





Echelle setups

MAR 23/24/97 6400Å 600 lines/mm

1 3

1872

1872

Spectr. Tem

Focus.....

Spectr. Tem

Exp. Mtr.



5 p9#1

Mon/Tues

Emulsion Batches:

Date 1997 Feb 10/11..... Observers L. J. [Blm] / T. n.....

| Plate No.                           | Object             | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-------------------------------------|--------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CC437 <sup>87</sup> / <sub>86</sub> | Inboard (outboard) |              |                     |                         |                       |                   |             | FeAr<br>ND3               | 3/4  |
| 87                                  | BIAS(4)            |              |                     | 21 43                   |                       |                   |             |                           | 3    |
| 88                                  | Comp               |              |                     |                         |                       |                   |             | FeAr<br>ND4               | 3s   |
| 89                                  | HD47839            | 063528       | +95918              | 21 5934                 |                       |                   |             |                           | 441  |
| 90                                  | "                  | "            | "                   | 22 0721                 |                       |                   |             |                           | 455  |
| CC43791                             | Comp               |              |                     |                         |                       |                   |             | FeAr<br>ND4               | 3s   |
| 92                                  | Comp               |              |                     |                         |                       |                   |             | "                         | 3s   |
| 93                                  | HD37022 ✓          | 05 3022      | -052720             | 22 2902                 |                       |                   |             |                           | 732  |
| 94                                  | Comp               |              |                     |                         |                       |                   |             | "                         | 3s   |
| 95                                  | Comp               |              |                     |                         |                       |                   |             | "                         | 3s   |
| 96                                  | HD37043 ✓          | 05 3032      | -055832             | 22 5040                 |                       |                   |             |                           | 219  |
| 97                                  | Comp               |              |                     |                         |                       |                   |             | "                         | 3    |
| 98                                  | Comp               |              |                     |                         |                       |                   |             | "                         | 3    |
| 99                                  | HD37742 ✓          | 05 3543      | -015943             | 23 0045                 |                       |                   |             |                           | 122  |
| CC43800                             | Comp               |              |                     |                         |                       |                   |             | "                         | 3    |
| 01                                  | BIAS(4)            |              |                     | 23 04                   |                       |                   |             |                           |      |

ccd

Spectr. Tem

Focus.....

Spectr. Tem

Exp. Mtr.

B639

Filter

5K

5K

5K

5K

5K

20K

47

47K

CCD Spectr. Temp.  $-101.8^{\circ}\text{C}$  Dome Temp./Hum.  $-02.9^{\circ}\text{C}$  71% H Transparency Conditions *part cloudy* 6

Focus  $7.12$

Spectr. Temp.  $-100.8^{\circ}\text{C}$  Dome Temp./Hum.  $-04.7^{\circ}\text{C}$  73% H  
 408 0 50 1024 4 1 CCDFWT -MAX

| Exp. Mtr.      | Seeing | Ptg. Mag. | Sp.     | Inst.                        | Grating/Tilt  | Slit | Emulsion          | P.H. | Program    | Remarks                       | Quality |
|----------------|--------|-----------|---------|------------------------------|---------------|------|-------------------|------|------------|-------------------------------|---------|
| BG39<br>Filter |        |           |         | Tgrating →                   | 600C<br>25.40 | 200u | 4309A             | 3/4  |            |                               |         |
|                |        |           |         | Actual visually checked      |               |      | ± 2A<br>@ how 572 | 1    |            |                               |         |
|                |        |           |         | Angle = $25.60^{\circ}$      |               |      |                   | 5    |            |                               |         |
|                |        |           |         | (Predicted $25.57^{\circ}$ ) |               |      |                   | 6    | 15 min     |                               |         |
| 5K             |        | 4.4       | 07Vf    |                              |               |      |                   | 7    |            |                               | 13K     |
| 5K             |        |           |         |                              |               |      |                   | 8    |            |                               | 103K    |
|                |        |           |         |                              |               |      |                   | 9    |            |                               |         |
| 2.2K           | 3"     | 5.15      | 06Sep   |                              |               |      |                   | 10   | Bln 0 star | *C component<br>cloudy        | 47      |
|                |        |           |         |                              |               |      |                   | 11   |            |                               | 86K     |
|                |        |           |         |                              |               |      |                   | 12   |            |                               |         |
| 4.7            |        | 2.53      | 09III   |                              |               |      |                   | 13   | Bln 0 star | 15d -00 0013<br>15s -00 01 20 | 13      |
|                |        |           |         |                              |               |      |                   | 14   |            | CRD Field BAD                 |         |
|                |        |           |         |                              |               |      |                   | 15   |            |                               |         |
| 4.7K           | 3"     | 1.54      | 09.5 Ib |                              |               |      |                   | 16   | Bln 0 star |                               |         |
|                |        |           |         |                              |               |      |                   | 17   |            |                               |         |
|                |        |           |         |                              |               |      |                   | 1    |            |                               |         |

7 pg#2 Mon/Tues

Emulsion Batches:

Date 1997 Feb 10/11..... Observers Lg. / [Blm] / Tn.....

| Plate No. | Object                | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|-----------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CC43802   | Comp                  |              |                     |                         |                       |                   |             | FEAR<br>NO4               | 3s   |
| 03        | HD 34656              | 05 1400      | +37 20 00           | 23 09 36                |                       |                   |             |                           | 1249 |
| 04        | Comp                  |              |                     |                         |                       |                   |             | "                         | 3s   |
| 05        | Comp                  |              |                     |                         |                       |                   |             | "                         | 3s   |
| 06        | HD 37366 <sup>v</sup> | 05 33 00     | +30 50 00           | 23 37 49                |                       |                   |             |                           | 1439 |
| 07        | Comp                  |              |                     |                         |                       |                   |             | "                         | 3s   |
| 08        | Comp                  |              |                     |                         |                       |                   |             | "                         | 3s   |
| 09        | HD 47839              | 06 35 28     | +09 59 18           | 00 07 29                |                       |                   |             |                           | 241  |
| 10        | Comp                  |              |                     |                         |                       |                   |             | "                         | 3s   |
| 11        | BLANK                 |              |                     | 00 14                   |                       |                   |             |                           |      |
| 12        | Comp                  |              |                     |                         |                       |                   |             | "                         | 3s   |
| 13        | HD 84441              | 09 40 11     | +24 14 05           | 00 18 42                |                       |                   |             |                           | 1082 |
| 14        | Comp                  |              |                     |                         |                       |                   |             | "                         | 3s   |
| 15/23     | FLATS x 9             |              |                     |                         |                       |                   |             | TUNG<br>NO 2              | 11s  |
| 24/25     | Inboard / Outboard    |              |                     |                         |                       |                   |             | FEAR<br>NO 2              | 3/4  |

Exp. Mtr.

Spectr. Tem.

Spectr. Tem.

Spectr. Tem.

Exp. Mtr.

Spectr. Tem.

Exp. Mtr.

Exp. Mtr.

Exp. Mtr.

Exp. Mtr.



Spectr. Temp. <sup>CCD</sup> -100.8°C

Dome Temp./Hum. ....

Transparency Conditions *cloud/haze*

Focus *7.12*

Spectr. Temp. ....

Dome Temp./Hum. *-04.8°C 75% H*

| Exp. Mtr.   | Seeing | Ptg. Mag.         | Sp.     | Inst.   | Grating/Tilt           | Slit  | Emulsion | P.H. | Program          | Remarks                  | Quality |
|-------------|--------|-------------------|---------|---------|------------------------|-------|----------|------|------------------|--------------------------|---------|
| BG39 Filter |        |                   |         | CAS CCD | 600C Infrared<br>25.40 | 250um | 4309A    | 18   |                  |                          |         |
| 3.3         |        | 6.81              | 07II(F) |         |                        |       |          | 19   | Blk 0 star       |                          | 8K      |
|             |        |                   |         |         |                        |       |          | 20   |                  |                          |         |
|             |        |                   |         |         |                        |       |          | 24   |                  |                          |         |
| 1.3K        | 2"-4"  | <sup>B</sup> 7.67 | 09.5V   |         |                        |       |          | 25   | Blk 0 star       | getting cloudy           | 26K     |
|             |        |                   |         |         |                        |       |          | 26   |                  |                          |         |
|             |        |                   |         |         |                        |       |          | 27   |                  |                          |         |
| 160         | 1-3"   | <sup>B</sup> 7.40 | 07V(F)  |         |                        |       |          | 28   | 15min Blk 0 star | Faint companion 2" to SW |         |
|             |        |                   |         |         |                        |       |          | 29   |                  |                          |         |
|             |        |                   |         |         |                        |       |          | 1    |                  |                          |         |
|             |        |                   |         |         |                        |       |          | 5    |                  |                          |         |
| 360         | 2"     | <sup>V</sup> 2.98 | G1 II   |         |                        |       |          | 6    | std vel          | very cloudy              |         |
|             |        |                   |         |         |                        |       |          | 7    |                  |                          |         |
|             |        |                   |         |         |                        |       |          | 2    |                  |                          | 14K     |
| -04.8       |        |                   |         |         |                        |       |          | 3/4  | focus            | right on in Red          |         |



Spectr. Temp.  $-100.9^{\circ}\text{C}$  ..... Dome Temp./Hum.  $-2.6^{\circ}\text{C}$  62.1% Transparency Conditions ... Part. Cloudy ..... 10

Focus ... 6.99 .....

Spectr. Temp. .... Dome Temp./Hum. ....  $\text{c} \dot{\lambda}$  340 0 56 1024 41 CCD LENT

| Exp. Mtr. | Seeing    | P. Mag. | Sp.      | Inst.                 | Grating/Tilt  | Slit      | Emulsion | P.H.            | Program | Remarks     | Quality |
|-----------|-----------|---------|----------|-----------------------|---------------|-----------|----------|-----------------|---------|-------------|---------|
| 4/6       | no filter |         |          | C455 CCD              | 1800 lines/mm | 300 $\mu$ | 5184A    | 3/4             |         |             |         |
|           |           |         |          | Tgrating              | 46.9          |           |          | 1               |         |             |         |
|           |           |         |          | Actual                | 47.1          |           |          | 5               |         |             |         |
|           |           |         |          | C455 CCD Predicted by | 46.94         |           |          |                 |         |             |         |
| 43        | 3K        | 1.14    | KO III b |                       |               |           |          | 6               | st/vel  | thin cloud  |         |
| 119       | 3.8K      |         |          |                       |               |           |          | 7               | "       | Thick cloud | 8.8K    |
| 4         |           |         |          |                       |               |           |          | 8               |         |             |         |
| 15        |           |         |          |                       |               |           |          | 9               |         |             | 12.8K   |
|           |           |         |          |                       |               |           |          | 1               |         |             |         |
|           |           |         |          |                       |               |           |          | <del>10</del> 1 |         |             |         |

11. pg #1

Wed / Thues

Emulsion Batches:

Date 1997. Feb 12/13.... Observers Gld. / Tn.....

| Plate No.             | Object              | R.A.<br>1900   | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison  |      |
|-----------------------|---------------------|----------------|---------------------|-------------------------|-----------------------|-------------------|-------------|-------------|------|
|                       |                     |                |                     |                         |                       |                   |             | Type/Filter | Exp. |
| CC438 <sup>H/42</sup> | Inbound (out) Bound |                |                     |                         |                       |                   |             | FeAr<br>ND4 | 3/5  |
| 43                    | Comp                |                |                     |                         |                       |                   |             | FeAr<br>ND4 | 4s   |
| 44                    | HP 62509            | 073912         | +281604             | 195737                  |                       |                   |             |             | 16   |
| 45                    | "                   |                |                     | 195829                  |                       |                   |             |             | 30   |
| 46                    | Comp                |                |                     |                         |                       |                   |             | "           | 4s   |
| 47                    | BIAS(4)             |                |                     | 200147                  |                       |                   |             |             |      |
| 48                    | Comp                |                |                     |                         |                       |                   |             | "           | 4s   |
| 49                    | FFCnc               | 2000<br>082939 | 1171702             | 200943                  |                       |                   |             |             | 1200 |
| 50                    | Comp                |                |                     |                         |                       |                   |             | "           | 4s   |
| 51                    | FFCnc               |                |                     | 203246                  |                       |                   |             |             | 1200 |
| 52                    | Comp                |                |                     |                         |                       |                   |             | "           | 4s   |
| 53                    | FFCnc               |                |                     | 205437                  |                       |                   |             |             | 1200 |
| 54                    | Comp                |                |                     |                         |                       |                   |             | "           | 4s   |
| 55                    | BIAS(A)             |                |                     | 211658                  |                       |                   |             |             |      |
| 56                    | FFCnc               |                |                     | 211847                  |                       |                   |             |             | 1200 |
| 57                    | Comp                |                |                     |                         |                       |                   |             | "           | 4    |

CCD

Spectr. Tem

Focus ...

Spectr. Tem

Exp. Mtr.

No. of Neg

8x

10x

200

200

200

200

CCD  
 Spectr. Temp.  $-100.7^{\circ}\text{C}$  Dome Temp./Hum.  $-08.0^{\circ}\text{C}$  56% H Transparency Conditions .. Clearing quickly ..... 12  
 Focus ..... 7.00 .....  
 Spectr. Temp. .... Dome Temp./Hum. ....  
 [All Headers; stellar info manually entered] very gusty NW  
 390 050 1024 4 1 CCUPAT

| Exp. Mtr. | Seeing    | Plg. Mag. | Sp.           | Inst.     | Grating/Tilt | Slit | Emulstn | P.H. | Program | Remarks | Quality |
|-----------|-----------|-----------|---------------|-----------|--------------|------|---------|------|---------|---------|---------|
| 3/5       | No filter |           |               | CASSCO    | 1800 h/line  | 306u | 5184A   | 3/4  |         |         |         |
| 4s        |           |           |               | T grading | 46.9         |      |         | 5    |         |         |         |
| 16        | 8K        |           | 1114 K0 III 6 |           |              |      |         | 6    | std vel |         |         |
| 30        | 10K       | 6"        |               |           |              |      |         | 7    | "       |         |         |
| 4s        |           |           |               |           |              |      |         | 1    |         |         |         |
| 4s        |           |           |               |           |              |      |         | 8    |         |         |         |
| 120       | 270       |           | 10.6 G8-K3    |           |              |      |         | 9    |         |         |         |
| 4s        |           |           |               |           |              |      |         | 10   |         |         |         |
| 120       | 270       |           |               |           |              |      |         | 11   |         |         |         |
| 4s        |           |           |               |           |              |      |         | 12   |         |         |         |
| 120       | 260       | 4"-6"     |               |           |              |      |         | 9    |         |         |         |
| 4s        |           |           |               |           |              |      |         | 13   |         |         |         |
| 120       | 240       | 5-7"      |               |           |              |      |         | 1    |         |         |         |
| 4s        |           |           |               |           |              |      |         | 11   |         |         |         |
|           |           |           |               |           |              |      |         | 14   |         |         |         |

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Wed / Thurs

Emulsion Batches:

Date 1997 Feb 12/13 Observers Gid. Tu

| Plate No. | Object    | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|-----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CC43858   | COMP      |              |                     |                         |                       |                   |             | FeAr<br>NO4               | 45   |
| 59        | HD 27990  | 04 20 00     | +17 48 00           | 21 51 59                |                       |                   |             |                           | 637s |
| 60        | COMP      |              |                     |                         |                       |                   |             | i                         | 45   |
| 61        | COMP      |              |                     |                         |                       |                   |             | k                         | 45   |
| 62        | HD 28783  | 04 27 06     | 15 48 00            | 22 06 26                | ed. A ✓               |                   |             |                           | 690  |
| 63        | COMP      |              |                     |                         |                       |                   |             | y                         | 45   |
| 64        | COMP      |              |                     |                         |                       |                   |             |                           | 45   |
| 65        | HD 29250  | 04 13 06     | 19 40 00            | 22 23 03                |                       |                   |             |                           | 573  |
| 66        | COMP      |              |                     |                         |                       |                   |             | u                         | 45   |
| 67        | BIAS (4)  |              |                     | 22 33                   |                       |                   |             |                           |      |
| 68        | COMP      |              |                     |                         |                       |                   |             | v                         | 45   |
| 69        | HD 285720 | 04 24 16     | +18 00 12           | 22 37 03                |                       |                   |             |                           | 953  |
| 70        | COMP      |              |                     |                         |                       |                   |             | n                         | 45   |
| 71        | COMP      |              |                     |                         |                       |                   |             | n                         | 45   |
| 72        | HD 29310  | 04 31 54     | +14 57 00           | 22 58 07                |                       |                   |             |                           | 200  |
| 73        | COMP      |              |                     |                         |                       |                   |             | 1                         | 45   |

Spectr. Tem.

Focus ...

Spectr. Tem.

Exp. Mtr.

not like

500

570

543

370

535

Spectr. Temp. .... Dome Temp./Hum.  $-10.1^{\circ}\text{C}$   $55.1\%$  Transparency Conditions *Fine* .....

Focus *7.00* .....

Spectr. Temp.  $-100.8^{\circ}\text{C}$  .....

*340 050 1024 41 CCD FMT* MAX  
RADU

| Exp. Mtr.  | Seeing            | Hg. Mag.    | Sp.         | Inst.           | Grating/Tilt                  | Slit       | Emulsion     | P.H.      | Program   | Remarks   | Quality    |
|------------|-------------------|-------------|-------------|-----------------|-------------------------------|------------|--------------|-----------|-----------|---|------------|
| <i>49</i>  | <i>not filter</i> |             |             | <i>CHSS CCD</i> | <i>1800 lines/mm<br/>46.9</i> | <i>306</i> | <i>5184A</i> | <i>15</i> |           |   |            |
| <i>637</i> | <i>500</i>        | <i>6"</i>   | <i>9.01</i> | <i>K2V</i>      |                               |            |              | <i>16</i> | <i>Δ2</i> | <i>750/11 SIN<br/>-12<sup>s</sup> 48 - 1' 19"</i> | <i>270</i> |
| <i>45</i>  |                   |             |             |                 |                               |            |              | <i>17</i> |           |   |            |
| <i>45</i>  |                   |             |             |                 |                               |            |              | <i>18</i> |           |   |            |
| <i>640</i> | <i>510</i>        | <i>4.7"</i> | <i>8.94</i> | <i>K1V</i>      |                               |            |              | <i>19</i> |           | <i>written in 16 ci</i>                           |            |
| <i>43</i>  |                   |             |             |                 |                               |            |              | <i>20</i> |           |   |            |
| <i>44</i>  |                   |             |             |                 |                               |            |              | <i>24</i> |           |   |            |
| <i>513</i> | <i>543</i>        |             | <i>8.63</i> | <i>G9V</i>      |                               |            |              | <i>25</i> |           |   |            |
| <i>43</i>  |                   |             |             |                 |                               |            |              | <i>26</i> |           |   |            |
| <i>43</i>  |                   |             |             |                 |                               |            |              | <i>1</i>  |           |   |            |
| <i>43</i>  |                   |             |             |                 |                               |            |              | <i>27</i> |           |   |            |
| <i>453</i> | <i>370</i>        | <i>4.5"</i> | <i>9.99</i> | <i>K4V</i>      |                               |            |              | <i>28</i> |           |   |            |
| <i>43</i>  |                   |             |             |                 |                               |            |              | <i>29</i> |           |   |            |
| <i>44</i>  |                   |             |             |                 |                               |            |              | <i>30</i> |           |   |            |
| <i>200</i> | <i>535</i>        | <i>4"</i>   | <i>7.54</i> | <i>G1V</i>      |                               |            |              | <i>31</i> |           |   |            |
| <i>43</i>  |                   |             |             |                 |                               |            |              | <i>32</i> |           |   |            |

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Date 1997 Feb 12/13 Wed/Thurs Observers Gld/Tu

Emulsion Batches:

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| Plate No. | Object   | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison  |       |
|-----------|----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|-------------|-------|
|           |          |              |                     |                         |                       |                   |             | Type/Filter | Exp.  |
| CC43874   | Comp     |              |                     |                         |                       |                   |             | Felt<br>ND4 | 75    |
| 75        | HD 28068 | 04 20 42     | +637 00             | 23 05 35                |                       |                   |             |             | 338   |
| 76        | Comp     |              |                     |                         |                       |                   |             | "           | 45    |
| 77        | Comp     |              |                     |                         |                       |                   |             | "           | 45    |
| 78        | HD 27989 | 04 20 00     | +1839 00            | 23 15 35                |                       |                   |             |             | 202   |
| 79        | Comp     |              |                     |                         |                       |                   |             | "           | 45    |
| 80        | Comp     |              |                     |                         |                       |                   |             | "           | 45    |
| 81        | HD 62509 | 07 39 12     | +2816 04            | 23 26 16                |                       |                   |             |             | 27    |
| 82        | Comp     |              |                     |                         |                       |                   |             | "           | 45    |
| 83        | BINS(4)  |              |                     | 23 29                   |                       |                   |             |             |       |
| 84        | Comp     |              |                     |                         |                       |                   |             | "           | 75    |
| 85        | FFCnc    | 08 29 40     | +1717 02            | 23 33 54                |                       |                   |             |             | 12 M  |
| 86        | Comp     |              |                     |                         |                       |                   |             |             | 45    |
| 87        | FFCnc    |              |                     | 23 58 06                |                       |                   |             |             | 1200  |
| 88        | Comp     |              |                     |                         |                       |                   |             |             | 45    |
| 88        | FFCnc    |              |                     | 08 20 42                |                       |                   |             |             | 12 50 |

Spectr. Tem

Focus .....

Spectr. Tem

Exp. Mir

No  
G. Mir

556

512

246

240

249



Spectr. Temp. .... Dome Temp./Hum.  $-121^{\circ}\text{C } 56\% \text{H}$  Transparency Conditions *fine* ..... 16

Focus ..... 7.00

Spectr. Temp. .... Dome Temp./Hum. ....

| Exp. Mtr.     | Seeing | Pv. Mag. | Sp.   | Inst.    | Grating/Tilt       | Slit      | Emulsion | P.H.            | Program | Remarks                | Quality |
|---------------|--------|----------|-------|----------|--------------------|-----------|----------|-----------------|---------|------------------------|---------|
| 10<br>Filter. |        |          |       | C455 CCD | 1800 $\mu$<br>46.9 | 306 $\mu$ | 5184A    | 5               |         |                        |         |
| 558           | 3.5"   | 8.06     | G5V   |          |                    |           |          | 6               |         |                        |         |
|               |        |          |       |          |                    |           |          | 8               |         |                        |         |
|               |        |          |       |          |                    |           |          | 8 <sup>13</sup> |         |                        |         |
| 512           |        | 7.53     | G6V   |          |                    |           |          | 14              |         |                        |         |
|               |        |          |       |          |                    |           |          | 15              |         |                        |         |
|               |        |          |       |          |                    |           |          | 16              |         |                        |         |
| 51            |        | 6.14     | A0III |          |                    |           |          | 17              | std vel |                        |         |
|               |        |          |       |          |                    |           |          | 18              |         |                        |         |
|               |        |          |       |          |                    |           |          | 1               |         | <del>CC-BIAA-BAT</del> |         |
|               |        |          |       |          |                    |           |          | 19              |         |                        |         |
| 246           |        |          |       |          |                    |           |          | 9               |         |                        |         |
|               |        |          |       |          |                    |           |          | 19              |         | $\Rightarrow$          |         |
| 240           |        |          |       |          |                    |           |          | 9               |         |                        |         |
|               |        |          |       |          |                    |           |          | 19              |         |                        |         |
| 249           |        |          |       |          |                    |           |          | 9               |         |                        |         |

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 12612/13  
 Date 1.9.97 Wed. 1.1.1998 Observers Gld./Tn.....

Emulsion Batches:

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 .....  
 .....

| Plate No.  | Object            | R.A.<br>1900             | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison  |      |
|------------|-------------------|--------------------------|---------------------|-------------------------|-----------------------|-------------------|-------------|-------------|------|
|            |                   |                          |                     |                         |                       |                   |             | Type/Filter | Exp. |
| CC43890    | comp              |                          |                     |                         |                       |                   |             | FeAr<br>ND4 | 4s   |
| 91         | FFCnc             | 08 29 40 <sup>2000</sup> | +17 17 02           | 00 43 55                |                       |                   |             |             | 1300 |
| 92         | Comp              |                          |                     |                         |                       |                   |             | "           | 4s   |
| 93         | FFCnc             |                          |                     | 01 07 41                |                       |                   |             |             | 1267 |
| 94         | Comp              |                          |                     |                         |                       |                   |             | "           | 4s   |
| 95         | FFCnc             |                          |                     | 01 31 31                |                       |                   |             |             | 1259 |
| 96         | Comp              |                          |                     |                         |                       |                   |             | "           | 4s   |
| 97         | FFCnc             |                          |                     | 01 55 50                |                       |                   |             |             | 1210 |
| 98         | Comp              |                          |                     |                         |                       |                   |             | "           | 4s   |
| 99         | BIAS(4)           |                          |                     |                         |                       |                   |             |             | -    |
| 900-909    | Eluts(x10)        |                          |                     |                         |                       |                   |             | TUNG<br>ND4 | 11s  |
| CC43910/11 | Inboard/out BOARD |                          |                     |                         |                       |                   |             | FeNe<br>ND5 | 4/2  |
| 12         | Comp              |                          |                     |                         |                       |                   |             | "           | 4s   |
| 13         | FFCnc             |                          |                     | 02 44 21                |                       |                   |             |             | 1201 |
| 14         | Comp              |                          |                     |                         |                       |                   |             | "           | 4s   |

Exp. Mtr.  
 267  
 270  
 255  
 234

Exp. Mtr.  
 267  
 270  
 255  
 234  
 -155  
 203

Spectr. Temp. <sup>CO<sub>2</sub></sup> -100.4°C ..... Dome Temp./Hum. -140°C 51.2%RH ..... Transparency Conditions slightly hazy ..... 18

Focus ... 7.00 .....

Spectr. Temp. .... Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | PV Mag. | Sp.  | Inst.       | Grating/Tilt | Slit | Emulsion  | P.H. | Program  | Remarks           | Quality |
|-----------|--------|---------|------|-------------|--------------|------|-----------|------|----------|-------------------|---------|
| 45        |        |         |      | CASS        | 1800 lines   | 306μ | S184A     | 19.  |          |                   |         |
| 130       |        |         |      | CLD         | 46.9         |      |           | 9    |          |                   |         |
| 45        |        |         |      |             |              |      |           | 19   |          |                   |         |
| 126       | 270    | 4.5"    | 10.6 |             |              |      |           | 9    |          |                   |         |
| 8         |        |         |      |             |              |      |           | 19   |          |                   |         |
| 129       | 255    |         |      |             |              |      |           | 9    |          |                   |         |
| 45        |        |         |      |             |              |      |           | 19   |          |                   |         |
| 120       | 254    |         |      |             |              |      |           | 9    |          |                   |         |
| 45        |        |         |      |             |              |      |           | 19   |          |                   |         |
| -         |        |         |      |             |              |      |           | 1    |          |                   |         |
| 115       |        |         |      |             |              |      |           | 2    |          |                   |         |
| 4/2       | -15.5  | F 208   |      | Tyrating    | 600 lines    | 250μ | 4113      | 3/4  | CCD FMT1 | 422 0 50 1024 4 1 |         |
| 45        |        |         |      | pract. etal | 2500         |      | ± 1Å      | 5    |          |                   |         |
| 120       | 203    |         |      |             | 25.17        |      | @ Row 512 | 9    |          |                   | 12K     |
| 45        |        |         |      |             |              |      |           | 19   |          |                   |         |



Spectr. Temp. .... Dome Temp./Hum.  $-15.7^{\circ}\text{C}$  52.38% Transparency Conditions ... slightly hazy ..... 20

Focus ..... 7.28 .....

Spectr. Temp. .... Dome Temp./Hum.  $-16.2^{\circ}\text{C}$  52.37% .....

| Exp. Mtr.         | Seeing | Ptg. Mag. | Sp. | Inst.    | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks        | Quality |
|-------------------|--------|-----------|-----|----------|--------------|------|----------|------|---------|----------------|---------|
| 110 207<br>filter | 6"     |           |     | Tgrating | 600C<br>25.0 | 2504 | 413A     | 9    |         |                |         |
|                   |        |           |     |          |              |      |          | 19   |         |                |         |
|                   |        |           |     |          |              |      |          | 1    |         |                |         |
|                   |        |           |     |          |              |      |          | 20   |         |                |         |
| 4.6K              | 4.97   | G2V       |     |          |              |      |          | 21   |         | Max 2.8 k ADU  |         |
|                   |        |           |     |          |              |      |          | 22   |         |                |         |
|                   |        |           |     |          |              |      |          | 23   |         |                |         |
| 3.7K              | 5"     | 5.33      | G8V |          |              |      |          | 24   |         | max. 2.0 k ADU |         |
|                   |        |           |     |          |              |      |          | 25   |         |                |         |
|                   |        |           |     |          |              |      |          | 26   |         |                |         |
| 6400k             | 3.01   | K1V       |     |          |              |      |          | 27   |         |                | 2.6K    |
|                   |        |           |     |          |              |      |          | 28   |         |                |         |
|                   |        |           |     |          |              |      |          | 28   |         |                |         |
| 6.4               | 5"     | 4.26      | G0V |          |              |      |          | 29   |         |                |         |
|                   |        |           |     |          |              |      |          | 30   |         |                |         |



Spectr. Temp. .... Dome Temp./Hum. ~~-16.4, 52.3%~~ Transparency Conditions ..... 22

Focus ..... 7.28 .....

Spectr. Temp. .... Dome Temp./Hum. ~~-16.4, 52.3%~~

| Exp. Mtr. | Seeing         | Pg. Mag. | Sp.   | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks    | Quality |
|-----------|----------------|----------|-------|-------|--------------|------|----------|------|---------|------------|---------|
| no filter |                |          |       |       |              | 250u | 4/13     | 5    |         |            |         |
| 5.3k      |                | 4.97     | G4V   |       |              |      |          | 6    |         | 2.6 km ADU |         |
|           |                |          |       |       |              |      |          | 8    |         |            |         |
|           |                |          |       |       |              |      |          | 9    |         |            |         |
| SK        |                | 4.78     | G6III |       |              |      |          | 10   |         |            |         |
|           |                |          |       |       |              |      |          | 11   |         |            |         |
|           |                |          |       |       |              |      |          | 12   |         |            |         |
| 2.9k      | 5 <sup>4</sup> | R23      | K3V   |       |              |      |          | 13   |         |            |         |
|           |                |          |       |       |              |      |          | 14   |         |            |         |
|           |                |          |       |       |              |      |          | 15   |         |            |         |
| SK        |                | 3.79     | G9III |       |              |      |          | 16   |         |            |         |
|           |                |          |       |       |              |      |          | 17   |         |            |         |
|           |                |          |       |       |              |      |          | 1    |         |            |         |
|           |                |          |       |       |              |      |          | 18   |         |            |         |
| 3050      |                | 6.60     | K2V   |       |              |      |          | 19   |         |            |         |
|           |                |          |       |       |              |      |          | 20   |         |            |         |

23  
Pg #7

Wed/Thur.

Emulsion Batches:

Date 1947 Feb 12/13 Observers Gld/In

| Plate No.  | Object                   | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End          | Declination | Comparison<br>Type/Filter | Exp. |
|------------|--------------------------|--------------|---------------------|-------------------------|-----------------------|----------------------------|-------------|---------------------------|------|
| CC43946    | Comp                     |              |                     |                         |                       |                            |             | FeNe<br>NDS               | 4s   |
| 47         | HD185144                 | 19 32 33     | 69 29 28            |                         |                       |                            |             |                           | 220s |
| 48         | comp                     |              |                     |                         |                       |                            |             | "                         | 4s   |
| 49         | comp                     |              |                     |                         |                       |                            |             | "                         | 4s   |
| 50         | HD144579                 | 16 01 30     | 39 24 00            |                         |                       |                            |             |                           | 331  |
| 51         | Comp                     |              |                     |                         |                       |                            |             | "                         | 4s   |
| CC30768/71 | HD144579                 | "            | "                   |                         |                       |                            |             | 4x                        | 67ms |
| 72/75      | DARKS x 4                |              |                     |                         |                       | Again, no box center       |             | 4x                        | 67ms |
| 76/77      | DARKS x 2                |              |                     |                         |                       | OR intensifier adjustments |             | 2x                        | 133  |
| 78/79      | HD144579 x 2             |              |                     |                         |                       | Throughout Test            |             | 2x                        | 133  |
| CC43952    | Comp                     |              |                     |                         |                       |                            |             | FeNe<br>NDS               | 4s   |
| 53         | sky                      | 20 15 24     | +32 00              |                         |                       |                            |             |                           | 435  |
| 54         | comp                     |              |                     |                         |                       |                            |             | "                         | 4s   |
| 55         | <del>HD144579</del> comp |              |                     |                         |                       |                            |             | "                         | 4s   |
| 56         | Hale-Bopp                | 20 15 25     | +22 20 24           | 06 21 16                |                       |                            |             |                           | 203s |
| 57         | star NE of out           | 20 15 24     | +22 20 57           | 06 26 29                |                       |                            |             |                           | 371s |



Spectr. Temp. .... Dome Temp./Hum.  $-16.8, 52.8^{\circ}$  Transparency Conditions *Fine* 24

Focus *7.28*

Spectr. Temp. *-*  $^{\circ}\text{C}$

Dome Temp./Hum.  $-17.5^{\circ}\text{C } 54.5\% \text{H}$

| Exp. Mtr.                  | Seeing    | Ptg. Mag.   | Sp.        | Inst.           | Grating/Tilt | Slit             | Emulsion     | P.H.       | Program            | Remarks              | Quality |
|----------------------------|-----------|-------------|------------|-----------------|--------------|------------------|--------------|------------|--------------------|----------------------|---------|
| <i>No</i><br><i>F. 1k2</i> |           |             |            |                 |              |                  | <i>4113A</i> | <i>21</i>  |                    |                      |         |
| <i>5.3k</i>                |           | <i>4.68</i> | <i>KOV</i> |                 |              |                  |              | <i>22</i>  |                    |                      |         |
|                            |           |             |            |                 |              |                  |              | <i>23</i>  |                    |                      |         |
|                            |           |             |            |                 |              |                  |              | <i>24</i>  |                    |                      |         |
| <i>1.7K</i>                | <i>5"</i> | <i>6.6</i>  | <i>G8V</i> |                 |              |                  |              | <i>25</i>  |                    | <i>RV standard</i>   |         |
|                            |           |             |            |                 |              |                  |              | <i>26</i>  |                    |                      |         |
|                            |           | <i>6.6</i>  | <i>G8V</i> | <i>Above</i>    |              | <i>250u slit</i> |              |            | <i>Seeing Test</i> | <i>Dome SSW</i>      |         |
|                            |           |             |            | <i>ALT 379°</i> |              |                  |              |            |                    | <i>Medium N wind</i> |         |
|                            |           |             |            |                 |              |                  | <i>4113A</i> |            |                    |                      |         |
| <i>44</i>                  |           |             |            |                 |              |                  |              | <i>27c</i> |                    | <i>sky line exp.</i> |         |
|                            |           |             |            |                 |              |                  |              | <i>28</i>  |                    |                      |         |
|                            |           |             |            |                 |              |                  |              | <i>29</i>  |                    |                      |         |
| <i>2100</i>                |           |             |            |                 |              |                  |              | <i>30</i>  |                    |                      |         |
| <i>829</i>                 |           |             |            |                 |              |                  |              | <i>31</i>  |                    |                      |         |

25  
17 #8

Emulsion Batches:

Date 1947 Feb 12/13 Observers Gld/Ts

| Plate No. | Object                 | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp.          |
|-----------|------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|---------------|
| CC43958   | comp                   |              |                     |                         |                       |                   |             | FeNe<br>NDS               | 4s            |
| 59        | Hale-Bopp              | 20 15 27     | 22 20 39            | 06 3552                 |                       |                   |             |                           | 200s          |
| 60        | "                      | "            | "                   | 06 3948                 |                       |                   |             |                           | 252           |
| 61        | comp                   | 20 15 30     | 22 20 42            |                         |                       |                   |             | "                         | 4s            |
| 62        | Brus (4)               |              |                     |                         |                       |                   |             |                           | -             |
| 63        | sky                    | 20 15 29     | 32 43 30            | 06 47 53                |                       |                   |             |                           | 116           |
| 64        | Comp                   |              |                     |                         |                       |                   |             | "                         | 4s            |
| 65        | Hat                    |              |                     |                         |                       |                   |             | ND2<br>16s                | <del>4s</del> |
| 66-73     | Flats x 8              |              |                     |                         |                       |                   |             | ND2<br>TUNG               | 11s           |
| 74/75     | Inb/out board Horimann |              |                     |                         |                       |                   |             | ND 5<br>FeNe              | 4/2           |

Spectr. Tem

Focus ...

Spectr. Tem

Exp. Mtr

2700

3900

3270

Spectr. Temp. .... Dome Temp./Hum. .... Transparency Conditions ..... *Fine* ..... 26

Focus ..... *7.28* .....

*LED* Spectr. Temp. .... *100.8°C* ..... Dome Temp./Hum. .... *77.7°C 54.3%RH* .....

| Exp. Mtr.   | Seeing | Ptg. Mag. | Sp. | Inst.           | Grating/Tilt | Slit        | Emulsion     | P.H.       | Program | Remarks                    | Quality |
|-------------|--------|-----------|-----|-----------------|--------------|-------------|--------------|------------|---------|----------------------------|---------|
|             |        |           |     | <i>Cass</i>     | <i>6000</i>  | <i>250μ</i> | <i>4113A</i> | <i>5</i>   |         |                            |         |
|             |        |           |     | <i>1grating</i> | <i>25.0</i>  |             |              | <i>6</i>   |         |                            |         |
| <i>2700</i> |        |           |     |                 |              |             |              | <i>6</i>   |         |                            |         |
| <i>3900</i> |        |           |     |                 |              |             |              | <i>8</i>   |         |                            |         |
|             |        |           |     |                 |              |             |              | <i>1</i>   |         |                            |         |
| <i>2270</i> |        |           |     |                 |              |             |              | <i>9</i>   |         | <i>brightest best now!</i> |         |
|             |        |           |     |                 |              |             |              | <i>11</i>  |         |                            |         |
|             |        |           |     |                 |              |             |              | <i>2</i>   |         |                            |         |
|             |        |           |     |                 |              |             |              | <i>2</i>   |         |                            |         |
|             |        |           |     |                 |              |             |              | <i>3/4</i> |         |                            |         |

27

Tues / Wed

Date 1997 Feb 18/19.....

Observers

[RG] / Lu / Ta.....

called "E-W" in Header.

Emulsion Batches:

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.....  
.....

| Plate No.                            | Object                      | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|--------------------------------------|-----------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CC 439 <sup>76</sup> / <sub>77</sub> | inboard / outboard          |              | HUTNAMM             |                         |                       |                   |             | RA<br>NO 4                | 5/9  |
| 78                                   | Comp                        |              |                     |                         |                       |                   |             | "                         | 45   |
| 79                                   | HD 14386                    | 02 14 18     | -03 25 54           | 19 48 46                |                       |                   |             |                           | 387  |
| 80                                   | "                           | "            | "                   | 19 56 26                |                       |                   |             |                           | 136  |
| 81                                   | HD 14386<br><del>comp</del> | "            | "                   | 19 59 43                |                       |                   |             | "                         | 308  |
| 82                                   | Comp                        |              |                     |                         |                       |                   |             | RA<br>NO 4                | 45   |
| 83                                   | BIAS (4)                    |              |                     | 20 07                   |                       |                   |             |                           |      |
| 84                                   | Comp                        |              |                     |                         |                       |                   |             | "                         | 45   |
| 85                                   | HD 1888 4                   | 02 57 03     | +03 41 51           | 20 13 28                |                       |                   |             |                           | 1085 |
| 86                                   | "                           | "            | "                   | 20 16 13                |                       |                   |             |                           | 5315 |
| 87                                   | "                           | "            | "                   | 20 28 01                |                       |                   |             |                           | 312  |
| 88                                   | Comp                        |              |                     |                         |                       |                   |             | "                         | 45   |
| 89/95                                | FLATS x 7                   |              |                     |                         |                       | 0 0               | platform    | TUNG<br>NO 2              | 115  |
| 96                                   | BIAS (4)                    |              |                     |                         |                       |                   |             |                           |      |
| 97                                   | BIAS (4)                    |              |                     | 21 34                   |                       |                   |             |                           |      |

CCD  
Spectr. Tem  
Focus...  
Spectr. Tem

Exp. Mtr.

No  
514g

24K

88K

12K

27K

77K

9K

CCD Spectr. Temp.  $-102.3^{\circ}\text{C}$  Dome Temp./Hum.  $+2.6^{\circ}\text{C}$  73% H Transparency Conditions *Mostly cloudy* 28

Focus  $6.90$

CCD Spectr. Temp.  $-100.5^{\circ}\text{C}$  Dome Temp./Hum.  $+5.5^{\circ}\text{C}$  67% H  
400 0 50 1024 41 CCD/FMT

| Exp. Mtr. | Seeing | P <sub>v</sub> Mag. | Sp.               | Inst.       | Grating/Tilt   | Slit      | Emulsion | P.H. | Program               | Remarks              | Quality |
|-----------|--------|---------------------|-------------------|-------------|----------------|-----------|----------|------|-----------------------|----------------------|---------|
| 5/4       |        |                     |                   | CASS<br>CCD | 1800/n<br>44.8 | 306 $\mu$ | 4848A    | 3/4  | focus test            |                      | ~ MAX   |
| 45        |        |                     |                   |             |                |           |          | 5    |                       |                      |         |
| 387       | 2.4K   | 10"                 | 12 <sup>?</sup> M |             |                |           |          | 6    | Rad into 5c<br>16 pgm | cloudy<br>MIR0 0 CET | H A etc |
| 136       | 8.8K   |                     |                   |             |                |           |          | 6    |                       | continuum ~ 1.4K     | 3.6K    |
| 308       | 12K    |                     |                   |             |                |           |          | 7    |                       | 1.5K                 | 4K      |
| 45        |        |                     |                   |             |                |           |          | 8    |                       |                      | 11.5K   |
|           |        |                     |                   |             |                |           |          | 1    |                       |                      |         |
| 45        |        |                     |                   |             |                |           |          | 9    |                       |                      |         |
| 1069      | 8.7K   | 5"                  | 2.52              | M1.5 III    |                |           |          | 10   | std vel               | and MAX std from     |         |
| 535       | 7.3K   |                     |                   |             |                |           |          | 11   | "                     | LARGE GARCIA LIST.   |         |
| 312       | 9K     |                     |                   |             |                |           |          | 12   |                       |                      | 4K      |
| 45        |        |                     |                   |             |                |           |          | 13   |                       |                      |         |
| 115       |        |                     |                   |             |                |           |          | 14   |                       |                      | 12K     |
|           |        |                     |                   |             |                |           |          | 1    |                       |                      |         |
|           |        |                     |                   |             |                |           |          | 1    |                       |                      |         |





31

Pg #1 SAT/SUN

Date . 1997. Feb. 22/23. Observers . Blm. / Lu. / Jm. ....

Emulsion Batches:

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| Plate No.              | Object              | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison  |      |
|------------------------|---------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|-------------|------|
|                        |                     |              |                     |                         |                       |                   |             | Type/Filter | Exp. |
| CE135 <sup>74/75</sup> | Inboard / OUTBOARD  |              |                     |                         |                       |                   |             | Th Ar       | 5/3  |
| 76                     | Comp                |              |                     |                         |                       |                   |             | "           | 45   |
| 77                     | HD 37017            | 05 3025      | -043336             | 19 21 46                |                       | 0 33W             |             |             | 3143 |
| 78                     | Comp                |              |                     |                         |                       |                   |             | "           | 45   |
| 79                     | BIAS(4)             |              |                     | 20 15 00                |                       |                   |             |             |      |
|                        | <del>HD 37017</del> | "            | "                   | <del>20 17 40</del>     |                       |                   |             |             |      |
| 80                     | BIAS(4)             |              |                     | 20 37                   |                       |                   |             |             |      |
| 81                     | Comp                |              |                     |                         |                       |                   |             | Th Ar       | 45   |
| 82                     | HD 47839            | 06 3528      | +095918             | 20 45 21                |                       | 0 11W             |             |             | 726  |
| 83                     | Comp                |              |                     |                         |                       |                   |             | "           | 45   |
| 84                     | HD 47839            |              |                     | 20 58 39                |                       |                   |             |             | 1230 |
| 85                     | Comp                |              |                     |                         |                       |                   |             |             |      |
| 86                     | Comp                |              |                     |                         |                       |                   |             | "           | 45   |
| 87                     | HD 47839            | 06 3528      | +095918             | 00 43 29                |                       | 4 20W             |             |             | 1302 |
| 88                     | Comp                |              |                     |                         |                       |                   |             |             | 45   |
| 89                     | BIAS(4)             |              |                     | 01 07                   |                       |                   |             |             |      |

CO  
Spectr. Ten

Focus...

CO  
Spectr. Ten

Exp. Mir

V=1300/16

F=12K

F=12K

188

560

520

580



CCD Spectr. Temp.  $-100.4^{\circ}\text{C}$  Dome Temp./Hum.  $-3.0^{\circ}\text{C}$  505764 Transparency Conditions *mostly clear* 32

Focus  $\dots 2.4 \dots$

CCD Spectr. Temp.  $-102.0^{\circ}\text{C}$  Dome Temp./Hum.  $\dots \dots$

90 cgain

$\pm 5\text{\AA}$

@  $\pm 101110$

4481  $\text{\AA}$  can lead in 5th order

Expansion  
filter Exp

| Exp. Mtr.                            | Seeing | Ptg. Mag. | Sp.      | Inst.                     | Grating/<br>Tilt | Slit  | Emulsion | P.H.         | Program    | Remarks                     | Quality                    |
|--------------------------------------|--------|-----------|----------|---------------------------|------------------|---|----------|--------------|------------|-----------------------------|----------------------------|
| V=1300 volt<br>Blue/ultra<br>Filter. |        |           |          | Echelle<br>0600m<br>19.90 | x<br>.4590       | 60u = .277 x<br>400u = .275 4481 $\text{\AA}$ |          | 1/2          | focus test | CCDFMT<br>0 0 128 1024 8 1  |                            |
|                                      |        |           |          |                           | x.4585           | 60u @ Row 512<br>400u = 225 Height            |          | 3            |            | CCDFMT<br>6 0 256 1024 4 1  |                            |
| 188                                  | 5"     | B<br>6.42 | B2Vp     |                           |                  |   |          | 4            | Bln Binary | Diagonal too poor<br>by Bln | 260<br>above<br>Background |
|                                      |        |           |          |                           |                  |   |          | 3            |            |                             |                            |
|                                      |        |           |          |                           |                  |   |          | 1            |            |                             |                            |
|                                      |        |           |          |                           |                  |   |          | <del>5</del> |            | Discordant.                 |                            |
|                                      |        |           |          |                           |                  |   |          | 1            |            |                             |                            |
|                                      |        |           |          |                           |                  | 100u width now<br>400u height                 |          | 3            |            |                             |                            |
| 560                                  | 6"     | B<br>4.40 | 07V (CF) |                           |                  |   |          | 5            |            | 15 min (sometimes cloud)    | max 6K                     |
|                                      |        |           |          |                           |                  |   |          | 3            |            |                             |                            |
| 570                                  |        |           |          |                           |                  |   |          | 6            |            |                             |                            |
|                                      |        |           |          |                           |                  |   |          | 3            |            |                             |                            |
|                                      |        |           |          |                           |                  |   |          | 3            |            |                             |                            |
| 2580                                 | 4"     | B<br>4.40 | 07V (CF) |                           |                  |   |          | 4            |            |                             |                            |
|                                      |        |           |          |                           |                  |   |          | 3            |            |                             |                            |
|                                      |        |           |          |                           |                  |   |          | 1            |            |                             |                            |







CCD Spectr. Temp. -100.4°C

Dome Temp./Hum. -02.4°C 62.1%RH

Transparency Conditions ... Mostly clear ... 36

Focus ... 214

CCD Spectr. Temp. - °C

Dome Temp./Hum. -03.5°C 72.4%RH

Then mostly cloudy  
Then clear after sunset

| Exp. Mtr. | Seeing               | Ptg. Mag. | Sp. | Inst.   | Grating/Tilt       | Slit        | Emulsion | P.H. | Program         | Remarks   | Quality    |
|-----------|----------------------|-----------|-----|---------|--------------------|-------------|----------|------|-----------------|---|------------|
| Ar 53     |                      |           |     | e-belle | 600 $\mu$ m        | 100 $\mu$ m | 4481A    | 1/2  | Focus unchanged | Focus CCD Fm 7<br>0 0 128 1024 8 1                  |            |
|           |                      |           |     |         | 4585               | 400 $\mu$ m |          | 1    |                 | 0 0 256 1024 4 1                                    |            |
|           |                      |           |     |         | .225 = 400 $\mu$ m |             |          | 3    |                 | n ~ 70/l S/N @ 4481A MAX                            |            |
|           | 555 < 2"             | 6.42      | B2V |         |                    |             |          | 4    | Sp Bin Bln      | cloud ended exp. ~ 400                              |            |
|           |                      |           |     |         |                    |             |          | 3    |                 |   |            |
|           |                      |           |     |         |                    |             |          | 3    |                 |   |            |
|           |                      |           |     |         |                    |             |          | 3    |                 |   |            |
|           | 1367 2-3"            | 4.4       | B   | 7V (CF) |                    |             |          | 5    |                 | 100/l S/N @ 4481A<br>70/l S/N @ 4471A<br>some cloud | MAX<br>1K  |
|           |                      |           |     |         |                    |             |          | 3    |                 |   |            |
|           |                      |           |     |         |                    |             |          | 1    |                 |   |            |
|           |                      |           |     |         | set. 215           | 500 $\mu$ m | FLATS    | 6    |                 |   | 105        |
|           |                      |           |     |         |                    |             |          | 1    |                 |   |            |
|           | Vol/ture to 1320 now |           |     |         |                    |             |          | 3    |                 |   |            |
|           |                      |           |     |         |                    |             |          | 3    |                 |   |            |
|           | 2600 3-5"            | 4.38      | B   | 8V      |                    |             |          | 4    | Sp Bin Bln      | n ~ 180/l S/N                                       | MAX<br>3.5 |
|           |                      |           |     |         |                    |             |          | 3    |                 | Almost 1 pixel flux shift between                   |            |
|           |                      |           |     |         |                    |             |          | 3    |                 | comparisons,  |            |





29

pg#1

Mon/Tues

Emulsion Batches:

Date 1997 Feb 24/25 Observers [B.L.] / Lu. / T.H.

| Plate No.              | Object             | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp.           |
|------------------------|--------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|----------------|
| ce136 <sup>26/27</sup> | Inbound / outboard |              |                     |                         |                       | ~230W             | 50°         | T <sub>h</sub> Ar         | 5/3            |
| 28                     | BIAS(4)            |              |                     | 1848                    |                       |                   |             |                           |                |
| 29                     | Comp               |              |                     |                         |                       |                   |             | T <sub>h</sub> Ar         | t <sub>s</sub> |
| 30                     | HD 37017           | 053025       | -043336             | 190227                  |                       |                   |             |                           | 3036           |
| 31                     | Comp               |              |                     |                         |                       |                   |             | T <sub>h</sub> Ar         | t <sub>s</sub> |
| 32                     | HD 37017           | "            | "                   | 195418                  |                       |                   |             |                           | 2400           |
| 33                     | Comp               |              |                     |                         |                       |                   |             | T <sub>h</sub> Ar         | t <sub>s</sub> |
| 34                     | BIAS(4)            |              |                     | 2035                    |                       |                   |             |                           |                |
| 35                     | HD 37017           | "            | "                   | 203723                  |                       |                   |             |                           | 235            |
| 36                     | Comp               |              |                     |                         |                       |                   |             | T <sub>h</sub> Ar         | t <sub>s</sub> |
| 37                     | HD 37017           | "            | "                   | 21<br>203723            |                       |                   |             |                           | 2406           |
| 38                     | Comp               |              |                     |                         |                       |                   |             | T <sub>h</sub> Ar         | t <sub>s</sub> |
| 39                     | BIAS(4)            |              |                     | 2156                    |                       |                   |             |                           |                |
| 40                     | HD 37017           | "            | "                   | 215915                  |                       |                   |             |                           | 2400           |
| 41                     | Comp               |              |                     |                         |                       |                   |             | T <sub>h</sub> Ar         | t <sub>s</sub> |

G.C.  
Spectr. Tem

Focus ...

Spectr. Tem

Exp. Mtr.

1320Wk

Exp. Mtr.

231

Exp. Mtr.

232

233

700

760



CCD Spectr. Temp.  $-100.5^{\circ}\text{C}$  Dome Temp./Hum.  $-08.9^{\circ}\text{C}$   $80\% \text{H}$  Transparency Conditions *Fine* 40

Focus  $0.211$

*some clouds*

CCD Spectr. Temp.  $-100.6^{\circ}\text{C}$  Dome Temp./Hum.  $\text{CA}$

| Exp. Mtr.                        | Seeing | Pg. Mag. | Sp.  | Inst.            | Grating/<br>X Tilt | Slit           | Emulsion | P.H. | Program | Remarks                                       | Quality |
|----------------------------------|--------|----------|------|------------------|--------------------|----------------|----------|------|---------|---|---------|
| 132016/6<br>Blue/green<br>Filter |        |          |      | Echelle<br>19.90 | 0600/n<br>4585     | 100uW<br>400uH | 4481A    | 1/2  | Focus.  | Focus CCD Filter<br>0 0 128 1024 81           |         |
|                                  |        |          |      |                  |                    |                |          | 1    |         | 0 0 256 1024 41                               |         |
|                                  |        |          |      |                  |                    |                |          | 3    |         | seeing getting worse<br>than at start.        |         |
| 731                              | 2" 4"  | B<br>6.4 | B2Vp |                  |                    |                |          | 2    |         | <u>100/1 @ 4481A</u>                          |         |
|                                  |        |          |      |                  |                    |                |          | 3    |         |   |         |
|                                  |        |          |      |                  |                    |                |          | 4    |         | 80/1 S/N @ 4481A                              |         |
|                                  |        |          |      |                  |                    |                |          | 3    |         |   |         |
|                                  |        |          |      |                  |                    |                |          | 1    |         |   |         |
| 735                              | 3"     | "        | "    |                  |                    |                |          | 2    |         | only 70/1 S/N @ 4481A<br>cloud at end         |         |
|                                  |        |          |      |                  |                    |                |          | 3    |         |   |         |
| 700                              | 3" 5"  | "        | "    |                  |                    |                |          | 4    |         | 70/1 S/N again<br>poor seeing, ended exposure |         |
|                                  |        |          |      |                  |                    |                |          | 3    |         |   | 6.6K    |
|                                  |        |          |      |                  |                    |                |          | 1    |         |   |         |
| 760                              | 2" 4"  | "        | "    |                  |                    |                |          | 2    |         | 70/1 S/N                                      |         |
|                                  |        |          |      |                  |                    |                |          | 3    |         |   |         |

4/p9#2 Mon/Tues

Emulsion Batches:

Date 1947 Feb 24/25... Observers [Bl.] / Lu. / Tu.....

| Plate No. | Object           | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CE13642   | Comp             |              |                     |                         |                       |                   |             | ThAr                      | 45   |
| 43        | HD 47839         | 06 3528      | +09 5918            | 22 46 09                |                       |                   |             |                           | 1693 |
| 44        | Comp             |              |                     |                         |                       |                   |             | ThAr                      | 45   |
| 45        | BIAS(4)          |              |                     | 23 15                   |                       |                   |             |                           |      |
| 46/52     | FLATS            | X 7          | for Bl              | 100u slit width         |                       | 2 48W             | +10°        | TUNG                      | 255  |
| CE13653   | Comp<br>HD 47105 | 06 31 56     | +16 29 05           | <del>22 38 12</del>     |                       |                   |             | ThAr                      | 45   |
| 54        | HD 47105         | "            | "                   | 23 38 13                |                       |                   |             |                           | 1010 |
| 55        | Comp             |              |                     |                         |                       |                   |             | "                         | 4    |
| 56        | Comp             |              |                     |                         |                       |                   |             | "                         | 4    |
| 57        | HD 34029         | 05 04 18     | +45 53 47           | 23 59 59                |                       |                   |             |                           | 836  |
| 58        | Comp             |              |                     |                         |                       |                   |             | "                         | 45   |
| 59        | BIAS(4)          |              |                     | 00 16                   |                       |                   |             |                           |      |
| 60/64     | FLATS x 5        |              |                     |                         |                       | 2 30W             | +10°        |                           | 355  |
| 65        | BIAS(4)          |              |                     | 07 03                   |                       |                   |             |                           |      |

Spectr. Temp. <sup>CCD</sup> -100.6°C

Dome Temp./Hum. -12.5°C 60% H

Transparency Conditions ... some cloud ... 42

Focus ... 211

Spectr. Temp. .....

Dome Temp./Hum. ....

| Exp. Mtr.            | Seeing | Ptg. Mag. | Sp.    | Inst. | Grating/<br>x Tilt | Slit   | Emulsion | P.H. | Program   | Remarks   | Quality |
|----------------------|--------|-----------|--------|-------|--------------------|--------|----------|------|-----------|---|---------|
| 1320 V<br>Blue pyran |        |           |        | e26/e | 0.600u/mm          | 100u W | 4481A    | 3    |           |   |         |
| 4275                 | 2"     | 4.4       | 07V    | (F)   | 19.90<br>0.4585    | 400u H | 4481A    | 5    | Blu pyran | ~ 160/1 S/N MAX<br>15 min in cloud<br>~ 100/1 @ 4471A |         |
|                      |        |           |        |       |                    |        |          | 3    |           |   |         |
|                      |        |           |        |       |                    |        |          | 1    |           |   | MAX     |
|                      |        |           |        |       |                    |        |          | 6    |           |   | 11K     |
| still<br>1320u/15    |        | 4.9       |        |       |                    |        |          | 3    |           |   |         |
| 4341                 |        | 1.9       | A01V   |       |                    | 60u    | 4481A    | 2    | kk pyran  | ~ 150/1 S/N   |         |
|                      |        |           |        |       |                    |        |          | 3    |           |   |         |
|                      |        |           |        |       |                    |        |          | 3    |           |   |         |
| 1460                 | 4"     | 0.9       | G801+F |       |                    |        |          | 4    | kk pyran  | capella in cloud                                      |         |
|                      |        |           |        |       |                    |        |          | 3    |           |   |         |
|                      |        |           |        |       |                    |        |          | 1    |           |   |         |
|                      |        |           |        |       |                    | 60u W  |          | 6    |           |   | 11.5K   |
|                      |        |           |        |       |                    | 500u H |          | 1    |           |   |         |

43

PT #1 sun/moon

Date 1997 MAR 2/3. Observers M.A./T.A. (Charles KERTON)

Emulsion Batches:

| Plate No.            | Object              | R.A.<br>1900             | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination                      | Comparison<br>Type/Filter | Exp. |
|----------------------|---------------------|--------------------------|---------------------|-------------------------|-----------------------|-------------------|----------------------------------|---------------------------|------|
| CC4400 <sup>24</sup> | Inboard/outboard    |                          |                     |                         |                       |                   |                                  | FeAr<br>NO 5              | 8/10 |
| CC44004              | <del>HD 34019</del> |                          |                     |                         |                       |                   |                                  | FeAr<br>NO 9              | 45   |
| 05                   | HD 34019*           | 05 09 13                 | +53 28 26           | 19 13 12                |                       |                   | 1997<br>α 05 16 55<br>δ 53 44 00 |                           | 708  |
| 06                   | Comp                |                          |                     |                         |                       |                   |                                  | "                         | 45   |
| 07                   | BIAS(A)             |                          |                     | 19 28 54                |                       |                   |                                  |                           |      |
| 08                   | Comp                |                          |                     |                         |                       |                   |                                  | "                         | 45   |
| 09                   | VES 735             | 02 20 07 <sup>2000</sup> | +10 07 03           | 19 46 31                |                       |                   |                                  |                           |      |
| 10                   | Comp                |                          |                     |                         |                       |                   |                                  | "                         | 45   |
| 11                   | VES 735             | "                        | "                   | 20 29 59                |                       |                   |                                  |                           |      |
| 12                   | Comp                |                          |                     |                         |                       |                   |                                  | NO 5                      | 45   |
| 13                   | VES 735             | "                        | "                   | 21 00 43                |                       |                   |                                  |                           | 1062 |
| 14                   | Comp                |                          |                     |                         |                       |                   |                                  | "                         | 45   |
| 15                   | BIAS(A)             |                          |                     | 21 21 52                |                       |                   |                                  |                           |      |
| 16                   | Comp                |                          |                     |                         |                       |                   |                                  | "                         | 45   |
| 17                   | HD 36512            | 05 27 06                 | -07 22 31           | 21 34 41                |                       |                   |                                  |                           | 563  |

Spectr. Temp. <sup>CCD</sup> -100.4°C Dome Temp./Hum. +100.4°C 53.1% Transparency Conditions Clearing gradually. 4x  
 Then cloud again.

Focus 6-90

Spectr. Temp. Dome Temp./Hum. -00.7°C 58.3% H

390 0 50 1024 47 CCD/FILT

| Comparison Filter Exp | Exp. Mtr.<br>1000 Volts | Seeing           | Ptg. Mag. | Sp. | Inst.       | Grating/Tilt    | Slit             | Emulsion | P.H.    | Program                                | Remarks                             | Quality |
|-----------------------|-------------------------|------------------|-----------|-----|-------------|-----------------|------------------|----------|---------|--|-------------------------------------|---------|
| 8/10                  | no Filter               |                  |           |     | CASS<br>CCD | 1800/n<br>56.2° | 306 <sub>n</sub> | 6608A    | 1/2     | focus test                             |                                     |         |
| 45                    |                         |                  |           |     |             |                 |                  |          | 3       |  |                                     |         |
| 908                   | 800                     |                  |           |     |             |                 |                  |          | 4       | E-W mira                               | * Not the Right star.<br>Not a mira |         |
| 45                    |                         |                  |           |     |             |                 |                  |          | 5       |  |                                     |         |
|                       |                         |                  |           |     |             |                 |                  |          | 1       |  |                                     |         |
| 45                    | Exp meter<br>Rebulung?  |                  |           |     |             |                 |                  |          | 6       |  |                                     |         |
|                       |                         | 3-4 <sup>u</sup> | 1205      | 0   |             |                 |                  | 7        | Mn pgn  | Reversal.                              |                                     |         |
| 4                     |                         |                  |           |     |             |                 |                  | 8        |         |  |                                     |         |
|                       |                         |                  |           |     |             |                 |                  | 9        | Mn pgn  | Had to Reboot Area,<br>And Restart     |                                     |         |
|                       |                         |                  |           |     |             |                 |                  | 2        |         | Mirror Rehomel                         | 5K                                  |         |
|                       | 180                     |                  |           |     |             |                 |                  | 3        |         | is 2 -0000 to Reversal<br>1-5+00 00 04 |                                     |         |
|                       |                         |                  |           |     |             |                 |                  | 4        |         |  |                                     |         |
|                       |                         |                  |           |     |             |                 |                  | 1        |         |  |                                     |         |
|                       |                         |                  |           |     |             |                 |                  | 5        |         |  |                                     |         |
| 556                   | 105K                    | 5 <sup>u</sup>   | 487       | BOV |             |                 |                  | 6        | Mir std | Clouds                                 | 55K                                 |         |









CD  
Spectr. Temp. .... -100.1°C .. Dome Temp./Hum. .... -01.6°C 56.2%<sup>H</sup> Transparency Conditions .. part. cloudy ..... 48.

Focus .... 7.00 .....

Spectr. Temp. .... Dome Temp./Hum. .... -4.4°C 56.6%<sup>H</sup>

396 0 50 1024 4 1 CCD mag

| Exp. Mtr.                | Seeing | Mag.<br>Mag. | Sp.   | Inst.       | Grating/<br>Tilt | Slit             | Emulsion                           | P.H.       | Program    | Remarks   | Quality |
|--------------------------|--------|--------------|-------|-------------|------------------|------------------|------------------------------------|------------|------------|---|---------|
| no filter<br>still 1000V |        |              |       | T grading → | 1800 1/4<br>1890 | 306 <sup>u</sup> | 5184 <sup>o</sup><br>± 1A<br>c 512 | 3/4<br>1/2 | focus test |   |         |
|                          |        |              |       |             |                  |                  |                                    | 5          |            |   | 6.3K    |
| 2.1K                     |        | 6.09         | G3J6  |             |                  |                  |                                    | 6          |            | normalization star  |         |
|                          |        |              |       |             |                  |                  |                                    | 7          |            |   |         |
|                          |        |              |       |             |                  |                  |                                    | 8          |            |   |         |
| 11K                      |        | 1.14         | K0011 |             |                  |                  |                                    | 9          | std vel    |   |         |
|                          |        |              |       |             |                  |                  |                                    | 10         |            |   |         |
|                          |        |              |       |             |                  |                  |                                    | 1          |            |   |         |
|                          |        |              |       |             |                  |                  |                                    | 13         |            | * source mirror<br>down (-) 2 steps from<br>normal (after home<br>(for max speed) poss. | 5K      |
| 3,170                    | 3.4"   | 7.00         | G8K   |             |                  |                  |                                    | 14         | std vel    |   |         |
|                          |        |              |       |             |                  |                  |                                    | 15         |            |   |         |
|                          |        |              |       |             |                  |                  |                                    | 11         |            |   |         |
| 265                      | 2.3"   | 10.6         |       |             |                  |                  |                                    | 12         |            | ↙ 730/1 5/4<br>very gusty NW wind<br>but great seeing ??                                |         |
|                          |        |              |       |             |                  |                  |                                    | 16         |            |   |         |

49

pg#2 Thurs/Fri

Emulsion Batches:

Date 1997 MAR 6/7 Observers Gld/IT

| Plate No. | Object              | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|---------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CC44046   | FF Cnc              | 08 2940      | +171702             | 00 5717                 |                       |                   |             |                           | 1000 |
| 47        | Comp                |              |                     |                         |                       |                   |             | FeAr<br>NO 3              | 4s   |
| 48        | BIAS (4)            |              |                     | 01 15                   |                       |                   |             |                           |      |
| 49        | FF CnC              |              |                     | 01 1625                 |                       |                   |             |                           | 953  |
| 50        | Comp                |              |                     |                         |                       |                   |             | "                         | 4s   |
| 51        | FF CnC              |              |                     |                         |                       |                   |             |                           | 751  |
| 52        | Comp                |              |                     |                         |                       |                   |             | "                         | 4s   |
| 53        | Comp                |              |                     |                         |                       |                   |             | "                         | 4s   |
| 54        | HD 62509            | 07 3912      | +281604             | 01 5324                 |                       |                   |             |                           | 36   |
| 55        | "                   |              |                     | 01 5434                 |                       |                   |             |                           | 51   |
| 56        | Comp                |              |                     |                         |                       |                   |             | "                         | 4s   |
| 57        | BIAS (4)            |              |                     |                         |                       |                   |             |                           |      |
| 58/64     | FLATS x 7           |              |                     |                         |                       |                   |             | JUNG<br>NO 3              | 8s   |
| 65/66     | Inboard / OUT BOARD |              |                     |                         |                       |                   |             | FeAr<br>NO 3              | 5/6  |

Spectr. Temp. <sup>CCD</sup> -100.2°C ..... Dome Temp./Hum. -5.0°C 55% H Transparency Conditions *Late clearing* ..... 50

Focus ..... 7.00 .....

Spectr. Temp. ..... Dome Temp./Hum. -5.6°C 56.8% H

| Exp. Mtr.   | Seeing  | Ptg. Mag. | Sp. | Inst.       | Grating/Tilt    | Slit      | Emulsion | P.H. | Program | Remarks                      | Quality |
|-------------|---------|-----------|-----|-------------|-----------------|-----------|----------|------|---------|------------------------------|---------|
| 1000<br>268 |         | 10.6      |     | C455<br>CCD | 1800ln<br>46.9° | 306 $\mu$ | 5184A    | 17   |         |                              |         |
|             |         |           |     |             |                 |           |          | 18   |         |                              |         |
|             |         |           |     |             |                 |           |          | 1    |         |                              |         |
| 95<br>270   | 3 $\mu$ |           |     |             |                 |           |          | 19   |         | Some cloud                   |         |
|             |         |           |     |             |                 |           |          | 20   |         |                              |         |
| 75<br>237   |         |           |     |             |                 |           |          | 21   |         | more clouds                  |         |
|             |         |           |     |             |                 |           |          | 22   |         |                              |         |
|             |         |           |     |             |                 |           |          | 23   |         |                              |         |
|             |         |           |     |             |                 |           |          | 24   | stiller |                              | 3.3K    |
| 51<br>10.8K |         |           |     |             |                 |           |          | 25   | "       |                              |         |
|             |         |           |     |             |                 |           |          | 26   |         |                              | 3.4K    |
|             |         |           |     |             |                 |           |          | 1    |         |                              |         |
|             |         |           |     |             |                 |           |          | 27   |         | NO adjustment to MIREA MADE. | 13.6K   |
|             |         |           |     |             |                 |           |          | 3/4  | focus   |                              |         |
|             |         |           |     |             |                 |           |          |      |         |                              |         |

- 5.2° F = 7.00

51

Mon / Tues

Emulsion Batches:

Date 1997 MAR 10/11... Observers Tu... Tests of ND Filter FRinging.....

| Plate No.              | Object            | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination             | Comparison<br>Type/Filter | Exp  |
|------------------------|-------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------------------|---------------------------|------|
| CC440 <sup>67/68</sup> | Inboard/out       |              |                     |                         |                       | 0                 | +14°                    | FeAr<br>ND 4              | 3/3  |
| 69                     | FLAT              |              |                     |                         |                       |                   |                         | TUNG<br>ND 4              | 3    |
| 70                     | BIAS(4)           |              |                     | 00 40                   |                       |                   |                         |                           |      |
| 71                     | FLAT              |              |                     |                         |                       |                   |                         | TUNG<br>ND 5              | 9    |
| 72                     | FLAT              |              |                     |                         |                       |                   |                         | TUNG<br>ND 6              | 39   |
| 73                     | FLAT 47           |              |                     |                         |                       |                   |                         | TUNG<br>ND 7              | 44   |
| 74                     | FLAT              |              |                     |                         |                       |                   | +GG385                  | TUNG<br>ND 4              | 35   |
| 75/6                   | Inboard/out Board |              |                     |                         |                       |                   | +GG385                  | FeAr<br>ND 3              | 9/12 |
| 77                     | FLAT              |              |                     |                         |                       |                   | "                       | TUNG<br>ND 4              | 30   |
| 78                     | FLAT              |              |                     |                         |                       |                   | "                       | TUNG<br>ND 5              | 90   |
| 79                     | "                 |              |                     |                         |                       |                   | "                       | TUNG<br>ND 6              | 400  |
| 80                     | "                 |              |                     |                         |                       |                   | "                       | TUNG<br>ND 7              | 500  |
| 81                     | FLAT              |              |                     |                         |                       |                   | ORDER sep<br>filter out | TUNG<br>ND 7              | 1115 |

Note, that 600C grating used by mistake

CCD Spectr. Temp.  $-100.3^{\circ}\text{C}$

Dome Temp./Hum.  $+100.7^{\circ}\text{C}$  80%RH

Transparency Conditions ... *Snow* ... 52

Focus ... 6.85

90C gain

Spectr. Temp. ....

Dome Temp./Hum. ....  $C^{\lambda}$

396 0 50 1024 4 1 CCD FWT MAX 104

| Exp. Mtr.   | Seeing                                | Ptg. Mag. | Sp. | Inst. | Grating/Tilt               | Slit      | Emulsion       | P.H.  | Program    | Remarks                   | Quality               |     |
|---|---------------------------------------|-----------|-----|-------|----------------------------|-----------|----------------|-------|------------|---------------------------|-----------------------|-----|
| 3/3   |                                       |           |     |       | 1800 $\lambda$ / 56.87     | 306 $\mu$ | 6702 $\pm$ 1A  | 3/4   | focus test |                           | 12/146K               |     |
| 3/3   | Yes, HARTMANN MASK home now           |           |     |       |                            |           |                |       | 5          |                           |                       | 13K |
|   |                                       |           |     |       |                            |           |                | 1     |            |                           |                       |     |
| 9   |                                       |           |     |       |                            |           |                | 6     |            |                           | 12.1K                 |     |
| 3/4   |                                       |           |     |       |                            |           |                | 7     |            | 4.4K <del>4.4K</del>      |                       |     |
| <del>(No I guess this was ND #6 and not #7)</del> |                                       |           |     |       |                            |           |                | 8     |            | 700                       | <del>4.4K</del>       |     |
|   |                                       |           |     |       |                            |           |                | 9     |            |                           | 11.8K                 |     |
| 9/12  | Intended to use                       |           |     |       | 600C / 42.52               | 306 $\mu$ | 6696 $\pm$ 2A  | 11/12 | focus      | CCD FWT 425 0 50 1024 4 1 |                       |     |
| 3/0   | 600 $\lambda$ grating, but discovered |           |     |       | 600C in                    |           | C512           | 10    |            | *except for hot pixel     | 5.6K <del>12.4K</del> |     |
| 9/0   |                                       |           |     |       | At end of test. No wonder! |           |                | 13    |            | x " " "                   | 5.2K                  |     |
| 6/0   |                                       |           |     |       |                            |           |                | 14    |            |                           | 2.7K                  |     |
| 6/0   | A bit long for a flat?                |           |     |       |                            |           |                | 15    |            |                           | 500                   |     |
| 11/5  |                                       |           |     |       | 1800 / 56.87               | 306 $\mu$ | 6701 $\lambda$ | 16    | The Real   | ND #7 Filter              | 1.5K                  |     |
|   |                                       |           |     |       |                            |           |                |       |            | A repeat actually         |                       |     |

53 pg#1

Tues/Wed

Emulsion Batches:

Date 1997 MAR 11/12 Observers [Bln] Lu. (WxL) / T. ....

| Plate No.               | Object           | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp.           |
|-------------------------|------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|----------------|
| CC440 <sup>82</sup> /83 | Inboard/outboard |              |                     |                         |                       |                   |             | FeAr<br>ND 3              | 7/6            |
| 84                      | BIAS (4)         |              |                     | 19 21                   |                       |                   |             |                           |                |
| 85                      | Comp             |              |                     |                         |                       |                   |             | FeAr<br>NO 3              | 4              |
| 86                      | HD37017          | 05 3025      | -0433 36            | 19 25 04                |                       |                   |             |                           | 1209           |
| 87                      | Comp             |              |                     |                         |                       |                   |             | h                         | 4 <sub>B</sub> |
| 88                      | Comp             |              |                     |                         |                       |                   |             | h                         | 4 <sub>B</sub> |
| 89                      | HD21564          | 03 21 45     | +09 23 03           | 19 53 29                |                       |                   |             |                           | 253            |
| 90                      | Comp             |              |                     |                         |                       |                   |             | h                         | 4 <sub>B</sub> |
| 91                      | Comp             |              |                     |                         |                       |                   |             | h                         | 4 <sub>B</sub> |
| 92                      | HD37017          | 05 30 25     | -04 33 36           | 20 06 58                |                       |                   |             |                           | 18/2           |
| 93                      | Comp             |              |                     |                         |                       |                   |             | h                         | 4 <sub>B</sub> |
| 94                      | BIAS (4)         |              |                     | 20 39                   |                       |                   |             |                           |                |
| 95                      | Comp             |              |                     |                         |                       |                   |             | h                         | 4 <sub>B</sub> |
| 96                      | HD 38446         | 04 24 06     | +53 41 37           | 20 47 41                |                       |                   |             |                           | 815            |
| 97                      | Comp             |              |                     |                         |                       |                   |             | h                         | 4 <sub>B</sub> |

500  
Spectr. Tem

Focus ...

Spectr. Tem

Exp. Mir

11-44  
200V

55K

10-39  
12-8H

64K

7.8

Spectr. Temp. <sup>CCD</sup> -100.7°C ..... Dome Temp./Hum. -01.6°C 567RH Transparency Conditions ..... Fine ..... 5K

Focus ..... 6.97 .....

Spectr. Temp. ..... Dome Temp./Hum. -03.2°C 562RH

405 0 50 1024 4 1 CCD FORT

| Exp. Mtr.          | Seeing              | Ptg. Mag. | Sp.  | Inst.       | Grating/Tilt          | Slit | Emulsion | P.H. | Program       | Remarks                    | Quality |
|--------------------|---------------------|-----------|------|-------------|-----------------------|------|----------|------|---------------|----------------------------|---------|
| No filter<br>1000V |                     |           |      | CASS<br>CCD | 1800 bl/scan<br>42150 | 306  | 4463A    | 3/4  | focus test    | mirror again humid<br>1st. |         |
|                    |                     |           |      |             |                       |      |          | 1    |               |                            |         |
|                    |                     |           |      |             |                       |      |          | 5    |               |                            |         |
| 8.5K               | 4"                  | 642       | B2Vp |             |                       |      |          | 6    | bln SB        |                            | 23K     |
|                    |                     |           |      |             |                       |      |          | 7    |               |                            | 10K     |
| BG 39 now          |                     |           |      |             |                       |      |          | 8    | panl into 6ci |                            |         |
| 12.8K              | 4"                  | 366       | B8p  |             |                       |      |          | 9    | bln SB        |                            | 6K      |
|                    |                     |           |      |             |                       |      |          | 10   |               |                            |         |
|                    |                     |           |      |             |                       |      |          | 11   |               |                            |         |
| 6.4K               | 3.5"                | 642       | B2Vp |             |                       |      |          | 12   | bln SB        |                            | 3K      |
|                    |                     |           |      |             |                       |      |          | 13   |               |                            |         |
|                    |                     |           |      |             |                       |      |          | 14   |               |                            |         |
| 7.8                | <del>4.2</del> 5.22 |           | B0II |             |                       |      |          | 15   | bln SB        |                            | 3K      |
|                    |                     |           |      |             |                       |      |          | 16   |               |                            |         |





CCD Spectr. Temp.  $-100.3^{\circ}\text{C}$

Dome Temp./Hum.  $-03.5^{\circ}\text{C}$  56.7% H

Transparency Conditions . Part. Cloudy ..... 5.6

Focus .... 6.97

Spectr. Temp. ....

Dome Temp./Hum.  $-04.1^{\circ}\text{C}$  59.0% H

Comparator Filter Exp.

| Exp. Mtr.       | Seeing | Ptg. Mag. | Sp.  | Inst.    | Grating/Tilt    | Slit      | Emulsion | P.H. | Program | Remarks | Quality |
|-----------------|--------|-----------|------|----------|-----------------|-----------|----------|------|---------|---------|---------|
| BG 39<br>Filter |        |           |      |          | 1800ln<br>42.50 | 306 $\mu$ | 4A63A    | 17   |         |         |         |
| 11.4K           | 4"     | B<br>3.57 | 09.5 | Tgrating |                 |           |          | 18   | SB Bln  |         |         |
|                 |        |           |      |          |                 |           |          | 19   |         |         |         |
|                 |        |           |      |          |                 |           |          | 20   | SB Bln  |         |         |
| 20K             | 3.5"   | 07V(f)    | 4.4  |          |                 |           |          | 21   | 15 Mon  |         | 8.7K    |
| 20.4K           | "      | 07V(f)    | 4.4  |          |                 |           |          | 21   | "       |         |         |
|                 |        |           |      |          |                 |           |          | 22   |         |         |         |
|                 |        |           |      |          |                 |           |          | 1    |         |         |         |
|                 |        |           |      |          |                 |           |          | 23   |         |         |         |
| 4.9             |        | A0        | 6.88 |          |                 |           |          | 24   | SB Bln  |         | 2K      |
|                 |        |           |      |          |                 |           |          | 25   |         |         | 10K     |
|                 |        |           |      |          |                 |           |          | 26   |         |         |         |
| 20.5            | 4"     | B9V       | 5.22 |          |                 |           |          | 27   | SB Bln  |         | 9K      |
|                 |        |           |      |          |                 |           |          | 28   |         |         |         |
|                 |        |           |      |          |                 |           |          | 1    |         |         |         |

57

Pg#3 Tues/Wed

Date 1997. M. R. 11/12... Observers [Blm] / Ly. / Jh.....

Emulsion Batches:

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.....  
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| Plate No.             | Object    | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter                        | Exp.     |
|-----------------------|-----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|--|----------|
| CC44113               | comp      |              |                     |                         |                       |                   |             | FeAr<br>NO 3                                     | 4s       |
| 14                    | HD 81104  | 09 18 36     | 54 28               | 23 02 11                |                       |                   |             |  | 2100     |
| 15                    | comp      |              |                     |                         |                       |                   |             | "  | 4s       |
| 16                    | comp      |              |                     |                         |                       |                   |             | "  | 4s       |
| 17                    | HD 103095 | 11 47 13     | 38 26               | 23 45 19                |                       |                   |             |  | 1120     |
| 18                    | comp      |              |                     |                         |                       |                   |             | "  | 4        |
| 19                    | Bias (4)  |              |                     | 00 06 08                |                       |                   |             |  |          |
| CG80 <sup>80/83</sup> | HD 103095 | "            | "                   |                         |                       |                   |             | No change to Intensifier<br>and default Box used | 4x 67ms  |
| 84/87                 | DARK x 4  |              |                     |                         |                       |                   |             |  | 4x 67ms  |
| 85/89                 | " x 2     |              |                     |                         |                       |                   |             | FOR 111  | 2x 137ms |
| 90/91                 | HD 103095 |              |                     |                         |                       |                   |             |  | 2x 137ms |
| CC44120               | Comp      |              |                     |                         |                       |                   |             | FeAr<br>NO 3                                     | 4s       |
| 21                    | HD 102870 | 11 45 29     | 102 19 42           | 00 27 06                |                       |                   |             |  | 818      |
| 22                    | comp      |              |                     |                         |                       |                   |             | "  | 4s       |
| 23                    | comp      |              |                     |                         |                       |                   |             | "  | 4s       |

Spectr. Tem

Focus...

Spectr. Tem

Exp. Mir.

3.6x

4.3x

107x

Spectr. Temp. <sup>CCD</sup> -100.3°C

Dome Temp./Hum. -4.5°C 59.8%

Transparency Conditions ... Fine ... S8

Focus ..... 6.97

Spectr. Temp. ....

Dome Temp./Hum. -05.5°C 62.8%<sup>H</sup>Light west wind  
High pressure still coming in

| Exp. Mtr. | Seeing           | Ptg. Mag.         | Sp.  | Inst.            | Grating/Tilt   | Slit | Emulsion | P.H. | Program | Remarks  | Quality |
|-----------|------------------|-------------------|------|------------------|----------------|------|----------|------|---------|--|---------|
|           |                  |                   |      | CASS<br>7grating | 1800h<br>42.50 | 306u | 4463A    | 5c   |         |  |         |
| 3.6 K     |                  | 7.42              | A2   |                  |                |      |          | 6c   | B/n SB  |  |         |
|           |                  |                   |      |                  |                |      |          | 7    |         |  | 99K     |
|           |                  |                   |      |                  |                |      |          | 8    |         |  |         |
| 4.3 K     | 3.5 <sup>V</sup> | 6.45              | G8Vp |                  |                |      |          | 9    | Std vel |  |         |
|           |                  |                   |      |                  |                |      |          | 10   |         |  |         |
|           |                  |                   |      |                  |                |      |          | 1    |         |  |         |
|           |                  | 6.45 <sup>V</sup> | G8Vp | ALT 80°          | ABare          | 306u | slit     |      |         | Seeing Test, Dome SW<br>Light west wind<br>A no Fan night. |         |
|           |                  |                   |      |                  |                |      |          |      |         |  |         |
|           |                  |                   |      | CASS<br>CCD      | 1800h<br>42.50 | 306u | 4463A    | 11   |         |  | 12.4K   |
| 10.7K     | 5 <sup>n</sup>   | 3.6 <sup>V</sup>  | F9V  |                  |                |      |          | 12   | Std vel |  | 4.3K    |
|           |                  |                   |      |                  |                |      |          | 13   |         |  | 12.4K   |
|           |                  |                   |      |                  |                |      |          | 14   |         |  |         |

59 pg#4 Tue/wed

Emulsion Batches:

Date 1997 MAR 11/12 Observers [Blm]/L.H./T.N.....

| Plate No. | Object              | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. | Exp. Mtr |
|-----------|---------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|----------|
| CC44124   | HD130841            | 14 4521      | -15 3734            | 00 3730                 |                       |                   |             |                           | 415  | 21K      |
| 25        | Comp                |              |                     |                         |                       |                   |             | FeA<br>ND3                | 4s   |          |
| 26        | HD130819            | 14 4509      | -15 3453            | 00 4749                 |                       |                   |             |                           | 153Z | 77K      |
| 27        | Comp                |              |                     |                         |                       |                   |             | "                         | 4s   |          |
| 28        | BIAS (4)            |              |                     | 01 16                   |                       |                   |             |                           |      |          |
| 29/37     | FLATS X9            |              |                     |                         |                       | 2 E               | -16°        | JUNG<br>ND2               | 25   |          |
| 38        | comp                |              |                     |                         |                       |                   |             | FeA<br>ND3                | 4s   |          |
| 39        | HD152614            | 16 4917      | 10 19 48            | 01 48 07                |                       |                   |             |                           | 826  | 20S      |
| 40        | Comp                |              |                     |                         |                       |                   |             | FeA<br>ND3                | 4s   |          |
| 41        | Comp                |              |                     |                         |                       |                   |             | "                         | 4s   |          |
| 42        | HD154528            | 17 0054      | +77 48 00           | 01 5902                 |                       |                   |             |                           | 1384 | 4.6K     |
| 43        | comp                |              |                     |                         |                       |                   |             |                           |      |          |
| 44        | Bias (4)            |              |                     | 02 25                   |                       |                   |             |                           |      |          |
| 45/46     | Inboard (out board) |              |                     |                         |                       | 0 40E             | +40         | FeA<br>ND3                | 4/7  | T=0      |
| 47        | Comp                |              |                     |                         |                       |                   |             | "                         | 4s   |          |

Spectr. Temp. .... Dome Temp./Hum. .... Transparency Conditions .. *Some..cloud.....* 60Focus ..... *6.97* .....

Spectr. Temp. .... Dome Temp./Hum. ....

| Exp. Mtr. | Seeing       | Ptg. Mag.                      | Sp.  | Inst.       | Grating/Tilt | Slit     | Emulsion | P.H. | Program | Remarks                                      | Quality |
|-----------|--------------|--------------------------------|------|-------------|--------------|----------|----------|------|---------|--|---------|
| 415       | 21K          | B<br>2.89                      | Am   | CASS<br>CCD | 1800/n       | 30 $\mu$ | 4463A    | 15   | S13 Bln | $\alpha$ 2 Lib, SE Brighter<br>of wide pair. |         |
| 1534      | 7.7K         | 5 <sup>h</sup> -8 <sup>m</sup> |      |             |              |          |          | 16   |         |  |         |
|           |              |                                |      |             |              |          |          | 17   | S13 Bln | cloud at end                                 | 2K      |
|           |              |                                |      |             |              |          |          | 19   |         |  |         |
|           |              |                                |      |             |              |          |          | 1    |         |  |         |
| 25        |              |                                |      |             |              |          |          | 2    |         |  | 12K     |
| 43        |              |                                |      |             |              |          |          | 5    |         |  | 11K     |
| 826       | 20.5         | 3 <sup>h</sup> 5 <sup>m</sup>  | 4.46 | B8V         |              |          |          | 6    | S13 Bln | $\sim$ 400/1 S/N                             | 7K      |
| 43        |              |                                |      |             |              |          |          | 7    |         |  | 11K     |
| 43        |              |                                |      |             |              |          |          | 8    |         |  |         |
| 1394      | 4.6K         | V<br>6.66                      | AO   |             |              |          |          | 9    | S13 Bln | clouds in                                    |         |
|           |              |                                |      |             |              |          |          | 10   |         |  | 11K     |
|           |              |                                |      |             |              |          |          | 1    |         | Topup by 0240                                |         |
| 417       | T = -06.4 °C |                                |      |             |              |          |          | 3/4  | focus   | Right on Redward<br>of row 300, still.       |         |
| 43        |              |                                |      |             |              |          |          | 11   |         |  |         |

61 pg #5

Date 1997 MAR 11/12 Observers [Bl] WXL/Tn

Emulsion Batches:

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 .....  
 .....

| Plate No. | Object                                    | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|---|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CC44148   | <sup>164852</sup><br><del>HD 102870</del> | 17 58 07     | +20 50              | 02 49 11                |                       |                   |             |                           | 1506 |
| 49        | Comp                                      |              |                     |                         |                       |                   |             | TeAr<br>ND 3              | 4s   |
| 50        | <sup>164852</sup><br><del>HD 102870</del> | "            | "                   | 03 16 17                |                       |                   |             |                           | 1500 |
| 51        | Comp                                      |              |                     |                         |                       |                   |             | "                         | 4s   |
| 52        | BIAS (4)                                  |              |                     | 03 44 46                |                       |                   |             |                           |      |
| 53        | Comp                                      |              |                     |                         |                       |                   |             | "                         | 4s   |
| 54        | HD 164577                                 | 17 56 41     | +01 18 27           | 03 49 04                |                       |                   |             |                           | 846  |
| 55        | Comp                                      |              |                     |                         |                       |                   |             | "                         | 4s   |
| 56        | Comp                                      |              |                     |                         |                       |                   |             | "                         | 4s   |
| 57        | HD 172187                                 | 18 33 42     | 43 08 12            | 04 09 16                |                       |                   |             |                           | 2033 |
| 58        | Comp                                      |              |                     |                         |                       |                   |             | "                         | 4s   |
| 59        | Bias (4)                                  |              |                     |                         |                       |                   |             |                           |      |
| 60        | Comp                                      |              |                     |                         |                       |                   |             | "                         | 4s   |
| 61        | HD 180316                                 | 19 11 00     | +27 46 00           | 04 49 06                |                       |                   |             |                           | 2351 |
| 62        | Comp                                      |              |                     |                         |                       |                   |             |                           |      |

Spectr. Ten

Focus...6

Spectr. Ten

Exp. Mir.

3K

20K

20K

20K

20K

Spectr. Temp. .... Dome Temp./Hum.  $-06.4^{\circ}\text{C}$   $70.7\% \text{H}$  Transparency Conditions ... *Cloudy* ..... 62

Focus ... *6.97* .....

Spectr. Temp. .... Dome Temp./Hum.  $-06.8^{\circ}\text{C}$   $77.3\% \text{H}$

405 0 50 1024 41 CCDFWT

| Exp. Mtr.   | Seeing | Ptg. Mag.            | Sp.   | Inst. | Grating/Tilt    | Slit      | Emulsion | P.H. | Program | Remarks                | Quality |
|-------------|--------|----------------------|-------|-------|-----------------|-----------|----------|------|---------|------------------------|---------|
| 1586<br>3K  | 4-8"   | <sup>B</sup><br>5.19 | B3 IV | CASS  | 1800/n<br>42.50 | 306 $\mu$ | 4463A    | 12   | SB Bln  | 1st part mostly cloudy |         |
|             |        |                      |       |       |                 |           |          | 13   |         |                        |         |
| 1500<br>20K |        |                      |       |       |                 |           |          | 14   | SB Bln  | clear                  |         |
|             |        |                      |       |       |                 |           |          | 16   |         |                        |         |
|             |        |                      |       |       |                 |           |          | 1    |         |                        |         |
|             |        |                      |       |       |                 |           |          | 19   |         |                        |         |
| 840<br>20K  | 5-8"   | <sup>B</sup><br>4.46 | A1 V  |       |                 |           |          | 20   | SB Bln  |                        | 6.4K    |
|             |        |                      |       |       |                 |           |          | 22   |         |                        |         |
|             |        |                      |       |       |                 |           |          | 23   |         |                        |         |
| 2053<br>12K | 3-5"   | 6.40                 | F0 V  |       |                 |           |          | 24   | SB Bln  |                        |         |
|             |        |                      |       |       |                 |           |          | 25   |         |                        |         |
|             |        |                      |       |       |                 |           |          | 1    |         |                        |         |
|             |        |                      |       |       |                 |           |          | 26   |         |                        |         |
| 351<br>6.7K |        | <sup>B</sup><br>6.64 | B8    |       |                 |           |          | 27   | SB Bln  |                        | 3K      |
|             |        |                      |       |       |                 |           |          | 28   |         |                        |         |







65 Pg #1

Wed / Thurs

Date 1997 MAR 12/13 Observers Lu / Tn

Emulsion Batches:

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 .....

| Plate No.              | Object                        | R.A.<br>1900                | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp.                 |
|------------------------|-------------------------------|-----------------------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|----------------------|
| CC441 <sup>67/68</sup> | In board / out board HARTMANN |                             |                     |                         |                       |                   |             | FBAN<br>NO 3              | 4/5                  |
| 72                     | BIAS (4)                      | done after                  | 1st exp             | 19 05                   |                       |                   |             |                           |                      |
| <del>69</del>          | comp                          |                             |                     |                         |                       |                   |             | FBAN<br>NO 3              | 4s                   |
| 70                     | HD 62509                      |                             |                     | 18 58 11                |                       |                   |             |                           | 27                   |
| 71                     | Comp                          |                             |                     |                         |                       |                   |             | FBAN<br>NO 3              | 4s                   |
| 73                     | Comp                          |                             |                     |                         |                       |                   |             | "                         | 4s                   |
| 74                     | BV Eri                        | <sup>2000</sup><br>03 51 53 | +10 31 43           | 19 14 01                |                       |                   |             |                           | 900                  |
| 75                     | "                             | "                           | "                   | 19 29 19                |                       |                   |             | "                         | <del>819</del><br>4s |
| 76                     | Comp                          |                             |                     |                         |                       |                   |             | "                         | 4s                   |
| 77                     | Comp                          |                             |                     | <del>19</del>           |                       |                   |             | "                         | 4s                   |
| 78                     | XZ Leo                        | <sup>2000</sup><br>10 02 34 | +17 02 46           | 19 50 51                |                       |                   |             |                           | 900                  |
| 79                     | "                             | edit version ✓              |                     | <u>20 06 18</u>         |                       |                   |             |                           | 900                  |
| 80                     | comp.                         |                             |                     |                         |                       |                   |             |                           | 4s                   |
| 81                     | BIAS (4)                      |                             |                     | 20:24                   |                       |                   |             |                           |                      |
| 82                     | XZ Leo                        | 10 02 34                    | +17 02 46           | 20 25 43                |                       |                   |             |                           | 903                  |

COO

Spectr. Tem

Focus

Spectr. Tem

Exp. Mir.

942C

2639 4.5

No Filter  
now

370

363

354

CCD Spectr. Temp. ... -100.5°C ... Dome Temp./Hum. ... -04.2°C 580%<sup>H</sup> Transparency Conditions ... Fine ... 66

Focus ... G.97 ... Hole Bopp real fine, with star in TAIL.

Spectr. Temp. ... Dome Temp./Hum. ...

405 050 1024 4 1 CCD/FWT

| Exp. Mtr. | Seeing                            | Mag. | Sp. | Inst.                | Grating/<br>Tilt | Slit | Emulsion | P.H. | Program    | Remarks    | Quality |
|-----------|-----------------------------------|------|-----|----------------------|------------------|------|----------|------|------------|------------|---------|
| 4/5       | -04.2°C                           |      |     | C455 CCD<br>Tgrating | 1800/n<br>46.9   | 306  | 5184A    | 3/4  | focus test |            |         |
| 4/5       |                                   |      |     |                      |                  |      |          | 5    |            |            | 28K     |
| 4/5       |                                   |      |     |                      |                  |      |          | 6    | std vel    |            | 108K    |
| 4/5       |                                   |      |     |                      |                  |      |          | 7    |            |            |         |
| 4/5       | BG 39 F: H <sub>2</sub> still in. |      |     |                      |                  |      |          | 8    |            |            | 35K     |
| 9/0       | 5"                                | 8.6  | F2  |                      |                  |      |          | 9    | DRL        | ~ 80/1 S/N |         |
| 8/9       |                                   |      |     |                      |                  |      |          | 10   |            |            |         |
| 4/5       | No Fil/ka<br>now                  |      |     |                      |                  |      |          | 11   |            |            | 2.9     |
| 4/5       |                                   |      |     |                      |                  |      |          | 12   |            |            | 3.2     |
| 9/0       | 370                               | 19.6 | A5  |                      |                  |      |          | 13   | DRL        |            |         |
| 9/0       | 363                               |      |     |                      |                  |      |          | 14   |            |            |         |
| 4/5       |                                   |      |     |                      |                  |      |          | 15   |            |            |         |
| 4/5       |                                   |      |     |                      |                  |      |          | 1    |            |            |         |
| 4/5       | 354                               | 3.4" |     |                      |                  |      |          | 16   |            | 40/1 S/N   |         |

67  
 6 pg #2  
 Date 1997 Wed/Thurs  
 Observers Lu/Tn

Emulsion Batches:

.....  
 .....  
 .....

| Plate No. | Object   | R.A.<br>1900             | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp |
|-----------|----------|--------------------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-----|
| cc44183   | XZ Leo   | 10 02 34 <sup>2000</sup> | 17 02 46            | 20 41 04                |                       |                   |             |                           | 900 |
| 84        | comp     |                          |                     |                         |                       |                   |             | Fe Ar<br>ND 3             | 45  |
| 85        | Comp     |                          |                     |                         |                       |                   |             | "                         | 45  |
| 86        | AH Aur   | 06 26 05 <sup>2060</sup> | 27 59 54            | 21 05 09                |                       |                   |             |                           | 972 |
| 87        | "        | "                        | "                   | 21 21 34                |                       |                   |             |                           | 924 |
| 88        | comp     |                          |                     |                         |                       |                   |             | "                         | 45  |
| 89        | Comp     |                          |                     |                         |                       |                   |             | "                         | 45  |
| 90        | U Z Leo  | 10 40 33                 | +13 34 00           | 21 43 25                |                       |                   |             |                           | 900 |
| 91        | "        |                          |                     | 21 58 53                |                       |                   |             |                           | 902 |
| 92        | Comp     |                          |                     |                         |                       |                   |             | "                         | 45  |
| 93        | BIAS (4) |                          |                     | 22 16                   |                       |                   |             |                           |     |
| 94        | U Z Leo  | 10 40 33                 | 13 34 00            | 22 17 05                |                       |                   |             |                           | 900 |
| 95        | "        |                          |                     | 22 32 33                |                       |                   |             |                           | 900 |
| 96        | Comp     |                          |                     |                         |                       |                   |             | "                         | 4   |
| 97        | Comp     |                          |                     |                         |                       |                   |             | "                         | 4   |

Spectr. Temp.  
 Focus.....  
 Spectr. Temp.  
 Exp. Mtr  
 See  
 346  
 350  
 502  
 550  
 540

Spectr. Temp.  $CCD -100.5^{\circ}C$  Dome Temp./Hum.  $-6.0^{\circ}C$   $55.1\%$  Transparency Conditions *some cloud* 58

Focus  $6.97$

Spectr. Temp. .... Dome Temp./Hum. ....

405 0 50 1024 4 1 CCD FWH

| Comp. Filter | Exp. Mtr.               | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks    | Quality |
|--------------|-------------------------|--------|-----------|-----|-------|--------------|------|----------|------|---------|------------|---------|
| 900          | <i>no filter</i><br>346 | 3.5"   | 10.6      | A5  |       |              | 306  | 5184A    | 17   |         | < 40/1 S/N |         |
| 4            |                         |        |           |     |       |              |      |          | 18   |         |            | 2.6K    |
| 4            |                         |        |           |     |       |              |      |          | 19   |         |            |         |
| 900          | 402                     | 3-4"   | 10.5      | G   |       |              |      |          | 20   |         | > 40/1 S/N |         |
| 400          | 304                     |        |           |     |       |              |      |          | 21   |         |            |         |
| 4            |                         |        |           |     |       |              |      |          | 22   |         |            |         |
| 4            |                         |        |           |     |       |              |      |          | 23   |         |            | 3.1K    |
| 900          | 550                     |        | 9.8       | F2  |       |              |      |          | 24   |         |            |         |
| 900          | 502                     | 3"     |           |     |       |              |      |          | 25   |         |            |         |
| 4            |                         |        |           |     |       |              |      |          | 26   |         |            | 2.6K    |
|              |                         |        |           |     |       |              |      |          | 1    |         |            |         |
| 900          | 550                     | 2-3"   |           |     |       |              |      |          | 27   |         |            |         |
| 900          | 540                     | 2-3"   |           |     |       |              |      |          | 28   |         |            |         |
| 4            |                         |        |           |     |       |              |      |          | 29   |         |            | 2.6K    |
| 4            |                         |        |           |     |       |              |      |          | 30   |         |            | 3.1K    |

69 pg#3 wed / Thurs

Emulsion Batches:

Date 1997 MAR 12/13... Observers L. U. / T. n.....

| Plate No. | Object   | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CC4198    | W Crv    | 12 07 36     | -13 09 30           | 22 54 51                |                       |                   |             |                           | 900  |
| 99        | "        | "            | "                   | 23 10 15                |                       |                   |             |                           | 900  |
| 200       | comp     |              |                     |                         |                       |                   |             | FeAr<br>1103              | 45   |
| 01        | W Crv    |              |                     | 23 27 45                |                       |                   |             |                           | 900  |
| 02        | "        |              |                     | 23 43 22                |                       |                   |             |                           | 900  |
| 03        | comp     |              |                     |                         |                       |                   |             | "                         | 45   |
| 04        | BIAS (4) |              |                     |                         |                       |                   |             |                           |      |
| 05        | W Crv    |              |                     | 00 03 06                |                       |                   |             |                           | 900  |
| 06        | "        |              |                     | 00 18 35                |                       |                   |             |                           | 900  |
| 07        | Comp     |              |                     |                         |                       |                   |             | "                         | 45   |
| 08        | W Crv    |              |                     | 00 35 29                |                       |                   |             |                           | 935  |
| 09        | "        |              |                     | 00 53 31                |                       |                   |             |                           | 907  |
| 10        | Comp     |              |                     |                         |                       |                   |             |                           |      |
| 11        | W Crv    |              |                     | 01 11 20                |                       |                   |             |                           | 900  |
| 12        | "        |              |                     | 01 26 56                |                       |                   |             |                           | 900  |
| 13        | comp     |              |                     |                         |                       |                   |             |                           | 45   |

Spectr. Temp.

Focus...

Spectr. Temp.

Exp. Mtr

104/12

240

239

250

220

239

233

243

250

221

210

Spectr. Temp. .... Dome Temp./Hum.  $-07.4^{\circ}\text{C}$  59%  $84^{\circ}\text{H}$  Transparency Conditions *Fine* ..... 70

Focus .... 6.97 .....

Spectr. Temp. .... Dome Temp./Hum. ....

Comparison  
Filter Exp

| Exp. Mtr.        | Seeing | Ptg. Mag. | Sp. | Inst.       | Grating/<br>Tilt   | Slit      | Emulsion | P.H. | Program | Remarks   | Quality |
|------------------|--------|-----------|-----|-------------|--------------------|-----------|----------|------|---------|-----------|---------|
| no filter<br>240 | 2.4"   | 10.7      | G2  | C455<br>CCD | 1800 lines<br>46.9 | 306 $\mu$ | 5184A    | 31   | DRL     | 25/1 S/N? |         |
| 239              |        |           |     |             |                    |           |          | 6    |         |           |         |
|                  |        |           |     |             |                    |           |          | 7    |         |           |         |
| 230              |        |           |     |             |                    |           |          | 8    |         |           |         |
| 220              |        |           |     |             |                    |           |          | 9    |         |           |         |
|                  |        |           |     |             |                    |           |          | 10   |         |           |         |
|                  |        |           |     |             |                    |           |          | 1    |         |           |         |
| 239              |        |           |     |             |                    |           |          | 11   |         |           |         |
| 233              |        |           |     |             |                    |           |          | 12   |         |           |         |
|                  |        |           |     |             |                    |           |          | 13   |         |           |         |
| 243              |        |           |     |             |                    |           |          | 14   |         |           |         |
| 230              |        |           |     |             |                    |           |          | 15   |         |           |         |
|                  |        |           |     |             |                    |           |          | 16   |         |           |         |
| 221              |        |           |     |             |                    |           |          | 17   |         |           |         |
| 210              |        |           |     |             |                    |           |          | 18   |         |           |         |
|                  |        |           |     |             |                    |           |          | 19   |         |           |         |





Spectr. Temp.  $-99.6^{\circ}\text{C}$  3EST Dome Temp./Hum.  $-09.0^{\circ}\text{C}$  6488H Transparency Conditions ... slightly hazg ..... 72

Focus ..... 6.97 .....

Spectr. Temp. .... Dome Temp./Hum. ....

Comparison  
Filter Exp

| Exp. Mtr.   | Seeing | Mag. | Sp. | Inst.       | Grating/<br>Tilt | Slit | Emulsion | P.H. | Program | Remarks       | Quality |
|-------------|--------|------|-----|-------------|------------------|------|----------|------|---------|---------------|---------|
| 170<br>F/16 |        |      |     | CASS<br>CCD | 1800h<br>46.9°   | 306u | 51848    | 22   |         |               |         |
| 665         | 4"     | 9.5  | F7V |             |                  |      |          | 23   | DRL     | 65/1 S/N      |         |
| 606         |        |      |     |             |                  |      |          | 24   |         |               |         |
|             |        |      |     |             |                  |      |          | 25   |         |               |         |
| 570         |        |      |     |             |                  |      |          | 26   |         |               |         |
| 600         |        |      |     |             |                  |      |          | 27   |         |               |         |
|             |        |      |     |             |                  |      |          | 28   |         |               |         |
|             |        |      |     |             |                  |      |          | 1.   |         | Topup by 3:05 |         |
|             |        |      |     |             |                  |      |          | 29   |         |               | 37x     |
| 313         |        | 10.1 | F5  |             |                  |      |          | 30   | DRL     |               |         |
| 325         |        |      |     |             |                  |      |          | 31   |         |               |         |
|             |        |      |     |             |                  |      |          | 50   |         |               |         |
| 309         |        |      |     |             |                  |      |          | 6    |         |               |         |
| 285         |        |      |     |             |                  |      |          | 7    |         |               |         |
|             |        |      |     |             |                  |      |          | 8    |         |               |         |

73 pg #5 Wed/Thurs

Date 1997 Mar 12/13 Observers Lu/Tn

Emulsion Batches:

.....  
 .....  
 .....

| Plate No. | Object    | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|-----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CC41229   | Bias (4)  |              |                     | 04 17                   |                       |                   |             |                           |      |
| 30        | VZ Lib    | 15 31 53     | -15 41 06           | 04 19 41                |                       |                   |             |                           | 968  |
| 31        | "         | "            | "                   | 04 36 08                | ed. 1/5 ✓             |                   |             |                           | 1152 |
| 32        | Comp      |              |                     |                         |                       |                   |             | te 4r<br>NO 3             | 45   |
| 33        | VZ Lib    | "            | "                   | 04 57 36                |                       |                   |             |                           | 900  |
| 34        | "         | "            | "                   | 05 13 13                |                       |                   |             |                           | 900  |
| 35        | Comp      |              |                     |                         |                       |                   |             | "                         | 45   |
| 36        | Comp      |              |                     |                         |                       |                   |             | "                         | 45   |
| 37        | HD 136202 | 15 14 12     | +02 08 37           | 05 33 57                |                       |                   |             |                           |      |
| 38        | Comp      |              |                     |                         |                       |                   |             | "                         | 45   |
| 39        | BIAS (4)  |              |                     | 05 38                   |                       |                   |             |                           |      |
| 40        | Comp      |              |                     |                         |                       |                   |             | "                         | 45   |
| 41        | HD 145001 | 16 03 34     | +17 18 48           | 05 41 51                |                       |                   |             |                           |      |
| 42        | Comp      |              |                     |                         |                       |                   |             | "                         | 45   |
| A3/47     | FLATS x 5 |              |                     |                         |                       |                   |             | TUNG<br>NO 3              | 85   |

Spectr. Temp.

Focus...

Spectr. Temp.

Exp. Mtr.

290

340

268

290

45

FK

Spectr. Temp.  $-100.5^{\circ}\text{C}$ Dome Temp./Hum.  $-10.1 / 69.1\%$ Transparency Conditions *some cloud* 74Focus  $6.97$ Spectr. Temp.  $-100.6^{\circ}\text{C}$ Dome Temp./Hum.  $+10.2^{\circ}\text{C} \dots 70\% \text{H}$ 

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp.    | Inst. | Grating/<br>Tilt | Slit      | Emulsion | P.H.          | Program | Remarks       | Quality |
|-----------|--------|-----------|--------|-------|------------------|-----------|----------|---------------|---------|---------------|---------|
|           |        |           |        |       | 1800<br>46.9     | 306 $\mu$ | 5184     | 1             |         |               |         |
| 290       | 2'-3"  | 10.1      | F5     |       |                  |           |          | 9             |         | < 40/1 S/N    |         |
| 340       |        |           |        |       |                  |           |          | <del>10</del> |         | read into 9ci |         |
|           |        |           |        |       |                  |           |          | 11            |         |               |         |
| 268       |        |           |        |       |                  |           |          | 12            |         |               |         |
| 290       |        |           |        |       |                  |           |          | 13            |         |               |         |
|           |        |           |        |       |                  |           |          | 14            |         |               | 2.9K    |
|           |        |           |        |       |                  |           |          | 15            |         |               |         |
| 4K        |        | 5.06      | F8 W-V |       |                  |           |          | 16            | silver  |               |         |
|           |        |           |        |       |                  |           |          | 17            |         |               |         |
|           |        |           |        |       |                  |           |          | 1             |         |               |         |
|           |        |           |        |       |                  |           |          | 18            |         |               |         |
| 5K        | 2'-3"  | 5.0       | G5M    |       |                  |           |          | 19            | silver  |               |         |
|           |        |           |        |       |                  |           |          | 20            |         |               |         |
|           |        |           |        |       |                  |           |          | 2             |         |               | 13.7K   |

75 p4#1

SAT/SUN

Emulsion Batches:

Date 1997 MAR 15/16... Observers Gld. Tn. ....

5" photometer 24"

| Plate No.  | Object               | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|------------|----------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CCAA248/49 | In board / out board |              |                     | 0920                    |                       |                   |             | Felle<br>ND5              | 45ft |
| 50         | Comp?                |              |                     |                         |                       |                   |             | ND5                       | 4    |
| 51         | HP 47914             | 063548       | +443714             | 002352                  |                       |                   |             |                           | 273  |
| 52         | Comp                 |              |                     |                         |                       |                   |             | "                         | 4    |
| 53         | BIAS(A)              |              |                     | 1932                    |                       |                   |             |                           |      |
| 54         | Comp                 |              |                     |                         |                       |                   |             |                           | 4    |
| 55         | HD62509              | 073912       | +281604             | 193835                  |                       |                   |             |                           | 255  |
| 56         | Comp                 |              |                     |                         |                       |                   |             | "                         | 4    |
| 57         | Comp?                |              |                     |                         |                       |                   |             | "                         | 4    |
| 58         | FF Cnc               | 082940       | +171702             | 194758                  |                       |                   |             |                           | 1800 |
| 59         | Comp                 |              |                     |                         |                       |                   |             | "                         | 4    |
| 60         | FF Cnc               | "            | "                   | 202041                  |                       |                   |             |                           | 1200 |
| 61         | Comp                 |              |                     |                         |                       |                   |             | "                         | 45   |
| 62         | FF Cnc               | "            | "                   | 204337                  |                       |                   |             |                           | 1235 |
| 63         | Comp                 |              |                     |                         |                       |                   |             |                           | 45   |
|            | BIAS(A)              |              |                     |                         |                       |                   |             |                           |      |

S.D.  
Spectr. Tem

Focus ...

Spectr. Tem

Exp. Nr

630

in

3K

12K

20

60

150

CCD Spectr. Temp.  $-100.5^{\circ}\text{C}$  Dome Temp./Hum.  $-060^{\circ}\text{C}$  57.4%RH Transparency Conditions *clearing finally* ..... 76.

Focus ..... 7.15.....

Spectr. Temp. .... Dome Temp./Hum. .... SMALL class TOUP early Oct 1997

| Comparison<br>Date | Exp. | Exp. Mtr.      | Seeing    | Ptg. Mag. | Sp. | Inst.                    | Grating/<br>Tilt            | Slit  | Emulsion | P.H. | Program   | Remarks                                       | Quality |
|--------------------|------|----------------|-----------|-----------|-----|--------------------------|-----------------------------|-------|----------|------|-----------|---|---------|
| 4/5/97             | 4    | BG39<br>Filter |           |           |     | <u>Tgrating</u><br>25.00 | 600C 1u/mmi<br>25.3° actual | 2.50u | 4113A    | 3/4  | focus     |   |         |
|                    | 4    |                |           |           |     |                          |                             |       |          | 5    | } HAWKMAN | STILL IN OUTBOARD<br>SUST NORMALIZED<br>STARS | 6K      |
| 2/3/97             | 4    | 3K             | ✓<br>5.02 | K5III     |     |                          |                             |       | 6        |      |           |   |         |
|                    | 4    |                |           |           |     |                          |                             |       | 7        |      |           |   |         |
|                    |      |                |           |           |     |                          |                             |       |          | 8    |           | Maximum out now                               |         |
| 4                  | 4    | 12K            | ✓<br>11.4 | K0IV      |     |                          |                             |       |          | 9    | std vel   |   |         |
| 2/5/97             | 4    |                |           |           |     |                          |                             |       |          | 10   |           |   |         |
| 4                  | 4    |                |           |           |     |                          |                             |       |          | 11   |           |   |         |
| 1/18/97            | 4    | 220            | 3"        | 10.6      |     |                          |                             |       |          | 12   |           | 7 30/1 S/N<br>Some cloud                      |         |
| 4                  | 4    |                |           |           |     |                          |                             |       |          | 13   |           |   |         |
| 1/20/97            | 4    | 160            |           |           |     |                          |                             |       |          | 14   |           | 30/1 S/N                                      |         |
| 4                  | 4    |                |           |           |     |                          |                             |       |          | 15   |           |   | 15K     |
| 1/23/97            | 4    | 150            |           |           |     |                          |                             |       |          | 16   |           |   |         |
| 4                  | 4    |                |           |           |     |                          |                             |       |          | 17   |           |   |         |

77

p452

SAT/SUN

e mki

Emulsion Batches:

Date 1997. MAR. 15/16. Observers Gld./Tn.....

| Plate No. | Object  | R.A.<br>1900 | Declination<br>1900     | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|---------|--------------|-------------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CC44264   | FF Cnc  | 082940       | <sup>2000</sup> +171702 | 21 07 38                |                       |                   |             |                           |      |
| 65        | Comp    |              |                         |                         |                       |                   |             | FeNe<br>ND5               | 4s   |
| 66        | BIAS(4) |              |                         | 21 29                   |                       |                   |             |                           |      |
| 67        | FF Cnc  | "            | "                       | 21 30 01                |                       |                   |             |                           | 1200 |
| 68        | Comp    |              |                         |                         |                       |                   |             | <del>FeNe</del><br>ND5    | 3s   |
| 69        | FF Cnc  | "            | "                       | 21 53 33                |                       |                   |             |                           | 1200 |
| 70        | Comp    |              |                         |                         |                       |                   |             | "                         | 3s   |
| 71        | FF Cnc  | "            | "                       | 22 15 51                |                       |                   |             |                           | 1200 |
| 72        | Comp.   |              |                         |                         |                       |                   |             | "                         | 3s   |
| 73        | FF Cnc  | "            | "                       | 22:37:49                |                       |                   |             |                           | 1200 |
| 74        | Comp    |              |                         |                         |                       |                   |             | "                         | 3s   |
| 75        | BIAS(4) |              |                         | 22 59                   |                       |                   |             |                           |      |
| 76        | FF Cnc  | "            | "                       | 23 00 45                |                       |                   |             |                           | 1315 |
| 77        | Comp    |              |                         |                         |                       |                   |             | "                         | 3    |
| 78        | FF Cnc  |              |                         | 23 24 25                |                       |                   |             |                           | 1200 |
| 79        | Comp    |              |                         |                         |                       |                   |             |                           | 3    |

CoD  
Spectr. Tem

Focus

Spectr. Tem

Exp. Nr.

153 39

154

155

135

155

170 3

CCD Spectr. Temp.  $-100.5^{\circ}\text{C}$  Dome Temp./Hum.  $-08.0^{\circ}\text{C}$   $66.7\% \text{H}$  Transparency Conditions  $\text{PART CLOUDY}$   $78\%$

Focus  $7.15$

Spectr. Temp.  $-100.5^{\circ}\text{C}$  Dome Temp./Hum.  $-09.0^{\circ}\text{C}$   $68.7\% \text{H}$

CX

| Exp. Mtr.    | Seeing | Ptg. Mag. | Sp. | Inst.       | Grating/Tilt   | Slit      | Emulsion | P.H. | Program | Remarks    | Quality |
|--------------|--------|-----------|-----|-------------|----------------|-----------|----------|------|---------|------------|---------|
| BG 39<br>154 |        |           |     | C455<br>CCD | 0600m<br>25.00 | 250 $\mu$ | 4113A    | 18   |         | 7 30/1 S/N |         |
|              |        |           |     |             |                |           |          | 19   |         |            |         |
|              |        |           |     |             |                |           |          | 1    |         |            |         |
| 155          | 3"     |           |     |             |                |           |          | 20   |         |            |         |
|              |        |           |     |             |                |           |          | 21   |         |            | OK      |
|              |        |           |     |             |                |           |          | 22   |         |            |         |
|              |        |           |     |             |                |           |          | 23   |         |            |         |
| 135          |        |           |     |             |                |           |          | 24   |         |            |         |
|              |        |           |     |             |                |           |          | 25   |         |            | 13K     |
| 155          | 3'     |           |     |             |                |           |          | 26.  |         |            |         |
|              |        |           |     |             |                |           |          | 27   |         |            |         |
|              |        |           |     |             |                |           |          | 1    |         |            |         |
| 170          | 3-4'   |           |     |             |                |           |          | 28   |         | 30/1 S/N   |         |
|              |        |           |     |             |                |           |          | 29   |         |            | 13K     |
|              |        |           |     |             |                |           |          | 30   |         |            |         |
|              |        |           |     |             |                |           |          | 5    |         |            |         |





CCD  
Spectr. Temp.  $-100.5^{\circ}\text{C}$

Dome Temp./Hum. ....

Transparency Conditions *some thin cloud* do.

Focus  $7.15$

Spectr. Temp. ....

Dome Temp./Hum.  $-10.4^{\circ}\text{C } 69.8\% \text{H}$

| Exp. Mtr.     | Seeing | Mag. | Sp.    | Inst.    | Grating/<br>Tilt     | Slit     | Emulsion | P.H. | Program | Remarks          | Quality |
|---------------|--------|------|--------|----------|----------------------|----------|----------|------|---------|------------------|---------|
| 1211<br>BG 39 | 3-5    | 10.6 |        | CHSS CCD | 6000 1/2 mm<br>25.00 | 25 $\mu$ | A113A    | 12   |         |                  |         |
|               |        |      |        |          |                      |          |          | 13   |         |                  |         |
|               |        |      |        |          |                      |          |          | 1    |         |                  |         |
| 160           |        |      |        |          |                      |          |          | 14   |         |                  |         |
|               |        |      |        |          |                      |          |          | 15   |         |                  |         |
| 150           |        |      |        |          |                      |          |          | 16   |         | cloud @ end - 19 |         |
|               |        |      |        |          |                      |          |          | 17   |         |                  | 13.7K   |
| 160           |        |      |        |          |                      |          |          | 18   |         |                  |         |
|               |        |      |        |          |                      |          |          | 19   |         |                  |         |
| 150           |        |      |        |          |                      |          |          | 20   |         | cloud @ end 19   |         |
|               |        |      |        |          |                      |          |          | 21   |         |                  |         |
|               |        |      |        |          |                      |          |          | 1    |         |                  |         |
|               |        |      |        |          |                      |          |          | 23   |         |                  |         |
| 600           | 5"     | 2.77 | K2 III |          |                      |          |          | 24   | std vel | in cloud         |         |
|               |        |      |        |          |                      |          |          | 25   |         |                  | 11.5K   |





87

p9#1 sun/moon

Emulsion Batches:

Date 1997 MAR 16/17. Observers L4/Tn

| Plate No.   | Object       | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp |
|-------------|--------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-----|
| CC 44309/10 | In/ouad/ou T |              |                     |                         |                       | 0 10E             | 40°         | K <sub>2</sub> Ar<br>ND 4 | 4/7 |
| 11          | Comp         |              |                     |                         |                       |                   |             | "                         | 4   |
| 12          | HD 47914     | 063548       | +443714             | 19 0427                 |                       |                   |             |                           | 77  |
| 13          | Comp         |              |                     |                         |                       |                   |             | "                         | 45  |
| 14          | Comp         |              |                     |                         |                       |                   |             | "                         | 45  |
| 15          | HD 67509     | 073912       | 281604              | 19 1217                 |                       |                   |             |                           | 23  |
| 16          | Comp         |              |                     |                         |                       |                   |             |                           |     |
| 17          | BIAS (4)     |              |                     | 19 14                   |                       |                   |             |                           |     |
| 18          | Comp         |              |                     |                         |                       |                   |             | "                         | 45  |
| 19          | HD 65583     | 075418       | +293106             | 19 2136                 |                       |                   |             |                           | 457 |
| 20          | Comp         |              |                     |                         |                       |                   |             | "                         | 45  |
| 21          | comp         |              |                     |                         |                       |                   |             |                           | 45  |
| 22          | AH Aur       | 062605       | +275954             | 19 3609                 |                       |                   |             |                           | 721 |
| 23          | Comp         |              |                     |                         |                       |                   |             | K <sub>2</sub> Ar<br>ND 4 | 45  |
| 24/32       | FLATS x 9    |              |                     |                         |                       | 0 55W             | +28°        | Tung<br>ND 4              | 11s |
| 33          | BIAS (4)     |              |                     | 20 00                   |                       |                   |             |                           |     |

CCD Spectr. Temp.  $-100.3^{\circ}\text{E}$  Dome Temp./Hum.  $-05.7^{\circ}\text{C}$   $52.3\% \text{H}$  Transparency Conditions  $\text{PART. CLEAR}$  84

Focus  $7.00$

Spectr. Temp. Dome Temp./Hum.  $-06.9^{\circ}\text{C}$   $54.3\% \text{H}$

405 050 1024 41 CCD/FUT

| Comp. Filter | Exp | Exp. Mtr. | Seeing    | Pt. Mag. | Sp.      | Inst.                                 | Grating/Tilt | Slit      | Emulsion            | P.H. | Program   | Remarks                                       | Quality |
|--------------|-----|-----------|-----------|----------|----------|---------------------------------------|--------------|-----------|---------------------|------|-----------|---|---------|
|              | 4   | 9/2       | no filter |          |          | CHSS                                  | 1800lm       | 306 $\mu$ | 518A17 <sup>o</sup> | 3/4  |           |   |         |
|              | 4   |           |           |          |          | Teperature $\rightarrow 49.6^{\circ}$ |              |           |                     | 5    |           |   |         |
|              | 77  | 3K        | 1"        | 5.07     | K5 III   |                                       |              |           |                     | 6    | normalize | normalization star                            |         |
|              | 8   |           |           |          |          |                                       |              |           |                     | 7    |           |   |         |
|              | 45  |           |           |          |          |                                       |              |           |                     | 8    |           |   |         |
|              | 23  | 7-9       | 1"        | 1.4      | K0 III b |                                       |              |           |                     | 9    | std vel   |   | 10K     |
|              |     |           |           |          |          |                                       |              |           |                     | 10   |           |   |         |
|              |     |           |           |          |          |                                       |              |           |                     | 11   |           |   |         |
|              | 45  | 3K        | 2"        | 7.00     | dG7      |                                       |              |           |                     | 12   | std vel   |   |         |
|              | 45  |           |           |          |          |                                       |              |           |                     | 13   |           |   |         |
|              | 45  |           |           |          |          |                                       |              |           |                     | 15   |           |   |         |
|              | 22  | 480?      | 1.2'      | 10.5     | G        |                                       |              |           |                     | 16   | DRC       | DRC $\rightarrow$ 30/1 SW through thin clouds |         |
|              | 45  |           |           |          |          |                                       |              |           |                     | 17   |           |   | 12.8K   |
|              | 4   |           |           |          |          |                                       |              |           |                     | 2    |           |   | 12.8K   |
|              |     |           |           |          |          |                                       |              |           |                     | 1    |           |   |         |



Spectr. Temp. .... Dome Temp./Hum.  $-07.0^{\circ}\text{C}$  543%<sup>H</sup> Transparency Conditions *Part Cloudy* ..... 86

Focus *7.00* .....

Spectr. Temp. .... Dome Temp./Hum.  $-07.0^{\circ}\text{C}$  566%<sup>H</sup> *CA* 465 0 50 1024 4 1 CCDPMT

| Comp. Filter | Exp. | Exp. Mtr.        | Seeing | P <sub>v</sub> Mag. | Sp. | Inst.                      | Grating/Tilt | Slit             | Emulsion | P.H. | Program | Remarks    | Quality |
|--------------|------|------------------|--------|---------------------|-----|----------------------------|--------------|------------------|----------|------|---------|------------|---------|
|              | 96   | no filter<br>642 | 1.2"   | 10.5                | G   | 1800 <sup>in</sup><br>CHSS | 4690         | 306 <sub>u</sub> | 5184A    | 18   |         | < 50/1 S/N |         |
|              | 5    |                  |        |                     |     |                            |              |                  |          | 19   |         |            |         |
|              | 4    |                  |        |                     |     |                            |              |                  |          | 20   |         |            | 3+      |
|              | 97   | 670              |        | 9.8                 | F2  |                            |              |                  |          | 21   | DRL     |            |         |
|              | 900  | 670              |        | "                   | "   |                            |              |                  |          | 22   |         |            |         |
|              | 4    |                  |        |                     |     |                            |              |                  |          | 23   |         |            |         |
|              | 4    |                  |        |                     |     |                            |              |                  |          | 1    |         |            |         |
|              | 900  | 800              |        | 9.8                 | F2  |                            |              |                  |          | 24   |         |            |         |
|              | 400  | 840              |        | "                   | "   |                            |              |                  |          | 25   |         |            |         |
|              | 4    |                  |        |                     |     |                            |              |                  |          | 26   |         |            |         |
|              | 900  | 835'             |        | "                   | F2  |                            |              |                  |          | 27   |         |            |         |
|              | 900  | 840              | 2"     |                     |     |                            |              |                  |          | 28   |         |            |         |
|              |      |                  |        |                     |     |                            |              |                  |          | 29   |         |            |         |
|              |      |                  |        |                     |     |                            |              |                  |          | 1    |         |            |         |
|              | 71   | 510              | 2"     |                     |     |                            |              |                  |          | 6    |         | Some cloud |         |
|              | 4    |                  |        |                     |     |                            |              |                  |          | 7    |         |            |         |





Spectr. Temp. .... Dome Temp./Hum.  $-07.3^{\circ}C$   $57.7\%H$  Transparency Conditions *Mostly cloudy* ..... 89

Focus  $7.00$  .....

Spectr. Temp. .... Dome Temp./Hum. ....

| Exp. Mtr.  | Seeing | Hg. Mag. | Sp. | Inst.                     | Grating/Tilt  | Slit | Emulsion | P.H. | Program          | Remarks            | Quality      |
|--|--------|----------|-----|---------------------------|---------------|------|----------|------|------------------|--------------------|--------------|
| no filter  |        |          |     | CHSS<br>CCD               | 1800h<br>46.9 | 306u | 5184A    | 8    |                  |                    |              |
| ?  | 13'    | 10.6     |     |                           |               |      |          | 16   |                  | cloudy             |              |
| ?  | 13'    |          |     |                           |               |      |          | 18   |                  | "                  |              |
|  |        |          |     |                           |               |      |          | 7    |                  |                    |              |
|  |        |          |     |                           |               |      |          | 1    |                  |                    |              |
| <hr/> Test CCD FWHM<br>360 0 50 1024 41<br>CCD T = $-101.2^{\circ}C$ |        |          |     |                           |               |      |          |      |                  |                    |              |
| 4006 F 700   |        |          |     | 600J<br>Tgrating -        | 42.60         | 306u | 6700E1A  | 3/4  | focus (right on) |                    | ADU<br>MAX K |
| no fringes no fringes  |        |          |     | [Actual Angle<br>visual.] | <u>42.80</u>  |      |          | 5    |                  | plotted max 12.5 K | 12.5 K       |
| no fringes seen  |        |          |     |                           |               |      |          | 6    |                  | plotted max 11.0 K | 11.0 K       |
| no fringes   |        |          |     |                           |               |      |          | 7    |                  | " " 100 K          | 100 K        |
| no fringes   |        |          |     |                           |               |      |          | 8    |                  | " " 12.3 K         | 12.3 K       |
|  |        |          |     |                           |               |      |          | 1    |                  |                    |              |



CCD Spectr. Temp.  $-100.6^{\circ}\text{C}$

Dome Temp./Hum.  $+00.6^{\circ}\text{C}$  7882H

Transparency Conditions *clearing gradually* 91

Focus ~~675~~ 700

Spectr. Temp. ....

Dome Temp./Hum. .... *ca*

390 0 50 1024 4 1

CCDFMT

Comparison  
Filter Exp

| Exp. Mtr.       | Seeing | Ptg. Mag.            | Sp.   | Inst. | Grating/Tilt    | Slit      | Emulsion | P.H. | Program | Remarks            | Quality |
|-----------------|--------|----------------------|-------|-------|-----------------|-----------|----------|------|---------|--------------------|---------|
| BG 39<br>Filter |        |                      |       |       | 1800 m<br>42.50 | 306 $\mu$ | 4463P    | 3/4  | focus   |                    |         |
|                 |        |                      |       |       |                 |           |          | 1    |         |                    |         |
|                 |        |                      |       |       |                 |           |          | 5    |         |                    | 10K     |
| 6.7K            | 3"-4"  | <sup>B</sup><br>642  | B2Vp  |       |                 |           |          | 6    | SB Bln  | 200/1 S/N          | 3.8K    |
|                 |        |                      |       |       |                 |           |          | 9    |         |                    |         |
|                 |        |                      |       |       |                 |           |          | 10   |         |                    |         |
| 15.1K           |        | <sup>B</sup><br>357  | 09-V  |       |                 |           |          | 11   | SB Bln  |                    | 7.7K    |
|                 |        |                      |       |       |                 |           |          | 12   |         |                    | 10.1K   |
|                 |        |                      |       |       |                 |           |          | 13   |         |                    |         |
| 22.7K           | 3"-3"  | <sup>B</sup><br>44   | 07-Vf |       |                 |           |          | 14   | SB Bln  |                    | 12.4K   |
|                 |        |                      |       |       |                 |           |          | 15   |         |                    |         |
|                 |        |                      |       |       |                 |           |          | 1    |         |                    |         |
|                 |        |                      |       |       |                 |           |          | 16   |         |                    |         |
| 12K             | 5.22   | <sup>B</sup><br>5.22 | B0III |       |                 |           |          | 17   | SB Bln  | NORTH East of Pair | 6K      |
|                 |        |                      |       |       |                 |           |          | 18   |         |                    | 9K      |

92 p9#2 Mon/Tues

Emulsion Batches:

Date ... 1997 MAR 17/18 ... Observers [Blh]/Tr/Lu .....

| Plate No. | Object    | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|-----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| Cc44378   | Comp      |              |                     |                         |                       |                   |             | 12A<br>ND3                | As   |
| 79        | HD 88360  | 09 52 51     | +12 55 19           | 22 14 33                |                       |                   |             |                           | 702  |
| 80        | Comp      |              |                     |                         |                       |                   |             | "                         | As   |
| 81        | Comp      |              |                     |                         |                       |                   |             | "                         | As   |
| 82        | HD 102870 | 11 45 29     | +02 19 42           | 22 37 34                |                       |                   |             |                           | 174  |
| 83        | Comp      |              |                     |                         |                       |                   |             | "                         | As   |
| 84        | Comp      |              |                     |                         |                       |                   |             | "                         | As   |
| 85        | HD 46516  | 06 28 48     | -19 30 00           | 22 46 12                |                       |                   |             |                           | 1833 |
| 86        | Comp      |              |                     |                         |                       |                   |             | "                         | As   |
| 87        | B1HS(4)   |              |                     | 23 19                   |                       |                   |             |                           |      |
| 88        | Comp      |              |                     |                         |                       |                   |             | "                         | As   |
| 89        | HD 81104  | 09 18 36     | 54 28 00            | 23 24 51                |                       |                   |             |                           | 1192 |
| 90        | Comp      |              |                     |                         |                       |                   |             | "                         | As   |
| 91        | HD 81104  | "            | "                   | 23 59 35                |                       |                   |             |                           | 1301 |
| 92        | Comp      |              |                     |                         |                       |                   |             | "                         | As   |
| 93        | B1A5(A)   |              |                     | 00 23                   |                       |                   |             |                           |      |

cc0  
Spectr. Tem  
Focus...  
Spectr. Tem

Exp Mir.

6.5 39

1448

11K

515K

2000

13K

CUO  
Spectr. Temp. ... -100.5°C

Dome Temp./Hum. ... 0.0°C 68.3% H

Transparency Conditions ... PART. Cloudy ... 93

Focus ... 7.00

Spectr. Temp. ....

Dome Temp./Hum. ....

390

| Exp. Mtr. | Seeing | Mag.                 | Sp.   | Inst. | Grating/<br>Tilt | Slit | Emulsion | P.H. | Program | Remarks             | Quality |
|-----------|--------|----------------------|-------|-------|------------------|------|----------|------|---------|---------------------|---------|
| BG 39     |        |                      |       | CASS  | 1800h<br>42.50   | 300μ | 4463A    | 19   |         |                     |         |
| 14.6      | 2.3"   | <sup>B</sup><br>5.22 | B9 IV |       |                  |      |          | 12   | SB Blu  | cloud righted end   | 10K     |
|           |        |                      |       |       |                  |      |          | 13   |         |                     |         |
|           |        |                      |       |       |                  |      |          | 20   |         |                     |         |
| 11K       | 3"     | ✓<br>3.61            | F9 IV |       |                  |      |          | 21   | st blue |                     | 5.5K    |
|           |        |                      |       |       |                  |      |          | 22   |         |                     |         |
|           |        |                      |       |       |                  |      |          | 23   |         |                     |         |
| 5.5K      | 2"     | <sup>B</sup><br>6.88 | A0    |       |                  |      |          | 24   | SB Blu  | some cloud          | 9.5K    |
|           |        |                      |       |       |                  |      |          | 25   |         |                     |         |
|           |        |                      |       |       |                  |      |          | 1    |         |                     |         |
|           |        |                      |       |       |                  |      |          | 26   |         |                     |         |
| 2000      | 1"     | 7.42                 | A2    |       |                  |      |          | 27   |         | clouds in @ 15 min. |         |
|           |        |                      |       |       |                  |      |          | 28   |         |                     |         |
| 1.3K      | 1.2"   | ✓                    | "     |       |                  |      |          | 29   |         | through clouds      |         |
|           |        |                      |       |       |                  |      |          | 30   |         |                     |         |
|           |        |                      |       |       |                  |      |          | 1    |         |                     |         |

94 pg #3 Mon/Tues

Date 1997 MAR 17/18 Observers [Blm]/Lg/Tg.....

Emulsion Batches:

.....  
.....  
.....

| Plate No.              | Object   | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|------------------------|----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CG807 <sup>92/95</sup> | HD103095 | 11 4713      | +38 2610            |                         |                       |                   |             | 4x                        | 67ms |
| 96/99                  | DARKS    |              |                     |                         |                       |                   |             | 4x                        | 67ms |
| 800/01                 | DARKS    |              |                     |                         |                       |                   |             | 2x                        | 133  |
| 02/-04                 | HD103095 | 02 saturated |                     |                         |                       |                   |             | 2x                        | 133  |
| CCA4394 <sup>As</sup>  | Comp     |              |                     |                         |                       |                   |             | F4<br>ND3                 | 4s   |
| 95                     | HD103095 | "            | "                   | 00 4023                 |                       |                   |             | "                         | 887  |
| 96                     | Comp     |              |                     |                         |                       |                   |             | "                         | 4s   |
| 97                     | Comp     |              |                     |                         |                       |                   |             | "                         | 4s   |
| 98                     | HD130841 | 14 4521      | -15 3734            | 01 0620                 |                       |                   |             |                           | 304  |
| 99                     | Comp     |              |                     |                         |                       |                   |             | "                         | 4s   |
| CC44400                | HD130819 | 14 4509      | -15 3453            | 01 1423                 |                       |                   |             |                           | 1481 |
| 01                     | Comp     |              |                     |                         |                       |                   |             | "                         | 4s   |
| 02                     | B/H S(4) |              |                     | 01 41                   |                       |                   |             |                           |      |
| 03                     | Comp     |              |                     |                         |                       |                   |             | "                         | 4s   |
| 04                     | HD152614 | 16 4917      | -10 19 48           | 01 4512                 |                       |                   |             |                           | 485  |

DE fault box causing FRAH1

some Intensity adjustment though

Spectr. Tem

Focus...

Spectr. Tem

Exp. Mr.

1-39  
-1.12K

5K

7.5K

10K

11K

Spectr. Temp.  $-99.9^{\circ}\text{C}$  ... Dome Temp./Hum.  $-00.5^{\circ}\text{C}$  73.3% H Transparency Conditions ... Half cloudy ... 95

Focus ... 7.00

Spectr. Temp. ... Dome Temp./Hum.  $-01.3^{\circ}\text{C}$  68.3% H

390 0 50 1024 4 1

| Exp. Mtr.      | Seeing | Flt. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program     | Remarks                         | Quality |
|----------------|--------|-----------|-----|-------|--------------|------|----------|------|-------------|---------------------------------|---------|
|                | 1-2"   | 645       |     |       | HBX 306      | 511T |          |      | Seeing test | PART cloudy<br>Light NW wind    |         |
| B639<br>Fi HER |        |           |     |       | 1800<br>4250 |      | 4463A    | 5    |             | Format OK                       | 10K     |
| 5K             | 1-2"   | 645       | 68V |       |              |      |          | 6    | Std vel     |                                 |         |
|                |        |           |     |       |              |      |          | 7    |             | $-99.9^{\circ}\text{C}$ Dewar T |         |
|                |        |           |     |       |              |      |          | 8    |             | After Topup                     |         |
| 4.5K           | 3-5"   | 2.89      | A m |       |              |      |          | 9    | SB Blu      |                                 | 8.6K    |
|                |        |           |     |       |              |      |          | 10   |             |                                 |         |
| 10K            | 5"     | 557       | FSV |       |              |      |          | 11   |             | clouds in the field             | 39      |
|                |        | 507       | FSV |       |              |      |          | 12   |             |                                 |         |
|                |        |           |     |       |              |      |          | 1    |             |                                 |         |
|                |        |           |     |       |              |      |          | 13   |             |                                 |         |
| 14K            | 2-3"   | 4.3       | B8V |       |              |      |          | 14   |             |                                 | 7.5     |





Spectr. Temp. <sup>LED</sup> -100.1°C

Dome Temp./Hum. -2.1/64.4

Transparency Conditions *PART cloudy* 97

Focus 7.00

Spectr. Temp.

Dome Temp./Hum. -039°C 59.0%RH

| Exp. Mtr. | Seeing | Ptg. Mag.            | Sp.  | Inst. | Grating/Tilt    | Slit | Emulsion | P.H. | Program | Remarks  | Quality |
|-----------|--------|----------------------|------|-------|-----------------|------|----------|------|---------|--|---------|
| BG 39     |        |                      |      | C 455 | 1800lm<br>42.50 | 306μ | 4463A    | 15   |         |  |         |
|           |        |                      |      |       |                 |      |          | 16   |         |  |         |
| 7.5 K     | 2"     | <sup>V</sup><br>6.66 | A0   |       |                 |      |          | 17   |         | <sup>+</sup><br>15d 000 50                             | 5K      |
|           |        |                      |      |       |                 |      |          | 18   |         | Δ 50000 39   |         |
|           |        |                      |      |       |                 |      |          | 1    |         | 050/1 S/N  |         |
|           |        |                      |      |       |                 |      |          | 19   |         |  |         |
| 8.5 K     | 1"-2"  | <sup>B</sup><br>6.40 | FOV  |       |                 |      |          | 20   |         |  |         |
|           |        |                      |      |       |                 |      |          | 21   |         |  |         |
|           |        |                      |      |       |                 |      |          | 22   |         | COOT - 99.8°C  |         |
| 13.1 K    | 2"-3"  | <sup>B</sup><br>5.19 | B3IV |       |                 |      |          | 23   |         | thin cloud   | 6.3 K   |
|           |        |                      |      |       |                 |      |          | 24   |         |  |         |
|           |        |                      |      |       |                 |      |          | 1    |         |  |         |
|           |        |                      |      |       |                 |      |          | 25   |         |  |         |
| 13.5 K    | 3-5"   | <sup>B</sup><br>4.46 | A1E  |       |                 |      |          | 26   | SBB/m   |  | 5.7 K   |
|           |        |                      |      |       |                 |      |          | 27   | *       | Had to Reboot Hecol<br>and Realign before<br>this exp. | 10K     |





100 pg# 1

Emulsion Batches:

Date 1997 MAR 18/19 Observers R.G. / T.M.

| Plate No.                           | Object           | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp           |
|-------------------------------------|------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|---------------|
| CC144 <sup>36</sup> / <del>37</del> | Inb/low          |              |                     |                         |                       |                   |             | Red<br>ND3                | 4/7           |
| 38                                  | BIAS (4)         |              |                     | 1909                    |                       |                   |             |                           |               |
| 39                                  | Comp             |              |                     |                         |                       |                   |             | "                         | 4s            |
| 40                                  | HD 48682         |              |                     | 191336                  |                       |                   |             |                           | 60s           |
| 41                                  | Comp             |              |                     |                         |                       |                   |             | "                         | 4s            |
| 42                                  | Comp             |              |                     | 200212                  |                       |                   |             | "                         | 4s            |
| 43                                  | HD 34578         | 051325       | 335113              | <del>191938</del>       |                       |                   |             | <del>Red</del>            | <del>4s</del> |
| 44                                  | "                | "            | "                   | 201752                  |                       |                   |             | 400                       | <del>4s</del> |
| 45                                  | HD 34578<br>Comp | "            | "                   | 203338                  |                       |                   |             | <del>Red</del>            | 4s            |
| 46                                  | Comp             |              |                     | <del>200212</del>       |                       |                   |             | Red<br>ND3                | 4s            |
| 47                                  | BIAS (4)         |              |                     |                         |                       |                   |             |                           |               |
| 48                                  | Comp             |              |                     |                         |                       |                   |             | "                         | 4s            |
| 49                                  | HD 47105         | 63156        | +162905             | 205712                  |                       |                   |             |                           | 161           |
| 50                                  | "                |              |                     | 210218                  |                       |                   |             |                           | 315           |
| 51                                  | "                |              |                     | 210936                  |                       |                   |             |                           | 397           |
| 52                                  | Comp             |              |                     |                         |                       |                   |             | "                         | 4s            |

CGI  
Spectr. Temp  
Focus... 6  
Spectr. Temp

Exp. Mtr

16.7  
-1.2

18.00

16.7

18.9K

6SK

133K

135K

CD Spectr. Temp.  $-100.3^{\circ}\text{C}$  Dome Temp./Hum.  $-02.5^{\circ}\text{C}$  52/10H Transparency Conditions *Mostly clear* 101

Focus  $6.97$

Spectr. Temp. Dome Temp./Hum. CD 390 050 102A 41 CCD/FIT

| Comparison Filter Exp | Exp. Mtr.               | Seeing | Ptg. Mag. | Sp. | Inst.       | Grating/Tilt | Slit | Emulsion     | P.H.     | Program | Remarks             | Quality |
|-----------------------|-------------------------|--------|-----------|-----|-------------|--------------|------|--------------|----------|---------|---------------------|---------|
| 3 4/7                 | BG 39<br>f. 1/2         |        |           |     | C455<br>CCD | 41.03        | 306  | A720A<br>J2A | 3/4<br>1 |         |                     |         |
| 4s                    |                         |        |           |     |             |              |      |              | 5        |         |                     |         |
| 6s                    | 800                     |        | ✓<br>5.25 |     | GOV         |              |      |              | 6        |         | Encoder narrow star |         |
| 4s                    |                         |        |           |     |             |              |      |              | 7        |         |                     |         |
| 4s                    | 16K 7                   |        | B<br>5.3  |     | A5 II       |              |      |              | 8        |         |                     |         |
| 4s                    | <del>17.1K</del><br>2.3 |        |           |     |             |              |      |              | 2        |         | ~ 275/1 S/N         | 5.2K    |
| 0 1/2                 | 18.9K                   |        |           |     |             |              |      |              | 3        |         |                     |         |
| 4s                    |                         |        |           |     |             |              |      |              | 4        |         |                     |         |
| 3 4s                  |                         |        |           |     |             |              |      |              | 5        |         |                     |         |
| 4s                    |                         |        |           |     |             |              |      |              | 1        |         |                     |         |
| 4s                    |                         |        |           |     |             |              |      |              | 6        |         |                     |         |
| 1/1                   | 63K                     |        | B<br>1.93 |     | AL IVs      |              |      |              | 7        |         | Traced 1/5 slit     | 13K     |
| 3/5                   | 123K                    |        |           |     |             |              |      |              | 8        |         | Traced 1/3 slit     | 10K     |
| 3/1                   | 136K                    |        |           |     |             |              |      |              | 9        |         |                     | 13K     |
| 4s                    |                         |        |           |     |             |              |      |              | 10       |         |                     |         |

102 p9#2 Tues Wed

Emulsion Batches:

Date 1997 MAR 18/19. Observers ... R.G./T.M. ....

| Plate No.  | Object    | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|------------|-----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CC44453/57 | FLATS x 5 |              |                     | 1st 2 60sec             | 3x 70secs             |                   |             | TUNG<br>ND2               | 60s  |
| 58         | B/AS(4)   |              |                     | 21 35                   |                       |                   |             |                           |      |
| 59         | Comp      |              |                     |                         |                       |                   |             | KAr<br>ND3                | 4s   |
| 60         | HD 87737  | 10 0453      | +17 15 01           | 21 44 21                |                       |                   |             |                           | 270  |
| 61         | "         | "            | "                   | 21 48 56                |                       |                   |             |                           | 600  |
| 62         | "         | "            | "                   | 21 59 29                |                       |                   |             |                           | 602  |
| 63         | Comp      |              |                     |                         |                       |                   |             | "                         | 4s   |
| 64         | Comp      |              |                     |                         |                       |                   |             | "                         | 4s   |
| 65         | HD 89625  | 10 11 08     | +23 54 57           | 22 15 20                |                       |                   |             |                           | 600  |
| 66         | "         | "            | "                   | 22 25 38                |                       |                   |             |                           | 606  |
| 67         | "         | "            | "                   | 22 36 09                |                       |                   |             |                           | 603  |
| 68         | Comp      |              |                     |                         |                       |                   |             | "                         | 4s   |
| 69         | B/AS(4)   |              |                     |                         |                       |                   |             |                           |      |
| 70         | Comp      |              |                     |                         |                       |                   |             | "                         | 4s   |
| 71         | HD 92125  | 10 33 06     | 32 29 45            | 22 50 17                |                       |                   |             |                           | 658  |

Spectr. Temp. ... -101.9°C ... Dome Temp./Hum. ... -05.3°C 5746 Transparency Conditions ... *Fine* ... 103

Focus ... 6.9.7 ...

Spectr. Temp. ... Dome Temp./Hum. ...

| Exp. Mtr.       | Seeing | Ptg. Mag.           | Sp.                | Inst.       | Grating/Tilt  | Slit | Emulsion | P.H. | Program            | Remarks           | Quality |
|-----------------|--------|---------------------|--------------------|-------------|---------------|------|----------|------|--------------------|-------------------|---------|
| BG 39<br>Filter |        |                     |                    | CHSS<br>CCD | 18006<br>4103 | 306  | 4220A    | 11   |                    |                   | 12K     |
|                 |        |                     |                    |             |               |      |          | 1    |                    |                   |         |
|                 |        |                     |                    |             |               |      |          | 12   |                    |                   | 10K     |
| 90K             | 2"     | <sup>B</sup><br>349 | AOI <sub>b</sub>   |             |               |      |          | 13   | r6 p <sub>ym</sub> |                   | 7.4K    |
| 58K             |        |                     |                    |             |               |      |          | 14   |                    | 1/4 slit tail sl. | 5.8K    |
| 58K             |        |                     |                    |             |               |      |          | 15   |                    | "                 |         |
|                 |        |                     |                    |             |               |      |          | 16   |                    |                   |         |
|                 |        |                     |                    |             |               |      |          | 17   |                    |                   |         |
| 52K             | 2"     | <sup>B</sup><br>375 | FOLTA <sub>a</sub> |             |               |      |          | 18   | r6 p <sub>ym</sub> |                   | 5.5K    |
| 49K             |        |                     |                    |             |               |      |          | 19   |                    |                   |         |
| 50.4K           |        |                     |                    |             |               |      |          | 20   |                    |                   |         |
|                 |        |                     |                    |             |               |      |          | 21   |                    |                   |         |
|                 |        |                     |                    |             |               |      |          | 1    |                    |                   |         |
|                 |        |                     |                    |             |               |      |          | 22   |                    |                   |         |
| 15.9K           | 2"     | <sup>B</sup><br>552 | G1II               |             |               |      |          | 23   |                    | 7200/1 5/11       | 4K      |

104

Pg#3 Tues/Wed

Emulsion Batches:

Date 1997 MAR 18/19 Observers S.G./T.S.

| Plate No.      | Object           | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|----------------|------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CC44472        | HD 92125         |              |                     | 230329                  |                       |                   |             |                           | 642  |
| 73             | "                |              |                     | 23435                   |                       |                   |             |                           | 632  |
| 74             | Comp             |              |                     |                         |                       |                   |             | FEAR<br>ND 3              | 45   |
| 75             | Comp             |              |                     |                         |                       |                   |             | "                         | 45   |
| 76             | HD 111812        | 124658       | +280506             | 232942                  |                       |                   |             |                           | 890  |
| 77             | "                |              |                     | 234524                  |                       |                   |             |                           | 840  |
| 78             | "                |              |                     | 000000                  |                       |                   |             |                           | 874  |
| 78             | Comp             |              |                     |                         |                       |                   |             | "                         | 45   |
| 79             | BIAS(4)          |              |                     | 0016                    |                       |                   |             |                           |      |
| 80/85          | FLATS x 5        |              |                     |                         |                       | 0 50E             | +27         | TUNG<br>ND 2              | 70   |
| 86/87          | Inboard/out      |              |                     |                         |                       | "                 | "           | FEAR<br>ND 4              | 4/8  |
| FOR Gladders - |                  | Stefan       |                     | checking in             |                       |                   |             |                           |      |
| CC44488/89     | In b / out BOARD |              |                     |                         |                       |                   |             | FEAR<br>ND 5              |      |
| 90             | Comp             |              |                     |                         |                       |                   |             | "                         | 45   |
| 91             | FF Cnc           | 082940       | +171702             | 012310                  |                       |                   |             |                           | 1800 |

CCD  
Spectr. Tem

Focus ...

Spectr. Tem

Exp. Mtr

RG

5.100

15K

15K

15K

15K

15K

-063

639

15K

360









108 pg#1 Sun / Mon

Date 1997.MAR23/24... Observers K.K. / T.n.....

Emulsion Batches:

.....  
.....  
.....

| Plate No. | Object                             | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|------------------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| ce1366/67 | Inboard / out board 1/4 AT minimum |              |                     |                         |                       | 2 32W             | +10 11      | THAr 5/3                  |      |
| 68        | BIAS(4)                            |              |                     | 19 15                   |                       |                   |             |                           |      |
| 69        | Comp                               |              |                     |                         |                       |                   |             | THAr                      | 1s   |
| 70        | HD 57669                           | 07 17 13     | +40 51 54           | 19 20 11                |                       |                   |             |                           | 134  |
| 71        | Comp                               |              |                     |                         |                       |                   |             | "                         | 1    |
| 72        | Comp                               |              |                     |                         |                       |                   |             | "                         | 1    |
| 73        | BD+33 1646 B                       | 08 02 34     | +33 06 25           | 19 31 54                |                       |                   |             |                           | 1800 |
| 74        | Comp                               |              |                     |                         |                       |                   |             | "                         | 1    |
| 75        | BD+33 1646 A                       | "            | "                   | 20 03 36                |                       |                   |             |                           | 1345 |
| 76        | Comp                               |              |                     | 26 49                   |                       |                   |             |                           | 1    |
| 77        | Comp                               |              |                     | 32 25                   |                       |                   |             | "                         | 1    |
| 78        | AC +54 2311-89                     | 03 33 54     | +54 53 34           | 20 32 25                | 02 41 13678           |                   |             |                           | 178  |
| 79        | Comp                               |              |                     |                         | 02 40                 |                   |             | "                         | 1    |
| 80        | Comp                               |              |                     |                         | 14 07                 |                   |             | "                         | 1    |
| 81        | BD-02 3000                         | 09 48 10     | -03 13 04           | 21:14                   |                       |                   |             |                           | 230  |
| 82        | Comp                               |              |                     |                         |                       |                   |             |                           |      |

13679 are adjacent

cc9  
Spectr. Tem

Focus...

Spectr. Tem

Exp. Mir

1320V

F. 42 out

600

74

105

86

100

CCD Spectr. Temp. ... -100.3°C Dome Temp./Hum. ... -04.0°C 50.1% H Transparency Conditions ... Fine ... 109.

Focus ... 215 ... 90 cgain as usual

Spectr. Temp. ... Dome Temp./Hum. ... 22

| Exp. Mtr. | Seeing | PV Mag. | Sp.   | Inst.   | Grating/<br>x Tilt | Slit                 | Emulsion | P.H. | Program    | Remarks  | Quality                   |
|-----------|--------|---------|-------|---------|--------------------|----------------------|----------|------|------------|--|---------------------------|
| 5/3       |        |         |       | Echelle | 0600<br>3028       | 90u = .265<br>400u H | 6400H    | 3/4  | focus test | CCD FINT<br>0 0 128 1024 81                      |                           |
|           |        |         |       |         |                    | 90u<br>400u H = .225 |          | 1    |            | 0 0 256 1024 41                                  |                           |
| 1/5       |        |         |       |         |                    |                      |          | 3    |            |  | 76H                       |
| 134       | 600    | 519     | KOUI  | CNI     |                    |                      |          | 4    |            | Just encoder normalization<br>STAR.              | 700                       |
| 1         |        |         |       |         |                    |                      |          | 3    |            |  |                           |
| 1         |        |         |       |         |                    |                      |          | 3    |            | Encoder errors<br>dx -00 00 04 e 44'E<br>1000003 |                           |
| 1800      | 74     | 2"      | 12.1  | M3      |                    |                      |          | 5    | Vys 250B   | fainter SW of pair                               | Hx en<br>30NW<br>Hx<br>7K |
| 1         |        |         |       |         |                    |                      |          | 3    |            |  |                           |
| 134       | 105    | 11      | MO    |         |                    |                      |          | 6    | Vys 250A   | Brighter NE one                                  |                           |
| 1         |        |         |       |         |                    |                      |          | 3    |            |  |                           |
| 1         |        |         |       |         |                    |                      |          | 3    |            |  |                           |
| 175       | 86     |         | 11.0  | MO      |                    |                      |          | 7    | Vys 424    | dx -00 00 16<br>65 100 0106<br>e 44 West         |                           |
| 1         |        |         |       |         |                    |                      |          | 3    |            |  |                           |
| 1         |        |         |       |         |                    |                      |          | 3    |            |  |                           |
| 73        | 100    | 2"      | 10.74 | MO      |                    |                      |          | 2    | Vys 560    | dx -00 00 10<br>45 -00 02 10                     |                           |
|           |        |         |       |         |                    |                      |          | 3    |            |  |                           |

116 P. 2

Sun / Mon

Date 1997 Mar 23/24 Observers KK/TN

Emulsion Batches:

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| Plate No. | Object      | R. A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|-------------|---------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CE13683   | biag (4)    |               |                     | 21 56                   |                       |                   |             |                           |      |
| 84        | Comp        |               |                     |                         |                       |                   |             | THA                       | 1s   |
| 85        | AC+38 28746 | 9:30.07       | +3758               | 22.04                   |                       |                   |             |                           | 2356 |
| 86        | Comp        |               |                     |                         |                       |                   |             | THA                       | 1s   |
| 87        | Comp        |               |                     |                         |                       |                   |             | "                         | 1s   |
| 88        | AC+70 4336A | 09 3358       | +702925             | 23 0134                 |                       |                   |             |                           | 1763 |
| 89        | Comp        |               |                     |                         |                       |                   |             | THA                       | 1s   |
| 90        | AC+70 4336B | "             | "                   | 23 3324                 |                       |                   |             |                           | 1780 |
| 91        | Comp        |               |                     |                         |                       |                   |             | "                         | 1s   |
| 92        | BIAS (4)    |               |                     | 00 04                   |                       |                   |             |                           |      |
| 93        | Comp        |               |                     |                         |                       |                   |             | "                         | 1s   |
| 94        | HD 95735    | 10 5754       | 3638 00             | 00 11 48                |                       |                   |             |                           | 850  |
| 95        | Comp        |               |                     |                         |                       |                   |             | "                         | 1s   |
| 96        | Comp        |               |                     |                         |                       |                   |             | "                         | 1s   |
| 97        | BD+01 2447  | 10 2349       | +0121 36            | 00 31 22                |                       |                   |             |                           | 1725 |
| 98        | Comp        |               |                     |                         |                       |                   |             | "                         | 1s   |

COO

Spectr. Ten

Focus

Spectr. Ten

Exp. Mir.

1226

1-1-192

Exp. Mir.

Focus

Spectr. Ten

Spectr. Ten

Spectr. Ten

Spectr. Ten

Spectr. Ten

Spectr. Ten

Spectr. Ten

Spectr. Ten

Spectr. Ten

Spectr. Ten

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Spectr. Ten

Spectr. Ten

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Spectr. Ten

Spectr. Ten

Spectr. Ten

Spectr. Ten

Spectr. Ten

Spectr. Ten

Spectr. Ten

Spectr. Ten

Spectr. Ten

Spectr. Ten

Spectr. Ten

Spectr. Ten

Spectr. Ten

CCD Spectr. Temp.  $-100.8^{\circ}\text{C}$  Dome Temp./Hum.  $-07.6^{\circ}\text{C}$  5778/H Transparency Conditions *Fine* III

Focus  $215$

*Nice PARTIAL Lunar eclipse (Humly)*

Spectr. Temp. Dome Temp./Hum.

| Exp. Mtr.  | Seeing | Fig. Mag. | Sp. | Inst.                   | Grating/<br>X Tilt | Slit        | Emulsion | P.H. | Program             | Remarks   | Quality |
|--|--------|-----------|-----|-------------------------|--------------------|-------------|----------|------|---------------------|---|---------|
| 1320V<br>No filter                                   |        |           |     | 19.12<br><i>calotte</i> | 0600/n<br>.3025    | 90u<br>100u | 6400A    | 1    |                     |   |         |
| Exp me kn<br>Balancost<br>Had been clock<br>climbing |        |           |     |                         |                    |             |          | 3    |                     |   |         |
|  |        |           |     |                         |                    |             |          | 4    | Vys 549             |   |         |
|  |        |           |     |                         |                    |             |          | 3    |                     |   |         |
|  |        |           |     |                         |                    |             |          | 3    |                     |   |         |
| 83   | 2-3"   | 10.58     | M2  |                         |                    |             |          | 5    | Vys 550A            | Brighter WSW of<br>PAIR<br>During MAX of PARTIAL<br>Lunar eclipse.                                  |         |
|  |        |           |     |                         |                    |             |          | 3    | <del>Vys 550A</del> | $\Delta \alpha -00 00 02$<br>$\Delta \delta +00 00 42$  | 87K     |
| 50   |        | 11.5      | M   |                         |                    |             |          | 6    | Vys 550B            | <del>PAIR</del> Filter ENE <sup>one</sup><br>$\Delta \alpha +00 00 11$<br>$\Delta \delta +00 01 06$ |         |
|  |        |           |     |                         |                    |             |          | 3    |                     |   |         |
|  |        |           |     |                         |                    |             |          | 1    |                     |   |         |
|  |        |           |     |                         |                    |             |          | 3    |                     |   |         |
| 550  | 2"     | 7.48      | M2  |                         |                    |             |          | 2    | marcy stel vel      | Vys 594   |         |
|  |        |           |     |                         |                    |             |          | 3    |                     |   | 82K     |
|  |        |           |     |                         |                    |             |          | 3    |                     |   |         |
| 90   | 2-4"   | 9.65      | M2  |                         |                    |             |          | 4    | marcy stel          |   |         |
|  |        |           |     |                         |                    |             |          | 3    |                     |   |         |

112 p9#3 Sun/mor

Date 1947 MAR 23/24 Observers [KK] / Tm

Emulsion Batches:

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| Plate No. | Object                                  | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|---|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| cel3699   | Comp                                    |              |                     |                         |                       |                   |             | Th Ar                     | 1s   |
| 13700     | HD 87901                                | 10 0303      | +12 27 22           | 01 0513                 |                       |                   |             |                           | 65s  |
| 01        | HD 87901                                | "            | "                   | 01 0727                 |                       |                   |             |                           | 133  |
| 02        | Comp                                    |              |                     |                         |                       |                   |             | "                         | 1s   |
| 03        | BIAS (4)                                |              |                     | 01 11                   |                       |                   |             |                           |      |
| 04        | Comp                                    |              |                     |                         |                       |                   |             | "                         | 1s   |
| 05        | BD+21 2763                              | 15 1725      | +21 20 06           | 01 2031                 |                       |                   |             |                           |      |
| 06        | Comp                                    |              |                     |                         |                       |                   |             | "                         | 1s   |
| 07        | Comp (nearby field star NW of intended) |              |                     |                         |                       |                   |             | "                         | 1s   |
| 08        | *BD-08 4352                             | 16 5005      | -08 09 47           | 02 0810                 |                       |                   |             |                           | 176  |
| 09        | Comp                                    |              |                     |                         |                       |                   |             | "                         | 1s   |
| 10        | BD-08 4352                              | "            | "                   | 02 4037                 |                       |                   |             |                           | 182  |
| 11        | Comp                                    |              |                     |                         |                       |                   |             | "                         | 1s   |
| 12        | BIAS (4)                                |              |                     | 03 13                   |                       |                   |             |                           |      |
| 13        | Comp                                    |              |                     |                         |                       |                   |             | "                         | 1s   |

Spectr. Tem

Focus...

Spectr. Tem

Exp. Mr

10/6/42

4K

9K

90

16

90



Spectr. Temp. <sup>CO</sup> -100.8°C ..... Dome Temp./Hum. -079°C 60.5%<sup>9/11</sup> Transparency Conditions ... Fine ..... 11.7

Focus ..... 215 .....

Spectr. Temp. .... Dome Temp./Hum. ....

| Exp. Mtr. | Seeing    | Pl. Mag. | Sp.  | Inst.<br><i>Echelle</i> | Grating/<br>x Tilt | Slit           | Emulsion | P.H. | Program               | Remarks                       | Quality |
|-----------|-----------|----------|------|-------------------------|--------------------|----------------|----------|------|-----------------------|-------------------------------|---------|
| 15        | no filter |          |      | 19.12                   | 0600<br>•3028      | 90° W<br>400nm | 6900A    | 3    |                       |                               |         |
| 65s       | 4K        | 1037     | BQV  |                         |                    |                |          | 7    | Telluric Star         | max ~                         | 3K      |
| 137       | 9K        |          |      |                         |                    |                |          | 7    |                       |                               | 5K      |
| 15        |           |          |      |                         |                    |                |          | 3    |                       |                               |         |
|           |           |          |      |                         |                    |                |          | 1    |                       |                               |         |
| 15        |           |          |      |                         |                    |                |          | 3    |                       |                               |         |
|           | 90        | 2"       | 1041 | M0e                     |                    |                |          | 2    | Vys 740               | nice H $\alpha$ em            |         |
| 15        |           |          |      |                         |                    |                |          | 3    |                       |                               |         |
| 15        |           |          |      |                         |                    |                |          | 3    |                       |                               |         |
| 15        | 16        | 2.5"     | 12   |                         |                    |                |          | 7    | <del>Vys 782 AB</del> | slightly hazy wrong star weak |         |
| 15        |           |          |      |                         |                    |                |          | 3    |                       |                               |         |
| 15        | 90        | 2.4"     | 9.0  | M5e                     |                    |                |          | 4    | Vys 782 AB            | nice H $\alpha$ em            |         |
| 15        |           |          |      |                         |                    |                |          | 3    |                       |                               |         |
|           |           |          |      |                         |                    |                |          | 1    |                       |                               |         |
| 15        |           |          |      |                         |                    |                |          | 3    |                       |                               |         |







CCD Spectr. Temp. -100.3 °C

Dome Temp./Hum. -00.2 °C 59.6 H

Transparency Conditions Thin cloud 117

Focus 21.5 unchanged

JUST past Full moon

Spectr. Temp. ....

Dome Temp./Hum. -01.0 °C 64.5 H  
CD

Yesterday was lunar eclipse

| Exp. Mtr. | Seeing             | Mag. | Sp.  | Inst.             | Grating/<br>x Tilt | Slit            | Emulsion | P.H. | Program              | Remarks   | Quality |
|-----------|--------------------|------|------|-------------------|--------------------|-----------------|----------|------|----------------------|---|---------|
| 21        | no filter<br>1320V |      |      | Echelle<br>19.12° | 0600<br>.3028      | 90u W<br>400u H | 6900A    | 1/2  | focus test<br>CCDFMT | 0 0 128 1024 8 1  |         |
|           |                    |      |      |                   |                    |                 |          | 1    | " "                  | 0 0 256 1024 4 1  |         |
| 83        | 570                | 1-2' | 5119 | KO III            |                    |                 |          | 3    |                      |   |         |
|           |                    |      |      |                   |                    |                 |          | 4    |                      | Just same normalization<br>star of last night.  | 1.1K    |
|           |                    |      |      |                   |                    |                 |          | 3    |                      |   | 7.5K    |
|           |                    |      |      |                   |                    |                 |          | 3    |                      |   |         |
| 127       | 55                 | 1-2' | 11   | MO                |                    |                 |          | 2    | Vys 250A             | good H $\alpha$ em<br>Brighter NE end   |         |
|           |                    |      |      |                   |                    |                 |          | 3    |                      |   |         |
| 220       | 31                 | 1-2' | 1201 | M3                |                    |                 |          | 5    | Vys 250B             | em @ $\nearrow$ (about same<br>width as<br>as H $\alpha$ em)<br>H $\alpha$ Looks single<br>just a bit of<br>self absorption |         |
|           |                    |      |      |                   |                    |                 |          | 3    |                      |   |         |
|           |                    |      |      |                   |                    |                 |          | 6    |                      |   |         |
| 852       | 56                 | 1-2' | 1054 | MO                |                    |                 |          | 7    | Vys 560              | B2 - 00 0007<br>15 - 00 02 24<br>No H $\alpha$ em as expected   | 7K      |
|           |                    |      |      |                   |                    |                 |          | 3    |                      |   |         |
|           |                    |      |      |                   |                    |                 |          | 1    |                      |   |         |
|           |                    |      |      |                   |                    |                 |          | 3    |                      |   | 7.5K    |

118 p9th2

Mon/Tues

Emulsion Batches:

Date 1997 MAR 24/25 Observers [K.K.] / T.M.

| Plate No. | Object        | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|---------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| ce13744   | AC+38 28746   | 09 30 07     | +37 58 38           | 21 18 55                |                       |                   |             |                           | 1500 |
| 45        | Comp          |              |                     |                         |                       |                   |             | THAr                      | 1s   |
| 46        | Comp          |              |                     |                         |                       |                   |             | "                         | 1s   |
| 47        | HD 95735      | 10 57 54     | +36 38 00           | 21 48 53                |                       |                   |             |                           | 891  |
| 48        | Comp          |              |                     |                         |                       |                   |             | "                         | 1s   |
| 49/53     | FLATS x 5     |              |                     |                         |                       |                   |             | TUNG                      | 2s   |
| 54        | BIAS(4)       |              |                     | 22 09                   |                       |                   |             |                           |      |
| ce13755   | Comp          |              |                     |                         |                       |                   |             | THAr                      | 1s   |
| 56        | HD 95735      | 10 57 54     | +36 38 00           | 22 22 20                |                       |                   |             |                           | 2331 |
| 57        | Comp          |              |                     |                         |                       |                   |             | THAr                      | 1s   |
| 58        | Comp          |              |                     |                         |                       |                   |             | "                         | 1s   |
| 59        | HD 87901      | 10 03 03     | +12 27 22           | 23 06 37                |                       |                   |             |                           | 1736 |
| 60        | Comp          |              |                     |                         |                       |                   |             | "                         | 1s   |
| 61        | BIAS(4)       |              |                     | 23 37                   |                       |                   |             |                           |      |
| 62/66     | FLATS x 5     |              |                     |                         |                       |                   |             | TUNG                      | 2s   |
| 67/68     | Inb/out Board |              |                     |                         |                       | 1 26W +12°        |             | THA                       | 2/   |
|           |               |              |                     |                         |                       | 3 05W +30         |             |                           |      |

C60

Spectr. Temp.

Focus...

Spectr. Temp.

Exp. Mir

no. 1320V

27

250

135

37K

T=00

CCD Spectr. Temp.  $-100.5^{\circ}\text{C}$  Dome Temp./Hum.  $-01.1^{\circ}\text{C}$  6528H Transparency Conditions increasing cloud 119

Focus  $21.5$

Spectr. Temp.  $-101.7^{\circ}\text{C}$

Dome Temp./Hum.  $-01.9^{\circ}\text{C}$  7370H

23 EST AIR PORT wind  
ESE 17 Kms/hr.

| Exp. Mtr.                   | Seeing | P.V. Mag. | Sp. | Inst.        | Grating/Tilt   | Slit              | Emulsion | P.H. | Program         | Remarks                                     | Quality |
|-----------------------------|--------|-----------|-----|--------------|----------------|-------------------|----------|------|-----------------|---|---------|
| 1520                        |        |           |     | edelle       |                |                   |          |      |                 |   |         |
| no filter<br>1320V<br>27    | 1-3"   | 11        | M0  | CCD<br>17.12 | 0600m<br>.3028 | 90u<br>400u       | 6400A    | 2ci  | Vys 549         |   |         |
|                             |        |           |     |              |                |                   |          | 3    |                 | Bottom Hz order<br>6559A → 6607A 48 Å range |         |
|                             |        |           |     |              |                |                   |          | 3    |                 |   |         |
| 89/                         |        |           |     |              |                |                   |          | 4    | inaccuracy stel | Vys 594                                     |         |
|                             |        | 748       | M2  |              |                |                   |          | 3    |                 |   |         |
|                             |        |           |     |              |                | 90u<br>600u = 205 |          | 6ci  |                 |   |         |
|                             |        |           |     |              |                |                   |          | 1    |                 |   |         |
|                             |        |           |     | edelle       | 0600m          | 90u               | 6401     | 1    |                 | 6520-6565 Å Bottom order                    | 75K     |
|                             |        |           |     | 17.50        | .3056          | 400u = 225        |          |      |                 |   |         |
| 135                         | 1-2"   | 748       | M2  |              |                |                   |          | 5    | stel            | other side of block                         |         |
|                             |        |           |     |              |                |                   |          | 3    |                 |   |         |
|                             |        |           |     |              |                |                   |          | 3    |                 |   |         |
| 3.7K                        | 2.4"   | 1.37      | B7V |              |                |                   |          | 6    | telluric        | stel. Thick cloud                           | 3K      |
|                             |        |           |     |              |                |                   |          | 3    |                 |   |         |
|                             |        |           |     |              |                |                   |          | 1    |                 |   |         |
|                             |        |           |     |              |                |                   |          | 2    |                 |   |         |
| T = $-02.0^{\circ}\text{C}$ |        |           |     |              |                |                   |          | 11/2 |                 | Focus CCD 7m7<br>0 0 128 1024 8 1           | 11.8K   |

Bin ~ 0.2 pixels  
Set for cooled settings slightly

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Wed / Thurs

Emulsion Batches:

Date .. 1997.MAR.26/27. Observers [Blm] / L.A. / T.n.....

| Plate No.              | Object               | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|------------------------|----------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CC444 <sup>96/97</sup> | In bound / out BOARD |              |                     |                         |                       | 00                | +40         | FeAn<br>ND 4              | 4/4  |
| 98                     | BIAS(4)              |              |                     | ~ 01 26                 |                       |                   |             |                           |      |
| 99                     | Comp                 |              |                     |                         |                       |                   |             | "                         | 4    |
| CC4500                 | HD 80360             | 69 5251      | +125 19             | 01 34 38                |                       |                   |             |                           | 2291 |
| 01                     | Comp                 |              |                     |                         |                       |                   |             | "                         | 4    |
| 02                     | Comp                 |              |                     |                         |                       |                   |             | "                         | 4    |
| 03                     | HD 152614            | 16 4917      | +10 19 46           | 02 19 04                |                       |                   |             |                           | 873  |
| 04                     | Comp                 |              |                     |                         |                       |                   |             | "                         | 4    |
| 05                     | BIAS(4)              |              |                     | 02 35                   |                       |                   |             |                           |      |
| 06                     | Comp                 |              |                     |                         |                       |                   |             | "                         | 4s   |
| 07                     | HD 154528            | 17 0054      | +77 48 00           | 02 44 48                |                       |                   |             |                           | 2400 |
| 08                     | Comp                 |              |                     |                         |                       |                   |             | "                         | 4.   |
| 09                     | Comp                 |              |                     |                         |                       |                   |             | "                         | 4s   |
| 10                     | MP 144579            | 16 0130      | +39 24 00           | 03 31 02                |                       |                   |             |                           | 836  |
| 11                     | Comp                 |              |                     |                         |                       |                   |             | "                         | 4s   |
| 12                     | BIAS(4)              |              |                     | 3 46                    |                       |                   |             |                           |      |

< 0  
Spectr. Tem  
Focus...  
Spectr. Tem

Exp. Mtr.  
1000 volts  
85-59A/2

1/2K

20K

87K

20K



Spectr. Temp. <sup>CCD</sup> - 101.9 °C

Dome Temp./Hum. 401.2°C 74.6%RH

Transparency Conditions . Clearing, but Hazy. 121

Focus ... 6.93

Bright moon in Libra

Spectr. Temp. - 101.7 °C

Dome Temp./Hum. 400.8°C 81.2%RH  
Ca

390 0 50 1024 4 1 CCD FMT

| Exp. Mtr.               | Seeing           | Ptg. Mag. | Sp.  | Inst.                  | Grating/Tilt   | Slit | Emulsion | P.H. | Program    | Remarks    | Quality |
|-------------------------|------------------|-----------|------|------------------------|----------------|------|----------|------|------------|------------|---------|
| 1000 Volts<br>BG 39A/ke |                  |           |      | CASS CCD<br>Tgrating → | 1800nm<br>4250 | 30µ  | 4463A    | 3/4  | focus Test |            |         |
|                         |                  |           |      |                        |                |      |          | 1    |            |            |         |
|                         |                  |           |      |                        |                |      |          | 5    |            |            | 9.7K    |
| 2/2K                    | 5.9 <sup>B</sup> | 5.22      | B9IV |                        |                |      |          | 6    | SBB/1n     | 7250/1 S/N | 38K     |
|                         |                  |           |      |                        |                |      |          | 7    |            |            | 8.3K    |
|                         |                  |           |      |                        |                |      |          | 8    |            |            |         |
| 20K                     | 6 <sup>B</sup>   | 4.3       | B8V  |                        |                |      |          | 9    | SBB/1n     | 7300/1 S/N | 7.7     |
|                         |                  |           |      |                        |                |      |          | 10   |            |            |         |
|                         |                  |           |      |                        |                |      |          | 11   |            |            | 9.8K    |
| 8.7K                    | 4.7 <sup>V</sup> | 6.66      | A0   |                        |                |      |          | 12   | SBB/1n     |            | 7.4K    |
|                         |                  |           |      |                        |                |      |          | 13   |            |            | 8.0K    |
|                         |                  |           |      |                        |                |      |          | 14   |            |            |         |
| 2.9K                    | 4 <sup>V</sup>   | 6.66      | G8V  |                        |                |      |          | 15   | std vel    |            |         |
|                         |                  |           |      |                        |                |      |          | 16   |            |            |         |
|                         |                  |           |      |                        |                |      |          | 1    |            |            |         |

127 pg #2

Wed / Thurs

Emulsion Batches:

Date .. 1997. MAR. 26/27. Observers [Bl.] / Lu / Tn .....

| Plate No.  | Object     | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|------------|------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CG 805/808 | HD 144579  | 16 0130      | +39 24 00           | 03 48                   |                       |                   |             | 4x 67ms                   |      |
| 809/12     | DARKS x4   |              |                     |                         | All same              | Box center        |             | 4x 67ms                   |      |
| 13/14      | DARKS x2   |              |                     |                         |                       | and Int setting   |             | 2x 133                    |      |
| 15/16      | HD 144579  |              |                     |                         |                       |                   |             | 2x 133                    |      |
| CC 44513   | Comp       |              |                     |                         |                       |                   |             | FeAr<br>ND4               | 4s   |
| 14         | HD 164577  | 17 56 41     | +01 18 27           | 03 59 21                |                       |                   |             |                           | 954  |
| 15         | Comp       |              |                     |                         |                       |                   |             | "                         | 4s   |
| 16         | Comp       |              |                     |                         |                       |                   |             | "                         | 4s   |
| 17         | HD 1648152 | 17 58 07     | +20 50 00           | 04 21 13                |                       |                   |             |                           | 970  |
| 18         | Comp       |              |                     |                         |                       |                   |             | "                         | 4s   |
| 19         | Comp       |              |                     |                         |                       |                   |             | "                         | 4s   |
| 20         | HD 172187  | 18 33 42     | +43 08 12           | 04 41 56                |                       |                   |             |                           |      |
| 21         | Comp       |              |                     |                         |                       |                   |             | "                         | 4s   |
| 22         | Comp       |              |                     |                         |                       |                   |             | "                         | 4s   |
| 23         | HD 180316  | 19 11 00     | +27 46 00           | 05 05 05                |                       |                   |             |                           | 1532 |

Spectr. Temp. <sup>CCD</sup> -100.5°C ..... Dome Temp./Hum. ....

Transparency Conditions ... Hazy ..... 123

Focus ..... 6.93 .....

Airport SSW 17 Kms/hr

Spectr. Temp. .... Dome Temp./Hum. ....

~~100.72~~ Kpxcds and falling

| Exp. Mtr.       | Seeing | Ptg. Mag. | Sp.       | Inst.    | Grating/Tilt     | Slit      | Emulsion | P.H. | Program | Remarks              | Quality |
|-----------------|--------|-----------|-----------|----------|------------------|-----------|----------|------|---------|----------------------|---------|
| <del>2.9K</del> |        |           | ALT = 85° |          | Above            | 306 $\mu$ | Slit     |      |         | Seeing test Dome WSW |         |
|                 |        |           |           |          |                  |           |          |      |         |                      |         |
|                 |        |           |           |          |                  |           |          |      |         |                      |         |
|                 |        |           |           |          |                  |           |          |      |         |                      |         |
|                 |        |           |           | C455 CCD | 1800 In<br>42.50 | 306 $\mu$ | AA63A    | 17   |         |                      | 9.9K    |
| 20K             |        | B<br>4.46 | A I V     |          |                  |           |          | 18   | SB Bln  |                      |         |
|                 |        |           |           |          |                  |           |          | 19   |         |                      |         |
|                 |        |           |           |          |                  |           |          | 20   |         |                      |         |
| 15.2K           | 4"-6"  | B<br>5.19 | B3 I V    |          |                  |           |          | 21   | SB Bln  |                      | 7.1K    |
|                 |        |           |           |          |                  |           |          | 22   |         |                      |         |
|                 |        |           |           |          |                  |           |          | 23   |         |                      | 8.8K    |
| 7.1K            | 4"     | B<br>6.40 | FO I V    |          |                  |           |          | 24   | SB Bln  |                      |         |
|                 |        |           |           |          |                  |           |          | 25   |         |                      |         |
|                 |        |           |           |          |                  |           |          | 26   |         |                      |         |
| 6.1             | 4.5"   | B<br>6.64 | B8        |          |                  |           |          | 27   | SB Bln  | sky light            |         |





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p9#1

THURS / FRI

Emulsion Batches:

Date 1997. MAR 27/28. Observers Lu. / Tn.....

| Plate No.                           | Object          | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-------------------------------------|-----------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CC445 <sup>33</sup> / <sub>34</sub> | Inb / out bound |              |                     |                         |                       | 020E              | 40          | F4r<br>ND4                | 4/7  |
| 35                                  | BIAS (4)        |              |                     | 19 11                   |                       |                   |             |                           |      |
| 36                                  | Comp            |              |                     |                         |                       |                   |             | F4r<br>ND4                | 4s   |
| 37                                  | HD 57669        | 07 1713      | 1105154             | 191452                  |                       |                   |             |                           | 128s |
| 38                                  | Comp            |              |                     |                         |                       |                   |             | "                         | 4s   |
| 39                                  | Comp            |              |                     |                         |                       |                   |             | "                         | 4s   |
| 40                                  | AH Aur          | 06 26 05     | 27 59 54            | 19 25 24                |                       |                   |             |                           | 900  |
| 41                                  | " Comp          | "            | "                   | 1940 48                 |                       |                   |             |                           | 900  |
| 42                                  | Comp            |              |                     |                         |                       |                   |             | F4r<br>ND4                | 4s   |
| 43                                  | Comp            |              |                     |                         |                       |                   |             | "                         | 4s   |
| 44                                  | BD-02 3000      | 09 48 10     | -031304             | 20 02 04                |                       |                   |             |                           | 1359 |
| 45                                  | Comp            |              |                     |                         |                       |                   |             | "                         | 4s   |
| 46                                  | BIAS (4)        |              |                     | 20 26                   |                       |                   |             |                           |      |
| 47                                  | Comp            |              |                     |                         |                       |                   |             | "                         | 4s   |
| 48                                  | BD+01 2447      | 10 23 49     | +01 2136            | 20 31 00                |                       |                   |             |                           | 731  |
| 49                                  | Comp            |              |                     |                         |                       |                   |             | "                         | 4s   |

CCD  
Spectr. Tem

Focus ... 6

Spectr. Tem

Exp. Mtr.

No filter  
see work

53K

500

410

590

570

CCD Spectr. Temp.  $-101.5^{\circ}\text{C}$  Dome Temp./Hum.  $+07.8^{\circ}\text{C}$  63.7% H Transparency Conditions Fine - some cloud 127

Focus 6: 85

Spectr. Temp. Dome Temp./Hum.  $+06.6^{\circ}\text{C}$  65.0% H

CCDFMT  
390 0 50 1024 41 ~ MAX

| Exp. Mtr.       | Seeing                 | Mag. | Sp.   | Inst.      | Grating/Tilt | Slit | Emulsion | P.H. | Program        | Remarks  | Quality |
|-----------------|------------------------|------|-------|------------|--------------|------|----------|------|----------------|--|---------|
| 4/7             | no filter<br>1000 Vols |      |       | CASS CCD   | 1800<br>46.9 | 306  | 5184     | 3/4  | focus test     |  |         |
|                 |                        |      |       |            |              |      |          | 1    |                |  |         |
| 4 <sub>3</sub>  |                        |      |       |            |              |      |          | 5    |                |  |         |
| 108s            | 5.3K                   | 1"   | 5.19  | KOIII, CN1 |              |      |          | 6    | Test and       | normalisation star   | 5.5K    |
| 4 <sub>8</sub>  |                        |      |       |            |              |      |          | 7    |                |  | 2K      |
| 4 <sub>5</sub>  |                        |      |       |            |              |      |          | 8    |                |  | 404     |
| 9 <sub>00</sub> | 500                    | 1"   | 10.5  | G          |              |      |          | 9    | Lu pgm         | 50/1 S/N   | 440     |
| 900             | 410                    | 1.2" | "     | "          |              |      |          | 10   |                |  |         |
| 4 <sub>8</sub>  |                        |      |       |            |              |      |          | 11   |                |  | 1.7K    |
| 4 <sub>3</sub>  |                        |      |       |            |              |      |          | 12   |                |  |         |
| 137             | 590                    | 1.2" | 10.54 | M0         |              |      |          | 13   | H/uv Vys pgm   | K200 0010 (45/L S/N)<br>58-00 0039<br>is a bit north of equator?<br>Field OK though. |         |
| 4 <sub>3</sub>  |                        |      |       |            |              |      |          | 14   |                |  |         |
|                 |                        |      |       |            |              |      |          | 1    |                |  |         |
| 4 <sub>3</sub>  |                        |      |       |            |              |      |          | 15   |                |  |         |
| 73              | 570                    | 2"   | 9.65  | M2         |              |      |          | 16   | Murcy stel vel |  |         |
| 4 <sub>3</sub>  |                        |      |       |            |              |      |          | 17   |                |  |         |

78  
p9#2

Thurs / Fri

Date 1997. MAR. 27/28... Observers L.G./T.A.....

Emulsion Batches:

.....  
.....  
.....

| Plate No. | Object   | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CC44550   | Comp     |              |                     |                         |                       |                   |             | FeAr<br>NO4               | 4s   |
| 51        | HD 95735 | 10 57 54     | 1900<br>+36 38 00   | 20 48 18                |                       |                   |             |                           | 153  |
| 52        | Comp     |              |                     |                         |                       |                   |             | "                         | 4s   |
| 53        | Comp     |              |                     |                         |                       |                   |             | "                         | 4s   |
| 54        | U2 Leo   | 10 40 33     | 2000<br>+13 34 00   | 20 57 57                |                       |                   |             |                           | 1020 |
| 55        | "        | "            | "                   | 21 15 32                |                       |                   |             |                           | 1050 |
| 56        | comp     |              |                     |                         |                       |                   |             |                           | 4    |
| 57        | Bias (4) |              |                     | 21 35                   |                       |                   |             |                           |      |
| 58        | comp     |              | 2000                |                         |                       |                   |             |                           | 4    |
| 59        | XZ Leo   | 10 02 34     | 17 02 46            | 21 43 13                |                       |                   |             |                           | 4900 |
| 60        | "        |              |                     | 21 58 43                |                       |                   |             |                           | 900  |
| 61        | comp     |              |                     |                         |                       |                   |             |                           | 4s   |
| 62        | XZ Leo   | "            | "                   | 22 16 04                |                       |                   |             |                           | 900  |
| 63        | "        | "            | "                   | 22 31 55                |                       |                   |             |                           | 900  |
| 64        | comp     |              |                     |                         |                       |                   |             |                           |      |

Spectr. Tem.

Focus...6

Spectr. Tem.

Exp. Mir.

No filter

1K

525

587

333

397

432

420



Spectr. Temp. .... Dome Temp./Hum.  $+5.3^{\circ}C / 66.3\%$  Transparency Conditions *mostly clear* 129

Focus ... 6.85 .....

Spectr. Temp. .... Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | Filter<br>Mag. | Sp. | Inst.       | Grating/<br>Tilt | Slit | Emulsion | P.H. | Program    | Remarks  | Quality |
|-----------|--------|----------------|-----|-------------|------------------|------|----------|------|------------|----------|---------|
| no filter |        |                |     | CASS<br>CCD | 1800 h           | 306  | 5184A    | 18   |            |          |         |
| 1K        | 2"     | 7.45           | M2  |             |                  |      |          | 19   | marcy std. |          |         |
|           |        |                |     |             |                  |      |          | 20   |            |          |         |
|           |        |                |     |             |                  |      |          | 21   | L4 pgn     |          |         |
| 525       |        |                |     |             |                  |      |          | 22   | n          |          |         |
| 587       | 2"     |                |     |             |                  |      |          | 23   |            |          |         |
|           |        |                |     |             |                  |      |          | 24   |            |          |         |
|           |        |                |     |             |                  |      |          | 1    |            |          |         |
|           |        |                |     |             |                  |      |          | 25   |            |          |         |
| 833       |        | 10.6           | A5  |             |                  |      |          | 26   |            |          |         |
| 397       |        |                |     |             |                  |      |          | 27   |            |          |         |
|           |        |                |     |             |                  |      |          | 28   |            |          |         |
| 432       |        |                |     |             |                  |      |          | 29   |            | 50/1 S/N |         |
| 420       | 1.2"   |                |     |             |                  |      |          | 30   |            |          |         |
|           |        |                |     |             |                  |      |          | 5    |            |          |         |



Spectr. Temp. .... Dome Temp./Hum.  $+5.7^{\circ}C / 67.6\%$  Transparency Conditions ..... *clear* ..... 131

Focus ..... 6.85 .....

Spectr. Temp.  $\overset{CO_2}{-}$  .....  $\overset{E}{-}$  ..... Dome Temp./Hum.  $+5.0^{\circ}C / 70\%H$

| Exp. Mtr. | Seeing | Pig. Mag. | Sp. | Inst.    | Grating/Tilt | Slit      | Emulsion | P.H. | Program | Remarks  | Quality |
|-----------|--------|-----------|-----|----------|--------------|-----------|----------|------|---------|----------|---------|
|           |        |           |     | Cass CCD | 1800<br>46.9 | 306 $\mu$ | 5184A    | 5    |         |          |         |
| 202       |        | 10.7      | G2  |          |              |           |          | 6    | DRL     |          |         |
| 217       | 1"     | 4         | "   |          |              |           |          | 7    |         |          |         |
|           |        |           |     |          |              |           |          | 8    |         |          |         |
|           |        |           |     |          |              |           |          | 1    |         |          |         |
|           |        |           |     |          |              |           |          | 9    |         |          |         |
| 557       | 1-2"   | 9.5       | F7V |          |              |           |          | 10   |         | 60/1 S/H |         |
| 517       |        |           |     |          |              |           |          | 11   |         |          |         |
|           |        |           |     |          |              |           |          | 12   |         |          |         |
|           |        |           |     |          |              |           |          | 18   |         |          |         |
| 490       | 2"     |           |     |          |              |           |          | 19   |         |          |         |
| 510       |        |           |     |          |              |           |          | 20   |         |          |         |
| 457       |        |           |     |          |              |           |          | 21   |         |          |         |
| 455       | 2-3"   |           |     |          |              |           |          | 22   |         |          |         |
|           |        |           |     |          |              |           |          | 23   |         |          |         |
|           |        |           |     |          |              |           |          | 1    |         |          |         |



Spectr. Temp. ....

Dome Temp./Hum. ....

Transparency Conditions ... *SUNO. c. land.* .....Focus .... *6.85* .....

133

Spectr. Temp. ... *CCD* *-100.5°C* .....

Dome Temp./Hum. ....

| Exp. Mtr.              | Seeing      | P <sub>v</sub> Mag. | Sp.           | Inst.           | Grating/Tilt           | Slit        | Emulsion     | P.H.      | Program        | Remarks             | Quality     |
|------------------------|-------------|---------------------|---------------|-----------------|------------------------|-------------|--------------|-----------|----------------|---------------------|-------------|
| <i>43</i><br>AO filter |             |                     |               | <i>CASS CCD</i> | <i>1800h<br/>46.90</i> | <i>306u</i> | <i>5184A</i> | <i>24</i> |                |                     | <i>21K</i>  |
| <i>460</i><br>1500     | <i>2"</i>   | <i>8.5</i>          | <i>40</i>     |                 |                        |             |              | <i>25</i> | <i>Lu pgn</i>  | <i>L 100/11 5/N</i> | <i>11K</i>  |
| <i>480</i><br>1570     |             |                     |               |                 |                        |             |              | <i>26</i> |                |                     |             |
| <i>480</i><br>1550     |             |                     |               |                 |                        |             |              | <i>27</i> |                |                     |             |
| <i>480</i><br>1630     |             |                     |               |                 |                        |             |              | <i>28</i> |                |                     |             |
| <i>42</i>              |             |                     |               |                 |                        |             |              | <i>29</i> |                |                     |             |
| <i>480</i><br>1360     |             |                     |               |                 |                        |             |              | <i>6</i>  |                |                     |             |
| <i>480</i><br>1200     |             |                     |               |                 |                        |             |              | <i>7</i>  |                |                     |             |
| <i>480</i><br>1100     | <i>2"</i>   |                     |               |                 |                        |             |              | <i>8</i>  |                |                     |             |
| <i>480</i><br>1160     |             |                     |               |                 |                        |             |              | <i>9</i>  |                |                     |             |
|                        |             |                     |               |                 |                        |             |              | <i>10</i> |                |                     |             |
|                        |             |                     |               |                 |                        |             |              | <i>11</i> |                |                     |             |
| <i>480</i><br>4.4K     | <i>1.2"</i> | <i>5.06</i>         | <i>F814-7</i> |                 |                        |             |              | <i>12</i> | <i>std Vol</i> |                     | <i>3.7K</i> |
|                        |             |                     |               |                 |                        |             |              | <i>13</i> |                |                     |             |

Pg #5

134

Date . 1997. MAR 27/28 Observers . L.C. / T.H. ....

Emulsion Batches:

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| Plate No.               | Object     | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End     | Declination | Comparison<br>Type/Filter | Exp. |
|-------------------------|------------|--------------|---------------------|-------------------------|-----------------------|-----------------------|-------------|---------------------------|------|
| CC445 <sup>96/601</sup> | FLATS x 6  |              |                     |                         |                       | 0 55E                 | +20         | ND 3                      | 85   |
| CG80017/20              | HD 128718  | 14 33.4      | +48 39              |                         |                       |                       |             | 4x                        | 67ms |
| 21/24                   | DARK x 4   |              |                     |                         |                       | De fault box and SAME | Int         | 4x                        | 67ms |
| 25/26                   | " x 2      |              |                     |                         |                       | FOR ALL               |             | 2x                        | 133  |
| 27/28                   | HD 128718  |              |                     |                         |                       |                       |             | 2x                        | 133  |
| CC44502                 | Comp       |              |                     |                         |                       |                       |             | FeAr<br>ND 3              | 45   |
| 03                      | BD+21 2763 | 15 1725      | +21 2006            | 02 5723                 |                       |                       |             |                           | 1295 |
| 04                      | Comp       |              |                     |                         |                       |                       |             | "                         | 45   |
| 05                      | Comp       |              |                     |                         |                       |                       |             | "                         | 45   |
| 06                      | BD-08 4352 | 16 5005      | -08 0947            | 03 2706                 |                       |                       |             |                           | 894  |
| 07                      | Comp       |              |                     |                         |                       |                       |             | "                         | 45   |
| 08                      | BIAS (4)   |              |                     | 03 43                   |                       |                       |             |                           |      |
| 09                      | Comp       |              |                     |                         |                       |                       |             | "                         | 45   |
| 10                      | GR Vir     | 14 45 20     | -06 44 06           | 03 46 06                |                       |                       |             |                           | 600  |
| 11                      | "          |              |                     | 03 56 41                |                       |                       |             |                           | 600  |

Spectr. Temp.

Focus.....

Spectr. Temp.

Exp. Mtr.

710  
6.462

710

490

480

416

Spectr. Temp. .... Dome Temp./Hum.  $+04.2^{\circ}\text{C}$  71% H Transparency Conditions ... Mostly clear ..... 135

Focus ..... 6.85 .....

Spectr. Temp. .... Dome Temp./Hum. ....

| Filter | Exp. | Exp. Mtr. | Seeing | Ap. Mag. | Sp.  | Inst.       | Grating/Tilt    | Slit | Emulsion | P.H. | Program     | Remarks          | Quality |
|--------|------|-----------|--------|----------|------|-------------|-----------------|------|----------|------|-------------|------------------|---------|
|        | 8    |           |        |          |      | CASS        | 1800ln<br>46.9° | 306  | 5184A    | 2    |             |                  | 13K     |
|        | 67   |           | 1.2    | 6.7      | F2   | ALT 86°     | Above           | 306  | 511t     |      | seeing test | no wind, dome NW |         |
|        | 67   |           |        |          |      |             |                 |      |          |      |             |                  |         |
|        | 133  |           |        |          |      |             |                 |      |          |      |             |                  |         |
|        | 133  |           |        |          |      |             |                 |      |          |      |             |                  |         |
|        | 4    | no filter |        |          |      | CASS<br>CCD | 1800ln<br>46.9° | 306  | 5184A    | 14   |             |                  | 2.1K    |
|        | 1275 | F10       | 1.2    | 10.11    | M10e |             |                 |      |          | 15   | Vys 740Ht   |                  | ~ 450   |
|        | 4    |           |        |          |      |             |                 |      |          | 16   |             |                  |         |
|        | 4    |           |        |          |      |             |                 |      |          | 17   | Vys 782 AB  |                  |         |
|        | 694  | 490       | 2      | 9        | M5e  |             |                 |      |          | 18   |             |                  |         |
|        | 4    |           |        |          |      |             |                 |      |          | 19   |             |                  |         |
|        | 4    |           |        |          |      |             |                 |      |          | 1    |             |                  |         |
|        | 4    |           |        |          |      |             |                 |      |          | 20   |             |                  |         |
|        | 60   | 480       |        | 8.5      | 40   |             |                 |      |          | 21   |             | through clouds.  |         |
|        | 60   | 416       |        | "        | "    |             |                 |      |          | 22   |             |                  |         |

136 pg #6

Date 1997 Mar. 27/28

Observers Lu/Tn

Emulsion Batches:

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| Plate No. | Object  | R.A.     | Declination | Starting Time | Ending Time | Hour Angle<br>End | Declination | Comparison  |      |
|-----------|---------|----------|-------------|---------------|-------------|-------------------|-------------|-------------|------|
|           |         | 1900     | 1900        | E.S.T.        | E.S.T.      |                   |             | Type/Filter | Exp. |
| cc44612   | GR Vir  | 14 45 20 | -06 44.06   | 04 07 32      |             |                   |             |             | 600  |
| 13        | Comp    |          |             |               |             |                   |             | Red<br>ND3  | 45   |
| 14        | GR Vir  | "        | "           | 04 19 37      |             |                   |             |             | 600  |
| 15        | "       | "        | "           | 04 29 58      |             |                   |             |             | 600  |
| 16        | Comp    |          |             |               |             |                   |             |             | 4    |
| 17        | Comp    |          |             |               |             |                   |             |             | 4    |
| 18        | CK Boo  | 14 35 03 | 09 06 54    | 04 47 56      |             |                   |             |             | 300  |
| 19        | comp    |          |             |               |             |                   |             |             | 4    |
| 20        | Bias(4) |          |             |               |             |                   |             |             | 0    |
|           |         |          |             |               |             |                   |             |             |      |
|           |         |          |             |               |             |                   |             |             |      |
|           |         |          |             |               |             |                   |             |             |      |
|           |         |          |             |               |             |                   |             |             |      |
|           |         |          |             |               |             |                   |             |             |      |
|           |         |          |             |               |             |                   |             |             |      |
|           |         |          |             |               |             |                   |             |             |      |
|           |         |          |             |               |             |                   |             |             |      |
|           |         |          |             |               |             |                   |             |             |      |
|           |         |          |             |               |             |                   |             |             |      |
|           |         |          |             |               |             |                   |             |             |      |
|           |         |          |             |               |             |                   |             |             |      |

Spectr. Tem

Focus...

Spectr. Tem

Exp Mir

486

625

540

380







CCD <sup>didn't check</sup>  
 Spectr. Temp. ..... Dome Temp./Hum.  $-00.1^{\circ}\text{C}$  53684 Transparency Conditions ... Fine ..... 129

Focus ..... 6.93 .....

Spectr. Temp. .... Dome Temp./Hum. .... 390 0 50 1074 4 1 CCD/Faint

| Comparison<br>Filter Exp | Exp. Mtr.         | Seeing | P.V.<br>Mag. | Sp. | Inst.      | Grating/<br>Tilt | Slit | Emulsion | P.H. | Program       | Remarks  | Quality |
|--------------------------|-------------------|--------|--------------|-----|------------|------------------|------|----------|------|---------------|----------|---------|
| 4/10                     | 10 f/100<br>1000V |        |              |     | CAS<br>CCD | 1800ln<br>46.9°  | 306u | 518AA    | 3/4  | focus test    |          |         |
|                          |                   |        |              |     |            |                  |      |          | 1    |               |          |         |
| 4                        |                   |        |              |     |            |                  |      |          | 5    |               |          |         |
| 36K                      | 2K                | 3-4"   | 7.48         | M2  |            |                  |      |          | 2    | marcy std vel |          | 1K      |
| 4                        |                   |        |              |     |            |                  |      |          | 7    |               |          | 36K     |
| 4                        |                   |        |              |     |            |                  |      |          | 8    |               |          | 34K     |
| 18K                      | 630               | 3-6"   | 10.54        | M10 |            |                  |      |          | 9    | Vgs 560 H/w   | 50/1 S/N |         |
| 4                        |                   |        |              |     |            |                  |      |          | 10   |               |          | 20K     |
| 4                        |                   |        |              |     |            |                  |      |          | 11   |               |          | 26K     |
| 95K                      | 710               | 3-5"   | 9.65         | M2  |            |                  |      |          | 12   | marcy std vel |          |         |
| 4                        |                   |        |              |     |            |                  |      |          | 13   |               |          |         |
|                          |                   |        |              |     |            |                  |      |          | 1    |               |          |         |
| 4                        |                   |        |              |     |            |                  |      |          | 14   |               |          |         |
| 18K                      | 280               | 3-4"   | 10.6         |     |            |                  |      |          | 17   | Gld pgr       |          |         |

140 P<sub>g</sub> #2

Mon/Tues

Emulsion Batches:

Date 1997 MAR 31 / Apr 1 Observers ... Lu. / Tu. ....

| Plate No. | Object      | R.A.<br>1900       | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. | Exp Mtr    |
|-----------|-------------|--------------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|------------|
| CC 74637  | Comp        |                    |                     |                         |                       |                   |             | KA<br>ND3                 | 4s   | 10<br>1/ka |
| 38        | AC+38 28746 | 09 30 07           | 43 58 38            | 21 21 19                |                       |                   |             |                           | 18/8 | 477        |
| 39        | Comp        |                    |                     |                         |                       |                   |             | "                         | 4s   |            |
| 40        | Bias(4)     |                    |                     | 21 53                   |                       |                   |             |                           |      |            |
| 41        | Comp        |                    |                     |                         |                       |                   |             | "                         | 4s   |            |
| 42        | SX Crv      | (2000)<br>12 40 15 | -18 48 00           | 22 02 02                |                       |                   |             |                           | 720  | 386        |
| 43        | "           | "                  | "                   | 22 15 03                |                       |                   |             |                           | 720  | 378        |
| 44        | "           | "                  | "                   | 22 27 27                |                       |                   |             |                           | 721  | 380        |
| 45        | Comp        |                    |                     |                         |                       |                   |             | "                         | 4s   |            |
| 46        | SX Crv      | "                  | "                   | 22 41 40                |                       |                   |             |                           | 720  | 395        |
| 47        | "           | "                  | "                   | 22 54 08                |                       |                   |             |                           | 720  | 390        |
| 48        | "           | "                  | "                   | 23 06 33                |                       |                   |             |                           | 721  | 395        |
| 49        | comp        |                    |                     |                         |                       |                   |             | "                         | 4s   |            |
| 50        | Bias(4)     |                    |                     | 23 20                   |                       |                   |             |                           |      |            |
| 51        | SX Crv      |                    |                     | 23 22 35                |                       |                   |             |                           | 721  | 411        |

CCDT Spectr. Temp. ....  $-92.5^{\circ}\text{C}$  @ 21:30 Dome Temp./Hum. ....  $-00.8^{\circ}\text{C}$  44.8% Transparency Conditions .... Fine (10)

Focus ..... 6.9.3 .....

note CCDT set at start of night to 4.2 units  
not the usual 5.0 units  
by accident

Spectr. Temp. .... Dome Temp./Hum. ....

ca

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst.   | Grating/Tilt               | Slit             | Emulsion | P.H. | Program | Remarks                        | Quality |
|-----------|--------|-----------|-----|---------|----------------------------|------------------|----------|------|---------|--------------------------------|---------|
| NO filter |        |           |     | CAS CCD | 1800 <sub>h</sub><br>46.90 | 306 <sub>h</sub> | 5184A    | 18   |         |                                |         |
| 477       | 3.5"   | 11        | MO  |         |                            |                  |          | 19   | Vys 549 |                                |         |
|           |        |           |     |         |                            |                  |          | 20   |         |                                | 26K     |
|           |        |           |     |         |                            |                  |          | 1    |         | CCDT = $-92.4^{\circ}\text{C}$ |         |
|           |        |           |     |         |                            |                  |          | 20   |         |                                |         |
| 386       | 8"     | 9.5       | F7V |         |                            |                  |          | 21   | DRL     |                                |         |
| 378       |        |           |     |         |                            |                  |          | 22   |         |                                |         |
| 380       |        |           |     |         |                            |                  |          | 23   |         |                                |         |
|           |        |           |     |         |                            |                  |          | 24   |         |                                |         |
| 395       |        |           |     |         |                            |                  |          | 25   |         |                                |         |
| 390       |        |           |     |         |                            |                  |          | 26   |         |                                |         |
| 395       |        |           |     |         |                            |                  |          | 27   |         |                                |         |
|           |        |           |     |         |                            |                  |          | 28   |         |                                |         |
|           |        |           |     |         |                            |                  |          | 1    |         |                                |         |
| 411       |        |           |     |         |                            |                  |          | 29   |         |                                |         |

142 pg # 3

Date 1997 Mar 31 / Apr 1

Observers

Lu / Tn

Emulsion Batches:

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 .....  
 .....

| Plate No. | Object  | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison   |      |
|-----------|---------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|--------------|------|
|           |         |              |                     |                         |                       |                   |             | Type/Filter  | Exp. |
| CC44652   | SX Crv  | 12 40 15     | (2000)<br>-18 48 00 | 23 35 16                |                       |                   |             | FaAr<br>ND43 | 720  |
| 53        | comp    |              |                     |                         |                       |                   |             | ↓            | 45   |
| 54        | comp    |              |                     |                         |                       |                   |             | "            | 45   |
| 55        | W Crv   | 12 07 36     | -13 09 30           | 23 55 48                |                       |                   |             |              | 900  |
| 56        | "       |              |                     | 00 12 29                |                       |                   |             |              | 990  |
| 57        | Comp    |              |                     |                         |                       |                   |             | "            | 45   |
| 58        | W Crv   | "            | "                   | 00 31 19                |                       |                   |             |              | 927  |
| 59        | "       |              |                     | 00 47 10                |                       |                   |             |              | 956  |
| 60        | Comp    |              |                     |                         |                       |                   |             | "            | 45   |
| 61        | BIAS(A) |              |                     | 01 04                   |                       |                   |             |              |      |
| 62        | Comp    |              |                     |                         |                       |                   |             | "            | 45   |
| 63        | SX Crv  | 12 40 15     | -18 48 00           | 01 08 36                |                       |                   |             |              | 660  |
| 64        | "       |              |                     | 01 20 01                |                       |                   |             |              | 660  |
| 65        | "       |              |                     | 01 31 16                |                       |                   |             |              | 697  |
| 66        | Comp    |              |                     |                         |                       |                   |             | "            | 45   |

CCD  
Spectr. Tem  
Focus.....  
Spectr. Tem

Exp. Mtr.

455

153

172

166

166

440

441

420

CCD  
Spectr. Temp.  $-92.5$

Dome Temp./Hum.  $-1.5^{\circ}\text{C}/47.8\%$

Transparency Conditions *Fine* 143

Focus  $6.93$

medium strength NNW wind

Spectr. Temp.  $-92.9^{\circ}\text{C}$

Dome Temp./Hum. ....

wind NNW 28 Kms/hr @ 0830

| Exp. Mtr. | Seeing | P <sup>W</sup> Mag. | Sp.  | Inst. | Grating/Tilt | Slit         | Emulsion  | P.H. | Program | Remarks   | Quality |
|-----------|--------|---------------------|------|-------|--------------|--------------|-----------|------|---------|-----------|---------|
| 720       | 455    | 4'-6"               | 9.5  | F7V   | CASS<br>CLD  | 1800<br>46.9 | 306 $\mu$ | 5184 | 30      |           |         |
| 43        |        |                     |      |       |              |              |           | 5    |         |           |         |
| 43        |        |                     |      |       |              |              |           | 5    |         |           |         |
| 900       | 153    | 3'-5"               | 10.7 | 42    |              |              |           | 6    | DRL     |           |         |
| 990       | 172    |                     |      |       |              |              |           | 7    |         |           |         |
| 45        |        |                     |      |       |              |              |           | 14   |         |           |         |
| 920       | 166    |                     |      |       |              |              |           | 15   |         | 720/1 S/N |         |
| 950       | 166    |                     |      |       |              |              |           | 16   |         |           |         |
| 43        |        |                     |      |       |              |              |           | 18   |         |           | 2.8     |
|           |        |                     |      |       |              |              |           | 1    |         |           |         |
| 43        |        |                     |      |       |              |              |           | 24   |         |           |         |
| 600       | 440    |                     | 9.5  | F7V   |              |              |           | 25   |         |           |         |
| 600       | 441    | 3'-6"               |      |       |              |              |           | 26   |         |           |         |
| 610       | ~420   |                     |      |       |              |              |           | 25   |         |           |         |
| 43        |        |                     |      |       |              |              |           | 27   |         |           |         |

pg # 4  
144

Mon / Tues

Date 1997 MAR 31 / Apr 1 Observers L. L. / T. J. ....

Emulsion Batches:

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.....

| Plate No. | Object    | R. A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|-----------|---------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| cc44667   | Comp      |               |                     |                         |                       |                   |             | RA<br>1103                | 4s   |
| 68        | HD 102870 | 11 4529       | +02 19 42           | 01 47 55                |                       |                   |             |                           | 4B   |
| 69        | Comp      |               |                     |                         |                       |                   |             | "                         | 4    |
| 70        | Comp      |               |                     |                         |                       |                   |             | "                         | 4    |
| 71        | HD 107328 | 12 1516       | +03 52 10           | 01 52 58                |                       |                   |             |                           | 133  |
| 72        | Comp      |               |                     |                         |                       |                   |             | "                         | 4    |
| 73        | Comp      |               |                     |                         |                       |                   |             | "                         | 4    |
| 74        | CK Boo    | 14 3503       | +09 06 54           | 02 00 07                |                       |                   |             |                           | 600  |
| 75        | "         |               |                     | 02 10 51                |                       |                   |             |                           | 600  |
| 76        | "         |               |                     | 02 21 16                |                       |                   |             |                           | 600  |
| 77        | comp      |               |                     |                         |                       |                   |             | "                         | 4s   |
| 78        | BIAS(4)   |               |                     | 02 33                   |                       |                   |             |                           |      |
| 79        | CK Boo    |               |                     | 02 34 40                |                       |                   |             |                           | 600  |
| 80        | "         |               |                     | 02 45 10                |                       |                   |             |                           | 600  |
| 81        | "         |               |                     | 02 55 42                |                       |                   |             |                           | 600  |

Exp. Mtr.  
Spectr. Tem.  
Focus...  
Spectr. Tem.

Exp. Mtr.  
Spectr. Tem.

Exp. Mtr.

Exp. Mtr.  
Spectr. Tem.

Exp. Mtr.

Exp. Mtr.  
Spectr. Tem.

Exp. Mtr.



CCD Spectr. Temp.  $-92.4^{\circ}\text{C}$  ..... Dome Temp./Hum.  $-02.1^{\circ}\text{C}$   $39.4\% \text{H}$  Transparency Conditions *Finer* ..... 145

Focus ..... 6.93 .....

Spectr. Temp. .... Dome Temp./Hum. ....

390 0 50 1024 41 CCD F57

| Exp. Mtr. | Seeing | Mag.           | Sp.            | Inst.       | Grating/<br>Tilt | Slit | Emulsion | P.H. | Program | Remarks      | Quality |
|-----------|--------|----------------|----------------|-------------|------------------|------|----------|------|---------|--------------|---------|
| no. 5/16  |        |                |                | CASS<br>CCD | 1800m<br>46.9°   | 306u | 5184A    | 26   |         |              |         |
| 4K        |        | 3.6            | F9V            |             |                  |      |          | 29   | std vel |              | 2K      |
|           |        | <del>3.6</del> | <del>F9V</del> |             |                  |      |          | 30   |         |              | 3.1K    |
|           |        |                |                |             |                  |      |          | 5    |         |              |         |
| 5K        | 4"     | 4.96           | KO.5 IIIb      |             |                  |      |          | 6    | std vel |              | 2.5K    |
|           |        |                |                |             |                  |      |          | 7    |         |              | 3K      |
|           |        |                |                |             |                  |      |          | 8    |         | CCD - 92.5°C |         |
| 644       | 4.5"   | 9.8            | F8             |             |                  |      |          | 9    |         |              |         |
| 618       |        |                |                |             |                  |      |          | 10   |         |              |         |
| 570       |        |                |                |             |                  |      |          | 11   |         |              |         |
|           |        |                |                |             |                  |      |          | 12   |         |              |         |
|           |        |                |                |             |                  |      |          | 1    |         |              |         |
| 560       |        |                |                |             |                  |      |          | 13   |         |              |         |
| 500       | 5"-7"  |                |                |             |                  |      |          | 14   |         |              |         |
| 466       |        |                |                |             |                  |      |          | 15   |         |              |         |

P9#5  
146

Date 1997.12.18.31. / Apr. 1 Observers Lu. / Tn.....

Emulsion Batches:

.....  
.....  
.....

| Plate No. | Object                   | R. A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|--------------------------|---------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CC44682   | Comp CK Boo              |               |                     |                         |                       |                   |             | FeAr<br>ND3               | 4/1A |
| 83        | <del>VZ Lib</del> (A)    | 14 35 03      | +09 06 54           | 03 08 27                |                       |                   |             |                           | 600  |
| 84        | ck Boo                   | "             | "                   | 03 18 54                |                       |                   |             |                           | 579  |
| 85        | <del>VZ Lib</del> ck Boo |               |                     | 03 30 36                |                       |                   |             |                           | 610  |
| 86        | Comp                     |               |                     |                         |                       |                   |             | FeAr<br>ND3               | 45   |
| 87        | CK Boo                   | 14 35 03      | +09 06 54           | 03 42 25                |                       |                   |             |                           | 600  |
| 88        | "                        | "             | "                   | 03 53 13                |                       |                   |             |                           | 655  |
| 89        | Comp                     |               |                     |                         |                       |                   |             | FeAr<br>ND3               | 45   |
| 90        | B/H S (A)                |               |                     | 04 06                   |                       |                   |             |                           |      |
| 91        | Comp                     |               |                     |                         |                       |                   |             | "                         | 45   |
| 92        | VZ Lib                   | 15 31 53      | +5 41 06            | 04 25 09                |                       |                   |             |                           | 983  |
| 93        | comp                     |               |                     |                         |                       |                   |             | "                         | 45   |
| 94        | Comp                     |               |                     |                         |                       |                   |             | "                         | 45   |
| 95        | BD-08 4352               | 16 50 05      | -08 09 47           | 04 46 53                |                       |                   |             |                           | 1115 |
| 96        | Comp                     |               |                     |                         |                       |                   |             | "                         | 45   |

CCD Spectr. Tem

Focus ...

Spectr. Tem

Exp. Mir.

1/2

477

570

460

450

465

185

1070

CCD Spectr. Temp. .... -92.4 °C

Dome Temp./Hum. .... -0.28 °C 91.78 H

Transparency Conditions ... Fine ..... 147

Focus ..... 6.93 .....

Wind NNW 14 km/hr.

Spectr. Temp. ....

Dome Temp./Hum. ....

390 050 1024 4 1

| Exp. Mtr.        | Seeing | Mag.         | Sp.            | Inst. | Grating/<br>Tilt | Slit             | Emulsion | P.H. | Program    | Remarks | Quality |
|------------------|--------|--------------|----------------|-------|------------------|------------------|----------|------|------------|---------|---------|
| 1/8<br>No Filter |        |              |                | CASS  | 1806<br>46-9     | 306 <sub>n</sub> | 5184A    | 3/4  | 16         |         |         |
| 600<br>477       |        | 9.8          | F8             |       |                  |                  |          | 17   |            |         |         |
| 574<br>520       | 4-7"   |              |                |       |                  |                  |          | 5    |            |         |         |
| 610<br>460       | 7      |              |                |       |                  |                  |          | 6    |            |         |         |
| 73<br>450        |        |              |                |       |                  |                  |          | 7    |            |         | 26K     |
| 600<br>465       | 3-5"   |              |                |       |                  |                  |          | 8    |            |         |         |
| 655<br>465       |        |              |                |       |                  |                  |          | 9    |            |         |         |
| 43<br>450        |        |              |                |       |                  |                  |          | 10   |            |         |         |
| 43<br>450        |        |              |                |       |                  |                  |          | 11   |            |         | 24K     |
| 85<br>185        |        | <del>9</del> | <del>m5e</del> |       |                  |                  |          | 12   | Vgs 782 AB |         |         |
| 83<br>185        |        |              |                |       |                  |                  |          | 13   |            |         |         |
| 83<br>185        |        |              |                |       |                  |                  |          | 14   |            |         |         |
| 115<br>1070      | 8-9" 9 |              | m5e            |       |                  |                  |          | 15   | Vgs 787 AB |         |         |
| 43<br>1070       |        |              |                |       |                  |                  |          | 16   |            |         |         |





150 p9#1

Tues/wed

Emulsion Batches:

Date 1997 Apr 1/2 Observers Lu, T. G.

| Plate No. | Object               | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison  |      |
|-----------|----------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|-------------|------|
|           |                      |              |                     |                         |                       |                   |             | Type/Filter | Exp. |
| CC4705/09 | In board / out board |              |                     |                         |                       |                   |             | FeAr<br>ND3 | 4/7  |
| 10        | BIHS(4)              |              |                     | 19 26                   |                       |                   |             |             |      |
| 11        | Comp                 |              |                     |                         |                       |                   |             | "           | 4s   |
| 12        | HD60437              | 072916       | +462403             | 19 3327                 |                       |                   |             |             | 36s  |
| 13        | Comp                 |              |                     |                         |                       |                   |             | "           | 4s   |
| 14        | Comp                 |              |                     |                         |                       |                   |             | "           | 4s   |
| 15        | HD 95735             | 10 5754      | +36 3800            | 19 41 46                |                       |                   |             |             | 48s  |
| 16        | Comp                 |              |                     |                         |                       |                   |             | "           | 4s   |
| 17        | Comp                 |              |                     |                         |                       |                   |             | "           | 4s   |
| 18        | BD-02 3000           | 09 4810      | -031304             | 19 55 49                |                       |                   |             |             | 175s |
| 19        | Comp                 |              |                     |                         |                       |                   |             | "           | 4s   |
| 20        | Comp                 |              | (-2000)             |                         |                       |                   |             | "           | 4s   |
| 21        | Uz Leo               | 10 4033      | 13 3400             | 20 30 45                |                       |                   |             |             | 900  |
| 22        | "                    |              |                     | 20 46 46                |                       |                   |             |             | 930  |
| 23        | Comp                 |              |                     |                         |                       |                   |             |             |      |
| 24        | Bias(4)              |              |                     | 21 04                   |                       |                   |             |             |      |

CCP  
Spectr. Temp.

Focus...

Spectr. Temp.

Exp. Mtr.

5.5K

6.1K

6.7

4.5d

4.6

CCD Spectr. Temp.  $-100.5^{\circ}\text{C}$  Dome Temp./Hum.  $+03.6^{\circ}\text{C}$  43.8% H Transparency Conditions *Fine* 151

Focus  $6.93$  *no change needed*

Spectr. Temp. .... Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | Pl. Mag. | Sp.          | Inst.       | Grating/Tilt                          | Slit      | Emulsion | P.H. | Program   | Remarks             | Quality |
|-----------|--------|----------|--------------|-------------|---------------------------------------|-----------|----------|------|---|---------------------|---------|
| no f. / K |        |          |              | CASS<br>CCD | 1800 $\mu\text{m}$<br>48.9 $^{\circ}$ | 306 $\mu$ | 5184A    | 3/4  | Focus   |                     |         |
|           |        |          |              |             |                                       |           |          | 1    |   |                     |         |
|           |        |          |              |             |                                       |           |          | 5    |   |                     | 35K     |
| * 5.5K    | 2-3"   | 565      | MO <u>VI</u> |             |                                       |           |          | 6    | High exp meta cuts for resulting<br>Normalization star <u>spectra</u> | Em front hd<br>SAY? | 1K      |
|           |        |          |              |             |                                       |           |          | 7    |   |                     |         |
|           |        |          |              |             |                                       |           |          | 8    |   |                     | 39K     |
| 2.1K      | 3"     | 748      | M2           |             |                                       |           |          | 9    | marcy vel std   |                     | 900     |
|           |        |          |              |             |                                       |           |          | 10   |   |                     | 2.9K    |
|           |        |          |              |             |                                       |           |          | 11   |   |                     |         |
| 512       | 3-5"   | 10.54    | MO           |             |                                       |           |          | 12   | Vys 560 $\mu\text{m}$ for H/w   |                     |         |
|           |        |          |              |             |                                       |           |          | 13   |   |                     | 2AK     |
|           |        |          |              |             |                                       |           |          | 14   |   |                     |         |
| 454       |        | 9.8      | F2           |             |                                       |           |          | 15   |   |                     |         |
| 460       |        |          |              |             |                                       |           |          | 16   |   |                     |         |
|           |        |          |              |             |                                       |           |          | 17   |   |                     |         |
|           |        |          |              |             |                                       |           |          | 1    |   |                     |         |

152 Pg #2

Tues / wed

Date 1997 Apr 1/2

Observers

Lu/Tn

Emulsion Batches:

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| Plate No. | Object      | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|-------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CC44725   | U7 Leo      | 10 40 33     | 13 34 00            | 21 06 11                |                       |                   |             |                           | 900  |
| 26        | "           | "            | "                   | 21 21 40                |                       |                   |             |                           | 960  |
| 27        | comp        |              |                     |                         |                       |                   |             | FeAr<br>NO3               | 4s   |
| 28        | U7 Leo      | "            | "                   | 21 41 10                |                       |                   |             |                           |      |
| 29        | Comp        |              |                     |                         |                       |                   |             | "                         | 4s   |
| 30        | Comp        |              |                     |                         |                       |                   |             | "                         | 4s   |
| 31        | FF Cnc      | 08 29 40     | 17 17 02            | 22 08 17                |                       |                   |             |                           | 1342 |
| 32        | Comp        |              |                     |                         |                       |                   |             | "                         | 4s   |
| 33        | BIAS (4)    |              |                     | 22 32                   |                       |                   |             |                           |      |
| 34        | FF Cnc      | "            | "                   | 22 34 13                |                       |                   |             |                           | 1380 |
| 35        | Comp        |              |                     |                         |                       |                   |             | "                         | 4s   |
| 36        | Comp        |              |                     |                         |                       |                   |             | "                         | 4s   |
| 37        | BD +01 2447 | 10 23 49     | 01 21 36            | 23 01 52                |                       |                   |             |                           | 800  |
| 38        | Comp        |              |                     |                         |                       |                   |             |                           |      |
| 39        | BIAS (4)    |              |                     | 23 18                   |                       |                   |             |                           |      |

Spectr. Tem

Focus...

Spectr. Tem

Exp. Nr.

463

520

280

285

640



Spectr. Temp. .... Dome Temp./Hum.  $+2.6^{\circ}\text{C} / 39.4\%$  Transparency Conditions ... Fine ..... 153

Focus ..... 6.93 .....

Spectr. Temp. .... Dome Temp./Hum. ....  $27$   $39.0$   $0$   $50$   $1024$   $4$   $1$  CCD FMT

| Exp. Mtr.    | Seeing            | Mag. | Sp. | Inst.       | Grating/<br>Tilt | Slit      | Emulsion | P.H. | Program       | Remarks   | Quality |
|--------------|-------------------|------|-----|-------------|------------------|-----------|----------|------|---------------|-----------|---------|
| 9:00<br>463  |                   | 9.8  | F2  | CASS<br>CCD | 1800<br>469      | 366 $\mu$ | 5184     | 18   |               |           |         |
| 9:60<br>520  |                   |      |     |             |                  |           |          | 19   |               |           |         |
|              |                   |      |     |             |                  |           |          | 20   |               |           |         |
|              | 4 $\frac{1}{2}$ " |      |     |             |                  |           |          | 21   |               |           |         |
|              |                   |      |     |             |                  |           |          | 22   |               |           |         |
|              |                   |      |     |             |                  |           |          | 23   |               |           |         |
| 13:00<br>280 | 4 $\frac{1}{2}$ " | 10.6 |     |             |                  |           |          | 24   | G/d pgrm      | >40/1 S/N |         |
|              |                   |      |     |             |                  |           |          | 25   |               |           | 2.6K    |
|              |                   |      |     |             |                  |           |          | 1    |               |           |         |
| 15:00<br>285 |                   | 10.6 |     |             |                  |           |          | 2    | G/d pgrm      |           |         |
|              |                   |      |     |             |                  |           |          | 26   |               |           | 2.6K    |
|              |                   |      |     |             |                  |           |          | 27   |               |           | 2.6K    |
| 8:00<br>640  |                   | 9.65 | m2  |             |                  |           |          | 28   | marcy std vel |           |         |

154 Pg #3

Tues/Wed

Emulsion Batches:

Date 1997 Apr 1/2 Observers Lu, J.T.

| Plate No.  | Object    | R.A.<br>1900                                       | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|------------|-----------|--|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CG8009/32  | HD 103095 | 11 4713  | +382610             |                         |                       |                   |             | 4x                        | 67   |
| CG80033/34 | DARK      | Should have done 4 instead of 2.                   |                     |                         |                       |                   |             | 2x                        | 67   |
| 35/36      | "         | All with default Box and same Intensifier setting. |                     |                         |                       |                   |             | 2x                        | 133  |
| 37/38      | HD 103095 | "  | "                   |                         |                       |                   |             | 2x                        | 133  |
| CC 44740   | Comp      |  |                     |                         |                       |                   |             | Fe<br>ND3                 | 4s   |
| 41         | HD 103095 | 11 4713  | 382610              | 23 28 42                |                       |                   |             |                           | 207  |
| 42         | Comp      |  |                     |                         |                       |                   |             | "                         | 4s   |
| 43         | Comp      |  |                     |                         |                       |                   |             | "                         | "    |
| 44         | UZ Leo    | 10 40 33   | 13 34 00            | 23 57 28                |                       |                   |             |                           | 900  |
| 45         | "         |  |                     | 23 53 00                |                       |                   |             |                           | 900  |
| 46         | comp      |  |                     |                         |                       |                   |             |                           | 4s   |
| 47         | UZ Leo    | "  | "                   | 00 10 06                |                       |                   |             |                           | 900  |
| 48         | "         | "  | "                   | 00 26 29                |                       |                   |             |                           |      |
| 49         | comp      |  |                     |                         |                       |                   |             |                           |      |
| 50         | B/A5 (4)  |  |                     | 00 34                   |                       |                   |             |                           |      |

Spectr. Tem

Focus

Spectr. Tem

Exp. Mtr.

29/1

56

58

57

50



156

Pg #4

Tues/Wed

Emulsion Batches:

Date 1997 Apr. 1./2... Observers Lu./Tn.....

| Plate No. | Object  | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|---------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CC 44751  | Comp    |              | 2000                |                         |                       |                   |             | Red<br>NO 3               | 45   |
| 52        | VZ Lib  | 15 3153      | -15 4106            | 00 4958                 |                       |                   |             |                           | 900  |
| 53        | "       | "            | "                   | 01 0520                 |                       |                   |             |                           | 900  |
| 54        | Comp    |              |                     |                         |                       |                   |             | "                         | 45   |
| 55        | VZ Lib  | "            | "                   | 01 2223                 |                       |                   |             |                           | 960  |
| 56        | "       | "            | "                   | 01 3912                 |                       |                   |             |                           | 960  |
| 57        | Comp    |              |                     |                         |                       |                   |             | "                         | 45   |
| 58        | BIAS(4) | "            | "                   | 01 59 02                |                       |                   |             |                           |      |
| 59        | VZ Lib  | "            | "                   | 01 59 02                |                       |                   |             |                           | 900  |
| 60        | "       | "            | "                   | 02 1433                 |                       |                   |             |                           | 900  |
| 61        | Comp    |              |                     |                         |                       |                   |             | "                         | 4    |
| 62        | VZ Lib  | "            | "                   | 02 32 05                |                       |                   |             |                           | 919  |
| 63        | Comp    |              |                     |                         |                       |                   |             | "                         | 4    |
| 64        | Comp    |              |                     |                         |                       |                   |             | "                         | 4    |
| 65        | CK Boo  | 14 35 03     | 09 06 54            | 02 5318                 |                       |                   |             |                           | 622  |

Spectr. Temp. .... Dome Temp./Hum.  $+01.7^{\circ}\text{C}$   $40.2\%/\text{H}$  Transparency Conditions *Fine* ..... 157.

Focus ..... 6.93

Spectr. Temp.  $-100.6^{\circ}\text{C}$  @ 2:40 Dome Temp./Hum.  $+01.1^{\circ}\text{C}$   $41.6\%/\text{H}$  No wind by 02:30, but seeing worse.

| Exp. Mtr. | Seeing | P.V. Mag. | Sp. | Inst.       | Grating/Tilt        | Slit      | Emulsion | P.H. | Program | Remarks    | Quality |
|-----------|--------|-----------|-----|-------------|---------------------|-----------|----------|------|---------|------------|---------|
| no filter |        |           |     | CASS<br>CCD | 1806<br><u>48.9</u> | 306 $\mu$ | 5184Å    | 8c:  |         |            | 3.2K    |
| 227       | 4"8"   |           |     |             |                     |           |          | 15c: | DRL     | > 30/1 S/N |         |
| 200       |        |           |     |             |                     |           |          | 16c: |         |            |         |
|           |        |           |     |             |                     |           |          | 17   |         |            |         |
| 192       |        |           |     |             |                     |           |          | 18   |         |            |         |
| 188       |        |           |     |             |                     |           |          | 19   |         |            |         |
|           |        |           |     |             |                     |           |          | 20   |         |            |         |
|           |        |           |     |             |                     |           |          | 1    |         |            |         |
| 180       |        | 10.1      | F5  |             |                     |           |          | 21   |         |            |         |
| 180       | 4"8"   |           |     |             |                     |           |          | 22   |         |            |         |
|           |        |           |     |             |                     |           |          | 23   |         |            |         |
| 183       | 5-15"  |           |     |             |                     |           |          | 24   |         |            |         |
|           |        |           |     |             |                     |           |          | 25   |         |            | 2.5K    |
|           |        |           |     |             |                     |           |          | 26   |         |            | 2.5K    |
| 293       |        | 9.8       | F8  |             |                     |           |          | 27   | DRL     | > 50/1 S/N |         |

Note noticed Grating Tilt in Header.  
Had been wrong. It is 46.9° all night.

and Grating unchanged from last night's tilt.

158 pg#5 Tues/Wed

Date ... Apr. 1/2/1997 Observers L.H.I. Tu.....

Emulsion Batches:

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| Plate No. | Object     | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. | Exp. Mtr. |
|-----------|------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|-----------|
| cc44766   | CK Boo     | 14 35 03     | 09 06 54            | 3 04 06                 |                       |                   |             |                           | 622  | 420       |
| 67        | comp ↑     |              |                     |                         |                       |                   |             | Fe Ar<br>ND3              | 4s   |           |
| 68        | NSV 7457   | 16 06 02     | 50 11 12            | 03 29 41                |                       |                   |             |                           | 600  | 241       |
| 69        | comp ↑     |              |                     |                         |                       |                   |             | "                         | 4s   |           |
| 70        | BIAS (4)   |              |                     | 03 33                   |                       |                   |             |                           |      |           |
| 71        | NSV 7457 ↓ | "            | "                   | 03 35 33                | edit time ✓           |                   |             |                           | 900  | 380       |
| 72        | "          | "            | "                   | 03 51 57                |                       |                   |             |                           | 900  | 407       |
| 73        | comp       |              |                     |                         |                       |                   |             | "                         | 4s   |           |
| 74        | NSV 7457   | "            | "                   | 04 09 18                |                       |                   |             |                           | 1054 | 445       |
| 75        | "          | "            |                     | 04 27 19                |                       |                   |             |                           | 900  | 400       |
| 76        | comp       |              |                     |                         |                       |                   |             | "                         | 4s   |           |
| 77        | NSV 7457   | "            | "                   | 04 44 40                |                       |                   |             |                           | 600  | 365       |
| 78        | comp       |              |                     |                         |                       |                   |             | "                         | 4s   |           |
| 79        | comp       |              |                     |                         |                       |                   |             |                           | 4s   |           |
| 80        | HD 136202  | 15 19 05     | 01 46 56            | 05 00 53                |                       |                   |             | 1495                      | 870  | 39k       |

CCD Spectr. Temp.  $-100.4^{\circ}\text{C}$  ..... Dome Temp./Hum.  $+01.1^{\circ}\text{C} / 40.9\%$  ..... Transparency Conditions ... *Fine* ..... 159  
 Focus ..... 6:9.3 .....  
 Spectr. Temp. .... Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp.    | Inst.       | Grating/Tilt | Slit      | Emulsion | P.H.  | Program        | Remarks                                 | Quality |
|-----------|--------|-----------|--------|-------------|--------------|-----------|----------|-------|----------------|---|---------|
| 420       | 5-10"  | 9.8       | F8     | CASS<br>CCD | 1800<br>46.9 | 306 $\mu$ | S184A    | 28 cc | DRL            |   |         |
|           |        |           |        |             |              |           |          | 29    |                |   |         |
| 241       |        | 9.5?      | 40?    |             |              |           |          | 30    | - without comp | before<br>code error<br>ok ok<br>od -30 |         |
|           |        |           |        |             |              |           |          | 31    |                |   |         |
|           |        |           |        |             |              |           |          | 1     |                |   |         |
| 380       |        | "         | "      |             |              |           |          | 5     | Redantia       | 30ci                                    |         |
| 407       |        |           |        |             |              |           |          | 6     |                |   | 420     |
|           |        |           |        |             |              |           |          | 7     |                | CCD T -100.4C 09:20                     |         |
| 445       | 7-8"   |           |        |             |              |           |          | 8     |                | 75/1 S/N                                |         |
| 400       |        |           |        |             |              |           |          | 9     |                |   |         |
|           |        |           |        |             |              |           |          | 10    |                |   |         |
| 265       |        |           |        |             |              |           |          | 11    |                |   |         |
|           |        |           |        |             |              |           |          | 12    |                |   |         |
|           |        |           |        |             |              |           |          | 13    |                |   |         |
| 3.9k      |        | 5.06      | F8IV-L |             |              |           |          | 14    | std vel        |   |         |







162 pg#1

Wed/Thurs.

Date 1997 Apr 2/3..... Observers L.U./T.M.....

Emulsion Batches:

.....  
.....  
.....

| Plate No.               | Object               | R.A.<br>1900                | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison  |      |
|-------------------------|----------------------|-----------------------------|---------------------|-------------------------|-----------------------|-------------------|-------------|-------------|------|
|                         |                      |                             |                     |                         |                       |                   |             | Type/Filter | Exp. |
| CC447 <sup>9/1</sup> 92 | In bound / out bound |                             |                     |                         |                       |                   |             | RA<br>NO3   | 4/8  |
| 93                      | BIAS(4)              |                             |                     | 19 15                   |                       |                   |             | "           | 4s   |
| 94                      | Comp                 |                             |                     |                         |                       |                   |             | "           | 4s   |
| 95                      | HD 66437             | 072916                      | +462403             | 191847                  |                       |                   |             | "           | 238  |
| 96                      | Comp                 |                             |                     |                         |                       |                   |             | "           | 4s   |
| 97                      | Comp                 |                             |                     |                         |                       |                   |             | "           | 4s   |
| 98                      | HD 84441             | 094011                      | +241405             | 192914                  |                       |                   |             | "           | 47s  |
| 99                      | Comp                 |                             |                     |                         |                       |                   |             | "           | 4s   |
| CC44800                 | Comp                 |                             |                     |                         |                       |                   |             | "           | 4s   |
| 01                      | UZ Leo               | <sup>2000</sup><br>10 40 33 | +13 34 00           | 194034                  |                       |                   |             | "           | 900  |
| 02                      | comp                 |                             |                     |                         |                       |                   |             | "           | 4s   |
| 03                      | comp                 |                             |                     |                         |                       |                   |             | "           | 4s   |
| 04                      | XZ Leo               | <sup>2000</sup><br>10 02 34 | 17 02 46            | 20 01 00                |                       |                   |             | "           | 900  |
| 05                      | comp                 |                             |                     |                         |                       |                   |             | "           | 4s   |
| 06                      | BIAS(4)              |                             |                     | 01 18                   |                       |                   |             | "           | 0    |

CO  
Specr. Tem  
Focus...  
Specr. Tem

Exp. Mir

11-11-20  
200 V

698K

7K

530

378

Spectr. Temp. ... 1005 °C

Dome Temp./Hum. 10.6 °C 40.2%

Transparency Conditions ... Mostly clear ... 163

Focus ... 6.85

Spectr. Temp. ....

Dome Temp./Hum. ... 23

390 0 50 1024 4 1 CCHERRY

| Exp. Mtr.          | Seeing | Pl. Mag. | Sp.    | Inst.       | Grating/Tilt   | Slit | Emulsion | P.H. | Program          | Remarks                   | Quality |
|--------------------|--------|----------|--------|-------------|----------------|------|----------|------|------------------|---------------------------|---------|
| no filter<br>1000V |        |          |        | CASS<br>CCD | 1800h<br>46.9° | 306μ | 5184A    | 3/4  |                  |                           |         |
|                    |        |          |        |             |                |      |          | 1    |                  |                           |         |
|                    |        |          |        |             |                |      |          | 5    |                  |                           | 3.3K    |
| 6.85K              | 2.3"   | 5.65     | M0 III |             |                |      |          | 6    | beamline<br>star | sky a bit steamy<br>still | AK      |
|                    |        |          |        |             |                |      |          | 7    |                  |                           | 3K      |
|                    |        |          |        |             |                |      |          | 8    |                  |                           |         |
| 7K                 | 2"     | 2.98     | G1 II  |             |                |      |          | 9    | StdVel           |                           | 7.7K    |
|                    |        |          |        |             |                |      |          | 10   |                  |                           | 3.3K    |
|                    |        |          |        |             |                |      |          | 11   |                  |                           | 35K     |
| 530                |        | 9.8      | F2     |             |                |      |          | 12   | DRL              |                           |         |
|                    |        |          |        |             |                |      |          | 13   |                  |                           |         |
|                    |        |          |        |             |                |      |          | 14   |                  |                           |         |
| 378                |        | 10.6     | A5     |             |                |      |          | 15   | DRL              |                           |         |
|                    |        |          |        |             |                |      |          | 16   |                  |                           |         |
|                    |        |          |        |             |                |      |          | 1    |                  |                           |         |

164 p4 #2 wed / Thurs

Date 1997 Apr 2/3

Observers

Lu / Tn

Emulsion Batches:

.....  
 .....  
 .....

| Plate No. | Object    | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp |
|-----------|-----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-----|
| cc 44807  | Comp      |              | 2000                |                         |                       |                   |             | FeAr<br>ND#3              | 4s  |
| 08        | UZ Leo    | 10 40 33     | 13 34 00            | 20 21 49                |                       |                   |             |                           | 900 |
| 09        | "         | "            | "                   | 20 37 36                |                       |                   |             |                           | 901 |
| 10        | comp      |              |                     |                         |                       |                   |             | "                         | 4s  |
| 11        | UZ Leo    | "            | "                   | 20 55 14                |                       |                   |             |                           | 900 |
| 12        | "         | "            | "                   | 21 10 34                |                       |                   |             |                           | 900 |
| 13        | comp      |              |                     |                         |                       |                   |             | "                         | 4s  |
| 14        | UZ Leo    | "            | "                   | 21 27 47                |                       |                   |             |                           | 900 |
| 15        | Comp      |              |                     |                         |                       |                   |             | "                         | 4s  |
| 16        | BIDS(4)   |              |                     | 21 45                   |                       |                   |             |                           |     |
| 17        | Comp      |              |                     |                         |                       |                   |             | "                         | 4s  |
| 18        | NSV 7457  | 16 06 02     | 50 11 12            | 21 53 48                |                       |                   |             |                           | 901 |
| 19        | comp      |              |                     |                         |                       |                   |             | "                         | 4s  |
| 20/27     | FLATS x 8 |              |                     |                         |                       | 0520E             | +50 11      | JUNG<br>ND3               | 8s  |
| 28        | Comp      |              |                     |                         |                       |                   |             | FeAr<br>ND3               | t2  |





CCD Spectr. Temp.  $-100.3^{\circ}\text{C}$

Dome Temp./Hum.  $+08.0^{\circ}\text{C}$  46.9% H

Transparency Conditions ... PART. Cloudy ... 15T

Focus ... 6.85

Spectr. Temp. ....

Dome Temp./Hum.  $+07.6^{\circ}\text{C}$  46.9% H

WSW 10 kms/hr

~ MAX

| Exp. Mtr.   | Seeing | P.W. Mag. | Sp.  | Inst.   | Grating/Tilt  | Slit | Emulsion | P.H. | Program       | Remarks                     | Quality |
|-------------|--------|-----------|------|---------|---------------|------|----------|------|---------------|-----------------------------|---------|
| 123<br>3-9K | 1-2"   | 6.45      | G8Vp | CASSCOB | 1800h<br>4650 | 306u | 5184A    | 30   | std vel       |                             | 3K      |
|             |        |           |      |         |               |      |          | 31   |               |                             | 2.7K    |
|             |        |           |      |         |               |      |          | 1    |               |                             |         |
|             |        | 6.45      | G8Vp |         | Above         | 306u | Slit     |      | Seeing test   | Dome SW, Light WSW wind     |         |
|             |        |           |      |         |               |      |          |      |               | ALT 81°                     |         |
|             |        |           |      |         |               |      |          | 5    |               |                             |         |
| 460         | 2"     | 10.54     | M0   |         |               |      |          | 6    | Vys 560       | (Hazy) ~25/1 S/N<br>For H/w |         |
|             |        |           |      |         |               |      |          | 7    |               |                             | 2.4K    |
|             |        |           |      |         |               |      |          | 8    |               |                             |         |
| 420         | 2.4"   | 9.65      | M2   |         |               |      |          | 9    | Margy std vel |                             |         |
|             |        |           |      |         |               |      |          | 10   |               |                             |         |
|             |        |           |      |         |               |      |          | 11   |               |                             |         |
| 350         | 1-2"   | 11        | M0   |         |               |      |          | 12   | Vys 549       | for KK                      |         |
|             |        |           |      |         |               |      |          | 13   |               |                             |         |

168 pg#4

wed 1 Thurs

Emulsion Batches:

Date 1997 Apr 2/3... Observers L. U. / J. T. n.....

| Plate No. | Object  | R.A.<br>1900 | Declination<br>1900         | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison  |      |
|-----------|---------|--------------|-----------------------------|-------------------------|-----------------------|-------------------|-------------|-------------|------|
|           |         |              |                             |                         |                       |                   |             | Type/Filter | Exp. |
| CC44841   | BIA5(A) |              |                             | 00 20                   |                       |                   |             |             |      |
| 42        | Comp    |              |                             |                         |                       |                   |             | RA<br>NO 3  | 45   |
| 43        | CK Boo  | 14 3503      | <del>2000</del><br>109 0654 | 00 25 03                |                       |                   |             |             | 600  |
| 44        | "       |              |                             | 00 35 27                |                       |                   |             |             | 600  |
| 45        | "       |              |                             | 00 45 54                |                       |                   |             |             | 600  |
| 46        | comp    |              |                             |                         |                       |                   |             | "           | 45   |
| 47        | CK Boo  |              |                             | 00 58 17                |                       |                   |             |             | 720  |
| 48        | "       | "            | "                           | 01 10 43                |                       |                   |             |             | 600  |
| 49        | "       | "            | "                           | 01 21 07                |                       |                   |             |             | 600  |
| 50        | comp    |              |                             |                         |                       |                   |             | "           | 45   |
| 51        | BIA8(4) |              |                             | 01 33                   |                       |                   |             |             |      |
| 52        | CK Boo  | "            | "                           | 01 34 13                |                       |                   |             |             | 600  |
| 53        | "       | "            | "                           | 01 44 44                |                       |                   |             |             | 600  |
| 54        | comp    |              |                             |                         |                       |                   |             | "           | 4    |
| 55        | Comp    |              |                             |                         |                       |                   |             | "           | 4    |

Spectr. Tem

Focus ...

Spectr. Tem

Exp. Mir

568

511

340

394

380

440

560

550



Spectr. Temp.  $-100.5^{\circ}\text{C}$ Dome Temp./Hum.  $+7.2^{\circ}\text{C}/48.7\%$ Transparency Conditions *partly cloudy* 169Focus  $6.85$ 

Spectr. Temp. ....

Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | PV<br>Mag. | Sp. | Inst.       | Grating/<br>Tilt | Slit      | Emulsion | P.H. | Program | Remarks                          | Quality |
|-----------|--------|------------|-----|-------------|------------------|-----------|----------|------|---------|----------------------------------|---------|
|           |        |            |     | CASS<br>CCD | 1800<br>46.9     | 306 $\mu$ |          | 1    |         |                                  |         |
|           |        |            |     |             |                  |           |          | 14   |         |                                  | 3-1A    |
| 600       | 568    | 9.8        | F8  |             |                  |           |          | 15   | DRL     |                                  |         |
| 600       | 511    |            |     |             |                  |           |          | 16   |         |                                  |         |
| 600       | 340    |            |     |             |                  |           |          | 17   |         | through clouds                   |         |
| 45        |        |            |     |             |                  |           |          | 18   |         |                                  |         |
| 700       | 394    |            |     |             |                  |           |          | 19   |         | through clouds                   |         |
| 600       | 380    |            |     |             |                  |           |          | 20   |         |                                  |         |
| 600       | 440    |            |     |             |                  |           |          | 21   |         |                                  |         |
| 45        |        |            |     |             |                  |           |          | 22   |         | CCD T = $-100.6^{\circ}\text{C}$ |         |
|           |        |            |     |             |                  |           |          | 1    |         |                                  |         |
| 600       | 560    | 1-2"       |     |             |                  |           |          | 23   |         |                                  |         |
| 600       | 550    |            |     |             |                  |           |          | 24   |         |                                  |         |
|           |        |            |     |             |                  |           |          | 25   |         |                                  |         |
|           |        |            |     |             |                  |           |          | 25   |         |                                  |         |

p9#5

170

Date 1997 Apr 2/3 ..... Observers L4 / J4 .....

Emulsion Batches:

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.....  
.....

| Plate No. | Object  | R.A.<br>1900             | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. | Exp. Mir |
|-----------|---------|--------------------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|----------|
| CC44856   | V Z Lib | <sup>2000</sup> 15 31 53 | -15 41 06           | 02 00 40                |                       |                   |             |                           | 900  | 260      |
| 57        | "       | "                        | "                   | 02 16 06                |                       |                   |             | FAr                       | 900  | 261      |
| 58        | comp    |                          |                     |                         |                       |                   |             | ND3                       | 4s   |          |
| 59        | VZ Lib  | "                        | "                   | 02 33 42                |                       |                   |             |                           | 902  | 270      |
| 60        | comp    |                          |                     |                         |                       |                   |             | "                         | 4s   |          |
| 61        | BIAS(4) |                          |                     | 02 50                   |                       |                   |             |                           |      |          |
| 62        | comp    |                          |                     |                         |                       |                   |             | "                         | 4s   |          |
| 63        | GR Vir  | <sup>2000</sup> 14 45 20 | -16 44 06           | 02 54 16                |                       |                   |             |                           | 360  | 800      |
| 64        | "       | "                        | "                   | 03 00 36                |                       |                   |             |                           | 360  | 800      |
| 65        | "       | "                        | "                   | 03 06 55                |                       |                   |             |                           | 360  | 840      |
| 66        | "       |                          |                     | 03 13 14                |                       |                   |             |                           | 360  | 830      |
| 67        | "       |                          |                     | 03 19 57                |                       |                   |             |                           | 360  | 825      |
| 68        | "       |                          |                     | 03 26 36                |                       |                   |             |                           | 359  | 780      |
| 69        | Comp    |                          |                     |                         |                       |                   |             | "                         | 4s   | 7        |
| 70        | GR Vir  |                          |                     | 03 35 22                |                       |                   |             |                           | 360  | 780      |

CCD Spectr. Temp. ... -100.8°C

Dome Temp./Hum. ... +6.8°C 49.5%<sup>94</sup>

Transparency Conditions ... mostly clear ... 171

Focus ... 6.85

Spectr. Temp. ....

Dome Temp./Hum. ....

390 0 50 1024 4 1 CCDFAST

| Exp. Mtr.             | Seeing | PA Mag. | Sp. | Inst.       | Grating/Tilt   | Slit | Emulsion | P.H. | Program | Remarks         | Quality |
|-----------------------|--------|---------|-----|-------------|----------------|------|----------|------|---------|-----------------|---------|
| 900<br>NO 5/16<br>260 |        | 10.1    | FS  | CASS<br>CCD | 1800h<br>46.90 | 306u | 5184R    | 26   | DRL     |                 |         |
| 900<br>261            |        |         |     |             |                |      |          | 27   |         |                 |         |
| 4s                    |        |         |     |             |                |      |          | 28   |         |                 |         |
| 900<br>270            |        |         |     |             |                |      |          | 29   |         |                 |         |
| 4s                    |        |         |     |             |                |      |          | 30   |         |                 |         |
| 4s                    |        |         |     |             |                |      |          | 5    |         | CCDT = -100.6°C |         |
| 360<br>810            | 2-3"   | 8.5     | G0  |             |                |      |          | 6    | DRL     | 80/1 S/N        | C80     |
| 360<br>810            |        |         |     |             |                |      |          | 7    |         |                 |         |
| 360<br>840            |        |         |     |             |                |      |          | 8    |         |                 |         |
| 360<br>830            |        |         |     |             |                |      |          | 9    |         |                 |         |
| 360<br>805            |        |         |     |             |                |      |          | 10   |         |                 |         |
| 360<br>780            |        |         |     |             |                |      |          | 11   |         | CCDT = -98.8°C  |         |
| 4s<br>7.              |        |         |     |             |                |      |          | 12   |         | " - 99.4°C      |         |
| 360<br>780            |        |         |     |             |                |      |          | 13   |         |                 |         |

172 pg #6

Date 1997 Apr. 2/3

Observers

Lu / Tn

Emulsion Batches:

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 .....  
 .....

| Plate No. | Object               | R.A.<br>1900               | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. | Exp. Nr |
|-----------|----------------------|----------------------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|---------|
| CC44871   | GR VII               | 14 45 20 <sup>(2000)</sup> | -06 44 06           | 03 41 59                |                       |                   |             |                           | 360  | 740     |
| 72        | "                    | "                          | "                   | 03 48 23                |                       |                   |             |                           | 360  | 790     |
| 73        | "                    | "                          | "                   | 03 54 46                |                       |                   |             |                           | 360  | 766     |
| 74        | "                    | "                          | "                   | 04 01 13                |                       |                   |             |                           | 360  | 740     |
| 75        | Comp                 |                            |                     |                         |                       |                   |             | FEAr<br>NO 3              | 4s   |         |
| 76        | BIAS (4)             |                            |                     | 04 08                   |                       |                   |             |                           |      |         |
| 77        | comp                 |                            |                     |                         |                       |                   |             | "                         | 4s   |         |
| 78        | NSV 7457             | 16 06 02                   | 50 11 12            | 04 15 20                |                       |                   |             |                           | 901  | 780     |
| 79        | comp                 |                            |                     |                         |                       |                   |             | "                         | 4s   |         |
| 80        | NSV 7457             | "                          | "                   | 04 32 24                |                       |                   |             |                           | 900  | 873     |
| 81        | "                    | "                          | "                   | 04 47 52                |                       |                   |             |                           | 984  | 483     |
| 82        | comp                 |                            |                     |                         |                       |                   |             | "                         | 4s   |         |
| 83        | BIAS (4)             |                            |                     | 05 06                   |                       |                   |             |                           | 0s   |         |
| 84/85     | In board / out board |                            |                     |                         |                       | 01 30W            | +50°        | FEAr<br>NO 3              | 4/7  |         |

<sup>CCD</sup>  
 Spectr. Temp.  $\rightarrow 100.1^{\circ}\text{C}$  ..... Dome Temp./Hum.  $46.2^{\circ}\text{C} / 51.4\%$  Transparency Conditions ..... *clear* ..... 173.

Focus ..... 6.85 .....

Spectr. Temp. .... Dome Temp./Hum.  $7.06^{\circ}\text{C} / 45.4\%$

| Exp. Mtr. | Seeing | Plg. Mag. | Sp. | Inst.       | Grating/Tilt | Slit      | Emulsion | P.H. | Program    | Remarks  | Quality |
|-----------|--------|-----------|-----|-------------|--------------|-----------|----------|------|------------|--|---------|
| 360       |        | 8.5       | 60  | CASS<br>CCD | 1800<br>46.9 | 306 $\mu$ | 5184     | 14   | DRL        |  |         |
| 360       |        |           |     |             |              |           |          | 15   |            |  |         |
| 360       |        |           |     |             |              |           |          | 16   |            | CCD T $-100.0^{\circ}\text{C}$   |         |
| 360       | 2-3"   |           |     |             |              |           |          | 17   |            |  |         |
| 360       |        |           |     |             |              |           |          | 18   |            |  | 28K     |
|           |        |           |     |             |              |           |          | 1    |            |  |         |
|           |        |           |     |             |              |           |          | 19   |            |  |         |
| 400       | 2-3"   | 9.5?      | 60? |             |              |           |          | 20   | DRL        | } Topup during these<br>Frames.<br>And disconnected star.<br>Both comparison kept on<br>top of each other. |         |
|           |        |           |     |             |              |           |          | 21   |            |  |         |
|           |        |           |     |             |              |           |          | 22   |            |  |         |
| 900       |        |           |     |             |              |           |          | 23   |            |  |         |
| 900       |        |           |     |             |              |           |          | 24   |            |  |         |
|           |        |           |     |             |              |           |          | 1    |            |  |         |
| 3 4/7     |        |           |     |             |              |           |          | 3/4  | focus test |  |         |

174 pgs

THURS / FRI

Emulsion Batches:

Date 1997 Apr 3/4

Observers Gld / Tn

Gld doing photometry on 24"

| Plate No. | Object               | R. A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|----------------------|---------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| cc4480/87 | In board / out Board |               |                     |                         |                       |                   |             | FeNo<br>ND5               | 4/4  |
| 88        | BIAS(4)              |               |                     | 200033                  |                       |                   |             |                           |      |
| 89        | Comp                 |               |                     |                         |                       |                   |             | "                         | 3s   |
| 90        | HD 73593             | 0840065       | +461105             | 200345                  |                       |                   |             |                           | 108  |
| 91        | Comp                 |               |                     |                         |                       |                   |             | "                         | 3s   |
| 92        | Comp                 |               |                     |                         |                       |                   |             | "                         | 3s   |
| 93        | HD 62504             | 07 8912       | +281604             | 20 3108                 |                       |                   |             |                           |      |
| 94        | Comp                 |               |                     |                         |                       |                   |             | "                         | 3s   |
| 95        | Comp                 |               |                     |                         |                       |                   |             | "                         | 3s   |
| 96        | FF Cnc               | 08 2940       | +17 1702            | 20 5220                 |                       |                   |             |                           | 1569 |
| 97        | Comp                 |               |                     |                         |                       |                   |             | "                         | 3s   |
| 98        | FF Cnc               | "             | "                   | 21 2221                 |                       |                   |             |                           | 1129 |
| 99        | Comp                 |               |                     |                         |                       |                   |             | "                         | 3s   |
| cc44900   | BIAS(4)              |               |                     | 21 43                   |                       |                   |             |                           |      |
| 01        | FF Cnc               | "             | "                   | 21 4445                 |                       |                   |             |                           | 1679 |
| 02        | Comp                 |               |                     |                         |                       |                   |             | "                         | AS   |

Spectr. Tem

Focus...

Spectr. Tem

Exp. Mtr.

10-1/2  
100 V

1.6k

14.8k

250

180

280

Spectr. Temp. .... Dome Temp./Hum. + 7.7°C 72.4%<sup>H</sup> Transparency Conditions ... Hazy, part cloudy ...

Focus ... 6.98 .....

Spectr. Temp. .... Dome Temp./Hum. + 05.4°C 78.0%<sup>H</sup>

CD

405

0.50

1024 41 CCD

| Exp. Mtr. | Secing | Ptg. Mag. | Sp. | Inst.       | Grating/Tilt   | Slit | Emulsion | P.H. | Program  | Remarks                                | Quality |
|-----------|--------|-----------|-----|-------------|----------------|------|----------|------|----------|--|---------|
| 4/4       | 1000 V |           |     | CHSS<br>CCD | 0600h<br>25.00 | 250  | 4113A    | 3/4  |          |  |         |
|           |        |           |     |             |                |      |          | 1    |          |  |         |
| 3s        |        |           |     |             |                |      |          | 5    |          |  | 7.7     |
| 108       | 1.6K   |           |     |             |                |      |          | 6    |          | just normalized and test purpose.      | 10K     |
| 3s        |        |           |     |             |                |      |          | 7    |          |  | 1K      |
| 3s        |        |           |     |             |                |      |          | 11   |          | Telescope Reversed.                    | 7.4K    |
|           | 14.8K  |           |     |             |                |      |          | 12   | std (v)  | 2h2-00 00 24<br>1.5-00 00 18           |         |
| 3s        |        |           |     |             |                |      |          | 13   |          | Had to Reboot Aera. Back home for tel. |         |
| 3s        |        |           |     |             |                |      |          | 14   |          | After comp some cloud.                 | 5.5K    |
| 15.0      | 2.50   | 3.5"      |     |             |                |      |          | 15   | Gld ppm. | 2h2-00 00 24<br>1.5-00 01 24 @ 01 west |         |
| 3s        |        |           |     |             |                |      |          | 16   |          |  | 8K      |
| 11.2      | 180    |           |     |             |                |      |          | 17   |          | cloud ended.                           |         |
| 3s        |        |           |     |             |                |      |          | 18   |          |  |         |
|           |        |           |     |             |                |      |          | 1    |          |  |         |
| 6.7       | 280    | 2.4"      |     |             |                |      |          | 8    |          |  |         |
|           |        |           |     |             |                |      |          | 9    |          |  |         |

(- 25/1 S/N)

176  
pg#2

Emulsion Batches:

Date 1997 Apr 3/4..... Observers Gld.../In... &amp;... mki helping

| Plate No. | Object    | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|-----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CC44903   | FF Cnc    | 08 2940      | +171702             | 22 1458                 |                       |                   |             |                           | 1800 |
| CC44904   | Comp      |              |                     | 22 4726                 |                       |                   |             | FeNe<br>ND5               | 3s   |
| 5         | FF Cnc    |              |                     | 22 4914                 |                       |                   |             |                           | 1804 |
| 6         | Comp      |              |                     |                         |                       |                   |             | "                         | 3s   |
| 7         | FF Cnc    |              |                     | 23 2114                 |                       |                   |             |                           | 1769 |
| 8         | Comp      |              |                     |                         |                       |                   |             | "                         | 3s   |
| 9         | FF Cnc    |              |                     | 23 5251                 |                       |                   |             |                           | 1865 |
| 10        | Comp      |              |                     |                         |                       |                   |             | "                         | 3s   |
| 11        | B7HS (4)  |              |                     | 00 24                   |                       |                   |             |                           |      |
| 12        | FF Cnc    |              |                     | 00 2614                 |                       |                   |             |                           | 2600 |
| 13/19     | Comp      | FLATS x 7    |                     |                         |                       | 04W               | +62°        | TUNG<br>ND2               | 11s  |
| 20        | Comp      |              | 1900                |                         |                       |                   |             | edge<br>ND5               | 3s   |
| 21        | HD 44 579 | 16 0130      | +139 2400           | 01 3333                 |                       |                   |             |                           | 128  |
| 22        | Comp      |              |                     |                         |                       |                   |             |                           |      |
| 23        | B7HS (4)  |              |                     | 01 37                   |                       |                   |             |                           |      |



Spectr. Temp. .... Dome Temp./Hum.  $105.4^{\circ}\text{C}$   $77.9\%$  Transparency Conditions *part cloudy* ..... 177.

Focus ..... 6.98 .....

Spectr. Temp. .... Dome Temp./Hum. ....

*ca*

*405 050 1024 9 1 CCD FMT*

| Exp. Mtr.   | Seeing           | Fig. Mag.   | Sp.             | Inst.                     | Grating/Tilt            | Slit                       | Emulsion     | P.H.      | Program        | Remarks                              | Quality     |
|-------------|------------------|-------------|-----------------|---------------------------|-------------------------|----------------------------|--------------|-----------|----------------|--------------------------------------|-------------|
| <i>1800</i> | <i>no filter</i> | <i>2-4"</i> | <i>10.6</i>     | <i>CASS CCD</i>           | <i>600/n<br/>25.00°</i> | <i>250<math>\mu</math></i> | <i>4113A</i> | <i>10</i> | <i>Gld pgm</i> |                                      |             |
| <i>35</i>   | <i>300</i>       |             |                 | <i>Tegring</i> $\nearrow$ |                         |                            |              | <i>11</i> |                | <i>30/1 S/H</i>                      | <i>8.3K</i> |
| <i>1804</i> | <i>280</i>       | <i>3-4"</i> |                 |                           |                         |                            |              | <i>12</i> |                |                                      |             |
| <i>35</i>   |                  |             |                 |                           |                         |                            |              | <i>13</i> |                |                                      |             |
| <i>1769</i> | <i>250</i>       | <i>3-5"</i> |                 |                           |                         |                            |              | <i>14</i> |                |                                      |             |
| <i>35</i>   |                  |             |                 |                           |                         |                            |              | <i>15</i> |                |                                      |             |
| <i>1845</i> | <i>217</i>       |             |                 |                           |                         |                            |              | <i>16</i> |                |                                      |             |
| <i>35</i>   |                  |             |                 |                           |                         |                            |              | <i>17</i> |                |                                      |             |
|             |                  |             |                 |                           |                         |                            |              | <i>1</i>  |                |                                      |             |
| <i>1800</i> | <i>256</i>       | <i>4-5"</i> |                 |                           |                         |                            |              | <i>18</i> |                |                                      |             |
| <i>35</i>   |                  |             |                 |                           |                         |                            |              | <i>19</i> |                | <i>Rack failed to go to °C posn.</i> |             |
| <i>35</i>   |                  |             |                 |                           |                         |                            |              | <i>20</i> |                |                                      | <i>8.3K</i> |
| <i>1800</i> | <i>112K</i>      | <i>4"</i>   | <i>6.66 dGS</i> |                           |                         |                            |              | <i>21</i> | <i>stlbel</i>  | <i>Tel westside now</i>              | <i>800</i>  |
|             |                  |             |                 |                           |                         |                            |              | <i>22</i> |                | <i>ud -00 0002</i>                   |             |
|             |                  |             |                 |                           |                         |                            |              | <i>1</i>  |                | <i>BS 100 00 42 <u>2E</u></i>        |             |

178. pg#3

Emulsion Batches:

Date 1997 Apr 3/4.... Observers Gld./Tn.....

| Plate No.      | Object                     | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter             | Exp.  |
|----------------|----------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------------------|-------|
| CC44924        | Comp                       |              |                     |                         |                       |                   |             | no filters rear<br>for border sep NDS | 45    |
| 25             | HD 144579                  | 16 0130      | +392400             | 015405                  |                       |                   |             |                                       | 179   |
| 26             | Comp                       |              |                     |                         |                       |                   |             | rear<br>NDS                           | 45    |
| 27             | BIAS(4)                    |              |                     | 01459                   |                       |                   |             |                                       |       |
| 28             | Comp                       |              |                     |                         |                       |                   |             |                                       | +     |
| 29             | S92 in NGC 6819            | 19 41 03     | +40 11 00           | 021705                  |                       |                   |             |                                       | 3201s |
| 30             | Comp                       |              |                     |                         |                       |                   |             | "                                     | +     |
| 31/36          | FLATS x 6                  |              |                     |                         |                       |                   |             | TUNG<br>NDS                           | 3s    |
| 37             | BIAS(4)                    |              |                     | 031737                  |                       |                   |             |                                       |       |
| <del>38</del>  | <del>S92 in NGC 6819</del> | "            | "                   | 034510                  |                       |                   |             |                                       | 120s  |
| CD00532) 38    | S92 in NGC 6819            | "            | "                   | 3 47 28                 |                       |                   |             |                                       | 120s  |
| CD00533) 39    | "                          | "            | "                   | 3 49 56                 |                       |                   |             |                                       | "     |
| CD00534) 40/41 | "                          |              |                     | 5 55 18                 |                       |                   |             |                                       | "     |
| 5.36/37) 42/43 | "                          |              |                     |                         |                       |                   |             |                                       | 120   |
| 5.38/47) 44/53 | "                          |              |                     |                         |                       |                   |             |                                       | 120   |

Spectr. Tem

Focus...6

Spectr. Tem

Exp. Mir

No. bits

14K

46

Spectr. Temp. .... Dome Temp./Hum.  $+1031^{\circ}C$   $67/84$  Transparency Conditions *Fine* ..... (79)

Focus ...  $6.90$  .....

*Topup by 0150*

Spectr. Temp. .... Dome Temp./Hum. ....  $C2$

$370$   $0.50$   $1624$   $4$   $1$  CCD *Faint*

| Exp. Mtr.        | Seeing | Mag.  | Sp.    | Inst.                | Grating/<br>Tilt | Slit      | Emulsion | P.H. | Program            | Remarks                                    | Quality |
|------------------|--------|-------|--------|----------------------|------------------|-----------|----------|------|--------------------|--|---------|
| <i>No filter</i> |        |       |        | <i>CMS</i>           | $1200/1$         | $306\mu$  | $6473A$  | 5    |                    |  | 4K      |
| $1.4K$           |        | $666$ | $d68$  | <i>Tgrating</i> →    | $41.620$         |           |          | 6    | <i>std vel</i>     |  | 3.8K    |
|                  |        |       |        |                      |                  |           |          | 7    |                    |  | 5K      |
|                  |        |       |        |                      |                  |           |          | 8    |                    |  | 3.4K    |
| $146.$           |        | $2''$ | $15.1$ |                      |                  |           |          | 9    |                    | <i>AIR MASS 1.5</i>                        |         |
|                  |        |       |        |                      |                  |           |          | 10   | <i>used nearby</i> | <i>Field positively identified</i>         |         |
|                  |        |       |        |                      |                  |           |          | 11   | <i>on with</i>     | <i>16th mag star to guide</i>              |         |
|                  |        |       |        |                      |                  |           |          |      |                    | <i>500 <del>ms</del> ms in integration</i> | 9K      |
|                  |        |       |        |                      |                  |           |          | 1    |                    |  |         |
|                  |        |       |        | <i>Tgrating 1800</i> | <i>opt flint</i> | $B6$      |          | 3ci  |                    | <b>OVERWRITTEN</b>                         |         |
|                  |        |       |        |                      |                  | $39\mu H$ |          | 1ci  |                    |  |         |
|                  |        |       |        |                      |                  |           |          | 3ci  |                    |  |         |
|                  |        |       |        |                      |                  |           |          | 4ci  |                    |  |         |
|                  |        |       |        |                      |                  |           |          | 4    |                    |  |         |
|                  |        |       |        |                      |                  |           |          | 4    |                    |  |         |

180 II 4

Emulsion Batches:

Date 1997 Apr 3/4... Observers Gld. ITa.....

| Plate No.                                    | Object          | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|--|-----------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| <del>CD00548</del><br>CC44954                | B/AS(4)         |              | 2000                | 042839                  |                       |                   |             |                           |      |
| CD00549                                      | 55 S 92 NGC6819 |              |                     | 043102                  |                       |                   |             |                           | 120  |
| CD00550<br>To 59                             | 56/65 "         | 194103       | 401100              |                         |                       |                   |             | 10x                       | 120  |
| 60/62  | 66/68 "         | "            | "                   | 045807                  |                       |                   |             | 3x                        | 120  |
| 63/65  | 69/71 "         | "            | "                   | 050509                  |                       |                   |             | 3x                        | 120  |
| 66/67  | 72/73 FLATS     |              |                     |                         |                       |                   |             |                           | 30s  |
| 68/70  | 74/76 FLATS     | 1856         | +33°                |                         |                       |                   |             |                           | 24s  |
| 71/72  | 78 B/AS(4) x2   |              |                     | 0528                    |                       |                   |             |                           |      |
| Renumbered to CD series now.                 |                 |              |                     |                         |                       |                   |             |                           |      |
| They are now CD00532-CD00572.fts In Apr 8/97 |                 |              |                     |                         |                       |                   |             |                           |      |

Spectr. Temp. <sup>60</sup> -101.6 °C Dome Temp./Hum. +02.3°C 69% H Transparency Conditions Fine 187

Focus 6.90

Spectr. Temp. - °C Dome Temp./Hum. +02.2°C 69% H

CCD FWT for imaging

376 780 220 220 1 1

| Exp. Mtr. | Seeing | Pg. Mag. | Sp.                  | Inst. | Grating/Tilt | Slit | Emulsion | P.H.           | Program         | Remarks              | Quality |
|-----------|--------|----------|----------------------|-------|--------------|------|----------|----------------|-----------------|----------------------|---------|
|           |        |          |                      | CASS  | optical      | BG39 |          | 1              |                 |                      |         |
|           | -15    |          | Tyrating 18:00°      |       | FLAT         |      |          | 5              |                 |                      |         |
|           |        |          | Direct Imaging       |       |              |      |          | 6              | Gld photometry  | Aia mass 1.10        |         |
|           | 12"    |          | Focus improved first |       |              |      |          | 7              | very nice ones. | Repeat phot. but x 3 |         |
|           |        |          |                      |       |              |      |          | 8              |                 |                      |         |
|           |        |          |                      |       |              |      |          | 9              |                 |                      | 94K     |
|           |        |          |                      |       |              |      |          | <del>9</del> 9 |                 |                      | 12K     |
|           |        |          |                      |       |              |      |          | 1              |                 |                      |         |

182 p9 B1

Fri / Sat

Emulsion Batches:

Date 1997 Apr 4/5 Observers ..r.G./Tn.....

| Plate No.                           | Object              | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-------------------------------------|---------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CC449 <sup>79</sup> / <sub>80</sub> | Inboard / out BOARD |              |                     |                         |                       | 0 18E             | +43°        | Red ND 2                  | 8/13 |
| 81                                  | BIAS(4)             |              |                     | 00 33                   |                       |                   |             | "                         | 4s   |
| 82                                  | Comp                |              |                     | <del>19 3631</del>      |                       |                   |             | "                         | 4s   |
| 83                                  | HD 70272            | 08 15 59     |                     | 19 3631                 |                       |                   |             |                           | 242  |
| 84                                  | Comp                |              |                     |                         |                       |                   |             | "                         | 4s   |
| 85                                  | Comp                |              |                     |                         |                       |                   |             | "                         | 4s   |
| 86                                  | HD 47105            | 06 31 56     | +16 29 05           | 19 47 49                |                       |                   |             |                           | 235  |
| 87                                  | "                   | "            | "                   | 19 53 07                |                       |                   |             |                           | 337  |
| 88                                  | "                   | "            | "                   | 19 59 07                |                       |                   |             | "                         | 280  |
| 89                                  | Comp                |              |                     |                         |                       |                   |             | "                         | 4    |
| 90                                  | Comp                |              |                     |                         |                       |                   |             | "                         | 4s   |
| 91                                  | HD 34578            | 05 13 25     | +33 51 13           | 20 14 05                |                       |                   |             |                           | 592  |
| 92                                  | Comp                |              |                     |                         |                       |                   |             |                           | 4s   |
| 93                                  | BIAS(4)             |              |                     | 20 27                   |                       |                   |             |                           |      |
| 94/98                               | FLATS x 5           |              |                     | 20 44                   |                       | 3 46W             | +34         | TUNG ND 1                 | 110  |
| 99                                  | BIAS(4)             |              |                     | 21                      |                       |                   |             |                           |      |

CCD Spectr. Temp.  $-100.7^{\circ}\text{C}$  Dome Temp./Hum.  $+9.4^{\circ}\text{C}$  5438H Transparency Conditions *PART Cloudy* 183

Focus  $6.84$

Spectr. Temp. ..... Dome Temp./Hum.  $+09.10^{\circ}\text{C}$  528H  
 400 0 260 1024 1 1 CCD FMT

| Exp. Mtr.             | Seeing  | Ptg. Mag. | Sp.           | Inst. | Grating/Tilt                        | Slit | Emulsion | P.H. | Program          | Remarks   | Quality   |
|-----------------------|---------|-----------|---------------|-------|-------------------------------------|------|----------|------|------------------|---|-----------|
| 8/13<br>B639<br>1000V |         |           |               |       | 1800h<br>grating $\Rightarrow$ 4250 | 306  | 4463A    | 3/4  | focus test       |   |           |
|                       |         |           |               |       |                                     |      |          | 1    |                  |   |           |
|                       |         |           |               |       |                                     |      |          | 5    |                  |   |           |
| 401K                  | 1-2'    | V<br>4.25 | KA.5 III-IIIb |       |                                     |      |          | 6    | no normalization | no tracking<br>store. <i>MAR</i>                  | 60<br>800 |
|                       |         |           |               |       |                                     |      |          | 7    |                  |   | 5.5K      |
|                       |         |           |               |       |                                     |      |          | 8    |                  |   |           |
| 82.8K                 | 1-2'    | B<br>1.93 | A1 IVs        |       |                                     |      |          | 9    | 16 ppm           | TRAILED? much                                     | 5K        |
| 93K                   |         | 1.93      | A1 IVs        |       |                                     |      |          | 10   |                  | " "   | 4K        |
| 45K                   |         | "         | "             |       |                                     |      |          | 11   |                  | cloud, trail end                                  |           |
|                       |         |           |               |       |                                     |      |          | 12   | cs Limit         | no sky light seen<br>ie no mercury vapor<br>lines |           |
|                       |         |           |               |       |                                     |      |          | 5    |                  |   | 5K        |
| 2.6K                  | 1-3"    | B<br>530  | A5 II         |       |                                     |      |          | 8    | 16 ppm           |   |           |
|                       |         |           |               |       |                                     |      |          | 5    |                  |   | 4K        |
|                       |         |           |               |       |                                     |      |          | 1    |                  |   |           |
| IND                   | #1 used |           |               |       |                                     |      |          | 3    |                  |   | 11K       |

[750/1 S/N]





CCD  
Spectr. Temp. ... -100.5°C

Dome Temp./Hum. ... +8.0°C 54.5% H

Transparency Conditions ... Part clear, Hazy 185

Focus ... 6.84

Spectr. Temp. ... Dome Temp./Hum. ...

400 6 206 1024 1 1 CCD/FATT

| Exp. Mtr.  | Seeing | Mag.      | Sp.               | Inst.       | Grating/<br>Tilt | Slit | Emulsion | P.H. | Program | Remarks                        | Quality |
|------------|--------|-----------|-------------------|-------------|------------------|------|----------|------|---------|--------------------------------|---------|
| 110 F. Tel |        | B         |                   | C455<br>CCO | 1800M<br>425D    | 306u | 4A63A    | 8    |         | 44740 Row 459                  |         |
| 21.8K      | 2"     | 3.49<br>B | A0 I <sub>b</sub> |             |                  |      |          | 6    | 15 p/m  | 7300/1 S/N                     |         |
| 14.4K      |        | 3.49<br>B | A0 I <sub>b</sub> |             |                  |      |          | 7    |         | ~250/1 S/N<br>increasing cloud | 1K      |
| 212K       |        |           |                   |             |                  |      |          | 8    |         | 2250/1 S/N                     |         |
| 132K       |        |           |                   |             |                  |      |          | 7    |         |                                |         |
|            |        |           |                   |             |                  |      |          | 5    |         |                                |         |
|            |        |           |                   |             |                  |      |          | 1    |         |                                |         |

186

SUN / MON

Emulsion Batches:

Date 1997 Apr 6/7... Observers [Vys] p.m. T.n.....

| Plate No.             | Object           | R. A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------------------|------------------|---------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CC4500 <sup>7/8</sup> | Inboard/OutBOARD |               | HEATMANN            |                         |                       |                   |             | Gene<br>ND5               | 4/3  |
| 9                     | Comp             |               |                     |                         |                       |                   |             | ND5                       | 3s   |
| 10                    | HD115004         | 13 0911       | 440 4057            | 001312                  |                       |                   |             |                           | 133  |
| 11                    | Comp             |               |                     |                         |                       |                   |             | "                         | 3s   |
| 12                    | Comp             |               |                     |                         |                       |                   |             | "                         | 3s   |
| 13                    | BD-02 3000       | 094810        | -031304             | 002155                  |                       |                   |             |                           | 966  |
| 14                    | Comp             |               |                     |                         |                       |                   |             | "                         | 3s   |
| 15                    | Comp             |               |                     |                         |                       |                   |             | "                         | 3s   |
| 16                    | BD+01 2447       | 10 23 49      | 401 21 36           | 00 43 33                |                       |                   |             |                           | 1187 |
| 17                    | Comp             |               |                     |                         |                       |                   |             | "                         | 3s   |
| 18                    | BIAS (4)         |               |                     | 0106                    |                       |                   |             |                           |      |
| 19/23                 | FLATS x 5        |               |                     |                         |                       | 00                | -10°        | JUNG<br>ND 4              | 11s  |
| 24                    | BIAS (4)         |               |                     | 0120                    |                       |                   |             |                           |      |

NO - Brighten star nearby  
 ↓ edot.

CCD Spectr. Temp. -10.5 °C

Dome Temp./Hum. +11.0°C 50% H

Transparency Conditions PARTIAL CLEARING 187

Focus 6.75

90c gain

still very yucky SW

Spectr. Temp. ....

Dome Temp./Hum. ....

390 0 50 1024 4 1 CCD FINT

| Exp. Mtr.                    | Seeing | Flt. Mag. | Sp.   | Inst.              | Grating/Tilt    | Slit | Emulsion                 | P.H.        | Program                 | Remarks  | Quality   |
|------------------------------|--------|-----------|-------|--------------------|-----------------|------|--------------------------|-------------|-------------------------|--|-----------|
| B6<br>39 F. Ken<br>still in. |        |           |       | CASSCO<br>Tgrating | 1800/1m<br>4756 | 306u | 5298A<br>@Kaw512<br>± LA | 3/4<br>5    | focus test.             |  |           |
| 1.4K                         | 6"     | 492       | KO111 |                    |                 |      |                          | 6<br>7      | no amplification & test |  | 2K<br>64K |
| <del>1.4K</del>              |        |           |       |                    |                 |      |                          | 8           | readout                 | Yes, it's wrong step!                                      |           |
| 100                          | 4-10"  | M/D       |       |                    |                 |      |                          | 6<br>7      | Vys 560!                | maybe Brightsee vid step<br>Δ 2 -00 00 21<br>Δ 5 -00 05 03 | 6K        |
| 110 F. Ken                   |        |           |       |                    |                 |      |                          | 9           |                         |  | 55K       |
| 500                          | 5-14"  | 9.65      | M2    |                    |                 |      |                          | 10<br>11    | Marsy Std               | Δ 2 -00 00 16<br>Δ 5 -00 01 33                             |           |
|                              |        |           |       |                    |                 |      |                          | 1<br>2<br>1 |                         |  | 155K      |

188

Tues/Wed

pg#1

Date 1997 Apr 8/9 Observers [Gid]/T.M.K./T.M.

Emulsion Batches:

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| Plate No.              | Object           | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End                  | Declination                       | Comparison   |      |
|------------------------|------------------|--------------|---------------------|-------------------------|-----------------------|------------------------------------|-----------------------------------|--------------|------|
|                        |                  |              |                     |                         |                       |                                    |                                   | Type/Filter  | Exp. |
| CC450 <sup>25/26</sup> | Inboard/outboard | Bourp        | Hurtmann            |                         |                       |                                    | no order separation<br>Filter Vet | FeAr<br>ND 4 | 5/5  |
| 27                     | Comp             |              |                     |                         |                       |                                    |                                   | ND 5         | 4    |
| 28                     | HD 115604        | 13 1304      | +41 0557            | 00 3050                 |                       |                                    |                                   |              | 345  |
| 29                     | Comp             |              |                     |                         |                       |                                    |                                   |              | 4    |
| 30                     | B/H/S (4)        |              |                     | 00 3354                 |                       |                                    |                                   |              |      |
| 31                     | Comp             |              |                     |                         |                       |                                    | OG 560 in<br>Source beam          | FeAr<br>ND 5 | 4 s  |
| 32                     | HD 171232        | 18 2830      | +25 2500            | 00 58 48                |                       | No order sep                       | filter for stellar                |              | 3/4  |
| 33                     | Comp             |              |                     |                         |                       |                                    |                                   |              | 4 s  |
| 34                     | HD 171232        | "            | "                   | 01 11 02                |                       | GG 385 order sep                   | for stellar                       |              | 757  |
| 35                     | Comp             |              |                     |                         |                       |                                    |                                   |              | 4 s  |
| 36                     | B/H/S (4)        |              |                     | 01 26 16                |                       |                                    |                                   |              |      |
| 37                     | Comp             |              |                     |                         |                       |                                    |                                   | "            | 4 s  |
| 38                     | S92 NGC 6819     | 19 41 03     | +10 11 00           | 01 42 33                |                       | No order separation<br>for stellar |                                   |              | 3600 |
| 39                     | Comp             |              |                     |                         |                       |                                    |                                   | "            | 4 s  |
| 40                     | B/H/S (4)        |              |                     | 02 45                   |                       |                                    |                                   |              |      |

<sup>CCD</sup>  
 Spectr. Temp. ....  $-100.5^{\circ}\text{C}$  Dome Temp./Hum. ....  $-5.5^{\circ}\text{C}$   $50\% \text{H}$  Transparency Conditions ... Clearing by OEST

Focus  $7.00$

Spectr. Temp. .... Dome Temp./Hum. ....  $-0.7^{\circ}\text{C}$   $50\% \text{H}$

370 0 50 1024 41 CCD FMT

189

| Exp. Mtr.             | Seeing | Ap. Mag. | Sp.    | Inst.            | Grating/Tilt    | Slit | Emulsion | P.H. | Program                 | Remarks   | Quality |
|-----------------------|--------|----------|--------|------------------|-----------------|------|----------|------|-------------------------|---|---------|
| 5/5<br>1000V          |        |          |        | 1200<br>CASS CCD | 1200/n<br>41.62 | 306a | 6473A    | 3/4  | focus                   | $T = -5.5^{\circ}\text{C}$  |         |
| 4                     |        |          |        |                  |                 |      |          | 5    |                         |   | 5K      |
| 3/5<br>1000           |        | 4.73     | F3 III |                  |                 |      |          | 6    | Just normalization star |   |         |
| 4                     |        |          |        |                  |                 |      |          | 7    |                         |   |         |
|                       |        |          |        |                  |                 |      |          | 1    |                         |   |         |
| 48<br>5/4<br>1.3K     | 5"     | 7.73     | G8 III |                  |                 |      |          | 8    |                         | no difference noted<br>between comp with<br>w/ w/ without filter. | 2.8K    |
|                       |        |          |        |                  |                 |      |          | 9    | std vel                 |   |         |
|                       |        |          |        |                  |                 |      |          | 10   |                         |   |         |
| 7/7<br>1.7K           | 4"     | 7.73     | G8 III |                  |                 |      |          | 11   | std vel                 | with f. lens  |         |
|                       |        |          |        |                  |                 |      |          | 12   |                         |   |         |
|                       |        |          |        |                  |                 |      |          | 1    |                         |   |         |
|                       |        |          |        |                  |                 |      |          | 13   |                         | sd +00 00 06<br>65-00 00 24                                       | 4.3K    |
| 3/2<br>1.87 (sky) bad |        | ~15.1    |        |                  |                 |      |          | 14   | Std fgm                 | Again, guiding using faint<br>nearby star to SW<br>6" arc         |         |
|                       |        |          |        |                  |                 |      |          | 15   |                         |   |         |
|                       |        |          |        |                  |                 |      |          | 1    |                         |   |         |

190  
1947

Tues/Wed

Date ... Apr 8/9 ... Observers [Gid]/mtk/ta...

Emulsion Batches:

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| Plate No. | Object      | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination                       | Comparison<br>Type/Filter | Exp. |
|-----------|-------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-----------------------------------|---------------------------|------|
| CC45041   | S92 NGC6819 | 19 41 03     | +40 11 8            | 02 48 59                |                       |                   | 06580                             | 3606                      |      |
| 42        | Comp        |              |                     |                         |                       |                   | FOR Comparison                    | 4s                        |      |
| 43        | BIAS (4)    |              |                     | 03 51 05                |                       |                   |                                   |                           |      |
| 44        | S92 NGC6819 | "            | "                   | 03 58 00                |                       |                   |                                   | 2065                      |      |
| 43        | Comp        |              |                     |                         |                       |                   | "                                 | 4s                        |      |
| 45        | Comp        |              |                     |                         |                       |                   | "                                 | 4s                        |      |
| 46        | HD 187235   | 19 43 55     | +38 09 36           | 04 35 35                |                       |                   |                                   | 304                       |      |
| 47        | Comp        |              |                     |                         |                       |                   | "                                 | 4s                        |      |
| 48        | BIAS (4)    |              |                     | 04 42                   |                       |                   |                                   |                           |      |
| 49/5A     | FLATS x 6   |              |                     |                         |                       |                   | 06580 filter removed<br>02 E +21° | TUNGS<br>NO 5 4s          |      |

Spectr. Ten

Focus ...

Spectr. Ten

Exp. Mtr.

As f. 1/10

174

44k

Spectr. Temp. .... Dome Temp./Hum.  $-080^{\circ}C$  566% H Transparency Conditions ... Fine - sl haze

Focus ..... 7.00 .....

Increasing cloud. 191

Spectr. Temp.  $-$  .....  $^{\circ}C$  .....

Dome Temp./Hum.  $-084^{\circ}C$  506% H 370 0 50 1024 4 1 CCD FWH

| Exp. Mtr.                | Seeing | Ptg/<br>Mag. | Sp.                   | Inst.       | Grating/<br>Tilt | Slit | Emulsion | P.H. | Program       | Remarks  | Quality |
|--------------------------|--------|--------------|-----------------------|-------------|------------------|------|----------|------|---------------|--|---------|
| 3006<br>no filter<br>174 | 3"     | 151          |                       | CXSS<br>CCD | 1200m            | 300u | 6473A    | 16c  | Gld pyg       | [ ~15/1 S/N<br>mainly 4 columns @ 20ADU<br>Above sky level ] |         |
|                          |        |              |                       |             |                  |      |          | 17   |               |  |         |
|                          |        |              |                       |             |                  |      |          | 18   |               | some thin cloud  |         |
|                          |        |              |                       |             |                  |      |          | 19   |               |  | 3.5K    |
|                          |        |              |                       |             |                  |      |          | 20   |               |  |         |
| 304<br>4.4K              | 4"     | 5.77         | V<br>BSI <sub>1</sub> |             |                  |      |          | 21   | Telluric std. |  | 3K      |
|                          |        |              |                       |             |                  |      |          | 22   |               |  |         |
|                          |        |              |                       |             |                  |      |          | 1    |               |  |         |
|                          |        |              |                       |             |                  |      |          | 2    |               |  | 3K      |





CCD Spectr. Temp.  $-100.5^{\circ}\text{C}$

Dome Temp./Hum.  $+01.8^{\circ}\text{C}$   $66\% \text{H}$

Transparency Conditions *Clearing on time*

Focus  $6.86$

193

CCD Spectr. Temp.  $-100.4^{\circ}\text{C}$

Dome Temp./Hum. ....

| Exp. Mtr.         | Seeing | P <sub>2</sub> Mag. | Sp.             | Inst.                  | Grating/Tilt   | Slit | Emulsion                | P.H.          | Program            | Remarks | Quality         |
|-------------------|--------|---------------------|-----------------|------------------------|----------------|------|-------------------------|---------------|--------------------|---------|-----------------|
| no filter<br>100V | T+     | 1.8 <sup>0</sup>    |                 | CLASS CCD<br>Teprating | 1800/n<br>5480 | 306u | 6404<br>A 512<br>I 1.5N | 3/4<br>1      | focus              |         |                 |
|                   |        |                     |                 |                        |                |      |                         | 5             |                    |         | 5.7K            |
| 1.6K              |        | 5.32                | B8 III          | pMn                    |                |      |                         | 6             | normalization star |         | 1K              |
|                   |        |                     |                 |                        |                |      |                         | 7             |                    |         | 5.8K            |
| 3.2K              | 4-6    | 7.9<br>-8.8         | F6-G1           |                        |                |      |                         | 8             | Rm pgn centered    | HW Per  | 3.5K            |
|                   |        |                     |                 |                        |                |      |                         | 9             |                    |         | <del>5.8K</del> |
|                   |        |                     |                 |                        |                |      |                         | 10            | Rm pgn centered    |         |                 |
|                   |        |                     |                 |                        |                |      |                         | 11            |                    |         | 5.7K            |
| 4.2K              | 3-5    | B<br>6.5<br>8.0     | F7Iab<br>-K1Iab |                        |                |      |                         | 12            | Rm pgn             | T mon   |                 |
|                   |        |                     |                 |                        |                |      |                         | 13            |                    |         |                 |
|                   |        |                     |                 |                        |                |      |                         | 1             |                    |         |                 |
|                   |        |                     |                 |                        |                |      |                         | 14            |                    |         |                 |
| 6.5K              |        | 2.98                | G1 II           |                        |                |      |                         | 15            | std vel            |         | 7.8K            |
|                   |        |                     |                 |                        |                |      |                         | <del>16</del> |                    |         |                 |
|                   |        |                     |                 |                        |                |      |                         | 16            |                    |         |                 |



Spectr. Temp. .... Dome Temp./Hum.  $+1.5^{\circ}C$  65.23/4 Transparency Conditions .... Fine ..... 195

Focus .... 6.86 .....

Comet nice too

Spectr. Temp. .... Dome Temp./Hum.  $+0.11^{\circ}C$  63.63/4  
 CD 380 0.56 1024 41 CCD Faint

| Expansion<br>Factor<br>Exp | Exp. Mtr. | Seeing | P <sub>v</sub><br>Mag. | Sp.    | Inst.       | Grating/<br>Tilt | Slit             | Emission              | P.H. | Program | Remarks   | Quality |
|----------------------------|-----------|--------|------------------------|--------|-------------|------------------|------------------|-----------------------|------|---------|---|---------|
| 24<br>3                    | 10K       |        | 1.14                   | KOIIIb | CASS<br>CCD | 1800/4<br>54.80  | 306 <sub>u</sub> | 6467A                 | 17c  |         |   | 8K      |
| 4<br>3                     |           |        |                        |        |             |                  |                  |                       | 18   |         |   |         |
| 4<br>3                     |           |        |                        |        |             |                  |                  |                       | 19   |         |   | 6.3K    |
| 36<br>4<br>3               | 6K        |        | 2.98                   | G1 II  |             |                  |                  |                       | 20   | std vel | Repat   |         |
|                            |           |        |                        |        |             |                  |                  |                       | 21   |         |   |         |
|                            |           |        |                        |        |             |                  |                  |                       | 21   |         |   | 12K     |
|                            |           |        |                        |        |             |                  |                  |                       | 1    |         |   |         |
| 3<br>3                     |           |        |                        |        | CASS<br>CCD | 1800/4<br>47.56  | 306 <sub>u</sub> | 5298A                 | 5    |         | st. N 380 0.56 1024 41<br>CCD Faint                         |         |
| 42<br>3<br>3               | 6.8K      |        | 2.98                   | G1 II  |             |                  |                  | $\pm 1A$<br>@ Res 512 | 6    | std vel |   | 8K      |
|                            |           |        |                        |        |             |                  |                  |                       | 7    |         |   |         |
|                            |           |        |                        |        |             |                  |                  |                       | 8    |         | on the spot estimate  |         |
| 14<br>3                    | 5.20      | 3-5"   | 10.54                  | M10    |             |                  |                  |                       | 9    | Vgs 560 | J. say find vel ~ $+22.9$<br>in) Field data<br>for Hlw Fine | 4.3K    |
|                            |           |        |                        |        |             |                  |                  |                       | 10   |         |   | 4.9K    |
|                            |           |        |                        |        |             |                  |                  |                       | 1    |         |   |         |
|                            |           |        |                        |        |             |                  |                  |                       | 11   |         |   |         |

196

py#3 Sun/Mon

Emulsion Batches:

Date ... 1947 Apr 13/14 ... Observers [Vya] J. T. ....

| Plate No. | Object       | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp  |
|-----------|--------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CC45092   | BD+012447    | 10 2349      | +012136             | 220844                  |                       |                   |             |                           | 1261 |
| 93        | Comp         |              |                     |                         |                       |                   |             | FeNe<br>ND5               | 3s   |
| 94        | Comp         |              |                     |                         |                       |                   |             | "                         | 3s   |
| 95        | AC+3828746   | 093007       | +375838             | 223646                  |                       |                   |             |                           | 3184 |
| 96        | Comp         |              |                     |                         |                       |                   |             | "                         | 3s   |
| 97        | BIAS(4)      |              |                     | 2331                    |                       |                   |             |                           | "    |
| 98        | Comp         |              |                     |                         |                       |                   |             | "                         | 3    |
| 99        | HD94735      | 10 5754      | +363800             | 233802                  |                       |                   |             |                           | 211  |
| CC45100   | Comp         |              |                     |                         |                       |                   |             | "                         | 3s   |
| 01        | Comp         |              |                     |                         |                       |                   |             | "                         | 3s   |
| 02        | AC-021513-11 | 11 2810      | -025102             | 235058                  |                       |                   |             |                           | 2266 |
| 03        | Comp         |              |                     |                         |                       |                   |             | "                         | 3s   |
| 04        | Comp         |              |                     |                         |                       |                   |             | "                         | 3s   |
| 05        | AC+191971-31 | 11 4755      | +192859             | 003545                  |                       |                   |             |                           | 2450 |
| 06        | Comp         |              |                     |                         |                       |                   |             | "                         | 3s   |
| 07        | BIAS(4)      |              |                     | 0119                    |                       |                   |             |                           |      |

Spectr. Temp. .... Dome Temp./Hum. ....

Transparency Conditions .. *OK, ... slight Haze* ..Focus ... *6.86* ..

197

Spectr. Temp. ... *120.62* .. Dome Temp./Hum. ....

| Filter | Exp. | Exp. Mtr.                        | Seeing      | P.V. Mag.   | Sp.       | Inst.          | Grating/Tilt                   | Slit                       | Emulsion     | P.H.      | Program             | Remarks   | Quality     |
|--------|------|----------------------------------|-------------|-------------|-----------|----------------|--------------------------------|----------------------------|--------------|-----------|---------------------|---|-------------|
|        |      | <i>1000V</i><br>no filter<br>690 | <i>3-5"</i> | <i>9.65</i> | <i>M2</i> | <i>CASSCOB</i> | <i>1800 lm</i><br><i>47.56</i> | <i>306<math>\mu</math></i> | <i>5298A</i> | <i>12</i> | <i>Marcy sl/vel</i> |   |             |
|        |      |                                  |             |             |           |                |                                |                            |              | <i>13</i> |                     |   |             |
|        |      |                                  |             |             |           |                |                                |                            |              | <i>14</i> |                     |   |             |
|        |      | <i>620</i>                       | <i>3-4"</i> | <i>11.0</i> | <i>M0</i> |                |                                |                            |              | <i>15</i> | <i>Vys 549</i>      | <i>60/1 S/N</i><br><i>Field checks nicely</i><br><i>Not the brighter nearby</i><br><i>star.</i> |             |
|        |      |                                  |             |             |           |                |                                |                            |              | <i>16</i> |                     |   |             |
|        |      |                                  |             |             |           |                |                                |                            |              | <i>1</i>  |                     |   |             |
|        |      |                                  |             |             |           |                |                                |                            |              | <i>18</i> |                     |   |             |
|        |      | <i>1K</i>                        |             | <i>7.48</i> | <i>M2</i> |                |                                |                            |              | <i>17</i> | <i>Marcy sl/vel</i> |   | <i>900</i>  |
|        |      |                                  |             |             |           |                |                                |                            |              | <i>19</i> |                     |   |             |
|        |      |                                  |             |             |           |                |                                |                            |              | <i>19</i> |                     |   |             |
|        |      | <i>370</i>                       | <i>2-4"</i> | <i>11.2</i> | <i>M0</i> |                |                                |                            |              | <i>20</i> | <i>Vys 613</i>      | <i>Vys green pyrm</i>   |             |
|        |      |                                  |             |             |           |                |                                |                            |              | <i>21</i> |                     |   |             |
|        |      |                                  |             |             |           |                |                                |                            |              | <i>22</i> |                     |   |             |
|        |      | <i>290</i>                       | <i>3-4"</i> | <i>11.7</i> | <i>M0</i> |                |                                |                            |              | <i>23</i> | <i>Vys 622</i>      | <i>Vys green pyrm</i>   |             |
|        |      |                                  |             |             |           |                |                                |                            |              | <i>24</i> |                     |   |             |
|        |      |                                  |             |             |           |                |                                |                            |              | <i>1</i>  |                     |   | <i>5.2K</i> |



Spectr. Temp. .... Dome Temp./Hum.  $+00.2^{\circ}\text{C}$  60% H Transparency Conditions ... Fine ..... 199

Focus ..... 6.86 .....

Spectr. Temp. .... Dome Temp./Hum. ....  $380$   $0$   $50$   $1024$   $4$   $1$   $\text{CLDFMT}$

| Exp. Mtr.           | Seeing | P/Mag. | Sp. | Inst.  | Grating/Tilt   | Slit | Emulsion | P.H. | Program   | Remarks                             | Quality |
|---------------------|--------|--------|-----|--------|----------------|------|----------|------|-----------|-------------------------------------|---------|
| 1000 V<br>NO filter |        |        |     | CASSCO | 1800 L<br>4756 | 306u | 5298A    | 25   |           |                                     | 4.9K    |
| 180                 | 3"     | 11.8   |     |        |                |      |          | 26   |           | wrong det. got thrown by indicated  |         |
|                     |        |        |     |        |                |      |          | 27   |           | west near proper motion             |         |
| 360                 | 3"     | 11.2   | MO  |        |                |      |          | 28   | Vys 689AB | Field checks well<br>Yes, on m-type |         |
|                     |        |        |     |        |                |      |          | 29   |           |                                     |         |
|                     |        |        |     |        |                |      |          | 5    |           |                                     |         |
| 450                 | 2-3"   | 11.0   | MO  |        |                |      |          | 6    | Vys 699   |                                     |         |
|                     |        |        |     |        |                |      |          | 7    |           |                                     | 5.4K    |
|                     |        |        |     |        |                |      |          | 2    |           | CCDT OK $-101.5^{\circ}\text{C}$    | 14.7    |
|                     |        |        |     |        |                |      |          | 8    |           |                                     | 4.9K    |
| 375                 | 3"     | 11.1   | MO  |        |                |      |          | 15   | Vys 309   | (45/11 5/4)                         |         |
|                     | 3"     | 11.1   | MO  |        |                |      |          | 16   |           | CCDT - $99.8^{\circ}\text{C}$       |         |
|                     |        |        |     |        |                |      |          | 1    |           | (Slow Topup by 04:10 incomplete)    |         |
|                     |        | 10     |     |        |                |      |          | 16   | Vys 740   |                                     |         |
| 570                 | 2"     | 10.11  | MO  |        |                |      |          | 17   | Vys 740   |                                     |         |
|                     |        |        |     |        |                |      |          | 18   |           |                                     |         |





Spectr. Temp. .... Dome Temp./Hum.  $-00.6^{\circ}\text{C}$  64.4% H Transparency Conditions 21.5.6.16. 1974 ..... 20/.

Focus ... 6.86 .....

CCD Spectr. Temp.  $-100.5^{\circ}\text{C}$  .....

Dome Temp./Hum.  $-00.7^{\circ}\text{C}$  65.5% H  
e1

| Exp. Mtr. | Seeing | Mag. | Sp. | Inst.      | Grating/<br>Tilt | Slit | Emulsion | P.H. | Program   | Remarks | Quality |
|-----------|--------|------|-----|------------|------------------|------|----------|------|-----------|---------|---------|
|           |        |      |     | CMS<br>CCD | 1800m<br>47.56   | 306u | 5248A    | 19   |           |         |         |
| 700       | 3"     | 9.0  | M5e |            |                  |      |          | 20   | Vys T82AB |         |         |
|           |        |      |     |            |                  |      |          | 21   |           |         |         |
| 4/3 secs  |        |      |     |            |                  |      |          | 3/4  | focus.    |         |         |
|           |        |      |     |            |                  |      |          | 1    |           |         |         |

202 p9#1

Mon/Tues

Emulsion Batches:

Date ..1997 Apr. 19/15... Observers ..[Vys]./Tn.....

| Plate No.              | Object             | R. A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|------------------------|--------------------|---------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CC451 <sup>36/37</sup> | Inboard / Outboard |               |                     |                         |                       | 0 10E             | +40         | FelNe<br>ND5              |      |
| 38                     | BIAS(4)            |               |                     | 19 34                   |                       |                   |             |                           |      |
| 39                     | Comp               |               |                     |                         |                       |                   |             | n                         | 3    |
| 40                     | HD 76943           | 08 5409       | +42 10 44           | 19 39 56                |                       |                   |             |                           | 52   |
| 41                     | Comp               |               |                     |                         |                       |                   |             | u                         | 3    |
| 42                     | Comp               |               |                     |                         |                       |                   |             | u                         | 3    |
| 43                     | HD 95735           | 10 5754       | +36 38 00           | 19 51 56                |                       |                   |             |                           | 285  |
| 44                     | Comp               |               |                     |                         |                       |                   |             | u                         | 3    |
| 45                     | Comp               |               |                     |                         |                       |                   |             | u                         | 3    |
| 46                     | BD-02 3000         | 09 48 10      | -03 13 04           | 20 03 15                |                       |                   |             |                           | 1071 |
| 47                     | Comp               |               |                     |                         |                       |                   |             | u                         | 3s   |
| 48                     | Comp               |               |                     |                         |                       |                   |             | u                         | 3s   |
| 49                     | BD+01 2747         | 10 23 49      | +01 21 36           | 20 25 07                |                       |                   |             |                           | 679  |
| 50                     | Comp               |               |                     |                         |                       |                   |             | u                         | 3    |
| 51                     | BIAS(4)            |               |                     | 20 38                   |                       |                   |             |                           |      |

Spectr. Temp. ... 100.4 °C ... Dome Temp./Hum. 7.05.3 °C 49.284 Transparency Conditions ... Fine ... 20.3

Focus ... 8.6 ... no change needed

Spectr. Temp. ... Dome Temp./Hum. ... 380 0 50 1024 4 1 CCD FWT

| Exp. Mtr.           | Seeing | Mag. | Sp. | Inst.       | Grating/<br>Tilt             | Slit  | Emulsion | P.H. | Program       | Remarks                         | Quality |
|---------------------|--------|------|-----|-------------|------------------------------|-------|----------|------|---------------|---------------------------------|---------|
| no F. Hood<br>1000V |        |      |     | CHSS<br>CCD | 1800ln<br>47.56<br>Unchanged | 2/6mm | 5298R    | 3/4  | focus         | set for only slightly<br>cooler |         |
|                     |        |      |     |             |                              |       |          | 1    |               |                                 |         |
|                     |        |      |     |             |                              |       |          | 5    |               |                                 | 5.7K    |
| 6.8K                | 1"     | 347  | F5V |             |                              |       |          | 6    |               |                                 | 5.7K    |
|                     |        |      |     |             |                              |       |          | 7    |               |                                 | 6.3K    |
|                     |        |      |     |             |                              |       |          | 8    |               |                                 | 5.7K    |
| 2.1K                | <1"    | 748  | M2  |             |                              |       |          | 9    | Muray std vel |                                 | 1.7K    |
|                     |        |      |     |             |                              |       |          | 10   |               |                                 |         |
|                     |        |      |     |             |                              |       |          | 11   |               |                                 | 5.5K    |
| 535                 | 1"     | 1054 | M0  |             |                              |       |          | 12   | V45 pyem      | for H/W                         |         |
|                     |        |      |     |             |                              |       |          | 13   |               |                                 |         |
|                     |        |      |     |             |                              |       |          | 14   |               |                                 |         |
| 640                 | 1.2"   | 9.65 | M2  |             |                              |       |          | 15   | Muray std vel |                                 |         |
|                     |        |      |     |             |                              |       |          | 16   |               |                                 |         |
|                     |        |      |     |             |                              |       |          | 1    |               |                                 |         |



CCD  
Spectr. Temp. ... -100.4°C ...

Dome Temp./Hum. +04.5°C 49.1% H

Transparency Conditions ... FIRE, 110.2% SOUTH ...

Focus ... 6.86 ...

Spectr. Temp. ... -100.4°C ...

Dome Temp./Hum. +02.4°C 56.2% H

380 0 50 1024 4 1 CCDFAST

| Comparison<br>Tel Exp | Exp. Mtr. | Seeing | Pty<br>Mag. | Sp. | Inst.       | Grating/<br>Tilt | Slit      | Emulsion | P.H. | Program               | Remarks   | Quality |
|-----------------------|-----------|--------|-------------|-----|-------------|------------------|-----------|----------|------|-----------------------|---|---------|
| 35                    | no filter |        |             |     | CASS<br>CCD | 1800 in<br>17.56 | 306 $\mu$ | 5798A    | 17   |                       |   |         |
| 133                   | 460       | 1.7"   | 11.0        | MO  |             |                  |           |          | 18   | Vys 5941              | Looks fine  |         |
| 35                    |           |        |             |     |             |                  |           |          | 19   |                       |   |         |
| 35                    |           |        |             |     |             |                  |           |          | 20   |                       |   |         |
| 146                   | 340       | 2"     | 11.34       | MO  |             |                  |           |          | 21   | Vys 584               | Latic like MO type  |         |
| 35                    |           |        |             |     |             |                  |           |          | 22   |                       |   |         |
| 35                    |           |        |             |     |             |                  |           |          | 23   |                       |   |         |
| 154                   | 460       | 1.2"   | 11.0        | MO  |             |                  |           |          | 24   | Vys 549               | Definitely the faintest<br>SE one. Easy to get<br>right one if you don't<br>check it out. | 6-7K    |
| 35                    |           |        |             |     |             |                  |           |          | 25   |                       |   |         |
|                       |           |        |             |     |             |                  |           |          | 1    |                       |   |         |
| 35                    |           |        |             |     |             |                  |           |          | 26   |                       |   | 5-7K    |
| 244                   | 315       | 1"     | 11.8        | K8  |             |                  |           |          | 27   | Vys 597B              | Took some frames of<br>slit view field.   |         |
| 35                    |           |        |             |     |             |                  |           |          | 28   |                       |   |         |
| 154                   | 160       |        | 2/3         |     |             |                  |           |          | 29   | Vys 597C <sup>?</sup> | NWC faintest of triple  |         |
| 35                    |           |        |             |     |             |                  |           |          | 30   |                       |   |         |



CCD  
Spectr. Temp. ... 100.8 ... °C

Dome Temp./Hum. : .....

Transparency Conditions . Fine ..... 207

Focus .... 6.8.6 .....

Spectr. Temp. ....

Dome Temp./Hum. +01.7°C 57.78H

| Exp. Mtr.                    | Seeing  | Plg<br>Mag. | Sp. | Inst.       | Grating/<br>Tilt    | Slit      | Emulsion | P.H. | Program           | Remarks   | Quality |
|------------------------------|---------|-------------|-----|-------------|---------------------|-----------|----------|------|-------------------|---|---------|
| no filter<br>1 meter dia and |         |             |     | CASS<br>CCD | 1800 lines<br>47.56 | 306 $\mu$ | 5798Å    | 1    |                   |   |         |
| 320                          | 2" ~ 11 |             |     |             |                     |           |          | 6    | Vys 597A          | Fainter star 5" to ENE<br>partly on slit too                                  |         |
|                              |         |             |     |             |                     |           |          | 7    |                   |   |         |
|                              |         |             |     |             |                     |           |          | 8    |                   |   |         |
| 300                          | 1"      | 1196        | MO  |             |                     |           |          | 9    | Vys pgm           | ~ 40/1 S/N<br>yes, spectrum good,<br>and M type.                              |         |
|                              |         |             |     |             |                     |           |          | 10   |                   |   |         |
|                              |         |             |     |             |                     |           |          | 11   |                   |   |         |
| 260                          | 1.2"    | 1104        | MO  |             |                     |           |          | 12   | Vys pgm           | Pair just resolved<br>Brighter is southern.<br>I intend to guide on southern. |         |
|                              |         |             |     |             |                     |           |          | 10   |                   |   |         |
| 155                          | 2"      | 1141        | MO  |             |                     |           |          | 13   | guided on fainter | close north<br>components   |         |
|                              |         |             |     |             |                     |           |          | 14   |                   |   |         |
|                              |         |             |     |             |                     |           |          | 15   |                   |   |         |
| 450                          | 2"      | 10.4        | MO  |             |                     |           |          | 17   | Vys 152           | $\Delta 2 +000028$<br>$\Delta 1 -000009$                                      |         |
|                              |         |             |     |             |                     |           |          | 18   |                   |   |         |

708 1944 Mon / Tues

Date 1947. Apr 14/15..... Observers [Vys.] / Tu.....

Emulsion Batches:

.....  
 .....  
 .....

| Plate No.              | Object        | R.A.<br>1900    | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|------------------------|---------------|-----------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CC45182                | BIAS(4)       |                 |                     | 01 49                   |                       |                   |             |                           |      |
| 183/190                | FLATS x 8     |                 |                     |                         |                       | 0 48E             | +390        | TUNG<br>ND4               | 11s  |
| 191                    | Comp          |                 |                     |                         |                       |                   |             | FENE<br>ND5               | 3s   |
| 192                    | HD 144579     | 16 0130         | +39 2400            | 02 0327                 |                       |                   |             |                           | 226  |
| 193                    | Comp          |                 |                     |                         |                       |                   |             | "                         | 3s   |
| CG808 <sup>55/58</sup> | HD 144579     | "               | "                   |                         |                       |                   |             | 4x                        | 67m  |
| 59/62                  | DARKS x 4     |                 |                     |                         |                       |                   |             | 4x                        | 67ms |
| 63/64                  | DARKS x 2     |                 |                     |                         |                       |                   |             | 2x                        | 133w |
| 65/66                  | HD 144579     | "               | "                   |                         |                       |                   |             | 2x                        | "    |
| CC45194                | Comp          |                 |                     |                         |                       |                   |             | FENE<br>ND5               | 3s   |
| 95                     | S 92 NGC 6819 | 2000<br>19 4103 | +40 1100            | 02 36 11                |                       |                   |             |                           | 2132 |
| 96                     | Comp          |                 |                     |                         |                       |                   |             | "                         | 3s   |
| 97                     | BIAS(4)       |                 |                     | 03 16                   |                       |                   |             |                           |      |
| 98                     | Comp          |                 |                     |                         |                       |                   |             | "                         | 3s   |
| 99                     | AC +80 7      | 00 0753         | +80 0631            | 03 27 36                |                       |                   |             |                           | 1744 |

All default Box

and same Int setting

100 Spectr. Ten  
Focus  
Spectr. Ten

Exp. Mtr.

10 1/2

2K

10

370



CCD Spectr. Temp. .... -100.6 °C Dome Temp./Hum. ....

Transparency Conditions ... Slightly hazy south ...

Focus ... 6.86 .....

Spectr. Temp. .... Dome Temp./Hum. 40.4 °C 59.0% H

207

| Exp. Mtr. | Seeing | Fw. Mag. | Sp.   | Inst.                           | Grating/Tilt    | Slit | Emulsion | P.H. | Program    | Remarks  | Quality |
|-----------|--------|----------|-------|---------------------------------|-----------------|------|----------|------|------------|--|---------|
| No filter |        |          |       | CAS CCD                         | 1800h<br>47.56° | 36u  | 5298A    | 1    |            |  |         |
|           |        |          |       |                                 |                 |      |          | 2    |            |  | 15K     |
|           |        |          |       |                                 |                 |      |          | 19   |            |  |         |
| 2K        | 1"     | 666      | 68V   |                                 |                 |      |          | 20   | std vel    |  | 2.5K    |
|           |        |          |       |                                 |                 |      |          | 21   |            |  |         |
|           | 1.2"   | 666      |       |                                 | Above 36u slit. |      |          |      | Seein, yes | Dome SW<br>Light East Breeze<br>Just NE Fan on               |         |
|           |        |          |       |                                 |                 |      |          | 21   |            |  |         |
| 110       | 1"     | 1511     | early | I guess. This Region very flat. |                 |      |          | 22   | Gld pgr.   | 15 ADU above sky<br>min easier<br>guiding then<br>last time. |         |
|           |        |          |       |                                 |                 |      |          | 23   |            |  |         |
|           |        |          |       |                                 |                 |      |          | 1    |            |  |         |
|           |        |          |       |                                 |                 |      |          | 5    |            |  |         |
| 390       | 2"     | 10.7     | m0    |                                 |                 |      |          | 6    | Vys 354A   | Ad +00 00 50<br>df -00 00 06                                 |         |



Spectr. Temp. .... Dome Temp./Hum. *40.1.9°C... 60% H* Transparency Conditions *some haze*.....

Focus *6.8.6*.....

211

Spectr. Temp. .... Dome Temp./Hum. ....

| Exp. Mtr.  | Seeing     | Mag.       | Sp.         | Inst.              | Grating/<br>Tilt        | Slit       | Emulsion    | P.H.       | Program      | Remarks      | Quality |
|------------|------------|------------|-------------|--------------------|-------------------------|------------|-------------|------------|--------------|--------------|---------|
|            |            |            |             | <i>CMS<br/>CCD</i> | <i>1800 H<br/>47.56</i> | <i>306</i> | <i>5298</i> | <i>7</i>   |              |              |         |
| <i>3</i>   |            |            |             |                    |                         |            |             | <i>8</i>   | <i>max</i>   | <i>stave</i> |         |
| <i>152</i> | <i>820</i> | <i>1.3</i> | <i>9.83</i> | <i>MO</i>          |                         |            |             | <i>10</i>  |              |              |         |
| <i>3</i>   |            |            |             |                    |                         |            |             | <i>1</i>   |              |              |         |
| <i>4</i>   |            |            |             |                    |                         |            |             | <i>3/4</i> | <i>focus</i> |              |         |
|            |            |            |             |                    |                         |            |             | <i>1</i>   |              |              |         |

212  
pg# 1

Tua/wad

Emulsion Batches:

Date 1997 Apr 15/16 ..... Observers ... G/Tn .....

| Plate No.              | Object   | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|------------------------|----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CC452 <sup>08/04</sup> | inb/out  |              |                     |                         |                       |                   |             | FeAr<br>ND2               | 4/3  |
| 10                     | Comp     |              |                     |                         |                       |                   |             |                           |      |
| 11                     | HD 76942 | 08 54 09     | +42 10 14           | 19 37 36                |                       |                   |             |                           | 58   |
| 12                     | Comp     |              |                     |                         |                       |                   |             |                           |      |
| 13                     | BIA S(4) |              |                     | 19 47                   |                       |                   |             |                           |      |
| 14/18                  | FLATS x5 |              |                     |                         |                       | 04 W              | +34°        | TUNG<br>ND1               | 110  |
| 19                     | Comp     |              |                     |                         |                       |                   |             | FeAr<br>ND2               | 45   |
| 20                     | HD 34578 | 05 13 25     | +33 51 13           | 20 09 27                |                       |                   |             |                           | 1200 |
| 21                     | "        | "            | "                   | 20 30 13                |                       |                   |             |                           | 1207 |
| 22                     | "        | "            | "                   | 20 51 11                |                       |                   |             |                           | 1518 |
| 23                     | Comp     |              |                     |                         |                       |                   |             | FeAr<br>ND2               | 15   |
| 24                     | BIA S(4) |              |                     | 21 18                   |                       |                   |             |                           |      |
| 25                     | Comp     |              |                     |                         |                       |                   |             | "                         | 75   |
| 26                     | HD 89625 | 10 11 08     | +23 54 57           | 21 25 41                |                       |                   |             |                           | 725  |
| 27                     | "        | "            | "                   | 21 38 13                |                       |                   |             |                           | 690  |

CCD Spectr. Temp.  $-100.9^{\circ}C$  Dome Temp./Hum.  $+08.5$   $43.8\%RH$  Transparency Conditions  $Hazy$  213

Focus  $6.86$

Spectr. Temp.  $CCD$  Dome Temp./Hum.  $CCD$

| Exp. Mtr.           | Seeing | Ptg. Mag. | Sp.    | Inst.    | Grating/Tilt   | Slit | Emission | P.H. | Program   | Remarks   | Quality |
|---------------------|--------|-----------|--------|----------|----------------|------|----------|------|---|---|---------|
| 413<br>No filter    |        |           |        | CHSS CCD | 1800h<br>42.50 | 306u | 4463A    |      | focus   | 390 0 50 1024 4 1<br>CCD FWHM<br>390 0 200 1024 1 1 |         |
| 58K                 | Fine   | 3.97      | F5V    |          |                |      |          | 1c1  |   |   |         |
|                     |        |           |        |          |                |      |          | 2c1  | just test and normalization                         |   |         |
|                     |        |           |        |          |                |      |          | 3c1  |   |   |         |
|                     |        |           |        |          |                |      |          | 4c1  |   |   | 14K     |
| BG<br>39K filter in |        |           |        |          |                |      |          | 5c1  |   |   | 4K      |
| 4.9K                | 2"     | B3<br>530 | A5 II  |          |                |      |          | 1c1  | r 6 ppm   | $\sim 150/1$ S/N                                    |         |
| 6K                  |        |           |        |          |                |      |          | 2c1  |   |   |         |
| 6K                  | 2.3"   |           |        |          |                |      |          | 3c1  |   |   |         |
|                     |        |           |        |          |                |      |          | 5c1  |   |   |         |
|                     |        |           |        |          |                |      |          | 1    |   |   |         |
|                     |        |           |        |          |                |      |          | 5c1  |   |   |         |
| 58K                 | 2"     | B<br>3.75 | F0 III |          |                |      |          | 2c1  |   | $> 500/1$ S/N                                       |         |
| 62K                 |        |           |        |          |                |      |          | 3c1  | TRAIled higher column II<br>end of slit by accident |   |         |

214 p#2

Tues/Wed

Emulsion Batches:

Date 1997 Apr. 15/16... Observers R.G./Tn.....

| Plate No. | Object        | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|---------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CC45228   | HD 89025      | 10 11 08     | +235457             | 21 50 10                |                       |                   |             |                           | 689  |
| 29        | Comp          |              |                     |                         |                       |                   |             | Red<br>ND2                | 45   |
| 30        | Comp BIAS (4) |              |                     | 22 08                   |                       |                   |             | "                         | 45   |
| 31        | Comp          |              |                     |                         |                       |                   |             | "                         | 45   |
| 32        | HD 92125      | 10 33 06     | +322945             | 22 11 00                |                       |                   |             |                           | 772  |
| 33        | "             | "            | "                   | 22 24 25                |                       |                   |             |                           | 1015 |
| 34        | "             | "            | "                   | 22 41 57                |                       |                   |             |                           | 1036 |
| 35        | Comp          |              |                     |                         |                       |                   |             | "                         | 45   |
| 36        | Comp          |              |                     |                         |                       |                   |             | "                         | 45   |
| 37        | HD 111812     | 12 46 50     | +280506             | 23 05 08                |                       |                   |             |                           | 879  |
| 38        | "             | "            | "                   | 23 20 13                |                       |                   |             |                           | 958  |
| 39        | "             | "            | "                   | 23 36 37                |                       |                   |             |                           | 741  |
| 40        | Comp          |              |                     |                         |                       |                   |             | "                         | 45   |
| H/45      | FLATS x5      |              |                     |                         |                       | 0 30 W            | +28°        | FWB<br>ND 1               | 110  |
| 46        | BIAS (4)      |              |                     | 0005                    |                       |                   |             |                           |      |

Spectr. Ten

Focus

Spectr. Ten

Exp. Mtr

300

R339

58k

P6k

5k

5k

7k

157k

Spectr. Temp. .... Dome Temp./Hum.  $+07.1^{\circ}\text{C}$   $46.1\% \text{H}$  Transparency Conditions *Hazy... to part cloudy.*  
 Focus ... *6.86* .....  
 Spectr. Temp. *ccp* ...  $-100.9^{\circ}\text{C}$  ..... Dome Temp./Hum.  $+05.8^{\circ}\text{C}$   $49.5\% \text{H}$  *increasing cloud. 215*

| Filter | Exp. | Exp. Mtr.                    | Seeing      | Ptg. Mag.         | Sp.          | Inst.                     | Grating/Tilt                  | Slit        | Emulsion     | P.H.      | Program       | Remarks                                    | Quality |
|--------|------|------------------------------|-------------|-------------------|--------------|---------------------------|-------------------------------|-------------|--------------|-----------|---------------|--|---------|
| 699    |      | <i>1000N</i><br>BG 39<br>56K | <i>2"</i>   | <i>B</i><br>375   | <i>FOTII</i> | <i>CASS</i><br><i>CCD</i> | <i>1800ln</i><br><i>42.50</i> | <i>306u</i> | <i>4463A</i> | <i>4c</i> | <i>RG p4m</i> |  |         |
| 79     |      |                              |             |                   |              |                           |                               |             |              | <i>5c</i> |               |  |         |
| 15     |      |                              |             |                   |              |                           |                               |             |              | <i>5c</i> |               |  |         |
| 8      |      |                              |             |                   |              |                           |                               |             |              | <i>5c</i> |               |  |         |
| 772    |      | <i>19.6K</i>                 | <i>1.2"</i> | <i>B=</i><br>552  | <i>G1II</i>  |                           |                               |             |              | <i>6c</i> | <i>RG p4m</i> | <i>7 300/1 S/N</i><br><i>some fringing</i> |         |
| 1015   |      |                              |             |                   |              |                           |                               |             |              | <i>3c</i> |               |  |         |
| 1036   |      | <i>9.5K</i>                  |             |                   |              |                           |                               |             |              | <i>4</i>  |               |  |         |
| 14     |      |                              |             |                   |              |                           |                               |             |              | <i>5</i>  |               |  |         |
| 45     |      |                              |             |                   |              |                           |                               |             |              | <i>5</i>  |               |  |         |
| 879    |      | <i>15K</i>                   | <i>1"</i>   | <i>B=</i><br>5.61 | <i>GOTII</i> |                           |                               |             |              | <i>1</i>  |               |  |         |
| 955    |      | <i>17K</i>                   |             |                   |              |                           |                               |             |              | <i>2</i>  |               |  |         |
| 74     |      | <i>15.2K</i>                 |             |                   |              |                           |                               |             |              | <i>3</i>  |               |  |         |
| 8      |      |                              |             |                   |              |                           |                               |             |              | <i>5</i>  |               |  |         |
| 106    |      |                              |             |                   |              |                           |                               |             |              | <i>7</i>  |               |  |         |
| 1      |      |                              |             |                   |              |                           |                               |             |              | <i>1</i>  |               |  |         |





CCD Spectr. Temp. ... -102.1°C

Dome Temp./Hum. ... +05.8°C 82%RH

Transparency Conditions .. Part. Clear ..... =17

Focus ... 6.86

Dome Temp./Hum. ... +05.2°C 81%RH

90 gain as usual

390 0 200 1024 11 CCDFWT

| Filter Exp. | Exp. Mtr. | Seeing   | Mag. Mag. | Sp.   | Inst.       | Grating/Tilt    | Slit | Emulsion | P.H. | Program            | Remarks                     | Quality |
|-------------|-----------|----------|-----------|-------|-------------|-----------------|------|----------|------|--------------------|-----------------------------|---------|
| 43          | BG39      |          |           |       | CASS<br>CCD | 1800h<br>42.50° | 306u | 4A63A    | 5    |                    |                             | 4K      |
| 242         | 2K        | 3"       | V<br>5.25 | FOV   |             |                 |      |          | 6    | normalization star |                             |         |
| 43          |           |          |           |       |             |                 |      |          | 5    |                    |                             |         |
| 43          |           |          |           |       |             |                 |      |          | 5    |                    |                             |         |
| 156         | 82K       | 4"       | V<br>0.34 | FS IV |             |                 |      |          | 3    | 16 pym             |                             | 7K      |
| 113         | 81K       |          |           |       |             |                 |      |          | 4    | "                  |                             |         |
| 163         | 46K       |          |           |       |             |                 |      |          | 4    | "                  | cloud now                   |         |
| 43          |           |          |           |       |             |                 |      |          | 5    |                    |                             |         |
|             |           |          |           |       |             |                 |      |          | 1    |                    |                             |         |
| 113         |           |          |           |       |             |                 |      |          | 7    |                    |                             | 13K     |
|             |           |          |           |       |             |                 |      |          | 1    |                    |                             |         |
|             |           |          |           |       |             |                 |      |          | 1    |                    |                             |         |
| 43          | +040°C    | 6.86 set |           |       | CASS<br>CCD | 1800h<br>46.90  | 306u | 5184     | 1/2  | focused            | CCDFWT<br>390 0 50 1024 9 1 |         |
|             |           |          |           |       |             |                 |      |          | 1    |                    |                             |         |
|             |           |          |           |       |             |                 |      |          | 3    |                    |                             | 3K      |

218 1942 Wed / Thurs continued.

Emulsion Batches:

Date 1997 Apr 16/17 Observers Lu / Tu

| Plate No. | Object   | R.A.   | Declination | Starting Time | Ending Time | Hour Angle<br>End | Declination | Comparison  |      |
|-----------|----------|--------|-------------|---------------|-------------|-------------------|-------------|-------------|------|
|           |          | 1900   | 1900        | E.S.T.        | E.S.T.      |                   |             | Type/Filter | Exp. |
| CC45269   | GR Vir   | 144520 | -064406     | 000933        |             |                   |             |             | 480  |
| 70        | Comp     |        |             |               |             |                   |             | FeAr<br>ND3 | 45   |
| 71        | Comp     |        |             |               |             |                   |             |             | 45   |
| 72        | NSV 7968 | 164654 | +38 3858    | 002428        |             |                   |             |             | 924  |
| 73        | "        |        |             | 004027        |             |                   |             |             | 915  |
| 74        | Comp     |        |             |               |             |                   |             | "           | 45   |
| 75        | BIAS (4) |        |             | 0058          |             |                   |             |             |      |
| 76        | Comp     |        |             |               |             |                   |             | "           | 45   |
| 77        | GR Vir   | 144520 | -064406     | 010326        |             |                   |             |             | 420  |
| 78        | "        |        |             | 011051        |             |                   |             |             | 420  |
| 79        | "        |        |             | 011818        |             |                   |             |             | 420  |
| 80        | "        |        |             | 012542        |             |                   |             |             | 420  |
| 81        | comp     |        |             |               |             |                   |             |             | 45   |
| 82        | GR Vir   |        |             | 013447        |             |                   |             |             | 420  |
| 83        | "        |        |             | 014215        |             |                   |             |             | 420  |

Spectr. Ten

Focus ...

Spectr. Ten

Exp. Mtr.

110 F. / 1/2

550

150

167

582

590

580

620

624

620

Spectr. Temp. .... Dome Temp./Hum.  $+04.0^{\circ}\text{C}$   $74\% \text{H}$  Transparency Conditions *PART Cloudy* .....

Focus ..... *686* .....

Spectr. Temp. .... Dome Temp./Hum. ....

*219*

| Exp. Mtr.         | Seeing    | P.V. Mag.   | Sp.       | Inst.               | Grating/Tilt           | Slit       | Emulsion     | P.H.       | Program    | Remarks | Quality |
|-------------------|-----------|-------------|-----------|---------------------|------------------------|------------|--------------|------------|------------|---------|---------|
| <i>430</i><br>550 | <i>5"</i> | <i>7.9</i>  | <i>G0</i> | <i>CASS<br/>CCD</i> | <i>1800m<br/>46.90</i> | <i>306</i> | <i>5184A</i> | <i>4ci</i> | <i>DRL</i> |         |         |
| <i>45</i>         |           |             |           |                     |                        |            |              | <i>5</i>   |            |         |         |
| <i>45</i>         |           |             |           |                     |                        |            |              | <i>6</i>   |            |         |         |
| <i>924</i><br>150 |           | <i>10.5</i> | <i>A6</i> |                     |                        |            |              | <i>7</i>   | <i>DRL</i> |         |         |
| <i>915</i><br>167 | <i>4"</i> | <i>"</i>    | <i>"</i>  |                     |                        |            |              | <i>8</i>   |            |         |         |
| <i>45</i>         |           |             |           |                     |                        |            |              | <i>9</i>   |            |         |         |
|                   |           |             |           |                     |                        |            |              | <i>1</i>   |            |         |         |
| <i>45</i>         |           |             |           |                     |                        |            |              | <i>10</i>  |            |         |         |
| <i>420</i><br>582 | <i>5"</i> | <i>7.9</i>  | <i>G0</i> |                     |                        |            |              | <i>11</i>  | <i>DRL</i> |         |         |
| <i>420</i><br>590 |           |             |           |                     |                        |            |              | <i>12</i>  |            |         |         |
| <i>420</i><br>580 |           |             |           |                     |                        |            |              | <i>13</i>  |            |         |         |
| <i>420</i><br>620 |           |             |           |                     |                        |            |              | <i>14</i>  |            |         |         |
| <i>41</i>         |           |             |           |                     |                        |            |              | <i>15</i>  |            |         |         |
| <i>420</i><br>624 |           |             |           |                     |                        |            |              | <i>16</i>  |            |         |         |
| <i>420</i><br>620 |           |             |           |                     |                        |            |              | <i>17</i>  |            |         |         |







Spectr. Temp. <sup>CD</sup> -102.0°C Dome Temp./Hum. +02.6°C 50%RH Transparency Conditions PART cloudy 223

Focus 6.89 Then suddenly completely cloudy

Spectr. Temp. Dome Temp./Hum. CD 390 0 50 1024 4 1 CCD

| Exp. Mtr.         | Seeing | F#<br>Mag. | Sp.         | Inst.                  | Grating/<br>Tilt    | Slit | Emulsion | P.H. | Program | Remarks                   | Quality |
|-------------------|--------|------------|-------------|------------------------|---------------------|------|----------|------|---------|---------------------------|---------|
| 120V<br>No Filter |        |            |             | CAS<br>CCD             | 1800 lines<br>46.9  | 306  | 5184A    | 5/6  |         | focus test done by wa. Lu |         |
|                   |        |            |             |                        |                     |      |          | 1    |         |                           |         |
|                   |        |            |             |                        |                     |      |          | 7    |         |                           |         |
| 670               | 2"     | 5.32       | B8 III p Mn |                        |                     |      |          | 8    |         | normal reaction star      |         |
|                   |        |            |             |                        |                     |      |          | 9    |         |                           |         |
|                   |        |            |             |                        |                     |      |          | 10   |         |                           |         |
| 2.9K              | 2"     | 1.14       | KO III b    |                        |                     |      |          | 11   |         | starred very cloudy       | 2K      |
|                   |        |            |             |                        |                     |      |          | 12   |         |                           |         |
|                   |        |            |             |                        |                     |      |          | 2    |         |                           | 13.2K   |
|                   |        |            |             |                        |                     |      |          | 1    |         |                           |         |
| BG 39<br>Filter   |        |            |             | (T = +02.7°C 6.89 sec) | 1800 lines<br>41.03 | 306  | 4220A    | 1/2  |         | focus test.               |         |
|                   |        |            |             |                        |                     |      |          | 13   |         |                           | 14K     |
| 43K               | 5"     | 0.34       | F5 IV       |                        |                     |      |          | 14   |         | 56 ppm cloudy             | 6K      |
| 54.3K             |        |            |             |                        |                     |      |          | 15   |         |                           | 6.3K    |
| 64K               |        |            |             |                        |                     |      |          | 16   |         |                           | 7.7K    |
|                   |        |            |             |                        |                     |      |          | 17   |         |                           |         |

224

p4#2

Tues/FRI

Emulsion Batches:

Date ... 1997 Apr 17/18. Observers ... Lu / Tin ... Some for rG

| Plate No. | Object    | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|-----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CC45320   | BIAS(4)   |              |                     | 21 35                   |                       |                   |             |                           |      |
| 21/27     | FLATS x 7 |              |                     |                         |                       |                   |             | TUNG<br>MD1               | 70   |
| 28        | Comp      |              | 2000                |                         |                       |                   |             | Felt<br>ND 3              | 45   |
| 29        | SX Crv    | 12 46 15     | -18 48 00           | 21 59 05                |                       |                   |             |                           | 720  |
| 30        | "         |              |                     | 22 11 49                |                       |                   |             |                           | 720  |
| 31        | "         |              |                     | 22 24 20                |                       |                   |             |                           | 720  |
| 32        | comp      |              |                     |                         |                       |                   |             |                           | 45   |
| 33        | BIAS(4)   |              |                     | 22 37                   |                       |                   |             |                           | 0    |
| 34        | SX Crv    |              |                     | 22 39 20                |                       |                   |             |                           | 770  |
| 35        | "         |              |                     | 22 52 48                |                       |                   |             |                           | 720  |
| 36        | "         |              |                     | 23 05 15                |                       |                   |             |                           | 740  |
| 37        | comp      |              |                     |                         |                       |                   |             |                           | 45   |
| 38        | SX Crv    |              |                     | 23 20 05                |                       |                   |             |                           | 720  |
| 39        | "         |              |                     | 23 32 47                |                       |                   |             |                           | 720  |
| 40        | comp      |              |                     |                         |                       |                   |             |                           | 45   |
| 41        | BIAS(4)   |              |                     | 23 46                   |                       |                   |             |                           | 0    |

CCD

Spectr. Ten

Focus ...

Spectr. Ten

Exp. Mtr

not filled

433

436

436

408

460

483

227

506



CCD Spectr. Temp.  $-101.9^{\circ}\text{C}$  Dome Temp./Hum.  $+01.8^{\circ}\text{C} 56\% \text{RH}$  Transparency Conditions *part cloudy*  $\approx 25$

Focus  $6.89$

Spectr. Temp. ..... Dome Temp./Hum. ....

For both 2 regions  
390 0 50 1024 41 CCDFM

| Exp. Mtr. | Seeing  | Flt. Mag. | Sp. | Inst.       | Grating/Tilt        | Slit      | Emulsion          | P.H. | Program | Remarks | Quality |
|-----------|---------|-----------|-----|-------------|---------------------|-----------|-------------------|------|---------|---------|---------|
|           |         |           |     | CASS<br>CCD | 1800 $\mu$<br>41.03 | 306 $\mu$ |                   | 1    |         |         |         |
|           |         |           |     |             |                     |           | 4270 $\text{\AA}$ | 18   | for rG  |         |         |
|           | not flt | 9         |     | "           | 1800 $\mu$<br>46.90 | 306 $\mu$ | 5185 $\text{\AA}$ | 19c  |         |         |         |
|           | 433     | 3"        | 9.5 | F7V         |                     |           |                   | 20   | DRL     |         |         |
|           | 436     |           |     |             |                     |           |                   | 21   |         |         |         |
|           | 436     |           |     |             |                     |           |                   | 22   |         |         |         |
|           |         |           |     |             |                     |           |                   | 23   |         |         |         |
|           |         |           |     |             |                     |           |                   | 1    |         |         |         |
|           | 408     |           |     |             |                     |           |                   | 24   |         |         |         |
|           | 460     |           |     |             |                     |           |                   | 25   |         |         |         |
|           | 483     |           |     |             |                     |           |                   | 26   |         |         |         |
|           |         |           |     |             |                     |           |                   | 27   |         |         |         |
|           | 427     |           |     |             |                     |           |                   | 28   |         |         |         |
|           | 426     |           |     |             |                     |           |                   | 29   |         |         |         |
|           |         |           |     |             |                     |           |                   | 30   |         |         |         |
|           |         |           |     |             |                     |           |                   | 1    |         |         |         |

226 py# 3. Thurs / Fri

Emulsion Batches:

Date . 1947. Apr. 17/18. . . . Observers . L. L. T. . . . .

.....  
 .....  
 .....

| Plate No. | Object    | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison  |      |
|-----------|-----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|-------------|------|
|           |           |              |                     |                         |                       |                   |             | Type/Filter | Exp. |
| CC45342   | Comp      |              |                     |                         |                       |                   |             | REAR<br>ND3 | 4s   |
| 43        | HD 102870 | 11 4529      | +02 1942            | 23 5652                 |                       |                   |             |             | 298  |
| 44        | Comp      |              |                     |                         |                       |                   |             |             | 4s   |
| 45/52     | FLATS X8  |              |                     |                         |                       |                   |             | JUNG<br>ND3 | 8s   |
| 53        | Comp      |              |                     |                         |                       |                   |             | REAR<br>ND3 | 4s   |
| 54        | CK Boo    | 14 3503      | 09 0654             | 00 21 09                |                       |                   |             |             | 720  |
| 55        | "         |              |                     | 00 33 42                |                       |                   |             |             | 720  |
| 56        | "         |              |                     | 00 46 20                |                       |                   |             |             | 695  |
| 57        | Comp      |              |                     |                         |                       |                   |             |             |      |
| 58        | BIAS(4)   |              |                     | 00 59                   |                       |                   |             |             |      |
| 59        | Comp      |              |                     |                         |                       |                   |             | "           | 4    |
| 60        | NSV 7457  | 16 06 02     | 50 11 12            | 01 08 33                |                       |                   |             |             | 1100 |
| 61        | "         |              |                     | 01 27 46                |                       |                   |             |             | 926  |
| 62        | Comp      |              |                     |                         |                       |                   |             | ✓           | 4    |
| 63        | Comp      |              |                     |                         |                       |                   |             |             |      |

Spectr. Tem

Focus ...

Spectr. Tem

Exp. Mtr.

Exp. Mtr.

Exp. Mtr.

Exp. Mtr.

Exp. Mtr.

Exp. Mtr.

Exp. Mtr.

Exp. Mtr.

Exp. Mtr.

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Exp. Mtr.

Exp. Mtr.

Exp. Mtr.

Exp. Mtr.

Exp. Mtr.

Exp. Mtr.

Exp. Mtr.

Exp. Mtr.

Exp. Mtr.

Exp. Mtr.

Spectr. Temp. .... Dome Temp./Hum.  $40.8^{\circ}\text{C}$   $62.3\%$  Transparency Conditions ... *East half cloudy* .....

Focus .... *6.8.9* .....

227

Spectr. Temp. .... Dome Temp./Hum. ....

| Exp. Mtr.           | Seeing      | F <sub>g</sub> Mag. | Sp.        | Inst.         | Grating/Tilt                  | Slit        | Emulsion    | P.H.      | Program        | Remarks                  | Quality     |
|---------------------|-------------|---------------------|------------|---------------|-------------------------------|-------------|-------------|-----------|----------------|--------------------------|-------------|
| <i>10</i><br>f i Hg |             |                     |            | <i>C15500</i> | <i>1800/n</i><br><i>46.9°</i> | <i>306u</i> | <i>5185</i> | <i>7</i>  |                |                          | <i>AK</i>   |
| <i>3.7K</i>         | <i>3"</i>   | <i>361</i>          | <i>F9V</i> |               |                               |             |             | <i>8</i>  | <i>std bel</i> |                          | <i>2.9K</i> |
| <i>8</i>            |             |                     |            |               |                               |             |             | <i>9</i>  |                |                          |             |
|                     |             |                     |            |               |                               |             |             | <i>2</i>  |                | <i>copy by 00:20 EST</i> | <i>13K</i>  |
|                     |             |                     |            |               |                               |             |             | <i>10</i> |                |                          | <i>43K</i>  |
| <i>485'</i>         | <i>3"4"</i> | <i>9.8</i>          | <i>F8</i>  |               |                               |             |             | <i>11</i> | <i>DRL</i>     |                          |             |
| <i>502</i>          |             |                     |            |               |                               |             |             | <i>12</i> |                |                          |             |
| <i>370</i>          |             |                     |            |               |                               |             |             | <i>13</i> |                |                          |             |
|                     |             |                     |            |               |                               |             |             | <i>14</i> |                |                          |             |
|                     |             |                     |            |               |                               |             |             | <i>1</i>  |                |                          |             |
|                     |             |                     |            |               |                               |             |             | <i>15</i> |                |                          |             |
| <i>240</i>          | <i>2.3"</i> | <i>9.5</i>          | <i>G0</i>  |               |                               |             |             | <i>16</i> | <i>DRL</i>     | <i>through clouds</i>    |             |
| <i>315</i>          |             |                     |            |               |                               |             |             | <i>17</i> |                |                          |             |
|                     |             |                     |            |               |                               |             |             | <i>18</i> |                |                          | <i>3K</i>   |
|                     |             |                     |            |               |                               |             |             | <i>19</i> |                |                          |             |

*edited  
read &  
write in  
13 ci*

228 Pg # 4

Date 1997 Apr 17/18 Observers Lu/Tn

Emulsion Batches:

.....  
.....  
.....

| Plate No. | Object   | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CC45364   | NSV 7968 | 16 46 54     | 38 38 58            | 01 52 13                |                       |                   |             |                           | 900  |
| 65        | "        | "            | "                   | 02 07 42                |                       |                   |             | Fe4r                      | 901  |
| 66        | comp     |              |                     |                         |                       |                   |             | ND#3                      | 45   |
| 67        | NSV 7968 | "            | "                   | 02 24 41                |                       |                   |             |                           | 915  |
| 68        | "        | "            | "                   | 02 40 22                |                       |                   |             |                           | 90   |
| 69        | comp     |              |                     |                         |                       |                   |             | "                         | 45   |
| 70        | BIAS(4)  |              |                     | 02 56                   |                       |                   |             |                           | 0    |
| 71        | NSV 7968 | "            | "                   | 02 58 36                |                       |                   |             |                           | 900  |
| 72        | "        | "            | "                   | 03 14 05                |                       |                   |             |                           | 924  |
| 73        | comp     |              |                     |                         |                       |                   |             | "                         | 15   |
| 74        | NSV 7968 | "            | "                   | 03 31 43                |                       |                   |             |                           | 90   |
| 75        | "        | "            | "                   | 03 47 13                |                       |                   |             |                           | 901  |
| 76        | comp     |              |                     |                         |                       |                   |             | "                         | 45   |
| 77        | BIAS(4)  |              |                     | 04 03                   |                       |                   |             |                           | 0    |
| 78        | NSV 7968 | "            | "                   | 04 05 25                |                       |                   |             |                           | 900  |

CCO  
Spectr. Temp  
Focus.....  
Spectr. Temp

Exp. Mtr. S

185

160

143

184

182

184

75

192

189

CCD  
Spectr. Temp.  $-100.6^{\circ}\text{C}$

Dome Temp./Hum.  $+0.2^{\circ}\text{C} / 61.3\%$

Transparency Conditions *hazy* 229

Focus *6.89*

Spectr. Temp. ....

Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst.       | Grating/Tilt | Slit      | Emulsion | P.H. | Program | Remarks | Quality |
|-----------|--------|-----------|-----|-------------|--------------|-----------|----------|------|---------|---------|---------|
| 185       |        | 10.5      | A6  | CASS<br>CCD | 1800<br>46.9 | 306 $\mu$ | 5185     | 20   | DRL     |         |         |
| 160       |        |           |     |             |              |           |          | 21   |         |         |         |
|           |        |           |     |             |              |           |          | 22   |         |         |         |
| 143       |        |           |     |             |              |           |          | 23   |         |         |         |
| 184       |        |           |     |             |              |           |          | 24   |         |         |         |
|           |        |           |     |             |              |           |          | 25   |         |         |         |
|           |        |           |     |             |              |           |          | 1    |         |         |         |
| 182       | 2"     |           |     |             |              |           |          | 26   |         |         |         |
| 184       |        |           |     |             |              |           |          | 27   |         |         |         |
|           |        |           |     |             |              |           |          | 28   |         |         |         |
| 175       | 2"     |           |     |             |              |           |          | 29   |         | clear   |         |
| 172       |        |           |     |             |              |           |          | 30   |         |         |         |
|           |        |           |     |             |              |           |          | 31   |         |         |         |
|           |        |           |     |             |              |           |          | 1    |         |         |         |
| 197       |        |           |     |             |              |           |          | 7    |         |         |         |





237 pg#1

Mon / Tues

Emulsion Batches:

Date 1997 Apr 21/22... Observers MKi / Ty... and some Shen

| Plate No.               | Object              | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-------------------------|---------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| ce 137 <sup>69/70</sup> | Inboard / out board |              |                     |                         |                       | ~ 2 W             | ~ 70°       |                           |      |
| 71                      | Comp                |              |                     |                         |                       |                   |             | ThAr                      | 1s   |
| 72                      | HP87901             | 10 0303      | +12 2722            | 213315                  |                       |                   |             |                           | 708  |
| 73                      | Comp                |              |                     |                         |                       |                   |             | ThAr                      | 1s   |
| 74                      | BIAS (4)            |              |                     | 214722                  |                       |                   |             |                           |      |
| 75                      | Comp                |              |                     |                         |                       |                   |             | "                         | 1s   |
| 76                      | HD120136            | 13 4231      | +175719             | 220620                  |                       |                   |             |                           | 1900 |
| 77                      | Comp                |              |                     |                         |                       |                   |             | "                         | 1s   |
| 78                      | HD120136            | "            | "                   | 224043                  |                       |                   |             |                           | 619  |
| 79                      | Comp.               |              |                     |                         |                       |                   |             | "                         | 1s   |
| 80                      | BIAS(4)             |              |                     | 2258                    |                       |                   |             |                           |      |
| 81/90                   | FLATS x10           |              |                     |                         |                       | 0 45E             | +17 28      | JUNG                      | 6x2  |
| 91                      | BIAS(4)             |              |                     | 0021                    |                       |                   |             |                           |      |
| 92                      | comp                |              |                     |                         |                       |                   |             | ThAr                      | 1s   |
| 93                      | HD120136            | 13 4231      | +175719             | 002607                  |                       |                   |             |                           | 161+ |



CCD Spectr. Temp.  $-100.4^{\circ}\text{C}$

Dome Temp./Hum.  $+8.4^{\circ}\text{C} / 52\% \text{H}$

Transparency Conditions *Part Cloudy* 233

Focus  $22.8$

CCD Spectr. Temp.  $-100.3^{\circ}\text{C}$

Dome Temp./Hum.  $+06.5^{\circ}\text{C} / 62\% \text{H}$

0 0 256 1024 4 1 *CCD UNIT*

| Exp. Mtr.                         | Seeing | Pr. Mag. | Sp. | Inst.   | Grating/<br>X Tilt | Slit        | Emulsion  | P.H. | Program      | Remarks   | Quality |
|-----------------------------------|--------|----------|-----|---------|--------------------|-------------|---|------|--------------|---|---------|
| 1000 V                            |        |          |     | edletto | 0600h<br>19.00     | 400u        | set = .285<br>Height = .275<br>50u = .281<br>400u H | 3    | focus test   | 90 c gain for focus<br>and <del>at</del> Height with<br>30 c gain now | 3K      |
| 2.4K                              | 2"     | 1.35     | B7V |         |                    |             | 6380A   | 4    | Telluric Std |   |         |
|                                   |        |          |     |         |                    |             |   | 5    |              |   |         |
|                                   |        |          |     |         |                    |             |   | 1    |              |   |         |
|                                   |        |          |     |         |                    |             |   | 2    |              |   |         |
| 1320 Volts, but not balanced yet. |        |          |     |         |                    |             |   | 6    |              | <del>150/1 S/N</del><br>in and out of cloud.<br>20 days from moon     |         |
| 800                               | 2"     | 45       | F7V |         |                    |             |   | 3    |              |   |         |
|                                   |        |          |     |         |                    |             |   | 4    |              |   |         |
| 2UB                               |        |          |     |         |                    |             |   | 7    |              | Terminated by cloud.  |         |
|                                   |        |          |     |         |                    |             |   | 1    |              |   |         |
|                                   |        |          |     |         |                    | 50u W       |   | 2    |              |   | 11K     |
|                                   |        |          |     |         |                    | 600u Height |   |      |              |   |         |
| meter Balance 0. K <sub>0</sub>   |        |          |     |         |                    |             |   | 1    |              |   |         |
|                                   |        |          |     |         |                    | 50u W       |   | 3    |              |   | 3.3K    |
|                                   |        |          |     |         |                    | 400u Height |   |      |              |   |         |
| 1100                              | 1-2"   |          |     |         |                    |             |   | 2    |              |   |         |



CCD Spectr. Temp. -100.6 °C

Dome Temp./Hum. +05.5°C 59.8%RH

Transparency Conditions ... H<sub>2</sub>O 2.9 g/m<sup>3</sup> Bright Full moon nearby 235

Focus ... 22.8

PART cloudy

Spectr. Temp. ...

Dome Temp./Hum. ...

| Exp. Mtr.          | Seeing | Plg. Mag. | Sp. | Inst.           | Grating/<br>Tilt        | Slit      | Emulsion | P.H.              | Program | Remarks                                   | Quality     |
|--------------------|--------|-----------|-----|-----------------|-------------------------|-----------|----------|-------------------|---------|---|-------------|
| 1320V<br>No filter |        |           |     | Echelle<br>1900 | 0600<br><del>1900</del> | 50μ = 281 |          | 7ci<br>Approx     |         | Big red shift rel to previous comparison? |             |
| 1645               | 1.2"   | 45        | F7V |                 | .308                    |           |          | 5ci<br>7ci        |         |   |             |
| 1720               |        |           |     |                 |                         |           |          | 6ci               |         |   |             |
| 1720               |        |           |     |                 |                         |           |          | 3ci               |         | Blue shift rel to 7ci<br>oil pixel        |             |
| 2908               | 2.3"   |           |     |                 |                         |           |          | 4ci<br>7ci        |         | < oil pixel / more blue of previous       |             |
| 2350               | 2"     |           |     |                 |                         |           |          | 1<br>2<br>3ci     |         | 1/3 spectral by done for 1st part.        |             |
| 2560               | 2.3"   |           |     |                 |                         |           |          | 4ci<br>7ci<br>8ci |         | some cloud                                |             |
| 2132               |        |           |     |                 |                         |           |          | 2ci<br>3          |         | cloudy (uneven)                           | 1.3K<br>35K |





238

pg#1 Tues/Wed

Date 1997 Apr 22/23 Observers MKi/Ta

Emulsion Batches:

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 .....  
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| Plate No.              | Object                  | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|------------------------|-------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CE138 <sup>28/29</sup> | Inb / outboard HURTmann |              |                     |                         |                       |                   |             | ThAr                      | 1/1  |
| 30                     | Comp                    |              |                     |                         |                       |                   |             | ThAr                      | 1s   |
| 31                     | HD120136                | 134231       | +175719             | 00 5313                 |                       |                   |             |                           | 1200 |
| 32                     | Comp                    |              |                     |                         |                       |                   |             | "                         | 1s   |
| 33                     | BIAS(A)                 |              |                     | 01 14                   |                       |                   |             |                           |      |
| 34                     | Comp                    |              |                     |                         |                       |                   |             | "                         | 1s   |
| 35                     | HD120136                | "            | "                   | 01 1722                 |                       |                   |             |                           | 1200 |
| 36                     | Comp                    |              |                     |                         |                       |                   |             | "                         | 1s   |
| 37                     | HD120136                | "            | "                   | 01 3926                 |                       |                   |             |                           |      |
| 38                     | Comp                    |              |                     |                         |                       |                   |             | "                         | 1s   |
| 39                     | HD120136                | "            | "                   | 02 0046                 |                       |                   |             |                           | 1200 |
| 40                     | Comp                    |              |                     |                         |                       |                   |             | "                         | 1s   |
| 41                     | BIAS(A)                 |              |                     | 02 22                   |                       |                   |             |                           |      |
| 42                     | Comp                    |              |                     |                         |                       |                   |             | "                         | 1s   |
| 43                     | HD120136                |              |                     | 02 2435                 |                       |                   |             |                           | 1200 |

CCD Spectr. Temp.  $-100.5^{\circ}C$  Dome Temp./Hum.  $+07.9^{\circ}C$  67.1%  
 Focus  $.228$  Transparency Conditions clearing from NE  
 Spectr. Temp.  $-100.8^{\circ}C$  Dome Temp./Hum.  $+06.2^{\circ}C$  68.4%  
 No ground wind but cloud moving from NE slowly  
 90 c gain however r MAX

| Exp. Mtr.<br>No. Filter | Seeing   | Ptg. Mag. | Sp. | Inst.   | Grating/<br>Tilt  | Slit        | Emulsion | P.H. | Program | Remarks              | Quality |
|-------------------------|----------|-----------|-----|---------|-------------------|-------------|----------|------|---------|----------------------|---------|
| 1320V<br>+08.2°C        | F = .228 |           |     | Echelle | x<br>0600<br>.308 | 50u<br>400u | 6380A    | 8/9  | focus   | 0 0 128 1024 8 1 CCD |         |
|                         |          |           |     |         |                   |             |          | 3    |         | 0 0 256 1024 4 1 CCD | 5K      |
| 4.2K                    | 2"       | 4.5       | F7V |         |                   |             |          | 4    |         |                      | 5K      |
|                         |          |           |     |         |                   |             |          | 5    |         |                      |         |
|                         |          |           |     |         |                   |             |          | 1    |         |                      |         |
|                         |          |           |     |         |                   |             |          | 2    |         |                      |         |
| 2.4K                    |          |           |     |         |                   |             |          | 6    |         |                      |         |
|                         |          |           |     |         |                   |             |          | 7    |         |                      |         |
| 4.6K                    |          |           |     |         |                   |             |          | 4    |         | Big dome turn        |         |
|                         |          |           |     |         |                   |             |          | 3    |         |                      |         |
| 4.4K                    |          |           |     |         |                   |             |          | 5    |         |                      |         |
|                         |          |           |     |         |                   |             |          | 7    |         |                      |         |
|                         |          |           |     |         |                   |             |          | 1    |         |                      |         |
|                         |          |           |     |         |                   |             |          | 2    |         | Dome turned          |         |
|                         |          |           |     |         |                   |             |          | 4    |         | Some cloud           |         |

240

Pg#2 Tues/Wed

Date 1997 Apr 22/23... Observers Mki/Tlg

Emulsion Batches:

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| Plate No. | Object         | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|----------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| ce1384A   | Comp           |              |                     |                         |                       |                   |             | ThAr                      | 1s   |
| 45        | Comp           |              |                     |                         |                       |                   |             | "                         | 1s   |
| 46        | HD 120136      | 13 42 31     | +17 57 19           | 02 56 01                |                       |                   |             |                           | 1200 |
| 47        | Comp           |              |                     |                         |                       |                   |             | "                         | 1s   |
| 48        | HD 120136      |              |                     | 03 17 16                |                       |                   |             |                           | 1205 |
| 49        | Comp           |              |                     |                         |                       |                   |             | "                         | 1s   |
| 50        | BIAS (4)       |              |                     | 03 38 45                |                       |                   |             |                           |      |
| 51        | Comp           |              |                     |                         |                       |                   |             | "                         | 1s   |
| 52        | HD 130109      | 14 41 2      | +02 10 57           | 03 45 56                |                       |                   |             |                           | 970  |
| 53        | Comp           |              |                     |                         |                       |                   |             | "                         | 1s   |
| 54        | Comp           |              |                     |                         |                       |                   |             | "                         | 1s   |
| 55        | HD 1871691     | 19 46 14     | +10 09 55           | 04 07 43                |                       |                   |             |                           | 1131 |
| 56        | Comp           |              |                     |                         |                       |                   |             | "                         | 1s   |
| 57/66     | FLATS x10      |              |                     |                         |                       | 2 32W +14°        |             | TUNG                      | 3s   |
| 67        | BIAS (4)       |              |                     | 04 38                   |                       |                   |             |                           |      |
| 68/69     | Inh / low Beam |              |                     |                         |                       | "                 | "           | ThAr                      | 1/1  |



CCD Spectr. Temp. ... -100.8°C ... Dome Temp./Hum. ... +06.1°C 68.4% H Transparency Conditions . Part Cloudy

Focus ..... 228 .....

Spectr. Temp. ... -101.9°C ... Dome Temp./Hum. ... +05.3°C 71.6% H

241

| Exp. Mtr. | Seeing | Mag. | Sp. | Inst. | Grating/<br>Tilt | Slit         | Emulsion | P.H. | Program       | Remarks  | Quality |
|-----------|--------|------|-----|-------|------------------|--------------|----------|------|---------------|----------|---------|
|           |        | #    |     | 19100 | 0600<br>X 308    | 50u<br>400u  | 6380A    | 3    |               |          |         |
| 3.5K      | 2.5"   | 45   | F7V |       |                  |              |          | 5    |               |          |         |
|           |        |      |     |       |                  |              |          | 7    |               |          |         |
| 29K       |        |      |     |       |                  |              |          | 6    |               |          |         |
|           |        |      |     |       |                  |              |          | 2    |               |          |         |
|           |        |      |     |       |                  |              |          | 1    |               |          |         |
|           |        |      |     |       |                  |              |          | 2    |               |          |         |
| 3K        | 2.5"   | 372  | A0V |       |                  |              |          | 4    | telluric std. |          |         |
|           |        |      |     |       |                  |              |          | 3    |               |          |         |
|           |        |      |     |       |                  |              |          | 3    |               |          |         |
| 1090      | 2"     | 511  | F7V |       |                  |              |          | 5    | std vel       |          |         |
|           |        |      |     |       |                  |              |          | 7    |               |          |         |
|           |        |      |     |       |                  | 600u = 1.205 |          | 2    |               |          | 11K     |
|           |        |      |     |       |                  |              |          | 1    |               |          |         |
|           |        |      |     |       |                  |              |          | 8/9  | focus         | 2:1 in Y |         |

242 P4 #1 1 Wed/Tues

Emulsion Batches:

Date 1947 Apr 23/24 Observers M.K. / T.G.

| Plate No.                           | Object              | R. A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-------------------------------------|---------------------|---------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| ce138 <sup>70</sup> / <sub>71</sub> | Inboard / out Board |               |                     |                         |                       |                   |             | ThAr                      | 1/1  |
| 72                                  | BIAS(4)             |               |                     | 2034                    |                       |                   |             |                           |      |
| 73                                  | Comp                |               |                     |                         |                       |                   |             | ThAr                      | 1    |
| 74                                  | HD 87901            | 10 03 03      | +122722             | 203605                  |                       |                   |             | Short                     | 11K  |
| 75                                  | Comp                |               |                     |                         |                       |                   |             | "                         | 1s   |
| 76                                  | Comp                |               |                     |                         |                       |                   |             | "                         | 1s   |
| 77                                  | HD 120136           | 13 42 31      | +175719             | 204409                  |                       |                   |             |                           | 989  |
| 78                                  | Comp                |               |                     |                         |                       |                   |             | "                         | 1s   |
| 79                                  | HD 120136           |               |                     | 210209                  |                       |                   |             |                           | 1200 |
| 80                                  | Comp                |               |                     |                         |                       |                   |             | "                         | 1s   |
| 81                                  | HD 120136           |               |                     | 212312                  |                       |                   |             |                           | 1200 |
| 82                                  | Comp                |               |                     |                         |                       |                   |             | "                         | 1s   |
| 83                                  | BIAS(4)             |               |                     | 2144                    |                       |                   |             |                           |      |
| 84                                  | Comp                |               |                     |                         |                       |                   |             | "                         | 1    |
| 85                                  | HD 120136           |               |                     | 214558                  |                       |                   |             |                           | 856  |
| 86                                  | Comp                |               |                     |                         |                       |                   |             | "                         | 1    |

COO  
Spectr. Tem

Focus ...

Spectr. Tem

Exp. Mr.

1320

1-107

11K

990

AK

97K

11K

Spectr. Temp.  $-100.8^{\circ}\text{C}$  ..... Dome Temp./Hum.  $+10.8^{\circ}\text{C}$   $3862\text{H}$  Transparency Conditions *clearing partially*  $243$

Focus  $\cdot 230$  ..... Spectr. Temp. .... Dome Temp./Hum. .... 30c gain FROM NE.

*No wind again and some cloud moving N14X*

| Exp. Mtr.                            | Seeing  | Fl. Mag. | Sp. | Inst.            | Grating/<br>x Tilt | Slit                       | Emulsion    | P.H. | Program      | Remarks   | Quality |
|--------------------------------------|---------|----------|-----|------------------|--------------------|----------------------------|-------------|------|--------------|---|---------|
| 1320V<br>$T = +10.7^{\circ}\text{C}$ |         |          |     | Echelle<br>19.00 | 0600<br>•308       | 50u<br>400u<br>50u<br>400u | W<br>H 6380 | 8/9  | four test    | 0 0 1781024 81                                    |         |
|                                      |         |          |     |                  |                    |                            |             | 1    |              | 0 0 256 1024 41<br>30 c gain now                  |         |
|                                      |         |          |     |                  |                    |                            |             | 3    |              |   |         |
| 11K                                  |         | 1.35     | B7V |                  |                    |                            |             | 4    | Telluric Std |   | 5K      |
|                                      |         |          |     |                  |                    |                            |             | 5    |              |   |         |
|                                      |         |          |     |                  |                    |                            |             | 5    |              |   |         |
| 3900                                 | $< 1''$ | 4.5      | F7V |                  |                    |                            |             | 2    |              | 7200/1 S/H<br>(E 300)<br>cloud @ 2055 (last half) | 3K      |
|                                      |         |          |     |                  |                    |                            |             | 3    |              |   |         |
| 4K                                   | $1.2''$ |          |     |                  |                    |                            |             | 4    |              | some cloud  |         |
|                                      |         |          |     |                  |                    |                            |             | 5    |              |   |         |
| 5.9K                                 | $1''$   |          |     |                  |                    |                            |             | 6    |              | clear   |         |
|                                      |         |          |     |                  |                    |                            |             | 3    |              |   |         |
|                                      |         |          |     |                  |                    |                            |             | 1    |              |   |         |
|                                      |         |          |     |                  |                    |                            |             | 3    |              |   |         |
| 3.1K                                 | $1''$   |          |     |                  |                    |                            |             | 2    |              | cloud at end                                      |         |
|                                      |         |          |     |                  |                    |                            |             | 3    |              |   |         |

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p#2

Wed / Thurs

Emulsion Batches:

Date ... 1997 Apr 23/24... Observers MKI./Jn.....

| Plate No. | Object    | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|-----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| ce13887   | Comp      |              |                     |                         |                       |                   |             | ThAr                      | 1s   |
| 88        | HD130109  | 14 41 12     | +02 18 51           | 22 14 17                |                       |                   |             |                           | 12/8 |
| 89        | Comp      |              |                     |                         |                       |                   |             | ThAr                      | 1    |
| 90        | Comp      |              |                     |                         |                       |                   |             | "                         | 1    |
| 91        | HD 105870 | 11 45 29     | +02 19 42           | 22 40 37                |                       |                   |             |                           | 758  |
| 92        | Comp      |              |                     |                         |                       |                   |             | "                         | 1    |
| 93        | BIAS (4)  |              |                     | 22 54                   |                       |                   |             |                           |      |
| 94        | Comp      |              |                     |                         |                       |                   |             | "                         | 1    |
| 95        | HD 120136 | 13 42 31     | +17 57 19           | 22 58 38                |                       |                   |             |                           | 1088 |
| 96        | Comp      |              |                     |                         |                       |                   |             | "                         | 1    |
| 97        | Comp      |              |                     |                         |                       |                   |             | "                         | 1s   |
| 98        | HD 120136 | "            | "                   | 23 26 36                |                       |                   |             |                           | 605  |
| 99        | Comp      |              |                     |                         |                       |                   |             | "                         | 1c   |
| ce13900   | BIAS (4)  |              |                     | 23 47                   |                       |                   |             |                           |      |
| 01        | Comp      |              |                     |                         |                       |                   |             | "                         | 1s   |

Spect. Tem.

Focus...

Spectr. Tem.

Exp. Mir.

220'

57'

34'

14'

750'

<sup>COO</sup>  
 Spectr. Temp.  $-100.7^{\circ}\text{C}$  .. Dome Temp./Hum.  $+09.3^{\circ}\text{C}$   $41\% \text{RH}$  Transparency Conditions  $\dots$  *part cloudy*  $\dots$  245  
 Focus  $\dots$  230  $\dots$

Spectr. Temp.  $\dots$  Dome Temp./Hum.  $\dots$  *ed* 30 c gain

| Exp. Mtr. | Seeing | Mag. | Sp. | Inst.                   | Grating/<br>Tilt | Slit        | Emulsion | P.H. | Program      | Remarks                         | Quality |
|-----------|--------|------|-----|-------------------------|------------------|-------------|----------|------|--------------|---------------------------------|---------|
| 1320V     |        |      |     | <i>Echelle</i><br>19.00 | 0600h<br>1308    | 50u<br>400u | 6380Å    | 5    |              |                                 |         |
| 37h       | 2"     | 3.72 | A0V |                         |                  |             |          | 7    | telluric Std |                                 |         |
|           |        |      |     |                         |                  |             |          | 3    |              |                                 |         |
|           |        |      |     |                         |                  |             |          | 5    |              |                                 |         |
| 34k       | 2.3"   | 3.61 | F9V |                         |                  |             |          | 6    | std vel      |                                 |         |
|           |        |      |     |                         |                  |             |          | 3    |              |                                 |         |
|           |        |      |     |                         |                  |             |          | 1    |              |                                 |         |
|           |        |      |     |                         |                  |             |          | 5    |              |                                 |         |
| 1.4k      | 1.2"   | 4.5  | F7V |                         |                  |             |          | 2    | mki psm      | ↗ Boo                           |         |
|           |        |      |     |                         |                  |             |          | 3    |              |                                 |         |
|           |        |      |     |                         |                  |             |          | 5    |              |                                 |         |
| 750       | 1"     |      |     |                         |                  |             |          | 6    |              | Thin cloud, <u>Thick at end</u> |         |
|           |        |      |     |                         |                  |             |          | 3    |              |                                 |         |
|           |        |      |     |                         |                  |             |          | 1    |              |                                 |         |
|           |        |      |     |                         |                  |             |          | 3    |              |                                 |         |



Spectr. Temp.  $-100.8^{\circ}\text{C}$  ..... Dome Temp./Hum.  $+07.8^{\circ}\text{C}$  5098H Transparency Conditions ... Post. (clearly) ..... 47.

Focus ..... 2.30 .....

Spectr. Temp.  $-100.7^{\circ}\text{C}$  ..... Dome Temp./Hum.  $+07.6^{\circ}\text{C}$  5098H 30c gain

| Exp. Mtr. | Seeing | Pig/Mag. | Sp. | Inst.  | Grating/<br>X Tilt | Slit                         | Emulsion | P.H.         | Program | Remarks            | Quality |
|-----------|--------|----------|-----|--------|--------------------|------------------------------|----------|--------------|---------|--------------------|---------|
| 1320V     |        |          |     | Edelle |                    |                              |          |              |         |                    |         |
| 2870      |        | 450      | F7V | 19.00  | 0600 In/air<br>308 | 50a<br>400a<br>400a H = .205 | W<br>H   | 6c           | -       | Intermittent Cloud |         |
|           |        |          |     |        |                    |                              |          | 3            |         |                    |         |
| 2870      | 2"     |          |     |        |                    |                              |          | 7c           |         |                    |         |
|           |        |          |     |        |                    |                              |          | <del>3</del> |         |                    |         |
| 306K      | 1-2"   |          |     |        |                    |                              |          | 5c           |         |                    |         |
|           |        |          |     |        |                    |                              |          | 3            |         |                    |         |
|           |        |          |     |        |                    |                              |          | 1            |         |                    |         |
|           |        |          |     |        |                    |                              |          | 3            |         |                    | 13K     |
|           |        |          |     |        |                    | 600a = .205                  |          |              |         |                    |         |

248  
pg#1

THURS / FRI

Emulsion Batches:

Date ... 1977. Apr. 24/25. Observers M.K.S. / J.G. ....

| Plate No.  | Object             | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp.  |
|------------|--------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-------|
| CO13919/20 | Inboard / outboard |              |                     |                         |                       |                   |             | ThAr                      | 1/1   |
| 21         | B/H5(4)            |              |                     | 19 38                   |                       |                   |             |                           |       |
| 22         | Comp               |              |                     |                         |                       |                   |             | ThAr                      | 1 sec |
| 23         | HD 89021           | 10 1104      | +43 2450            | 19 4727                 |                       |                   |             |                           | 1225  |
| 24         | Comp               |              |                     |                         |                       |                   |             | "                         | 15    |
| 25         | Comp               |              |                     |                         |                       |                   |             | "                         | 15    |
| 26         | HD 87901           | 10 0303      | +12 2722            | 19 5349                 |                       |                   |             |                           | 197   |
| 27         | Comp               |              |                     |                         |                       |                   |             | ThAr                      | 1     |
| 28         | Comp               |              |                     |                         |                       |                   |             | "                         | 1     |
| 29         | HD 120136          | 13 4231      | +17 5719            | 20 0209                 |                       |                   |             |                           | 1201  |
| 30         | Comp               |              |                     |                         |                       |                   |             | "                         | 1     |
| 31         | HD 120136          | "            | "                   | 20 2332                 |                       |                   |             |                           | 1201  |
| 32         | Comp               |              |                     |                         |                       |                   |             | "                         | 1     |
| 33         | HD 120136          | "            | "                   | 20 4459                 |                       |                   |             |                           | 1250  |
| 34         | Comp               |              |                     |                         |                       |                   |             | "                         | 1     |
| 35         | B/H5(4)            |              |                     | 21 06                   |                       |                   |             |                           |       |



CCD Spectr. Temp. ... 100.7°C ..... Dome Temp./Hum. ... +10.6°C 5652<sup>h</sup> Transparency Conditions ... F:NR ..... 249

Focus ... 230 ... unchanged ..... 30 equn tonight  
 en some cloud moving from NORTH

Spectr. Temp. .... Dome Temp./Hum. .... CCD  
 light NNW breeze

| Exp. Mtr.           | Seeing            | Pa. Mag. | Sp.  | Inst.                   | Grating/<br>X Tilt | Slit      | Emulsion | P.H. | Program               | Remarks                   | Quality |
|---------------------|-------------------|----------|------|-------------------------|--------------------|-----------|----------|------|-----------------------|---------------------------|---------|
| 1320V<br>110 filter | (+10.6°C F=0.230) |          |      | CCD<br>Echelle<br>19.00 | 0600 lines<br>.308 | 50<br>100 | 6380A    | 8/9  | 90 equn<br>Focus Test | CCDFMT<br>0 0 1281024 8 1 |         |
|                     |                   |          |      |                         |                    |           |          | 1    | Now 30 equn           | CCDFMT<br>0 0 2561024 4 1 |         |
|                     |                   |          |      |                         |                    |           |          | 3    |                       |                           |         |
| 2.5K                | 1"                | 3.45     | A2IV |                         |                    |           |          | 2    | normalization         | STHR                      |         |
|                     |                   |          |      |                         |                    |           |          | 3    |                       |                           |         |
|                     |                   |          |      |                         |                    |           |          | 3    |                       |                           |         |
| 19K                 | 1"                | 1.35     | B7V  |                         |                    |           |          | 4    | Telluric Std.         |                           |         |
|                     |                   |          |      |                         |                    |           |          | 3    |                       |                           |         |
|                     |                   |          |      |                         |                    |           |          | 3    |                       |                           |         |
| 3.2K                | 2"2'              | 4.5      | F7V  |                         |                    |           |          | 6    |                       | 1.71 Air mass             |         |
|                     |                   |          |      |                         |                    |           |          | 3    |                       |                           |         |
| 4.8K                |                   |          |      |                         |                    |           |          | 7    |                       |                           |         |
|                     |                   |          |      |                         |                    |           |          | 3    |                       |                           |         |
| 3080.               |                   | 4.5      | F7V  |                         |                    |           |          | 4    |                       | 20.47 cloudy              |         |
|                     |                   |          |      |                         |                    |           |          | 3    |                       |                           |         |
|                     |                   |          |      |                         |                    |           |          | 1    |                       |                           |         |



Spectr. Temp. .... Dome Temp./Hum.  $+08.3^{\circ}\text{C}$   $62.3\% \text{H}$  Transparency Conditions *part cloudy* ..... 251

Focus ..... 230

<sup>CCD</sup> Spectr. Temp. ....  $101.7^{\circ}\text{C}$  ..... Dome Temp./Hum.  $107.7^{\circ}\text{C}$   $61.4\% \text{H}$   
*CA*

| Exp. Mtr. | Seeing | P <sub>0</sub> Mag. | Sp. | Inst.            | Grating/<br>X Tilt                      | Slit            | Emulsion | P.H. | Program                      | Remarks  | Quality |
|-----------|--------|---------------------|-----|------------------|---|-----------------|----------|------|------------------------------|--|---------|
| 1320V     |        |                     |     | Echelle<br>19:00 | 0600 $\frac{1}{2}$ $\frac{1}{2}$<br>308 | 50 $\mu$<br>400 | 6380A    | 3    |                              |  |         |
| 3200      |        | 45                  | F7V |                  |   |                 |          | 2    |                              |  |         |
|           |        |                     |     |                  |   |                 |          | 3    |                              |  |         |
| 3.4K      | 1.2"   |                     |     |                  |   |                 |          | 4    |                              | darkened   |         |
|           |        |                     |     |                  |   |                 |          | 3    |                              |  |         |
| 2.3K      |        |                     |     |                  |   |                 |          | 6    | <del>small</del> <u>Lost</u> | small file, probably a <del>recording</del> problem<br>fairly streaked |         |
|           |        |                     |     |                  |   |                 |          | 3    |                              | After re load of tape  |         |
|           |        |                     |     |                  |   |                 |          | 1    |                              |  |         |
|           |        |                     |     |                  |   |                 |          | 3    |                              |  |         |
| 3.6K      | 1.2"   |                     |     |                  |   |                 |          | 2    |                              |  |         |
|           |        |                     |     |                  |   |                 |          | 3    |                              |  |         |
| 1.4K      |        |                     |     |                  |   |                 |          | 4    |                              |  |         |
|           |        |                     |     |                  |   |                 |          | 3    |                              |  |         |
|           |        |                     |     |                  |   |                 |          | 3    |                              |  |         |
|           | 1.2"   | 3.61                | F9V |                  |   |                 |          | 4    | std vel                      |  |         |
|           |        |                     |     |                  |   |                 |          | 3    |                              |  |         |



Spectr. Temp. <sup>SCP</sup> - 10.7 °C ..... Dome Temp./Hum. ....

Transparency Conditions ... *mostly cloudy* ... 25.3

Focus ..... 230 .....

Spectr. Temp. .... Dome Temp./Hum. ....

ca

| Exp. Mtr. | Seeing | Pg. Mag. | Sp.                         | Inst.            | Grating/<br>X Tilt | Slit                 | Emulsion | P.H. | Program | Remarks                           | Quality |
|-----------|--------|----------|-----------------------------|------------------|--------------------|----------------------|----------|------|---------|-----------------------------------|---------|
| 1320V     |        |          |                             | Echelle<br>19.00 | 0660ln<br>.308     | 50uW<br>400uH        | 6380A°   | 1    |         |                                   |         |
|           |        |          |                             |                  |                    | 50uW = .281          |          | 3    |         |                                   | IAK     |
|           |        |          |                             |                  |                    | 600uH = .205         |          | 1    |         |                                   |         |
|           |        |          |                             |                  |                    | 50uW<br>400uH = .225 |          | 3    |         |                                   |         |
| 4300      | 1.2"   | 4.5      |                             |                  |                    |                      |          | 4    |         |                                   |         |
|           |        |          |                             |                  |                    |                      |          | 3    |         |                                   |         |
| 2830      |        |          |                             |                  |                    |                      |          | 5    |         |                                   |         |
|           |        |          |                             |                  |                    |                      |          | 3    |         |                                   |         |
|           |        |          |                             |                  |                    |                      |          | 3    |         |                                   |         |
| 300       | 2"     | 5.06     | F8 $\bar{I}\bar{R}-\bar{V}$ |                  |                    |                      |          | 6    |         | HR 5694 = 5 star<br>cloudy (weak) |         |
|           |        |          |                             |                  |                    |                      |          | 3    |         |                                   |         |
|           |        |          |                             |                  |                    |                      |          | 1    |         |                                   |         |
|           |        |          |                             |                  |                    |                      |          | 3    |         |                                   |         |
| 280       | 2"     | 2.99     | A0Vn                        |                  |                    |                      |          | 2    |         | Telluric std. (in cloud)          |         |
|           |        |          |                             |                  |                    |                      |          | 3    |         |                                   |         |

pg #4  
254

Date 1997 Apr 24/25 ..... Observers ... M.A. / T.A. ....

Emulsion Batches:

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| Plate No. | Object      | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|-------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| ce13976   | HD 177724   | 190049       | +134253             | 024616                  |                       |                   |             |                           | 970s |
| 77        | Comp        |              |                     |                         |                       |                   |             | ThAr                      | 1s   |
| 78        | Comp        |              |                     |                         |                       |                   |             | .                         | 1s   |
| 79        | HD 136202   | 151412       | +020837             | 030849                  |                       |                   |             |                           | 1456 |
| 80        | Comp        |              |                     |                         |                       |                   |             | n                         | 1s   |
| 81        | BIDS (4)    |              |                     | 0334                    |                       |                   |             |                           |      |
| 82        | Comp        |              |                     |                         |                       |                   |             |                           | 1s   |
| 83        | HD 120136   | 151412       | +175719             | 035000                  |                       |                   |             |                           | 588  |
| 84        | Comp        |              |                     |                         |                       |                   |             |                           | 1s   |
| 85/86     | Inboard/out |              |                     |                         |                       |                   |             |                           | 1/1  |

Spectr. Ten

Focus...

Spectr. Ten

Exp. Mir

200

No. 4/10

302K

2K

Spectr. Temp. .... Dome Temp./Hum.  $+06.6^{\circ}\text{C}$   $55.2\%$  Transparency Conditions *part clear* 255

Focus *1230* .....

Spectr. Temp. .... Dome Temp./Hum.  $+06.2^{\circ}\text{C}$   $55\%$   
*ca*

| Exp. Mtr.  | Seeing      | P.V. Mag.   | Sp.           | Inst.                         | Grating/Tilt               | Slit                      | Emulsion     | P.H.       | Program             | Remarks                                | Quality |
|--|-------------|-------------|---------------|-------------------------------|----------------------------|---------------------------|--------------|------------|---------------------|--|---------|
| <i>1320V</i><br><i>10 f. / ka</i><br><i>302K</i> | <i>2"</i>   | <i>2.99</i> | <i>A0Vn</i>   | <i>edelle</i><br><i>19.00</i> | <i>0600</i><br><i>1308</i> | <i>50u</i><br><i>400u</i> | <i>5380A</i> | <i>4c</i>  | <i>Telluric Std</i> |  |         |
|  |             |             |               |                               |                            |                           |              | <i>3</i>   |                     |  |         |
|  |             |             |               |                               |                            |                           |              | <i>3</i>   |                     |  |         |
| <i>2K</i>  | <i>2-3"</i> | <i>5.06</i> | <i>F8IV-V</i> |                               |                            |                           |              | <i>5</i>   | <i>sp Std</i>       | <i>5 set</i>                           |         |
|  |             |             |               |                               |                            |                           |              | <i>3</i>   |                     |  |         |
|  |             |             |               |                               |                            |                           |              | <i>1</i>   |                     |  |         |
|  |             |             |               |                               |                            |                           |              | <i>3</i>   |                     |  |         |
|  | <i>2-3"</i> | <i>4.15</i> | <i>F7V</i>    |                               |                            |                           |              | <i>2</i>   |                     | <i>mostly so</i><br><i>part cloudy</i> |         |
|  |             |             |               |                               |                            |                           |              | <i>3</i>   |                     |  |         |
|  |             |             |               |                               |                            |                           |              | <i>7/8</i> | <i>focus</i>        | <i>8-1 in Y</i>                        |         |

pg #1 Fri/SAT  
 256 Date 1997 April 25 Observers KK/Mki/Tn

Emulsion Batches:

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| Plate No. | Object           | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CE 13987  | Hartmann inboard |              |                     |                         |                       |                   |             | Thin                      | 2    |
| 88        | outboard         |              |                     |                         |                       |                   |             |                           | 4    |
| 89        | Comp             |              |                     |                         |                       |                   |             |                           | 1    |
| 90        | HP 76943         | 08 54 09     | +210 44             | 19 33 25                |                       |                   |             |                           | 142  |
| 91        | Comp             |              |                     |                         |                       |                   |             | Thin                      | 1    |
| 92        | Comp             |              |                     |                         |                       |                   |             | "                         | 1    |
| 93        | HD47105          | 06 31 56     | +1629 05            | 19 47 20                |                       |                   |             |                           | 174  |
| 94        | Comp             |              |                     |                         |                       |                   |             | "                         | 1    |
| 95        | HD47105          | "            | "                   | 19 51 53                |                       |                   |             |                           | 290  |
| 96        | Comp             |              |                     |                         |                       |                   |             |                           | 1    |
| 97        | HD47105          | "            | "                   | 19 54 03                |                       |                   |             |                           | 330  |
| 98        | Comp             |              |                     |                         |                       |                   |             |                           | 1    |
| 99        | BIAS (4)         |              |                     | 20 05                   |                       |                   |             |                           |      |
| 14000     | BIAS (4)         |              |                     | 20 24                   |                       |                   |             |                           |      |
| 01        | Comp             |              |                     |                         |                       |                   |             |                           |      |

Spectr. Tem

Focus...

Spectr. Tem

Exp Mir

1320V

100V

650

1346

1590



Spectr. Temp. .... Dome Temp./Hum.  $+11.6$   $40.9\%$  Transparency Conditions clear ..... 257

Focus ..... 0.232 .....

Medium NNW wind

Spectr. Temp. .... Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | Flt. Mag. | Sp. | Inst.   | Grating/Tilt | Slit     | Emulsion   | P.H. | Program | Remarks                              | Quality |
|-----------|--------|-----------|-----|---------|--------------|----------|------------|------|---------|--------------------------------------|---------|
| 2         |        |           |     | echelle | 300 /        |          |            |      |         |                                      |         |
|           |        |           |     | 19.00   | .308         | 50 $\mu$ | 6380 $\mu$ | 7    |         | 0 0 12810081<br>CCDFMT<br>30 gain    |         |
| 4         |        |           |     |         |              |          |            | 8    |         | "                                    |         |
| 1         |        |           |     |         |              |          |            |      |         | CCDFMT                               |         |
| 1/2       |        |           |     |         |              |          |            |      |         | 0 0 25612441                         |         |
| 1         |        |           |     |         |              |          |            |      |         | "                                    |         |
| 1         |        |           |     |         |              |          |            |      |         | "                                    |         |
|           |        |           |     |         |              |          |            |      |         |                                      |         |
|           |        |           |     |         |              |          |            |      |         |                                      |         |
| 174       |        |           |     |         |              |          |            | 4    |         | 30 gain now                          | 4K      |
|           |        |           |     |         |              |          |            | 3    |         |                                      |         |
| 1         |        |           |     |         |              |          |            | 5    |         |                                      | 6K      |
| 310       |        |           |     |         |              |          |            | 7    |         |                                      |         |
| 1         |        |           |     |         |              |          |            | 4    |         |                                      | 7K      |
| 39        |        |           |     |         |              |          |            | 3    |         |                                      |         |
| 1         |        |           |     |         |              |          |            | 1    |         | ccdfT still @ $-115^{\circ}\text{C}$ |         |
|           |        |           |     |         |              |          |            | 1    |         | now to $-100^{\circ}\text{C}$        |         |
|           |        |           |     |         |              |          |            | 3    |         |                                      |         |

397 FSV

Note CCD Temp  
unregulated for  
this period

7.9 AONC

1000V  
650

1346

1590

pg #2  
258

pg #2 Fri / Sat

Date 1997 Apr 25/26 Observers H.K. / M.K. / T.G....

Emulsion Batches:

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.....  
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| Plate No. | Object    | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|-----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CE4002    | HD 8890   | 01 22 34     | +88 46 26           | 20 26 12                |                       |                   |             |                           | 284  |
| 03        | Comp      |              |                     |                         |                       |                   |             | ThAr                      | 1s   |
| 04        | HD 8890   |              |                     | 20 32 35                |                       |                   |             |                           | 300  |
| 05        | Comp      |              |                     |                         |                       |                   |             | "                         | K    |
| 06        | HD 8890   |              |                     | 20 38 53                |                       |                   |             |                           | 284  |
| 07        | Comp      |              |                     |                         |                       |                   |             | "                         | 1s   |
| 08        | Comp      | 1 51 02      |                     |                         |                       |                   |             | "                         | 1s   |
| 09        | HD 102870 | 11 45 29     | +02 19 42           | 20 51 42                |                       |                   |             |                           | 1160 |
| 10        | Comp      |              |                     |                         |                       |                   |             | "                         | 1s   |
| 11        | Comp      |              |                     |                         |                       |                   |             | "                         | 1s   |
| 12        | HD 120136 | 13 42 31     | +17 57 19           | 21 18 50                |                       |                   |             |                           | 1200 |
| 13        | Comp      |              |                     |                         |                       |                   |             | "                         | 1s   |
| 14        | HD 120136 | "            | "                   | 21 40 14                |                       |                   |             |                           | 1200 |
| 15        | Comp      |              |                     |                         |                       |                   |             | "                         | 1s   |
| 16        | BIAS(4)   |              |                     | 22 02                   |                       |                   |             |                           |      |

Spectr. Tem  
Focus...  
Spectr. Tem

Exp. Mtr.  
100V  
18K

13K  
14K

13K

413

218

240

Spectr. Temp. .... Dome Temp./Hum.  $109.0^{\circ}\text{C}$   $43.2\% \text{H}$  Transparency Conditions Fixed ..... 259  
 Focus ..... 0.232 ..... wind "Air port Parksh"  
 Spectr. Temp. .... Dome Temp./Hum.  $107.7^{\circ}\text{C}$   $46.9\% \text{H}$  NNW 15 kws/hrs @ 21:25T

| Exp. Mtr.       | Seeing | Plu<br>Mag.   | Sp. | Inst.            | Grating/<br>X Tilt | Slit | Emulsion | P.H. | Program | Remarks   | Quality       |
|-----------------|--------|---------------|-----|------------------|--------------------|------|----------|------|---------|---|---------------|
| 1000V<br>1.8K   |        |               |     | Echelle<br>19.00 | 0600h<br>.808      | 50u  | 6380A    | 6a   | Polaris |   | 8K            |
| <del>1.8K</del> |        |               |     |                  |                    |      |          | 3    |         |   | <del>8K</del> |
| 1.4K            |        |               |     |                  |                    |      |          | 6    |         | $\Delta\alpha = 0807W$<br>$= -001804$<br>$\Delta S = -000057$ | 7K            |
| 1.3K            |        | <del>36</del> |     |                  |                    |      |          | 3    |         |   |               |
|                 |        |               |     |                  |                    |      |          | 2    |         |   |               |
|                 |        |               |     |                  |                    |      |          | 3    |         |   |               |
|                 |        |               |     |                  |                    |      |          | 3    |         |   |               |
| 413             | 2"     | 361           | F9V |                  |                    |      |          | 4    | std vel |   | 9K            |
|                 |        |               |     |                  |                    |      |          | 3    |         |   |               |
|                 |        |               |     |                  |                    |      |          | 3    |         |   |               |
| 268             | 2"     | 4.5           | F7V |                  |                    |      |          | 6    |         |   |               |
|                 |        |               |     |                  |                    |      |          | 3    |         |   |               |
| 260             | 2"     | 4.5           | F7V |                  |                    |      |          | 4    |         |   |               |
|                 |        |               |     |                  |                    |      |          | 3    |         |   |               |
|                 |        |               |     |                  |                    |      |          | 1    |         |   |               |

P43 FRI / SAT

260 Date 1997 Apr 25/26 Observers M.K.I./T.H.

Emulsion Batches:

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 .....  
 .....

| Plate No. | Object    | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|-----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| ce14017   | Comp      |              |                     |                         |                       |                   |             | ThAr                      | 1s   |
| 18        | HD 87901  | 10 0303      | +12 27 22           | 22 08 28                |                       |                   |             |                           |      |
| 19        | Comp      |              |                     |                         |                       |                   |             | "                         | 1s   |
| 20        | Comp      |              |                     |                         |                       |                   |             | "                         | 1s   |
| 21        | HD 120136 | 13 423       | +17 57 19           | 22 17 46                |                       |                   |             |                           | 1201 |
| 22        | Comp      |              |                     |                         |                       |                   |             | "                         | 1s   |
| 23        | HD 120136 |              |                     | 22:40:02                |                       |                   |             |                           | 1200 |
| 24        | Comp      |              |                     |                         |                       |                   |             | "                         | 1    |
| 25        | BIAS(4)   |              |                     | 23 02                   |                       |                   |             |                           |      |
| 26        | Comp      |              |                     |                         |                       |                   |             | "                         | 1    |
| 27        | HD 136202 | 15 14 12     | +02 08 37           | 23 05 56                |                       |                   |             |                           | 1617 |
| 28        | Comp      |              |                     |                         |                       |                   |             | "                         | 1    |
| 29        | HD 136202 |              |                     | 23 33 58                |                       |                   |             |                           | 1687 |
| 30        | Comp      |              |                     |                         |                       |                   |             | "                         | 1s   |
| 31        | BIAS(4)   |              |                     | 00 04                   |                       |                   |             |                           |      |

Exp. Mtr  
Spectr. Tem  
Spectr. Tem  
Exp. Mtr  
Spectr. Tem  
Spectr. Tem

CCO  
Spectr. Temp.  $-100.7^{\circ}\text{C}$

Dome Temp./Hum. ....

Transparency Conditions *Fine* 761

Focus  $232$

Spectr. Temp. ....

Dome Temp./Hum.  $406.2^{\circ}\text{C}$  51.4%RH

| Exp. Mtr.                    | Seeing | Pl. Mag. | Sp. | Inst.            | Grating/<br>X Tilt | Slit        | Emulsion | P.H. | Program      | Remarks | Quality |
|------------------------------|--------|----------|-----|------------------|--------------------|-------------|----------|------|--------------|---------|---------|
| 1000V<br>no filter           |        |          |     | Echelle<br>19.00 | 0600<br>1308       | 50u<br>400u | 6380A    | 3    |              |         |         |
| K                            | 1.35   |          | B7V |                  |                    |             |          | 2    | Telluric Std |         | 3.4     |
|                              |        |          |     |                  |                    |             |          | 3    |              |         |         |
|                              |        |          |     |                  |                    |             |          | 3    |              |         |         |
| 278                          |        | 45       | F7V |                  |                    |             |          | 4    |              |         |         |
|                              |        |          |     |                  |                    |             |          | 3    |              |         |         |
|                              | 2.4'   |          |     |                  |                    |             |          | 4    |              |         |         |
|                              |        |          |     |                  |                    |             |          | 3    |              |         |         |
|                              |        |          |     |                  |                    |             |          | 1    |              |         |         |
|                              |        |          |     |                  |                    |             |          | 3    |              |         |         |
| 108                          | 2.3'   | 5.06     | F7V |                  |                    |             |          | 2    | Sp Std       | 15 Ser  |         |
|                              |        |          |     |                  |                    |             |          | 3    |              |         |         |
| meter balanced for 1000V new |        |          |     |                  |                    |             |          | 2    |              |         |         |
| 120                          |        |          |     |                  |                    |             |          | 3    |              |         |         |
|                              |        |          |     |                  |                    |             |          | 1    |              |         |         |

P#4

Fri / SAT

Emulsion Batches:

262

Date 1997 Apr 25/26.. Observers Mki / Tn.....

| Plate No. | Object    | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|-----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CE14032   | Comp      |              |                     | 00 07 49                |                       |                   |             | ThAr                      | 1s   |
| 33        | HD 137909 | 15 2342      | +29 27 01           | 00 08 27                |                       |                   |             |                           | 724  |
| 34        | Comp      |              |                     |                         |                       |                   |             | "                         | 1s   |
| 35        | Comp      |              |                     |                         |                       |                   |             | "                         | 1s   |
| 36        | HD 120136 | 13 4231      | +17 57 19           | 00 25 52                |                       |                   |             |                           | 1440 |
| 37        | Comp      |              |                     |                         |                       |                   |             | "                         | 1s   |
| 38        | HD 120136 | "            | "                   | 00:52:02                |                       |                   |             |                           | 1203 |
| 39        | Comp      |              |                     |                         |                       |                   |             | "                         | 1s   |
| 40        | BIAS(A)   |              |                     | 01 14                   |                       |                   |             |                           |      |
| 41        | Comp      |              |                     |                         |                       |                   |             | "                         | 1s   |
| 42        | HD 130109 | 14 4112      | +02 18 51           | 01:17:48                |                       |                   |             |                           | 1019 |
| 43        | Comp      |              |                     |                         |                       |                   |             | "                         | 1s   |
| 44        | Comp      |              |                     |                         |                       |                   |             | "                         | 1s   |
| 45        | HD 136202 | 15 1412      | +02 08 37           | 01 38 47                |                       |                   |             |                           | 1384 |
| 46        | Comp      |              |                     | 02 02 28                |                       |                   |             | "                         | 1s   |

CCD Spectr. Temp.  $-101.8^{\circ}\text{C}$  Dome Temp./Hum. .... Transparency Conditions ... *Fine* ... 26.3

Focus ..... 232

CCD Spectr. Temp.  $-100.5^{\circ}\text{C}$  Dome Temp./Hum.  $+06.0^{\circ}\text{C}$  51.4RH

| Comparison<br>Filter Exo | Exp. Mtr. | Seeing | Mag.<br>Mag. | Sp. | Inst.            | Grating/<br>X Tilt | Slit        | Emulsion | P.H. | Program       | Remarks | Quality |
|--------------------------|-----------|--------|--------------|-----|------------------|--------------------|-------------|----------|------|---------------|---------|---------|
| 1/5                      | 1000 V    |        |              |     | Echelle<br>19002 | 0600 h<br>.308     | 50u<br>400u | 6380A    | 30   |               |         |         |
| 724                      | 472       | 3.4"   | 366          | Fp  |                  |                    |             |          | 2    | KK pyro       |         |         |
| 1/5                      |           |        |              |     |                  |                    |             |          | 3    |               |         |         |
| 1/5                      |           |        |              |     |                  |                    |             |          | 3    |               |         |         |
| 1/5                      | 390       |        | 4.5          | F7V |                  |                    |             |          | 5    |               |         |         |
| 1/5                      |           |        |              |     |                  |                    |             |          | 3    |               |         |         |
| 703                      | 394       | 3.4"   |              |     |                  |                    |             |          | 4    |               |         |         |
| 1/5                      |           |        |              |     |                  |                    |             |          | 3    |               |         |         |
| 1/5                      |           |        |              |     |                  |                    |             |          | 1    |               |         |         |
| 1/5                      |           |        |              |     |                  |                    |             |          | 3    |               |         |         |
| 1049                     | 526       | 3"     | 372          | A0V |                  |                    |             |          | 2    | Telluric Std. |         |         |
| 1/5                      |           |        |              |     |                  |                    |             |          | 3    |               |         |         |
| 1/5                      |           |        |              |     |                  |                    |             |          | 3    |               |         |         |
| 1/5                      | 200       | 3.4"   |              |     |                  |                    |             |          | 4    | Sy Std.       |         |         |
| 1/5                      |           |        |              |     |                  |                    |             |          | 3    |               |         |         |

P#5

764

Date ... 1997 Apr 25/26 Observers ... mti. Tin .....

Emulsion Batches:

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 .....  
 .....

| Plate No. | Object    | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|-----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CC14047   | Comp      |              |                     | 02 05 46                |                       |                   |             | ThAr                      | 1s   |
| 48        | HD120136  | 13 42 31     | +17 57 19           | 02 06 28                |                       |                   |             |                           | 1250 |
| 49        | Comp      |              |                     |                         |                       |                   |             | "                         | 1s   |
| 50        | HD120136  |              |                     | 02 30 29                |                       |                   |             |                           | 1280 |
| 51        | Comp      |              |                     |                         |                       |                   |             | "                         | 1s   |
| 52        | B/H/S (4) |              |                     | 02 51                   |                       |                   |             |                           |      |
| 53        | Comp      |              |                     |                         |                       |                   |             | "                         | 1s   |
| 54        | HD177724  | 19 00 49     | +13 42 53           | 03 04 29                |                       |                   |             |                           | 489  |
| 55        | Comp      |              |                     |                         |                       |                   |             | "                         | 1s   |
| 56        | Comp      |              |                     |                         |                       |                   |             | "                         | 1s   |
| 57        | HD1871691 | 19 46 14     | +10 09 55           | 03 18 30                |                       |                   |             |                           | 1438 |
| 58        | Comp      |              |                     |                         |                       |                   |             | "                         | 1s   |
| 59        | Comp      |              |                     |                         |                       |                   |             | "                         | 1s   |
| 60        | HD120136  | 13 42 31     | +17 57 19           | 03 47 59                |                       |                   |             |                           | 1505 |
| 61        | Comp      |              |                     |                         |                       |                   |             | "                         | 1s   |

CCD Spectr. Temp.  
 Focus  
 Spectr. Temp.

Exp. Mtr.  
 120V

380

1280

578

125

1270



CCD Spectr. Temp. -99.5 @ 02:54 Flou Topup. Dome Temp./Hum. ....

Transparency Conditions ... Fine ... 265

Focus ... 2.32 ...

Spectr. Temp. .... Dome Temp./Hum. 405.3°C 49.2%RH

| Exp. Mtr. | Seeing | Mag. | Sp.  | Inst.              | Grating/<br>Tilt | Slit                                | Emulsion | P.H. | Program       | Remarks     | Quality |
|-----------|--------|------|------|--------------------|------------------|-------------------------------------|----------|------|---------------|-------------|---------|
| 1000V     |        |      |      | Echelle            | X                |                                     |          |      |               |             |         |
| 15        |        |      |      | 19.00 <sup>h</sup> | 0.600m<br>.308   | 50 <sub>u</sub><br>400 <sub>u</sub> | 6380Å    | 3    |               |             |         |
| 380       | 3.4"   | 4.5  | F7V  |                    |                  |                                     |          | 6    |               |             |         |
| 15        |        |      |      |                    |                  |                                     |          | 6    |               |             |         |
| 1360      |        |      |      |                    |                  |                                     |          | 6    |               |             |         |
| 15        |        |      |      |                    |                  |                                     |          | 3    |               |             |         |
| 15        |        |      |      |                    |                  |                                     |          | 1    |               |             |         |
| 15        |        |      |      |                    |                  |                                     |          | 3    |               | Topup by 03 |         |
| 444       | 578    | 4"   | 2.99 | A0Vn               |                  |                                     |          | 2    | Telluric Std. |             | 2.4K    |
| 15        |        |      |      |                    |                  |                                     |          | 3    |               |             |         |
| 15        |        |      |      |                    |                  |                                     |          | 3    |               |             |         |
| 1433      | 125    | 4.6" | 5.11 | F8V                |                  |                                     |          | 4    | std tel       |             |         |
| 15        |        |      |      |                    |                  |                                     |          | 3    |               |             |         |
| 15        |        |      |      |                    |                  |                                     |          | 3    |               |             |         |
| 15        | 220    | 5.8" | 4.5  | F7V                |                  |                                     |          | 4    |               |             |         |
| 15        |        |      |      |                    |                  |                                     |          | 3    |               |             |         |





P9#1 SAT/SUN  
268

Date 1997 Apr 26/27.... Observers ..Tn...for..K.K.,...Mki. + SAT Four ..  
STUDENT MING ZHU.....

Emulsion Batches:

| Plate No.     | Object     | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|---------------|------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| ce 14073      | B/Hs(4)    |              |                     | 19 38                   |                       |                   |             |                           |      |
| 74            | Comp       |              |                     |                         |                       |                   |             | ThAr                      | 1s   |
| 75            | HD 47105   | 06 3156      | +16 29 05           | 19 40 20                |                       |                   |             |                           | 304  |
| 76            | Comp       |              |                     |                         |                       |                   |             | ThAr                      | 1s   |
| 77            | ✓ HD 47105 | "            | "                   | 19 46 20                |                       |                   |             |                           | 219  |
| 78            | Comp       |              |                     |                         |                       |                   |             | "                         | 1s   |
| 79            | HD 47105   | "            | "                   | 19 50 47                |                       |                   |             |                           | 388  |
| 80            | Comp       |              |                     |                         |                       |                   |             | "                         | 1s   |
| 81            | B/Hs(4)    |              |                     | 21 10                   |                       |                   |             |                           |      |
| 82            | Comp       |              |                     |                         |                       |                   |             | ThAr                      | 1s   |
| 83            | HD 120136  | 13 42 31     | +17 57 19           | 22 12 06                |                       |                   |             |                           | 1700 |
| 84            | Comp       |              |                     |                         |                       |                   |             | ThAr                      | 1s   |
| 85            | HD 120136  | "            | "                   | 22 34 03                |                       |                   |             |                           | 1165 |
| <del>86</del> | Comp       |              |                     |                         |                       |                   |             | "                         | 1s   |
| 87            | Comp       |              |                     |                         |                       |                   |             | "                         | 1s   |

Spectr. Tem  
Focus...  
Spectr. Tem

Exp. Mtr

1130

1130

750

370

150

Spectr. Temp.  $-107.5^{\circ}\text{C}$  <sup>1938 EST</sup> Dome Temp./Hum.  $+10.9^{\circ}\text{C}$  3728H Transparency Conditions *Fine* 269  
 Focus  $0.232$  *unchanged and unchecked, but should be Fine*  
 Spectr. Temp. .... Dome Temp./Hum. .... *30 cgain*

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp.  | Inst.            | Grating/<br>x Tilt | Slit       | Emulsion     | P.H. | Program     | Remarks  | Quality |
|-----------|--------|-----------|------|------------------|--------------------|------------|--------------|------|-------------|--|---------|
| 1000V     |        |           |      | Echelle<br>19.00 | 0606<br>• 308      | 50u<br>40u | W<br>H 6380A | 1    |             | mean extracted AD4                                 |         |
|           |        |           |      |                  |                    |            |              | 3    |             |  |         |
| 1130      | 4"     | 1.9       | 40IV |                  |                    |            |              | 2    | KK ppm      | 1771   | 4.9K    |
|           |        |           |      |                  |                    |            |              | 3    |             |  |         |
|           |        |           |      |                  |                    |            |              | 4    |             | 10778  | 2.6K    |
|           |        |           |      |                  |                    |            |              | 3    |             |  |         |
| 750       |        |           |      |                  |                    |            |              | 2    |             | 14918  |         |
|           |        |           |      |                  |                    |            |              | 3    |             |  |         |
|           |        |           |      |                  | 30 cgain           |            |              | 1    | After TOURS | 30 cgain Reset<br>CCD T = $-100.7^{\circ}\text{C}$ |         |
|           |        |           |      |                  | 30 cgain           |            |              | 3    |             |  | 3.2K    |
| 270       | 3"     | 4.5       | F7V  |                  | 90 cgain           |            |              | 2    |             | 7761   |         |
|           |        |           |      |                  |                    |            |              | 3    |             |  |         |
| 150       |        |           |      |                  |                    |            |              | 5    |             | 5881   |         |
|           |        |           |      |                  |                    |            |              | 3    |             |  |         |
|           |        |           |      |                  |                    |            |              | 3    |             |  |         |

270

pg #2

Date 1997 Apr 26/27 Observers [KK] / mki / Tu.

Emulsion Batches:

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| Plate No. | Object          | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison  |      |
|-----------|-----------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|-------------|------|
|           |                 |              |                     |                         |                       |                   |             | Type/Filter | Exp. |
| ce14088   | HD 87901        | 10 03 03     | +12 27 22           | 23 00 53                |                       |                   |             |             | 741  |
| 89        | Comp            |              |                     |                         |                       |                   |             | THA         | K    |
| 90        | BINS(A)         |              |                     | 23 15                   |                       |                   |             |             |      |
| 91        | Comp            |              |                     |                         |                       |                   |             | n           | 1s   |
| 92        | HD 8890         | 01 22 34     | +88 46 26           | 23 38 29                |                       |                   |             |             | 421  |
| 93        | Comp            |              |                     |                         |                       |                   |             | n           | 1s   |
| 94        | HD 8890         | n            | n                   | 23 37 37                |                       |                   |             |             | 375  |
| 95        | Comp            |              |                     |                         |                       |                   |             | n           | 1s   |
| 96        | HD 8890         | n            | n                   | 23 45 06                |                       |                   |             |             | 308  |
| 97        | Comp            |              |                     | 23 51                   |                       |                   |             |             | 1s   |
| 98        | <del>Comp</del> |              | not wait            | then                    |                       |                   |             |             | 1s   |
| 98        | HD 120136       | 13 42 31     | +17 57 19           | 23 57 27                |                       |                   |             |             | 9018 |
| ce14099   | Comp            |              |                     |                         |                       |                   |             | n           | 1s   |
| 100       | Comp            |              |                     |                         |                       |                   |             | n           | 1s   |
| 101       | HD 102870       | 11 45 29     | +02 14 42           | 00 40 25                |                       |                   |             |             | 1016 |

Spectr. Temp. .... Dome Temp./Hum.  $+07.9^{\circ}\text{C}$   $38.9\%$  Transparency Conditions *Increasing cloud* .....  $>7/1$   
 Focus .....  $0.232$   
 Spectr. Temp. ....  $-100.7^{\circ}\text{C}$  Dome Temp./Hum.  $+06.8^{\circ}\text{C}$   $41.6\%$   $30\text{c gain in tented, but glitch switched it @ ce 4083.}$

| Exp. Mtr.   | Seeing | Mag. | Sp. | Inst.                  | Grating/Tilt | Slit        | Emulsion | P.H.         | Program  | Remarks                                    | Quality |
|-------------|--------|------|-----|------------------------|--------------|-------------|----------|--------------|----------|--|---------|
| 741<br>2.2K | 4.5"   | 1.35 | B7V | edelle<br>ccd<br>19.00 | 0600<br>1308 | 50u<br>400u | 6380A    | 6            | Telluric | std 90c gain <sup>51477</sup>              | 15K     |
|             |        |      |     |                        |              |             |          | 3            |          |  |         |
|             |        |      |     |                        |              |             |          | 1            |          |  |         |
|             |        |      |     |                        |              |             |          | 3            |          |  |         |
| 921<br>460  | 3"     | 2    | F   |                        |              |             |          | 2            | kk pgr   | at 11 hrs wed<br>45-00 12 11<br>45-00 0127 | 5K      |
|             |        |      |     |                        |              |             |          | 3            |          | gain now 90 somehow?                       |         |
| 375<br>420  |        |      |     |                        |              |             |          | 4            |          | 13346                                      |         |
|             |        |      |     |                        |              |             |          | 3            |          |  |         |
| 308<br>280  |        |      |     |                        |              |             |          | 2            |          | 7061                                       |         |
|             |        |      |     |                        |              |             |          | 3            |          |  |         |
|             |        |      |     |                        |              |             |          | <del>3</del> |          |  |         |
| 205         |        |      |     |                        |              |             |          | 4            |          | 9735                                       | 2.7K    |
|             |        |      |     |                        |              |             |          | 3            |          |  |         |
|             |        |      |     |                        |              |             |          | 3            |          |  |         |
| 160<br>424  | 3"     | 3.61 | F9V |                        |              |             |          | 6            | std vel  | 21453                                      |         |

272 pg#3 SAT/SUN

Emulsion Batches:

Date 1997 Apr 26/27 Observers [K.H.] / m.k. / Tn.....

| Plate No. | Object                  | R. A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|-------------------------|---------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| 014102    | Comp                    |               |                     |                         |                       |                   |             | ThAr                      | 2s   |
| 103       | BIAS(4)                 |               |                     | 00 58                   |                       |                   |             |                           |      |
| 104       | Comp                    |               |                     |                         |                       |                   |             | n                         | 1s   |
| 105       | HD120136                | 13 4231       | +175719             | 01 0732                 |                       |                   |             |                           | 1200 |
| 106       | Comp                    |               |                     |                         |                       |                   |             | v                         | 1s   |
| 107       | HD120136                |               |                     | 01:29:25                |                       |                   |             |                           | 1200 |
| 108       | Comp                    |               |                     |                         |                       |                   |             | v                         | 1s   |
| 109       | Comp                    |               |                     |                         |                       |                   |             | e                         | 1    |
| 110       | HP136202                | 15 1412       | +020837             | 01 5444                 |                       |                   |             |                           | 1633 |
| 111       | Comp                    |               |                     |                         |                       |                   |             | n                         | 1    |
| 112       | <del>HD136202</del> (4) | HD136202      | again               | 02 2358                 |                       |                   |             |                           | 1446 |
| 113       | Comp                    |               |                     |                         |                       |                   |             | n                         | 1    |
| 114       | BIAS(4)                 |               |                     | 02 52                   |                       |                   |             |                           |      |
| 115       | Comp                    |               |                     |                         |                       |                   |             | a                         | 1    |
| 116       | HD130109                | 144112        | +021851             | 025610                  |                       |                   |             |                           |      |



Spectr. Temp. .... Dome Temp./Hum.  $+05.8^{\circ}\text{C}$   $43.9\%$  Transparency Conditions *clearing again*  $27.3$   
 Focus *0.232* .....  
 Spectr. Temp. .... Dome Temp./Hum. .... *90 c gain* *Then cloudy again*

| Exp. Mtr.   | Seeing | P.V. Mag. | Sp. | Inst.          | Grating/Tilt          | Slit                | Emulsion     | P.H.     | Program         | Remarks                                    | Quality |
|-------------|--------|-----------|-----|----------------|-----------------------|---------------------|--------------|----------|-----------------|--|---------|
| <i>15</i>   |        |           |     | <i>Echelle</i> |                       |                     |              |          |                 |  |         |
|             |        |           |     | <i>19.00</i>   | <i>0606h<br/>1308</i> | <i>50u<br/>400u</i> | <i>6380A</i> | <i>3</i> |                 |  |         |
|             |        |           |     |                |                       |                     |              | <i>1</i> |                 |  |         |
| <i>15</i>   |        |           |     |                |                       |                     |              | <i>3</i> |                 |  |         |
| <i>1200</i> |        |           |     |                |                       |                     |              | <i>2</i> |                 | <i>LS -00 00 07</i><br><i>LS -00 00 09</i> |         |
| <i>15</i>   |        |           |     |                |                       |                     |              | <i>3</i> |                 |  |         |
| <i>1200</i> |        |           |     |                |                       |                     |              | <i>4</i> |                 | <i>13508</i>                               |         |
| <i>15</i>   |        |           |     |                |                       |                     |              | <i>7</i> |                 |  |         |
| <i>1</i>    |        |           |     |                |                       |                     |              | <i>3</i> |                 |  |         |
| <i>1653</i> |        |           |     |                |                       |                     |              | <i>5</i> | <i>Spectrum</i> | <i>Std 7713</i>                            |         |
|             |        |           |     |                |                       |                     |              | <i>3</i> |                 |  |         |
| <i>144</i>  |        |           |     |                |                       |                     |              | <i>6</i> | <i>n</i>        | <i>n 5959</i>                              |         |
|             |        |           |     |                |                       |                     |              | <i>3</i> |                 |  |         |
|             |        |           |     |                |                       |                     |              | <i>1</i> |                 |  |         |
|             |        |           |     |                |                       |                     |              | <i>3</i> |                 |  |         |
|             |        |           |     |                |                       |                     |              | <i>2</i> |                 | <i>Telluric Std cloudy</i>                 |         |

*CCD-Echelle p/m Readout slow and vary audable*

274

Pg #14 SAT/SUN

Emulsion Batches:

Date 1997 Apr 26/27 Observers [Kk]/mkj/ITg.....

| Plate No.  | Object                        | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|------------|-------------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| ce14117    | Comp                          |              |                     |                         |                       |                   |             | JhAr                      | 1s   |
| 18         | Comp                          |              |                     | 03 38 24                |                       |                   |             | "                         | 1s   |
| 19         | HP120136                      | 13 42 31     | +17 57 19           | 03 38 24                |                       |                   |             |                           | 1390 |
| 20         | Comp                          |              |                     |                         |                       |                   |             | "                         | 1s   |
| 21/30      | FLATS x10 + [BIAS(4) ce14131] |              |                     |                         |                       | 02 40W            | +17°        | TUNG                      | 4s   |
| ce14132/41 | FLATS x10                     |              |                     |                         |                       | "                 | "           | TUNG                      | 8s   |
| 42         | BIAS(4)                       |              |                     | 04 27                   |                       |                   |             |                           |      |
| ce14143/44 | Inboard / out Board           |              |                     |                         |                       | 2 40W             | +17°        | JhAr                      |      |

CCD Spectr. Temp.  $-100.5^{\circ}\text{C}$  Dome Temp./Hum.  $+059^{\circ}\text{C}$  4312H Transparency Conditions *mostly cloudy* 275

Focus  $\cdot 2.32$

Spectr. Temp. Dome Temp./Hum.

| Exp. Mtr. | Seeing   | P.P. Mag. | Sp. | Inst.            | Grating/Tilt  | Slit        | Emulsion | P.H. | Program  | Remarks                           | Quality |
|-----------|--|-----------|-----|------------------|---------------|-------------|----------|------|----------|-----------------------------------|---------|
| 15        |  |           |     | Eddolls<br>19.00 | 06004<br>'30S | 50u<br>400u | 6380Å    | 3    |          |                                   |         |
| 15        |  |           |     |                  |               |             |          | 3    |          |                                   |         |
| 138       | 60   | 3"        | 45  | F7V              |               |             |          | 6    |          | 2059                              |         |
| 15        |  |           |     |                  |               |             |          | 3    |          |                                   |         |
| 45        |  |           |     |                  |               |             |          | 3    |          | 90c gain                          | 125K    |
| 85        |  |           |     |                  |               |             |          | 4    |          | 30c gain                          | 125K    |
|           | CCDT @ 04:31 = $-94.5^{\circ}\text{C}$ ; just starting to warm up. |           |     |                  |               |             |          | 1    | 30c gain | for early gamma gen observations. |         |
|           |  |           |     |                  |               |             |          | 1    |          | <del>30c gain</del>               |         |
|           | T = $+060^{\circ}\text{C}$   |           |     | '232 set         |               |             |          | 7    | focus    | 90c gain                          |         |
|           |  |           |     |                  |               |             |          | 8    |          | "                                 |         |



CCD Spectr. Temp.  $-100.7^{\circ}\text{C}$  Dome Temp./Hum.  $108.8^{\circ}\text{C}$  61% RH Transparency Conditions *Fine* 277

Focus  $1230$  changed from previous Aircraft wind W 4 kts/hr @ 21 EST.

Spectr. Temp. Dome Temp./Hum. 30 cgain 2 m. 4x

| Exp. Mtr.                 | Seeing     | Ptg. Mag. | Sp.  | Inst.                   | Grating/<br>X Tilt | Slit            | Emulsion | P.H. | Program | Remarks   | Quality                  |
|---------------------------|------------|-----------|------|-------------------------|--------------------|-----------------|----------|------|---------|---|--------------------------|
| 43<br>1000 V<br>no filter |            |           |      | Echelle<br>CCD<br>19.00 | 0600<br>.308       | 50u W<br>400u H | 6380A    | 1/2  |         | D 0 128 1024  |                          |
|                           |            |           |      |                         |                    |                 |          | 1    |         |   |                          |
| 6<br>15                   |            |           |      |                         |                    |                 |          | 3    |         |   | 32K                      |
| 730<br>1630               | BAD<br>>6" | 1.9       | A0TV |                         |                    |                 |          | 2    | 1/2 pgm |   | 4K                       |
| 15                        |            |           |      |                         |                    |                 |          | 3    |         |   |                          |
| 93<br>1940                |            |           |      |                         |                    |                 |          | 4    |         |   |                          |
| 1                         |            |           |      |                         |                    |                 |          | 3    |         |   |                          |
| 90<br>1170                | >10"       |           |      |                         |                    |                 |          | 2    |         | - I turned off NE fan, and seeing then improved? maybe coincidence? |                          |
| 1                         |            |           |      |                         |                    |                 |          | 3    |         |   |                          |
|                           |            |           |      |                         |                    |                 |          | 1    |         | then much better  | still 30 cgain indicated |
| 15                        |            |           |      |                         |                    |                 |          | 3    |         |   | 2.6K                     |
| 125<br>216                | 2-5"       | 4.5       | F7V  |                         |                    |                 |          | 5    | Tau Leo |   |                          |
| 15                        |            |           |      |                         |                    |                 |          | 3    |         |   |                          |
| 125<br>922                |            |           |      |                         |                    |                 |          | 2    |         |   |                          |
| 15                        |            |           |      |                         |                    |                 |          | 3    |         |   |                          |

278  
 py#2 Mon/Tues

Emulsion Batches:

Date 1997 Apr 28/29 Observers [HK]/mki./Ts.....

| Plate No.     | Object    | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|---------------|-----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CE14161       | Comp      |              |                     |                         |                       |                   |             | ThAr                      | 1s   |
| 62            | HD 8890   | 01 2234      | +88 4626            | 21 3823                 |                       |                   |             |                           | 167  |
| 63            | Comp      |              |                     |                         |                       |                   |             | "                         | 1s   |
| 64            | HD 8890   |              |                     | 21 4215                 |                       |                   |             |                           |      |
| 65            | Comp      |              |                     |                         |                       |                   |             | "                         | 1s   |
| 66            | HD 8890   |              |                     | 21 4614                 |                       |                   |             |                           | 184  |
| 67            | Comp      |              |                     |                         |                       |                   |             | "                         | 1s   |
| 68            | BIHS(A)   |              |                     | 21 50                   |                       |                   |             |                           |      |
| 69            | Comp      |              |                     |                         |                       |                   |             | "                         | 1s   |
| 70            | HD 120136 | 13 4231      | +17 5719            | 22 5903                 |                       |                   |             |                           | 1388 |
| 71            | Comp      |              |                     |                         |                       |                   |             | "                         | 1s   |
| <del>72</del> | HD 120136 | "            | "                   | 22 2305                 |                       |                   |             |                           | 1106 |
| 73            | Comp      |              |                     |                         |                       |                   |             | "                         | 1s   |
| 74            | Comp      |              |                     |                         |                       |                   |             |                           |      |
| 75            | HD 87901  | 10 0303      | +12 2722            | 22 4624                 |                       |                   |             |                           | 278  |
| 76            | Comp      |              |                     |                         |                       |                   |             |                           |      |

CCD Spectr. Tem  
 Focus ...  
 CCD Spectr. Tem  
 Exp. Mir.  
 300  
 1/100  
 30  
 20  
 300  
 280  
 100  
 338

CCD Spectr. Temp. ... -100.8 °C

Dome Temp./Hum. ... +07.3°C 51.7%RH

Transparency Conditions ... Fine ... 279...

Focus ... 230

CCD Spectr. Temp. ... -101.7 °C

Dome Temp./Hum. ... CCD

| Companson<br>Filter | Exp. | Exp. Mtr.           | Secing | Hg.<br>Mag. | Sp. | Inst.                  | Grating/<br>X Tilt | Slit        | Emulsion     | P.H. | Program      | Remarks   | Quality |
|---------------------|------|---------------------|--------|-------------|-----|------------------------|--------------------|-------------|--------------|------|--------------|---|---------|
|                     | 1/6  | 1000V<br>110 filter |        |             |     | Edalle<br>CCD<br>19.00 | 0600 1u/mm<br>.308 | 50u<br>400u | u<br>H 6380H | 3    |              | @ 09 32 west Reversed   |         |
|                     | 1/6  | 680                 | 3'     | 2           | F   |                        |                    |             |              | 6    |              | 00 -00 15 13<br>28 -00 00 27  | 3.5K    |
|                     | 1/5  |                     |        |             |     |                        |                    |             |              | 3    |              |   |         |
|                     | 1/5  | 720                 |        |             |     |                        |                    |             |              | 6    |              |   | 3.7K    |
|                     | 1/5  |                     |        |             |     |                        |                    |             |              | 3    |              |   |         |
|                     | 1/6  | 630                 |        |             |     |                        |                    |             |              | 6    |              |   |         |
|                     | 1/5  |                     |        |             |     |                        |                    |             |              | 3    |              |   | 2.8K    |
|                     | 1/5  |                     |        |             |     |                        |                    |             |              | 1    |              |   |         |
|                     | 1/5  |                     |        |             |     |                        |                    |             |              | 3    |              |   |         |
|                     | 1/5  | 280                 | 2:3'   | 4.5         | F7V |                        |                    |             |              | 2    | Tau Boo      | maximized on smallest<br>apparent image.  |         |
|                     | 1/5  |                     |        |             |     |                        |                    |             |              | 3    |              |   |         |
|                     | 1/6  | 280                 | 3'     |             |     |                        |                    |             |              | 4    |              |   |         |
|                     | 1/5  |                     |        |             |     |                        |                    |             |              | 3    |              | maximized on cam rate<br>& equal rate above and<br>below slit.<br>image not so great. |         |
|                     | 1/5  |                     |        |             |     |                        |                    |             |              | 3    |              |   |         |
|                     | 1/5  | 338                 |        | 135         | B7V |                        |                    |             |              | 6    | Telluric STD | 1.50 Air mass   | 2.7K    |
|                     |      |                     |        |             |     |                        |                    |             |              | 3    |              |   |         |

P943  
280

Mon/Tues

Emulsion Batches:

Date ... 1997. Apr. 28/29. Observers [K.S.] / M.Ki. / Th.....

| Plate No. | Object    | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|-----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CE14177   | HD 87901  | 10 03 03     | +12 27 27           | 22 52 31                |                       |                   |             |                           | 60E  |
| 78        | v Comp    |              |                     |                         |                       |                   |             | ThAr                      | 1s   |
| 79        | Comp      |              |                     |                         |                       |                   |             | "                         | 1s   |
| 80        | HD 102870 | 11 15 29     | +02 19 42           | 23 06 44                |                       |                   |             |                           | 965  |
| 81        | Comp      |              |                     |                         |                       |                   |             | "                         | 1s   |
| 82        | BIAS(A)   |              |                     | 23 24 36                |                       |                   |             |                           |      |
| 83        | Comp      |              |                     | <del>23 24 36</del>     |                       |                   |             | "                         | 1s   |
| 84        | HD 130609 | 14 41 12     | +02 18 51           | 23 29 19                |                       |                   |             |                           | 1550 |
| 85        | Comp      |              |                     |                         |                       |                   |             | "                         | 1s   |
| 86        | Comp.     |              |                     |                         |                       |                   |             |                           | B    |
| 87        | HD 136202 | 15 14 12     | +02 08 37           | 00 05 00                |                       |                   |             |                           | 1800 |
| 88        | Comp      |              |                     |                         |                       |                   |             | "                         | 1s   |
| 89        | HD 136202 | "            | "                   | 00 36 08                |                       |                   |             |                           | 1800 |
| 90        | Comp      |              |                     |                         |                       |                   |             | "                         | 1s   |
| 91        | BIAS(4)   |              |                     | 01 07                   |                       |                   |             |                           | FC   |

CCO Spectr. Tem

FOCUS...  
CCO Spectr. Tem

Min Mir

100V

3000

595

149

167

18



CCD Spectr. Temp.  $-101.7^{\circ}\text{C}$  ..... Dome Temp./Hum.  $+070^{\circ}\text{C}$  64%RH Transparency Conditions *Fine* ..... 28/

Focus  $1230$  .....

CCD Spectr. Temp.  $-$  .....  $^{\circ}\text{C}$  ..... Dome Temp./Hum.  $+06.2^{\circ}\text{C}$  64%RH  
*n.c.d*

| Exp. Mtr.            | Seeing | P <sub>v</sub> Mag. | Sp. | Inst.           | Grating/<br>X Tilt | Slit        | Emulsion | P.H. | Program      | Remarks      | Quality |
|----------------------|--------|---------------------|-----|-----------------|--------------------|-------------|----------|------|--------------|--------------|---------|
| 697<br>1000V<br>3000 |        | 1.35                | B7V | Edelle<br>19.00 | 0600h<br>.30%      | 50u<br>400u | 6380A    | 6    | Telluric Std | Aspect       |         |
| 1/5                  |        |                     |     |                 |                    |             |          | 3    |              |              |         |
| 1/5                  |        |                     |     |                 |                    |             |          | 3    |              |              |         |
| 965<br>585           | 3"     | 3.61                | F9V |                 |                    |             |          | 6    | std bel      |              |         |
| 1/5                  |        |                     |     |                 |                    |             |          | 3    |              |              |         |
|                      |        |                     |     |                 |                    |             |          | 1    |              |              |         |
| 1/5                  |        |                     |     |                 |                    |             |          | 3    |              |              |         |
| 166<br>~400          | 2.3"   | 3.72                | A0V |                 |                    |             |          | 2    | telluric Std |              |         |
| 1/5                  |        |                     |     |                 |                    |             |          | 3    |              |              |         |
| 1/5                  |        |                     |     |                 |                    |             |          | 3    |              |              |         |
| 162                  | 2.3"   | 5.06                | F7V |                 |                    |             |          | 2    | sp std       | still 30cyan | >1K     |
| 1/5                  |        |                     |     |                 |                    |             |          | 3    |              |              |         |
| 168                  | 2.4"   |                     |     |                 |                    |             |          | 2    |              |              |         |
| 1/5                  |        |                     |     |                 |                    |             |          | 3    |              |              |         |
|                      |        |                     |     |                 |                    |             |          | 1    |              |              |         |

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Mon/Tues

Emulsion Batches:

282

Date 1997 Apr 28/29... Observers [MK]/mki/Tg.....

| Plate No. | Object   | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| ce14192   | Comp     |              |                     |                         |                       |                   |             | ThAr                      | 1s   |
| 93        | HD120135 | 134231       | +175719             | 011202                  |                       |                   |             |                           | 1200 |
| 94        | Comp     |              |                     |                         |                       |                   |             | n                         | 1s   |
| 95        | HD120136 | n            | "                   | 013319                  |                       |                   |             |                           | 1402 |
| 96        | Comp     |              |                     |                         |                       |                   |             | n                         | 1    |
| 97        | HD120136 | n            | "                   | 015823                  |                       |                   |             |                           | 1606 |
| 98        | Comp     |              |                     |                         |                       |                   |             | n                         | 1    |
| 99        | BIAS(4)  |              |                     | 0227                    |                       |                   |             |                           |      |
| ce14200   | Comp     |              |                     |                         |                       |                   |             | n                         | 1    |
| 01        | HD137909 | 152342       | +292701             | 023405                  |                       |                   |             |                           | 930  |
| 02        | Comp     |              |                     |                         |                       |                   |             | n                         | 1    |
| 03        | Comp     |              |                     |                         |                       |                   |             | n                         | 1    |
| 04        | HD187891 | 194614       | +100955             | 025454                  |                       |                   |             |                           | 1605 |
| 05        | Comp     |              |                     |                         |                       |                   |             | n                         | 1    |
| 06        | BIAS(4)  |              |                     | 0324                    |                       |                   |             |                           |      |

Spectr. Temp. .... Dome Temp./Hum. .... Transparency Conditions ... *Fine* ..... 283

Focus ... *230* .....

Spectr. Temp. ... *701.8* ... Dome Temp./Hum. .... *03 EST* ... *0 0 256 1024 4 1 CCD FMT*

| Exp. Mtr.         | Seeing      | Mag.        | Sp.        | Inst.                           | Grating/<br>X Tilt         | Slit                    | Emulsion      | P.H.     | Program          | Remarks               | Quality |
|-------------------|-------------|-------------|------------|---------------------------------|----------------------------|-------------------------|---------------|----------|------------------|-----------------------|---------|
| <i>1000 volts</i> |             |             |            | <i>eJelle<br/>CCD<br/>19:00</i> | <i>0600 ln/mm<br/>1308</i> | <i>50u W<br/>400u H</i> | <i>6380A8</i> | <i>3</i> |                  |                       |         |
| <i>299</i>        | <i>3"</i>   | <i>4.5</i>  | <i>F7V</i> |                                 |                            |                         |               | <i>2</i> |                  | <i>still 30c gain</i> |         |
|                   |             |             |            |                                 |                            |                         |               | <i>3</i> |                  |                       |         |
| <i>368</i>        |             |             |            |                                 |                            |                         |               | <i>6</i> |                  |                       |         |
|                   |             |             |            |                                 |                            |                         |               | <i>3</i> |                  |                       |         |
| <i>368</i>        |             |             |            |                                 |                            |                         |               | <i>4</i> |                  |                       |         |
|                   |             |             |            |                                 |                            |                         |               | <i>3</i> |                  |                       |         |
|                   |             |             |            |                                 |                            |                         |               | <i>1</i> |                  |                       |         |
|                   |             |             |            |                                 |                            |                         |               | <i>3</i> |                  |                       |         |
| <i>630</i>        | <i>3.4"</i> | <i>3.66</i> | <i>Fp</i>  |                                 |                            |                         |               | <i>2</i> | <i>kk pgm</i>    |                       |         |
|                   |             |             |            |                                 |                            |                         |               | <i>3</i> |                  |                       |         |
|                   |             |             |            |                                 |                            |                         |               | <i>3</i> |                  |                       |         |
| <i>148</i>        |             | <i>5.11</i> | <i>F8V</i> |                                 |                            |                         |               | <i>2</i> | <i>still bel</i> |                       |         |
|                   |             |             |            |                                 |                            |                         |               | <i>3</i> |                  |                       |         |
|                   |             |             |            |                                 |                            |                         |               | <i>1</i> |                  |                       |         |



CCD Spectr. Temp.  $-100.7^{\circ}\text{C}$  Dome Temp./Hum.  $40.59^{\circ}\text{C}$  6778H Transparency Conditions *Hazy*  $>85$

Focus  $230$

Spectr. Temp.  $-101.5^{\circ}\text{C}$  @ 0420 Dome Temp./Hum.  $40.56^{\circ}\text{C}$

| Exp. Mtr. | Seeing | Mag. | Sp.  | Inst.                                  | Grating/<br>X Tilt | Slit      | Emulsion | P.H. | Program      | Remarks  | Quality |  |
|-----------|--------|------|------|--|--------------------|-----------|----------|------|--------------|--|---------|--|
|           |        |      |      | Echelle<br>19.00                       | 0600<br>1308       | 50<br>400 | 6380     | 3    |              |  |         |  |
| 193       | 3"     | 4-5  | FZV  |  |                    |           |          | 3    |              |  |         |  |
|           |        |      |      |  |                    |           |          | 3    |              |  |         |  |
| 228       | 3"     |      |      |  |                    |           |          | 5    |              | CCD - $100.7^{\circ}\text{C}$                  |         |  |
|           |        |      |      |  |                    |           |          | 3    |              | Still 300um                                    |         |  |
|           |        |      |      |  |                    |           |          | 3    |              |  |         |  |
| 900       | 3"     | 299  | A0Vn |  |                    |           |          | 4    | Telluric Std | 64338 @ center<br>of 2nd order from<br>bottom. |         |  |
|           |        |      |      |  |                    |           |          | 3    |              |  |         |  |
|           |        |      |      |  |                    |           |          | 3    |              |  | 15K     |  |
|           |        |      |      |  |                    |           |          | 1    |              |  |         |  |
|           |        |      |      | Still on E1 Echelle as well as Perseus |                    |           |          |      |              |  |         |  |



CCD  
Spectr. Temp.  $-100.7^{\circ}\text{C}$

Dome Temp./Hum.  $+13.3^{\circ}\text{C}$  5108H

Transparency Conditions ... Hazy ... 287

Focus ... 230

Spectr. Temp. ....

Dome Temp./Hum.  $+12.6^{\circ}\text{C}$  5008H  
NCA

ADU  
~ MAX

| Exp. Mtr. | Seeing             | Pr<br>Mag. | Sp. | Inst.                | Grating/<br>X Tilt        | Slit           | Emulsion | P.H. | Program    | Remarks  | Quality |
|-----------|--------------------|------------|-----|----------------------|---------------------------|----------------|----------|------|------------|--|---------|
| 413       | 1006V<br>no filter |            |     | Echelle CCD<br>19.00 | 0600ins<br>1308           | 50u W<br>400uH | 6380A    | 7/8  | Focus test | Focus CCD FORMAT<br>0 0 128 1024 81<br>Set for slightly cooler |         |
|           |                    |            |     |                      |                           |                |          | 1    |            | 0 0 256 1024 41  |         |
| 15        |                    |            |     |                      | note actual contrast      |                |          | 3    |            |  | 31K     |
| 1144      | 1038               | 1.2"       | 1.9 | AOIU                 | $\lambda$ is 6363A        |                |          | 2    | HK pgr     | part cloudy  | 4K      |
| 15        |                    |            |     |                      | @ Row 512                 |                |          | 3    |            |  |         |
|           |                    |            |     |                      | & col 145                 |                |          |      |            |  |         |
| 234       | 2100               | 2"         |     |                      | <u>4th ORDER FROM TOP</u> |                |          | 4    | "          |  | 8K      |
| 15        |                    |            |     |                      |                           |                |          | 3    |            |  |         |
| 957       | 1400               | 2.3"       |     |                      |                           |                |          | 2    | "          |  | 6K      |
| 15        |                    |            |     |                      |                           |                |          | 3    |            |  |         |
|           |                    |            |     |                      |                           |                |          | 1    |            |  |         |
| 15        |                    |            |     |                      |                           |                |          | 3    |            |  |         |
| 404       | 440                | 2"         | 2   | F                    |                           |                |          | 2    | TEL        | East side of course  | 2.6K    |
| 15        |                    |            |     |                      |                           |                |          | 3    |            |  | 2.2K    |
| 518       | 600                |            |     |                      |                           |                |          | 2    |            |  |         |
| 15        |                    |            |     |                      |                           |                |          | 3    |            |  |         |





Spectr. Temp. <sup>CO</sup> -106.8°C

Dome Temp./Hum. +12.4°C 49.2%RH

Transparency Conditions ... *Partly Cloudy* ... *7/7*

Focus ... 230

Spectr. Temp. ....

Dome Temp./Hum. +12.0°C 50.0%RH

| Exp. Mtr.            | Seeing | Mag. | Sp.  | Inst.           | Grating/<br>Tilt | Slit      | Emulsion | P.H. | Program       | Remarks                | Quality |
|----------------------|--------|------|------|-----------------|------------------|-----------|----------|------|---------------|------------------------|---------|
| 692<br>1000 V<br>245 | 2"     | 2    | F    | E 1110<br>19.00 | 0600 h<br>1308   | 50<br>400 | 6380A    | 2    | Polaris       |                        | 1.5K    |
| 15                   |        |      |      |                 |                  |           |          | 3    |               |                        |         |
| 35                   |        |      |      |                 |                  |           |          | 3    |               |                        | 10K     |
| 552                  | 2.7K   | 1.5" | 1.35 | B7V             |                  |           |          | 5    | Telluric Std. | 1.32 Air mass          | 8K      |
| 38                   |        |      |      |                 |                  |           |          | 3    |               |                        |         |
|                      |        |      |      |                 |                  |           |          | 1    |               |                        |         |
| 35                   |        |      |      |                 |                  |           |          | 3    |               |                        | 89K     |
| 140                  | 235    | 1"   | 4.5  | F7V             |                  |           |          | 5    | Tau Boo       |                        |         |
| 35                   |        |      |      |                 |                  |           |          | 3    |               |                        |         |
| 130                  | 240    | 1"   |      |                 |                  |           |          | 2    |               |                        | 1K      |
| 38                   |        |      |      |                 |                  |           |          | 3    |               |                        |         |
|                      |        |      |      |                 |                  |           |          | 1    |               |                        |         |
| 34                   |        |      |      |                 |                  |           |          | 3    |               |                        |         |
| 70                   | 100    | 2.1" | 3.61 | F9V             |                  |           |          | 2    | std vel       | <del>very</del> cloudy |         |
| 35                   |        |      |      |                 |                  |           |          | 3    |               |                        |         |







CCO Spectr. Temp.  $-100.8^{\circ}\text{C}$  Dome Temp./Hum.  $+08.3^{\circ}\text{C}$  396% H @ 19:15 EST Transparency Conditions *FINE* 293

Focus  $\bullet 227$

Spectr. Temp. Dome Temp./Hum. *90 degain* *~ MAX*

| Exp. Mtr. | Seeing | Pl. Mag. | Sp. | Inst.                | Grating/<br>x Tilt | Slit        | Emulsion | P.H. | Program        | Remarks  | Quality |
|-----------|--------|----------|-----|----------------------|--------------------|-------------|----------|------|----------------|--|---------|
| 10000     |        |          |     | Echelle CCO<br>19.48 | 3455               | 100u = .261 | 5888A    | 1/2  | focus test     |  |         |
|           |        |          |     |                      |                    |             |          | 1    |                | 0 0 256 1024 4 1   |         |
|           |        |          |     |                      |                    |             |          | 3    |                | $\Delta\alpha -00 00 23$<br>$\Delta\delta +00 01 36$             | 9K      |
| 155       | ~3K    |          |     | 135 BOX              |                    |             |          | 4    | Telluric std.  |  | 13K     |
|           |        |          |     |                      |                    |             |          | 3    |                |  | 10K     |
|           |        |          |     |                      |                    |             |          | 3    |                |  |         |
| 400       | 1100   | 3"       |     | F0 III               |                    |             |          | 2    | sp std         | 7 300/1 S/N  | 6K      |
|           |        |          |     |                      |                    |             |          | 3    | ei             |  |         |
|           |        |          |     |                      |                    |             |          | 3    |                |  |         |
|           | 1320V  |          |     | and Balanced,        |                    |             |          | 5    |                | 20/1 S/N<br>$\Delta\alpha +00 00 03$<br>$\Delta\delta +00 02 18$ |         |
|           | 45     |          |     | 9.9 ASV ~105V        |                    |             |          | 3    |                | nearby is  |         |
|           |        |          |     |                      |                    |             |          | 3    |                | $\Delta\alpha -00 00 34$<br>+00 01 06                            |         |
|           | 81     | 3"       |     | 99 ASV               |                    |             |          | 6    | written in 5ci | $\Delta\alpha -00 00 34$<br>$\Delta\delta +00 01 06$             |         |
|           |        |          |     |                      |                    |             |          | 3    |                |  |         |
|           | 65     |          |     |                      |                    |             |          | 5    |                | ~ 95/1 S/N   |         |
|           |        |          |     |                      |                    |             |          | 3    |                |  |         |



Spectr. Temp. .... Dome Temp./Hum.  $+04.9^{\circ}\text{C}$   $46.1\% \text{H}$  Transparency Conditions ... *Fine* .....  $2/5$

Focus .....  $227$  .....

Spectr. Temp. <sup>SD</sup>  $-100.8^{\circ}\text{C}$  ..... Dome Temp./Hum.  $+03.6^{\circ}\text{C}$   $51.4\% \text{H}$   $90 \text{ cgaln}$

| Exp. Mtr. | Seeing | Flg. Mag. | Sp. | Inst.            | Grating/<br>X Tilt | Slit         | Emulsion | P.H. | Program       | Remarks             | Quality |
|-----------|--------|-----------|-----|------------------|--------------------|--------------|----------|------|---------------|---------------------|---------|
| 1320      |        |           |     | Echelle<br>19.48 | 0600m<br>13455     | 100u<br>400u | 5888A    | 1    |               |                     |         |
| 82        |        | 9.9       | H5V |                  |                    |              |          | 2    |               |                     |         |
|           |        |           |     |                  |                    |              |          | 3    |               |                     |         |
|           |        |           |     |                  |                    |              |          | 1    |               |                     |         |
|           |        |           |     |                  |                    |              |          | 3    |               |                     |         |
| 140       | 2.3"   | 9.5       | G5  |                  |                    |              |          | 2    |               | < 40/1 S/N          |         |
|           |        |           |     |                  |                    |              |          | 3    |               |                     |         |
| 106       |        |           |     |                  |                    |              |          | 6    |               | <del>40/1 S/N</del> |         |
|           |        |           |     |                  |                    |              |          | 3    |               |                     |         |
| 176       |        |           |     |                  |                    |              |          | 6    |               |                     |         |
|           |        |           |     |                  |                    |              |          | 3    |               |                     |         |
|           |        |           |     |                  |                    |              |          | 1    |               | stats               |         |
|           |        |           |     |                  |                    |              |          |      |               | 406 4/4 410.025     |         |
|           |        |           |     |                  |                    |              |          |      |               | J 1299              |         |
| 1300      | 3"     | 5.7       | AOV |                  |                    |              |          | 2    | Telluric std. |                     | 1K      |
|           |        |           |     |                  |                    |              |          | 3    |               |                     |         |





Spectr. Temp. ....

Dome Temp./Hum. ....

Transparency Conditions .. *Fine* ..... 297

Focus ..... 227

Spectr. Temp. ....

Dome Temp./Hum. ....

Expansion  
ter/ Exp.

| Exp. Mtr. | Seeing | Mag. | Sp. | Inst.                   | Grating/<br>x Tilt | Slit        | Emulsion | P.H. | Program | Remarks                             | Quality |
|-----------|--------|------|-----|-------------------------|--------------------|-------------|----------|------|---------|-------------------------------------|---------|
| 1320V     |        |      |     | Echelle<br>CCD<br>19.48 | 06004<br>.3455     | 100<br>400u | 5888A    | 3    |         |                                     |         |
| 65        | 3.4    | 9.3  | KO  |                         |                    |             |          | 4    |         | ~ 30/1 S/N                          |         |
|           |        |      |     |                         |                    |             |          | 3    |         |                                     |         |
| 60        |        |      |     |                         |                    |             |          | 4    |         | Seemingly worse.                    |         |
|           |        |      |     |                         |                    |             |          | 3    |         |                                     |         |
| 79        |        |      |     |                         |                    |             |          | 4    |         |                                     |         |
|           |        |      |     |                         |                    |             |          | 3    |         |                                     |         |
|           |        |      |     |                         |                    |             |          | 1    |         | STATS 403 410<br>406 532            |         |
|           |        |      |     |                         |                    |             |          | 3    |         |                                     |         |
| 350       | 3"     | 8.1  | FO  |                         |                    |             |          | 2    |         | Ident. - comp G"E<br>- questionable |         |
|           |        |      |     |                         |                    |             |          | 3    |         |                                     |         |
| 380       | 3"     |      |     |                         |                    |             |          | 4    |         |                                     |         |
|           |        |      |     |                         |                    |             |          | 3    |         |                                     |         |
|           |        |      |     |                         |                    |             |          | 1    |         | STATS<br>403 41 406.314<br>~ 1.285  |         |
|           |        |      |     |                         |                    |             |          | 3    |         |                                     |         |



Spectr. Temp. .... Dome Temp./Hum.  $+03.7^{\circ}\text{C } 57.4\% \text{H}$  Transparency Conditions *Fine* ..... 299

Focus ..... 227

Spectr. Temp. <sup>540</sup> - ..... 2 Dome Temp./Hum.  $+03.0^{\circ}\text{C } 57.4\% \text{H}$

| Exp. Mtr.            | Seeing | Ptg Mag. | Sp.   | Inst.            | Grating/<br>X Tilt | Slit         | Emulsion | P.H. | Program                 | Remarks   | Quality |
|----------------------|--------|----------|-------|------------------|--------------------|--------------|----------|------|-------------------------|-----------|---------|
| 120<br>235           | 2.3"   | 87       | 65    | Echelle<br>19.48 | 0600h<br>.3435     | 100u<br>400u | 5888B    | 2    |                         |           |         |
| 5                    |        |          |       |                  |                    |              |          | 3    |                         |           |         |
| 1203<br>205          |        |          |       |                  |                    |              |          | 4    |                         |           |         |
| 6                    |        |          |       |                  |                    |              |          | 3    |                         |           | 9.9K    |
| 1/2                  |        |          |       |                  |                    |              |          | 3    |                         |           |         |
| 1204<br>205          | 2"     | 87       | 65    |                  |                    |              |          | 5    |                         |           |         |
| 13<br><del>205</del> |        |          |       |                  |                    |              |          | 3    |                         |           |         |
| 15                   |        |          |       |                  |                    |              |          | 3    |                         |           |         |
| 357<br>1K            |        |          |       |                  |                    |              |          | 6    | <del>std spectrum</del> | Telluric  |         |
| 15                   |        |          |       |                  |                    |              |          | 3    |                         |           |         |
| 1                    |        |          | KOTII |                  |                    |              |          | 3    |                         |           |         |
| 1204<br>4.8K         |        | 2.5      | KOTII |                  |                    |              |          | 4    | std spectrum            |           |         |
| 1                    |        |          |       |                  |                    |              |          | 3    |                         |           |         |
|                      |        |          |       |                  |                    |              |          | 1    |                         | stats Aug |         |
|                      |        |          |       |                  |                    |              |          | 3    |                         | = 1405196 |         |







CCD Spectr. Temp.  $-100.5^{\circ}\text{C}$  Dome Temp./Hum.  $+05.0^{\circ}\text{C}$  48% H Transparency Conditions Fine 303

Focus ..... 227

Spectr. Temp. ..... Dome Temp./Hum.  $+03.6^{\circ}\text{C}$  49% H 90 c gain

| Exp. Mtr.          | Seeing | Mag. | Sp.  | Inst.                   | Grating/<br>Tilt | Slit         | Emulsion | P.H. | Program | Remarks                           | Quality |
|--------------------|--------|------|------|-------------------------|------------------|--------------|----------|------|---------|-----------------------------------|---------|
| 1320V<br>No filter |        |      |      | E-kalle<br>CCD<br>19.48 | 0600h<br>13455   | 100u<br>400u | 5886     | 7/8  | SH I3   | Focus CCD FMT<br>0 0 128 1024 8 1 |         |
|                    |        |      |      |                         |                  |              |          | 1    |         | CCD FMT<br>0 0 256 1024 4 1       |         |
|                    |        |      |      |                         |                  |              |          | 3ci  |         |                                   |         |
| 9.5K               | 1.35   |      | BOV  |                         |                  |              |          | 4    |         | Telluric (Regular)                | 7.8K    |
|                    |        |      |      |                         |                  |              |          | 3ci  |         |                                   | 9K      |
|                    |        |      |      |                         |                  |              |          | 3ci  |         |                                   | 10K     |
| 2490               | 2"     | 4.9  | GOTT |                         |                  |              |          | 2ci  |         | spectral<br>std.                  |         |
|                    |        |      |      |                         |                  |              |          | 3ci  |         |                                   |         |
|                    |        |      |      |                         |                  |              |          | 3ci  |         |                                   |         |
| 4.3K               | 4.0    |      | A5V  |                         |                  |              |          | 5ci  |         | <del>spectral</del> spec. std.    |         |
|                    | 4.0    |      | A5V  |                         |                  |              |          | 3ci  |         |                                   |         |
|                    |        |      |      |                         |                  |              |          | 1ci  |         | stats<br>398 406 Aug 01.88        |         |
| 9.8K               |        |      |      |                         |                  |              |          | 3ci  |         | <del>1.410</del>                  |         |
| 12                 | 2"     | 9.9  | A5V  |                         |                  |              |          | 2ci  |         |                                   |         |
|                    |        |      |      |                         |                  |              |          | 3    |         |                                   |         |

Note Background (bias)

note to be high again  
n 400 ADU.

It was normal for

Test before focus test.

3.4 PG #2

Date 1997 May 6/7 Observers T.n./Gld./Bur./Hml./Kar

Emulsion Batches:

.....  
 .....  
 .....

| Plate No.        | Object      | R.A.<br>1900   | Declination<br>1900    | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp.         |
|------------------|-------------|--|------------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|--------------|
| Cel 143<br>57 57 | BD + 63985  | 11 <sup>h</sup> 55 <sup>m</sup> 21 <sup>s</sup><br>(52000.0) | 62° 31' 01"<br>(32000) | 21 58 28                |                       |                   |             |                           | 1606s        |
| 58               | Comp        |  |                        | 22 23 25                |                       |                   |             | JAr                       | 1s           |
| 59               | Bias(4)     |  |                        | 22 25                   |                       |                   |             |                           |              |
| 60               | Comp        |  |                        |                         |                       |                   |             | JAr                       | 1s           |
| 61               | BD + 521826 | 14 <sup>h</sup> 44 <sup>m</sup> 20 <sup>s</sup> (1650)       | 91° 50' 08"            | 22 36 58                |                       |                   |             |                           | 1800s<br>260 |
| 62               | Comp        |  |                        |                         |                       |                   |             | v                         | 1s           |
| 63               | Bias(4)     |  |                        | 23 11 02                |                       |                   |             |                           |              |
| 64               | Comp        |  |                        |                         |                       |                   |             | "                         | 1s           |
| 65               | BD + 521826 | "  | "                      | 23 25 53                |                       |                   |             | "                         | 1811         |
| 66               | Comp        |  |                        |                         |                       |                   |             | "                         | 1s           |
| 67               | BD + 521826 | "  | "                      | 23:51:53                |                       |                   |             |                           | 1800s        |
| 68               | Comp        |  |                        |                         |                       |                   |             | "                         | 1s           |
| 69               | Bias(4)     |  |                        | 00:29:51                |                       |                   |             |                           |              |
| 70               | Comp        |  |                        |                         |                       |                   |             | "                         | 1s           |
| 71               | BD + 521826 | "  | "                      | 00 32 20                |                       |                   |             |                           | 1860e        |

Spectr. Temp.

Focus... 2

ccd

Spectr. Temp.

Exp. Mtr.

1320 V

93

1320 V

330

245

223



Spectr. Temp. ~~+100.5~~ ..... Dome Temp./Hum. ~~+03.2~~ <sup>+03.2</sup> ~~50.6~~ <sup>50.6</sup> Transparency Conditions ~~.....~~ <sup>Five</sup> ..... 505

Focus ..... 227 ..... + 2.0i <sup>54.79p</sup>

Spectr. Temp. ~~.....~~ <sup>CCD</sup> ~~-100.9°C~~ ..... Dome Temp./Hum. ~~.....~~ <sup>3.4</sup> ~~49.9~~ <sup>49.9</sup>

| Exp. Mtr.           | Seeing | Ptg. Mag. | Sp. | Inst. Echell. | Grating/Tilt    | Slit           | Emulsion | P.H. | Program | Remarks   | Quality |
|---------------------|--------|-----------|-----|---------------|-----------------|----------------|----------|------|---------|---|---------|
| 1320 V<br>013       |        | 9.9       | A5V | CCD<br>19.48  | 0600 h<br>13455 | 100um<br>400um | 5888     | 6ci  | ETHI3   |   |         |
|                     |        |           |     |               |                 |                |          | 3ci  |         | Very low SN (230-40)  |         |
|                     |        |           |     |               |                 |                |          | 1    |         | 1109<br>399.691 $\sigma$ 1.3                                    |         |
|                     |        |           |     |               |                 |                |          | 3ci  |         |   |         |
| <del>1320</del> 310 | 2.3"   | 8.7       | AV  |               |                 |                |          | 4ci  |         | Secondary<br>and HI cloud feature<br>reduced w. intensifier off |         |
|                     |        |           |     |               |                 |                |          | 3    |         |   |         |
|                     |        |           |     |               |                 |                |          | 1    |         | Bias w. ? camera off<br>→ 398.249, 1.293                        |         |
|                     |        |           |     |               |                 |                |          | 3    |         |   |         |
| 330                 |        | "         | "   |               |                 |                |          | 5    |         |   |         |
|                     |        |           |     |               |                 |                |          | 3    |         |   |         |
| 245                 | 3"     | "         | "   |               |                 |                |          | 6    |         |   |         |
|                     |        |           |     |               |                 |                |          | 3    |         |   |         |
|                     |        |           |     |               |                 |                |          | 1    |         | ave 310.106<br>over 1.174                                       |         |
|                     |        |           |     |               |                 |                |          | 3    |         |   |         |
| 223                 | 3"     | "         | "   |               |                 |                |          | 2    |         |   |         |

306  
pg 3

Tues/Wed

Emulsion Batches:

Date 1997 May 6/7 Observers Th./Gld./Hrd./Bur./Kar.....

| Plate No. | Object                | R.A.<br>1900   | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |    |
|-----------|-----------------------|--|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|----|
| ce 14377A | comp                  |  |                     |                         |                       |                   |             | Mar                       | 1s   |    |
| 73        | BD +52182             | 14 <sup>h</sup> 44 <sup>m</sup> 20 <sup>s</sup> (1950) | 51° 50' 08"         | 01 04 01                |                       |                   |             |                           | 1800 |    |
| 74        | comp                  |  |                     |                         |                       |                   |             | "                         | 1s   |    |
| 75        | BIAS(4)               |  |                     | 01 35 50                |                       |                   |             |                           |      |    |
| 76        | comp                  |  |                     |                         |                       |                   |             | "                         | 1s   |    |
| 77        | SKY off BD+52182      | 14 45 36   | +51 38 12           | 01 40 48                |                       |                   |             |                           | 1811 |    |
| 78        | Comp                  |  |                     |                         |                       |                   |             | "                         | "    |    |
| 79        | comp                  |  |                     |                         |                       |                   |             | "                         | 1s   |    |
| 80        | HD170073              | 18 22 27   | +58 44 34           | 02 33 27                | 02 48 00              |                   |             |                           | 750  |    |
| 81        | Comp                  |  |                     |                         |                       |                   |             | "                         | 1s   |    |
| 82        | HD159561 Comp         |  |                     |                         |                       |                   |             |                           |      |    |
| 83        | HD159561              | 17 30 18   | +12 37 58           | 02 56 33                |                       |                   |             |                           |      |    |
| 84        | Comp                  |  |                     |                         |                       |                   |             |                           |      |    |
| 85        | BIAS(4)               |  |                     | 03 02 16                |                       |                   |             |                           |      |    |
| 86/87     | Plate x20 (East side) |  |                     |                         |                       |                   | 02 E        | 34° 46'                   | Tung | 2s |
| 06/07     | FOCUS TEST            |  |                     | Also EAST SIDE          |                       |                   |             |                           |      |    |

Spectr. Temp. .... Dome Temp./Hum. 2.0°C 55% Transparency Conditions fine - clouding in .....

Focus ..... 227 .....

Spectr. Temp. -101.9°C .....

Dome Temp./Hum. 40.7°C 63% .....

307

| Exp. Mtr. | Seeing | P. Mag. | Sp.    | Inst. Echell. | Grating/Tilt                    | Slit       | Emulsion | P.H. | Program   | Remarks                                | Quality |
|-----------|--------|---------|--------|---------------|---------------------------------|------------|----------|------|-----------|--|---------|
| 1/5       |        |         |        | 19.48         | 0.3455                          | 100u<br>4u | 5888     | 3    | SHI3      |  |         |
| 1/600     | 226    | 8.7     | A2V    |               |                                 |            |          | 4    |           |  |         |
| 1/5       |        |         |        |               |                                 |            |          | 3    |           |  |         |
|           |        |         |        |               |                                 |            |          | 1    |           | 395.118 $\sigma = 1.259$               |         |
| 1/5       |        |         |        |               |                                 |            |          | 3u   |           |  |         |
| 1/80      | 6      |         |        |               |                                 |            |          | 5    |           | increasing partial cloudiness          |         |
|           |        |         |        |               |                                 |            |          | 3    |           |  |         |
| 1/5       |        |         |        |               |                                 |            |          | 3    |           |  |         |
| 1/50      | 1012   | 2"      | 499    | A1V           |                                 |            |          | 6    | std star  | Faint companion seen To North (3" sep) |         |
| 1/5       |        |         |        |               |                                 |            |          | 3    |           |  |         |
|           |        |         |        |               |                                 |            |          | 3    |           |  |         |
|           | 3.4'   | 207     | A5 III |               |                                 |            |          | 4    |           |  |         |
|           |        |         |        |               |                                 |            |          | 3    |           |  |         |
|           |        |         |        |               |                                 |            |          | 1    |           | 393.99 $\sigma = 1.523$                |         |
| 1/5       |        |         |        | Probably      | H=600u<br>S.H. H=600u for Focus |            |          | 3    | OK though | 39                                     | 11K     |

308 Tu/Ri/1Bt special Tour Looked @ M3 (Fine view)

pp1 Wed/Thurs

Emulsion Batches:

Date 1997 MAY 7/8 Observers Gid/Cas = Mike Casey / Tu + Sc

| Plate No.              | Object             | R.A.<br>1900                 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|------------------------|--------------------|------------------------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| ce144 <sup>08/09</sup> | Inboard / Outboard |                              | Hartmann            |                         |                       |                   |             | ThAr                      | 1/1  |
| 10                     | BIAS(4)            |                              |                     | 22 16                   |                       |                   |             |                           |      |
| 11                     | Comp               |                              |                     |                         |                       |                   |             | ThAr                      | 1s   |
| 12                     | HP 136849          | <sup>1900</sup><br>15 17 48  | +33 17 30           | 22 19 46                |                       |                   |             |                           | 300  |
| 13                     | Comp               |                              |                     |                         |                       |                   |             | "                         | 1s   |
| 14                     | Comp               |                              |                     |                         |                       |                   |             | "                         | 1s   |
| 15                     | BD+63 3985         | <sup>J2000</sup><br>11 55 25 | +62 31 00           | 22 40 04                |                       |                   |             |                           | 1800 |
| 16                     | Comp               |                              |                     |                         |                       |                   |             | "                         | 1s   |
| 17                     | BD+63 3985         | "                            | "                   | 23 12 34                |                       |                   |             |                           | 1800 |
| 18                     | Comp               |                              |                     |                         |                       |                   |             | "                         | 1s   |
| 19                     | BIAS(4)            |                              |                     | 23 45                   |                       |                   |             |                           |      |
| 20                     | sky at BD+63 3985  |                              |                     | 23 47 26                |                       |                   |             |                           | 1834 |
| 21                     | Comp               |                              |                     |                         |                       |                   |             | "                         | 1    |
| 22                     | Comp               |                              |                     |                         |                       |                   |             | "                         | 1    |
| 23                     | BD+52 1826         | <sup>1950</sup><br>14 44 20  | +51 50 08           | 00 29 18                |                       |                   |             |                           | 1805 |
| 24                     | Comp               |                              |                     |                         |                       |                   |             | "                         | 1    |
| 25                     | BIAS(4)            |                              |                     | 01 00                   |                       |                   |             |                           |      |

CCD Spectr. Temp.  $-100.5^{\circ}\text{C}$  Dome Temp./Hum.  $+07.0^{\circ}\text{C}$  44.18% Transparency Conditions *Fine* 309

Focus  $122.7$  90c gain

CCD Spectr. Temp.  $-100.8^{\circ}\text{C}$  Dome Temp./Hum.  $+05.4^{\circ}\text{C}$  42.6% H

| Exp. Mtr. | Secing | Pg. Mag. | Sp. | Inst.            | Grating/<br>X Tilt | Slit                      | Emulsion | P.H. | Program      | Remarks  | Quality |
|-----------|--------|----------|-----|------------------|--------------------|---------------------------|----------|------|--------------|--|---------|
| 13200     |        |          |     | Eidelle<br>19.48 | 0600m<br>.3455     | 100u<br><del>400u</del>   | 5888     | 7/8  | focus test   | 0 0 128 1024 8 1 CCD-PT  |         |
|           |        |          |     |                  |                    | 600u = .205<br>By mistake |          | 1    |              | Aug 158.227 $\sigma$ 4.135                                     |         |
|           |        |          |     |                  |                    |                           |          | 3    |              |  | 10K     |
| 1050      | 3-5"   | 5.4      | B9V |                  |                    |                           |          | 2    | Telluric Std |  | 800     |
|           |        |          |     |                  |                    |                           |          | 3    |              |  | 10K     |
|           |        |          |     |                  |                    |                           |          | 3    |              |  |         |
| 144       | 3-5"   | 9.9      | A5V |                  |                    |                           |          | 4    |              | $\Delta\alpha = -00 00 42$<br>$\Delta\delta = +00 01 24$ SN=45 |         |
|           |        |          |     |                  |                    |                           |          | 3    |              |  |         |
| 115       | 3-4"   |          |     |                  |                    |                           |          | 5    |              |  |         |
|           |        |          |     |                  |                    |                           |          | 3    |              |  |         |
|           |        |          |     |                  |                    |                           |          | 6    | Sky          | only slightly hazy<br>Had em ~ 4-5 ADU<br>above background.    |         |
|           |        |          |     |                  |                    |                           |          | 3    |              |  |         |
|           |        |          |     |                  |                    |                           |          | 3    |              |  |         |
| 2500      | 3-4"   | 8.7      | A2  |                  |                    |                           |          | 2    |              |  |         |
|           |        |          |     |                  |                    |                           |          | 3    |              |  |         |
|           |        |          |     |                  |                    |                           |          | 1    |              | Bias(4) stats 155061<br>$\sigma$ 0.748                         |         |



Spectr. Temp. .... Dome Temp./Hum.  $105.3^{\circ}\text{C}$   $13.2\%$  Transparency Conditions ... *part cloudy* ...  $5/1$

Focus ...  $.227$  .....

Spectr. Temp. .... Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | P.V. Mag. | Sp. | Inst.           | Grating/<br>X Tilt | Slit                     | Emulsion | P.H. | Program | Remarks  | Quality |
|-----------|--------|-----------|-----|-----------------|--------------------|--------------------------|----------|------|---------|--|---------|
| 1320 V    | 34     | 87        | A2  | Echelle<br>1948 | 0600<br>.3455      | 100a<br><del>100a</del>  | 5888A    | 2    |         |  |         |
|           |        |           |     |                 |                    | 600 for stellar<br>=.205 |          | 3    |         |  |         |
| 420       |        |           |     |                 |                    |                          |          | 4    |         |  |         |
|           |        |           |     |                 |                    |                          |          | 3    |         |  |         |
|           |        |           |     |                 |                    |                          |          | 1    |         |  |         |
|           |        |           |     |                 |                    |                          |          | 3    |         |  |         |
| 640       |        | 8.1       | F0  |                 |                    |                          |          | 6    |         |  |         |
|           |        |           |     |                 |                    |                          |          | 3    |         |  |         |
| 764       | 2-3    | NI        | II  |                 |                    |                          |          | 5    |         | $\Delta\alpha = -00\ 00\ 33$<br>$\Delta\delta = +00\ 00\ 21$ |         |
|           |        |           |     |                 |                    |                          |          | 5    |         |  |         |
|           |        |           |     |                 |                    |                          |          | 1    |         | Aug 153.402 $\phi$ 0.739                                     |         |
|           |        |           |     |                 |                    |                          |          | 3    |         |  |         |
| 184       | 23     | 8.7       | G5  |                 |                    |                          |          | 5    |         | very hazy  |         |
|           |        |           |     |                 |                    |                          |          | 3    |         |  |         |
|           |        |           |     |                 |                    |                          |          | 2    |         |  |         |

312 #3

Wed / Thurs

Emulsion Batches:

Date .. 1997 May 7/8.... Observers G.R./Tn.....

| Plate No. | Object             | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|--------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CD14441   | HD177724           | 190044       | +134253             | 035527                  |                       |                   |             |                           | 238  |
| 42        | Comp               |              |                     |                         |                       |                   |             | ThAr                      | 1    |
| 43        | Comp               |              |                     |                         |                       |                   |             | "                         | 1    |
| 44        | HD 210027          | 220221       | +245124             | 041026                  |                       |                   |             |                           | 715  |
| 45        | Comp               |              |                     |                         |                       |                   |             | "                         | 1    |
| 46        | B/H5(C4)           |              |                     | 0424                    |                       |                   |             |                           |      |
| 47        | SKY near HD 210027 |              |                     | 042559                  |                       |                   |             |                           | 2/4  |
| 48        | Comp               |              |                     |                         |                       |                   |             | "                         | 15   |
| 49/58     | Flats X10          |              |                     |                         |                       | 2h E              |             | Tung                      | 2    |
| 59/60     | Inb/out Boxes      |              |                     |                         |                       | "                 |             |                           | 1/1  |



Spectr. Temp. .... Dome Temp./Hum.  $+05.3^{\circ}\text{C}$   $+41.7\%$  Transparency Conditions ... *Hazy* ..... 313

Focus ..... *1227* .....

Spectr. Temp. .... Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | Mag. | Sp.              | Inst.            | Grating/<br>X Tilt | Slit           | Emulsion | P.H. | Program    | Remarks             | Quality |
|-----------|--------|------|------------------|------------------|--------------------|----------------|----------|------|------------|---------------------|---------|
| 1322V     |        |      |                  |                  |                    |                |          |      |            |                     |         |
| 238 1595  | 2"     | 2.99 | AQV <sub>n</sub> | Echelle<br>19.48 | 0.600μ<br>.3455    | 100μ<br>400μ   | 5868     | 2    | Telluric   | std.                |         |
| 1         |        |      |                  |                  |                    | probably 600μ  |          | 3    |            |                     |         |
| 1         |        |      |                  |                  |                    | stellar = .205 |          | 3    |            |                     |         |
| 715 720   | 3"     | 3.77 | F5V              |                  |                    |                |          | 4    | sp std.    | thin cloud and down |         |
| 1         |        |      |                  |                  |                    |                |          | 3    |            |                     |         |
| 1         |        |      |                  |                  |                    |                |          | 1    |            |                     |         |
| 24 42     |        |      |                  |                  |                    |                |          | 2    | sky        |                     |         |
| 15        |        |      |                  |                  |                    |                |          | 3    |            |                     |         |
| 2         |        |      |                  |                  |                    | 100μ           |          | 3    |            | slit perhaps 600μ   |         |
| 111       |        |      |                  |                  |                    | 700μ = .195    |          | 3    |            | all night?          |         |
|           |        |      |                  |                  |                    | 600μ = .205    |          | 3    | focus test |                     |         |



CCD Spectr. Temp.  $-100.7^{\circ}\text{C}$  Dome Temp./Hum.  $407.8^{\circ}\text{C} 60\% \text{H}$  Transparency Conditions 1 PART CLEAR 315

Focus  $228$  Dome Temp./Hum.  $30^{\circ}\text{C} 94\% \text{H}$   $\sim 1 \text{ MAX}$

| Exp. Mtr. | Seeing      | Plg. Mag. | Sp.  | Inst.           | Grating/<br>X Tilt | Slit                               | Emulsion | P.H. | Program      | Remarks                            | Quality             |
|-----------|-------------|-----------|------|-----------------|--------------------|------------------------------------|----------|------|--------------|------------------------------------|---------------------|
| 211       |             |           |      | Edelle<br>19.00 | 0600<br>.308       | 50 $\mu$ = .28<br>400 $\mu$ = .225 |          | 1/2  | Focus test   | 0 0 128 1024 81<br>Focus Format    |                     |
|           |             |           |      |                 |                    |                                    | 6380A    | 1    |              | 0 0 256 1024 41                    |                     |
| 35        |             |           |      |                 |                    |                                    |          | 3    |              |                                    | 81K                 |
| 120       | $\sim 1950$ | $2'3''$   | 4.5  | F7V             |                    |                                    |          | 2    |              |                                    | $\sim 900$<br>ABOVE |
| 3         |             |           |      |                 |                    |                                    |          | 3    |              |                                    |                     |
| 001       | 2350        |           |      |                 |                    |                                    |          | 4    |              |                                    |                     |
| 3         |             |           |      |                 |                    |                                    |          | 3    |              |                                    |                     |
|           | 2500        |           |      |                 |                    |                                    |          | 5    |              |                                    |                     |
| 3         |             |           |      |                 |                    |                                    |          | 3    |              |                                    |                     |
| 120       | 1570.       | $3''$     |      |                 |                    |                                    |          | 6    |              | some cloud                         |                     |
| 3         |             |           |      |                 |                    |                                    |          | 3    |              |                                    |                     |
|           |             |           |      |                 |                    |                                    |          | 1    |              |                                    |                     |
| 3         |             |           |      |                 |                    |                                    |          | 3    |              |                                    |                     |
| 120       | 450         | $2'3''$   | 5.08 | F7V             |                    |                                    |          | 2    | Spectrum std | @ NOHA L<br>05-000006<br>05-000190 |                     |
| 3         |             |           |      |                 |                    |                                    |          | 3    |              |                                    |                     |



CCD Spectr. Temp. .... Dome Temp./Hum. 6.1 °C Transparency Conditions ..... 317

Focus 0.228

Spectr. Temp. .... Dome Temp./Hum. 63.7% Ci

| Exp. Mtr. | Seeing | Fig. Mag. | Sp. | Inst.   | Grating/Tilt  | Slit                      | Emulsion | P.H. | Program | Remarks                     | Quality |
|-----------|--------|-----------|-----|---------|---------------|---------------------------|----------|------|---------|-----------------------------|---------|
| 1320V     |        |           |     | echelle | 0600<br>19.00 | 50μ = .291<br>400μ = .225 |          | 3    |         | Q 0340W                     |         |
| 2940      | 3"     | 361       | F9V |         |               |                           |          | 4    |         | Δα -00 00 14<br>Δδ 00 01 24 |         |
|           |        |           |     |         |               |                           |          | 3    |         |                             |         |
|           |        |           |     |         |               |                           |          | 53   |         |                             |         |
| 4,000     |        | 2.99      | B0  |         |               |                           |          | 5    |         |                             |         |
|           |        |           |     |         |               |                           |          | 3    |         |                             |         |
|           |        |           |     |         |               |                           |          | 1    |         |                             |         |
|           |        |           |     |         |               |                           |          | 3    |         |                             |         |
| 2569      |        |           |     |         |               |                           |          | 6    |         |                             |         |
|           |        |           |     |         |               |                           |          | 3    |         |                             |         |
| 2428      |        |           |     |         |               |                           |          | 2    |         |                             |         |
|           |        |           |     |         |               |                           |          | 3    |         |                             |         |
| 2600      | 3.5"   |           |     |         |               |                           |          | 4    |         |                             |         |
|           |        |           |     |         |               |                           |          | 3    |         |                             | IK      |
| 2776      |        |           |     |         |               |                           |          | 5    |         |                             |         |
|           |        |           |     |         |               |                           |          | 3    |         |                             |         |

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#3 men/Tues

Emulsion Batches:

Date ... 1997 May 12/13. Observers ... Mk. Sp. J. Tu .....

| Plate No. | Object            | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|-------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| 93        | BIAS (4)          |              |                     | 02<br>02:30:49          |                       |                   |             |                           |      |
| 94        | Comp              |              |                     |                         |                       |                   |             | Th Ar                     | 3s   |
| 95        | HD120136          | 13:42:31     | 17:57:19            | 02<br>02:34:19          |                       |                   |             |                           | 689  |
| 96        | Comp              |              |                     |                         |                       |                   |             |                           | 3s   |
| 97/506    | FLATS x10         |              |                     |                         |                       | +10W              | +17 29      | TUNG                      | 8s   |
| 507/05    | Inboard/OUT BOARD |              |                     |                         |                       |                   |             |                           | 3/2  |
| 09        | BIAS (4)          |              |                     | 03210                   |                       |                   |             |                           |      |

Spectr. Temp. .... Dome Temp./Hum. ... 5.2°C ... Transparency Conditions ... Cloudy ... 49

Focus ... 0.228 ... Hum 67:1

Spec. Temp. ... -100.8°C ... Dome Temp./Hum. ... 30.0 gain  
Li

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst.           | Grating/Tilt | Slit                      | Emulsion | P.H. | Program | Remarks                         | Quality     |
|-----------|--------|-----------|-----|-----------------|--------------|---------------------------|----------|------|---------|---------------------------------|-------------|
|           |        |           |     | exelle<br>19.00 | 0400<br>.308 | 50μ = .281<br>400μ = .225 |          | 1    |         |                                 |             |
| 3s        |        |           |     |                 |              |                           |          | 3    |         |                                 |             |
| 689       | 652    |           |     |                 |              |                           |          | 6    |         | Thick clouds → Stopped exposure |             |
| 3s        |        |           |     |                 |              |                           |          | 3    |         |                                 |             |
| 8s        |        |           |     |                 |              | 600μ H = .205             |          | 3    |         |                                 | <u>Dark</u> |
| 3/2       |        |           |     |                 |              | <u>600μ H</u>             |          | 7/8  |         |                                 |             |
|           |        |           |     |                 |              |                           |          | 1    |         |                                 |             |





Cool Spectr. Temp.  $-100.5^{\circ}\text{C}$

Dome Temp./Hum.  $+08.1$  63% H

Transparency Conditions ... Part cloudy 32/

Focus  $0.228$

Dome Temp./Hum.  $40.60^{\circ}\text{C}$  69% H

Focus 0 0 178 1024 81 CCD Faint  
 Observing 0 0 256 1024 41 CCD Faint

| Exp. Mtr.          | Seeing | Pl. Mag. | Sp. | Inst.            | Grating/<br>X Tilt | Slit                          | Emission                 | P.H.          | Program      | Remarks                      | Quality    |
|--------------------|--------|----------|-----|------------------|--------------------|-------------------------------|--------------------------|---------------|--------------|------------------------------|------------|
| 1320V<br>No filter |        |          |     | Echelle<br>19.00 | 06006<br>308       | 550u<br>300u<br>50u<br>100u H | W.281<br>H=.235<br>6380Å | 7/8<br>1<br>3 | focus        | 90cgs for focus<br>30cgs now | MAX<br>KDU |
|                    |        |          |     |                  |                    |                               |                          | 2             | Telluric std |                              | AK         |
|                    |        |          |     |                  |                    |                               |                          | 3             |              |                              |            |
|                    |        |          |     |                  |                    |                               |                          | 3             |              |                              |            |
| 2630               | 3"     | 36       | F9V |                  |                    |                               |                          | 4             | std vel      | in cloud                     | ~1.7K      |
|                    |        |          |     |                  |                    |                               |                          | 3             |              |                              |            |
|                    |        |          |     |                  |                    |                               |                          | 1             |              | Aug 182.537<br>σ 0.736       |            |
|                    |        |          |     |                  |                    |                               |                          | 3             |              |                              |            |
| 2645               | 2-3"   | 45       | F7V |                  |                    |                               |                          | 2             | Tau Boo      |                              | 1.7K       |
|                    |        |          |     |                  |                    |                               |                          | 3             |              |                              |            |
| 3180               | 2"     |          |     |                  |                    |                               |                          | 5             |              |                              |            |
|                    |        |          |     |                  |                    |                               |                          | 3             |              |                              |            |
| 2750               |        | "        | "   |                  |                    |                               |                          | 6             |              |                              |            |
|                    |        |          |     |                  |                    |                               |                          | 3             |              |                              |            |



Spectr. Temp. ....

Dome Temp./Hum. .... 5.6°C

Transparency Conditions ... Part. Density ..... 32%

Focus ..... 2.28

Hum 70%

Spectr. Temp. ....

Dome Temp./Hum. ....

Expansion  
ter. Exp.

| Exp. Mtr.   | Seeing | P.V.<br>Mag. | Sp. | Inst.            | Grating/<br>X Tilt | Slit         | Emulsion | P.H. | Program                   | Remarks                            | Quality |
|-------------|--------|--------------|-----|------------------|--------------------|--------------|----------|------|---------------------------|------------------------------------|---------|
|             |        |              |     | Echelle<br>19.00 | 0600<br>.308       | 50u<br>400u  | 6380A    | 1    |                           |                                    |         |
| 1202        |        |              |     |                  |                    |              |          | 3    |                           |                                    |         |
| 1421<br>758 | 2      | 5.08         | F7V |                  |                    |              |          | 2    | Spectroscopic<br>Standard |                                    |         |
|             |        |              |     |                  |                    |              |          | 3    |                           |                                    |         |
| 220<br>247  | 2      | 5.08         | F7V |                  |                    |              |          | 4    |                           | Thick clouds ~ 170 AAV<br>ABAB BHS |         |
| 3<br>4616   |        |              |     |                  |                    |              |          | 3    |                           |                                    |         |
|             |        |              |     |                  |                    |              |          | 1    |                           |                                    |         |
| 65          |        |              |     |                  |                    | 600uH = .205 |          | 3    |                           |                                    | 12.6K   |
|             |        |              |     |                  |                    | 300 = 0.335  |          | 7/8  |                           |                                    |         |

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SAT/SUN

Emulsion Batches:

Date 1997 MAY 17/18 Observers Hdy. T. n

| Plate No.                           | Object              | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp  |
|-------------------------------------|---------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CC453 <sup>85</sup> / <sub>86</sub> | Inboard / out board |              |                     |                         |                       |                   |             | FeAr<br>ND3               | 4/6  |
| 87                                  | BIAS(1)             |              |                     | 20 21                   |                       |                   |             |                           |      |
| 88                                  | Comp                |              |                     |                         |                       |                   |             | FeAr<br>ND3               | 4s   |
| 89                                  | HD87901             |              |                     |                         |                       |                   |             |                           | 39   |
| 90                                  | "                   |              |                     | 20 27 23                |                       |                   |             |                           | 34   |
| 91                                  | "                   |              |                     | 20 28 50                |                       |                   |             |                           | 42   |
| 92                                  | "                   |              |                     | 20 30 24                |                       |                   |             |                           | 52   |
| 93                                  | Comp                |              |                     |                         |                       |                   |             | "                         | 4s   |
| 94/103                              | FLATS x 10          |              |                     |                         |                       |                   |             | TUNG<br>ND3               | 3s   |
| 404                                 | BIAS(1)             |              |                     | 20 39                   |                       |                   |             |                           |      |
| 405                                 | Comp                |              |                     |                         |                       |                   |             | FeAr<br>ND3               | 4s   |
| 406                                 | HD131156            | 14 46 46     | +19 30 57           | 20 47 48                |                       |                   |             |                           | 174  |
| 407                                 | Comp                |              |                     |                         |                       |                   |             | "                         | 4s   |
| 408                                 | Comp                |              |                     |                         |                       |                   |             | "                         | 4s   |
| 409                                 | HD11395             | 12 43 55     | 125 23 19           | 20 59 48                |                       |                   |             |                           | 319s |
| 410                                 | Comp                |              |                     |                         |                       |                   |             | "                         | 4s   |

edit time

Spectr. Temp. .... Dome Temp./Hum.  $\pm 0.7.8^{\circ}\text{C}$   $49.2\% \text{H}$  Transparency Conditions ..... 375

Focus ..... 6.80

Spectr. Temp. .... Dome Temp./Hum. .... 390 0 50 1024 4 1 count

| Exp. Mtr.          | Seeing | Plt Mag. | Sp. | Inst.                | Grating/Tilt        | Slit      | Emulsion            | P.H.          | Program    | Remarks    | Quality |
|--------------------|--------|----------|-----|----------------------|---------------------|-----------|---------------------|---------------|------------|------------|---------|
| no filter<br>1000V |        |          |     | C145 CCD<br>Tyratron | 1800 lines<br>55.90 | 250 $\mu$ | 6563A               | 3/4           | focus test |            | MAX     |
|                    |        |          |     |                      |                     |           | 6570A               | 1             |            |            |         |
|                    |        |          |     |                      |                     |           | Actual @ Ray<br>512 | 5             |            |            | 4K      |
|                    |        |          |     |                      |                     |           | $\pm 2A$            | 6             |            |            | 12K     |
| 30K                |        |          |     |                      |                     |           |                     | 6             |            |            | 10K     |
| 32K                |        |          |     |                      |                     |           |                     | 7             |            |            |         |
| 36K                |        |          |     |                      |                     |           |                     | 7             |            |            |         |
| 42K                |        | 135      | B7V |                      |                     |           |                     | 7             |            |            | 12K     |
|                    |        |          |     |                      |                     |           |                     | 8             |            |            | 9K      |
|                    |        |          |     |                      |                     |           |                     | 9             |            |            | 15.8K   |
|                    |        |          |     |                      |                     |           |                     | 1             |            |            |         |
|                    |        |          |     |                      |                     |           |                     | 10            |            |            |         |
| 3.8K               | 4"     | 4.55     | G8  |                      |                     |           |                     | 11            |            | 7300/1 SIN | 11K     |
|                    |        |          |     |                      |                     |           |                     | 12            |            |            | 3.6K    |
|                    |        |          |     |                      |                     |           |                     | 13            |            |            |         |
| 4K                 |        | 6.31     | G7V | (readout in 11ci)    |                     |           |                     | <del>14</del> |            |            | 5.3K    |
|                    |        |          |     |                      |                     |           |                     | 1A            |            |            | 3.8K    |

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Date 1997. MAY. 17/18.. Observers Hdy. J.N.....

Emulsion Batches:

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.....  
.....

| Plate No. | Object    | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|-----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CC45411   | Comp      |              |                     |                         |                       |                   |             | FeAr<br>ND3               | 4s   |
| 12        | HD109358  | 12 29 00     | +41 54 03           | 21 13 27                |                       |                   |             | n                         | 109s |
| 13        | Comp      |              |                     |                         |                       |                   |             | n                         | 4s   |
| 14        | Comp      |              |                     |                         |                       |                   |             | n                         | 4s   |
| 15        | HD 115817 | 13 13 10     | -17 45 18           | 21 25 21                |                       |                   |             |                           | 320s |
| 16        | Comp      |              |                     |                         |                       |                   |             | n                         | 4s   |
| 17        | Comp      |              |                     |                         |                       |                   |             | n                         | 4s   |
| 18        | HD 131977 | 14 51 37     | -20 57 49           | 21 37 40                |                       |                   |             |                           | 655  |
| 19        | Comp      |              |                     |                         |                       |                   |             | n                         | 4s   |
| 20        | Comp      |              |                     |                         |                       |                   |             | n                         | 4s   |
| 21        | HD 135101 | 15 08 15     | +19 39 11           | 21 35 59                |                       |                   |             |                           | 800  |
| 22        | Comp      |              |                     |                         |                       |                   |             | n                         | 4s   |
| 23        | Comp      |              |                     |                         |                       |                   |             | n                         | 4s   |
| 24        | HD 113848 | 13 01 29     | +21 41 24           | 22 15 49                |                       |                   |             |                           | 193  |
| 25        | Comp      |              |                     |                         |                       |                   |             | n                         | 4s   |
| 26        | BIAS (4)  |              |                     | 22 25                   |                       |                   |             |                           |      |

Spectr. Temp. ....

Dome Temp./Hum. ....

Transparency Conditions *mostly clear* .....Focus *680* .....Spectr. Temp. *CCD* *100.7°C* .....Dome Temp./Hum. *+05.7°C 52.9%* .....

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| Exp. Mtr.   | Seeing    | Mag.        | Sp.        | Inst.                         | Grating/<br>Tilt      | Slit        | Emulsion     | P.H.      | Program | Remarks | Quality     |
|-------------|-----------|-------------|------------|-------------------------------|-----------------------|-------------|--------------|-----------|---------|---------|-------------|
|             |           |             |            | <i>c ASS CCD<br/>Tgrating</i> | <i>18006<br/>5596</i> | <i>250u</i> | <i>6563A</i> | <i>15</i> |         |         |             |
| <i>8900</i> |           | <i>4.26</i> | <i>60V</i> |                               |                       |             |              | <i>16</i> |         |         |             |
|             |           |             |            |                               |                       |             |              | <i>17</i> |         |         |             |
|             |           |             |            |                               |                       |             |              | <i>18</i> |         |         |             |
| <i>8800</i> |           | <i>4.74</i> | <i>G6V</i> |                               |                       |             |              | <i>19</i> |         |         |             |
|             |           |             |            |                               |                       |             |              | <i>20</i> |         |         |             |
|             |           |             |            |                               |                       |             |              | <i>21</i> |         |         |             |
| <i>5.5K</i> | <i>5"</i> | <i>5.74</i> | <i>H4V</i> |                               |                       |             |              | <i>22</i> |         |         |             |
|             |           |             |            |                               |                       |             |              | <i>23</i> |         |         | <i>3.7K</i> |
|             |           |             |            |                               |                       |             |              | <i>24</i> |         |         |             |
| <i>5.9K</i> | <i>4"</i> | <i>6.68</i> | <i>G5V</i> |                               |                       |             |              | <i>25</i> |         |         | <i>5.3K</i> |
|             |           |             |            |                               |                       |             |              | <i>26</i> |         |         |             |
|             |           |             |            |                               |                       |             |              | <i>27</i> |         |         |             |
| <i>7.2K</i> | <i>4"</i> | <i>5.99</i> | <i>F4V</i> |                               |                       |             |              | <i>28</i> |         |         |             |
|             |           |             |            |                               |                       |             |              | <i>29</i> |         |         |             |
|             |           |             |            |                               |                       |             |              | <i>1</i>  |         |         |             |





Spectr. Temp. ....

Dome Temp./Hum. ....

Transparency Conditions ... P.A.T. ... Cloudy ... 329

Focus ..... 6.80

Spectr. Temp. ....

Dome Temp./Hum. ... +0.4.9°C ... 54.4% / H

MAY  
ADY

| Exp. Mtr. | Seeing | PV<br>Mag. | Sp. | Inst.                | Grating/<br>Tilt | Slit      | Emulsion | P.H. | Program | Remarks | Quality |
|-----------|--------|------------|-----|----------------------|------------------|-----------|----------|------|---------|---------|---------|
|           |        |            |     | CCD CASS<br>Tgrating | 1800h<br>56.90   | 250 $\mu$ | 6563A    | 5    |         |         | 4.4K    |
| 5000      | 3"     | 6.23       | G1V |                      |                  |           |          | 6    |         |         |         |
|           |        |            |     |                      |                  |           |          | 7    |         |         |         |
|           |        |            |     |                      |                  |           |          | 8    |         |         |         |
| 9K        |        | 4.93       | F5V |                      |                  |           |          | 9    |         |         | 8.3K    |
|           |        |            |     |                      |                  |           |          | 10   |         |         | 7K      |
|           |        |            |     |                      |                  |           |          | 12c  |         |         |         |
| 9600      | 3"     | 4.46       | F2V |                      |                  |           |          | 13   |         |         | 8.5K    |
|           |        |            |     |                      |                  |           |          | 14   |         |         |         |
|           |        |            |     |                      |                  |           |          | 15   |         |         |         |
| 9000      |        | 4.05       | F7V |                      |                  |           |          | 16   |         |         |         |
|           |        |            |     |                      |                  |           |          | 17   |         |         |         |
|           |        |            |     |                      |                  |           |          | 18   |         |         |         |
| 6.9K      | 3"4"   | 6.30       | G2V |                      |                  |           |          | 19   |         |         |         |
|           |        |            |     |                      |                  |           |          | 20   |         |         |         |



Spectr. Temp. .... Dome Temp./Hum.  $+4.9 / 54.8\%$  Transparency Conditions ... *clearing... cloudy* ...  
 Focus .....  $6.80$  ..... 331  
 Spectr. Temp. .... Dome Temp./Hum.  $+04.30 / 57.0\%$  .....

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp.   | Inst.       | Grating/Tilt    | Slit | Emulsion | P.H. | Program | Remarks        | Quality        |
|-----------|--------|-----------|-------|-------------|-----------------|------|----------|------|---------|----------------|----------------|
|           |        |           |       | CASS<br>CCD | 1800/1<br>55.90 | 25u  | 6563A    | 1    |         | Aug<br>136.8/3 | $\sigma$ 5.915 |
|           |        |           |       |             |                 |      |          | 21   |         |                |                |
| 6300      |        | 640       | K2V   |             |                 |      |          | 22c; |         |                |                |
|           |        |           |       |             |                 |      |          | 23   |         |                |                |
|           |        |           |       |             |                 |      |          | 24   |         |                |                |
| 8.7K      | 3"     | 5.97      | K0 IV |             |                 |      |          | 25   |         |                |                |
|           |        |           |       |             |                 |      |          | 26   |         |                |                |
|           |        |           |       |             |                 |      |          | 27   |         |                |                |
| 6500      | 3-4    | 6.39      | K3 V  |             |                 |      |          | 28   |         |                |                |
|           |        |           |       |             |                 |      |          | 29   |         |                | 35K            |
|           |        |           |       |             |                 |      |          | 5    |         |                |                |
| 4175      | 3-4"   | 6.43      | 68 IV |             |                 |      |          | 6    |         | cloudy         | 5.6K           |
|           |        |           |       |             |                 |      |          | 7    |         |                |                |
|           |        |           |       |             |                 |      |          | 1    |         | $\sigma$ 5.887 |                |
|           |        |           |       |             |                 |      |          | 8    |         |                |                |



Spectr. Temp. .... Dome Temp./Hum.  $+04.3^{\circ}\text{C}$   $57.5\% \text{H}$  Transparency Conditions ... *mostly cloudy* .....

Focus .....  $6.80$  .....

Spectr. Temp. .... Dome Temp./Hum.  $+04.5^{\circ}\text{C}$   $56.7\% \text{H}$  .....

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| Exp. Mtr.     | Seeing | Av. Mag. | Sp.  | Inst.      | Grating/Tilt            | Slit      | Emulsion | P.H. | Program | Remarks                         | Quality |
|---------------|--------|----------|------|------------|-------------------------|-----------|----------|------|---------|---------------------------------|---------|
| 1000V<br>8.1K | 3"     | 5.87     | F3IV | c. MSS CCD | 1800 $\mu$ /mm<br>55.90 | 250 $\mu$ | 6563A    | 9ci  |         | CLOUDY most exp in last 10 mins |         |
|               |        |          |      |            |                         |           |          | 10   |         |                                 |         |
|               |        |          |      |            |                         |           |          | 11   |         |                                 |         |
| 8.8K          | 2-3"   | 4.68     | K0I  |            |                         |           |          | 12   |         |                                 | 11K     |
|               |        |          |      |            |                         |           |          | 13   |         |                                 |         |
|               |        |          |      |            |                         |           |          | 14   |         |                                 |         |
| 8800          |        | 5.93     | G3V  |            |                         |           |          | 15   |         |                                 | 8.7K    |
|               |        |          |      |            |                         |           |          | 16   |         |                                 |         |
|               |        |          |      |            |                         |           |          | 1    |         | $\alpha = 5.901$                |         |
|               |        |          |      |            |                         |           |          | 17   |         |                                 |         |
| 8170          | 3-4"   | 5.99     | 67IV |            |                         |           |          | 18   |         |                                 | 7.9K    |
|               |        |          |      |            |                         |           |          | 19   |         |                                 |         |
|               |        |          |      |            |                         |           |          | 20   |         |                                 |         |
| 8800          |        | 4.01     | F8II |            |                         |           |          | 21   |         |                                 | 10K     |
|               |        |          |      |            |                         |           |          | 22   |         |                                 |         |

P9#6

234

Date 1997 MAY 17/18 Observers Hdy. Tu.....

Emulsion Batches:

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.....  
.....

| Plate No. | Object    | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|-----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| cc45472   | Comp      |              |                     |                         |                       |                   |             | FEAR<br>110 3             | 4c   |
| 73        | HD 156826 | 17 14 38.3   | -5 48 33            | 02 39 03                |                       |                   |             |                           | 804s |
| 74        | Comp      |              |                     |                         |                       |                   |             | "                         | 4s   |
| 75        | Comp      |              |                     |                         |                       |                   |             | "                         | 4s   |
| 76        | HD 171834 | 18 31 47.2   | +6 35 35            | 02 56 57                |                       |                   |             |                           | 348  |
| 77        | Comp      |              |                     |                         |                       |                   |             | "                         | 4s   |
| 78        | Comp      |              |                     |                         |                       |                   |             | "                         | 4    |
| 79        | HD 173667 | 18 41 21.4   | +20 27 02           | 03 10 29                |                       |                   |             |                           | 112s |
| 80        | Comp      |              |                     |                         |                       |                   |             | "                         | 4    |
| 81        | Comp      |              |                     |                         |                       |                   |             | "                         | 4    |
| 45482     | HD 176051 | 18 53 16.6   | +32 46 23           | 03 19 45                |                       |                   |             |                           | 253s |
| 83        | Comp      |              |                     |                         |                       |                   |             | "                         | 4s   |
| 84        | BINS(A)   |              |                     | 03 26                   |                       |                   |             |                           |      |
| 85        | Comp      |              |                     |                         |                       |                   |             | "                         | 4c   |
| 86        | HD 191067 | 20 0252      | -00 57 58           | 03 33 20                |                       |                   |             |                           | 586  |

Spectr. Temp. .... Dome Temp./Hum. ... 70.42°C 57.8%<sup>H</sup> Transparency Conditions ... D.S. Ty. c. led

Focus ..... 6.80 .....

335

Spectr. Temp. .... Dome Temp./Hum. ....

| Exp. Mtr.               | Seeing | Plu. Mag. | Sp.   | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|-------------------------|--------|-----------|-------|-------|--------------|------|----------|------|---------|---------|---------|
|                         |        |           |       | CASS  | 1800         | 250  | 6563A    | 23a  |         |         |         |
| 7400                    | 4"     | 6.32      | G9V   |       |              |      |          | 24   |         |         | 9.3 K   |
|                         |        |           |       |       |              |      |          | 25   |         |         |         |
|                         |        |           |       |       |              |      |          | 26   |         |         |         |
| 8600                    | 3.4"   | 5.45      | F3V   |       |              |      |          | 27   |         |         | 7.5K    |
|                         |        |           |       |       |              |      |          | 28   |         |         |         |
|                         |        |           |       |       |              |      |          | 29   |         |         |         |
| 8940                    |        | 4.19      | F6V   |       |              |      |          | 30   |         |         |         |
|                         |        |           |       |       |              |      |          | 31   |         |         |         |
|                         |        |           |       |       |              |      |          | 32   |         |         |         |
| 8790                    |        | 5.22      | F9V   |       |              |      |          | 33c  |         |         |         |
|                         |        |           |       |       |              |      |          | 34   |         |         |         |
|                         |        |           |       |       |              |      |          | 1    |         |         |         |
|                         |        |           |       |       |              |      |          | 5    |         |         |         |
| <del>8200</del><br>8200 | 3"     | 5.99      | K1 IV |       |              |      |          | 6    |         |         |         |

FUNNY SOUND ON READOUT  
LIKE OLD GPIB FAILURE  
TWILIGHT...

336 P9#7

Emulsion Batches:

Date ... 1997. MAY 17/18. Observers ... Hdy. J.T.u. ....

| Plate No.    | Object        | R. A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison   |       |
|--------------|---------------|---------------|---------------------|-------------------------|-----------------------|-------------------|-------------|--------------|-------|
|              |               |               |                     |                         |                       |                   |             | Type/Filter  | Exp.  |
| CC45487      | Comp          |               |                     |                         |                       |                   |             | Fe Ar<br>ND3 | 4s    |
| 88           | Comp          |               |                     |                         |                       |                   |             | "            | 4     |
| 89           | HD 157347     | 17 17 38.2    | -2 17 21            | 03 49 42                |                       |                   |             |              | 558s  |
| 90           | Comp          |               |                     |                         |                       |                   |             | "            | 4     |
| 91/500       | FLATS x 10    |               |                     |                         |                       | 02 18W            | -2 23       | Tung<br>ND3  | 3     |
| 501          | BIAS(4)       |               |                     | 04 03                   |                       |                   |             |              |       |
| 02/03        | Inb/out BOARD |               |                     |                         |                       | "                 | "           | Fe Ar<br>ND3 | 4/6   |
|              | MAY 18/19     | Hdy/JTu       | some                | tests                   | Dome T = -08.7°C      | 54.4% H           | CCD T = -   |              | 100.7 |
| 45504<br>-07 | SINGLE BIASES |               |                     |                         |                       |                   |             |              |       |
| 45508<br>-09 | DARKS         |               |                     | 20:23:04<br>20:25:38    |                       |                   |             |              | 150s  |
| 45510<br>-13 | SINGLE BIASES |               |                     |                         |                       |                   |             |              |       |
| 45514        | DARK          |               |                     | 20:30:05                |                       |                   |             |              | 1800s |
| 45515<br>-18 | SINGLE BIASES |               |                     |                         |                       |                   |             |              |       |
| 45519        | DARK          |               |                     | 21:02:29                |                       |                   |             |              | 1800s |
| 45520<br>-23 | SINGLE BIASES |               |                     |                         | 21 43 01              |                   |             |              |       |







CCD  
Spectr. Temp. .... -100.6 .....

Dome Temp./Hum. .... +09.8°C 46% H

Transparency Conditions . Some cloud in S.W. ...

Focus ..... 6.78 .....

90cg4m

339

Spectr. Temp. ....

Dome Temp./Hum. ....

C7

390 050 1024 41 CCD FMT

MAX  
AP4

| Exp. Mtr.           | Seeing | Plg. Mag. | Sp.   | Inst.                 | Grating/Tilt      | Slit | Emulsion | P.H. | Program    | Remarks             | Quality |
|---------------------|--------|-----------|-------|-----------------------|-------------------|------|----------|------|------------|---------------------|---------|
| 1000 V<br>10-f/11eq | 8.4°C  |           |       | CASS CCD<br>Tygrating | 1800 l/m<br>55.90 | 250u | 6563A    | 4/5  | Focus test |                     |         |
|                     |        |           |       |                       |                   |      |          | 1    |            |                     |         |
|                     |        |           |       |                       |                   |      |          | 2    |            |                     | 16K     |
|                     |        |           |       |                       |                   |      |          | 6    |            |                     | 7K      |
| 4030                | 4"     | 6.38      | K3 II |                       |                   |      |          | 7    |            | slight stry too     | 5K      |
|                     |        |           |       |                       |                   |      |          | 8    |            |                     | 76K     |
| 8070                |        | "         | "     |                       |                   |      |          | 9    |            |                     | 9K      |
|                     |        |           |       |                       |                   |      |          | 10   |            |                     | 6.7K    |
|                     |        |           |       |                       |                   |      |          | 11   |            |                     |         |
| 8050                | 4"     | 6.23      | K1 V  |                       |                   |      |          | 12   |            | Telescope east side | 10.3 K  |
|                     |        |           |       |                       |                   |      |          | 13   |            |                     | 5.8K    |
|                     |        |           |       |                       |                   |      |          | 1    |            |                     |         |
| 8000                |        | 5.93      | G9 IV |                       |                   |      |          | 15c  |            |                     |         |
|                     |        |           |       |                       |                   |      |          | 16c  |            |                     |         |

240 Pg #2 Tues/Wed

Emulsion Batches:

Date 1997 May 20/21 Observers Hdy. / Tn. ... + one star for [WxL]

| Plate No. | Object    | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|-----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CC45549   | Comp      |              |                     |                         |                       |                   |             | FeAr<br>ND2               | 45   |
| 50        | HD 82974  | 9 24 31.1    | -3 48 28            | 21 40 22                |                       |                   |             |                           | 1280 |
| 51        | Comp      |              |                     |                         |                       |                   |             | "                         | 45   |
| 52        | Comp      |              |                     |                         |                       |                   |             | "                         | 45   |
| 53        | HD 87401  | 10 03 03     | +12 27 22           | 22 07 18                |                       |                   |             |                           | 47   |
| 54        | Comp      | "            | "                   | 22 08 37                |                       |                   |             |                           | 48   |
| 55        | "         |              |                     | 22 09 48                |                       |                   |             |                           | 58   |
| 56        | "         |              |                     | 22 11 25                |                       |                   |             |                           | 50   |
| 57        | Comp      |              |                     |                         |                       |                   |             | "                         | 45   |
| 58        | BIAS(4)   |              |                     | 22 14                   |                       |                   |             |                           |      |
| CC45559   | Comp      |              |                     |                         |                       |                   |             | FeAr<br>ND2               | 45   |
| 60        | XZ Leo    | 10 02 34     | +17 02 46           | 22 22 22                |                       |                   |             |                           | 991  |
| 61        | Comp      |              |                     |                         |                       |                   |             | "                         | 45   |
| 62/64     | FLATS x 3 |              |                     |                         |                       |                   |             | TUNG<br>ND2               | 45   |
| 65        | BIAS(4)   |              |                     | 22 44                   |                       |                   |             |                           |      |

Spectr. Temp. .... Dome Temp./Hum.  $+06.6^{\circ}\text{C } 62.9\% \text{H}$  Transparency Conditions *17.06.74. Clear* *341*

Focus *6.78* .....

Spectr. Temp. .... Dome Temp./Hum. .... *CA*

| Exp. Mtr. | Seeing | Pl. Mag. | Sp.  | Inst.       | Grating/Tilt    | Slit      | Emulsion  | P.H. | Program      | Remarks | Quality |
|-----------|--------|----------|------|-------------|-----------------|-----------|-----------|------|--------------|---------|---------|
| 1000V     |        |          |      | C455<br>CCD | 1800ln<br>55.90 | 250 $\mu$ | 6563A     | 17c  |              |         |         |
| 7200      | 5"     | 6.26     | G6TV |             |                 |           |           | 18c  |              |         |         |
|           |        |          |      |             |                 |           |           | 19   |              |         |         |
|           |        |          |      |             |                 |           |           | 20   |              |         | 6K      |
| 37800     |        | 1.35     | B0V  |             |                 |           |           | 21   | Telluric std |         | 5K      |
| 39300     |        |          |      |             |                 |           |           | 21   |              |         | 7K      |
| 39K       |        |          |      |             |                 |           |           | 21   |              |         | 10.5K   |
| 40K       |        |          |      |             |                 |           |           | 21   |              |         |         |
|           |        |          |      |             |                 |           |           | 22   |              |         |         |
|           |        |          |      |             |                 |           |           | 1    |              |         |         |
|           |        |          |      |             | 1800ln<br>46.9  | 300 $\mu$ | 5784A     | 23   |              |         |         |
| 370       | 4.5"   | 10       |      |             |                 |           |           | 24   |              |         |         |
|           |        |          |      |             |                 |           |           | 25   |              |         |         |
|           |        |          |      |             |                 |           |           | 26   |              |         | 12K     |
|           |        |          |      |             |                 |           | (omitted) | 1    |              |         |         |

p9#3

Tues/Wed

342

Emulsion Batches:

Date 1997 MAY 20/21 Observers H.d.g./T.s.....

| Plate No.                    | Object    | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp |
|------------------------------|-----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-----|
| 45566<br>CC <del>83787</del> | Comp      |              |                     |                         |                       |                   |             | FeAr<br>ND2               | 43  |
| CC455 67                     | HD 83787  | 09 3540      | +31 4356            | 22 5511                 | <del>22 5511</del>    |                   |             |                           | 600 |
| 68                           | Comp      |              |                     |                         |                       |                   |             | n                         | 43  |
| 69                           | Comp      |              |                     |                         |                       |                   |             | n                         | 45  |
| 70                           | HD 89758  | 10 1622      | +42 0009            | 23 1242                 |                       |                   |             |                           | 42  |
| 71                           | Comp      |              |                     |                         |                       |                   |             | n                         | 45  |
| 72                           | Comp      |              |                     |                         |                       |                   |             | n                         | 4   |
| 73                           | HD 90839  | 10 2414      | +56 2936            | 23 2405                 |                       |                   |             |                           | 211 |
| 74                           | Comp      |              |                     |                         |                       |                   |             | n                         | 43  |
| 75                           | Comp      |              |                     |                         |                       |                   |             |                           |     |
| 76                           | HD 121146 | 13 4832      | 68 4839             | 23 37 24                |                       |                   |             |                           | 77  |
| 77                           | Comp      |              |                     |                         |                       |                   |             | n                         | 4   |
| 78                           | Comp      |              |                     |                         |                       |                   |             | n                         | 45  |
| 79                           | HD 164058 | 17 5417      | 51 3002             | 23 5800                 |                       |                   |             |                           | 18  |
| 80                           | Comp      |              |                     |                         |                       |                   |             | n                         | 4   |
| 81                           | B/HAS(4)  |              |                     | 00 00                   |                       |                   |             |                           |     |

Spectr. Temp. .... Dome Temp./Hum.  $\pm 5.8^{\circ}\text{C}$  57.0% *HT* Transparency Conditions *NORTH CLEAR* 393

Focus *6-78* .....

Spectr. Temp. .... Dome Temp./Hum.  $\pm 5.2^{\circ}\text{C}$  *CS* Telescope *still East side*

| Exp. Mtr.    | Seeing    | Plg. Mag.   | Sp.           | Inst.          | Grating/Tilt              | Slit                       | Emulsion     | P.H.                | Program              | Remarks                         | Quality      |
|--------------|-----------|-------------|---------------|----------------|---------------------------|----------------------------|--------------|---------------------|----------------------|---------------------------------|--------------|
|              |           |             |               | <i>Back to</i> | <i>1800 m/m<br/>55.90</i> | <i>250<math>\mu</math></i> | <i>6566A</i> | <i>5</i>            |                      |                                 |              |
| <i>7.9K</i>  | <i>4"</i> | <i>5.89</i> | <i>K6 III</i> |                |                           |                            |              | <i>6</i>            | <i>Academy in 24</i> |                                 |              |
|              |           |             |               |                |                           |                            |              | <del><i>8</i></del> |                      |                                 |              |
|              |           |             |               |                |                           |                            |              | <i>11</i>           |                      |                                 |              |
| <i>8.1K</i>  |           | <i>3.05</i> | <i>M0 II</i>  |                |                           |                            |              | <i>12</i>           |                      |                                 |              |
|              |           |             |               |                |                           |                            |              | <i>13</i>           |                      |                                 | <i>6-3K</i>  |
|              |           |             |               |                |                           |                            |              | <i>14</i>           |                      |                                 |              |
| <i>8K</i>    |           | <i>4.84</i> | <i>F8 V</i>   |                |                           |                            |              | <i>15</i>           |                      |                                 | <i>7K</i>    |
|              |           |             |               |                |                           |                            |              | <i>16</i>           |                      |                                 |              |
|              |           |             |               |                |                           |                            |              | <i>17</i>           |                      |                                 |              |
| <i>8.35K</i> |           | <i>6.40</i> | <i>K2 IV</i>  |                |                           |                            |              | <i>19</i>           |                      |                                 | <i>16.5K</i> |
|              |           |             |               |                |                           |                            |              | <i>19</i>           |                      |                                 |              |
|              |           |             |               |                |                           |                            |              | <i>20</i>           |                      | <i>row telescope west side.</i> |              |
| <i>8200</i>  |           | <i>2.23</i> | <i>K5 III</i> |                |                           |                            |              | <i>21</i>           |                      |                                 | <i>16K</i>   |
|              |           |             |               |                |                           |                            |              | <i>22</i>           |                      |                                 |              |
|              |           |             |               |                |                           |                            |              | <i>1</i>            |                      | <i>G = 5.302</i>                |              |





Spectr. Temp. ....

Dome Temp./Hum. ....

Transparency Conditions ... *Fine* ... 345Focus ... *6.78* ...

Spectr. Temp. ....

Dome Temp./Hum. *10.48°C 65.3% H*

| Exp. Mtr.   | Secing     | Pr. Mag.    | Sp.          | Inst.                    | Grating/Tilt | Slit        | Emulsion     | P.H.                 | Program | Remarks                           | Quality     |
|-------------|------------|-------------|--------------|--------------------------|--------------|-------------|--------------|----------------------|---------|-----------------------------------|-------------|
|             |            |             |              | <i>1800 in<br/>55-90</i> | <i>CASS</i>  | <i>306u</i> | <i>6566A</i> | <i>23</i>            |         |                                   |             |
| <i>8A</i>   |            | <i>5.93</i> | <i>K7 II</i> |                          |              |             |              | <i>24</i>            |         |                                   | <i>126K</i> |
|             |            |             |              |                          |              |             |              | <del><i>25</i></del> |         |                                   |             |
|             |            |             |              |                          |              |             |              | <i>25</i>            |         |                                   |             |
| <i>7400</i> |            | <i>4.91</i> | <i>K4 II</i> |                          |              |             |              | <i>26</i>            |         |                                   |             |
|             |            |             |              |                          |              |             |              | <i>27</i>            |         |                                   |             |
|             |            |             |              |                          |              |             |              | <i>28ci</i>          |         |                                   |             |
| <i>5750</i> |            | <i>6.52</i> | <i>G3 IV</i> |                          |              |             |              | <i>29ci</i>          |         |                                   |             |
|             |            |             |              |                          |              |             |              | <i>30</i>            |         |                                   |             |
|             |            |             |              |                          |              |             |              | <i>31</i>            |         |                                   |             |
| <i>7500</i> |            | <i>4.94</i> | <i>F5 IV</i> |                          |              |             |              | <i>32ci</i>          |         | <i>(NEAR MOON)<br/>MOON LIGHT</i> |             |
|             |            |             |              |                          |              |             |              | <i>33</i>            |         |                                   |             |
|             |            |             |              |                          |              |             |              | <i>1</i>             |         |                                   |             |
|             |            |             |              |                          |              |             |              | <i>5ci</i>           |         |                                   |             |
| <i>7960</i> | <i>3-5</i> | <i>6.10</i> | <i>G0 IV</i> |                          |              |             |              | <i>6ci</i>           |         |                                   |             |
|             |            |             |              |                          |              |             |              | <del><i>7</i></del>  |         |                                   |             |



Spectr. Temp. ....

Dome Temp./Hum. ....

Transparency Conditions .. *Fine* ..... <sup>307</sup>Focus ..... *6.78* .....Spectr. Temp. .... *100.9* °CDome Temp./Hum. .... *+0.4.4°C 68.4% H*

| Exp. Mtr.        | Seeing      | Fig. Mag. | Sp.    | Inst. | Grating/Tilt              | Slit        | Emulsion     | P.H. | Program | Remarks   | Quality     |
|------------------|-------------|-----------|--------|-------|---------------------------|-------------|--------------|------|---------|---|-------------|
| <i>no filter</i> |             |           |        |       | <i>1800 l/n<br/>55.90</i> | <i>250u</i> | <i>6566A</i> | 8    |         |   |             |
| 7980             | <i>5"</i>   | 4.65      | F7 IV  |       |                           |             |              | 9    |         |   | <i>7K</i>   |
|                  |             |           |        |       |                           |             |              | 10   |         |   | <i>7.1K</i> |
|                  |             |           |        |       |                           |             |              | 11   |         |   |             |
| 7980             |             | 6.49      | F9 IV  |       |                           |             |              | 12   |         | <i>LOTS OF COMPANIONS?</i>                        |             |
|                  |             |           |        |       |                           |             |              | 13   |         |   |             |
|                  |             |           |        |       |                           |             |              | 14   |         |   |             |
| 3800             |             | 5.23      | F6 II  |       |                           |             |              | 15   |         | <i>Companion to ESE<br/>at 10" - CLOSE TRIPLE</i> |             |
|                  |             |           |        |       |                           |             |              | 16   |         |   |             |
|                  |             |           |        |       |                           |             |              | 1    |         | <i>σ 5.576</i>                                    |             |
|                  |             |           |        |       |                           |             |              | 17   |         |   | <i>7.1K</i> |
| <i>8K</i>        |             | 4.37      | G1 III |       |                           |             |              | 18   |         |   | <i>6.5K</i> |
|                  |             |           |        |       |                           |             |              | 19   |         |   |             |
|                  |             |           |        |       |                           |             |              | 20   |         |   |             |
| <i>7.5K</i>      | <i>3.5"</i> | 6.00      | G3 III |       |                           |             |              | 21   |         |   | <i>5.7K</i> |
|                  |             |           |        |       |                           |             |              | 22   |         |   |             |

368

Pg# C

Emulsion Batches:

Date 1997 MAY 20/21 Observers Hdg. J.T.a.....

| Plate No. | Object    | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison  |      |
|-----------|-----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|-------------|------|
|           |           |              |                     |                         |                       |                   |             | Type/Filter | Exp. |
| CC 4564   | Comp      |              |                     |                         |                       |                   |             | FeAr<br>ND2 | 4s   |
| 15        | HD 186675 | 19 4040      | +37 0645            | 02 3028                 |                       |                   |             |             | 219  |
| 16        | Comp      |              |                     |                         |                       |                   |             | "           | 4s   |
| 17        | Comp      |              |                     |                         |                       |                   |             | "           | 4s   |
| 18        | HD 188947 | 19 5233      | +34 4903            | 02 3800                 |                       |                   |             |             | 105s |
| 19        | Comp      |              |                     |                         |                       |                   |             | "           | 4s   |
| 20        | Comp      |              |                     |                         |                       |                   |             | "           | 4s   |
| 21        | HD 161096 | 17 3832      | +04 3632            | 02 4517                 |                       |                   |             |             | 46s  |
| 22        | Comp      |              |                     |                         |                       |                   |             | "           | 4    |
| 23        | Comp      |              |                     |                         |                       |                   |             | "           | 4    |
| 24        | HD 153751 | 16 5612      | +82 1208            | 02 5342                 |                       |                   |             |             | 135s |
| 25        | Comp      |              |                     |                         |                       |                   |             | "           | 4    |
| 26        | Comp      |              |                     |                         |                       |                   |             | "           | 4    |
| 27        | HP 78154  | 09 0136      | +67 3226            | 03 0137                 |                       |                   |             |             | 432  |
| 28        | Comp      |              |                     |                         |                       |                   |             |             | 4    |
| 29        | B145 (4)  |              |                     | 03 10                   |                       |                   |             |             |      |

Spectr. Temp. ....

Dome Temp./Hum. ....

Transparency Conditions

cloudy in 349

Focus 6.78

Spectr. Temp. - °C

Dome Temp./Hum. 104.3°C 70%RH

| Exp. Mtr. | Seeing | Mag. | Sp.    | Inst.     | Grating/<br>Tilt | Slit | Emulsion | P.H. | Program | Remarks             | Quality |
|-----------|--------|------|--------|-----------|------------------|------|----------|------|---------|---------------------|---------|
|           |        |      |        | T grating | 1800<br>55.90    | 25a  | 6566A    | 23c  |         |                     |         |
| 7.8K      | 4"     | 4.89 | G7 III |           |                  |      |          | 24   |         |                     |         |
|           |        |      |        |           |                  |      |          | 25   |         |                     |         |
|           |        |      |        |           |                  |      |          | 26   |         |                     |         |
| 8070      |        | 3.89 | K0 III |           |                  |      |          | 27   |         |                     |         |
|           |        |      |        |           |                  |      |          | 28   |         |                     |         |
|           |        |      |        |           |                  |      |          | 29   |         |                     |         |
| 3.3K      |        | 2.77 | K2 III |           |                  |      |          | 30   |         |                     | 8K      |
|           |        |      |        |           |                  |      |          | 31   |         |                     |         |
|           |        |      |        |           |                  |      |          | 32   |         | Telescope east side |         |
| 7900      |        | 4.23 | G5 III |           |                  |      |          | 33   |         |                     |         |
|           |        |      |        |           |                  |      |          | 34   |         |                     |         |
|           |        |      |        |           |                  |      |          | 5    |         |                     |         |
| 8K        | 6"     | 4.80 | F6 II  |           |                  |      |          | 6    |         |                     |         |
|           |        |      |        |           |                  |      |          | 7    |         |                     |         |
|           |        |      |        |           |                  |      |          | 7    |         |                     |         |



Spectr. Temp. ....

Dome Temp./Hum. ....

Transparency Conditions ..

PART cloudy ..... 35/  
Complete by Dawn

Focus ..... 6.78

Spectr. Temp. .... CCD - 100.9°C

Dome Temp./Hum. .... +04.5°C 71.9%RH

| Exp. Mtr. | Seeing | P.V.<br>Mag.   | Sp.  | Inst. | Grating/<br>Tilt | Slit | Emulsion | P.H. | Program | Remarks              | Quality                |
|-----------|--------|----------------|------|-------|------------------|------|----------|------|---------|----------------------|------------------------|
| 4         |        |                |      |       | 1800ln<br>5590   | 250u | 6566A    | 8    |         |                      |                        |
| 4         | 5.2K   | 4 <sup>u</sup> | 6.09 | F4IV  |                  |      |          | 9    |         |                      |                        |
| 4         |        |                |      |       |                  |      |          | 10   |         |                      |                        |
| 4         |        |                |      |       |                  |      |          | 11   |         |                      |                        |
| 4         | 730    | 4              | 6.57 | G4V   |                  |      |          | 12   |         | BRIGHT SKY<br>cloudy | NORTH OF<br>close pair |
| 4         |        |                |      |       |                  |      |          | 13   |         |                      |                        |
| 3         |        |                |      |       |                  |      |          | 2    |         |                      | 15K                    |
|           |        |                |      |       |                  |      |          | 1    |         | $\sigma = 5.524$     |                        |
| 4         |        |                |      |       |                  |      |          | 7/5  | focus.  |                      |                        |

352

X

Sun / Mon

Emulsion Batches:

Date .. 1997 MAY 25/26 .. Observers ... W.K.L. (Ly) / T.N. ....

| Plate No.             | Object           | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp.         |
|-----------------------|------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|--------------|
| C456 <sup>49/50</sup> | Inbound/outbound |              |                     |                         |                       |                   |             | FeAr<br>ND4               | 4/6          |
| 51                    | BIAS(4)          |              |                     | 21 16 actual            | 21 05 because Acer    |                   |             |                           | Time was out |
| 52                    | Comp             |              |                     |                         |                       |                   |             | "                         | 4s           |
| 53                    | V361 Lyr         | 19 02 29     | +46 58 42           | 21 37 11                |                       |                   |             |                           | 1500         |
| 54                    | Comp             |              |                     |                         |                       |                   |             | "                         | 4s           |
| 55                    | V361 Lyr         |              |                     | 22 05 45                |                       |                   |             |                           | 1500         |
| 56                    | comp             |              |                     |                         |                       |                   |             | "                         | 4s           |
| 57                    | V361 Lyr         |              |                     | 22 33 07                |                       |                   |             |                           | 1500         |
| 58                    | Comp             |              |                     |                         |                       |                   |             | "                         | 4s           |
| 59                    | BIAS(4)          |              |                     | 23 00                   |                       |                   |             |                           |              |
| 60                    | V361 Lyr         |              |                     | 23 02 25                |                       |                   |             |                           | 1500         |
| 61                    | Comp             |              |                     |                         |                       |                   |             | "                         | 4s           |
| 62                    | V361 Lyr         |              |                     | 23 31 50                |                       |                   |             |                           | 1500         |
| 63                    | Comp             |              |                     |                         |                       |                   |             | "                         | 4s           |
| 64                    | V361 Lyr         |              |                     | 23 59 40                |                       |                   |             |                           | 1500         |

CCD  
Spectr. Tem

Focus...

Spectr. Tem

Exp. Mtr.

in filter  
100V

Spectr. Mtr.

45

90

90

90

90

90



CCD Spectr. Temp. .... 100.5°C Dome Temp./Hum. 71.1°C 45.6%RH Transparency Conditions .. Fine..... 353

Focus ..... 6.87..... 90cgain

Spectr. Temp. .... Dome Temp./Hum. .... 175 0 50 1024 4 1

| Exp. Mtr.                 | Seeing  | Mag. | Sp. | Inst.   | Grating/Tilt               | Slit      | Emulsion | P.H. | Program | Remarks  | Quality |
|---------------------------|---------|------|-----|---------|----------------------------|-----------|----------|------|---------|--|---------|
| 4/6<br>no filter<br>1000V |         |      |     | CHS CCD | 831 l/mm<br>Grating → 3340 | 306 $\mu$ | 6265A    | 3/4  | focused |  |         |
| Exposure meter            | balance | OK   |     |         |                            |           |          | 4    |         | $\sigma$ 3.260   |         |
| 95                        | 2"      | 136  |     |         |                            |           |          | 5    |         | Air mass 1.75  | 8.5     |
|                           |         |      |     |         |                            |           |          | 6    | DRL     | NO RH encoders tonight<br>But Field checks well  |         |
|                           |         |      |     |         |                            |           |          | 7    |         |  |         |
|                           |         |      |     |         |                            |           |          | 8    |         |  |         |
|                           |         |      |     |         |                            |           |          | 9    |         |  |         |
| 86                        |         |      |     |         |                            |           |          | 10   |         | SAO object move<br>across slit view @ 2255<br>From west end of slit<br>TO North end of field in 2 secs |         |
|                           |         |      |     |         |                            |           |          | 11   |         |  |         |
|                           |         |      |     |         |                            |           |          | 1    |         | $\sigma$ 3.461   |         |
| 80                        | 1"-2"   |      |     |         |                            |           |          | 12   |         |  |         |
|                           |         |      |     |         |                            |           |          | 13   |         |  |         |
| 80                        | 1"-2"   |      |     |         |                            |           |          | 14   |         |  |         |
|                           |         |      |     |         |                            |           |          | 15   |         |  | 9.5K    |
| 80                        |         |      |     |         |                            |           |          | 16   |         |  |         |

354  
#2

Sun/Mon

Date 1997 May 25/26

Observers Lu/Tn

Emulsion Batches:

.....  
.....  
.....

| Plate No. | Object   | R.A.<br>1900 | Declination<br>-1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|----------|--------------|----------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| c45665    | comp     |              | 1000                 |                         |                       |                   |             | FoAr<br>MP4               | 4s   |
| 66        | V361 Lyr | 19 02 29     | 46 58 42             | 00 27 13                |                       |                   |             |                           | 1500 |
| 67        | comp     |              |                      |                         |                       |                   |             | "                         | 4s   |
| 68        | BIAS(4)  |              |                      | 00 54                   |                       |                   |             |                           | 0    |
| 69        | V361 Lyr |              |                      | 00 56 13                |                       |                   |             |                           | 1548 |
| 70        | Comp     |              |                      |                         |                       |                   |             | "                         | 4s   |
| 71        | V361 Lyr |              |                      | 01 24 06                |                       |                   |             |                           | 1502 |
| 72        | Comp     |              |                      |                         |                       |                   |             | "                         | 4s   |
| 73        | V361 Lyr |              |                      | 01 52 22                |                       |                   |             |                           | 1500 |
| 74        | Comp     |              |                      |                         |                       |                   |             | "                         | 4s   |
| 75        | BIAS(4)  |              |                      | 02 19                   |                       |                   |             |                           |      |
| 76        | V361 Lyr |              |                      | 02 20 14                |                       |                   |             |                           | 1505 |
| 77        | Comp     |              |                      |                         |                       |                   |             | "                         | 4s   |
| 78        | Comp     |              |                      |                         |                       |                   |             | "                         | 4s   |
| 79        | SS Lac   |              | 2000                 | 02 55 55                |                       |                   |             |                           | 126  |
| 80        | Comp     |              |                      |                         |                       |                   |             | "                         | 4s   |

Exp. Mtr.  
Spectr. Temp.  
Focus.....  
Spectr. Temp.

462  
81  
87  
78  
74  
72  
500 3

CCD  
 Spectr. Temp. ... -100.5°C ... Dome Temp./Hum. +0.8°C 49.2% H Transparency Conditions ... Fine ... 355

Focus ... 6.87 ... Dome Temp./Hum. ... 90c gain  
 Spectr. Temp. ... Dome Temp./Hum. ... 175 0 50 1024 41 COFINT

| Exp. Mtr. | Seeing | Pl. Mag.  | Sp. | Inst.       | Grating/Tilt    | Slit | Emulsion | P.H. | Program | Remarks         | Quality |
|-----------|--------|-----------|-----|-------------|-----------------|------|----------|------|---------|-----------------|---------|
| no filter |        |           |     | CASS<br>CCD | 831/mm<br>33.40 | 306μ | 6265A    | 17   |         |                 |         |
| 81        |        | ✓<br>13.6 | K?  |             |                 |      |          | 18   |         |                 |         |
|           |        |           |     |             |                 |      |          | 19   |         |                 |         |
|           |        |           |     |             |                 |      |          | 1    |         |                 |         |
| 87        | 2"     |           |     |             |                 |      |          | 20   |         |                 |         |
|           |        |           |     |             |                 |      |          | 21   |         |                 |         |
| 78        | 1-2"   |           |     |             |                 |      |          | 22   |         |                 |         |
|           |        |           |     |             |                 |      |          | 23   |         |                 | 99K     |
| 74.       |        |           |     |             |                 |      |          | 24   |         |                 |         |
|           |        |           |     |             |                 |      |          | 25   |         |                 | 10.4K   |
|           |        |           |     |             |                 |      |          | 1    |         | <u>σ = 4.26</u> |         |
| 72        |        |           |     |             |                 |      |          | 26   |         |                 |         |
|           |        |           |     |             |                 |      |          | 27   |         |                 |         |
|           |        |           |     |             |                 |      |          | 28   |         |                 |         |
| 500       | 3-4"   | 10.1      | B9  |             |                 |      |          | 29   |         |                 |         |
|           |        |           |     |             |                 |      |          | 30   |         |                 |         |



CCDT  $-100.8^{\circ}\text{C}$   $+06.7^{\circ}\text{C}$   $61.4\%H$

meter

3K std vel

MAX  $\sim 7.9\text{K ADD.}$

$$\sigma = 4.327$$

$\sim 14\text{K max}$   $2\text{Ci}$

$+66^{\circ}\text{C}$   $687\text{SeT}$





