OBSERVATIONS OF PARTICLE MOTIONS IN OCEAN WAVES
(Vol. 2: Appendices)

by D. H. Shonting

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TECHNICAL MEMORANDUM

OBSERVATIONS OF PARTICLE MOTIONS IN OCEAN WAVES (Vol. 2: Appendices)

Prepared by: D. H. Shonting

July 1967

G. G. GOULD
Technical Director

W. W. WITTER
Captain, USN
Commanding Officer

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APPENDIX A

SUPPLEMENTARY DISCUSSIONS

Dynamics of a Ducted Meter

Response to a Step Input -- In discussing the dynamic characteristics of the ducted meter in chapter II, there is frequent mention of the terms "time constant", "response time", and "frequency response". Since these terms are often used (and also misused) in discussions of fluid flow sensors, it is desirable to clarify these meanings as they apply to the wave meters. The first step is to derive the relation for instrument response to a step increase in the driving force function.

The equation of motion representing the balance of forces on a ducted meter system can be written as:

$$\underset{A}{I\frac{d\omega}{dt}} = \underset{B}{-K_1\omega} + \underset{C}{K_2 u} \; ; \qquad \text{(A-1)}$$

where I is the moment of inertia of the impeller (gm cm^2), ω is the instantaneous angular velocity (sec^{-1}), u is the velocity of fluid through the meter, and K_1 and K_2 are proportionality constants.

Equation (A-1) represents the inertial force (term A) as equal to the sum of the drag force (B) produced by the impeller as it spins in the fluid and the dynamic thrust (C) caused by the moving fluid on the impeller. In other words, the drag force (B) is merely the reaction to the impressed force (C).

To investigate the solution $\omega(t)$, one must rewrite equation (A-1) in the form:

$$\frac{d\omega}{dt} + \frac{K_1}{I}\omega = \frac{K_2}{I}u . \qquad \text{(A-2)}$$

The initial conditions are given by:

$$\begin{aligned} \omega(t) = u(t) &= 0 \quad t < 0 \; ; \text{ and} \\ u(t) = U_T &= \text{constant} \quad t \geq 0 . \end{aligned} \qquad \text{(A-3)}$$

These conditions imply that the driving velocity U_T is applied instantaneously to the impeller at time t = 0. The solution to equation (A-2) is obtained by substitution of:

$$\omega = \omega' + \frac{K_2}{K_1}u \; ; \qquad \text{(A-4)}$$

giving

$$\frac{d\omega'}{dt} + \frac{K_2}{K_1}\frac{du}{dt} + \frac{K_1}{I}\omega' = 0. \qquad \text{(A-5)}$$

From conditions (A-3), the time derivative of U_1 is zero, producing the homogeneous equation:

$$\frac{d\omega'}{dt} + \frac{K_1}{I}\omega' = 0. \qquad \text{(A-6)}$$

Solving equation (A-6):

$$\omega' = K_3 e^{-\frac{K_1}{I}t} ; \qquad \text{(A-7)}$$

where K_3 is an integration constant. Substituting this in equation (A-4) yields the complete solution:

$$\omega = K_3 e^{-\frac{K_1}{I}t} + \frac{K_2}{K_1}u . \qquad \text{(A-8)}$$

At time t=0, from the initial conditions (A-3), one can evaluate:

$$K_3 = -\frac{K_2}{K_1} U_T . \qquad \text{(A-9)}$$

Thus:

$$\omega = -\frac{K_2}{K_1} U_T e^{-\frac{K_1}{I}t} + \frac{K_2}{K_1} u. \qquad \text{(A-10)}$$

This is the general solution of (A-2), which contains the sum of the transient and steady state solutions.

It is evident that:

$$\lim_{t\to\infty} \omega(t) = \frac{K_2}{K_1} U_T = \omega_T . \qquad \text{(A-11)}$$

For steady flow, the frequency of the impeller is directly proportional to the linear speed U_T. This important property is borne out by the calibration curves of the three ducted meter systems in figures II-5, II-9, and II-20.

Referring to chapter II, the ducted meter is subjected to a step input of velocity U_T at a point in time where:

$$t = \frac{I}{K_1} = T_r \quad . \tag{A-12}$$

In equation (A-10) $\omega(t)$ can be evaluated, utilizing (A-11), as:

$$\omega(t) = \omega\frac{I}{K_1} = \frac{K_2}{K_1} U_T \left(1-\frac{1}{e}\right) \cong 63\% \, \omega_T \, . \tag{A-13}$$

The value $T_r = I/K_1$ is defined as the response time. Likewise, T^{-1} (sec^{-1}) may be defined as the frequency response. Generally speaking, the instrument is incapable of registering fluctuations in flow greater than T_r^{-1} cps. The dividing line is completely arbitrary. However, for OMDUM III, having $T_r \cong$ 60 milliseconds, this response time is surely small enough to observe fluctuations due to surface waves which are of the order of 3000-4000 milliseconds.

Response to a Sinusoidal Input -- The next step is to examine the response characteristics of the ducted meter to a sinusoidal driving function, which might be crudely compared to a single Fourier component of an ocean wave.

One can assume the same equation of motion given in equation (A-2), except that u is given as a sinusoidal function. Thus, instead of (A-2):

$$\frac{dw}{dt} + \frac{K_1}{I}\omega = \frac{K_2}{I} \cos \Omega t. \tag{A-14}$$

The Ω is the driving frequency given by $2\pi T_F^{-1}$; where T_F is the period of the forcing function on the right hand side of (A-14).

Letting $K_1/I = \Omega_0$, the auxiliary equation becomes:

$$\omega = A e^{-\Omega_0 t} \, . \tag{A-15}$$

It is assumed that A=A(t) can serve as part of the solution to equation (A-14). Substituting (A-15) into (A-14), with the necessary adjustment, gives:

$$A = \frac{K_2}{I} \int e^{\Omega_0 t} \cos \Omega t \, dt. \tag{A-16}$$

The term B is an integration constant. Substituting (A-16) into (A-15) and integrating:

$$\omega = \frac{K_2}{I}\left[\frac{\Omega_0 \cos \Omega t + \Omega \sin \Omega t}{\Omega_0^2 + \Omega}\right] + B e^{-\Omega_0 t}; \qquad \text{(A-17)}$$

(A') (B')

or simplifying with trigonometric relationships:

$$\omega = \frac{K_2}{I\sqrt{\Omega_0^2+\Omega^2}} \cos(\Omega t - \alpha) + B e^{-\Omega_0 t}. \qquad \text{(A-18)}$$

(A') (B')

Equation (A-12) has been used in (A-18) to define:

$$\alpha = \text{ARCTAN} \frac{\Omega}{\Omega_0} = \text{ARCTAN}\, \Omega\, T_r. \qquad \text{(A-19)}$$

As with the solution (A-10) for response to a step function, solution (A-18) contains a steady oscillatory component term (A') and a time variable solution term (B'). The angle α can be thought of as the phase shift angle between the response function ω and the driving function $K_2/_I \cos \Omega t$. It is clear from (A-19) that the phase angle α increases with an increasing time constant T_r. Likewise, for a system with a constant T_r, the phase angle α increases as the frequency of the driving function. Also, the amplitude of the instrument response decreases as Ω increases.

In chapter II a test was made of the response of OMDUM II to a vertical oscillation. The period of oscillation was about 0.7 second. The phase angle α was found to be about 12°. Substituting these values into equation (A-19) written as

$$T_r = \frac{\text{TAN}\,\alpha}{\Omega} \qquad \text{(A-20)}$$

results in $T_r \sim 24$ milliseconds. This value for T_r is somewhat lower than the value obtained for OMDUM III by the method described in (A-1).

Relationship Between Instrument Output and Driving Motion Spectra -- The measurement in ocean waves using the ducted meters provides a time series record of the angular velocity vector of each impeller. From the time variable magnitude and direction of this vector one can infer, on the basis of steady flow and response time calibrations, an estimate of the Eulerian particle velocity at the position of the meter system. From this velocity data one can estimate averages, auto-covariance, covariance, and their related spectral functions. The accuracy of the statistical description of the actual motions is based on the assumption that the statistics of the impeller motion can be identified with statistics of ambient random motions driving the impellers. A simple analysis can be made of the criteria by which one can justify the correspondence of the statistics of the angular velocity vector with the particle velocity vector.

Write the equation of motion (A-1) in the form:

$$\frac{I}{K_2}\frac{d\omega}{dt} + \frac{K_1}{K_2}\omega = u(t) \quad ; \tag{A-21}$$

where u(t) is considered to be a quasi-random function of time. The functions on ω(t) and u(t) may be written as the complex Fourier integrals:

$$\omega(t) = \int_{-\infty}^{\infty} e^{i\nu t}\, dW(\nu) \tag{A-22}$$

and

$$u(t) = \int_{-\infty}^{\infty} e^{i\nu t}\, dZ(\nu). \tag{A-23}$$

The term ν represents angular frequency, and $dW(\nu)$ and $dZ(\nu)$ are increments in the quasi-random complex functions $W(\nu)$ and $Z(\nu)$. These functions have the following properties:

$$\left.\begin{aligned} &\lim_{d\nu_1 = d\nu_2 = d\nu \to 0} \frac{dW^*(\nu_1)\, dW(\nu_2)}{d\nu} = 0, \\ \text{and} \quad &\lim_{d\nu_1 = d\nu_2 = d\nu \to 0} \frac{dZ^*(\nu_1)\, dZ(\nu_2)}{d\nu} . \end{aligned}\right\} \tag{A-24}$$

Also:

$$\lim_{d\nu \to 0} \frac{dW^*(\nu)\, dW(\nu)}{d\nu} = \Psi(\nu), \tag{A-25}$$

and

$$\lim_{d\nu \to 0} \frac{dZ^*(\nu)\, dZ(\nu)}{d\nu} = \Phi(\nu). \tag{A-26}$$

The asterisk indicates the complex conjugate, and $\Psi(\nu)$ and $\Phi(\nu)$ represent the energy density of the spectrum functions of $\omega(t)$ and u(t), respectively (see Batchelor, 1953).

Substituting equations (A-22) and (A-23) into (A-21), and remembering that $dW(\nu)$ and $dZ(\nu)$ are independent of t, the result is:

$$\frac{iI\nu}{K_2}\int_{-\infty}^{\infty} e^{i\nu t}\,dW + \frac{K_1}{K_2}\int_{-\infty}^{\infty} e^{i\nu t}\,dW = \int_{-\infty}^{\infty} e^{i\nu t}\,dz, \qquad \text{(A-27)}$$

or simply

$$\left(\frac{iI\nu}{K_2} + \frac{K_1}{K_2}\right) dw = dz\,. \qquad \text{(A-28)}$$

Dividing (A-28) by $d\nu$ and multiplying both sides of the equation by the respective complex conjugates gives:

$$\left(\frac{K_1^2}{K_2^2} + \frac{I^2\nu^2}{K_2^2}\right) \frac{dw^{x}\,dw}{d\nu}\,. \qquad \text{(A-29)}$$

Taking the limit of (A-29) as $d\nu \to 0$, we have from equations (A-25) and (A-26):

$$\Phi(\nu) = \left(\frac{K_1^2}{K_2^2} + \frac{I^2\nu^2}{K_2^2}\right) \Psi(\nu)\,. \qquad \text{(A-30)}$$

Equation (A-30) gives the relation between the spectra of quasi-random function u(t) and the spectrum of impeller rotational response ω (t).

The next relationship to be examined is between the auto-covariance functions of both the turbulent velocity fluctuations u(t) and the impeller response function ω (t). In order to compare the response of each function at an instant T and at a later time τ, we must determine the relation between the auto-covariance functions given by:

$$\phi_u(\tau) = \overline{u(t)\,u(t+\tau)} \qquad \text{(A-31)}$$

and

$$\phi_\omega(\tau) = \omega(t)\,\omega(t+\tau)\,. \qquad \text{(A-32)}$$

These functions are defined in chapter III.

It is relation (A-32) that is actually measured. From this, (A-31) is interpreted and the spectrum function $\Phi(\nu)$ inferred. From equations (A-15) and (A-16), and the properties (A-18) and (A-19):

$$\overline{u(t)\,u(t+\tau)} = \int_{-\infty}^{\infty} \Phi(\nu)\, e^{i\nu\tau}\, d\nu , \qquad \text{(A-33)}$$

and

$$\overline{\omega(t)\,\omega(t+\tau)} = \int_{-\infty}^{\infty} \Psi(\nu)\, e^{i\nu\tau}\, d\nu . \qquad \text{(A-34)}$$

Thus, the auto-covariance, as shown in chapter III, is the Fourier transform of the spectrum function. Substituting equation (A-23) into (A-26):

$$\Phi_\omega(\tau) = \overline{\omega(t)\,\omega(t+\tau)} = \int_{-\infty}^{\infty} \frac{\Phi(\nu)\, e^{i\nu\tau}}{\left(\frac{K_1^2}{K_2^2} + \nu^2 \frac{I^2}{K_2^2}\right)} . \qquad \text{(A-35)}$$

Letting

$$\nu_c = \frac{K_1}{I} , \qquad \text{(A-36)}$$

and since

$$\frac{\nu_c^2}{\nu_c^2+\nu^2} = 1 - \frac{\nu^2}{\nu_c^2+\nu^2} ,$$

equation (A-35) may be written in the form:

$$\Phi_\omega(\tau) = \frac{K_2^2}{I^2\nu_c^2} \int_{-\infty}^{\infty} \Phi(\nu)\, e^{i\nu\tau} \left[1 - \frac{\nu^2}{\nu_c^2+\nu^2}\right] d\nu ;$$

or

$$\Phi_\omega(\tau) = \frac{K_2^2}{I^2\nu_c^2}\, \Phi_u(\tau) - \frac{K_2}{I^2\nu_c^2} \int_{-\infty}^{\infty} \frac{\nu^2\, \Phi(\nu)\, e^{i\nu\tau}}{\nu_c^2+\nu^2}\, d\nu . \qquad \text{(A-37)}$$

Now:

$$-\nu^2 e^{i\nu\tau} = \frac{d^2}{d\tau^2}\, e^{i\nu\tau} .$$

Thus:

$$\Phi_\omega(\tau) = \frac{K_2^2}{K_1^2}\, \Phi_u(\tau) + \frac{K_2^2}{I^2\nu_c^2} \frac{d^2}{d\tau^2} \int_{-\infty}^{\infty} \frac{\Phi(\nu)\, e^{i\nu\tau}}{\nu_c^2+\nu^2}\, d\nu ;$$

or

$$\Phi_\omega(\tau) = \frac{K_2^2}{K_1^2}\, \Phi_u(\tau) + \frac{1}{\nu_c^2} \frac{d^2}{d\tau^2}\, \Phi_\omega(\tau) . \qquad \text{(A-38)}$$

This may be written:

$$\Phi_w(\tau) = \frac{K_1^2}{K_2^2}\left[\Phi_\omega(\tau) - \frac{1}{\nu_c^2}\frac{d^2}{d\tau^2}\Phi_\omega(\tau)\right] . \qquad \text{(A-39)}$$

This equation provides a simple relationship of the auto-covariance of the driving motion u(t) with that of the instrument response function ω(t).

Since $T_r = K_1 (I)^{-1}$ and, from (A-12), equals $(T_r)^{-1}$, the limit may be written:

$$\lim_{T_r \to 0} \Phi_u(\tau) = \frac{K_1^2}{K_2^2}\,\Phi_\omega(\tau). \qquad \text{(A-40)}$$

Of course, this limiting condition ($T_r \to 0$) is not very realistic, since, for any instrument, T_r is finite.

Examining the relation (A-39) further -- the formal equation for $\Phi_\omega(\tau)$ may be written, from (III-24):

$$\Phi_\omega(\tau) = \lim_{T \to \infty} \frac{1}{T}\int_{-T/2}^{T/2} \omega(t)\,\omega(t+\tau)\,dt . \qquad \text{(A-41)}$$

Lee (1960) shows that the second derivative of $\Phi_\omega(\tau)$ is given as:

$$\frac{d^2\Phi_\omega(\tau)}{d\tau^2} = \lim_{T \to \infty} \frac{1}{T}\int_{-T/2}^{T/2} \frac{d\omega(t)}{dt} \cdot \frac{d\omega(t+\omega)}{dt}\,dt . \qquad \text{(A-42)}$$

The second derivative of the auto-covariance function is another auto-covariance function of the derivative of ω(t) except for the negative sign. Thus, in (A-39) the correction term

$$-\frac{1}{\nu^2}\frac{d^2}{d\tau^2}\Phi_\omega(\tau)$$

is a positive bias in relation to the estimate of $\Phi_u(\tau)$. The probable magnitudes of the derivative term with respect to the auto-covariance in equation (A-39) can now be examined. Assume that the driving function ω is represented simply as:

$$\omega = \sin \Omega t \; ; \qquad \text{(A-43)}$$

where Ω is the frequency of the oscillation. The auto-covariance function is $\Phi_\omega(\tau)$, which is approximated by:

$$\Phi_\omega(\tau) \cong \frac{1}{T}\int_{-T/2}^{T/2} \sin \Omega t \, \sin \Omega(t+\tau)\,d\tau . \qquad \text{(A-44)}$$

Integration gives:

$$\phi_\omega(\tau) = \frac{1}{2}\cos\Omega\tau . \qquad \text{(A-45)}$$

The second derivative of $\phi_\omega(\tau)$ is given by:

$$\frac{d^2\phi_\omega(\tau)}{d\tau^2} = -\frac{\Omega^2}{2}\cos\Omega\tau . \qquad \text{(A-46)}$$

The derivative term in (A-39) may be neglected if:

$$\frac{1}{2} \gg \frac{\Omega^2}{2\nu_c^2} \quad \text{OR} \quad 1 \gg \frac{\Omega^2}{\nu_c^2} . \qquad \text{(A-47)}$$

Since $\Omega = 2\pi\,(T_\omega)^{-1}$ (where T_ω is the period of the oscillation), and $\nu_c = K_1(I)^{-1} = (T_r)^{-1}$; then from (A-47):

$$1 \gg \frac{4\pi^2 T_r^2}{T_\omega^2} \sim \frac{40\,T_r^2}{T_\omega^2} .$$

As shown in chapter IV, T_r for the wave meters was roughly 50 milliseconds. If the dominant period of driving oscillations of wind waves is about 4000 milliseconds (4 sec), then:

$$\frac{40\,T_r^2}{T_\omega^2} \sim 0.04 .$$

Thus, if the auto-covariance function is of the form given by (A-43), then the error in the estimate of $\phi_u(\tau)$ in equation (A-39) will be about 4 percent too small.

This simple example is given only to demonstrate that the relative magnitudes of the instrument frequency response and the dominant frequencies of the driving motions must be considered in providing an accurate statistical analysis of the motions. Thus, both the spectrum function and auto-covariance of the driving functions can be evaluated to an accuracy which is unavoidably dependent upon the amount by which the instrument response exceeds the ambient driving frequencies.

Amplitude Probability Distribution of Sinusoidal Waves

Consider a wavy ocean surface made up of an ensemble of Fourier components of equal amplitude and frequency, but of random phase. Two of the waves are pictured in figure A-1. The random parameter in the waves is the phase angle with respect to time t = 0. Letting α be the random phase angle of the wave with an angular frequency Ω_1, and having an amplitude A, the random amplitude η of the wave at $t = t_1$ is expressed by:

$$\eta(t) = A \sin(\Omega_1 t_1 + \alpha). \qquad \text{(A-48)}$$

Given the probability density of α, the probability density of the random variable η can be estimated. In other words, the aim is to estimate the instantaneous amplitude of the wave at $t = t_1$, using the knowledge of the probability density of the phase angle. The method used here is discussed by Lee (1960).

The phase angle α need only be specified between 0 and 2π. Let the probability density of α be $P_\alpha(Y)$, and that of η be $P_\eta(X)$. For every value of η in its range $(-A, A)$, there are two possible values of α in its range $(0, 2\pi)$, except when $\eta = \pm A$.

Letting

$$\zeta = \Omega_1 t + \alpha, \qquad \text{(A-49)}$$

equation (A-48) becomes:

$$\eta = A \sin \zeta ; \qquad \text{(A-50)}$$

where the range of ζ is $(\Omega_1 t_1, \Omega_1 t_1 + 2\pi)$. The relation between the range of variables of X and Z of the random variables η and ζ is thus:

$$X = A \sin Z ; \qquad \text{(A-51)}$$

where

$$Z = \Omega_1 t_1 + Y . \qquad \text{(A-52)}$$

Assuming that Z_1 and Z_2 are two solutions of (A-51) for Z in the interval $(\Omega_1 t_1, \Omega_1 t_1 + 2\pi)$, then:

$$P(x < \eta < x + dx) = P(z_1 < \zeta < z_1 + dz) + P(z_2 < \zeta < z_2 + dz). \qquad \text{(A-53)}$$

This equation states that an event of η occurring in $(x, x+dx)$ is dependent upon the event of ζ occurring in $(z_1, z_1 + dz)$ and $(z_2, z_2 + dz)$ and nowhere else. If there were only one solution of (A-51), only one term would appear on the right side of (A-53). Equation (A-53) leads to:

$$P_\eta(x)\,dx = P_\zeta(z_1)\,dz + P_\zeta(z_2)\,dz \ . \qquad \text{(A-54)}$$

Here, $P_\zeta(z)$ is the probability density of ζ . It can be shown (Lee, 1960, p. 192) that:

$$P_\zeta(z) = P_\alpha(z - \Omega_1 t) \ . \qquad \text{(A-55)}$$

Equation (A-54) may be written:

$$P_\eta(x) = \frac{P_\alpha(z_1 - \Omega_1 t) + P_\alpha(z_2 - \Omega_1 t_1)}{\left|\frac{dx}{dz}\right|} \ ; \qquad \text{(A-56)}$$

where, for $-A < x < A$,

$$\left|\frac{dx}{dz}\right| = |A \cos z| = +\sqrt{A^2 - x^2} \ . \qquad \text{(A-57)}$$

The absolute value of the slope dx/dz is used, since in (A-56) the probability distributions must be positive.

The complete expression for $P_\eta(x)$ is given by:

$$P_\eta(x) = \begin{cases} \dfrac{P_\alpha(z - \Omega_1 t_1) + P_\alpha(z_2 - \Omega_1 t_1)}{\sqrt{A^2 - x^2}} & \text{FOR } -A < x < A \\ 0 & \text{ELSEWHERE} \end{cases} \qquad \text{(A-58)}$$

The term $P_\eta(x)$ is, generally, a function of t; thus, according to the definition in chapter III, it is nonstationary. $P_\alpha(z - \Omega_1 t_1)$ may be taken as a rectangular density function (i.e., constant probability over a specified interval) and defined as:

$$P_\alpha(z - \Omega_1 t_1) = \begin{cases} \frac{1}{2\pi} & \text{FOR } \Omega_1 t_1 < z < \Omega_1 t_1 + 2\pi \\ 0 & \text{ELSEWHERE} \end{cases} \ . \qquad \text{(A-59)}$$

This makes $P_\eta(x)$ independent of t_1 (i.e., become stationary), and reduces it to:

$$P_\eta(x) = \begin{cases} \dfrac{1}{\pi\sqrt{A^2 - x^2}} & \text{FOR } -A < x < A \\ 0 & \text{ELSEWHERE} \end{cases} \ . \qquad \text{(A-60)}$$

Since $z = \Omega_1 t_1 + \gamma$, condition (A-59) is equivalent to

$$P_\alpha(\gamma) = \begin{cases} \frac{1}{2\pi} & \text{FOR } 0 < \gamma < 2\pi \\ 0 & \text{ELSEWHERE} \end{cases} . \quad \text{(A-61)}$$

Therefore, if the probability density of the phase angle given by equation (A-59), depicted by figure V-13 (upper plot), is uniform, the ensemble of sine waves is stationary and the probability density of the amplitude is given by equation (A-60). This density distribution is plotted in figure V-13 (lower plot).

Relationships for Motions Associated with a Turbulent Velocity Field

Reynolds Stresses -- To examine the concept of the Reynolds stress existing in the surface ocean layer, one must consider the time variable motions of the water particles at a point immediately beneath wind-driven ocean waves that are being subjected to a surface shear stress by the wind.

Let:

$$u(t) = u = \bar{u} + u' .$$
$$w(t) = w = \bar{w} + w' . \quad \text{(A-62)}$$

The terms u and w are the time-varying horizontal and vertical velocity components at a point in the water column of uniform density. The $\bar{u}$ and $\bar{w}$ are time mean values given by the following integrals:

$$\bar{u} = \frac{1}{T}\int_{-T/2}^{T/2} u \, dt , \quad \text{(A-63)}$$

and

$$\bar{w} = \frac{1}{T}\int_{-T/2}^{T/2} w \, dt .$$

The terms u' and w' are the instantaneous deviations from the time mean velocities. Thus:

$$\overline{u'} \equiv \overline{w'} \equiv 0 .$$

Consider a small area dA in a horizontal plane between two layers of water which are being subjected to a horizontal shear. The mass of water dm crossing this area vertically during the time dt is given by:

$$dm = \rho \, dA \, w \, dt = \rho \, dA (\bar{w} + w') dt ; \quad \text{(A-64)}$$

where ρ is the density = constant.

The momentum of the water is dm $(\bar{u} + u')$ in the horizontal, and dm $(\bar{w} + w')$ in the vertical. Thus, the time rate of total horizontal and vertical transport across this area is:

$$\rho(\bar{w}+w')^2\, dA\, dt \quad \text{AND} \quad \rho(\bar{w}+w')(\bar{u}+u')\, dA\, dt. \tag{A-65}$$

Dividing through by dAdt, one obtains the time rate of vertical transfer of horizontal and vertical momentum per unit area, which is given by:

$$\rho(\bar{w}^2 + 2\bar{w}w' + w'^2) \tag{A-66}$$

and

$$\rho(\bar{w}\bar{u} + \bar{w}u' + w'\bar{u} + u'w'). \tag{A-67}$$

Taking averages over the period T, and utilizing equations similar to (A-63), produces:

$$\overline{\rho\bar{w}^2} + \overline{\rho w'^2} = \rho\bar{w}^2 + \overline{\rho w'^2}, \tag{A-68}$$

and

$$\overline{\rho\bar{w}\bar{u}} + \rho\overline{u'w'} = \rho\bar{u}\bar{w} + \overline{\rho u'w'}. \tag{A-69}$$

The turbulent transfer quantities are defined as $\rho\overline{w'^2}$ and $\rho\overline{u'w'}$.

Consider the turbulent term $\rho\overline{u'w'}$. This term represents a net transport of horizontal momentum in the vertical by means of a correlation of u' with w'. Correlation exists when

$$\rho\overline{u'w'} = \frac{\rho}{T}\int_{-T/2}^{T/2} u'w'\, dt \neq 0. \tag{A-70}$$

Note that in the case of ocean waves the time varying quantities oscillate and change sign. Thus, there must be an internal systematic relation; e.g., u' is large and negative when w' is large and negative, and u' is large and positive when w' is large and positive.

If u and w are measured at a fixed point beneath the surface of the ocean, and for a given time interval equation (A-75) holds true, one can then conclude that: (1) a much larger or much smaller eddy motion is instrumental in propagating momentum downward which the instruments did not detect; or (2) a mechanism of stress transfer exists which is unrelated to the Reynolds stress concept.

Both $\rho\overline{w'^2}$ and $\rho\overline{u'w'}$ in (A-68) and (A-69) have units of dynes per square centimeter or force per unit area. The former term is identified as a dyanmic or turbulent pressure, and the latter as a turbulent (or shear) stress.

<u>Momentum Equations for Turbulent Velocities</u> -- To appreciate how the eddy stresses can be interpreted as real physical quantities, let us consider the Navier-Stokes equations for an incompressible fluid in two dimensions in the vertical XZ plane. These equations are:

$$\frac{du}{dt} = -\frac{1}{\rho}\frac{\partial P}{\partial x} + \nu \nabla^2 u \qquad \text{(A-71)}$$

and

$$\frac{dw}{dt} = -\frac{1}{\rho}\frac{\partial P}{\partial x} - G + \nu \nabla^2 w \ ; \qquad \text{(A-72)}$$

where p = pressure (dyne cm^{-2})

ν = kinematic viscosity (cm^2 sec^{-1})

G = gravitational acceleration (980) cm sec^{-2}

∇^2 = laplacian operator ($\frac{\partial^2}{\partial x^2} + \frac{\partial^2}{\partial z^2}$) cm^{-2}

Z = measured positively upward.

Note that:

$$\frac{d}{dt} = \frac{\partial}{\partial t} + u\frac{\partial}{\partial x} + w\frac{\partial}{\partial z} .$$

The two-dimensional continuity equation for an incompressible fluid can also be used:

$$\frac{\partial u}{\partial x} + \frac{\partial w}{\partial z} = 0 . \qquad \text{(A-73)}$$

Substituting the Reynolds formulations (A-62) and also the pressure relation

$$P = \overline{P} + P' \qquad \text{(A-74)}$$

into equations (A-71) and (A-72), and taking time averages in accordance with equation (A-63), gives:

$$\frac{\partial \bar{u}}{\partial t} + \bar{u}\frac{\partial \bar{u}}{\partial x} + \overline{u'\frac{\partial u'}{\partial x}} + \bar{w}\frac{\partial \bar{u}}{\partial z} + \overline{w'\frac{\partial u'}{\partial z}} = -\frac{1}{\rho}\frac{\partial \overline{P}}{\partial x} + \nu\left(\frac{\partial^2 \bar{u}}{\partial x^2} + \frac{\partial^2 \bar{u}}{\partial z^2}\right) \qquad \text{(A-75)}$$

and

$$\frac{\partial \bar{w}}{\partial t} + \bar{u}\frac{\partial \bar{w}}{\partial x} + \overline{u'\frac{\partial w'}{\partial x}} + \bar{w}\frac{\partial \bar{w}}{\partial z} + \overline{w'\frac{\partial w'}{\partial z}} = \frac{1}{\rho}\frac{\partial \overline{P}}{\partial z} - G + \nu\left(\frac{\partial^2 \bar{w}}{\partial x^2} + \frac{\partial^2 \bar{w}}{\partial t^2}\right), \qquad \text{(A-76)}$$

All terms involving time average products of mean values and fluctuations vanish, simplifying the equations considerably. By regrouping terms:

$$\frac{d\bar{u}}{dt} = \frac{1}{\rho}\frac{\partial \bar{P}}{\partial x} + \nu\left[\frac{\partial^2 \bar{u}}{\partial x^2} + \frac{\partial^2 \bar{u}}{\partial z^2}\right] - \overline{u'\frac{\partial u'}{\partial x}} - \overline{w'\frac{\partial u'}{\partial z}} \quad ; \qquad \text{(A-77)}$$

and

$$\frac{d\bar{w}}{dt} = \frac{1}{\rho}\frac{\partial \bar{P}}{\partial z} - G + \nu\left[\frac{\partial^2 \bar{w}}{\partial x^2} + \frac{\partial^2 \bar{w}}{\partial z^2}\right] - \overline{u'\frac{\partial w'}{\partial x}} - \overline{w'\frac{\partial w'}{\partial z}} \, . \qquad \text{(A-78)}$$

Using the equation of continuity for turbulent velocity components obtained with equations (A-62) and (A-73), the result is:

$$\frac{\partial u'}{\partial x} + \frac{\partial w'}{\partial z} = 0 \, . \qquad \text{(A-79)}$$

Equations (A-77) and (A-78) may be put in the following form, with the assumption of no mean motion in the vertical ($\bar{w} \equiv 0$):

$$\frac{d\bar{u}}{dt} = -\frac{1}{\rho}\frac{\partial \bar{P}}{\partial x} + \frac{\partial}{\partial x}\left[\nu\frac{\partial \bar{u}}{\partial x} - \overline{u'^2}\right] + \frac{\partial}{\partial z}\left[\nu\frac{\partial u}{\partial z} - \overline{u'w'}\right] \; ; \qquad \text{(A-80)}$$

and

$$0 = -\frac{1}{\rho}\frac{\partial \bar{P}}{\partial z} - G + \frac{\partial}{\partial x}\left[-\overline{u'w'}\right] + \frac{\partial}{\partial z}\left[-\overline{w'^2}\right] \, . \qquad \text{(A-81)}$$

Consider the relative magnitudes of the viscous and dynamic pressure terms in equation (A-80). Realistic values for the terms $\partial u/\partial x$ and u' could be 5 cm sec^{-1} per 10 meters and 50 cm sec^{-1}, respectively, for a wind wave regime. For $\nu = 10^{-2}$ gm cm^{-1} sec^{-1}, the ratio

$$\nu\frac{\partial u}{\partial x} \Big/ \overline{u'^2} \sim 2 \times 10^{-6} \, .$$

This small ratio indicates that the molecular viscosity term in equation (A-80) may be neglected. Also, assuming that the term is vanishingly small, we obtain the simplified momentum equations:

$$\rho\frac{d\bar{u}}{dt} = -\frac{\partial \bar{P}}{\partial x} + \frac{\partial}{\partial x}\left[-\rho\overline{u'^2}\right] + \frac{\partial}{\partial z}\left[-\rho\overline{u'w'}\right] ; \qquad \text{(A-82)}$$

and

$$0 = -\frac{\partial \bar{P}}{\partial z} - \rho G + \frac{\partial}{\partial x}\left[-\rho\overline{u'w'}\right] + \frac{\partial}{\partial z}\left[-\rho\overline{w'^2}\right] . \qquad \text{(A-83)}$$

Equation (A-82) is a mathematical statement that the mean horizontal inertial acceleration of a water element is balanced by the mean horizontal pressure gradient, horizontal gradients of the mean horizontal dynamic pressure, and the vertical gradient of the mean eddy stress. Equation (A-83) indicates that the vertical mean pressure gradient is balanced by the gravitational force upon the water element, the horizontal gradient of the eddy stresses, and the vertical gradient of the vertical dynamic pressure.

Comparing equations (A-82) and (A-83) with equations (A-71) and (A-72), it is evident that the Reynolds stresses are interpreted as real stresses on the fluid elements and that they act in addition to the forces imparted by the pressure and pure viscous stresses.

The Reynolds stresses have normal as well as tractive or tangential components. An interpretation of the normal stress can be made in a similar manner. Consider a horizontal element ds normal to the vertical axis. Further assume $\bar{w}=0$, allowing only a turbulent component normal to the element. Then $-\rho\overline{u'w'}$ denotes the average flow of momentum through the surface element, namely $-\overline{(\rho w')w'ds}$. This flow of momentum causes a reaction on the surface; and, when integrated over the time T and averaged, it is sensed as a dynamic pressure.

Thus, the products of time variable advective quantities can be envisaged as real forces acting upon the particles of water.

The formulation of Reynolds stresses throws considerable light on the mechanism of turbulence, whereas the mathematical analysis is not readily soluble. In general, no analytical method is known whereby the Reynolds stresses can be expressed in terms of the mean velocities and their derivatives; so, for the most part, equations of the form of (A-82) and (A-83) remain intractable. One can try, however, to solve the equations experimentally; i.e., one can measure certain quantities in the equations experimentally and conjecture magnitudes of the unmeasurable quantities, thus providing an estimate of the validity of the equations themselves and a judgment on the assumptions made to develop them.

Kinetic Energy Relations -- To derive the equation expressing the flux of mean energy in the waves, consider the general momentum equations (A-80) and (A-81), neglecting the term $\partial/\partial x \, \nu \, \partial\bar{u}/\partial x$ in equation (A-80). First multiply equations (A-80) and (A-81) by $\rho\bar{u}$ and $\rho\bar{w}$, respectively. Since $\bar{w}$ is defined as identically zero, the result is a single equation given by:

$$\rho\bar{u}\frac{d\bar{u}}{dt} = -\bar{u}\frac{\partial\bar{P}}{\partial x} + \bar{u}\frac{\partial}{\partial x}\left[-\rho\overline{u'^2}\right] + \bar{u}\frac{\partial}{\partial z}\left[\eta_o\frac{\partial\bar{u}}{\partial z}\right] + \bar{u}\frac{\partial}{\partial z}\left[-\rho\overline{u'w'}\right] \quad . \qquad \text{(A-84)}$$

By definition the dynamic viscosity $\eta_D = \rho\nu$. The term

$$\rho\bar{u}\frac{d\bar{u}}{dt} = \frac{d}{dt}\left[\tfrac{1}{2}\rho\bar{u}^2\right]$$

is equivalent to the time rate of change of the kinetic energy of the mean motion in the X direction. Now integrate (A-84) and examine each term for its physical significance.

If equation (A-84) is integrated over a vertical strip in the Z plane of unit width (in the Y direction) and bounded at the sea bottom, the result gives the balance of kinetic energy of the mean flow across this section of the current (see figure A-2). The integration is carried out from the bottom at $Z = -D$ to the surface $Z = \eta(x_0, t)$. The x coordinate of the strip is x_0; and the mean value of η, over the averaging period T, is zero. If it is assumed that the time-rate of change of mean kinetic energy is constant, then:

$$0 = \underbrace{-\int_{-D}^{0} \bar{u}\frac{\partial \bar{P}}{\partial x} dz}_{A} \underbrace{- \int_{-D}^{0} u \frac{\partial}{\partial x}\left[\rho \overline{u'^2}\right] dz}_{B} \underbrace{- \int_{-D}^{0} \bar{u}\frac{\partial}{\partial z}\eta_D \frac{\partial \bar{u}}{\partial z} dz}_{C} + \underbrace{\int_{-D}^{0} \bar{u}\frac{\partial}{\partial z}\left(-\rho \overline{u'w'}\right) dz}_{D} . \qquad \text{(A-85)}$$

Terms A and B represent contributions to the mean horizontal kinetic energy due to horizontal flow caused by the fluid response to horizontal gradients of hydrostatic and dynamic pressure, respectively. Assuming hydrostatic equilibrium of the mean pressure gradients, term A may be written:

$$-\int_{-D}^{0} \bar{u}\frac{\partial \bar{P}}{\partial x} dz = \rho g \int_{-D}^{0} \bar{u}\left(\frac{\partial z}{\partial x}\right)_P dz \; . \qquad \text{(A-86)}$$

The term $\partial z/\partial x$ is the slope of the isobars and, in general, may be associated with semi-diurnal tidal motions or other types of motions having oscillatory components whose periods are much larger than the period of averaging T. This term could be evaluated from data obtained from appropriately spaced tide gauges.

Evaluation of term B in equation (A-85) requires measurements of the variance of u(t) at two or more positions on the x axis, and also as a function of depth. From a practical point of view, the term would be most difficult to determine experimentally. In the region of a uniform wind field the horizontal gradient of the wind-driven perturbations contributing to the variance σ_u^2 would surely be small.

Term C in (A-85) represents the contribution of pure frictional stresses to the mean kinetic energy. The term must, of course, contribute negatively to the mean kinetic energy, since the viscous forces always act to impede fluid flow; hence, they tend to decrease kinetic energy of mean motion. The frictional stresses occur at the air-sea boundary and at the bottom. They are brought about by viscous interaction of the wind with the waves and the free surface, and by water interaction with the bottom roughness elements.

The integral C may be written as:

$$\underbrace{-\int_{-D}^{0} \bar{u}\frac{\partial}{\partial z}\eta_D \frac{\partial \bar{u}}{\partial z} dz}_{C} = \int_{-D}^{0} \frac{\partial}{\partial x}\left[\bar{u}\,\eta_D \frac{\partial \bar{u}}{\partial z}\right] dz + \int_{-D}^{0} \eta_D \frac{\partial \bar{u}}{\partial z}\frac{\partial \bar{u}}{\partial z} dz \qquad \text{(A-87)}$$

$$= \underbrace{\bar{u}\,\eta \frac{\partial \bar{u}}{\partial z}\Big|_{-D}^{0}}_{E} + \underbrace{\int_{-D}^{0} \eta \left(\frac{\partial \bar{u}}{\partial z}\right)^2 dz}_{F} .$$

Term E implies η_D as a constant and could be evaluated with knowledge of the surface and bottom values of the velocity gradient. The value of η_D is, however, probably not a constant; hence, much difficulty arises in evaluating both E and F.

The integral D in (A-85), which has no dependence upon empirical relations as does C, may be expressed as:

$$\underbrace{\int_{-D}^{0} \bar{u}\frac{\partial}{\partial z}\left[-\rho\overline{u'w'}\right]dz}_{D} = \int_{-D}^{0}\frac{\partial}{\partial z}\left[-\bar{u}\,\rho\overline{u'w'}\right]dz - \int_{-D}^{0}-\rho\overline{u'w'}\,\frac{\partial\bar{u}}{\partial z}dz$$

$$= \underbrace{\left[-\bar{u}\,\rho\overline{u'w'}\right]\Big|_{-D}^{0}}_{G} + \underbrace{\int_{-D}^{0}\left[\rho\overline{u'w'}\frac{\partial\bar{u}}{\partial z}\right]dz}_{H} . \qquad \text{(A-88)}$$

Term G represents the flow of mean kinetic energy from the boundaries produced by perturbations at the boundaries. At the sea surface the perturbations are wind and the associated wind waves. At the bottom, disturbances can be produced by interaction of the mean motions with the gross bottom roughness elements. The sign and magnitude of G is dependent upon the direction and magnitudes of the wind and the mean current $\bar{u}$.

The integral H is the measure of the rate of transfer of mean kinetic energy into (or out of) the kinetic energy of eddy motions. Evaluation of this term requires knowledge of the variation of the Reynolds stress $-\rho\overline{u'w'}$ and the mean flow $\bar{u}$ with depth.

It should be noted that these equations were generalized in the sense that no assumptions were made of the causes of the stress terms (with the exception of fluid viscosity). We only state that, if they exist, they contribute to the momentum and kinetic energy of the mean flow in the manner shown.

Going back to (A-85), assume that $\frac{\partial\bar{u}}{\partial x}\sim 0$ but that the horizontal gradients of the mean pressure and Reynolds stresses are not zero. Taking the derivative with respect to X of (A-85):

$$\frac{\partial}{\partial x}\frac{d}{dt}\frac{1}{2}\rho\bar{u}^2 = \bar{u}\frac{\partial}{\partial x}\left[\frac{\partial\bar{p}}{\partial x}\right] + \bar{u}\frac{\partial}{\partial x}\left[\frac{\partial}{\partial x}\rho\overline{u'^2}\right] + \frac{\partial}{\partial x}\left[\frac{\partial}{\partial z}\rho\overline{u'w'}\right] - \frac{\partial\bar{u}}{\partial z}\frac{\partial}{\partial x}\rho\overline{u'w'} .$$

By again expanding and rearranging of terms:

$$0 = -\frac{\partial}{\partial x}\left[\frac{\partial}{\partial x}\left\{\bar{p} - \rho\overline{w'^2}\right\} - \frac{\partial}{\partial z}\rho\overline{u'w'}\right] , \qquad \text{(A-89)}$$

the kinetic energy being invariant in the X direction. Integrating (A-89) gives:

$$\frac{\partial}{\partial x}\left[\bar{p} - \rho\overline{u'^2}\right] - \frac{\partial}{\partial z}\rho\overline{u'w'} = \text{CONSTANT.} \qquad \text{(A-90)}$$

This indicates that the horizontal mean and dynamic pressure gradients are balanced by the vertical gradient of the Reynolds stresses.

In general, the mean horizontal pressure gradients in this simple model can only be a result of wind set-up along a coast or in a bay. The important thing is that the depth variation of the observed Reynolds stress is not necessarily controlled only by the eddy diffusion properties of the waves, but by fundamental dynamic conditions associated with the horizontal static and dynamic pressure gradients. More generally, the coriolis force must also be considered as in the Eulerian theory.

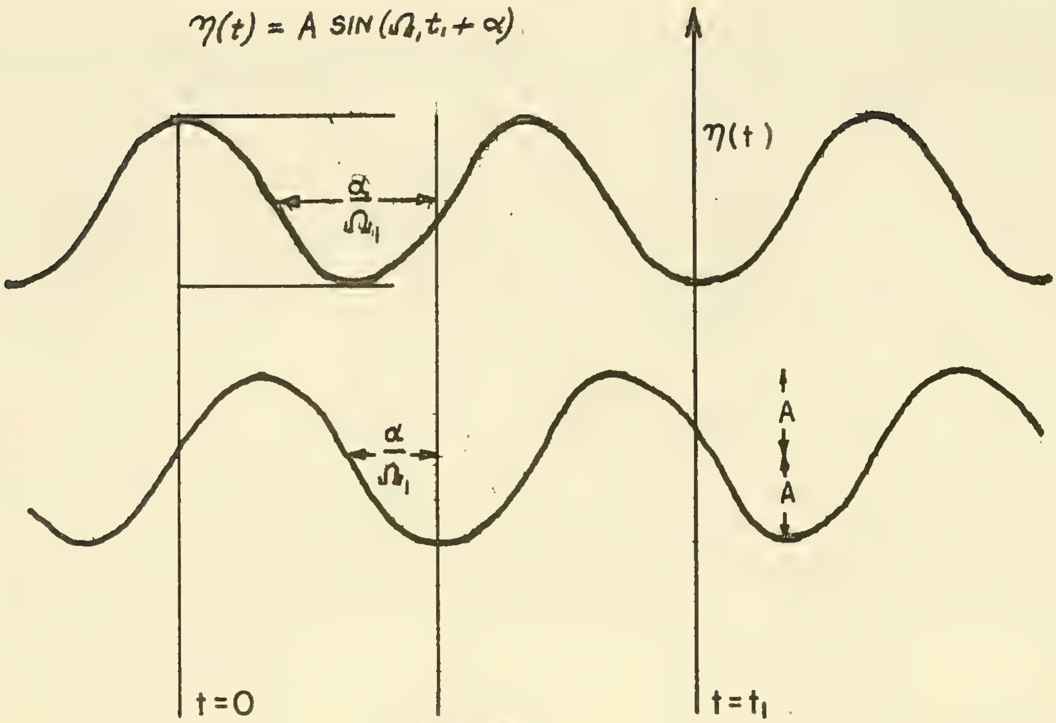

Fig. A-1

Figure A-1 . An ensemble of sinusoids with random initial phase angles.

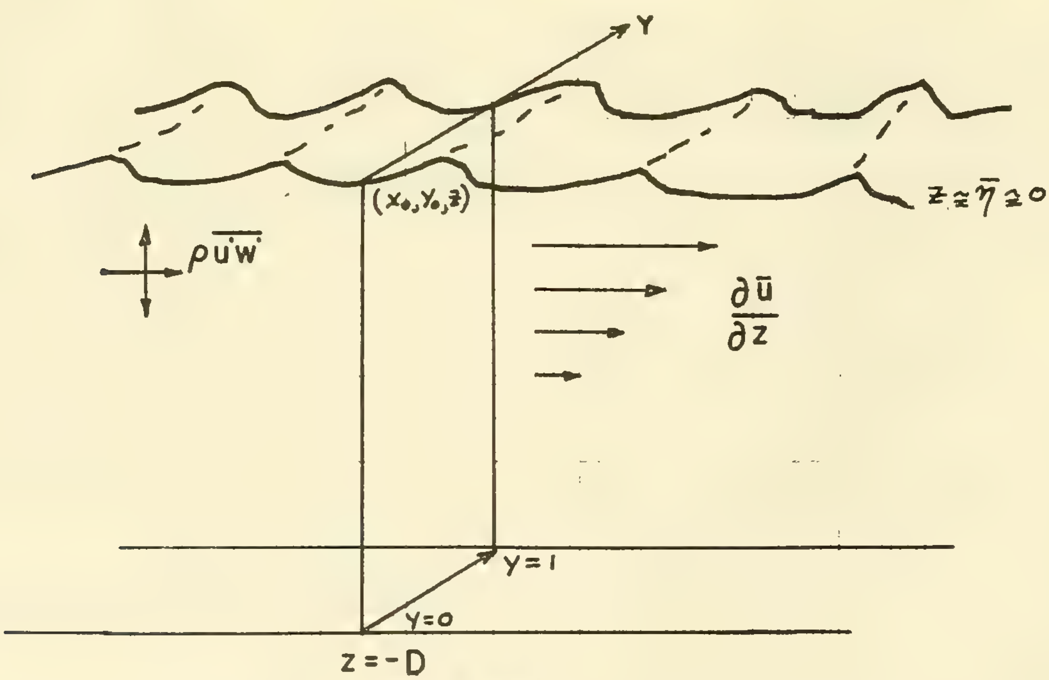

Fig. A-2

Figure A-2 . Model for vertical integration of Kinetic energy relations.

APPENDIX B

STATISTICAL ANALYSIS AND AUTO-SPECTRA PLOTS OF WAVE DATA

Spectral Data

Listings of spectral data are given for series 020 through 124 (BBELS-8 through BBELS-16, using the OMDUM III and LIMDUM I wave meters).

The first line contains the consecutive serial observation (020, etc.). This is followed by O III = OMDUM III measurement producing u and w; or by LI-u or LI-w = LIMDUM I measurement of u_1 and u_2 or w_1 and w_2, respectively. Note that the BBELS-11 series (030-069) was made with LIMDUM I; but only one channel is operative, thus the statistics of a single w are given.

The second line of the format consists of: the BBELS number, the depth (in meters) and the nth measurement at that depth (Roman numerals), the date, and the approximate time interval.

The third line consists of the lag number, the number of data points (N), and the interval of sampling of interpolated data (DT). The fourth line gives the mean values of the variables (u and w, u_1 and w_1, or u_2 and w_2).

The fifth line lists the following parameters (column headings), which are defined in chapter III. (X = the variable measured.)

K = Frequency and lag index.

ACOV X_1, ACOV X_2 = Auto-covariance functions of X_1 and X_2. (Note, ACOV X at K = 0 is the variance of X or σ_X^2.)

COV IN = In-phase covariance function of X_1 and X_2. (Note, COV IN at K = 0 is the covariance or $\phi_{X_1X_2}(0) = \overline{X_1'X_2'}$.)

COV OUT = Out-of-phase covariance function of X_1 and X_2.

SP X_1 SP X_2 = Auto-spectra functions of X_1 and X_2.

CO = Co-spectrum function of X_1 and X_2.

QUA = Quadrature spectrum function of X_1 and X_2.

PER = Period in seconds.

R = Coherence function of the cross-spectrum with the auto-spectra.

PH1 = Phase lag function between X_1 and X_2.

Note 1. In some cases, some of the data are left out indicating missing or irretrievable information.

Note 2. A 'U' following the consecutive serial observation indicates that the OMDUM data are uncorrected (see chapter III).

O20 OIII

BBELS 8 1.0M- 1 0. 07DEC-64 1310-1315

LAGS= 50 N= 12.45 DT= 0.2SEC

MEAN U= 21.6 MEAN W= 6.4

CORRELATION COEFFICIENT .03

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	183.8	348.3	6.4	0	18.21	19.91	11.42	0	0		
1	171.6	327.4	9.9	4.5	34.39	42.03	15.34	-4.23	20.00		
2	146.1	281.0	19.3	7.8	31.48	60.83	8.53	.51	10.00		
3	114.8	222.5	32.3	9.3	21.69	62.44	3.70	1.11	6.66		
4	84.1	160.9	45.0	9.7	12.05	38.89	-3.99	-2.84	5.00		
5	58.8	105.6	53.8	9.0	11.11	31.79	-5.55	1.70	4.00		
6	42.5	62.0	56.5	6.7	9.97	26.46	-3.26	7.42	3.33		
7	34.8	30.9	53.3	3.0	9.09	15.56	-2.53	4.19	2.85		
8	33.8	10.7	45.8	-1.2	10.24	12.48	-5.09	.24	2.50		
9	36.3	-2.0	36.7	-6.3	9.87	12.46	-6.18	-0.57	2.22		
10	39.2	-11.0	28.4	-11.5	5.99	9.07	-4.14	-0.87	2.00		
11	32.5	-19.9	22.8	-15.5	2.57	5.14	-1.57	-0.12	1.81		
12	36.0	-30.0	20.4	-17.5	1.30	2.59	-0.26	.37	1.66		
13	28.7	-39.8	21.3	-17.0	.93	1.32	-0.04	.21	1.53		
14	18.5	-47.8	23.5	-13.4	.73	1.03	-0.05	.19	1.42		
15	7.8	-52.9	24.6	-7.6	.59	.85	-0.03	.09	1.33		
16	-1.0	-54.6	23.1	-0.8	.45	.57	0	.01	1.25		
17	-6.4	-51.7	19.0	5.8	.34	.51	0	.03	1.17		
18	-9.2	-46.9	12.4	10.7	.24	.49	0	.05	1.11		
19	-7.1	-42.3	4.6	12.8	.19	.39	.03	.03	1.05		
20	-5.0	-38.8	-2.6	12.3	.17	.31	.04	.01	1.00		
21	-3.0	-37.7	-7.5	9.1	.17	.28	.05	.02	.95		
22	-2.5	-39.3	-9.1	3.9	.15	.25	.03	.04	.90		
23	-4.3	-42.8	-7.5	-2.4	.13	.21	0	.03	.86		
24	-7.8	-46.0	-3.5	-9.3	.12	.16	0	.03	.83		
25	-12.0	-46.5	2.0	-16.3	.10	.12	-0.01	.03	.80		
26	-16.2	-43.4	7.5	-22.7	.09	.13	0	.02	.76		
27	-18.6	-36.7	12.3	-27.6	.10	.19	.02	.02	.74		
28	-18.3	-25.9	15.8	-31.4	.10	.20	.01	0	.71		
29	-15.8	-11.9	17.9	-33.8	.08	.16	0	0	.68		
30	-11.1	4.2	19.2	-34.3	.07	.13	0	0	.66		
31	-5.3	21.9	19.5	-33.0	.08	.10	-0.01	-0.01	.64		
32	1.1	40.0	19.6	-29.4	.07	.09	-0.01	-0.03	.62		
33	6.8	56.8	19.8	-23.5	.05	.09	0	-0.02	.60		
34	11.3	70.0	20.0	-15.8	.04	.10	0	-0.02	.58		
35	14.7	78.8	20.4	-7.9	.05	.10	0	0	.57		
36	17.0	83.3	21.4	-0.9	.05	.07	0	0	.55		
37	19.0	84.5	23.0	4.5	.04	.05	0	0	.54		
38	20.7	83.1	24.7	6.9	.04	.06	-0.01	0	.52		
39	22.9	80.3	26.7	6.1	.04	.07	0	0	.51		
40	25.7	77.1	29.3	3.8	.04	.06	0	0	.50		
41	29.0	73.2	32.2	.3	.03	.04	0	0	.48		
42	32.6	69.1	34.8	-2.6	.03	.03	0	0	.47		
43	36.4	65.5	36.2	-4.4	.03	.02	0	0	.46		
44	40.3	62.0	37.0	-5.2	.02	.02	0	0	.45		
45	44.7	58.7	37.4	-4.8	.02	.03	0	0	.44		
46	48.7	56.0	38.1	-3.9	.03	.04	0	0	.43		
47	51.4	54.6	38.9	-2.8	.03	.04	0	0	.42		
48	52.2	53.8	39.2	-1.5	.04	.03	0	0	.41		
49	50.7	51.7	38.9	.2	.03	.02	0	0	.40		
50	47.3	47.3	37.5	1.8	.01	.01	0	0	.40		

021 O III

BBFLS 8 .5M= 1 0, 07DEC-64 1324-1329

LAGS= 50 N= 1576 DT= 0.2SEC

MEAN U= 16.8 MEAN W= 17.3

CORRELATION COEFFICIENT -.09

0	354.1	701.0	-46.9	0	19.71	12.43	6.07	0	0
1	325.8	605.8	-39.0	15.6	46.52	57.88	11.17	-16.39	20.00
2	264.0	445.7	-16.4	23.7	56.50	113.28	9.16	-24.79	10.00
3	189.4	268.2	16.1	21.3	45.12	99.60	.77	-11.99	6.66
4	116.4	123.5	49.2	9.6	26.42	56.96	-8.77	.49	5.00
5	56.0	39.0	73.4	-7.8	20.23	45.89	-7.11	4.89	4.00
6	16.2	13.4	81.9	-27.1	21.37	37.18	-5.44	8.56	3.33
7	-0.5	27.0	73.0	-44.6	29.46	29.29	-9.79	9.25	2.85
8	3.5	51.2	51.7	-57.7	33.45	30.92	-13.82	5.70	2.50
9	19.4	63.3	27.9	-65.0	23.84	47.34	-15.54	3.78	2.22
10	38.2	50.6	8.8	-68.8	10.37	51.52	-10.97	5.17	2.00
11	51.8	12.5	-3.3	-68.7	4.31	33.68	-4.12	3.32	1.81
12	54.4	-43.8	-4.4	-66.0	3.15	18.69	-1.08	1.21	1.66
13	45.6	-104.4	4.8	-61.4	2.60	12.62	.13	.81	1.53
14	25.9	-152.7	16.6	-57.4	1.70	9.30	.69	.34	1.42
15	-2.2	-178.4	26.2	-53.5	1.12	6.63	.36	.51	1.33
16	-32.4	-177.3	30.1	-49.3	.80	4.50	.14	.67	1.25
17	-59.0	-157.0	26.0	-43.8	.62	3.58	.25	.27	1.17
18	-76.1	-129.9	15.9	-36.5	.70	3.12	.33	-0.13	1.11
19	-80.4	-101.9	2.9	-28.2	.72	2.26	.23	0	1.05
20	-73.4	-86.3	-10.4	-20.4	.69	1.71	.13	.18	1.00
21	-58.9	-90.7	-20.9	-14.2	.58	1.54	.20	.07	.95
22	-41.7	-110.8	-26.8	-12.8	.41	1.22	.13	-0.02	.90
23	-26.6	-139.9	-28.1	-15.0	.37	1.13	-0.04	.03	.86
24	-16.5	-166.4	-26.0	-16.8	.35	1.35	-0.14	.17	.83
25	-13.2	-179.2	-23.3	-14.5	.27	1.20	-0.05	.14	.80
26	-16.2	-173.1	-16.6	-12.6	.25	.93	-0.01	-0.02	.76
27	-22.9	-148.8	-10.3	-9.7	.24	.91	-0.06	-0.04	.74
28	-29.6	-111.3	-7.0	-4.0	.20	.83	0	.02	.71
29	-33.4	-72.9	-6.7	4.9	.18	.78	.10	.03	.68
30	-33.3	-43.1	-6.9	15.7	.16	.85	.13	-0.03	.66
31	-29.2	-22.3	-5.7	26.4	.13	.81	.07	-0.05	.64
32	-21.0	-8.3	-1.7	33.7	.10	.65	0	.01	.62
33	-10.7	-2.3	4.7	35.6	.08	.60	0	.04	.60
34	-0.4	-3.6	13.2	32.5	.10	.63	-0.02	0	.58
35	9.5	-3.4	22.5	26.8	.11	.72	-0.05	0	.57
36	16.4	7.1	29.1	21.3	.12	.71	-0.04	0	.55
37	23.5	29.8	31.9	19.3	.11	.61	.02	.01	.54
38	28.7	57.9	30.4	20.4	.08	.57	.05	0	.52
39	31.5	92.4	24.6	24.8	.05	.54	.01	0	.51
40	32.7	125.1	16.4	31.9	.04	.59	0	0	.50
41	34.3	151.4	8.0	40.1	.04	.62	0	0	.48
42	37.5	170.0	3.0	44.5	.04	.60	.01	-0.02	.47
43	42.9	177.6	-0.9	42.9	.04	.58	-0.01	-0.03	.46
44	50.4	178.7	-5.3	35.2	.05	.54	-0.03	0	.45
45	58.6	177.6	-8.5	24.2	.05	.53	0	.01	.44
46	66.2	167.8	-9.3	12.8	.05	.55	.01	0	.43
47	71.1	160.4	-6.8	1.4	.05	.53	0	0	.42
48	72.6	157.1	-0.6	-8.6	.05	.52	-0.02	.02	.41
49	70.2	156.9	7.0	-15.7	.05	.52	0	.04	.40
50	63.9	155.9	13.2	-20.5	.03	.25	.01	0	.40

022 OIII

BBELS 8 2.0M- 1 0. 07DEC-64 1337-1342

LAGS= 50 N= 1359 DT= 0.2SEC

MEAN U= 13.6 MEAN W= 2.9

CORRELATION COEFFICIENT .31

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	239.7	250.6	76.7	0	35.90	25.08	16.08	0	0		
1	233.5	244.1	77.1	2.0	64.57	55.15	28.60	-8.80	20.00		
2	218.9	229.8	78.5	4.2	55.66	68.52	25.70	-0.02	10.00		
3	200.1	210.6	80.2	6.5	37.15	53.50	14.80	6.77	6.66		
4	179.3	188.5	81.0	8.4	15.11	20.72	.55	4.24	5.00		
5	158.6	165.1	80.0	9.7	8.19	9.31	-1.86	1.60	4.00		
6	139.7	141.4	76.8	10.3	5.38	5.25	-1.79	.86	3.33		
7	123.3	118.2	71.5	9.9	3.97	2.85	-1.46	.49	2.85		
8	109.0	95.5	64.5	8.6	3.62	2.15	-1.13	-0.28	2.50		
9	95.8	73.6	56.3	6.3	3.41	2.04	-1.36	-0.41	2.22		
10	82.7	52.4	47.8	3.4	2.45	1.66	-1.03	-0.19	2.00		
11	69.4	32.1	39.4	.2	1.24	.89	-0.35	-0.14	1.81		
12	55.8	12.9	31.5	-3.3	.59	.61	-0.03	-0.02	1.66		
13	42.1	-4.7	24.3	-6.8	.37	.43	-0.06	-0.02	1.53		
14	29.1	-20.3	17.7	-9.9	.32	.32	-0.07	-0.06	1.42		
15	17.4	-33.3	11.6	-12.6	.23	.25	-0.02	-0.03	1.33		
16	7.6	-43.8	5.6	-15.0	.17	.18	-0.01	-0.01	1.25		
17	-0.1	-51.9	-0.2	-17.1	.10	.17	-0.01	0	1.17		
18	-5.4	-57.6	-5.8	-19.0	.09	.16	.01	-0.01	1.11		
19	-9.9	-61.3	-10.7	-20.7	.11	.12	.01	-0.02	1.05		
20	-11.3	-63.1	-14.5	-22.6	.13	.11	0	0	1.00		
21	-13.3	-63.6	-17.1	-24.5	.10	.08	.01	0	.95		
22	-15.1	-63.0	-18.2	-26.3	.07	.07	0	0	.90		
23	-16.4	-61.3	-17.9	-27.8	.07	.07	0	-0.01	.86		
24	-17.0	-58.5	-16.6	-28.8	.07	.07	0	0	.83		
25	-16.8	-54.1	-14.7	-29.4	.07	.06	.01	0	.80		
26	-15.6	-48.4	-12.6	-29.5	.05	.05	0	0	.76		
27	-13.1	-41.2	-10.4	-29.3	.04	.05	0	0	.74		
28	-9.5	-32.5	-8.1	-28.5	.03	.05	0	0	.71		
29	-4.7	-22.7	-5.7	-27.1	.03	.03	0	0	.68		
30	.6	-12.4	-2.6	-25.3	.03	.03	0	0	.66		
31	6.2	-1.7	1.3	-23.3	.02	.03	0	0	.64		
32	11.7	8.9	6.0	-21.3	.01	.03	0	0	.62		
33	17.3	19.3	11.3	-19.3	.01	.03	0	0	.60		
34	22.9	29.1	16.7	-17.6	.01	.02	0	0	.58		
35	28.5	38.1	22.1	-16.5	.01	.02	0	0	.57		
36	33.8	46.7	27.4	-15.9	.01	.02	0	0	.55		
37	39.0	55.2	32.4	-15.5	.01	.01	0	0	.54		
38	44.1	63.6	36.8	-15.1	.01	.01	0	0	.52		
39	49.2	71.8	40.5	-14.3	0	.02	0	0	.51		
40	54.2	78.9	43.4	-13.0	0	.02	0	0	.50		
41	58.9	84.4	45.6	-11.1	0	.01	0	0	.48		
42	63.3	88.1	47.0	-8.8	0	.01	0	0	.47		
43	67.2	89.9	47.8	-6.2	0	.01	0	0	.46		
44	70.0	90.1	48.2	-3.5	0	.01	0	0	.45		
45	71.3	88.7	47.8	-0.9	0	.01	0	0	.44		
46	70.9	85.4	46.8	1.6	0	.01	0	0	.43		
47	68.6	80.4	45.1	4.1	0	.01	0	0	.42		
48	64.8	74.2	42.9	6.6	0	.01	0	0	.41		
49	59.3	66.6	40.0	9.3	0	.01	0	0	.40		
50	52.6	57.9	36.5	11.9	0	0	0	0	.40		

023 U O III

BBFLS 9 .5M- 1 0, 27JAN-65 1145-1150

LAGS= 60 N= 1441 DT= 0.2SEC

MEAN U= -5.5 MEAN W= .3

CORRELATION COEFFICIENT .52

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	555.0	739.1	-333.5	0	14.23	6.28	-4.06	0	0		
1	542.6	714.5	-331.5	60.11	18.59	117.00	-80.12	62.55	20.00		
2	513.5	659.9	-325.9	116.82	17.06	258.56	-162.9*	139.99	10.00		
3	474.7	591.1	-315.5	166.61	28.76	192.83	-92.79	95.14	6.66		
4	429.9	518.8	-299.3	208.4	25.00	67.59	-2.67	27.94	5.00		
5	381.2	446.0	-277.0	242.1	17.81	35.50	4.22	17.90	4.00		
6	329.1	370.1	-249.4	267.7	13.24	17.89	1.70	10.92	3.33		
7	273.1	288.1	-217.1	285.5	5.93	8.07	.73	4.06	2.85		
8	214.7	198.9	-181.7	295.6	2.37	4.43	.25	1.27	2.50		
9	155.7	105.9	-144.0	298.5	1.25	2.66	.12	.58	2.22		
10	99.2	17.1	-104.1	294.8	.91	2.36	.20	.30	2.00		
11	43.8	-61.6	-61.6	285.3	1.24	2.82	.55	.27	1.81		
12	-6.6	-127.7	-17.2	271.4	1.61	4.18	.49	.50	1.66		
13	-52.8	-183.3	28.1	255.0	1.59	4.71	.36	.68	1.53		
14	-95.8	-231.5	72.7	237.9	1.19	3.84	.35	.55	1.42		
15	-137.0	-275.0	115.7	220.2	.77	2.60	.28	.09	1.33		
16	-177.0	-314.4	156.0	201.5	.58	1.75	.07	-0.02	1.25		
17	-215.7	-349.4	192.8	180.9	.42	1.08	-0.01	-0.01	1.17		
18	-252.3	-378.8	225.7	158.0	.32	.64	-0.05	-0.02	1.11		
19	-285.6	-400.1	254.1	133.3	.30	.48	-0.05	.04	1.05		
20	-314.6	-413.4	277.1	107.5	.22	.40	-0.02	.07	1.00		
21	-338.6	-420.2	294.4	80.7	.18	.30	0	.03	.95		
22	-357.3	-421.7	306.4	53.0	.15	.25	0	0	.90		
23	-370.0	-417.9	312.8	24.5	.09	.26	0	-0.01	.86		
24	-376.9	-409.5	314.0	-5.3	.07	.31	0	-0.01	.83		
25	-377.6	-397.4	309.6	-35.7	.08	.27	.02	-0.02	.80		
26	-371.7	-381.0	299.9	-66.6	.07	.16	0	-0.01	.76		
27	-358.8	-358.6	284.9	-96.8	.06	.13	-0.01	-0.01	.74		
28	-339.0	-329.7	264.7	-125.4	.07	.13	-0.01	-0.01	.71		
29	-312.8	-295.0	239.9	-151.1	.07	.13	-0.01	0	.68		
30	-280.8	-256.4	211.4	-173.2	.06	.11	-0.01	0	.66		
31	-243.6	-214.3	180.3	-192.1	.06	.08	0	0	.64		
32	-203.0	-169.8	147.3	-207.8	.05	.07	0	0	.62		
33	-160.2	-123.8	112.6	-220.2	.04	.06	0	-0.01	.60		
34	-115.2	-75.8	76.9	-228.4	.04	.07	0	-0.01	.58		
35	-68.9	-26.1	40.2	-232.2	.05	.08	-0.01	0	.57		
36	-22.6	24.8	3.0	-231.6	.03	.07	0	0	.55		
37	22.6	75.5	-34.2	-227.2	.03	.07	0	0	.54		
38	65.9	124.4	-70.3	-219.6	.03	.06	0	0	.52		
39	106.8	170.8	-104.8	-210.0	.02	.06	0	0	.51		
40	146.1	214.4	-137.3	-198.1	.01	.06	0	0	.50		
41	183.1	253.2	-166.9	-183.0	.01	.07	0	0	.48		
42	217.6	286.5	-193.5	-164.4	.02	.06	0	0	.47		
43	248.9	314.5	-216.5	-142.7	.02	.05	0	0	.46		
44	276.5	336.8	-235.3	-118.4	.01	.04	0	0	.45		
45	299.9	352.7	-249.4	-92.8	.01	.04	0	0	.44		
46	319.0	362.1	-258.2	-66.6	.01	.04	0	0	.43		
47	333.5	366.3	-261.5	-39.6	.02	.04	0	0	.42		
48	342.7	365.7	-259.9	-11.2	.02	.06	0	0	.41		
49	346.4	359.3	-253.7	18.6	.02	.06	-0.01	0	.40		
50	344.5	346.2	-243.7	49.9	0	.03	0	0	.40		

024 U OIII

BBFLS 9 .5M- II 0, 27JAN-65 1224-1228

LAGS= 50 N= 918 DT= 0.2SEC

MEAN U= 3.2 MEAN W= 2.7

CORRELATION COEFFICIENT -.40

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	490.0	892.0	-261.7	0	37.60	5.91	1.89	0	0		
1	476.9	854.5	-260.7	59.5	113.73	98.28	-47.79	39.92	20.00		
2	450.8	762.3	-257.5	113.4	160.16	267.77	-124.8#	117.90	10.00		
3	416.1	642.1	-250.4	157.5	105.48	252.89	-89.08	102.00	6.66		
4	377.5	518.7	-235.9	191.0	28.34	96.45	-11.72	32.35	5.00		
5	337.1	409.9	-213.1	215.0	12.32	35.48	1.68	9.72	4.00		
6	296.3	322.3	-182.9	233.0	7.57	24.61	-0.49	5.81	3.33		
7	254.7	250.0	-148.4	248.0	4.16	13.70	-0.09	1.86	2.85		
8	212.0	181.1	-111.6	261.1	3.28	12.25	.35	1.14	2.50		
9	168.3	103.2	-74.5	271.3	3.08	17.36	1.82	1.98	2.22		
10	123.7	10.4	-38.6	276.2	3.47	23.62	2.46	4.48	2.00		
11	78.8	-94.7	-3.8	272.6	2.61	20.61	1.51	4.61	1.81		
12	34.5	-202.4	30.5	259.3	1.52	10.32	1.13	2.12	1.66		
13	-7.2	-300.6	64.6	237.1	1.02	3.95	.97	.66	1.53		
14	-44.9	-377.8	97.9	208.8	.81	1.84	.48	.16	1.42		
15	-78.2	-427.9	130.1	178.0	.67	1.15	.23	-0.08	1.33		
16	-107.8	-453.1	160.4	147.1	.46	.97	.11	-0.01	1.25		
17	-132.5	-461.6	187.9	118.4	.31	.70	.06	-0.05	1.17		
18	-153.3	-463.8	211.5	91.5	.34	.59	-0.03	-0.09	1.11		
19	-170.2	-466.0	230.8	65.7	.32	.39	0	-0.04	1.05		
20	-184.6	-470.4	244.6	39.4	.26	.26	.02	.05	1.00		
21	-195.9	-474.9	252.8	10.8	.21	.23	-0.01	.02	.95		
22	-204.2	-473.2	254.6	-20.5	.14	.24	-0.03	0	.90		
23	-209.2	-459.5	251.0	-52.7	.11	.25	0	-0.01	.86		
24	-207.7	-430.0	242.1	-84.0	.10	.25	-0.03	0	.83		
25	-202.0	-384.9	228.6	-112.2	.09	.20	-0.04	-0.01	.80		
26	-191.4	-327.0	211.1	-135.9	.12	.16	-0.04	0	.76		
27	-177.4	-262.9	191.2	-154.6	.14	.12	-0.05	0	.74		
28	-160.2	-197.8	169.0	-168.4	.10	.10	-0.03	0	.71		
29	-140.9	-135.6	145.2	-177.6	.09	.11	-0.01	0	.68		
30	-119.1	-77.7	119.1	-183.1	.09	.12	0	.02	.66		
31	-96.1	-23.0	90.3	-186.5	.07	.10	0	.01	.64		
32	-71.7	29.7	58.8	-188.6	.07	.09	0	0	.62		
33	-45.5	81.9	26.2	-188.8	.08	.07	0	0	.60		
34	-19.1	133.9	-5.8	-185.5	.06	.07	0	0	.58		
35	7.7	183.4	-36.3	-177.6	.06	.07	0	0	.57		
36	35.4	228.4	-64.8	-164.4	.06	.05	0	0	.55		
37	63.2	265.6	-89.9	-146.6	.05	.04	0	-0.01	.54		
38	89.3	291.3	-110.7	-125.6	.05	.05	-0.01	-0.01	.52		
39	112.5	304.4	-128.1	-103.6	.06	.04	-0.01	-0.01	.51		
40	132.1	306.4	-143.4	-82.6	.05	.04	-0.01	0	.50		
41	147.8	301.4	-157.4	-63.8	.04	.05	0	0	.48		
42	160.1	294.0	-170.7	-47.5	.06	.04	0	0	.47		
43	169.1	287.9	-182.6	-32.6	.06	.02	0	0	.46		
44	175.2	283.1	-193.2	-18.4	.04	.02	0	0	.45		
45	178.3	278.0	-199.7	-2.6	.05	.03	0	-0.01	.44		
46	178.9	270.0	-201.0	15.5	.07	.04	0	-0.01	.43		
47	178.1	255.1	-196.6	35.8	.08	.03	.01	0	.42		
48	175.0	231.7	-187.0	56.4	.06	.03	.02	0	.41		
49	168.3	200.1	-173.9	75.7	.04	.04	0	0	.40		
50	158.4	162.8	-159.0	91.6	.02	.02	0	0	.40		

025 U OIII

BBELS 9 2.0M- 1 0, 27JAN-65 1235-1240

LAGS= 50 N= 13 65 DT= 0.2SEC

MEAN U= 11.4 MEAN W= 4.6

CORRELATION COEFFICIENT -.43

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	444.4	493.4	-202.4	0	24.23	24.17	-0.40	0	0		
1	439.2	483.8	-200.9	35.9	105.59	90.72	-35.82	48.98	20.00		
2	422.8	461.8	-196.2	71.0	175.36	171.70	-91.92	114.12	10.00		
3	400.1	429.4	-187.9	104.0	108.63	140.50	-68.02	76.35	6.66		
4	371.5	389.3	-175.5	134.2	16.29	39.90	-10.42	10.81	5.00		
5	339.3	343.3	-158.7	161.2	3.94	8.69	.73	1.26	4.00		
6	300.9	293.0	-138.0	184.6	2.78	5.13	.14	1.71	3.33		
7	260.3	239.9	-114.0	204.3	1.41	2.14	.42	.24	2.85		
8	217.1	185.1	-87.4	219.9	1.31	2.08	.51	.09	2.50		
9	171.6	129.1	-59.2	231.2	1.10	2.17	1.05	.03	2.22		
10	124.8	73.1	-30.3	238.0	.97	1.80	.78	.28	2.00		
11	77.2	17.5	-1.5	240.1	.56	.97	.33	.19	1.81		
12	29.7	-36.4	26.1	237.6	.35	.52	.03	.14	1.66		
13	-16.8	-87.1	52.3	230.8	.26	.28	.01	.05	1.53		
14	-61.3	-133.1	76.8	219.9	.26	.29	.02	.01	1.42		
15	-103.2	-173.5	99.6	205.3	.17	.25	.04	-0.01	1.33		
16	-141.6	-207.3	120.6	187.6	.13	.20	.05	0	1.25		
17	-175.9	-234.2	139.4	167.2	.11	.14	.04	0	1.17		
18	-205.7	-253.8	155.5	144.3	.09	.14	.01	0	1.11		
19	-230.6	-266.5	168.2	119.2	.07	.14	0	0	1.05		
20	-251.7	-273.0	177.1	92.3	.08	.14	0	-0.01	1.00		
21	-265.7	-274.0	181.9	64.0	.06	.10	0	-0.01	.95		
22	-275.7	-269.5	182.4	34.7	.04	.07	0	0	.90		
23	-283.5	-259.7	179.0	5.1	.04	.05	0	0	.86		
24	-280.0	-244.4	171.9	-24.3	.04	.06	0	0	.83		
25	-274.1	-224.2	161.5	-52.9	.03	.06	0	0	.80		
26	-263.1	-199.3	148.3	-80.0	.03	.06	0	0	.76		
27	-246.9	-170.5	132.9	-105.2	.03	.05	0	0	.74		
28	-224.3	-138.4	115.6	-127.6	.02	.05	0	0	.71		
29	-201.6	-103.6	96.6	-147.2	.01	.04	0	0	.68		
30	-173.6	-67.4	76.3	-163.4	.01	.04	0	0	.66		
31	-142.9	-30.4	54.7	-176.2	.01	.03	0	0	.64		
32	-109.9	6.4	32.4	-185.3	.01	.03	0	0	.62		
33	-75.0	42.0	9.6	-190.6	.01	.02	0	0	.60		
34	-39.9	75.6	-13.2	-192.3	.01	.03	0	0	.58		
35	-2.5	106.6	-35.3	-190.4	.01	.03	0	0	.57		
36	33.6	134.7	-56.7	-185.1	.02	.03	0	0	.55		
37	68.8	159.4	-76.6	-176.3	.02	.04	0	0	.54		
38	102.6	180.6	-94.7	-164.2	.01	.04	0	0	.52		
39	134.4	198.0	-110.5	-149.3	.01	.03	0	0	.51		
40	163.6	211.9	-123.9	-132.1	.01	.02	0	0	.50		
41	189.8	221.6	-134.6	-112.9	.01	.03	0	0	.48		
42	212.3	227.4	-142.6	-92.2	.01	.03	0	0	.47		
43	230.4	229.2	-147.8	-70.4	.01	.02	0	0	.46		
44	243.9	227.0	-150.2	-48.3	.01	.02	0	0	.45		
45	252.4	220.5	-149.8	-26.3	0	.03	0	0	.44		
46	255.9	210.5	-146.7	-4.7	0	.03	0	0	.43		
47	254.4	197.6	-141.1	16.1	0	.02	0	0	.42		
48	249.0	182.2	-133.0	36.2	.01	.02	0	0	.41		
49	237.2	164.3	-122.6	55.3	.01	.03	0	0	.40		
50	222.2	144.4	-109.8	73.1	0	.02	0	0	.40		

026 OIII

BBELS 10 0.5M-01 0. 25MAY-65 1141-1146

LAGS= 50 N= 1443 DT= 0.2SEC

MEAN W= -8.1 MEAN V=-26.9

K	ACOV W	ACOV V	COV IN	COVOUT	SP W	SP V	CO	QUA	PER	R	PHI
0	73.0	43.5	5.4	0	9.01	5.86	3.59	0	0	.49	0
1	69.9	37.3	5.8	-3.6	15.36	8.51	4.35	-0.62	20.00	.38	-8.08
2	62.9	32.7	6.8	-7.1	11.12	3.71	.78	-0.63	10.00	.16	-38.99
3	53.5	27.0	8.0	-9.9	7.57	1.79	.58	-0.33	6.67	.19	-29.57
4	43.0	20.6	9.2	-11.8	6.57	3.37	.54	-1.80	5.00	.40	-73.32
5	32.8	14.5	10.3	-12.2	8.25	6.27	-1.31	-4.30	4.00	.62	73.05
6	23.5	9.5	11.2	-11.2	7.01	5.22	-1.97	-3.88	3.33	.72	63.08
7	15.8	5.0	11.8	-8.8	3.47	2.16	-0.78	-1.37	2.86	.58	60.39
8	9.8	1.9	11.9	-5.5	1.37	.97	-0.10	-0.09	2.50	.11	41.25
9	5.9	.1	11.7	-2.0	.75	.61	.07	.12	2.22	.21	61.95
10	4.1	.3	11.1	1.5	.55	.32	.05	.08	2.00	.22	57.50
11	4.2	2.0	9.8	4.5	.37	.22	-0.06	.01	1.82	.21	-7.00
12	5.8	4.8	8.1	6.8	.24	.24	-0.09	0	1.67	.36	1.56
13	8.4	8.0	6.3	8.3	.24	.27	-0.06	.06	1.54	.35	-44.55
14	11.1	11.6	4.5	8.6	.25	.26	-0.04	.12	1.43	.49	-70.84
15	13.4	14.4	3.0	7.8	.18	.24	-0.03	.08	1.33	.40	-69.03
16	15.0	16.5	2.1	5.7	.10	.22	-0.03	.04	1.25	.32	-54.97
17	15.7	17.8	1.9	2.9	.06	.15	-0.01	.02	1.18	.24	-56.68
18	15.4	18.5	2.2	-0.2	.05	.11	0	.01	1.11	.11	61.11
19	14.2	17.9	3.1	-3.2	.04	.13	0	0	1.05	.03	71.66
20	12.1	16.5	4.5	-5.7	.04	.12	-0.01	0	1.00	.14	23.31
21	9.1	14.7	6.0	-7.3	.04	.08	-0.01	0	.95	.18	12.05
22	5.7	11.4	7.5	-8.1	.03	.09	-0.01	0	.91	.13	-15.66
23	2.2	8.3	8.7	-8.1	.02	.10	0	0	.87	.06	-43.86
24	-0.9	5.3	9.6	-7.4	.02	.09	0	0	.83	.11	-31.47
25	-3.3	2.1	10.2	-6.2	.02	.08	-0.01	0	.80	.25	-8.84
26	-4.7	-0.2	10.4	-4.5	.02	.10	-0.01	0	.77	.31	1.09
27	-5.1	-2.4	10.1	-2.6	.02	.11	-0.01	0	.74	.24	-2.83
28	-4.8	-3.6	9.5	-0.5	.01	.12	0	0	.71	.10	-57.62
29	-3.8	-3.6	8.5	1.4	.01	.12	0	0	.69	.10	70.81
30	-2.3	-2.6	7.1	3.0	.02	.10	0	0	.67	.14	41.88
31	-0.7	-1.1	5.6	4.1	.01	.08	0	0	.65	.14	19.43
32	1.2	.7	4.0	4.6	.01	.09	0	0	.63	.02	17.97
33	3.1	2.4	2.5	4.5	.01	.11	0	0	.61	.12	29.68
34	5.0	4.4	1.1	4.0	.01	.13	0	0	.59	.11	27.20
35	6.5	6.4	-0.1	3.3	.01	.10	0	0	.57	.06	-15.58
36	7.7	7.6	-0.7	2.4	.01	.08	0	0	.56	.03	52.14
37	8.5	8.4	-1.0	1.5	.01	.10	0	0	.54	.10	63.50
38	8.9	8.6	-0.7	.4	.01	.11	0	0	.53	.09	88.92
39	8.8	8.0	0	-0.6	.01	.09	0	0	.51	.10	-74.94
40	8.6	7.2	.9	-1.4	.01	.07	0	0	.50	.11	16.78
41	8.2	6.0	1.9	-2.0	.01	.07	0	0	.49	.10	-27.35
42	7.6	4.7	3.0	-2.2	.01	.09	0	0	.48	.03	-40.34
43	7.0	3.2	4.1	-1.8	.01	.09	0	0	.47	.07	-47.56
44	6.2	1.4	5.0	-1.1	.01	.07	0	0	.45	.09	32.03
45	5.4	.3	5.6	-0.1	.01	.07	0	0	.44	.05	73.97
46	4.7	-0.9	6.1	1.1	.01	.08	0	0	.43	.04	14.36
47	4.4	-1.9	6.3	2.4	0	.09	0	0	.43	0	-39.18
48	4.5	-1.8	6.2	3.5	0	.09	0	0	.42	.05	-70.71
49	5.0	-1.1	5.7	4.5	0	.10	0	0	.41	.18	-27.18
50	5.7	-0.5	4.9	5.3	0	.06	0	0	.40	.29	0

027 OIII

BBFLS 10 3.0M-01 0, 25MAY-65 1242-1252

LAGS= 50 N= 1649 DT= 0.2SEC

MEAN U=-25.6 MEAN W= -5.8

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	14.8	16.7	.8	0	2.76	4.27	.36	0	0	.11	0
1	9.5	16.5	.8	.3	3.68	6.36	.43	.62	20.00	.15	55.31
2	8.9	16.0	.8	.6	1.35	2.96	-0.02	.44	10.00	.22	-87.91
3	8.7	15.4	.8	.8	.59	1.30	-0.08	.19	6.67	.23	-67.31
4	8.1	14.6	.8	1.1	.44	.74	.05	.23	5.00	.42	77.21
5	7.4	13.8	.8	1.2	.52	.49	.07	.26	4.00	.54	74.57
6	7.1	12.9	.7	1.3	.36	.23	.02	.10	3.33	.35	77.14
7	6.5	12.0	.6	1.3	.18	.09	0	-0.01	2.86	.08	-60.51
8	6.1	11.2	.7	1.3	.13	.05	0	0	2.50	.02	85.30
9	5.7	10.4	.6	1.2	.11	.04	-0.01	0	2.22	.16	-25.42
10	5.3	9.6	.5	1.1	.09	.04	-0.01	.01	2.00	.19	-28.29
11	5.4	8.9	.7	1.0	.09	.02	0	0	1.82	.11	5.16
12	5.1	8.3	.7	.9	.09	.01	0	0	1.67	.14	69.06
13	5.2	7.9	.7	.8	.09	.01	0	0	1.54	.07	9.74
14	5.0	7.3	.8	.7	.09	.01	0	.01	1.43	.19	-59.15
15	5.0	6.9	.8	.7	.09	.01	0	.01	1.33	.21	-70.63
16	5.0	6.5	.9	.7	.09	.01	0	0	1.25	.16	64.28
17	4.9	6.2	.9	.6	.10	0	0	0	1.18	.14	1.32
18	4.9	5.9	1.0	.7	.09	.01	0	0	1.11	.04	-80.98
19	4.6	5.6	1.0	.8	.09	.01	0	0	1.05	.06	82.78
20	4.5	5.4	1.0	.9	.09	0	0	0	1.00	.10	-23.34
21	4.2	5.1	1.0	1.1	.09	0	0	0	.95	.10	-57.76
22	4.0	4.7	.9	1.2	.10	0	0	0	.91	.09	-53.01
23	3.7	4.4	.9	1.3	.10	0	0	0	.87	.09	-78.59
24	3.5	4.0	.9	1.4	.11	0	0	0	.83	.05	63.78
25	3.2	3.7	.8	1.4	.12	0	0	0	.80	.02	55.43
26	2.7	3.4	.8	1.4	.12	0	0	0	.77	.04	13.23
27	2.7	3.1	.7	1.3	.11	0	0	0	.74	.10	36.35
28	2.5	2.8	.6	1.2	.12	0	0	0	.71	.21	31.25
29	2.3	2.5	.5	1.1	.13	0	0	0	.69	.05	1.14
30	2.3	2.3	.4	1.0	.12	0	0	0	.67	.12	65.22
31	2.3	2.1	.3	.8	.12	0	0	0	.65	.14	49.97
32	2.3	2.0	.2	.7	.13	0	0	0	.63	.12	46.03
33	2.3	1.9	.1	.5	.14	0	0	0	.61	.04	-5.70
34	2.6	1.8	.1	.4	.13	0	0	0	.59	.13	-1.64
35	2.8	1.7	.1	.3	.14	0	0	0	.57	.17	-5.50
36	2.8	1.7	.1	.3	.14	0	0	0	.56	.22	-48.67
37	2.9	1.8	0	.3	.15	0	0	0	.54	.21	-43.38
38	3.1	1.8	0	.4	.14	0	0	0	.53	.10	-10.19
39	3.1	1.8	0	.5	.12	0	0	0	.51	.02	52.43
40	3.3	1.9	0	.6	.12	0	0	0	.50	.08	11.81
41	3.2	1.9	0	.7	.11	0	0	0	.49	.14	5.84
42	3.3	1.8	0	.8	.10	0	0	0	.48	.17	30.45
43	3.2	1.8	0	.9	.12	0	0	0	.47	.20	72.39
44	3.1	1.7	0	.9	.14	0	0	0	.45	.07	71.91
45	3.1	1.5	-0.1	1.0	.15	0	0	0	.44	.13	-17.66
46	2.9	1.3	-0.1	1.0	.14	0	0	0	.43	.15	4.49
47	2.7	1.1	-0.1	1.1	.14	0	0	0	.43	.03	3.20
48	2.8	.8	-0.2	1.1	.14	0	0	0	.42	.05	-81.43
49	2.5	.5	-0.2	1.1	.13	0	0	0	.41	.14	-41.52
50	2.6	.2	-0.3	1.0	.07	0	0	0	.40	.19	0

028 OIII

BBELS 10 3.0M-III 25MAY-65 1256-1306

LAGS=50 N= 2320 DT= 0.2SEC

MEAN U=-17.7 MEAN W= 1.5

CORRELATION COEFFICIENT .14

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	9.3	50.3	3.0	0	1.17	10.41	.33	0	0	.09	0
1	8.5	49.3	2.9	1.5	2.03	15.92	.78	1.11	20.00	.24	54.81
2	7.5	47.0	2.6	2.9	1.34	7.78	.21	1.12	10.00	.35	79.57
3	6.5	43.6	2.1	4.1	.73	4.01	-0.28	.59	6.67	.38	-64.76
4	5.5	39.5	1.6	4.9	.83	4.22	.46	.99	5.00	.58	65.05
5	4.4	34.9	1.0	5.3	1.19	4.30	.87	1.58	4.00	.80	60.98
6	3.3	30.2	.5	5.2	.82	2.30	.46	1.00	3.33	.80	65.33
7	2.3	25.8	0	4.9	.26	.64	.09	.22	2.86	.58	68.34
8	1.5	21.9	-0.4	4.2	.09	.20	.03	.02	2.50	.26	41.55
9	.9	18.8	-0.6	3.2	.07	.10	.02	.01	2.22	.27	28.80
10	.6	16.5	-0.6	2.2	.06	.08	.01	.01	2.00	.16	51.02
11	.6	15.0	-0.4	1.3	.05	.04	-0.01	0	1.82	.12	-26.39
12	.7	14.4	-0.1	.4	.04	.03	-0.01	0	1.67	.14	10.50
13	.9	14.4	.4	-0.2	.04	.03	0	0	1.54	.13	-57.97
14	1.4	15.0	.9	-0.6	.04	.02	.01	0	1.43	.33	-21.65
15	1.8	15.8	1.4	-0.6	.04	.02	.01	0	1.33	.27	-14.69
16	2.2	16.7	1.8	-0.4	.04	.02	0	0	1.25	.10	-7.36
17	2.5	17.5	2.2	.1	.03	.01	0	0	1.18	.06	-57.23
18	2.6	18.0	2.5	.7	.03	.01	0	0	1.11	.12	-79.87
19	2.6	18.0	2.6	1.5	.03	.01	0	0	1.05	.09	63.09
20	2.5	17.6	2.6	2.3	.03	.01	0	0	1.00	.03	-32.25
21	2.1	16.7	2.4	3.0	.02	.01	0	0	.95	.04	10.11
22	1.6	15.3	2.1	3.5	.02	.01	0	0	.91	.16	-80.48
23	1.0	13.5	1.6	3.8	.02	.01	0	0	.87	.18	-68.88
24	.4	11.5	.9	3.9	.02	.01	0	0	.83	.21	-36.07
25	-0.2	9.4	.3	3.8	.02	.01	0	0	.80	.26	-34.62
26	-0.7	7.3	-0.4	3.4	.02	0	0	0	.77	.13	4.73
27	-1.1	5.4	-1.0	2.8	.02	.01	0	0	.74	.19	58.59
28	-1.3	3.8	-1.6	2.1	.02	.01	0	0	.71	.18	58.98
29	-1.4	2.5	-2.1	1.3	.01	0	0	0	.69	.09	59.00
30	-1.4	1.6	-2.4	.5	.01	0	0	0	.67	.03	29.51
31	-1.2	1.0	-2.7	-0.2	.01	0	0	0	.65	.07	29.74
32	-0.9	.8	-2.8	-0.8	.01	0	0	0	.63	.23	34.79
33	-0.6	.9	-2.8	-1.2	.01	0	0	0	.61	.29	24.41
34	-0.2	1.2	-2.7	-1.5	.01	0	0	0	.59	.18	3.85
35	.2	1.7	-2.6	-1.6	.01	0	0	0	.57	.19	-34.92
36	.5	2.4	-2.4	-1.6	.01	0	0	0	.56	.23	-35.01
37	.8	3.0	-2.2	-1.4	.01	0	0	0	.54	.19	-36.90
38	1.0	3.6	-2.0	-1.1	.01	0	0	0	.53	.14	-32.46
39	1.1	4.1	-1.9	-0.8	.01	0	0	0	.51	.19	-3.89
40	1.1	4.4	-1.7	-0.4	.01	0	0	0	.50	.25	21.76
41	1.1	4.5	-1.7	0	.01	0	0	0	.49	.20	50.70
42	1.0	4.3	-1.6	.4	.01	0	0	0	.48	.13	58.43
43	.9	3.9	-1.6	.6	.01	0	0	0	.47	.21	12.25
44	.8	3.3	-1.7	.9	.01	0	0	0	.45	.24	-5.88
45	.7	2.5	-1.8	1.0	.01	0	0	0	.44	.24	-5.37
46	.6	1.6	-1.9	1.0	.01	0	0	0	.43	.26	.58
47	.5	.6	-2.0	1.0	0	0	0	0	.43	.14	-14.40
48	.5	-0.3	-2.1	.9	.01	0	0	0	.42	.13	-3.47
49	.5	-1.0	-2.2	.7	.01	0	0	0	.41	.28	-4.80
50	.5	-1.7	-2.2	.6	0	0	0	0	.40	.34	0

029 OIII

.BFLS 10 1.0M- 1 0. 25MAY-65 1340-1350

.AGS= 50 N= 1764 DT= 0.2SEC

IEAN U=-18.6 MEAN W= 3.7

;	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	18.8	68.4	8.9	0	.98	3.69	.17	0	0	.09	0
1	15.9	65.6	8.4	5.0	1.72	7.80	.44	-0.25	20.00	.14	-29.39
2	13.4	58.4	7.1	9.4	1.20	9.17	.42	.41	10.00	.18	44.41
3	9.9	48.0	5.2	12.7	.88	10.01	.44	.84	6.67	.32	62.43
4	6.0	35.6	2.9	14.6	2.24	11.56	1.65	2.98	5.00	.67	61.01
5	2.1	22.4	.5	14.8	4.15	12.52	2.95	5.45	4.00	.86	61.59
6	-1.6	9.7	-1.7	13.3	3.37	8.06	2.01	4.07	3.33	.87	63.76
7	-4.3	-1.4	-3.6	10.5	1.33	2.80	.43	1.38	2.86	.75	72.61
8	-6.1	-10.2	-4.9	6.9	.44	.89	.03	.32	2.50	.51	84.57
9	-6.8	-16.5	-5.6	2.7	.28	.47	.06	.14	2.22	.43	66.10
10	-6.6	-20.2	-5.8	-1.4	.24	.44	.11	.11	2.00	.49	45.54
11	-5.5	-21.1	-5.4	-5.1	.15	.32	.09	.04	1.82	.45	22.91
12	-3.8	-19.6	-4.5	-8.1	.10	.16	.03	-0.01	1.67	.26	-20.45
13	-1.4	-16.2	-3.1	-10.0	.08	.08	.01	-0.02	1.54	.23	-53.86
14	1.1	-11.4	-1.4	-10.8	.07	.06	0	-0.01	1.43	.10	53.92
15	3.4	-6.0	.5	-10.5	.06	.05	-0.01	0	1.33	.23	18.75
16	5.4	-0.5	2.3	-9.2	.05	.03	0	-0.01	1.25	.15	67.47
17	6.9	4.3	3.9	-7.0	.05	.02	0	0	1.18	.16	-52.20
18	7.7	7.9	5.0	-4.2	.05	.02	0	0	1.11	.11	-54.72
19	7.7	9.9	5.4	-1.2	.05	.02	0	0	1.05	.09	-63.27
20	6.9	10.3	5.2	1.6	.05	.02	0	0	1.00	.14	-59.87
21	5.6	9.1	4.5	4.1	.07	.02	.01	0	.95	.22	-29.64
22	3.8	6.8	3.3	5.9	.06	.02	.01	0	.91	.23	20.96
23	1.7	3.6	1.8	6.9	.05	.02	0	0	.87	.22	44.17
24	-0.4	.3	.2	6.9	.04	.02	0	0	.83	.17	39.27
25	-2.1	-2.9	-1.3	6.1	.05	.01	0	0	.80	.12	35.17
26	-3.8	-5.5	-2.6	4.7	.04	.01	0	0	.77	.15	-13.26
27	-4.5	-7.4	-3.6	2.9	.04	.01	0	0	.74	.16	-4.84
28	-4.7	-8.6	-4.1	.8	.05	.01	0	0	.71	.09	37.36
29	-4.7	-8.8	-4.2	-1.3	.04	.01	0	0	.69	.11	74.30
30	-4.2	-8.2	-4.0	-3.2	.03	.01	0	0	.67	.22	79.33
31	-3.3	-6.9	-3.5	-4.8	.04	.01	0	0	.65	.20	66.34
32	-2.1	-4.9	-2.8	-6.0	.04	.01	0	0	.63	.18	33.26
33	-1.0	-2.5	-1.8	-6.8	.04	.01	0	0	.61	.19	11.63
34	.0	.2	-0.8	-7.1	.03	.01	0	0	.59	.18	-5.14
35	1.1	2.9	.3	-7.0	.03	0	0	0	.57	.22	-11.18
36	2.0	5.4	1.2	-6.5	.05	0	0	0	.56	.26	-6.92
37	2.7	7.5	2.0	-5.6	.05	0	0	0	.54	.21	20.35
38	3.2	9.1	2.4	-4.4	.04	0	0	0	.53	.08	37.46
39	3.3	10.0	2.4	-3.2	.04	0	0	0	.51	.07	37.07
40	3.2	10.1	2.1	-1.8	.04	0	0	0	.50	.12	21.18
41	2.7	9.4	1.6	-0.5	.04	0	0	0	.49	.08	5.76
42	2.2	7.9	.9	.7	.04	0	0	0	.48	.11	-13.15
43	1.4	5.8	.2	1.6	.05	0	0	0	.47	.20	10.98
44	.6	3.3	-0.6	2.3	.05	0	0	0	.45	.21	32.98
45	-0.2	.7	-1.3	2.6	.04	0	0	0	.44	.15	53.75
46	-0.8	-1.9	-1.8	2.7	.04	0	0	0	.43	.03	-21.04
47	-1.4	-4.2	-2.2	2.4	.04	0	0	0	.43	.09	-64.09
48	-1.9	-6.0	-2.5	1.8	.04	0	0	0	.42	.13	-16.55
49	-2.2	-7.0	-2.7	1.1	.03	0	0	0	.41	.02	68.67
50	-2.5	-7.3	-2.5	.2	.01	0	0	0	.40	.12	0

030 ΣI-ω

BBFLS 11 0.5M-02 I C. 29MAR-65 1630-1634

LAGS= 50 N= 974 DT= 0.2SEC

MEAN ω_1= -1.1 MEAN ω_2= 0.3

CORREL TION COEFFICIENT .92

K	ACOV ω_1	ACOV ω_2	COV IN	COVOUT	SP ω_1	SP ω_2	CO	QUA	PER	R	PHI
0	1289.2	624.1	829.2	0.	2.67	4.93	-.45	.00		.12	.00
1	1195.4	584.7	784.5	3.6	1[illegible].47	11.57	2.47	.31	20.00	.22	7.26
2	973.3	497.6	655.1	7.9	9.88	10.95	3.56	.46	10.00	.34	7.48
3	654.8	367.2	462.1	9.0	52.34	41.81	42.22	.25	6.66	.90	.34
4	283.6	206.3	22.7	50.0	277.20	162.40	208.20	-2.34	5.00	.98	-.64
5	-92.7	33.6	-20.6	8.4	437.40	220.90	307.40	.82	4.00	.98	.15
6	-437.1	-135.0	-257.5	4.9	281.00	117.30	178.40	5.33	3.33	.98	1.90
7	-713.4	-283.3	-459.2	1.8	99.91	28.73	51.90	3.20	2.85	.97	3.52
8	-896.9	-396.3	-604.4	-2.8	44.52	9.35	18.77	.68	2.50	.92	2.09
9	-979.5	-466.9	-683.3	-7.0	75.76	3.69	8.48	.65	2.22	.87	4.41
10	-96[illegible].7	-490.5	-694.5	-9.5	14.79	2.07	4.43	.33	2.00	.80	4.32
11	-855.1	-467.0	-640.5	-9.8	6.67	.87	1.45	.03	1.81	.60	1.24
12	-68[illegible].5	-401.3	-532.4	-8.7	3.91	.62	.57	-.16	1.66	.38	-15.59
13	-456.4	-303.5	-382.5	-6.7	2.85	.45	.25	-.07	1.53	.23	-16.42
14	-205.1	-182.9	-207.6	-3.8	2.18	.49	.28	-.10	1.42	.28	-19.76
15	43.5	-52.5	-23.7	.0	1.62	.46	.20	-.03	1.33	.24	-9.96
16	283.1	75.0	151.5	4.0	1.28	.42	.21	.02	1.25	.28	6.36
17	477.3	190.7	303.0	7.8	1.12	.31	.20	.03	1.17	.35	10.19
18	618.9	283.0	418.9	10.7	1.36	.29	.29	.04	1.11	.46	9.65
19	701.1	345.4	492.8	13.5	1.38	.28	.34	.05	1.05	.54	9.65
20	718.1	375.3	519.1	14.0	1.04	.28	.27	.00	1.00	.50	1.29
21	669.5	370.3	498.0	13.0	.64	.26	.10	-.02	.95	.27	-14.79
22	563.3	332.7	433.7	11.3	.52	.30	.08	-.04	.90	.24	-25.98
23	411.3	270.9	335.5	7.4	.49	.27	.08	-.05	.86	.27	-30.06
24	23[illegible].7	186.8	213.5	1.9	.44	.23	.05	-.05	.83	.23	-41.19
25	42.4	93.3	80.7	-3.2	.45	.23	.03	-.04	.80	.18	-54.01
26	-138.6	-2.5	-50.3	-9.3	.44	.22	.01	-.00	.76	.03	-9.19
27	-298.5	-93.6	-170.1	-13.8	.34	.17	-.04	.04	.74	.26	-45.60
28	-418.7	-171.0	-268.0	-17.4	.33	.15	-.07	.04	.71	.38	-33.45
29	-497.6	-230.3	-338.0	-19.2	.32	.17	-.04	.02	.68	.21	-22.97
30	-529.7	-266.6	-374.8	-18.0	.30	.18	.01	-.00	.66	.04	-27.21
31	-515.0	-278.5	-379.9	-15.0	.33	.15	.01	.00	.64	.08	6.77
32	-463.0	-267.7	-354.2	-10.1	.29	.15	.01	.00	.62	.05	27.47
33	-379.0	-236.1	-301.8	-3.7	.21	.20	.01	.00	.60	.09	12.36
34	-271.5	-186.4	-228.3	2.8	.25	.28	.04	-.03	.58	.21	-43.36
35	-149.3	-125.2	-140.5	9.0	.35	.31	.04	-.09	.57	.31	-63.86
36	-23.6	-56.4	-46.2	15.0	.40	.20	.05	-.06	.55	.29	-49.31
37	96.7	12.6	46.1	19.6	.35	.11	.03	-.02	.54	.21	-41.99
38	205.3	77.2	131.1	23.0	.33	.18	.00	-.05	.52	.23	-83.74
39	292.5	133.3	202.2	24.6	.34	.25	-.00	-.09	.51	.32	87.52
40	351.8	175.3	254.3	23.3	.30	.20	-.04	-.08	.50	.38	62.95
41	382.8	201.4	284.3	19.1	.27	.15	-.06	-.04	.48	.39	33.16
42	382.7	209.6	289.9	14.1	.26	.15	-.04	-.03	.47	.27	37.42
43	354.1	201.2	272.9	6.1	.23	.17	-.02	-.03	.46	.20	52.94
44	300.0	177.0	235.9	-2.7	.23	.15	-.04	-.01	.45	.23	26.35
45	225.7	139.4	181.1	-11.3	.22	.09	-.04	-.00	.44	.31	11.95
46	138.1	92.5	115.2	-17.7	.18	.11	-.00	-.01	.43	.09	67.51
47	43.9	39.4	42.5	-21.5	.18	.17	.00	-.00	.42	.04	-72.90
48	-49.7	-14.0	-32.3	-23.4	.23	.18	-.04	.02	.41	.24	-23.51
49	-143.4	-64.7	-102.7	-24.8	.24	.19	-.07	.01	.40	.39	-13.97
50	-229.4	-109.4	-164.5	-22.8	.11	.07	-.03	.00	.40	.39	-.00

031 CI-ω

BBEI S 11 0.5M-21II C. 29MAR-65 1630-1634

LAGS= 50 N= 339 DT= 0.2SEC

MEAN W_E= -1.1 MEAN W_1= 0.2

K	ACOV W_E	ACOV W_1	COV IN	COVOUT	SP W_E	SP W_1	CO	QUA	PER	R	PHI
0	731.1	1615.9	1034.8	0	1.67	2.83	-0.34	0	0	.15	0
1	687.4	1496.4	974.2	28.7	6.41	12.48	4.13	3.60	20.00	.61	41.12
2	568.0	1199.1	797.3	53.2	3.77	6.74	1.22	4.82	10.00	.99	75.79
3	388.6	768.9	531.6	71.8	26.25	41.95	31.13	3.87	6.67	.95	7.09
4	173.6	272.9	213.0	83.7	146.29	272.10	196.30	21.28	5.00	.99	6.19
5	-51.8	-225.9	-116.6	87.7	249.42	503.64	348.13	41.41	4.00	.99	6.78
6	-263.2	-663.5	-417.6	85.0	197.51	446.02	291.28	22.44	3.33	.98	4.40
7	-436.9	-999.8	-658.9	75.9	78.09	207.75	124.55	-2.44	2.86	.98	-1.12
8	-557.1	-1211.0	-816.7	61.4	10.08	42.18	19.22	-2.25	2.50	.94	-6.69
9	-613.2	-1279.0	-881.0	40.6	.87	12.78	3.53	1.11	2.22	1.11	17.40
10	-602.3	-1211.8	-848.5	16.2	2.41	16.20	5.97	.82	2.00	.97	7.83
11	-527.0	-1016.2	-728.1	-10.0	2.25	17.46	5.66	.35	1.82	.90	3.50
12	-398.4	-727.9	-537.4	-34.3	1.96	11.57	3.76	.38	1.67	.79	5.72
13	-233.5	-367.9	-298.2	-55.4	.96	3.43	.85	.68	1.54	.60	38.85
14	-53.6	12.3	-40.9	-69.8	.65	2.85	.20	.27	1.43	.25	53.67
15	120.0	370.0	206.3	-76.7	.46	2.40	-0.06	.19	1.33	.19	-72.42
16	269.1	663.3	414.8	-74.7	.42	1.64	.21	.23	1.25	.38	47.64
17	378.7	860.3	561.5	-64.1	.16	.68	-0.02	.05	1.18	.15	-67.03
18	438.2	944.4	632.9	-46.1	.08	.54	-0.04	.03	1.11	.25	-35.37
19	445.6	911.5	627.4	-21.3	0	.75	0	-0.01	1.05	0	-72.20
20	405.3	775.6	553.9	5.9	.06	.87	-0.03	-0.03	1.00	.16	44.63
21	327.3	566.2	428.6	34.4	.12	.57	-0.12	-0.01	.95	.46	2.45
22	225.4	322.4	273.6	59.2	.16	.50	-0.07	-0.03	.91	.27	22.73
23	113.3	80.7	111.7	78.5	.16	.30	-0.02	-0.01	.87	.11	37.84
24	5.5	-126.1	-37.0	89.0	.13	.29	.03	.03	.83	.23	46.16
25	-88.0	-282.9	-158.8	89.8	.05	.38	-0.01	.04	.80	.32	-73.67
26	-159.4	-384.6	-246.1	80.3	.02	.40	-0.04	.04	.77	.61	-47.13
27	-205.5	-435.6	-296.0	60.8	.02	.47	-0.04	.05	.74	.78	-53.12
28	-225.4	-439.4	-310.4	35.7	.03	.60	0	.06	.71	.42	-85.90
29	-222.3	-407.7	-294.2	7.6	.03	.47	0	.04	.69	.35	-83.74
30	-201.7	-350.3	-256.4	-19.5	.02	.35	.01	0	.67	.08	11.28
31	-169.9	-274.4	-207.5	-42.8	.02	.38	-0.01	.01	.65	.12	-35.48
32	-133.3	-194.8	-155.6	-59.3	.01	.30	-0.04	.02	.63	.80	-31.83
33	-97.5	-125.1	-109.5	-69.3	0	.17	-0.04	.01	.61	3.11	-10.42
34	-66.4	-69.7	-72.4	-72.0	.02	.20	-0.03	-0.01	.59	.47	20.07
35	-41.5	-33.9	-45.7	-68.4	.03	.24	-0.02	0	.57	.29	2.44
36	-22.1	-20.4	-28.0	-58.7	.04	.27	0	0	.56	.03	48.33
37	-5.9	-22.3	-16.5	-42.8	.04	.26	.02	0	.54	.17	5.90
38	10.3	-23.8	-5.3	-21.9	.02	.24	.01	.01	.53	.24	51.78
39	27.9	-7.7	12.4	.2	.02	.12	-0.01	.02	.51	.44	-50.35
40	49.6	32.7	41.5	19.7	.03	.03	-0.03	0	.50	.95	7.25
41	76.6	103.0	85.6	33.2	.05	.06	-0.06	-0.02	.49	1.07	19.83
42	107.7	194.6	141.2	40.0	.07	.13	-0.09	-0.01	.48	1.02	5.00
43	140.2	292.2	200.2	40.5	.05	.25	-0.09	.04	.47	.88	-22.02
44	168.2	382.6	252.0	37.0	.04	.39	-0.05	.04	.45	.54	-39.30
45	186.3	439.7	285.7	31.6	.05	.50	-0.04	-0.01	.44	.23	18.15
46	189.6	444.9	291.4	25.3	.05	.51	-0.01	-0.06	.43	.37	78.53
47	173.2	387.0	263.6	17.4	.03	.35	-0.01	-0.05	.43	.45	82.64
48	136.4	273.0	201.7	8.0	.01	.19	-0.02	-0.02	.42	.54	40.37
49	80.8	117.6	110.9	-1.8	.02	.09	-0.03	-0.01	.41	.71	18.21
50	12.6	-54.8	3.5	-12.9	.01	.04	-0.01	0	.40	.48	0

032 CI-ω

BBELS 11 0.5M-III S. 29MAR-65 1713-1716

LAGS= 50 N= 646 DT= 0.2SEC

MEAN W= -1.7

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	1062.196	4.025	0	0
1	988.330	9.955	20.0	50.0
2	810.338	16.910	10.0	100.0
3	550.635	65.039	6.7	150.0
4	251.152	224.958	5.0	200.0
5	-53.395	332.718	4.0	250.0
6	-331.722	222.293	3.3	300.0
7	-556.285	94.603	2.9	350.0
8	-709.311	43.987	2.5	400.0
9	-780.299	13.129	2.2	450.0
10	-767.962	7.396	2.0	500.0
11	-680.827	5.042	1.8	550.0
12	-534.903	3.098	1.7	600.0
13	-351.621	2.306	1.5	650.0
14	-153.759	2.597	1.4	700.0
15	37.301	2.454	1.3	750.0
16	203.965	1.543	1.3	800.0
17	334.706	.808	1.2	850.0
18	430.699	.652	1.1	900.0
19	475.770	.639	1.1	950.0
20	475.612	.466	1.0	1000.0
21	435.154	.470	1.0	1050.0
22	362.607	.452	.9	1100.0
23	267.259	.382	.9	1150.0
24	162.708	.254	.8	1200.0
25	55.795	.158	.8	1250.0
26	-46.388	.198	.8	1300.0
27	-142.013	.270	.7	1350.0
28	-224.430	.277	.7	1400.0
29	-289.265	.198	.7	1450.0
30	-329.419	.115	.7	1500.0
31	-340.597	.105	.6	1550.0
32	-319.744	.143	.6	1600.0
33	-269.372	.171	.6	1650.0
34	-192.241	.193	.6	1700.0
35	-95.913	.192	.6	1750.0
36	9.202	.147	.6	1800.0
37	113.104	.156	.5	1850.0
38	200.828	.179	.5	1900.0
39	262.007	.190	.5	1950.0
40	291.904	.245	.5	2000.0
41	286.477	.254	.5	2050.0
42	243.478	.232	.5	2100.0
43	181.437	.202	.5	2150.0
44	92.195	.164	.5	2200.0
45	-4.656	.218	.4	2250.0
46	-94.860	.267	.4	2300.0
47	-169.541	.243	.4	2350.0
48	-218.705	.190	.4	2400.0
49	-237.218	.197	.4	2450.0
50	-222.811	.118	.4	2500.0

033 CI-W

BBELS 11 0.5M-IV S. 29MAR-65 1715-1720

LAGS= 50 N= 1130 DT= 0.2SEC

MEAN W= -2.8

K	COV	SP	PERIOD	FREQ(MCPS)
0	1034.285	3.276	0	0
1	965.504	7.748	20.0	50.0
2	786.011	10.446	10.0	100.0
3	525.129	56.973	6.7	150.0
4	222.582	221.882	5.0	200.0
5	-81.035	325.243	4.0	250.0
6	-353.182	216.744	3.3	300.0
7	-560.167	93.872	2.9	350.0
8	-696.531	41.597	2.5	400.0
9	-754.225	18.988	2.2	450.0
10	-736.632	14.362	2.0	500.0
11	-653.186	8.419	1.8	550.0
12	-518.428	4.248	1.7	600.0
13	-344.245	2.409	1.5	650.0
14	-160.103	1.580	1.4	700.0
15	27.811	.849	1.3	750.0
16	199.440	.687	1.3	800.0
17	337.556	.549	1.2	850.0
18	435.477	.402	1.1	900.0
19	486.437	.344	1.1	950.0
20	490.274	.274	1.0	1000.0
21	451.153	.216	1.0	1050.0
22	377.532	.188	.9	1100.0
23	279.980	.137	.9	1150.0
24	169.472	.144	.8	1200.0
25	54.569	.189	.8	1250.0
26	-49.301	.183	.8	1300.0
27	-141.206	.156	.7	1350.0
28	-215.455	.153	.7	1400.0
29	-269.619	.139	.7	1450.0
30	-302.474	.123	.7	1500.0
31	-313.333	.114	.6	1550.0
32	-301.744	.111	.6	1600.0
33	-269.608	.109	.6	1650.0
34	-213.752	.111	.6	1700.0
35	-140.957	.101	.6	1750.0
36	-56.110	.091	.6	1800.0
37	32.719	.093	.5	1850.0
38	117.620	.090	.5	1900.0
39	191.162	.078	.5	1950.0
40	246.489	.077	.5	2000.0
41	278.116	.078	.5	2050.0
42	282.199	.072	.5	2100.0
43	257.589	.082	.5	2150.0
44	205.635	.097	.5	2200.0
45	131.909	.090	.4	2250.0
46	45.162	.085	.4	2300.0
47	-43.194	.085	.4	2350.0
48	-122.329	.079	.4	2400.0
49	-182.376	.082	.4	2450.0
50	-217.843	.044	.4	2500.0

034 LI-W

BBFLS 11   2.0M-1   S, 29MAR-65   1734-1739

LAGS= 50   N= 1459   DT= 0.2SEC

MEAN W= -0.2

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	486.970	3.338	0	0
1	461.633	9.527	20.0	50.0
2	391.760	13.337	10.0	100.0
3	287.265	43.154	6.7	150.0
4	166.718	125.346	5.0	200.0
5	24.320	152.407	4.0	250.0
6	-101.804	93.991	3.3	300.0
7	-211.656	33.132	2.9	350.0
8	-293.975	12.848	2.5	400.0
9	-343.033	2.910	2.2	450.0
10	-356.773	1.609	2.0	500.0
11	-336.778	1.087	1.8	550.0
12	-288.109	.885	1.7	600.0
13	-218.052	.443	1.5	650.0
14	-135.089	.340	1.4	700.0
15	-49.152	.269	1.3	750.0
16	34.450	.217	1.3	800.0
17	106.258	.125	1.2	850.0
18	162.419	.104	1.1	900.0
19	200.029	.076	1.1	950.0
20	218.288	.071	1.0	1000.0
21	219.361	.063	1.0	1050.0
22	202.504	.066	.9	1100.0
23	173.481	.044	.9	1150.0
24	134.461	.040	.8	1200.0
25	88.642	.043	.8	1250.0
26	30.200	.051	.8	1300.0
27	-10.906	.045	.7	1350.0
28	-58.576	.037	.7	1400.0
29	-100.773	.024	.7	1450.0
30	-134.664	.022	.7	1500.0
31	-157.962	.021	.6	1550.0
32	-169.233	.024	.6	1600.0
33	-167.832	.023	.6	1650.0
34	-153.813	.023	.6	1700.0
35	-128.187	.019	.6	1750.0
36	-92.733	.016	.6	1800.0
37	-50.229	.012	.5	1850.0
38	-3.898	.012	.5	1900.0
39	42.562	.010	.5	1950.0
40	85.338	.010	.5	2000.0
41	12[illegible].773	.011	.5	2050.0
42	145.907	.011	.5	2100.0
43	158.678	.009	.5	2150.0
44	159.465	.009	.5	2200.0
45	145.711	.010	.4	2250.0
46	122.150	.012	.4	2300.0
47	9[illegible].273	.012	.4	2350.0
48	52.982	.011	.4	2400.0
49	13.457	.009	.4	2450.0
50	-24.902	.005	.4	2500.0

035 LI-ω

BBELS 11 3.0M-11 S. 29MAR-65 1748-1753

LAGS= 50 N= 1486 DT= 0.2SEC

MEAN W= -0.9

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	305.883	1.648	0	0
1	291.943	3.759	20.0	50.0
2	254.129	8.239	10.0	100.0
3	197.017	43.663	6.7	150.0
4	126.166	100.103	5.0	200.0
5	48.028	94.471	4.0	250.0
6	-30.535	38.179	3.3	300.0
7	-103.022	8.542	2.9	350.0
8	-163.971	2.964	2.5	400.0
9	-208.914	1.182	2.2	450.0
10	-235.011	.710	2.0	500.0
11	-241.346	.467	1.8	550.0
12	-228.668	.331	1.7	600.0
13	-199.146	.211	1.5	650.0
14	-156.204	.190	1.4	700.0
15	-104.119	.161	1.3	750.0
16	-47.494	.139	1.3	800.0
17	8.918	.106	1.2	850.0
18	60.786	.085	1.1	900.0
19	104.383	.067	1.1	950.0
20	136.962	.062	1.0	1000.0
21	157.005	.047	1.0	1050.0
22	163.898	.044	.9	1100.0
23	158.191	.042	.9	1150.0
24	141.398	.040	.8	1200.0
25	115.662	.033	.8	1250.0
26	83.463	.033	.8	1300.0
27	47.709	.036	.7	1350.0
28	11.469	.035	.7	1400.0
29	-22.593	.026	.7	1450.0
30	-52.115	.022	.7	1500.0
31	-75.253	.021	.6	1550.0
32	-91.787	.019	.6	1600.0
33	-98.248	.015	.6	1650.0
34	-97.835	.012	.6	1700.0
35	-90.314	.012	.6	1750.0
36	-74.967	.014	.6	1800.0
37	-59.352	.014	.5	1850.0
38	-39.067	.013	.5	1900.0
39	-17.769	.012	.5	1950.0
40	2.936	.011	.5	2000.0
41	21.638	.011	.5	2050.0
42	37.355	.012	.5	2100.0
43	49.447	.013	.5	2150.0
44	57.580	.012	.5	2200.0
45	61.750	.010	.4	2250.0
46	62.018	.010	.4	2300.0
47	58.582	.010	.4	2350.0
48	52.088	.009	.4	2400.0
49	43.168	.009	.4	2450.0
50	32.634	.005	.4	2500.0

036 LI-w

BBFLS 11 1.59-1 S, 29MAR-65 1803-1808

LAGS= 50 N= 1600 DT= 0.2SEC

MEAN W= 2.5

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	539.0	38.7		
1	516.7	72.3	20.0	50.0
2	460.1	63.8	10.0	100.0
3	376.2	62.5	6.6	150.0
4	276.2	94.9	5.0	200.0
5	171.3	94.5	4.0	250.0
6	72.4	61.9	3.3	300.0
7	-12.4	25.8	2.8	350.0
8	-77.2	11.4	2.5	400.0
9	-119.1	5.5	2.2	450.0
10	-137.8	2.9	2.0	500.0
11	-135.6	1.5	1.8	550.0
12	-116.3	.8	1.6	600.0
13	-84.4	.4	1.5	650.0
14	-45.1	.3	1.4	700.0
15	-3.3	.2	1.3	750.0
16	36.6	.2	1.2	800.0
17	71.0	.1	1.1	850.0
18	96.9	.1	1.1	900.0
19	112.6	.0	1.0	950.0
20	117.4	.0	1.0	1000.0
21	111.5	.0	.9	1050.0
22	96.7	.0	.9	1100.0
23	74.8	.0	.8	1150.0
24	48.5	.0	.8	1200.0
25	20.1	.0	.8	1250.0
26	-7.8	.0	.7	1300.0
27	-33.2	.0	.7	1350.0
28	-54.6	.0	.7	1400.0
29	-70.7	.0	.6	1450.0
30	-80.6	.0	.6	1500.0
31	-84.2	.0	.6	1550.0
32	-81.9	.0	.6	1600.0
33	-74.4	.0	.6	1650.0
34	-63.0	.0	.5	1700.0
35	-49.2	.0	.5	1750.0
36	-34.1	.0	.5	1800.0
37	-19.3	.0	.5	1850.0
38	-6.0	.0	.5	1900.0
39	4.6	.0	.5	1950.0
40	12.2	.0	.5	2000.0
41	16.6	.0	.4	2050.0
42	17.7	.0	.4	2100.0
43	16.1	.0	.4	2150.0
44	12.2	.0	.4	2200.0
45	6.5	.0	.4	2250.0
46	-.2	.0	.4	2300.0
47	-7.1	.0	.4	2350.0
48	-14.1	.0	.4	2400.0
49	-20.6	.0	.4	2450.0
50	-26.2	.0	.4	2500.0

037 ¢I-W

BBFLS 11 2.5M-01 S, 29MAR-65 1820-1825

LAGS= 50 N= 1297 DT= 0.2SEC

MEAN W= -0.6

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	335.364	5.798	0	0
1	319.639	8.584	20.0	50.0
2	275.619	8.933	10.0	100.0
3	208.499	34.282	6.7	150.0
4	125.596	89.285	5.0	200.0
5	35.669	105.607	4.0	250.0
6	-52.359	57.040	3.3	300.0
7	-130.207	17.554	2.9	350.0
8	-191.019	5.523	2.5	400.0
9	-229.967	.937	2.2	450.0
10	-244.883	.503	2.0	500.0
11	-236.163	.270	1.8	550.0
12	-206.493	.163	1.7	600.0
13	-166.379	.107	1.5	650.0
14	-103.446	.134	1.4	700.0
15	-41.866	.095	1.3	750.0
16	18.481	.040	1.3	800.0
17	72.426	.054	1.2	850.0
18	115.990	.043	1.1	900.0
19	146.460	.039	1.1	950.0
20	162.607	.034	1.0	1000.0
21	164.488	.023	1.0	1050.0
22	153.555	.020	.9	1100.0
23	131.984	.014	.9	1150.0
24	102.563	.013	.8	1200.0
25	68.442	.013	.8	1250.0
26	32.539	.015	.8	1300.0
27	-2.310	.013	.7	1350.0
28	-33.612	.014	.7	1400.0
29	-59.363	.012	.7	1450.0
30	-77.944	.013	.7	1500.0
31	-88.408	.013	.6	1550.0
32	-90.283	.012	.6	1600.0
33	-83.844	.009	.6	1650.0
34	-69.803	.009	.6	1700.0
35	-49.698	.011	.6	1750.0
36	-25.585	.009	.6	1800.0
37	.184	.007	.5	1850.0
38	25.155	.006	.5	1900.0
39	47.111	.007	.5	1950.0
40	64.047	.009	.5	2000.0
41	74.490	.007	.5	2050.0
42	77.596	.006	.5	2100.0
43	72.980	.007	.5	2150.0
44	61.259	.008	.5	2200.0
45	43.866	.006	.4	2250.0
46	22.683	.005	.4	2300.0
47	-0.017	.005	.4	2350.0
48	-21.838	.004	.4	2400.0
49	-40.581	.005	.4	2450.0
50	-54.208	.003	.4	2500.0

038 ©-I-w

BBELS 11 4.04- 1 S. 29MAR-65 1832-1837

LAGS= 50 N= 1438 DT= 0.2SEC

MEAN W= -0.0

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	222.004	1.618	0	0
1	211.351	4.455	20.0	50.0
2	186.646	11.821	10.0	100.0
3	148.635	39.106	6.7	150.0
4	100.858	69.619	5.0	200.0
5	47.596	59.858	4.0	250.0
6	-6.654	24.945	3.3	300.0
7	-57.268	5.826	2.9	350.0
8	-100.631	1.620	2.5	400.0
9	-133.934	.529	2.2	450.0
10	-154.998	.250	2.0	500.0
11	-162.793	.213	1.8	550.0
12	-158.128	.220	1.7	600.0
13	-141.871	.167	1.5	650.0
14	-116.343	.098	1.4	700.0
15	-84.582	.069	1.3	750.0
16	-49.542	.066	1.3	800.0
17	-14.193	.063	1.2	850.0
18	18.797	.049	1.1	900.0
19	46.904	.046	1.1	950.0
20	68.878	.058	1.0	1000.0
21	83.658	.057	1.0	1050.0
22	90.798	.050	.9	1100.0
23	90.759	.051	.9	1150.0
24	84.061	.056	.8	1200.0
25	72.092	.050	.8	1250.0
26	55.988	.050	.8	1300.0
27	37.811	.062	.7	1350.0
28	18.971	.061	.7	1400.0
29	1.484	.046	.7	1450.0
30	-14.339	.035	.7	1500.0
31	-26.909	.031	.6	1550.0
32	-35.890	.028	.6	1600.0
33	-41.104	.034	.6	1650.0
34	-42.743	.046	.6	1700.0
35	-41.145	.048	.6	1750.0
36	-36.983	.043	.6	1800.0
37	-30.893	.047	.5	1850.0
38	-23.798	.050	.5	1900.0
39	-16.235	.043	.5	1950.0
40	-9.058	.038	.5	2000.0
41	-2.760	.038	.5	2050.0
42	2.221	.034	.5	2100.0
43	5.857	.039	.5	2150.0
44	8.182	.050	.5	2200.0
45	9.332	.049	.4	2250.0
46	9.661	.037	.4	2300.0
47	9.443	.035	.4	2350.0
48	9.108	.045	.4	2400.0
49	9.153	.038	.4	2450.0
50	9.680	.014	.4	2500.0

039 LI-W

BBELS 11 5.0M- 1 S. 29MAR-65 1845-1849

LAGS= 50 N= 1600 DT= 0.2SEC

MEAN W= 0.5

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	101.734	2.698	0	0
1	98.120	5.845	20.0	50.0
2	88.656	10.664	10.0	100.0
3	74.343	22.213	6.7	150.0
4	56.274	29.181	5.0	200.0
5	35.844	20.665	4.0	250.0
6	14.583	7.424	3.3	300.0
7	-6.028	1.546	2.9	350.0
8	-24.583	.398	2.5	400.0
9	-39.965	.197	2.2	450.0
10	-51.334	.161	2.0	500.0
11	-59.215	.116	1.8	550.0
12	-60.484	.083	1.7	600.0
13	-58.386	.055	1.5	650.0
14	-52.505	.044	1.4	700.0
15	-43.555	.042	1.3	750.0
16	-32.486	.042	1.3	800.0
17	-20.361	.034	1.2	850.0
18	-9.160	.028	1.1	900.0
19	3.216	.023	1.1	950.0
20	12.966	.020	1.0	1000.0
21	20.671	.021	1.0	1050.0
22	26.044	.021	.9	1100.0
23	29.991	.017	.9	1150.0
24	29.608	.015	.8	1200.0
25	29.175	.015	.8	1250.0
26	25.087	.014	.8	1300.0
27	20.786	.011	.7	1350.0
28	15.761	.009	.7	1400.0
29	10.446	.009	.7	1450.0
30	5.323	.010	.7	1500.0
31	.739	.011	.6	1550.0
32	-3.118	.010	.6	1600.0
33	-6.056	.008	.6	1650.0
34	-7.998	.006	.6	1700.0
35	-9.933	.006	.6	1750.0
36	-9.913	.007	.6	1800.0
37	-8.126	.007	.5	1850.0
38	-6.749	.007	.5	1900.0
39	-4.978	.006	.5	1950.0
40	-2.998	.004	.5	2000.0
41	-0.978	.004	.5	2050.0
42	.927	.005	.5	2100.0
43	2.566	.004	.5	2150.0
44	3.819	.004	.5	2200.0
45	4.566	.004	.4	2250.0
46	4.829	.005	.4	2300.0
47	4.615	.005	.4	2350.0
48	3.946	.005	.4	2400.0
49	2.953	.004	.4	2450.0
50	1.756	.002	.4	2500.0

BBELS- 11 2.0M- 8

50LAGS 1132DATA POINTS DT= .20SEC

040 LI-W

BBELS 11 3.5?- 1 S. 29MAR-65 1851-1855

LAGS= 50 N= 492 DT= 0.2SEC

MEAN = -0.[illegible]

K	COV	SP	PERIOD	FREQ(MCPS)
0	191.518	2.342	0	0
1	182.707	4.471	20.0	50.0
2	161.105	10.058	10.0	100.0
3	129.232	35.056	6.7	150.0
4	87.058	57.772	5.0	200.0
5	41.436	46.530	4.0	250.0
6	-4.664	23.424	3.3	300.0
7	-47.504	7.084	2.9	350.0
8	-83.711	1.113	2.5	400.0
9	-11 .935	.669	2.2	450.0
10	-127.533	.255	2.0	500.0
11	-133.047	.189	1.8	550.0
12	-129.142	.107	1.7	600.0
13	-114.391	.112	1.5	650.0
14	-93.174	.092	1.4	700.0
15	-67.671	.099	1.3	750.0
16	-4 .215	.077	1.3	800.0
17	-12.930	.063	1.2	850.0
18	12.024	.043	1.1	900.0
19	32.863	.041	1.1	950.0
20	49.661	.039	1.0	1000.0
21	59.044	.047	1.0	1050.0
22	64.196	.049	.9	1100.0
23	64.623	.041	.9	1150.0
24	61.239	.031	.8	1200.0
25	55.096	.029	.8	1250.0
26	47.433	.036	.8	1300.0
27	39.004	.041	.7	1350.0
28	3 .538	.033	.7	1400.0
29	22.679	.031	.7	1450.0
30	15.587	.031	.7	1500.0
31	9.072	.027	.6	1550.0
32	3.081	.026	.6	1600.0
33	-2.700	.031	.6	1650.0
34	-8.600	.031	.6	1700.0
35	-14.762	.028	.6	1750.0
36	-21.050	.027	.6	1800.0
37	-27.370	.029	.5	1850.0
38	-33.421	.030	.5	1900.0
39	-38.541	.028	.5	1950.0
40	-42.132	.026	.5	2000.0
41	-43.644	.023	.5	2050.0
42	-42.656	.019	.5	2100.0
43	-38.986	.018	.5	2150.0
44	-32.304	.020	.5	2200.0
45	-22.720	.024	.4	2250.0
46	-11.119	.027	.4	2300.0
47	1.905	.025	.4	2350.0
48	15.616	.022	.4	2400.0
49	29.780	.021	.4	2450.0
50	40.375	.011	.4	2500.0

041 CI-W

BBELS 11 4.5M- 1 S. 29MAR-65 1900-1905

LAGS= 50 N= 1380 DT= 0.2SEC

MEAN W= -1.7

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	193.478	1.817	0	0
1	184.890	2.915	20.0	50.0
2	164.716	9.133	10.0	100.0
3	133.522	41.451	6.7	150.0
4	93.892	67.347	5.0	200.0
5	49.464	46.862	4.0	250.0
6	3.287	16.525	3.3	300.0
7	-40.969	4.236	2.9	350.0
8	-80.320	.877	2.5	400.0
9	-111.832	.293	2.2	450.0
10	-133.867	.181	2.0	500.0
11	-145.554	.181	1.8	550.0
12	-146.392	.129	1.7	600.0
13	-137.212	.098	1.5	650.0
14	-119.709	.091	1.4	700.0
15	-95.578	.098	1.3	750.0
16	-67.014	.070	1.3	800.0
17	-36.398	.055	1.2	850.0
18	-5.927	.050	1.1	900.0
19	22.355	.047	1.1	950.0
20	46.886	.041	1.0	1000.0
21	66.420	.047	1.0	1050.0
22	81.441	.049	.9	1100.0
23	88.711	.039	.9	1150.0
24	91.155	.028	.8	1200.0
25	88.524	.025	.8	1250.0
26	81.432	.024	.8	1300.0
27	70.602	.025	.7	1350.0
28	56.933	.025	.7	1400.0
29	41.574	.033	.7	1450.0
30	25.479	.046	.7	1500.0
31	9.625	.046	.6	1550.0
32	-5.350	.037	.6	1600.0
33	-18.621	.034	.6	1650.0
34	-30.143	.032	.6	1700.0
35	-39.240	.030	.6	1750.0
36	-45.731	.031	.6	1800.0
37	-49.711	.030	.5	1850.0
38	-51.097	.035	.5	1900.0
39	-50.035	.043	.5	1950.0
40	-46.858	.040	.5	2000.0
41	-41.707	.036	.5	2050.0
42	-35.164	.036	.5	2100.0
43	-27.497	.034	.5	2150.0
44	-18.986	.033	.5	2200.0
45	-10.027	.032	.4	2250.0
46	-0.951	.028	.4	2300.0
47	7.851	.024	.4	2350.0
48	16.282	.027	.4	2400.0
49	24.013	.025	.4	2450.0
50	30.730	.010	.4	2500.0

042 LI-W

BBELS 11   6.04- 1   S, 29MAR-65   1901-1911

LAGS= 50   N= 1600   DT= 0.2SEC

MEAN W= .6

K	COV	SP	PERIOD	FREQ(MCPS)
0	115.313	2.098	0	0
1	111.247	4.183	20.0	50.0
2	101.338	9.974	10.0	100.0
3	85.957	31.329	6.7	150.0
4	66.247	40.662	5.0	200.0
5	43.531	20.179	4.0	250.0
6	19.309	4.150	3.3	300.0
7	-4.919	1.308	2.9	350.0
8	-27.630	.283	2.5	400.0
9	-47.584	.194	2.2	450.0
10	-63.650	.111	2.0	500.0
11	-75.130	.098	1.8	550.0
12	-81.665	.057	1.7	600.0
13	-83.008	.053	1.5	650.0
14	-79.402	.041	1.4	700.0
15	-71.483	.041	1.3	750.0
16	-59.813	.031	1.3	800.0
17	-45.491	.028	1.2	850.0
18	-29.257	.028	1.1	900.0
19	-12.286	.028	1.1	950.0
20	4.357	.025	1.0	1000.0
21	19.922	.026	1.0	1050.0
22	33.573	.018	.9	1100.0
23	44.619	.015	.9	1150.0
24	52.782	.014	.8	1200.0
25	57.670	.014	.8	1250.0
26	59.298	.016	.8	1300.0
27	57.646	.020	.7	1350.0
28	53.044	.017	.7	1400.0
29	45.797	.013	.7	1450.0
30	36.443	.013	.7	1500.0
31	25.475	.014	.6	1550.0
32	13.694	.014	.6	1600.0
33	1.625	.012	.6	1650.0
34	-10.112	.010	.6	1700.0
35	-21.838	.010	.6	1750.0
36	-30.021	.015	.6	1800.0
37	-37.145	.020	.5	1850.0
38	-41.955	.016	.5	1900.0
39	-44.328	.011	.5	1950.0
40	-44.049	.008	.5	2000.0
41	-41.269	.009	.5	2050.0
42	-36.175	.012	.5	2100.0
43	-29.039	.014	.5	2150.0
44	-20.412	.013	.5	2200.0
45	-10.882	.012	.4	2250.0
46	-0.771	.012	.4	2300.0
47	9.089	.011	.4	2350.0
48	19.220	.010	.4	2400.0
49	26.191	.014	.4	2450.0
50	32.443	.009	.4	2500.0

043 CI-W

BBFLS 11 7.0M= 1 S, 29MAR-65 1928-1933

LAGS= 50 N= 1600 DT= 0.2SEC

MEAN W= 0.9

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	78.884	4.686		
1	75.389	6.482	20.0	50.0
2	69.662	9.308	10.0	100.0
3	61.160	22.883	6.6	150.0
4	50.644	22.545	5.0	200.0
5	38.354	8.256	4.0	250.0
6	25.066	1.743	3.3	300.0
7	11.254	.768	2.8	350.0
8	-2.188	.266	2.5	400.0
9	-14.497	.166	2.2	450.0
10	-24.599	.056	2.0	500.0
11	-32.451	.075	1.8	550.0
12	-38.129	.036	1.6	600.0
13	-41.713	.062	1.5	650.0
14	-42.508	.075	1.4	700.0
15	-40.730	.100	1.3	750.0
16	-36.868	.113	1.2	800.0
17	-31.130	.115	1.1	850.0
18	-23.858	.103	1.1	900.0
19	-15.491	.079	1.0	950.0
20	-6.561	.045	1.0	1000.0
21	2.526	.025	.9	1050.0
22	11.396	.017	.9	1100.0
23	19.650	.019	.8	1150.0
24	26.757	.026	.8	1200.0
25	32.724	.046	.8	1250.0
26	37.197	.058	.7	1300.0
27	40.144	.051	.7	1350.0
28	41.231	.036	.7	1400.0
29	40.662	.027	.6	1450.0
30	38.610	.024	.6	1500.0
31	35.028	.023	.6	1550.0
32	30.236	.025	.6	1600.0
33	24.450	.029	.6	1650.0
34	18.036	.031	.5	1700.0
35	11.302	.029	.5	1750.0
36	4.484	.027	.5	1800.0
37	-2.118	.024	.5	1850.0
38	-9.289	.022	.5	1900.0
39	-13.847	.026	.5	1950.0
40	-18.646	.030	.5	2000.0
41	-22.407	.029	.4	2050.0
42	-24.908	.025	.4	2100.0
43	-26.063	.027	.4	2150.0
44	-25.906	.026	.4	2200.0
45	-24.625	.022	.4	2250.0
46	-22.091	.023	.4	2300.0
47	-18.467	.030	.4	2350.0
48	-13.980	.036	.4	2400.0
49	-8.808	.036	.4	2450.0
50	-3.270	.017	.4	2500.0

044 LI-w

BBELS 11 5.59- 1 S, 29MAR-65 1934-1939

LAGS= 50 N= 1417 DT= 0.25SEC

MEAN W= -0.3

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	91.114	2.554		
1	88.184	6.378	20.0	50.0
2	80.498	11.624	10.0	100.0
3	68.793	22.380	6.6	150.0
4	53.988	25.673	5.0	200.0
5	37.121	14.965	4.0	250.0
6	19.300	5.055	3.3	300.0
7	1.715	1.423	2.8	350.0
8	-14.517	.286	2.5	400.0
9	-28.409	.142	2.2	450.0
10	-39.273	.094	2.0	500.0
11	-46.687	.081	1.8	550.0
12	-50.541	.045	1.6	600.0
13	-50.903	.042	1.5	650.0
14	-49.183	.040	1.4	700.0
15	-42.832	.041	1.3	750.0
16	-35.465	.042	1.2	800.0
17	-26.804	.036	1.1	850.0
18	-17.634	.022	1.1	900.0
19	-8.322	.021	1.0	950.0
20	.263	.022	1.0	1000.0
21	7.763	.017	.9	1050.0
22	13.970	.013	.9	1100.0
23	18.700	.011	.8	1150.0
24	21.905	.010	.8	1200.0
25	23.548	.009	.8	1250.0
26	23.753	.008	.7	1300.0
27	22.703	.006	.7	1350.0
28	20.572	.006	.7	1400.0
29	17.585	.008	.6	1450.0
30	13.943	.007	.6	1500.0
31	9.821	.006	.6	1550.0
32	5.433	.005	.6	1600.0
33	1.065	.004	.6	1650.0
34	-3.061	.004	.5	1700.0
35	-6.639	.004	.5	1750.0
36	-10.154	.005	.5	1800.0
37	-12.895	.005	.5	1850.0
38	-14.940	.005	.5	1900.0
39	-16.238	.004	.5	1950.0
40	-16.688	.004	.5	2000.0
41	-16.292	.004	.4	2050.0
42	-15.122	.003	.4	2100.0
43	-13.229	.003	.4	2150.0
44	-10.712	.004	.4	2200.0
45	-7.700	.005	.4	2250.0
46	-4.410	.004	.4	2300.0
47	-1.062	.003	.4	2350.0
48	2.212	.003	.4	2400.0
49	5.242	.003	.4	2450.0
50	7.916	.001	.4	2500.0

045 C-I-ω

BBFLS 11 6.5M- 1 S. 29MAR-65 1942-1947

LAGS= 50 N= 1459 DT= 0.2SEC

MEAN W= .5

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	79.560	3.623		
1	76.340	8.202	20.0	50.0
2	70.483	11.974	10.0	100.0
3	61.596	18.179	6.6	150.0
4	50.314	20.190	5.0	200.0
5	37.333	12.143	4.0	250.0
6	23.475	2.877	3.3	300.0
7	9.597	.366	2.8	350.0
8	-3.509	.290	2.5	400.0
9	-15.134	.128	2.2	450.0
10	-24.660	.088	2.0	500.0
11	-31.688	.069	1.8	550.0
12	-35.961	.055	1.6	600.0
13	-37.497	.033	1.5	650.0
14	-36.438	.041	1.4	700.0
15	-33.092	.042	1.3	750.0
16	-27.863	.032	1.2	800.0
17	-21.243	.020	1.1	850.0
18	-13.827	.018	1.1	900.0
19	-4.247	.016	1.0	950.0
20	.946	.013	1.0	1000.0
21	7.291	.013	.9	1050.0
22	12.392	.015	.9	1100.0
23	15.981	.012	.8	1150.0
24	17.989	.010	.8	1200.0
25	18.404	.008	.8	1250.0
26	17.285	.007	.7	1300.0
27	14.899	.008	.7	1350.0
28	11.482	.007	.7	1400.0
29	7.485	.005	.6	1450.0
30	3.324	.004	.6	1500.0
31	-.605	.003	.6	1550.0
32	-3.983	.004	.6	1600.0
33	-6.573	.004	.6	1650.0
34	-8.256	.003	.5	1700.0
35	-9.946	.002	.5	1750.0
36	-8.654	.003	.5	1800.0
37	-7.499	.003	.5	1850.0
38	-5.677	.002	.5	1900.0
39	-3.337	.002	.5	1950.0
40	-.682	.003	.5	2000.0
41	2.001	.003	.4	2050.0
42	4.472	.002	.4	2100.0
43	6.569	.002	.4	2150.0
44	9.168	.002	.4	2200.0
45	9.139	.002	.4	2250.0
46	9.376	.001	.4	2300.0
47	8.846	.002	.4	2350.0
48	7.657	.003	.4	2400.0
49	5.913	.003	.4	2450.0

046 LI-W

BBELS 11   3.0M- 1   S. 29MAR-65   1950-1955

LAGS= 50   N= 1500   DT= 0.2SEC

MEAN W= -0.1

K	COV	SP	PERIOD	FREQ(MCPS)
0	69.969	4.458		
1	68.156	6.958	20.0	50.0
2	63.389	9.270	10.0	100.0
3	56.109	19.348	6.6	150.0
4	46.744	19.438	5.0	200.0
5	35.892	7.996	4.0	250.0
6	24.111	1.474	3.3	300.0
7	12.044	.329	2.8	350.0
8	.329	.094	2.5	400.0
9	-10.465	.044	2.2	450.0
10	-19.762	.058	2.0	500.0
11	-27.173	.059	1.8	550.0
12	-32.410	.051	1.6	600.0
13	-35.261	[illegible]	1.5	650.0
14	-35.722	[illegible]	1.4	700.0
15	-33.474	.023	1.3	750.0
16	-3[illegible].344	.014	1.2	800.0
17	-25.[illegible]84	.014	1.1	850.0
18	-18.[illegible]04	.015	1.1	900.0
19	-11.319	.017	1.0	950.0
20	-3.666	.013	1.0	1000.0
21	3.924	.010	.9	1050.0
22	11.031	.007	.9	1100.0
23	17.300	.006	.8	1150.0
24	22.470	.004	.8	1200.0
25	26.415	.004	.8	1250.0
26	29.076	.006	.7	1300.0
27	31.239	.008	.7	1350.0
28	30.146	.006	.7	1400.0
29	28.844	.004	.6	1450.0
30	26.463	.003	.6	1500.0
31	23.183	.003	.6	1550.0
32	19.218	.003	.6	1600.0
33	14.793	.003	.6	1650.0
34	10.132	.004	.5	1700.0
35	5.455	.004	.5	1750.0
36	.483	.003	.5	1800.0
37	-3.122	.003	.5	1850.0
38	-6.755	.003	.5	1900.0
39	-9.807	.004	.5	1950.0
40	-12.166	.003	.5	2000.0
41	-13.757	.002	.4	2050.0
42	-14.577	.002	.4	2100.0
43	-14.619	.001	.4	2150.0
44	-13.931	.001	.4	2200.0
45	-12.578	.001	.4	2250.0
46	-10.656	.002	.4	2300.0
47	-8.289	.002	.4	2350.0
48	-5.609	.002	.4	2400.0
49	-2.752	.001	.4	2450.0
50	.157	.000	.4	2500.0

BELS= 44

047 CI-ω

BBELS 11 2.0M-II S, 29MAR-65 2000-2005

LAGS= 50 N= 1360 DT= 0.2SEC

MEAN W= 0.1

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	414.830	4.351	0	0
1	396.907	9.598	20.0	50.0
2	347.514	21.216	10.0	100.0
3	272.872	77.550	6.7	150.0
4	181.098	126.099	5.0	200.0
5	81.292	97.027	4.0	250.0
6	-17.334	46.813	3.3	300.0
7	-106.819	18.546	2.9	350.0
8	-180.800	6.274	2.5	400.0
9	-235.019	3.020	2.2	450.0
10	-267.298	1.487	2.0	500.0
11	-277.483	.727	1.8	550.0
12	-267.228	.458	1.7	600.0
13	-239.566	.360	1.5	650.0
14	-198.522	.230	1.4	700.0
15	-149.634	.150	1.3	750.0
16	-94.479	.099	1.3	800.0
17	-40.253	.081	1.2	850.0
18	10.576	.070	1.1	900.0
19	55.221	.069	1.1	950.0
20	91.591	.053	1.0	1000.0
21	118.594	.048	1.0	1050.0
22	135.837	.043	.9	1100.0
23	143.622	.038	.9	1150.0
24	142.872	.030	.8	1200.0
25	134.997	.033	.8	1250.0
26	121.543	.033	.8	1300.0
27	103.973	.028	.7	1350.0
28	83.647	.023	.7	1400.0
29	61.718	.020	.7	1450.0
30	39.080	.019	.7	1500.0
31	16.381	.021	.6	1550.0
32	-5.847	.018	.6	1600.0
33	-27.200	.015	.6	1650.0
34	-46.884	.014	.6	1700.0
35	-64.342	.014	.6	1750.0
36	-78.984	.012	.6	1800.0
37	-90.166	.013	.5	1850.0
38	-97.416	.012	.5	1900.0
39	-100.433	.009	.5	1950.0
40	-99.169	.009	.5	2000.0
41	-93.734	.009	.5	2050.0
42	-84.487	.009	.5	2100.0
43	-72.221	.010	.5	2150.0
44	-57.791	.010	.5	2200.0
45	-42.018	.009	.4	2250.0
46	-25.652	.010	.4	2300.0
47	-9.374	.011	.4	2350.0
48	6.447	.010	.4	2400.0
49	21.411	.010	.4	2450.0
50	35.327	.005	.4	2500.0

048 LI-ω

BBFLS 11 0.5M-V S, 23MAR-65 2009-2013

LAGS= 50 N= 847 DT= 0.2SEC

MEAN W= -2.5

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	777.121	6.480	0	0
1	723.614	11.218	20.0	50.0
2	586.755	24.278	10.0	100.0
3	389.675	89.060	6.7	150.0
4	159.637	140.513	5.0	200.0
5	-48.851	161.653	4.0	250.0
6	-220.441	144.464	3.3	300.0
7	-341.932	91.941	2.9	350.0
8	-409.531	41.046	2.5	400.0
9	-426.573	29.801	2.2	450.0
10	-401.323	16.891	2.0	500.0
11	-344.635	8.254	1.8	550.0
12	-269.917	5.671	1.7	600.0
13	-185.710	3.140	1.5	650.0
14	-103.380	1.549	1.4	700.0
15	-27.490	1.554	1.3	750.0
16	37.503	1.281	1.3	800.0
17	88.130	.809	1.2	850.0
18	121.660	.449	1.1	900.0
19	136.312	.244	1.1	950.0
20	133.605	.150	1.0	1000.0
21	117.267	.163	1.0	1050.0
22	91.834	.177	.9	1100.0
23	61.535	.157	.9	1150.0
24	31.070	.113	.8	1200.0
25	4.854	.117	.8	1250.0
26	-13.238	.103	.8	1300.0
27	-19.414	.087	.7	1350.0
28	-11.658	.071	.7	1400.0
29	8.868	.056	.7	1450.0
30	37.148	.044	.7	1500.0
31	72.304	.060	.6	1550.0
32	99.476	.067	.6	1600.0
33	113.196	.054	.6	1650.0
34	110.052	.043	.6	1700.0
35	89.923	.042	.6	1750.0
36	56.694	.034	.6	1800.0
37	16.616	.027	.5	1850.0
38	-23.870	.026	.5	1900.0
39	-67.143	.025	.5	1950.0
40	-89.561	.026	.5	2000.0
41	-111.142	.024	.5	2050.0
42	-124.391	.018	.5	2100.0
43	-129.889	.020	.5	2150.0
44	-127.730	.022	.5	2200.0
45	-116.915	.020	.4	2250.0
46	-103.430	.016	.4	2300.0
47	-81.331	.020	.4	2350.0
48	-53.500	.020	.4	2400.0
49	-21.310	.015	.4	2450.0
50	12.530	.006	.4	2500.0

049 C-D-w

BBELS 11 0.5M-III S. 29MAR-65 2158-2203

LAGS= 50 N= 1007 DT= 0.2SEC

MEAN W= -3.0

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	741.748	2.479	0	0
1	677.319	6.012	20.0	50.0
2	514.356	18.287	10.0	100.0
3	299.323	69.187	6.7	150.0
4	78.575	135.646	5.0	200.0
5	-113.362	140.961	4.0	250.0
6	-256.758	108.637	3.3	300.0
7	-345.417	91.561	2.9	350.0
8	-380.931	64.882	2.5	400.0
9	-372.470	35.005	2.2	450.0
10	-332.207	21.309	2.0	500.0
11	-272.291	13.628	1.8	550.0
12	-202.854	9.523	1.7	600.0
13	-134.371	7.406	1.5	650.0
14	-73.589	4.429	1.4	700.0
15	-24.358	2.540	1.3	750.0
16	11.958	2.118	1.3	800.0
17	36.664	1.735	1.2	850.0
18	52.050	1.218	1.1	900.0
19	63.505	.840	1.1	950.0
20	74.580	.597	1.0	1000.0
21	88.316	.537	1.0	1050.0
22	103.727	.506	.9	1100.0
23	116.772	.369	.9	1150.0
24	123.466	.251	.8	1200.0
25	122.000	.205	.8	1250.0
26	112.406	.180	.8	1300.0
27	95.925	.122	.7	1350.0
28	71.762	.090	.7	1400.0
29	41.554	.114	.7	1450.0
30	7.132	.130	.7	1500.0
31	-30.303	.112	.6	1550.0
32	-66.669	.113	.6	1600.0
33	-96.120	.115	.6	1650.0
34	-113.207	.084	.6	1700.0
35	-114.799	.072	.6	1750.0
36	-100.438	.081	.6	1800.0
37	-74.838	.064	.5	1850.0
38	-43.714	.041	.5	1900.0
39	-12.693	.041	.5	1950.0
40	13.944	.060	.5	2000.0
41	33.328	.068	.5	2050.0
42	44.609	.054	.5	2100.0
43	47.642	.039	.5	2150.0
44	44.770	.034	.5	2200.0
45	38.759	.029	.4	2250.0
46	31.435	.037	.4	2300.0
47	23.520	.060	.4	2350.0
48	14.823	.065	.4	2400.0
49	4.451	.054	.4	2450.0
50	-8.969	.025	.4	2500.0

050 LI-w

BBFLS 11 2.0M-III S. 29MAR-65 2204-2211

LAGS= 50 N= 1938 DT= 0.2SEC

MEAN W= -0.1

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	346.576	2.051	0	0
1	330.744	3.715	20.0	50.0
2	287.268	21.871	10.0	100.0
3	222.609	73.077	6.7	150.0
4	144.386	99.335	5.0	200.0
5	60.980	71.435	4.0	250.0
6	-19.657	37.509	3.3	300.0
7	-90.774	18.654	2.9	350.0
8	-147.662	9.702	2.5	400.0
9	-187.581	4.880	2.2	450.0
10	-210.023	1.644	2.0	500.0
11	-216.317	.523	1.8	550.0
12	-208.788	.409	1.7	600.0
13	-190.396	.368	1.5	650.0
14	-164.165	.262	1.4	700.0
15	-132.938	.168	1.3	750.0
16	-99.200	.104	1.3	800.0
17	-64.682	.113	1.2	850.0
18	-30.802	.110	1.1	900.0
19	1.363	.090	1.1	950.0
20	30.596	.064	1.0	1000.0
21	55.770	.058	1.0	1050.0
22	75.876	.045	.9	1100.0
23	90.100	.035	.9	1150.0
24	98.145	.028	.8	1200.0
25	100.449	.032	.8	1250.0
26	97.923	.032	.8	1300.0
27	91.466	.029	.7	1350.0
28	82.138	.022	.7	1400.0
29	70.969	.020	.7	1450.0
30	58.809	.021	.7	1500.0
31	46.300	.019	.6	1550.0
32	33.766	.014	.6	1600.0
33	21.340	.013	.6	1650.0
34	8.951	.012	.6	1700.0
35	-3.216	.011	.6	1750.0
36	-14.894	.009	.6	1800.0
37	-25.792	.008	.5	1850.0
38	-35.434	.008	.5	1900.0
39	-43.336	.009	.5	1950.0
40	-49.274	.010	.5	2000.0
41	-53.210	.010	.5	2050.0
42	-55.040	.009	.5	2100.0
43	-54.949	.007	.5	2150.0
44	-53.212	.004	.5	2200.0
45	-49.816	.005	.4	2250.0
46	-44.720	.006	.4	2300.0
47	-37.907	.006	.4	2350.0
48	-29.378	.005	.4	2400.0
49	-19.255	.004	.4	2450.0
50	-7.839	.002	.4	2500.0

051 CI-W

BBFLS 11 2.0M-III S. 30MAR-65 0010-0015

LAGS= 50 N= 1425 DT= 0.2SEC

MEAN W= -0.8

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	286.302	2.831	0	0
1	274.152	6.650	20.0	50.0
2	241.679	27.105	10.0	100.0
3	194.059	70.887	6.7	150.0
4	136.745	82.425	5.0	200.0
5	75.427	49.300	4.0	250.0
6	15.261	20.780	3.3	300.0
7	-39.518	10.506	2.9	350.0
8	-85.999	6.825	2.5	400.0
9	-122.463	3.752	2.2	450.0
10	-148.272	1.729	2.0	500.0
11	-163.622	.914	1.8	550.0
12	-169.339	.586	1.7	600.0
13	-166.479	.387	1.5	650.0
14	-156.174	.251	1.4	700.0
15	-139.498	.207	1.3	750.0
16	-117.763	.153	1.3	800.0
17	-92.297	.139	1.2	850.0
18	-64.485	.120	1.1	900.0
19	-35.649	.093	1.1	950.0
20	-7.082	.066	1.0	1000.0
21	19.679	.057	1.0	1050.0
22	43.270	.050	.9	1100.0
23	62.574	.048	.9	1150.0
24	76.899	.051	.8	1200.0
25	85.756	.043	.8	1250.0
26	89.300	.030	.8	1300.0
27	87.920	.030	.7	1350.0
28	82.488	.028	.7	1400.0
29	73.932	.023	.7	1450.0
30	63.189	.021	.7	1500.0
31	51.386	.020	.6	1550.0
32	39.391	.016	.6	1600.0
33	27.549	.017	.6	1650.0
34	16.234	.016	.6	1700.0
35	5.734	.014	.6	1750.0
36	-3.626	.011	.6	1800.0
37	-11.918	.011	.5	1850.0
38	-19.177	.013	.5	1900.0
39	-25.338	.011	.5	1950.0
40	-30.716	.010	.5	2000.0
41	-35.398	.011	.5	2050.0
42	-39.468	.009	.5	2100.0
43	-42.946	.007	.5	2150.0
44	-45.317	.008	.5	2200.0
45	-46.262	.009	.4	2250.0
46	-45.517	.009	.4	2300.0
47	-42.904	.007	.4	2350.0
48	-38.431	.005	.4	2400.0
49	-32.205	.006	.4	2450.0
50	-24.598	.004	.4	2500.0

052 CI-W

BBFLS 11 0.5M-VII S, 30MAR-65 0022-0027

LAGS= 50 N= 1168 DT= 0.2SEC

MEAN W= -3.7

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	760.948	3.578	0	0
1	701.446	7.771	20.0	50.0
2	551.142	45.754	10.0	100.0
3	354.905	131.150	6.7	150.0
4	156.193	162.117	5.0	200.0
5	-14.536	112.036	4.0	250.0
6	-141.059	69.918	3.3	300.0
7	-220.816	59.363	2.9	350.0
8	-261.377	51.500	2.5	400.0
9	-275.454	41.168	2.2	450.0
10	-275.911	29.476	2.0	500.0
11	-271.467	15.113	1.8	550.0
12	-265.433	8.350	1.7	600.0
13	-257.916	7.310	1.5	650.0
14	-247.697	4.754	1.4	700.0
15	-231.500	2.429	1.3	750.0
16	-207.189	1.721	1.3	800.0
17	-171.722	1.317	1.2	850.0
18	-124.196	.918	1.1	900.0
19	-67.804	.838	1.1	950.0
20	-9.348	.810	1.0	1000.0
21	47.375	.616	1.0	1050.0
22	92.950	.414	.9	1100.0
23	125.440	.347	.9	1150.0
24	145.061	.284	.8	1200.0
25	154.103	.224	.8	1250.0
26	155.693	.180	.8	1300.0
27	157.078	.153	.7	1350.0
28	156.318	.136	.7	1400.0
29	151.373	.116	.7	1450.0
30	137.981	.087	.7	1500.0
31	113.696	.091	.6	1550.0
32	80.170	.102	.6	1600.0
33	43.566	.087	.6	1650.0
34	16.557	.057	.6	1700.0
35	-13.969	.040	.6	1750.0
36	-24.448	.038	.6	1800.0
37	-33.606	.046	.5	1850.0
38	-33.049	.054	.5	1900.0
39	-31.318	.057	.5	1950.0
40	-31.840	.050	.5	2000.0
41	-36.233	.040	.5	2050.0
42	-44.302	.037	.5	2100.0
43	-55.004	.036	.5	2150.0
44	-66.817	.036	.5	2200.0
45	-78.094	.043	.4	2250.0
46	-86.762	.048	.4	2300.0
47	-89.962	.047	.4	2350.0
48	-84.400	.043	.4	2400.0
49	-69.203	.036	.4	2450.0
50	-47.068	.015	.4	2500.0

053 LI-ω

BBFLS 11 0.5M-VIII S. 30MAR-65 0440-0445

LAGS= 50 N= 1401 DT= 0.2SEC

MEAN W= 1.5

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	337.292	5.826	0	0
1	315.151	11.418	20.0	50.0
2	259.196	27.536	10.0	100.0
3	182.996	64.523	6.7	150.0
4	99.582	71.978	5.0	200.0
5	22.042	41.436	4.0	250.0
6	-39.052	21.112	3.3	300.0
7	-78.637	24.628	2.9	350.0
8	-97.039	30.660	2.5	400.0
9	-99.182	21.671	2.2	450.0
10	-92.808	8.402	2.0	500.0
11	-85.761	2.371	1.8	550.0
12	-83.440	1.103	1.7	600.0
13	-88.056	.811	1.5	650.0
14	-99.157	.462	1.4	700.0
15	-109.652	.377	1.3	750.0
16	-115.808	.317	1.3	800.0
17	-114.708	.291	1.2	850.0
18	-100.812	.266	1.1	900.0
19	-74.384	.236	1.1	950.0
20	-39.216	.194	1.0	1000.0
21	2.575	.163	1.0	1050.0
22	41.883	.155	.9	1100.0
23	74.117	.154	.9	1150.0
24	95.403	.126	.8	1200.0
25	104.440	.104	.8	1250.0
26	102.095	.090	.8	1300.0
27	91.120	.083	.7	1350.0
28	75.494	.086	.7	1400.0
29	58.982	.084	.7	1450.0
30	44.391	.078	.7	1500.0
31	33.113	.067	.6	1550.0
32	25.140	.050	.6	1600.0
33	19.768	.043	.6	1650.0
34	15.796	.042	.6	1700.0
35	11.947	.044	.6	1750.0
36	7.299	.038	.6	1800.0
37	1.188	.027	.5	1850.0
38	-6.199	.021	.5	1900.0
39	-14.903	.021	.5	1950.0
40	-24.844	.022	.5	2000.0
41	-35.135	.024	.5	2050.0
42	-44.427	.024	.5	2100.0
43	-51.660	.019	.5	2150.0
44	-55.821	.015	.5	2200.0
45	-55.739	.014	.4	2250.0
46	-51.210	.016	.4	2300.0
47	-43.277	.019	.4	2350.0
48	-32.948	.019	.4	2400.0
49	-21.706	.017	.4	2450.0
50	-11.511	.008	.4	2500.0

054 LI-w

BBFLS 11 .54-II S, 30MAR-65 0810-0815

LAGS= 50 N= 1490 DT= 0.2SEC

MEAN W= -4.6

K	COV	SP	PERIOD	FREQ(MCPS)
0	507.732	2.331	0	0
1	456.877	9.327	20.0	50.0
2	327.560	23.752	10.0	100.0
3	157.065	31.497	6.7	150.0
4	-15.819	33.396	5.0	200.0
5	-157.277	61.868	4.0	250.0
6	-245.476	94.334	3.3	300.0
7	-277.776	90.283	2.9	350.0
8	-256.667	65.214	2.5	400.0
9	-196.148	41.071	2.2	450.0
10	-115.376	22.425	2.0	500.0
11	-32.892	11.140	1.8	550.0
12	36.247	6.212	1.7	600.0
13	82.383	3.885	1.5	650.0
14	102.605	2.598	1.4	700.0
15	99.503	1.979	1.3	750.0
16	78.441	1.251	1.3	800.0
17	46.512	.861	1.2	850.0
18	11.301	.797	1.1	900.0
19	-21.242	.585	1.1	950.0
20	-47.742	.347	1.0	1000.0
21	-66.935	.290	1.0	1050.0
22	-78.314	.218	.9	1100.0
23	-82.554	.166	.9	1150.0
24	-79.806	.172	.8	1200.0
25	-70.585	.162	.8	1250.0
26	-55.908	.133	.8	1300.0
27	-37.735	.129	.7	1350.0
28	-18.013	.113	.7	1400.0
29	2.118	.100	.7	1450.0
30	21.043	.123	.7	1500.0
31	38.155	.129	.6	1550.0
32	51.714	.105	.6	1600.0
33	59.058	.093	.6	1650.0
34	58.982	.078	.6	1700.0
35	53.405	.061	.6	1750.0
36	45.178	.049	.6	1800.0
37	35.901	.043	.5	1850.0
38	26.624	.038	.5	1900.0
39	17.707	.034	.5	1950.0
40	8.833	.037	.5	2000.0
41	.273	.042	.5	2050.0
42	-7.366	.038	.5	2100.0
43	-13.905	.032	.5	2150.0
44	-18.924	.036	.5	2200.0
45	-21.015	.040	.4	2250.0
46	-19.524	.033	.4	2300.0
47	-13.418	.025	.4	2350.0
48	-3.250	.024	.4	2400.0
49	9.558	.024	.4	2450.0
50	23.203	.012	.4	2500.0

055 LI-W

BBELS 11 2.0M-I S. 30MAR-65 0826-0831

LAGS= 50 N= 1295 DT= 0.2SEC

MEAN W= 1.8

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	309.193	4.146	0	0
1	289.521	10.613	20.0	50.0
2	235.557	26.617	10.0	100.0
3	160.064	36.966	6.7	150.0
4	72.463	29.240	5.0	200.0
5	-13.165	45.620	4.0	250.0
6	-85.165	69.797	3.3	300.0
7	-135.036	52.559	2.9	350.0
8	-158.433	20.469	2.5	400.0
9	-155.494	6.223	2.2	450.0
10	-130.273	2.524	2.0	500.0
11	-89.655	1.408	1.8	550.0
12	-41.977	.837	1.7	600.0
13	3.860	.400	1.5	650.0
14	43.366	.286	1.4	700.0
15	62.580	.237	1.3	750.0
16	68.196	.204	1.3	800.0
17	57.684	.157	1.2	850.0
18	33.599	.098	1.1	900.0
19	.724	.064	1.1	950.0
20	-34.802	.060	1.0	1000.0
21	-67.032	.060	1.0	1050.0
22	-91.025	.063	.9	1100.0
23	-103.260	.070	.9	1150.0
24	-102.258	.056	.8	1200.0
25	-88.778	.032	.8	1250.0
26	-65.137	.022	.8	1300.0
27	-34.787	.023	.7	1350.0
28	-1.659	.026	.7	1400.0
29	30.358	.027	.7	1450.0
30	57.858	.024	.7	1500.0
31	78.232	.019	.6	1550.0
32	90.190	.019	.6	1600.0
33	93.631	.023	.6	1650.0
34	88.977	.020	.6	1700.0
35	77.660	.014	.6	1750.0
36	61.813	.013	.6	1800.0
37	43.735	.011	.5	1850.0
38	26.047	.012	.5	1900.0
39	10.627	.015	.5	1950.0
40	-1.002	.015	.5	2000.0
41	-8.275	.013	.5	2050.0
42	-11.251	.013	.5	2100.0
43	-10.898	.010	.5	2150.0
44	-8.358	.008	.5	2200.0
45	-4.893	.010	.4	2250.0
46	-1.489	.010	.4	2300.0
47	1.227	.011	.4	2350.0
48	2.893	.011	.4	2400.0
49	3.099	.010	.4	2450.0
50	1.831	.006	.4	2500.0

056 CI-ω

BBFLS 11 2.0M-III S, 30MAR-65 1023-1030

LAGS= 50 N= 1537 DT= 0.2SEC

MEAN W= -0.8

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	473.999	2.736	0	0
1	450.620	28.491	20.0	50.0
2	388.098	78.579	10.0	100.0
3	297.198	74.918	6.7	150.0
4	190.044	40.201	5.0	200.0
5	79.757	77.992	4.0	250.0
6	-21.059	87.315	3.3	300.0
7	-102.587	48.605	2.9	350.0
8	-158.236	14.568	2.5	400.0
9	-185.166	3.953	2.2	450.0
10	-184.244	2.147	2.0	500.0
11	-160.390	1.084	1.8	550.0
12	-121.374	.760	1.7	600.0
13	-75.640	.652	1.5	650.0
14	-31.939	.535	1.4	700.0
15	2.014	.394	1.3	750.0
16	20.621	.230	1.3	800.0
17	21.791	.198	1.2	850.0
18	6.105	.200	1.1	900.0
19	-23.342	.180	1.1	950.0
20	-61.933	.135	1.0	1000.0
21	-104.079	.086	1.0	1050.0
22	-144.157	.074	.9	1100.0
23	-176.652	.067	.9	1150.0
24	-197.953	.066	.8	1200.0
25	-202.573	.068	.8	1250.0
26	-192.685	.075	.8	1300.0
27	-168.983	.073	.7	1350.0
28	-134.387	.065	.7	1400.0
29	-93.049	.051	.7	1450.0
30	-48.888	.037	.7	1500.0
31	-5.765	.030	.6	1550.0
32	33.310	.030	.6	1600.0
33	66.399	.028	.6	1650.0
34	92.499	.026	.6	1700.0
35	111.270	.026	.6	1750.0
36	123.306	.025	.6	1800.0
37	129.757	.020	.5	1850.0
38	132.116	.020	.5	1900.0
39	131.993	.019	.5	1950.0
40	130.424	.015	.5	2000.0
41	127.804	.012	.5	2050.0
42	123.793	.012	.5	2100.0
43	117.878	.012	.5	2150.0
44	109.775	.011	.5	2200.0
45	99.326	.012	.4	2250.0
46	86.572	.017	.4	2300.0
47	72.131	.018	.4	2350.0
48	56.586	.014	.4	2400.0
49	40.212	.012	.4	2450.0
50	23.890	.006	.4	2500.0

057A CI-ω

BBELS 11 0.5M-[illegible] S, 30MAR-65 1036-1040

LAGS= 50 N= 1001 DT= 0.2SEC

MEAN W= -5.1

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	1264.869	3.675	0	0
1	1162.878	23.508	20.0	50.0
2	894.477	70.054	10.0	100.0
3	526.241	74.720	6.7	150.0
4	130.937	81.648	5.0	200.0
5	-231.703	255.666	4.0	250.0
6	-518.107	360.171	3.3	300.0
7	-703.123	203.721	2.9	350.0
8	-777.674	66.604	2.5	400.0
9	-746.592	38.948	2.2	450.0
10	-625.742	26.585	2.0	500.0
11	-438.751	20.275	1.8	550.0
12	-214.240	12.531	1.7	600.0
13	17.707	7.155	1.5	650.0
14	228.741	4.372	1.4	700.0
15	394.564	3.167	1.3	750.0
16	495.963	2.914	1.3	800.0
17	520.243	2.318	1.2	850.0
18	463.033	1.395	1.1	900.0
19	333.507	.831	1.1	950.0
20	152.144	.723	1.0	1000.0
21	-53.914	.639	1.0	1050.0
22	-253.959	.446	.9	1100.0
23	-421.266	.378	.9	1150.0
24	-536.908	.375	.8	1200.0
25	-589.292	.255	.8	1250.0
26	-574.612	.164	.8	1300.0
27	-495.604	.154	.7	1350.0
28	-362.500	.145	.7	1400.0
29	-193.774	.129	.7	1450.0
30	-11.925	.119	.7	1500.0
31	162.813	.098	.6	1550.0
32	312.375	.065	.6	1600.0
33	422.093	.058	.6	1650.0
34	480.335	.074	.6	1700.0
35	482.791	.079	.6	1750.0
36	431.636	.061	.6	1800.0
37	335.389	.036	.5	1850.0
38	208.035	.038	.5	1900.0
39	69.282	.051	.5	1950.0
40	-62.993	.052	.5	2000.0
41	-166.182	.049	.5	2050.0
42	-227.857	.046	.5	2100.0
43	-242.150	.043	.5	2150.0
44	-210.079	.045	.5	2200.0
45	-140.969	.054	.4	2250.0
46	-49.815	.054	.4	2300.0
47	45.188	.051	.4	2350.0
48	126.441	.057	.4	2400.0
49	179.015	.053	.4	2450.0
50	195.336	.023	.4	2500.0

057 B   CI-W

BBELS 11   0.5M-DB S. 30MAR-65   1040-1047

LAGS= 50 N= 1070   DT= 0.2SEC

MEAN W= -2.9

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	1133.094	6.308	0	0
1	1044.294	35.400	20.0	50.0
2	823.930	87.064	10.0	100.0
3	516.744	75.790	6.7	150.0
4	179.237	76.325	5.0	200.0
5	-135.392	224.779	4.0	250.0
6	-391.725	294.115	3.3	300.0
7	-553.516	177.039	2.9	350.0
8	-641.891	69.946	2.5	400.0
9	-622.769	28.440	2.2	450.0
10	-532.278	13.671	2.0	500.0
11	-371.536	10.176	1.8	550.0
12	-173.123	8.729	1.7	600.0
13	31.224	7.551	1.5	650.0
14	210.575	4.770	1.4	700.0
15	334.340	2.871	1.3	750.0
16	402.108	1.945	1.3	800.0
17	395.392	1.219	1.2	850.0
18	325.846	.787	1.1	900.0
19	202.394	.608	1.1	950.0
20	62.909	.484	1.0	1000.0
21	-90.488	.461	1.0	1050.0
22	-233.900	.391	.9	1100.0
23	-351.605	.362	.9	1150.0
24	-433.595	.356	.8	1200.0
25	-473.737	.340	.8	1250.0
26	-469.450	.264	.8	1300.0
27	-423.163	.256	.7	1350.0
28	-339.577	.262	.7	1400.0
29	-230.157	.202	.7	1450.0
30	-107.285	.171	.7	1500.0
31	16.436	.162	.6	1550.0
32	129.507	.135	.6	1600.0
33	222.037	.140	.6	1650.0
34	288.646	.156	.6	1700.0
35	324.740	.146	.6	1750.0
36	340.769	.123	.6	1800.0
37	325.450	.122	.5	1850.0
38	285.552	.128	.5	1900.0
39	226.084	.128	.5	1950.0
40	153.804	.103	.5	2000.0
41	78.474	.080	.5	2050.0
42	10.582	.084	.5	2100.0
43	-41.737	.079	.5	2150.0
44	-75.665	.052	.5	2200.0
45	-88.659	.048	.4	2250.0
46	-80.575	.066	.4	2300.0
47	-54.397	.069	.4	2350.0
48	-15.843	.069	.4	2400.0
49	29.751	.080	.4	2450.0
50	76.887	.041	.4	2500.0

058 LI-ω

HBFLS 11 0.5M-XI S. 30MAR-65 1129-1131

LAGS= 50 N= 768 DT= 0.2SEC

MEAN W=

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	952.3	67.8		
1	903.7	156.7		
2	779.2	154.7		
3	611.4	104.2		
4	433.5	85.5		
5	273.1	102.3		
6	146.1	90.8		
7	58.4	65.0		
8	9.6	49.2		
9	-4.9	29.8		
10	3.7	14.9		
11	24.4	8.7		
12	47.8	6.3		
13	67.3	4.3		
14	79.2	3.0		
15	80.9	1.7		
16	71.5	1.0		
17	52.8	1.0		
18	29.9	1.0		
19	7.3	.7		
20	-13.2	.5		
21	-31.6	.3		
22	-48.5	.1		
23	-66.9	.0		
24	-86.9	.1		
25	-108.1	.1		
26	-128.2	.1		
27	-145.1	.1		
28	-157.1	.0		
29	-162.6	.0		
30	-160.3	.1		
31	-149.0	.1		
32	-127.2	.0		
33	-97.9	.0		
34	-66.6	.0		
35	-37.6	.0		
36	-12.9	.0		
37	5.7	.0		
38	17.9	.0		
39	22.9	.0		
40	20.1	.0		
41	9.8	.0		
42	-6.6	.0		
43	-29.1	.0		
44	-55.6	.0		
45	-83.7	.0		
46	-109.7	.0		
47	-128.8	.0		
48	-137.0	.0		
49	-131.8	.0		
50	-114.4	.0		

059 LI-W

BBELS 11 2.0M-VIII S. 30MAR-65 1134-1137

LAGS= 50 N= 751 DT= 0.2SEC

MEAN = 2.9

K	COV	SP	PERIOD	FREQ(MCPS)
0	485.6	41.0		
1	466.2	73.9	20.0	50.0
2	435.5	73.6	10.0	100.0
3	342.9	65.6	6.6	150.0
4	258.1	51.4	5.0	200.0
5	171.9	62.3	4.0	250.0
6	93.1	57.8	3.3	300.0
7	28.7	31.1	2.8	350.0
8	-16.4	13.0	2.5	400.0
9	-41.6	6.4	2.2	450.0
10	-48.7	3.2	2.0	500.0
11	-41.1	1.3	1.8	550.0
12	-23.4	.7	1.6	600.0
13	-.9	.6	1.5	650.0
14	21.3	.5	1.4	700.0
15	39.4	.3	1.3	750.0
16	50.7	.2	1.2	800.0
17	54.7	.2	1.1	850.0
18	51.3	.1	1.1	900.0
19	41.1	.1	1.0	950.0
20	25.4	.1	1.0	1000.0
21	5.9	.1	.9	1050.0
22	-14.3	.1	.9	1100.0
23	-32.8	.0	.8	1150.0
24	-47.7	.0	.8	1200.0
25	-57.2	.0	.8	1250.0
26	-59.9	.0	.7	1300.0
27	-54.8	.0	.7	1350.0
28	-42.7	.0	.7	1400.0
29	-25.2	.0	.6	1450.0
30	-4.5	.0	.6	1500.0
31	17.6	.0	.6	1550.0
32	39.7	.0	.6	1600.0
33	60.1	.0	.6	1650.0
34	76.3	.0	.5	1700.0
35	88.4	.0	.5	1750.0
36	96.4	.0	.5	1800.0
37	100.4	.0	.5	1850.0
38	101.5	.0	.5	1900.0
39	99.9	.0	.5	1950.0
40	95.8	.0	.5	2000.0
41	89.6	.0	.4	2050.0
42	81.9	.0	.4	2100.0
43	72.8	.0	.4	2150.0
44	62.4	.0	.4	2200.0
45	50.7	.0	.4	2250.0
46	38.1	.0	.4	2300.0
47	25.4	.0	.4	2350.0
48	13.6	.0	.4	2400.0
49	3.5	.0	.4	2450.0
50	-3.5	.0	.4	2500.0

060 LI-w

BBFLS 11 2.5M-II S. 30MAR-65 1140-1144

LAGS= 50 N= 1445 DT= 0.2SEC

MEAN W= --

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	475.5	4.2		
1	450.8	22.5		
2	389.9	57.9		
3	299.4	60.9		
4	189.7	71.5		
5	73.5	117.3		
6	-37.3	92.0		
7	-132.0	30.5		
8	-202.3	7.7		
9	-243.5	3.5		
10	-254.5	1.7		
11	-237.6	.8		
12	-198.0	.6		
13	-142.9	.4		
14	-80.1	.3		
15	-17.7	.2		
16	36.6	.2		
17	76.0	.2		
18	97.5	.2		
18	97.5	.2		
19	99.8	.1		
20	83.2	.1		
21	50.8	.1		
22	6.9	.0		
23	-42.7	.0		
24	-92.0	.1		
25	-135.4	.1		
26	-167.8	.1		
27	-185.4	.0		
28	-186.5	.0		
29	-170.8	.0		
30	-140.1	.0		
31	-97.5	.0		
32	-47.3	.0		
33	6.1	.0		
34	58.4	.0		
35	105.6	.0		
36	144.3	.0		
37	172.7	.0		
38	189.3	.0		
39	194.5	.0		
40	188.9	.0		
41	173.7	.0		
42	150.3	.0		
43	120.9	.0		
44	87.1	.0		
45	51.5	.0		
46	16.6	.0		
47	-15.3	.0		
48	-42.5	.0		
49	-63.4	.0		
50	-77.0	.0		

061 LI-ω

BBELS 11 1.0M-01 S. 30MAR-65 1155-1158

LAGS= 50 N= 733 DT= 0.2SEC

MEAN w= ——

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	970.4	35.9		
1	929.2	114.2	20.0	
2	819.8	178.5	10.0	
3	660.7	125.1	6.6	
4	474.3	91.6	5.0	
5	292.7	159.7	4.0	
6	105.9	147.9	3.3	
7	-39.8	64.4	2.8	
8	-144.9	18.6	2.5	
9	-205.4	8.5	2.2	
10	-223.2	7.7	2.0	
11	-203.6	4.4	1.8	
12	-156.0	1.8	1.6	
13	-92.3	1.1	1.5	
14	-23.9	.8	1.4	
15	38.7	.6	1.3	
16	85.1	.5	1.2	
17	107.7	.4	1.1	
18	101.9	.3	1.1	
19	66.5	.2	1.0	
20	5.4	.1	1.0	
21	-73.8	.1	.9	
22	-151.9	.1	.9	
23	-248.1	.2	.8	
24	-321.6	.1	.8	
25	-373.3	.1	.8	
26	-399.2	.1	.7	
27	-397.5	.0	.7	
28	-370.9	.0	.7	
29	-322.9	.0	.6	
30	-259.6	.0	.6	
31	-188.0	.0	.6	
32	-112.6	.0	.6	
33	-37.7	.0	.6	
34	32.5	.0	.5	
35	95.3	.0	.5	
36	148.4	.0	.5	
37	190.5	.0	.5	
38	220.2	.0	.5	
39	236.4	.0	.5	
40	238.4	.0	.5	
41	227.1	.0	.4	
42	204.6	.0	.4	
43	173.6	.0	.4	
44	136.9	.0	.4	
45	98.6	.0	.4	
46	61.8	.0	.4	
47	29.4	.0	.4	
48	3.5	.0	.4	
49	-13.0	.0	.4	
50	-19.2	.0	.4	

062 LI-ω

BBELS 11 1.5M-II S. 30MAR-65 1159-1203

LAGS= 50 N= 1232 DT= 0.2SEC

MEAN w= -3.8

K	COV	SP	PERIOD	FREQ(MCPS)
0	859.276	1.052	0	0
1	811.507	25.706	20.0	50.0
2	681.903	78.187	10.0	100.0
3	490.341	74.944	6.7	150.0
4	262.468	112.759	5.0	200.0
5	26.521	239.301	4.0	250.0
6	-191.192	209.263	3.3	300.0
7	-368.236	76.532	2.9	350.0
8	-488.492	20.197	2.5	400.0
9	-543.303	8.198	2.2	450.0
10	-531.655	4.406	2.0	500.0
11	-461.781	3.036	1.8	550.0
12	-347.650	1.404	1.7	600.0
13	-215.928	.824	1.5	650.0
14	-55.469	.666	1.4	700.0
15	85.629	.605	1.3	750.0
16	200.746	.457	1.3	800.0
17	277.124	.449	1.2	850.0
18	307.686	.372	1.1	900.0
19	290.989	.256	1.1	950.0
20	231.081	.174	1.0	1000.0
21	137.132	.112	1.0	1050.0
22	21.448	.062	.9	1100.0
23	-101.578	.073	.9	1150.0
24	-217.573	.092	.8	1200.0
25	-313.667	.086	.8	1250.0
26	-386.748	.081	.8	1300.0
27	-412.732	.098	.7	1350.0
28	-407.616	.081	.7	1400.0
29	-367.188	.058	.7	1450.0
30	-296.311	.060	.7	1500.0
31	-202.198	.055	.6	1550.0
32	-92.618	.041	.6	1600.0
33	22.302	.038	.6	1650.0
34	131.921	.031	.6	1700.0
35	227.262	.032	.6	1750.0
36	301.372	.047	.6	1800.0
37	348.838	.052	.5	1850.0
38	367.985	.048	.5	1900.0
39	359.299	.048	.5	1950.0
40	325.663	.040	.5	2000.0
41	272.185	.029	.5	2050.0
42	205.632	.024	.5	2100.0
43	133.839	.027	.5	2150.0
44	64.390	.029	.5	2200.0
45	3.476	.025	.4	2250.0
46	-44.370	.026	.4	2300.0
47	-76.738	.032	.4	2350.0
48	-92.246	.029	.4	2400.0
49	-91.614	.024	.4	2450.0
50	-77.439	.012	.4	2500.0

063 LJ-W

BBFLS 11 3.0M-II S. 30MAR-65 1205-1208

LAGS= 50 N= 1080 DT= 0.2SEC

MEAN W= —

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	296.3	29.5		
1	287.9	59.3	20.0	
2	265.4	60.4	10.0	
3	233.0	46.9	6.6	
4	194.4	28.3	5.0	
5	153.9	27.6	4.0	
6	115.1	23.0	3.3	
7	80.4	10.1	2.8	
8	51.9	4.0	2.5	
9	30.4	2.6	2.2	
10	16.0	1.5	2.0	
11	7.6	.5	1.8	
12	3.8	.3	1.6	
13	3.2	.3	1.5	
14	4.4	.2	1.4	
15	6.0	.1	1.3	
16	7.0	.1	1.2	
17	6.4	.1	1.1	
18	4.0	.0	1.1	
19	-.4	.0	1.0	
20	-7.0	.0	1.0	
21	-15.3	.0	.9	
22	-24.3	.0	.9	
23	-33.2	.0	.8	
24	-40.7	.0	.8	
25	-45.9	.0	.8	
26	-47.7	.0	.7	
27	-45.6	.0	.7	
28	-39.5	.0	.7	
29	-29.9	.0	.6	
30	-17.7	.0	.6	
31	-4.1	.0	.6	
32	9.3	.0	.6	
33	21.7	.0	.6	
34	32.2	.0	.5	
35	40.2	.0	.5	
36	45.6	.0	.5	
37	48.6	.0	.5	
38	49.5	.0	.5	
39	48.4	.0	.5	
40	45.0	.0	.5	
41	39.6	.0	.4	
42	32.5	.0	.4	
43	23.7	.0	.4	
44	13.8	.0	.4	
45	3.5	.0	.4	
46	-6.1	.0	.4	
47	-14.6	.0	.4	
48	-21.3	.0	.4	
49	-25.8	.0	.4	
50	-28.3	.0	.4	

064 LI-W

BBELS 11 3.5—11 S. 30MAR-65 1212-1216

LAGS= 50 N= 768 DT= 0.2SEC

MEAN W= —

K	COV	SP	PERIOD	FREQ(MCPS)
0	287.4	25.6		
1	278.3	47.9	20.0	
2	253.5	46.9	10.0	
3	216.6	38.3	6.6	
4	171.8	32.4	5.0	
5	123.3	43.8	4.0	
6	75.9	35.1	3.3	
7	33.7	11.4	2.8	
8	-.1	2.0	2.5	
9	-23.6	.9	2.2	
10	-36.1	.6	2.0	
11	-37.8	.5	1.8	
12	-30.6	.2	1.6	
13	-16.6	.1	1.5	
14	1.0	.1	1.4	
15	19.3	.1	1.3	
16	35.2	.0	1.2	
17	46.3	.0	1.1	
18	51.1	.0	1.1	
19	48.8	.0	1.0	
20	39.7	.0	1.0	
21	25.2	.0	.9	
22	7.2	.0	.9	
23	-12.0	.0	.8	
24	-30.1	.0	.8	
25	-44.8	.0	.8	
26	-54.3	.0	.7	
27	-57.9	.0	.7	
28	-55.1	.0	.7	
29	-46.5	.0	.6	
30	-32.9	.0	.6	
31	-15.5	.0	.6	
32	3.8	.0	.6	
33	23.4	.0	.6	
34	41.4	.0	.5	
35	56.3	.0	.5	
36	67.0	.0	.5	
37	72.9	.0	.5	
38	73.9	.0	.5	
39	70.5	.0	.5	
40	63.7	.0	.5	
41	54.4	.0	.4	
42	43.8	.0	.4	
43	33.1	.0	.4	
44	23.2	.0	.4	
45	15.0	.0	.4	
46	9.0	.0	.4	
47	5.3	.0	.4	
48	4.1	.0	.4	
49	5.0	.0	.4	
50	7.5	.0	.4	

065 LI-W

BBELS 11 2.04-VIII S. 30MAR-65 1218-1221

LAGS= 50 N= 1132 DT= 0.2SEC

MEAN W= -3.8

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	419.072	2.856	0	0
1	396.993	21.191	20.0	50.0
2	338.836	53.751	10.0	100.0
3	254.696	54.301	6.7	150.0
4	155.635	55.287	5.0	200.0
5	53.432	90.929	4.0	250.0
6	-40.991	81.461	3.3	300.0
7	-118.281	34.473	2.9	350.0
8	-172.287	11.391	2.5	400.0
9	-200.019	5.289	2.2	450.0
10	-201.582	2.164	2.0	500.0
11	-185.441	1.265	1.8	550.0
12	-142.493	.842	1.7	600.0
13	-95.007	.537	1.5	650.0
14	-45.741	.479	1.4	700.0
15	-1.149	.482	1.3	750.0
16	34.093	.415	1.3	800.0
17	56.110	.287	1.2	850.0
18	63.077	.176	1.1	900.0
19	54.795	.126	1.1	950.0
20	32.962	.116	1.0	1000.0
21	1.354	.123	1.0	1050.0
22	-35.515	.132	.9	1100.0
23	-73.349	.121	.9	1150.0
24	-107.667	.086	.8	1200.0
25	-134.397	.065	.8	1250.0
26	-15[illegible].913	.070	.8	1300.0
27	-155.521	.067	.7	1350.0
28	-147.493	.050	.7	1400.0
29	-127.322	.044	.7	1450.0
30	-96.781	.047	.7	1500.0
31	-58.982	.045	.6	1550.0
32	-17.579	.036	.6	1600.0
33	23.900	.024	.6	1650.0
34	61.570	.017	.6	1700.0
35	92.348	.025	.6	1750.0
36	114.301	.035	.6	1800.0
37	126.463	.032	.5	1850.0
38	129.242	.028	.5	1900.0
39	123.864	.026	.5	1950.0
40	112.206	.021	.5	2000.0
41	96.746	.019	.5	2050.0
42	79.513	.020	.5	2100.0
43	62.405	.021	.5	2150.0
44	46.894	.020	.5	2200.0
45	33.709	.018	.4	2250.0
46	23.259	.014	.4	2300.0
47	15.693	.013	.4	2350.0
48	10.616	.014	.4	2400.0
49	7.861	.015	.4	2450.0
50	6.787	.008	.4	2500.0

066 LI-ω

BBELS 11 2.5v-III S. 30MAR-65 1226-1229

LAGS= 50 N= 1055 DT= 0.2SEC

MEAN W= —

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	471.1	8.5		
1	445.2	28.1	20.0	
2	332.8	49.7	10.0	
3	291.6	42.7	6.6	
4	181.6	59.4	5.0	
5	65.0	131.3	4.0	
6	-45.3	96.3	3.3	
7	-139.3	24.7	2.8	
8	-208.3	7.3	2.5	
9	-247.8	4.4	2.2	
10	-255.7	1.8	2.0	
11	-235.5	1.3	1.8	
12	-190.8	.7	1.6	
13	-128.5	.4	1.5	
14	-56.9	.3	1.4	
15	15.4	.3	1.3	
16	80.8	.2	1.2	
17	131.5	.2	1.1	
18	162.5	.2	1.1	
19	171.3	.2	1.0	
20	157.2	.2	1.0	
21	122.0	.1	.9	
22	70.0	.1	.9	
23	7.2	.1	.8	
24	-59.0	.1	.8	
25	-122.2	.1	.8	
26	-175.5	.1	.7	
27	-213.7	.1	.7	
28	-232.6	.1	.7	
29	-230.2	.1	.6	
30	-205.9	.1	.6	
31	-162.8	.1	.6	
32	-105.5	.0	.6	
33	-38.7	.0	.6	
34	30.4	.0	.5	
35	95.3	.0	.5	
36	150.0	.0	.5	
37	188.8	.0	.5	
38	209.5	.0	.5	
39	211.0	.0	.5	
40	194.8	.0	.5	
41	164.1	.0	.4	
42	123.0	.0	.4	
43	76.7	.0	.4	
44	29.9	.0	.4	
45	-12.9	.0	.4	
46	-47.5	.0	.4	
47	-71.0	.0	.4	
48	-81.7	.0	.4	
49	-79.7	.0	.4	
50	-67.2	.0	.4	

067 DI-ω

B8FLS 11 4.0M-II S. 30MAR-65 1234-1238

LAGS= 50 N= 1008 DT= 0.2SEC

MEAN W= -1.4

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	475.663	2.787	0	0
1	453.510	22.748	20.0	50.0
2	392.767	66.350	10.0	100.0
3	301.885	68.800	6.7	150.0
4	192.329	64.133	5.0	200.0
5	76.645	104.491	4.0	250.0
6	-32.529	92.329	3.3	300.0
7	-124.344	36.108	2.9	350.0
8	-190.992	9.235	2.5	400.0
9	-228.416	3.392	2.2	450.0
10	-236.341	1.607	2.0	500.0
11	-217.914	.816	1.8	550.0
12	-178.822	.540	1.7	600.0
13	-126.735	.275	1.5	650.0
14	-70.219	.208	1.4	700.0
15	-17.258	.170	1.3	750.0
16	25.310	.163	1.3	800.0
17	52.949	.109	1.2	850.0
18	62.687	.074	1.1	900.0
19	54.105	.064	1.1	950.0
20	29.313	.071	1.0	1000.0
21	-7.511	.076	1.0	1050.0
22	-51.238	.079	.9	1100.0
23	-96.127	.056	.9	1150.0
24	-136.416	.041	.8	1200.0
25	-167.367	.027	.8	1250.0
26	-185.241	.026	.8	1300.0
27	-187.761	.032	.7	1350.0
28	-174.482	.033	.7	1400.0
29	-146.457	.026	.7	1450.0
30	-106.339	.020	.7	1500.0
31	-57.978	.015	.6	1550.0
32	-5.793	.019	.6	1600.0
33	45.562	.021	.6	1650.0
34	91.985	.016	.6	1700.0
35	130.219	.012	.6	1750.0
36	158.237	.011	.6	1800.0
37	175.106	.013	.5	1850.0
38	181.071	.014	.5	1900.0
39	177.955	.013	.5	1950.0
40	167.903	.016	.5	2000.0
41	153.080	.016	.5	2050.0
42	135.604	.013	.5	2100.0
43	117.138	.010	.5	2150.0
44	98.739	.010	.5	2200.0
45	81.140	.012	.4	2250.0
46	64.196	.016	.4	2300.0
47	47.421	.017	.4	2350.0
48	30.603	.015	.4	2400.0
49	13.460	.013	.4	2450.0
50	-4.147	.006	.4	2500.0

068 CI-ω

BBFLS 11 4.5M-Œ S. 30MAR-65 1241-1244

LAGS= 50 N= 885 DT= 0.2SEC

MEAN W= —

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	311.7	4.7	∞	
1	297.8	17.2	20.0	
2	260.6	37.6	10.0	
3	205.0	40.9	6.6	
4	137.1	54.2	5.0	
5	63.8	81.4	4.0	
6	-7.7	53.6	3.3	
7	-71.0	13.2	2.8	
8	-120.7	3.6	2.5	
9	-153.4	1.5	2.2	
10	-167.6	.8	2.0	
11	-163.8	.5	1.8	
12	-144.0	.2	1.6	
13	-112.0	.2	1.5	
14	-72.4	.2	1.4	
15	-30.3	.1	1.3	
16	9.1	.0	1.2	
17	42.0	.0	1.1	
18	65.0	.0	1.1	
19	76.2	.0	1.0	
20	74.8	.0	1.0	
21	61.2	.0	.9	
22	37.7	.0	.9	
23	7.3	.0	.8	
24	-26.1	.0	.8	
25	-58.8	.0	.8	
26	-87.3	.0	.7	
27	-108.2	.0	.7	
28	-119.5	.0	.7	
29	-120.8	.0	.6	
30	-110.8	.0	.6	
31	-90.5	.0	.6	
32	-61.5	.0	.6	
33	-26.1	.0	.6	
34	12.2	.0	.5	
35	50.4	.0	.5	
36	85.0	.0	.5	
37	113.4	.0	.5	
38	133.6	.0	.5	
39	144.1	.0	.5	
40	144.4	.0	.5	
41	134.7	.0	.4	
42	116.4	.0	.4	
43	91.2	.0	.4	
44	61.4	.0	.4	
45	29.2	.0	.4	
46	-2.5	.0	.4	
47	-31.4	.0	.4	
48	-55.2	.0	.4	
49	-72.3	.0	.4	
50	-81.7	.0	.4	

069 LI-W

BBELS 11 3.0M-III S, 30MAR-65 1245-1251

LAGS= 100 N= 1059 DT= 0.25EC

MEAN W= 0.5

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	228.4	1.4	0	0
1	220.4	2.5	40.0	25.0
2	198.3	.6	20.0	50.0
3	165.1	10.2	13.3	75.0
4	124.0	38.6	10.0	100.0
5	79.1	43.3	8.0	125.0
6	34.4	18.6	6.7	150.0
7	-6.1	7.2	5.7	175.0
8	-39.7	9.2	5.0	200.0
9	-64.3	15.0	4.4	225.0
10	-79.1	25.9	4.0	250.0
11	-84.3	28.4	3.6	275.0
12	-81.3	15.3	3.3	300.0
13	-72.0	4.8	3.1	325.0
14	-59.0	2.9	2.9	350.0
15	-45.1	1.6	2.7	375.0
16	-32.9	.7	2.5	400.0
17	-24.4	.4	2.4	425.0
18	-21.0	.3	2.2	450.0
19	-23.2	.2	2.1	475.0
20	-31.1	.2	2.0	500.0
21	-43.4	.2	1.9	525.0
22	-58.6	.2	1.8	550.0
23	-74.5	.1	1.7	575.0
24	-89.1	.1	1.7	600.0
25	-100.1	.1	1.6	625.0
26	-106.1	.0	1.5	650.0
27	-106.2	.0	1.5	675.0
28	-99.7	.1	1.4	700.0
29	-86.7	.0	1.4	725.0
30	-67.9	.0	1.3	750.0
31	-44.7	.0	1.3	775.0
32	-18.6	.0	1.3	800.0
33	8.5	.0	1.2	825.0
34	34.8	.0	1.2	850.0
35	58.4	.0	1.1	875.0
36	77.9	.0	1.1	900.0
37	92.2	.0	1.1	925.0
38	100.9	.0	1.1	950.0
39	103.8	.0	1.0	975.0
40	101.6	.0	1.0	1000.0
41	95.2	.0	1.0	1025.0
42	85.7	.0	1.0	1050.0
43	74.6	.0	.9	1075.0
44	63.2	.0	.9	1100.0
45	52.8	.0	.9	1125.0
46	44.4	.0	.9	1150.0
47	38.4	.0	.9	1175.0
48	35.0	.0	.8	1200.0
49	33.9	.0	.8	1225.0
50	34.2	.0	.8	1250.0
51	35.2	.0	.8	1275.0
52	35.8	.0	.8	1300.0
53	34.9	.0	.8	1325.0

069 .LI-W

BELS- 11

3 M- III

50LAGS 1059DATA POINTS DT# .20SEC

MEAN U # =0.462

K	ACOV	SP	PERIOD	F%MC
	228.405	1.275		
			∞	.0
1	220.391	18.609	20.0	50.0
2	198.336	50.206	10.0	100.0
3	165.050	45.304	6.6	150.0
4	123.975	28.740	5.0	200.0
5	79.066	39.606	4.0	250.0
6	34.432	31.340	3.3	300.0
7	-6.146	9.205	2.8	350.0
8	-39.707	1.753	2.5	400.0
9	-64.300	.748	2.2	450.0
10	-79.101	.384	2.0	500.0
11	-84.325	.317	1.8	550.0
12	-81.276	.160	1.6	600.0
13	-71.973	.107	1.5	650.0
14	-58.993	.089	1.4	700.0
15	-45.088	.083	1.3	750.0
16	-32.874	.052	1.2	800.0
17	-24.387	.032	1.1	850.0
18	-20.957	.029	1.1	900.0
19	-23.241	.042	1.0	950.0
20	-31.053	.039	1.0	1000.0
21	-43.400	.028	.9	1050.0
22	-58.582	.023	.9	1100.0
23	-74.535	.023	.8	1150.0
24	-89.057	.019	.8	1200.0
25	-100.092	.015	.8	1250.0
26	-106.109	.018	.7	1300.0
27	-106.175	.017	.7	1350.0
28	-99.678	.010	.7	1400.0
29	-86.664	.007	.6	1450.0
30	-67.897	.008	.6	1500.0
31	-44.680	.009	.6	1550.0
32	-18.603	.007	.6	1600.0
33	8.524	.006	.6	1650.0
34	34.795	.007	.5	1700.0
35	58.427	.006	.5	1750.0
36	77.907	.005	.5	1800.0
37	92.249	.005	.5	1850.0
38	100.899	.005	.5	1900.0
39	103.821	.005	.5	1950.0
40	101.587	.004	.5	2000.0
41	95.156	.003	.4	2050.0
42	85.695	.003	.4	2100.0
43	74.558	.004	.4	2150.0
44	63.211	.004	.4	2200.0
45	52.846	.004	.4	2250.0
46	44.361	.004	.4	2300.0
47	38.379	.003	.4	2350.0
48	35.002	.003	.4	2400.0
49	33.851	.003	.4	2450.0
50	34.221	.001	.4	2500.

071 OIII

BBELS 12 0.2M-III 0, 07APR-65 1235-1238

LAGS= 50 N= 585 DT= 0.2SEC

MEAN U= 4.5 MEAN W= 0.1

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	32.9	74.5	-7.0	0	5.02	5.18	-1.39	0	0	.27	0
1	32.3	71.0	-6.6	2.4	9.49	9.42	-1.23	3.04	20.00	.35	-67.97
2	31.0	62.0	-6.0	4.6	8.95	6.74	-0.20	4.03	10.00	.52	-87.21
3	29.3	49.3	-5.2	6.4	5.73	6.49	-0.78	2.26	6.67	.39	-70.99
4	27.3	34.5	-4.3	7.8	1.57	12.43	-1.13	.99	5.00	.34	-41.02
5	25.1	19.4	-3.3	8.6	.74	15.94	-1.38	1.07	4.00	.51	-37.91
6	22.8	5.2	-2.4	9.1	.51	10.07	-0.63	.91	3.33	.49	-55.45
7	20.3	-6.8	-1.5	9.2	.18	3.80	.06	.49	2.86	.61	82.54
8	17.7	-15.8	-0.7	9.0	.11	1.78	.03	.16	2.50	.35	80.87
9	15.2	-21.2	0	8.6	.07	.82	-0.01	.02	2.22	.10	-61.51
10	12.6	-23.0	.6	8.0	.07	.40	-0.03	0	2.00	.20	1.20
11	10.2	-21.4	.8	7.4	.10	.25	-0.06	.01	1.82	.41	-13.14
12	7.8	-16.9	.8	6.9	.08	.24	-0.05	.05	1.67	.52	-40.76
13	5.7	-10.4	.4	6.6	.03	.21	-0.02	.03	1.54	.47	-52.07
14	3.7	-2.8	-0.2	6.4	.02	.14	-0.01	0	1.43	.21	-2.46
15	2.0	5.0	-1.0	6.4	.03	.08	-0.02	0	1.33	.32	-9.41
16	.5	12.2	-1.9	6.5	.03	.07	-0.01	.01	1.25	.28	-52.06
17	-0.8	18.1	-2.9	6.6	.02	.06	0	.01	1.18	.19	-63.90
18	-2.1	22.1	-3.6	6.6	.01	.06	-0.01	0	1.11	.23	8.88
19	-3.2	24.3	-4.2	6.6	.02	.05	-0.01	-0.01	1.05	.39	43.76
20	-4.1	24.8	-4.6	6.2	.01	.03	0	-0.01	1.00	.31	61.27
21	-4.9	23.4	-4.7	5.7	.01	.02	0	0	.95	.09	-11.78
22	-5.5	20.4	-4.6	5.0	.01	.02	0	0	.91	.18	-6.80
23	-5.8	15.9	-4.3	4.3	0	.03	0	0	.87	.27	14.83
24	-5.8	10.5	-3.9	3.6	.01	.02	0	0	.83	.40	2.17
25	-5.5	4.6	-3.4	2.8	.01	.02	0	0	.80	.46	10.39
26	-5.1	-1.2	-2.9	2.0	0	.01	0	0	.77	.41	18.16
27	-4.5	-6.4	-2.4	1.1	0	.01	0	0	.74	.45	-17.30
28	-3.8	-10.7	-2.0	.3	0	.01	0	0	.71	.60	-22.04
29	-2.8	-13.7	-1.7	-0.5	0	.01	0	0	.69	.54	-4.11
30	-1.7	-15.2	-1.7	-1.2	0	.01	0	0	.67	.49	14.84
31	-0.3	-15.3	-2.0	-1.7	0	.01	0	0	.65	.55	-0.79
32	1.1	-14.1	-2.6	-2.1	0	0	0	0	.63	.80	-7.73
33	2.7	-11.8	-3.3	-2.4	0	.01	0	0	.61	.80	.07
34	4.2	-8.7	-4.1	-2.7	0	.01	0	0	.59	.79	-14.84
35	5.7	-5.1	-4.8	-2.9	0	.01	0	0	.57	.87	-20.32
36	7.1	-1.3	-5.6	-3.1	0	0	0	0	.56	.76	-5.87
37	8.2	2.2	-6.1	-3.3	0	.01	0	0	.54	.61	.89
38	9.1	4.9	-6.5	-3.3	0	.01	0	0	.53	.68	-3.72
39	9.9	6.6	-6.6	-3.2	0	0	0	0	.51	.79	1.76
40	10.4	7.4	-6.5	-3.0	0	.01	0	0	.50	.77	.08
41	10.8	7.0	-6.1	-2.7	0	.01	0	0	.49	.91	-1.84
42	10.9	5.6	-5.5	-2.3	0	0	0	0	.48	1.03	2.61
43	10.8	3.1	-4.7	-1.9	0	0	0	0	.47	.95	2.34
44	10.4	-0.2	-3.8	-1.4	0	0	0	0	.45	.88	-12.26
45	9.9	-4.1	-2.9	-1.0	0	0	0	0	.44	1.00	-14.85
46	9.2	-8.3	-2.2	-0.6	0	0	0	0	.43	1.08	-10.17
47	8.3	-12.3	-1.6	-0.3	0	0	0	0	.43	1.02	-7.98
48	7.4	-15.7	-1.3	0	0	0	0	0	.42	.92	-2.00
49	6.5	-18.1	-1.3	.4	0	0	0	0	.41	.96	3.89
50	5.5	-19.2	-1.4	.7	0	0	0	0	.40	1.07	0

072 O III

BBELS 12 .2M-OIII 0, 07APR-65 1243-1249

LAGS= 50 N= 1551 DT= 0.2SEC

MEAN U= 9.4 MEAN W= .1

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	19.9	87.5	-3.3	0	4.40	5.34	.15	0	0	.03	0
1	18.9	83.6	-3.0	.9	6.27	13.59	-0.14	1.23	20.00	.13	-83.61
2	16.9	73.9	-2.2	1.8	2.85	15.66	-0.67	1.22	10.00	.21	-61.36
3	15.0	60.8	-1.2	2.8	1.50	13.01	-0.56	.27	6.67	.14	-26.18
4	13.4	46.7	-0.3	3.5	.80	11.64	-0.25	.32	5.00	.13	-52.47
5	12.4	33.2	.3	3.7	.64	10.37	-0.24	.64	4.00	.27	-69.35
6	11.7	21.5	.4	3.5	.67	6.61	-0.33	.58	3.33	.32	-60.61
7	11.2	11.8	.2	2.9	.48	3.61	-0.22	.42	2.86	.36	-62.20
8	10.7	4.0	.1	2.1	.32	2.27	-0.15	.27	2.50	.36	-61.22
9	10.0	-2.3	.1	1.5	.27	1.45	-0.18	.17	2.22	.39	-42.56
10	9.3	-6.8	.3	1.1	.27	.88	-0.20	.03	2.00	.42	-9.00
11	8.8	-9.5	.6	1.1	.25	.72	-0.21	-0.06	1.82	.51	15.08
12	8.3	-10.4	.9	1.3	.23	.74	-0.18	-0.09	1.67	.49	26.36
13	8.0	-9.9	1.0	1.6	.22	.57	-0.11	-0.09	1.54	.40	38.90
14	7.8	-8.3	1.0	1.8	.16	.29	-0.04	-0.07	1.43	.38	61.36
15	7.6	-6.4	.9	2.1	.11	.16	-0.01	-0.04	1.33	.34	81.73
16	7.2	-4.7	.8	2.3	.07	.11	.01	-0.02	1.25	.28	-75.73
17	6.7	-3.5	.8	2.4	.05	.06	0	-0.01	1.18	.21	-74.93
18	6.2	-2.8	.9	2.6	.05	.04	0	0	1.11	.12	-61.13
19	5.8	-2.6	1.1	2.7	.04	.04	0	0	1.05	.13	5.49
20	5.3	-2.6	1.3	2.9	.03	.03	.01	0	1.00	.29	-8.71
21	4.9	-2.7	1.5	3.0	.02	.03	.01	0	.95	.26	-12.28
22	4.5	-3.1	1.6	3.0	.02	.03	0	0	.91	.12	-3.57
23	4.2	-3.8	1.6	3.0	.02	.02	0	0	.87	.02	-63.06
24	3.9	-5.0	1.7	2.9	.02	.03	0	0	.83	.01	24.11
25	3.7	-6.8	1.6	2.7	.02	.02	0	0	.80	.09	17.60
26	3.6	-8.8	1.5	2.4	.02	.02	0	0	.77	.12	31.62
27	3.6	-10.8	1.4	2.1	.01	.02	0	0	.74	.04	-18.02
28	3.7	-12.4	1.2	1.7	.01	.01	0	0	.71	.26	70.41
29	3.9	-13.2	1.0	1.2	.01	.01	0	0	.69	.31	48.27
30	4.0	-13.3	.7	.8	.01	.01	0	0	.67	.08	-32.32
31	4.1	-12.7	.5	.4	.01	0	0	0	.65	.46	71.16
32	4.2	-11.8	.2	.1	0	.01	0	0	.63	.29	49.24
33	4.2	-10.6	0	-0.2	0	.01	0	0	.61	.28	31.24
34	4.1	-9.3	-0.1	-0.5	0	0	0	0	.59	.15	7.31
35	3.9	-8.0	-0.1	-0.9	0	.01	0	0	.57	.03	63.03
36	3.8	-6.6	0	-1.2	0	0	0	0	.56	.15	-9.11
37	3.7	-4.2	.1	-1.6	0	0	0	0	.54	.19	-9.19
38	3.6	-3.1	.3	-1.9	0	.01	0	0	.53	.02	-39.54
39	3.5	-1.4	.3	-2.3	0	0	0	0	.51	0	-23.43
40	3.2	.0	.4	-2.7	0	0	0	0	.50	.31	-42.80
41	2.8	1.2	.4	-3.1	0	.01	0	0	.49	.26	-49.22
42	2.5	2.1	.4	-3.5	0	0	0	0	.48	0	-27.24
43	2.3	2.9	.5	-3.8	0	.01	0	0	.47	.09	58.14
44	2.4	3.7	.5	-4.1	0	0	0	0	.45	.19	87.33
45	2.6	4.8	.3	-4.4	0	0	0	0	.44	.13	-75.16
46	2.8	6.2	0	-4.5	0	.01	0	0	.43	.04	41.22
47	3.0	7.7	-0.4	-4.5	0	0	0	0	.43	.19	72.92
48	3.1	9.4	-0.9	-4.1	0	0	0	0	.42	.12	-37.10
49	3.2	11.0	-1.2	-3.5	0	.01	0	0	.41	.16	-24.63
50	3.1	12.1	-1.3	-2.6	0	0	0	0	.40	0	0

073 OIII

BBFLS- 12 10.#M- 1 7APRIL-65 1316-1320

LAGS= 50 N= 1327 DT= .20SEC

MEAN U = 16.00972

K	ACOV	SP	PERIOD	F(MC)
0	3.5	.3	0	0
1	2.5	.5	20.0	50.0
2	1.8	.4	10.0	100.0
3	1.6	.3	6.7	150.0
4	1.3	.3	5.0	200.0
5	1.0	.2	4.0	250.0
6	.9	.1	3.3	300.0
7	.7	.1	2.9	350.0
8	.6	.1	2.5	400.0
9	.5	.1	2.2	450.0
10	.3	.1	2.0	500.0
11	.2	.1	1.8	550.0
12	.3	.1	1.7	600.0
13	.2	.1	1.5	650.0
14	.1	.0	1.4	700.0
15	.2	.1	1.3	750.0
16	.2	.0	1.3	800.0
17	.3	.0	1.2	850.0
18	.3	.0	1.1	900.0
19	.4	.0	1.1	950.0
20	.4	.0	1.0	1000.0
21	.4	.0	1.0	1050.0
22	.4	.0	.9	1100.0
23	.3	.0	.9	1150.0
24	.4	.0	.8	1200.0
25	.3	.0	.8	1250.0
26	.2	.0	.8	1300.0
27	.3	.0	.7	1350.0
28	.2	.0	.7	1400.0
29	.2	.0	.7	1450.0
30	.1	.0	.7	1500.0
31	.1	.0	.6	1550.0
32	.1	.0	.6	1600.0
33	.1	.0	.6	1650.0
34	.1	.0	.6	1700.0
35	.1	.0	.6	1750.0
36	.2	.0	.6	1800.0
37	.3	.0	.5	1850.0
38	.3	.0	.5	1900.0
39	.4	.0	.5	1950.0
40	.5	.0	.5	2000.0
41	.5	.0	.5	2050.0
42	.5	.0	.5	2100.0
43	.5	.0	.5	2150.0
44	.5	.0	.5	2200.0
45	.5	.0	.4	2250.0
46	.4	.0	.4	2300.0
47	.4	.0	.4	2350.0
48	.3	.0	.4	2400.0
49	.2	.0	.4	2450.0
50	.2	.0	.4	2500.0

074 OIII OFF BOTTOM
BBELS- 12 .6M- 1 7 APRIL-65 1354-1359
LAGS= 50 N= 1202 DT= .20SEC
MEAN U = 16.74663

K	ACOV	SP	PERIOD	F(MC)
0	3.9	.5	0	0
1	3.3	1.0	20.0	50.0
2	2.8	.8	10.0	100.0
3	2.6	.4	6.7	150.0
4	2.4	.2	5.0	200.0
5	2.2	.1	4.0	250.0
6	2.0	.1	3.3	300.0
7	1.8	.1	2.9	350.0
8	1.6	.1	2.5	400.0
9	1.5	.1	2.2	450.0
10	1.3	.0	2.0	500.0
11	1.2	.0	1.8	550.0
12	1.1	.0	1.7	600.0
13	.9	.0	1.5	650.0
14	.7	.0	1.4	700.0
15	.5	.0	1.3	750.0
16	.4	.0	1.3	800.0
17	.3	.0	1.2	850.0
18	.2	.0	1.1	900.0
19	.1	.0	1.1	950.0
20	-0.1	.0	1.0	1000.0
21	-0.2	.0	1.0	1050.0
22	-0.2	.0	.9	1100.0
23	-0.2	.0	.9	1150.0
24	-0.2	.0	.8	1200.0
25	-0.2	.0	.8	1250.0
26	-0.2	.0	.8	1300.0
27	-0.2	.0	.7	1350.0
28	-0.2	.0	.7	1400.0
29	-0.3	.0	.7	1450.0
30	-0.3	.0	.7	1500.0
31	-0.2	.0	.6	1550.0
32	-0.1	.0	.6	1600.0
33	-0.1	.0	.6	1650.0
34	-0.1	.0	.6	1700.0
35	-0.1	.0	.6	1750.0
36	-0.1	.0	.6	1800.0
37	.0	.0	.5	1850.0
38	.0	.0	.5	1900.0
39	.1	.0	.5	1950.0
40	.1	.0	.5	2000.0
41	.2	.0	.5	2050.0
42	.3	.0	.5	2100.0
43	.3	.0	.5	2150.0
44	.3	.0	.5	2200.0
45	.3	.0	.4	2250.0
46	.2	.0	.4	2300.0
47	.2	.0	.4	2350.0
48	.2	.0	.4	2400.0
49	.1	.0	.4	2450.0
50	.1	.0	.4	2500.0

075 OIII OFF BOTTOM
BBELS 12 1.0M- a 0. 07APR-65 1415-1417
LAGS= 50 N= 629 DT= 0.25EC
MEAN U=-12.5

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	8.386	1.862	0	0
1	7.899	2.821	20.0	50.0
2	7.487	1.664	10.0	100.0
3	7.180	.922	6.7	150.0
4	6.774	.261	5.0	200.0
5	6.367	.088	4.0	250.0
6	6.076	.077	3.3	300.0
7	5.684	.068	2.9	350.0
8	5.371	.057	2.5	400.0
9	5.036	.043	2.2	450.0
10	4.566	.053	2.0	500.0
11	4.077	.059	1.8	550.0
12	3.627	.046	1.7	600.0
13	3.220	.033	1.5	650.0
14	2.865	.021	1.4	700.0
15	2.535	.012	1.3	750.0
16	2.199	.011	1.3	800.0
17	1.917	.010	1.2	850.0
18	1.664	.009	1.1	900.0
19	1.410	.011	1.1	950.0
20	1.169	.015	1.0	1000.0
21	1.001	.018	1.0	1050.0
22	.871	.016	.9	1100.0
23	.818	.013	.9	1150.0
24	.820	.011	.8	1200.0
25	.831	.008	.8	1250.0
26	.876	.009	.8	1300.0
27	.967	.009	.7	1350.0
28	1.048	.009	.7	1400.0
29	1.135	.011	.7	1450.0
30	1.244	.011	.7	1500.0
31	1.325	.011	.6	1550.0
32	1.410	.013	.6	1600.0
33	1.541	.015	.6	1650.0
34	1.681	.013	.6	1700.0
35	1.806	.010	.6	1750.0
36	1.962	.008	.6	1800.0
37	2.108	.007	.5	1850.0
38	2.187	.005	.5	1900.0
39	2.220	.004	.5	1950.0
40	2.236	.003	.5	2000.0
41	2.272	.003	.5	2050.0
42	2.302	.003	.5	2100.0
43	2.259	.003	.5	2150.0
44	2.201	.003	.5	2200.0
45	2.225	.004	.4	2250.0
46	2.197	.005	.4	2300.0
47	2.104	.006	.4	2350.0
48	2.047	.006	.4	2400.0
49	1.979	.005	.4	2450.0
50	1.801	.003	.4	2500.0

076 OIII OFF BOTTOM
BBELS 12 5.0M- B 0. 07APR-65 1440-1443
LAGS= 50 N= 883 DT= 0.2SEC
MEAN U= 17.5

K	ACOV	SP	PERIOD	FREQ(MCPS)
0	3.125	.511	0	0
1	1.636	.617	20.0	50.0
2	1.372	.173	10.0	100.0
3	1.303	.117	6.7	150.0
4	1.285	.099	5.0	200.0
5	1.281	.090	4.0	250.0
6	1.147	.065	3.3	300.0
7	1.039	.056	2.9	350.0
8	.949	.060	2.5	400.0
9	.965	.045	2.2	450.0
10	.993	.030	2.0	500.0
11	.991	.035	1.8	550.0
12	.908	.043	1.7	600.0
13	.828	.035	1.5	650.0
14	.935	.032	1.4	700.0
15	.880	.037	1.3	750.0
16	1.019	.037	1.3	800.0
17	.800	.036	1.2	850.0
18	.783	.042	1.1	900.0
19	.809	.059	1.1	950.0
20	.933	.060	1.0	1000.0
21	.805	.041	1.0	1050.0
22	.803	.027	.9	1100.0
23	.812	.028	.9	1150.0
24	.818	.033	.8	1200.0
25	.965	.038	.8	1250.0
26	.822	.035	.8	1300.0
27	.781	.028	.7	1350.0
28	.688	.029	.7	1400.0
29	.630	.028	.7	1450.0
30	.706	.031	.7	1500.0
31	.636	.034	.6	1550.0
32	.746	.027	.6	1600.0
33	.671	.023	.6	1650.0
34	.700	.024	.6	1700.0
35	.806	.028	.6	1750.0
36	.802	.035	.6	1800.0
37	.712	.032	.5	1850.0
38	.716	.025	.5	1900.0
39	.832	.024	.5	1950.0
40	.785	.029	.5	2000.0
41	.769	.025	.5	2050.0
42	.889	.022	.5	2100.0
43	.737	.034	.5	2150.0
44	.632	.039	.5	2200.0
45	.588	.028	.4	2250.0
46	.808	.018	.4	2300.0
47	.811	.016	.4	2350.0
48	.758	.020	.4	2400.0
49	.823	.028	.4	2450.0

077 OIII

BBFLS 13 1.0M- 1 0. 25MAY-65 1705-1710

LAGS= 50 N= 1294 DT= 0.2SEC

MEAN U=-20.1 * MEAN W= 0.4

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	128.8	964.0	68.8	0	4.81	1.61	-0.63	0	0	.23	0
1	114.7	903.9	64.7	74.8	8.06	6.11	-0.10	.05	20.00	.02	-26.20
2	87.6	754.8	52.0	139.8	6.73	6.58	.66	1.89	10.00	.30	70.80
3	54.6	533.4	30.8	184.7	7.89	72.71	-1.70	13.53	6.67	.57	-82.83
4	22.0	269.2	5.6	205.2	15.20	260.08	6.25	49.55	5.00	.79	82.81
5	-6.0	-5.9	-20.0	200.7	22.61	317.95	22.66	67.33	4.00	.84	71.40
6	-27.4	-262.7	-42.9	173.1	19.84	166.33	22.67	43.81	3.33	.86	62.64
7	-40.4	-475.6	-59.1	130.0	13.47	60.68	12.84	22.17	2.86	.90	59.92
8	-45.0	-630.6	-66.5	78.8	9.01	32.82	6.97	12.96	2.50	.86	61.71
9	-43.6	-714.9	-63.6	27.4	5.72	15.93	2.00	6.98	2.22	.76	74.02
10	-36.6	-730.5	-52.0	-18.9	3.57	8.60	-0.64	4.01	2.00	.73	-80.93
11	-25.5	-685.5	-34.4	-58.4	2.33	4.11	-0.60	1.96	1.82	.66	-72.88
12	-13.4	-588.6	-14.0	-88.9	1.55	1.68	-0.36	.56	1.67	.41	-56.85
13	-2.0	-452.4	5.8	-108.9	1.14	.62	-0.32	-0.04	1.54	.39	7.05
14	7.8	-290.6	22.5	-118.1	.95	.59	-0.24	-0.06	1.43	.33	13.72
15	15.7	-117.5	34.5	-117.5	.80	.59	-0.12	-0.11	1.33	.24	43.56
16	21.8	53.8	41.6	-108.8	.65	.66	-0.02	-0.18	1.25	.27	84.09
17	25.0	211.2	43.0	-92.9	.51	.52	.04	-0.20	1.18	.40	-79.41
18	26.4	343.8	39.7	-70.9	.42	.39	.03	-0.12	1.11	.32	-74.65
19	25.7	442.1	33.0	-45.1	.32	.34	-0.03	-0.05	1.05	.16	60.36
20	23.7	499.3	24.1	-17.2	.25	.39	-0.05	.05	1.00	.26	-50.02
21	19.9	515.2	14.7	9.7	.22	.33	-0.04	.12	.95	.47	-69.79
22	15.0	490.0	5.1	33.1	.20	.22	-0.04	.08	.91	.41	-61.01
23	9.9	429.6	-3.7	51.9	.20	.11	-0.05	.01	.87	.32	-13.89
24	4.7	340.2	-12.5	65.8	.23	.11	-0.05	0	.83	.34	4.07
25	-0.2	229.1	-20.7	73.5	.22	.12	-0.05	-0.02	.80	.34	23.69
26	-4.7	106.3	-27.7	75.3	.16	.15	-0.05	-0.03	.77	.38	36.18
27	-8.2	-18.5	-33.5	71.9	.11	.19	-0.06	-0.05	.74	.49	39.42
28	-10.5	-135.3	-37.2	63.7	.11	.23	-0.05	-0.04	.71	.39	34.90
29	-12.1	-236.9	-38.4	51.1	.09	.24	-0.03	0	.69	.22	5.89
30	-12.8	-315.2	-36.2	34.8	.07	.22	-0.01	.01	.67	.14	-25.46
31	-11.8	-365.6	-30.6	15.9	.07	.19	-0.01	-0.02	.65	.23	57.74
32	-9.3	-385.2	-22.0	-4.1	.06	.19	-0.02	-0.04	.63	.40	55.68
33	-6.1	-372.8	-11.2	-23.2	.07	.17	-0.03	-0.03	.61	.34	44.71
34	-2.8	-331.8	.3	-39.6	.09	.11	-0.02	-0.02	.59	.27	42.88
35	1.7	-266.2	11.3	-52.7	.09	.08	-0.02	-0.03	.57	.41	63.20
36	5.8	-183.2	20.4	-61.4	.09	.09	-0.01	-0.04	.56	.48	74.91
37	9.5	-90.2	26.9	-64.9	.10	.11	-0.01	-0.05	.54	.49	79.52
38	12.8	3.5	30.2	-63.2	.10	.14	0	-0.04	.53	.34	-85.01
39	15.1	91.5	30.5	-56.9	.09	.15	.01	-0.02	.51	.19	-68.22
40	16.4	167.0	27.5	-47.2	.07	.16	0	-0.01	.50	.13	-87.58
41	17.3	224.3	22.6	-34.7	.04	.18	.01	0	.49	.06	-18.38
42	17.7	260.9	16.6	-20.1	.05	.21	.02	.01	.48	.22	20.37
43	18.1	274.4	10.2	-4.7	.07	.21	.03	.01	.47	.25	11.53
44	18.1	266.3	4.1	10.7	.07	.16	.01	.01	.45	.16	29.67
45	17.2	238.8	-1.4	24.9	.06	.13	0	.01	.44	.13	-77.77
46	15.9	194.9	-6.4	37.1	.05	.14	0	.01	.43	.12	-73.65
47	14.1	139.4	-10.6	46.0	.04	.14	0	0	.43	.06	73.59
48	11.7	75.8	-14.6	51.8	.05	.12	.01	0	.42	.10	-10.32
49	8.5	9.4	-17.8	54.0	.06	.10	.01	-0.01	.41	.14	-35.50
50	4.8	-53.9	-20.0	51.9	.03	.05	0	0	.40	.07	0

* U SIGN REVERSED ON RAW DATA

078 0III

BBELS 13 1.5M-1 25JUL-65 1714-1719

LAGS= 50 N= 1540 DT= 0.2SEC

MEAN U= 19.8 * MEAN W= .13

CORRELATION COEFFICIENT .07

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	102.6	956.5	23.2	0	3.48	3.34	-1.17	0	0	.34	0
1	93.1	905.3	22.2	60.9	6.54	9.51	-1.42	.97	20.00	.22	-34.34
2	74.3	778.2	19.0	114.4	6.59	10.23	-1.55	2.66	10.00	.37	-59.81
3	50.5	586.7	12.5	154.3	9.21	114.92	-4.64	18.95	6.67	.60	-76.22
4	25.5	350.4	3.4	176.1	15.69	320.59	3.96	54.35	5.00	.77	85.83
5	2.5	97.0	-7.9	178.8	13.73	300.78	17.23	58.40	4.00	.81	73.56
6	-16.0	-150.4	-19.5	163.5	13.50	110.49	12.06	29.50	3.33	.83	67.76
7	-28.3	-370.1	-29.6	133.6	8.37	36.41	2.56	13.88	2.86	.81	79.56
8	-34.6	-546.6	-37.0	94.9	7.11	24.71	-0.07	10.19	2.50	.77	-89.59
9	-35.3	-668.4	-39.8	52.3	5.07	11.55	-1.06	5.54	2.22	.74	-79.17
10	-31.8	-730.4	-37.9	10.6	1.87	4.08	-0.88	1.34	2.00	.58	-56.73
11	-25.6	-734.3	-31.6	-26.2	.90	1.32	-0.53	.01	1.82	.49	-1.59
12	-18.2	-684.0	-21.5	-56.4	.91	1.21	-0.44	.04	1.67	.42	-5.78
13	-10.7	-589.6	-9.0	-78.8	.65	.72	-0.28	-0.01	1.54	.41	1.36
14	-4.1	-459.1	4.3	-93.4	.55	.62	-0.13	-0.07	1.43	.26	27.50
15	.8	-304.4	16.6	-100.9	.42	.41	-0.11	-0.07	1.33	.32	34.82
16	4.4	-136.6	27.1	-102.2	.32	.38	-0.08	.02	1.25	.24	-11.50
17	7.4	32.6	34.6	-97.9	.23	.28	-0.06	-0.02	1.18	.24	20.63
18	10.6	194.1	38.4	-88.0	.15	.26	-0.03	-0.03	1.11	.22	44.93
19	13.9	337.2	38.3	-73.1	.17	.19	-0.03	-0.03	1.05	.25	45.10
20	16.7	453.2	34.6	-53.8	.20	.21	-0.03	.01	1.00	.17	-25.44
21	18.7	534.3	27.7	-30.8	.18	.15	-0.02	.03	.95	.19	-58.28
22	19.4	575.6	18.4	-5.9	.15	.10	-0.01	.01	.91	.13	-54.31
23	18.5	574.2	7.5	20.0	.10	.11	-0.02	-0.01	.87	.23	21.50
24	15.2	531.2	-3.7	44.1	.09	.17	-0.02	-0.01	.83	.20	27.29
25	10.0	449.5	-14.6	64.4	.11	.19	-0.02	0	.80	.12	12.57
26	3.0	336.5	-24.1	78.1	.10	.19	-0.02	0	.77	.12	-3.89
27	-4.1	202.6	-31.6	84.2	.09	.17	-0.01	-0.01	.74	.08	42.42
28	-10.1	58.9	-36.8	82.6	.08	.18	0	0	.71	.04	57.02
29	-14.1	-82.9	-39.5	74.0	.06	.16	0	.01	.69	.07	48.64
30	-15.5	-212.2	-39.5	59.7	.06	.16	0	-0.01	.67	.16	-71.63
31	-14.1	-319.7	-36.4	42.2	.06	.18	0	-0.02	.65	.21	-86.87
32	-10.6	-397.7	-30.5	22.9	.06	.19	0	-0.01	.63	.14	84.50
33	-6.1	-443.2	-22.2	3.9	.05	.19	-0.01	-0.02	.61	.20	67.94
34	-1.6	-455.3	-12.0	-13.9	.05	.19	-0.01	0	.59	.16	19.83
35	2.2	-434.2	-1.0	-28.7	.05	.14	-0.01	.01	.57	.14	-26.33
36	4.4	-384.9	10.2	-40.5	.05	.14	-0.01	.01	.56	.13	-31.67
37	4.5	-311.2	20.1	-49.2	.05	.15	-0.01	.01	.54	.11	-33.54
38	3.6	-218.8	27.6	-54.1	.04	.14	0	.01	.53	.08	-78.05
39	2.8	-115.4	32.8	-56.0	.04	.14	-0.01	.02	.51	.25	-74.07
40	3.3	-8.5	35.0	-55.4	.04	.16	0	.02	.50	.27	-87.08
41	4.9	96.1	34.3	-52.2	.04	.17	.01	0	.49	.14	10.12
42	7.2	190.6	31.6	-46.7	.05	.17	.02	-0.01	.48	.21	-27.89
43	9.9	269.8	26.6	-38.2	.05	.15	.01	-0.01	.47	.20	-30.03
44	12.5	328.4	20.3	-26.2	.05	.12	.01	-0.01	.45	.17	-26.27
45	14.3	362.5	12.8	-11.5	.04	.10	.01	0	.44	.19	7.67
46	14.5	369.6	4.7	4.6	.03	.08	.01	0	.43	.22	-1.14
47	12.7	349.2	-3.5	20.9	.04	.06	.01	-0.01	.43	.23	-48.74
48	9.3	303.2	-11.5	36.0	.04	.08	0	.01	.42	.10	69.66
49	5.0	234.4	-18.5	47.9	.04	.12	.01	.02	.41	.28	65.54
50	.5	148.9	-23.8	55.0	.02	.06	.01	0	.40	.23	0

~~* U CHANNEL SIGN REVERSED~~

079 OIII

BBELS 13 2.5M-1 0, 25MAY-65 1740-1745

LAGS= 50 N= 1461 DT= 0.2SEC

MEAN U= 15.5 MEAN W= -0.7

CORRELATION COEFFICIENT .11

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	51.3	668.6	20.2	0	4.15	7.02	-0.80	0	0	.15	0
1	47.4	634.9	19.1	22.9	6.55	16.35	-1.19	.11	20.00	.12	-5.46
2	40.2	558.6	15.3	43.6	5.01	23.86	-2.60	1.30	10.00	.27	-26.60
3	31.2	440.9	9.2	59.6	6.19	104.85	-2.91	10.04	6.67	.41	-73.83
4	21.9	294.5	1.7	70.0	7.62	226.84	6.54	24.58	5.00	.61	75.11
5	13.3	131.9	-6.9	73.4	5.87	186.00	12.78	22.99	4.00	.74	60.93
6	6.0	-31.2	-15.1	69.9	4.68	60.34	7.01	10.67	3.33	.76	56.69
7	.2	-182.4	-22.1	60.5	3.19	19.96	1.99	5.29	2.86	.71	69.43
8	-3.8	-309.8	-27.3	46.2	2.01	11.14	.27	2.51	2.50	.53	83.84
9	-6.3	-406.7	-29.8	29.6	1.08	3.46	-0.29	.55	2.22	.32	-61.92
10	-7.2	-466.1	-29.3	12.4	.75	1.53	-0.22	.18	2.00	.27	-40.10
11	-6.8	-487.7	-25.9	-4.1	.54	.47	-0.17	.06	1.82	.35	-18.74
12	-5.4	-473.2	-19.8	-18.7	.37	.47	-0.02	-0.02	1.67	.06	48.12
13	-3.4	-426.4	-11.7	-30.5	.35	.40	.01	-0.11	1.54	.30	-86.91
14	-1.2	-352.4	-2.7	-39.1	.32	.35	.03	-0.10	1.43	.32	-75.68
15	.9	-259.3	6.4	-44.0	.22	.25	0	-0.07	1.33	.28	88.00
16	2.7	-154.4	14.2	-45.5	.14	.26	-0.03	-0.03	1.25	.22	41.25
17	3.9	-44.6	20.6	-43.9	.10	.16	-0.04	-0.01	1.18	.34	16.90
18	5.1	62.5	25.2	-39.6	.10	.17	-0.03	0	1.11	.20	-9.75
19	6.1	161.2	27.5	-33.5	.10	.19	-0.01	.03	1.05	.23	-69.39
20	6.9	244.2	27.7	-26.1	.08	.19	0	.02	1.00	.17	76.88
21	7.4	307.8	25.7	-17.6	.06	.15	.01	0	.95	.08	-4.78
22	7.6	348.3	21.8	-8.7	.05	.16	0	.01	.91	.12	-82.68
23	7.5	363.5	16.7	0	.04	.13	-0.01	.01	.87	.23	-50.07
24	7.3	353.4	10.3	8.4	.06	.13	-0.01	.01	.83	.19	-53.30
25	7.0	319.0	3.5	16.3	.05	.17	0	0	.80	.07	40.74
26	6.6	264.0	-3.2	23.3	.04	.20	.01	-0.02	.77	.21	-56.15
27	6.2	191.8	-9.7	28.5	.04	.19	.01	-0.01	.74	.16	-29.36
28	5.5	109.1	-15.3	31.8	.03	.18	0	0	.71	.04	50.92
29	4.5	21.2	-19.9	32.6	.02	.15	0	0	.69	.05	11.48
30	3.3	-64.9	-23.0	31.2	.03	.13	0	0	.67	.02	55.78
31	2.1	-143.3	-24.8	27.4	.03	.12	0	0	.65	.09	-11.94
32	1.0	-208.7	-24.9	21.7	.03	.12	0	.01	.63	.16	-60.88
33	.3	-257.4	-23.6	14.2	.03	.10	0	.01	.61	.19	-78.39
34	.0	-284.8	-20.9	5.7	.02	.12	0	.01	.59	.12	83.47
35	.1	-289.9	-17.2	-3.2	.02	.15	-0.01	0	.57	.13	-3.55
36	.9	-273.0	-12.5	-11.5	.03	.16	-0.02	-0.01	.56	.37	19.07
37	1.8	-236.4	-6.8	-18.6	.03	.15	-0.02	-0.01	.54	.40	30.74
38	2.6	-183.6	-0.6	-24.1	.03	.14	-0.01	-0.01	.53	.28	59.70
39	3.2	-119.4	5.5	-27.9	.02	.12	0	-0.01	.51	.25	-82.35
40	3.8	-49.3	11.5	-29.2	.02	.12	0	-0.01	.50	.22	-89.66
41	4.3	21.1	16.9	-27.7	.02	.14	-0.01	-0.01	.49	.28	57.39
42	4.6	87.0	20.9	-24.3	.02	.14	-0.01	-0.01	.48	.28	57.49
43	4.6	144.2	23.1	-19.1	.02	.12	0	-0.01	.47	.16	-83.52
44	4.7	188.2	23.4	-13.0	.02	.10	0	0	.45	.03	62.85
45	4.9	217.3	21.8	-6.4	.02	.11	0	0	.44	.08	5.30
46	5.2	230.0	18.1	.3	.02	.15	0	0	.43	.09	-68.92
47	5.2	226.0	12.7	7.0	.02	.17	.01	.01	.43	.18	53.86
48	5.0	206.9	6.1	12.9	.02	.17	0	.01	.42	.22	-84.04
49	4.3	175.3	-1.2	18.0	.02	.19	-0.01	0	.41	.12	-8.79
50	3.3	133.5	-8.3	21.6	.01	.11	0	0	.40	.12	0

080 OIII
BBELS 13 2.5M-II 0. 25MAY-65 1747-1752
LAGS= 50 N= 1532 DT= 0.2SEC
MEAN U=-13.9 MEAN W= -2.6

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	42.1	573.1	27.5	0	2.03	2.97	-0.07	0	0	.03	0
1	38.3	545.5	25.9	21.3	3.66	5.42	.13	.80	20.00	.18	80.83
2	30.5	475.8	21.1	40.6	3.25	13.02	-0.43	1.84	10.00	.29	-76.72
3	20.8	369.9	13.6	55.9	3.32	100.64	-1.95	7.82	6.67	.44	-75.98
4	11.2	238.1	4.2	65.0	4.61	193.44	3.77	16.26	5.00	.56	76.95
5	2.6	93.8	-5.9	66.9	6.77	148.57	12.24	18.82	4.00	.71	56.96
6	-4.3	-50.6	-15.2	61.4	6.90	67.18	10.21	15.22	3.33	.85	56.15
7	-9.1	-183.0	-22.7	49.9	4.50	26.48	3.61	7.97	2.86	.80	65.62
8	-11.7	-293.5	-27.4	34.1	2.05	6.46	.46	2.57	2.50	.72	79.81
9	-12.4	-375.0	-28.8	16.5	.89	2.47	-0.08	.64	2.22	.44	-82.76
10	-11.4	-422.5	-26.8	-0.7	.63	1.04	-0.06	-0.12	2.00	.17	64.08
11	-8.8	-435.4	-21.5	-15.6	.69	.83	-0.09	-0.27	1.82	.37	70.63
12	-5.1	-415.5	-13.8	-26.5	.66	.61	-0.06	-0.29	1.67	.46	79.06
13	-0.6	-367.9	-4.6	-33.0	.45	.47	-0.03	-0.17	1.54	.38	79.44
14	3.8	-298.7	5.0	-35.1	.28	.34	-0.01	-0.11	1.43	.35	85.76
15	7.5	-215.2	13.7	-33.6	.21	.28	-0.02	-0.07	1.33	.30	75.60
16	9.8	-125.3	20.8	-29.2	.15	.24	-0.02	-0.06	1.25	.32	74.73
17	10.5	-35.8	25.5	-22.9	.12	.19	-0.02	-0.04	1.18	.30	70.04
18	9.7	47.6	27.4	-15.7	.10	.12	-0.02	-0.03	1.11	.36	54.89
19	7.7	119.8	26.5	-8.6	.09	.11	-0.02	-0.03	1.05	.39	57.09
20	5.1	178.2	23.1	-2.2	.09	.10	-0.01	-0.04	1.00	.47	75.73
21	2.4	221.0	17.5	2.9	.07	.10	-0.01	-0.03	.95	.35	69.24
22	.0	248.1	10.5	6.6	.06	.09	-0.01	-0.01	.91	.19	22.92
23	-1.7	260.1	2.8	8.8	.06	.09	-0.01	0	.87	.10	20.49
24	-2.8	258.3	-4.6	9.6	.04	.09	.01	-0.01	.83	.13	-43.94
25	-3.2	244.2	-11.2	9.2	.03	.10	0	0	.80	.07	13.53
26	-3.2	219.7	-16.4	8.1	.04	.10	0	0	.77	.07	-19.29
27	-3.1	187.1	-19.9	6.9	.03	.09	0	-0.01	.74	.10	71.87
28	-2.6	148.0	-21.4	5.8	.03	.07	0	-0.01	.71	.16	-56.53
29	-1.9	104.7	-21.1	5.0	.03	.06	0	0	.69	.10	-3.85
30	-1.0	58.6	-19.4	4.6	.02	.06	0	0	.67	.05	-61.45
31	-0.0	11.0	-16.5	4.7	.02	.06	0	0	.65	.13	-9.88
32	.9	-36.3	-12.7	5.3	.02	.07	0	0	.63	.03	-79.85
33	1.7	-81.7	-8.5	6.2	.02	.09	.01	0	.61	.16	8.83
34	2.2	-123.6	-4.1	6.9	.02	.08	.01	0	.59	.17	34.22
35	2.4	-160.2	.1	7.5	.02	.06	0	0	.57	.09	24.41
36	2.2	-189.9	3.9	7.7	.01	.06	0	0	.56	.09	-55.37
37	1.9	-210.6	7.3	7.2	.01	.07	0	0	.54	.07	41.19
38	1.9	-221.8	10.0	6.0	.02	.08	0	0	.53	.16	61.61
39	1.9	-220.8	12.3	3.7	.01	.08	0	-0.01	.51	.26	87.03
40	1.9	-207.5	14.0	.4	.01	.08	0	-0.01	.50	.21	-85.42
41	1.9	-181.9	15.0	-3.6	.01	.07	0	0	.49	.10	-72.78
42	1.8	-144.5	15.4	-8.2	.01	.06	0	0	.48	.06	42.59
43	1.6	-97.6	14.9	-12.8	.01	.05	0	0	.47	.03	-24.07
44	1.2	-43.9	13.6	-17.2	.01	.05	0	0	.45	.12	16.06
45	.8	14.0	11.5	-20.3	.01	.06	0	0	.44	.14	-49.17
46	.7	71.7	8.8	-21.9	.01	.05	0	0	.43	.08	67.50
47	1.0	125.9	5.5	-21.5	.01	.04	0	0	.43	.15	2.77
48	1.6	172.1	1.7	-19.2	.01	.05	.01	0	.42	.21	-0.50
49	2.4	207.4	-2.0	-15.1	.01	.06	0	0	.41	.18	-11.55
50	2.9	228.4	-5.7	-9.7	.01	.03	0	0	.40	.13	0

081 OIII

BBFLS 13 1.0M-II 0. 25MAY-65 1828-1833

LAGS= 50 N= 1636 DT= 0.2SEC

MEAN U=-11.3 MEAN W= 1.2

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	200.8	878.0	-48.2	0	6.28	5.70	-1.13	0	0	.19	0
1	188.7	829.3	-44.8	67.2	12.34	13.88	-1.32	1.75	20.00	.17	-53.07
2	159.4	705.8	-35.7	128.1	11.66	18.36	-1.21	2.26	10.00	.18	-61.79
3	118.8	523.2	-22.5	177.2	21.07	113.20	-5.08	28.76	6.67	.60	-79.98
4	72.0	305.5	-6.9	209.3	41.85	265.43	-5.06	76.77	5.00	.73	-86.23
5	24.4	76.1	8.2	221.8	45.96	239.45	-4.85	70.91	4.00	.68	-86.09
6	-19.4	-141.8	20.5	214.0	30.29	109.81	-11.50	33.27	3.33	.61	-70.93
7	-55.3	-330.0	27.9	187.5	15.26	54.35	-11.14	15.20	2.86	.55	-53.77
8	-81.1	-475.2	29.8	146.3	6.27	29.48	-5.11	4.52	2.50	.50	-41.48
9	-96.1	-568.5	26.6	95.4	2.63	10.71	-1.58	.25	2.22	.30	-8.99
10	-99.7	-607.8	19.4	40.5	1.50	4.28	-0.02	0	2.00	.01	-1.85
11	-92.5	-596.1	10.0	-13.0	1.08	2.61	-0.14	-0.17	1.82	.13	50.02
12	-76.7	-541.3	.1	-60.9	.81	1.86	-0.06	-0.11	1.67	.10	61.35
13	-55.2	-453.0	-8.5	-99.9	.67	1.46	0	-0.23	1.54	.23	89.53
14	-31.3	-342.5	-14.4	-128.0	.54	1.14	.02	-0.19	1.43	.25	-84.08
15	-7.3	-220.3	-16.5	-143.5	.37	.76	.08	-0.16	1.33	.34	-64.29
16	14.5	-94.8	-14.9	-147.0	.27	.60	.05	-0.06	1.25	.20	-51.51
17	32.4	25.2	-10.4	-139.8	.20	.60	.02	0	1.18	.05	4.70
18	45.0	133.9	-3.7	-123.9	.16	.47	.02	.02	1.11	.10	40.79
19	52.5	227.0	3.4	-101.4	.14	.26	.01	-0.01	1.05	.08	-52.47
20	55.5	301.6	9.7	-75.0	.12	.19	0	-0.01	1.00	.04	74.58
21	54.2	355.9	13.7	-47.0	.08	.18	-0.01	0	.95	.12	6.44
22	49.1	387.8	14.7	-18.6	.09	.22	-0.03	.01	.91	.22	-11.64
23	41.3	395.5	12.9	9.5	.14	.21	-0.03	-0.03	.87	.24	46.25
24	32.4	378.2	8.9	35.4	.15	.15	-0.01	-0.04	.83	.24	79.13
25	23.0	338.2	2.8	58.1	.09	.14	0	-0.01	.80	.08	63.36
26	13.3	277.9	-4.2	77.1	.05	.16	-0.01	.03	.77	.33	-61.41
27	3.9	201.7	-11.1	92.0	.06	.14	-0.02	.02	.74	.29	-48.25
28	-4.4	113.1	-17.1	101.9	.07	.13	-0.02	-0.01	.71	.21	31.41
29	-11.4	19.1	-21.8	106.1	.05	.13	-0.01	-0.02	.69	.25	63.28
30	-17.6	-73.5	-24.6	104.3	.04	.14	-0.01	-0.01	.67	.15	27.08
31	-22.9	-159.1	-25.3	96.6	.03	.13	-0.01	0	.65	.18	-3.85
32	-26.6	-229.9	-24.1	82.6	.03	.09	0	.01	.63	.14	-88.74
33	-28.6	-281.8	-20.9	63.3	.03	.08	0	0	.61	.08	40.26
34	-29.1	-310.8	-16.1	39.5	.03	.08	-0.01	0	.59	.15	-27.97
35	-28.2	-317.3	-10.0	12.9	.03	.08	-0.01	.01	.57	.22	-38.52
36	-25.8	-302.2	-2.1	-15.4	.04	.10	-0.01	.01	.56	.14	-47.46
37	-22.3	-268.9	6.8	-42.9	.04	.10	0	0	.54	.07	-20.16
38	-17.7	-219.4	16.0	-67.8	.03	.08	0	0	.53	.09	-29.85
39	-12.4	-159.5	24.2	-88.3	.03	.07	0	.01	.51	.20	-57.56
40	-6.4	-94.0	30.4	-102.3	.03	.09	-0.01	.02	.50	.35	-62.93
41	.5	-28.1	33.0	-108.4	.02	.09	-0.01	.01	.49	.27	-51.68
42	7.8	35.2	31.7	-106.6	.02	.08	0	.01	.48	.18	-49.79
43	15.1	92.4	26.2	-97.3	.02	.10	0	.01	.47	.24	-69.54
44	22.3	141.9	17.3	-81.1	.02	.12	0	.01	.45	.19	89.85
45	28.7	182.0	5.8	-59.1	.02	.10	.01	0	.44	.18	37.81
46	33.5	211.0	-7.1	-33.5	.02	.09	.01	0	.43	.14	30.29
47	36.0	228.5	-19.9	-6.0	.02	.11	0	0	.43	.06	-64.75
48	35.8	234.1	-30.7	21.4	.02	.10	0	0	.42	.02	14.38
49	33.3	226.7	-37.5	46.0	.02	.09	0	.01	.41	.15	74.28

CORRELATION COEFFICIENT -0.115

082 0 III

BBELS- 13 1.?M- III 25 MAY-65 1835-1840

LAGS= 50 N= 1304 DT= .20SEC

MEAN U = 12.4 MEAN W = -3.2

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	272.5	1196.4	-87.3	0	6.29	3.35	-2.22	0	0	.48	0
1	256.2	1039.3	-82.7	121.2	15.76	9.47	-5.13	1.38	20.00	.44	-15.08
2	219.3	885.9	-68.6	231.7	19.58	12.05	-6.18	5.32	10.00	.53	-40.74
3	164.0	654.1	-48.4	319.2	28.42	114.64	-10.08	41.19	6.67	.74	-76.25
4	100.3	371.7	-23.9	376.5	55.69	330.75	-12.64	123.26	5.00	.91	-84.14
5	34.2	70.4	.5	397.3	66.09	353.36	-11.14	141.69	4.00	.93	-85.50
6	-26.9	-221.0	20.9	381.0	41.60	169.66	-14.42	73.78	3.33	.89	-78.94
7	-77.4	-475.7	34.6	331.3	19.23	55.60	-14.85	22.43	2.86	.82	-56.48
8	-114.1	-675.2	40.4	254.1	8.36	24.58	-7.91	5.27	2.50	.66	-33.71
9	-134.8	-803.8	38.1	157.6	3.15	10.99	-2.69	-0.20	2.22	.46	4.19
10	-140.3	-856.9	29.7	53.2	1.99	4.57	-0.56	-0.37	2.00	.22	33.08
11	-131.1	-835.2	18.6	-49.8	1.39	1.99	.08	-0.06	1.82	.06	-39.10
12	-116.3	-748.1	6.9	-142.2	.78	1.75	.23	.11	1.67	.22	26.94
13	-81.4	-607.0	-3.3	-215.3	.49	1.44	.19	-0.02	1.54	.23	-4.55
14	-48.7	-428.8	-9.6	-264.0	.41	1.15	.17	-0.08	1.43	.28	-25.06
15	-15.2	-231.9	-11.7	-286.0	.33	.75	.11	-0.15	1.33	.37	-53.18
16	15.9	-30.7	-10.2	-281.7	.26	.62	.03	-0.14	1.25	.36	-77.53
17	41.6	158.4	-5.6	-254.0	.19	.53	.04	-0.11	1.18	.38	-69.47
18	60.5	322.3	.0	-208.4	.14	.46	.05	-0.03	1.11	.22	-34.12
19	71.5	451.7	5.7	-150.6	.11	.36	.01	-0.02	1.05	.11	-73.09
20	74.8	540.3	10.1	-86.5	.13	.30	-0.01	-0.04	1.00	.20	72.64
21	70.7	584.3	12.5	-21.9	.14	.29	-0.02	-0.04	.95	.21	61.00
22	61.4	592.2	11.7	38.6	.14	.31	-0.02	-0.01	.91	.10	30.78
23	48.2	538.1	8.3	90.5	.14	.28	.01	-0.02	.87	.12	-68.67
24	32.3	456.3	3.2	131.1	.13	.27	.03	-0.03	.83	.22	-48.24
25	15.4	346.7	-3.0	158.8	.12	.25	.02	-0.02	.80	.14	-47.22
26	-1.3	218.9	-9.5	172.4	.10	.23	-0.00	-0.02	.77	.10	74.71
27	-17.4	84.9	-14.6	173.4	.08	.27	-0.02	-0.02	.74	.21	39.61
28	-31.7	-46.6	-18.0	161.5	.06	.33	-0.02	.01	.71	.16	-22.86
29	-43.9	-162.9	-19.7	139.1	.06	.32	-0.02	.03	.69	.25	-54.68
30	-53.1	-260.9	-18.9	108.2	.08	.32	-0.06	.03	.67	.44	-29.02
31	-59.0	-331.9	-15.0	71.2	.08	.30	-0.07	.03	.65	.44	-21.10
32	-60.8	-374.1	-10.0	32.7	.07	.22	-0.02	.01	.63	.16	-26.59
33	-57.9	-388.0	-2.9	-6.6	.06	.22	-0.01	-0.01	.61	.14	65.96
34	-51.4	-375.3	4.8	-42.7	.06	.29	-0.01	-0.03	.59	.23	67.24
35	-40.8	-337.2	11.8	-73.7	.05	.28	.00	-0.03	.57	.29	-88.62
36	-27.3	-280.7	17.4	-97.8	.05	.27	-0.00	-0.04	.56	.38	85.27
37	-12.7	-210.7	22.0	-113.5	.04	.29	-0.02	-0.03	.54	.34	54.98
38	2.7	-132.2	24.7	-120.7	.04	.28	-0.02	-0.01	.53	.27	27.54
39	17.3	-50.9	25.2	-119.3	.05	.24	-0.02	-0.03	.51	.37	58.63
40	29.7	28.1	23.7	-109.5	.04	.25	-0.02	-0.03	.50	.37	51.07
41	39.6	100.5	20.0	-93.7	.04	.28	-0.02	.00	.49	.17	-15.37
42	46.5	161.7	14.1	-72.9	.05	.29	-0.01	-0.00	.48	.06	18.49
43	50.6	208.4	6.8	-48.8	.05	.30	-0.02	-0.03	.47	.30	62.83
44	51.5	239.6	-1.3	-23.6	.06	.32	-0.02	-0.03	.45	.26	52.81
45	49.8	253.5	-9.4	.4	.07	.31	-0.01	-0.02	.44	.13	57.57
46	45.7	253.1	-17.1	22.0	.06	.24	-0.01	-0.02	.43	.19	74.62
47	39.4	237.5	-24.0	39.5	.04	.23	-0.00	-0.02	.43	.19	86.89
48	31.7	209.0	-29.3	54.1	.03	.28	.01	-0.00	.42	.07	-18.71
49	23.1	170.9	-32.6	65.3	.03	.23	-0.01	-0.00	.41	.11	1.28
50	14.3	125.9	-34.3	73.8	.02	.09	-0.01	-0.00	.40	.35	.00

CORRELATION COEFFICIENT -0.159

083 OIII

BRFLS- 13 4.0[illegible]-III 25 MAY-65 2016-2020

LAGS= 50 N= 1684 DT= .20SEC

MEAN U = -13.6 MEAN W = -8.5

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	89.7	424.0	-20.9	0	13.09	8.93	-1.87	0	0	.17	0
1	84.8	408.1	-20.7	22.0	19.32	14.74	-3.62	-2.18	20.00	.25	30.99
2	79.8	366.2	-19.9	42.3	11.09	27.46	-3.88	1.37	10.00	.24	-19.43
3	70.3	301.3	-18.3	59.4	12.67	92.06	-5.39	18.96	6.67	.58	-74.13
4	59.6	219.3	-15.9	71.9	14.19	139.64	-3.99	32.94	5.00	.75	-83.10
5	49.4	127.1	-12.8	79.1	9.24	94.65	-0.86	22.45	4.00	.76	-87.79
6	37.6	31.5	-9.3	80.3	4.03	32.14	-1.11	7.07	3.33	.63	-81.09
7	27.6	-60.4	-6.0	75.9	1.73	8.39	-1.04	1.40	2.86	.46	-53.50
8	18.8	-142.7	-2.9	66.4	1.08	2.15	.01	.07	2.50	.04	79.06
9	11.5	-209.8	-0.4	52.6	.90	.76	.22	-0.01	2.22	.26	-3.52
10	5.9	-258.2	1.4	35.4	.59	.52	.18	-0.04	2.00	.34	-11.37
11	2.2	-285.4	2.7	16.3	.33	.36	.07	.04	1.82	.22	31.25
12	.0	-291.2	3.6	-3.2	.24	.33	.08	.06	1.67	.36	39.68
13	-0.6	-276.6	4.1	-21.6	.21	.31	.09	.05	1.54	.41	25.65
14	.1	-244.4	4.3	-37.8	.15	.21	.07	.01	1.43	.39	7.84
15	2.1	-198.3	4.3	-50.7	.13	.13	.04	-0.01	1.33	.34	-19.08
16	5.0	-142.9	4.4	-59.5	.13	.08	.03	-0.03	1.25	.38	-47.36
17	8.7	-82.[illegible]	4.5	-64.2	.10	.07	.01	-0.02	1.18	.29	-59.79
18	12.7	-22.0	4.6	-64.8	.06	.06	.00	-0.01	1.11	.20	-68.26
19	16.6	35.6	4.8	-61.7	.05	.05	.01	-0.01	1.05	.17	-38.49
20	20.1	86.4	4.7	-55.3	.04	.06	.00	-0.01	1.00	.26	-72.11
21	23.0	127.9	4.3	-46.3	.03	.05	-0.00	-0.01	.95	.13	73.11
22	25.0	158.6	3.5	-35.5	.03	.03	-0.00	.00	.91	.04	-1.22
23	26.2	177.7	2.1	-23.7	.02	.02	.00	.00	.87	.03	41.35
24	26.4	185.1	.2	-11.6	.02	.03	.00	.00	.83	.10	62.39
25	25.6	181.5	-2.0	-0.2	.02	.04	-0.00	.01	.80	.33	-77.98
26	24.2	168.4	-4.3	10.1	.02	.04	-0.00	.01	.77	.36	-73.75
27	22.3	147.8	-6.5	18.9	.01	.03	-0.00	.00	.74	.16	-47.91
28	20.2	121.2	-8.3	25.8	.01	.02	-0.00	-0.00	.71	.20	32.32
29	18.1	90.9	-9.4	30.6	.01	.03	-0.00	.00	.69	.04	-76.89
30	15.9	58.7	-9.9	33.1	.01	.03	.00	.00	.67	.17	5.27
31	13.6	26.4	-9.6	33.7	.01	.03	.00	-0.00	.65	.18	-2.76
32	11.2	-4.2	-8.6	32.5	.01	.03	.00	-0.00	.63	.15	-18.18
33	8.8	-31.5	-7.0	29.8	.01	.03	.00	-0.00	.61	.18	-10.28
34	6.5	-54.4	-4.7	25.7	.01	.03	.00	-0.00	.59	.26	-18.02
35	4.5	-72.1	-1.9	20.5	.01	.03	.00	-0.00	.57	.32	-17.72
36	2.7	-84.0	1.3	14.6	.00	.03	.00	-0.00	.56	.38	-13.96
37	1.1	-90.1	4.5	8.3	.01	.03	.00	-0.00	.54	.33	-6.33
38	-0.1	-90.6	7.4	1.8	.01	.03	.00	-0.00	.53	.21	-6.99
39	-1.0	-86.1	9.9	-4.6	.01	.03	.00	-0.00	.51	.14	-20.71
40	-1.6	-77.5	11.7	-10.7	.01	.02	.00	.00	.50	.14	.90
41	-1.8	-66.0	12.5	-16.2	.01	.03	.00	.00	.49	.20	50.87
42	-1.8	-52.2	12.3	-20.7	.01	.03	.00	.00	.48	.11	62.59
43	-1.6	-37.3	11.0	-24.0	.01	.03	.00	.00	.47	.06	59.55
44	-1.2	-22.0	8.9	-26.1	.00	.03	.00	.00	.45	.25	21.86
45	-0.5	-7.0	6.2	-27.0	.00	.03	.00	.00	.44	.34	11.67
46	.6	7.3	3.2	-26.8	.00	.03	.00	-0.00	.43	.15	-13.46
47	1.8	20.4	.3	-25.3	.00	.03	-0.00	-0.00	.43	.09	26.36
48	3.2	31.8	-2.2	-23.0	.01	.02	-0.00	.00	.42	.12	-4.66
49	4.6	41.6	-4.3	-19.8	.00	.02	-0.00	.00	.41	.10	-27.56
50	5.8	49.7	-5.9	-16.1	.00	.01	-0.00	.00	.40	.08	-0.00

CORRELATION COEFFICIENT -0.107

084 OIII

BBELS 13 4.0M-III 0. 05MAY-65 2034-2037

LAGS= 50 N= 723 DT= .20SEC

MEAN U = -10.8 MEAN W = -7.2

CORRELATION COEFFICIENT -0.120

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	133.2	468.9	-29.9	0	3.57	6.33	.32	0	0	.07	0
1	126.9	448.0	-27.6	40.7	10.67	9.57	.64	.68	20.00	.09	46.82
2	112.5	403.5	-23.3	78.8	16.70	25.58	.77	5.99	10.00	.29	82.66
3	92.1	335.5	-16.9	111.1	26.77	117.53	-3.46	38.61	6.67	.69	-84.87
4	68.8	249.2	-9.3	135.5	33.53	175.54	-10.19	64.69	5.00	.85	-81.05
5	44.5	150.5	-0.6	150.4	22.49	97.03	-9.88	39.90	4.00	.88	-76.09
6	21.1	44.9	7.9	154.9	8.14	21.77	-5.01	9.56	3.33	.81	-62.32
7	-0.5	-59.9	15.8	149.7	2.88	6.33	-1.58	1.45	2.86	.50	-42.49
8	-19.8	-155.6	21.6	134.6	1.61	1.86	-0.30	-0.01	2.50	.17	1.46
9	-36.2	-237.0	25.1	111.1	1.52	.81	-0.26	.23	2.22	.32	-41.70
10	-49.1	-299.3	26.6	81.3	1.37	.45	-0.21	.22	2.00	.38	-46.02
11	-58.2	-340.8	26.1	47.4	.95	.33	-0.12	.09	1.82	.26	-36.11
12	-62.9	-360.6	24.0	12.4	.71	.30	.02	-0.07	1.67	.16	-75.11
13	-62.8	-355.8	19.7	-22.2	.60	.29	.13	-0.05	1.54	.34	-22.12
14	-58.3	-329.6	14.6	-54.2	.30	.19	.05	-0.02	1.43	.20	-18.81
15	-50.4	-284.9	8.7	-81.5	.13	.15	-0.04	-0.01	1.33	.27	8.53
16	-40.0	-225.5	2.5	-102.5	.15	.20	-0.04	.03	1.25	.31	-34.74
17	-27.8	-156.1	-3.8	-115.5	.13	.28	-0.03	.07	1.18	.41	-63.90
18	-15.3	-80.4	-9.6	-120.0	.08	.30	-0.02	.04	1.11	.32	-62.36
19	-3.4	-3.9	-13.8	-117.2	.05	.33	-0.04	-0.02	1.05	.39	28.95
20	7.1	69.1	-16.6	-107.3	.07	.34	-0.07	-0.08	1.00	.68	49.56
21	15.8	135.4	-17.6	-91.4	.08	.29	-0.08	-0.06	.95	.63	37.74
22	22.4	190.6	-17.2	-70.9	.06	.19	-0.06	-0.02	.91	.63	15.77
23	26.4	233.3	-16.0	-47.2	.03	.12	-0.03	-0.00	.87	.48	2.45
24	27.6	260.3	-14.1	-22.7	.02	.09	-0.01	-0.01	.83	.20	48.05
25	26.0	272.6	-11.6	1.3	.02	.08	-0.01	-0.01	.80	.22	57.57
26	22.5	268.5	-8.7	23.7	.03	.09	-0.00	-0.01	.77	.11	68.74
27	18.0	250.5	-5.9	43.5	.03	.12	-0.00	.00	.74	.05	-20.96
28	12.8	220.6	-2.9	60.0	.04	.14	-0.02	.00	.71	.30	-5.37
29	7.3	179.9	-0.0	72.3	.04	.13	-0.03	.01	.69	.48	-13.25
30	1.2	131.4	2.6	80.0	.03	.09	-0.02	.01	.67	.41	-13.44
31	-5.1	78.4	4.5	83.0	.02	.10	-0.01	.00	.65	.33	-1.99
32	-11.5	23.3	6.1	81.4	.02	.11	-0.02	-0.00	.63	.42	13.76
33	-17.4	-30.3	7.5	75.7	.02	.08	-0.02	-0.01	.61	.49	21.26
34	-22.2	-79.1	8.4	66.0	.02	.07	-0.02	.00	.59	.37	-8.29
35	-25.4	-121.7	9.3	53.6	.02	.12	-0.01	.01	.57	.26	-44.91
36	-26.9	-155.6	10.1	38.9	.02	.14	-0.01	-0.00	.56	.15	30.84
37	-26.6	-179.0	10.9	22.9	.02	.14	-0.01	-0.02	.54	.55	63.66
38	-25.0	-191.7	11.2	6.5	.02	.15	-0.02	-0.04	.53	.79	59.27
39	-22.5	-193.6	10.7	-10.1	.02	.15	-0.02	-0.02	.51	.52	53.11
40	-19.4	-184.5	9.4	-25.7	.02	.11	-0.00	.00	.50	.07	-36.37
41	-15.7	-166.5	7.5	-39.4	.02	.07	.01	.00	.49	.20	33.20
42	-11.4	-140.8	5.3	-50.5	.02	.07	.01	-0.00	.48	.35	-9.57
43	-6.5	-109.4	3.1	-58.6	.02	.11	.00	.01	.47	.14	62.65
44	-1.0	-73.9	.9	-63.2	.02	.11	-0.02	.01	.45	.43	-31.79
45	4.7	-37.0	-1.2	-64.4	.03	.10	-0.03	.01	.44	.56	-25.12
46	9.8	-0.4	-3.0	-62.6	.03	.09	-0.02	.01	.43	.53	-25.58
47	13.8	34.2	-4.7	-57.9	.02	.12	-0.02	.01	.43	.46	-13.02
48	16.5	65.3	-6.3	-50.7	.02	.12	-0.02	.00	.42	.46	-4.77
49	17.9	91.2	-7.5	-41.3	.02	.09	-0.02	.00	.41	.54	-5.95
50	18.3	111.6	-7.8	-30.8	.01	.04	-0.01	.00	.40	.63	-0.00

085 OIII
BBELS- 13 4.0M- VI 26 MAY- 65 0008-0011
LAGS= 50 N= 719 DT= .20SEC
MEAN U = -5.2 MEAN W = .9

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	228.3	361.9	-41.9	0	1.28	1.26	-0.14	0	0	.11	0
1	219.0	348.9	-40.7	60.4	.96	.71	.09	-0.83	20.00	1.01	-83.71
2	196.3	316.1	-37.1	116.9	14.33	24.61	-3.62	12.79	10.00	.71	-74.21
3	163.5	265.3	-31.4	165.8	67.49	110.06	-15.08	74.88	6.67	.89	-78.61
4	122.6	199.9	-24.2	204.0	88.27	140.71	-16.21	102.67	5.00	.93	-81.03
5	76.5	124.7	-16.1	229.3	40.39	63.63	-4.93	48.05	4.00	.95	-84.14
6	27.5	44.2	-7.7	240.3	7.38	11.88	-0.60	8.23	3.33	.98	-85.85
7	-21.7	-36.6	1.2	237.0	2.52	4.53	-0.82	2.67	2.86	.83	-72.98
8	-68.9	-112.7	10.0	219.6	.57	1.16	-0.34	.29	2.50	.55	-40.99
9	-111.3	-179.7	18.1	190.0	.52	.69	-0.12	.17	2.22	.35	-55.87
10	-146.1	-234.4	24.9	150.0	.35	.23	.07	-0.09	2.00	.40	-49.86
11	-171.2	-273.7	30.0	102.5	.64	.22	.06	-0.03	1.82	.18	-30.11
12	-185.3	-296.8	33.0	50.6	.66	.16	-0.01	-0.01	1.67	.04	58.61
13	-188.6	-302.0	34.7	-1.7	.47	.23	-0.08	.10	1.54	.40	-52.51
14	-181.3	-290.9	35.1	-51.7	.32	.21	-0.11	.04	1.43	.46	-21.24
15	-163.8	-265.1	34.0	-97.3	.34	.16	-0.12	.04	1.33	.54	-19.28
16	-138.3	-226.9	31.6	-135.8	.27	.08	-0.07	-0.01	1.25	.48	7.11
17	-106.8	-178.1	27.6	-165.4	.17	.06	-0.02	-0.02	1.18	.23	43.99
18	-71.1	-122.0	22.5	-184.9	.13	.06	.01	-0.03	1.11	.40	-69.69
19	-33.1	-62.0	16.0	-194.0	.11	.08	.03	-0.02	1.05	.36	-35.99
20	4.6	-1.4	8.9	-192.6	.07	.10	.03	-0.03	1.00	.52	-39.57
21	40.4	56.7	1.4	-180.8	.06	.10	.03	-0.01	.95	.42	-19.61
22	73.1	109.3	-6.2	-160.0	.06	.06	.02	.01	.91	.38	19.51
23	100.9	153.9	-13.3	-131.7	.06	.04	.01	.03	.87	.54	65.17
24	122.6	189.0	-19.7	-97.8	.07	.03	.01	.01	.83	.21	53.20
25	137.2	212.8	-25.0	-60.1	.10	.02	-0.01	-0.01	.80	.19	50.24
26	143.9	225.1	-29.0	-21.0	.09	.03	-0.00	-0.02	.77	.41	87.71
27	142.9	225.5	-31.4	17.7	.05	.05	.01	-0.02	.74	.50	-64.28
28	134.3	214.6	-32.3	54.1	.03	.05	.01	-0.01	.71	.38	-36.93
29	119.4	193.4	-31.3	86.2	.03	.05	.01	.01	.69	.42	56.39
30	99.7	163.2	-29.0	112.8	.03	.04	.00	.01	.67	.35	88.03
31	74.3	125.9	-25.3	133.1	.04	.03	-0.01	.01	.65	.41	-30.42
32-	49.9	83.8	-20.4	145.8	.04	.03	-0.02	.01	.63	.44	-19.45
33	21.9	39.1	-14.4	150.5	.04	.03	-0.01	.00	.61	.31	-20.81
34	-6.5	-5.6	-7.8	147.3	.02	.04	-0.01	-0.01	.59	.43	60.94
35	-33.8	-48.5	-1.0	136.4	.02	.04	-0.00	-0.01	.57	.54	73.97
36	-58.5	-87.2	5.8	118.8	.03	.04	-0.00	-0.01	.56	.35	79.41
37	-79.4	-120.0	12.2	95.6	.03	.05	.00	-0.01	.54	.23	-69.41
38	-95.6	-145.2	17.7	68.2	.02	.04	.01	-0.00	.53	.26	-9.72
39	-106.2	-162.2	22.1	38.5	.03	.03	.01	.00	.51	.26	22.36
40	-111.0	-169.8	25.5	7.7	.03	.02	.00	-0.00	.50	.18	-75.18
41	-109.6	-168.1	27.5	-22.4	.04	.03	-0.00	-0.01	.49	.31	66.90
42	-102.2	-157.9	28.1	-50.4	.03	.03	-0.00	-0.01	.48	.28	67.63
43	-89.5	-139.5	27.2	-75.0	.02	.02	.00	-0.00	.47	.15	-6.08
44	-72.6	-114.9	25.0	-94.9	.01	.03	.01	.00	.45	.57	23.64
45	-52.5	-85.6	21.9	-108.8	.01	.04	.01	.01	.44	.50	36.65
46	-30.7	-53.2	17.9	-116.4	.01	.04	.00	.01	.43	.32	67.49
47	-8.5	-19.6	13.5	-117.1	.01	.04	.00	.01	.43	.32	68.70
48	13.1	13.3	8.8	-111.4	.01	.02	.00	.00	.42	.31	54.74
49	32.9	43.7	3.8	-99.8	.01	.01	.00	.00	.41	.32	41.98
50	50.0	69.8	-1.0	-83.3	.01	.01	.00	.00	.40	.35	.00

CORRELATION COEFFICIENT -0.146

086 OIII
RBFLS- 13 4.04- VII 26 MAY-65 0552-0557
LAGS= 50 N= 1470 DT= .20SEC
MEAN U = -5.4 MEAN W = -6.4

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	83.4	166.6	3.2	0	7.36	4.81	.58	0	0	.10	0
1	81.1	151.6	3.1	17.3	12.20	9.71	.24	.79	20.00	.08	73.27
2	76.4	139.1	2.9	33.6	10.72	17.44	-0.43	5.90	10.00	.43	-85.87
3	66.9	119.7	2.6	47.8	18.15	41.61	1.27	21.98	6.67	.80	86.68
4	56.3	95.1	2.2	59.2	20.80	50.07	1.70	28.56	5.00	.89	86.60
5	44.0	66.5	1.9	66.9	10.02	24.71	.07	13.83	4.00	.88	89.70
6	31.1	36.0	1.4	70.5	2.04	4.84	-0.26	2.22	3.33	.71	-83.23
7	18.1	5.3	.9	69.8	.70	1.43	-0.02	.51	2.86	.51	-88.29
8	6.7	-23.6	.2	65.2	.31	.50	-0.02	.12	2.50	.31	-82.88
9	-5.4	-49.4	-0.4	57.1	.20	.25	-0.02	.04	2.22	.20	-68.35
10	-14.8	-70.6	-1.1	46.2	.12	.11	-0.01	-0.01	2.00	.13	45.01
11	-22.0	-86.3	-1.7	33.1	.12	.11	.02	-0.01	1.82	.21	-30.74
12	-26.7	-95.9	-2.2	18.8	.10	.12	.02	-0.04	1.67	.43	-57.68
13	-28.8	-99.0	-2.4	4.0	.08	.12	.02	-0.04	1.54	.45	-60.94
14	-28.5	-96.1	-2.5	-10.3	.05	.08	.02	-0.03	1.43	.64	-60.38
15	-26.1	-87.7	-2.4	-23.4	.04	.05	.02	-0.02	1.33	.51	-42.88
16	-21.6	-74.8	-2.2	-34.5	.04	.03	.01	-0.01	1.25	.27	-57.96
17	-15.6	-58.5	-1.7	-43.1	.03	.03	-0.00	-0.00	1.18	.10	20.38
18	-8.7	-39.7	-1.0	-48.8	.03	.03	-0.00	-0.00	1.11	.13	35.88
19	-1.2	-19.7	-0.2	-51.6	.02	.04	-0.00	.00	1.05	.12	-0.97
20	6.3	.4	.7	-51.2	.02	.04	-0.00	.00	1.00	.07	-32.16
21	13.5	19.3	1.8	-48.1	.02	.04	.00	.00	.95	.07	30.19
22	19.9	36.1	2.9	-42.5	.02	.03	.00	-0.00	.91	.17	-62.14
23	25.2	49.8	4.0	-34.9	.02	.03	.00	-0.00	.87	.09	-63.07
24	29.0	60.0	5.0	-25.8	.01	.02	-0.00	.00	.83	.18	-4.98
25	31.3	66.1	5.9	-15.7	.01	.02	-0.00	.00	.80	.24	-6.92
26	32.0	68.2	6.6	-5.3	.01	.02	-0.00	-0.00	.77	.14	87.41
27	31.0	66.3	7.1	4.8	.01	.02	.00	-0.00	.74	.23	-80.72
28	28.5	60.9	7.2	14.0	.01	.02	-0.00	-0.00	.71	.24	85.96
29	24.8	52.4	6.9	22.0	.01	.01	-0.00	-0.00	.69	.04	54.28
30	20.1	41.6	6.5	28.2	.01	.01	-0.00	.00	.67	.09	-8.79
31	14.7	29.1	5.7	32.6	.01	.01	-0.00	-0.00	.65	.10	53.89
32	9.1	15.8	4.8	34.8	.01	.01	.00	-0.00	.63	.17	-62.11
33	3.1	2.4	3.6	35.0	.01	.01	.00	-0.00	.61	.17	-47.98
34	-2.4	-10.2	2.4	33.3	.00	.01	.00	-0.00	.59	.24	-75.58
35	-7.6	-21.5	1.1	29.9	.01	.02	.00	-0.00	.57	.12	-78.69
36	-11.9	-30.8	-0.3	25.0	.01	.02	.00	-0.00	.56	.11	-10.77
37	-15.4	-37.9	-1.6	19.1	.01	.02	.00	-0.00	.54	.24	-9.68
38	-17.8	-42.1	-2.8	12.5	.01	.01	.00	-0.00	.53	.23	-24.54
39	-19.1	-43.6	-3.9	5.7	.00	.01	.00	-0.00	.51	.22	-25.42
40	-19.3	-42.5	-4.7	-1.1	.00	.01	.00	-0.00	.50	.27	-24.50
41	-18.4	-38.9	-5.4	-7.4	.00	.01	.00	-0.00	.49	.08	-4.42
42	-16.6	-33.2	-5.8	-12.8	.00	.01	-0.00	.00	.48	.07	-75.23
43	-13.8	-25.7	-5.8	-17.2	.00	.01	.00	.00	.47	.18	22.54
44	-10.2	-16.9	-5.5	-20.4	.00	.01	.00	.00	.45	.34	19.47
45	-6.0	-7.1	-5.2	-22.2	.00	.01	.00	.00	.44	.31	16.13
46	-1.5	2.9	-4.7	-22.5	.00	.01	.00	-0.00	.43	.23	-15.93
47	3.0	12.3	-3.9	-21.5	.00	.01	.00	-0.00	.43	.22	-26.40
48	7.3	20.7	-3.1	-19.1	.00	.01	.00	-0.00	.42	.18	-28.23
49	11.1	27.9	-2.1	-15.5	.00	.01	.00	-0.00	.41	.21	-7.97
50	14.2	32.9	-1.1	-10.9	.00	.01	.00	-0.00	.40	.27	-0.00

CORRELATION COEFFICIENT .028
I/O ERR P6, LINE 6

087 LI-w

BBFLS- 14 0-2.0M- II 7 JUNE-65 1403-1408

LAGS= 50 N= 1408 DT= .20SEC

MEAN W_2= -3.2 MEAN W_1= 1.6

K	ACOV W_2	ACOV W_1	COV IN	COVOUT	SP W_2	SP W_1	CO	QUA	PER	R	PHI
0	397.4	870.8	434.4	0	13.92	11.49	7.47	0	0	.59	0
1	346.4	724.8	403.0	7.0	21.94	17.42	9.86	-0.99	20.00	.51	-5.71
2	303.8	573.0	339.7	23.5	23.28	19.72	11.58	1.52	10.00	.55	7.49
3	231.5	352.2	241.1	26.8	50.63	53.85	39.01	9.98	6.67	.77	14.35
4	147.0	113.5	121.7	27.6	83.88	133.31	91.64	13.00	5.00	.88	8.07
5	63.1	-99.0	5.0	37.8	83.84	186.16	116.99	5.49	4.00	.94	2.69
6	-15.5	-259.8	-110.1	32.2	49.92	149.76	81.51	2.00	3.33	.94	1.41
7	-81.2	-375.4	-189.6	28.5	22.02	93.43	39.84	3.06	2.86	.88	4.39
8	-139.2	-451.3	-257.8	23.5	10.39	55.03	18.40	2.39	2.50	.78	7.40
9	-166.4	-438.0	-275.9	16.9	4.27	29.64	7.06	.96	2.22	.63	7.73
10	-183.9	-409.5	-274.0	10.9	2.25	18.62	3.02	-0.20	2.00	.47	-3.78
11	-183.0	-327.8	-243.3	9.3	1.95	13.40	1.30	-0.05	1.82	.25	-2.30
12	-159.2	-228.9	-190.6	2.7	1.94	9.67	.44	.32	1.67	.13	35.80
13	-129.1	-132.6	-129.1	-2.3	1.84	6.11	.08	-0.28	1.54	.09	-73.69
14	-86.5	-25.5	-58.4	-3.0	1.44	4.60	.34	-0.55	1.43	.25	-58.75
15	-42.4	58.8	-2.1	-9.1	.88	4.57	.64	-0.08	1.33	.32	-7.16
16	-5.0	131.5	56.0	-13.7	.69	4.22	.43	.07	1.25	.25	9.78
17	32.1	182.5	96.3	-16.1	.58	3.17	-0.02	.04	1.18	.03	-63.54
18	60.0	216.3	132.1	-18.1	.64	2.43	-0.13	.14	1.11	.15	-47.19
19	79.9	215.2	147.7	-23.5	.82	2.04	-0.05	.13	1.05	.11	-68.91
20	95.5	206.0	151.5	-22.5	.79	1.70	.14	.03	1.00	.13	11.88
21	102.3	181.8	142.3	-27.8	.76	1.44	.35	.21	.95	.39	30.26
22	100.0	140.0	121.2	-28.5	.67	1.23	.25	.31	.91	.43	50.93
23	95.2	111.4	100.0	-26.6	.53	1.05	-0.00	.12	.87	.16	-87.79
24	82.6	72.7	72.4	-21.1	.49	1.07	-0.09	-0.04	.83	.13	26.80
25	67.4	40.1	43.3	-15.5	.36	1.02	-0.10	-0.08	.80	.21	36.13
26	49.8	3.2	16.3	-8.4	.27	.93	-0.02	-0.04	.77	.09	64.05
27	32.2	-27.4	-7.7	-0.0	.30	1.29	.03	-0.18	.74	.29	-79.76
28	15.3	-60.5	-29.8	8.3	.34	1.64	.08	-0.30	.71	.42	-75.32
29	-0.3	-79.9	-48.0	10.8	.43	1.81	.33	-0.06	.69	.38	-11.11
30	-9.2	-93.4	-55.8	11.4	.53	2.03	.39	-0.03	.67	.38	-4.32
31	-19.7	-97.5	-60.5	14.7	.51	1.92	.18	-0.35	.65	.40	-62.39
32	-21.5	-89.2	-56.8	17.6	.60	2.11	.13	-0.55	.63	.50	-76.21
33	-21.6	-73.6	-46.0	19.1	.92	2.84	.23	-0.80	.61	.51	-73.78
34	-17.3	-54.9	-32.3	21.6	.96	2.98	.13	-0.84	.59	.50	-80.95
35	-11.9	-32.8	-17.5	22.1	.74	2.31	-0.07	-0.55	.57	.42	83.13
36	1.2	4.4	3.5	15.3	.53	1.52	-0.07	-0.34	.56	.38	78.75
37	9.6	31.9	24.5	11.4	.36	.94	-0.05	-0.24	.54	.42	77.33
38	16.0	60.0	42.2	7.8	.47	.91	.03	-0.27	.53	.41	-84.60
39	22.3	89.5	58.6	1.4	.81	1.05	.14	-0.23	.51	.29	-59.12
40	22.0	107.3	64.7	-7.2	1.07	1.09	.14	-0.11	.50	.17	-39.29
41	25.9	120.8	74.6	-6.8	1.20	1.46	.38	-0.03	.49	.29	-3.94
42	23.5	119.4	69.2	-12.8	1.17	2.09	.78	-0.01	.48	.50	-0.38
43	17.5	114.5	62.3	-14.5	1.18	2.86	1.16	-0.04	.47	.63	-2.05
44	7.1	93.6	50.6	-15.6	1.09	3.25	1.10	.07	.45	.58	3.59
45	-2.5	65.5	30.9	-22.3	.76	2.56	.48	.21	.44	.38	23.86
46	-13.5	27.9	13.2	-21.1	.69	1.75	-0.01	.36	.43	.33	-88.53
47	-26.7	-5.3	-12.3	-21.2	.69	1.61	-0.33	.30	.43	.42	-42.49
48	-36.4	-47.4	-32.0	-14.1	.50	1.63	-0.39	.02	.42	.43	-3.29
49	-42.5	-83.1	-52.2	-10.2	.41	1.43	-0.23	-0.07	.41	.31	16.43
50	-46.8	-100.5	-62.1	-4.6	.21	.62	-0.08	-0.00	.40	.22	.00

CORRELATION COEFFICIENT .738

088 LI-W

BBELS 14 00-02M-III C. 06JUL-65 1412-1417

LAGS= 50 N= 1618 DT= 0.2SEC

MEAN W1= -3.4 MEAN W2= -6.0

K	ACOV W1	ACOV W2	COV IN	COVOUT	SP W1	SP W2	CO	QUA	PER	R	PHI
0	540.6	166.2	208.2	0	8.73	8.44	1.47	0	0	.17	0
1	497.8	158.1	197.6	4.7	16.24	14.72	4.25	-1.14	20.00	.28	-15.01
2	389.9	137.7	167.0	8.5	17.72	12.68	7.23	.71	10.00	.48	5.61
3	243.5	108.6	120.4	11.4	37.24	18.95	18.78	1.01	6.67	.71	3.07
4	87.2	74.2	63.9	12.8	86.70	33.82	46.51	3.84	5.00	.86	4.72
5	-55.1	38.1	4.7	13.2	118.73	38.29	60.82	6.41	4.00	.91	6.02
6	-166.7	3.6	-50.5	12.7	98.78	23.25	41.56	2.90	3.33	.87	4.00
7	-240.3	-26.6	-96.0	11.5	60.88	7.96	17.26	-0.01	2.86	.78	-0.03
8	-274.4	-50.1	-127.7	9.5	32.67	2.46	5.88	-0.31	2.50	.66	-3.01
9	-274.9	-65.3	-143.7	6.7	21.40	1.40	2.81	-0.33	2.22	.52	-6.78
10	-248.9	-72.0	-143.8	2.9	14.50	1.16	1.58	.13	2.00	.39	4.86
11	-203.7	-70.6	-130.5	-1.4	8.41	.73	.33	.43	1.82	.22	52.41
12	-146.6	-61.9	-106.5	-5.8	6.23	.39	-0.10	.29	1.67	.20	-71.92
13	-83.9	-47.4	-75.6	-9.9	3.48	.26	-0.08	.11	1.54	.14	-53.00
14	-21.4	-29.2	-41.3	-12.9	1.74	.20	-0.01	.08	1.43	.13	-81.75
15	36.0	-9.1	-6.9	-14.4	1.27	.18	0	.05	1.33	.11	-89.35
16	83.7	10.9	24.6	-14.2	.97	.18	.05	.01	1.25	.12	12.13
17	118.2	28.9	50.7	-12.4	.79	.16	.01	.01	1.18	.05	37.48
18	137.7	42.9	69.6	-9.4	.58	.11	-0.01	.01	1.11	.05	-63.48
19	142.0	51.9	80.2	-5.6	.37	.09	.02	0	1.05	.11	1.01
20	132.6	55.5	82.2	-1.9	.36	.07	.01	0	1.00	.04	-19.36
21	113.8	53.9	76.0	1.6	.37	.07	-0.02	0	.95	.15	-8.02
22	88.8	48.0	63.1	4.2	.28	.07	-0.02	0	.91	.17	11.49
23	60.8	38.8	45.8	6.0	.21	.06	-0.02	-0.01	.87	.18	24.20
24	31.9	27.6	26.3	7.0	.20	.04	-0.01	0	.83	.16	7.89
25	4.3	15.9	7.0	7.2	.17	.03	-0.01	0	.80	.13	-16.95
26	-19.3	4.7	-10.3	6.6	.14	.02	-0.01	.01	.77	.20	-38.21
27	-36.6	-4.9	-24.3	5.5	.12	.02	-0.01	0	.74	.20	-17.61
28	-46.5	-12.3	-34.1	3.7	.09	.03	0	0	.71	.09	-4.47
29	-49.4	-17.3	-39.6	1.0	.08	.03	0	.01	.69	.11	-66.51
30	-47.0	-19.9	-41.2	-2.4	.08	.03	0	.01	.67	.15	-67.93
31	-41.3	-20.3	-39.9	-6.4	.08	.03	0	0	.65	.03	58.26
32	-34.7	-18.8	-36.5	-10.5	.09	.03	0	0	.63	.06	-87.95
33	-30.2	-15.8	-31.6	-14.2	.08	.03	0	.01	.61	.11	89.97
34	-28.8	-11.7	-25.4	-16.8	.07	.02	0	.01	.59	.20	-82.50
35	-29.9	-6.8	-18.0	-18.4	.07	.02	-0.01	.01	.57	.23	-51.78
36	-29.8	-1.7	-10.1	-18.9	.07	.01	-0.01	.01	.56	.25	-46.11
37	-24.6	3.3	-2.2	-18.1	.07	.01	0	.01	.54	.24	-68.20
38	-12.5	7.5	5.2	-16.3	.07	.01	0	.01	.53	.24	69.80
39	6.8	10.5	12.1	-13.6	.05	.01	0	.01	.51	.28	51.26
40	30.3	12.5	18.2	-10.4	.04	.01	0	0	.50	.17	55.45
41	53.8	13.4	23.3	-6.8	.04	.01	0	0	.49	.05	-86.92
42	72.2	13.1	26.9	-3.3	.04	.01	0	0	.48	.07	16.36
43	82.3	11.7	28.6	0	.04	.01	0	.01	.47	.26	-64.66
44	82.3	9.6	27.8	2.5	.04	.01	0	.01	.45	.38	-67.87
45	73.0	7.1	24.5	3.9	.04	.01	0	0	.44	.17	-41.46
46	55.7	4.6	19.0	4.2	.04	.01	0	0	.43	.11	31.71
47	33.2	2.3	12.1	3.5	.05	.01	0	0	.43	.16	-41.41
48	8.4	.2	4.9	2.0	.06	.01	0	0	.42	.20	-61.55
49	-15.5	-1.6	-1.6	-0.7	.05	.01	0	0	.41	.09	70.83
50	-35.2	-3.2	-6.7	-4.2	.02	0	0	0	.40	.13	0

CORRELATION COEFFICIENT 0.695

089 LI-W

BBEL S- 14 I-3.0M- 1 7 JUNE-65 1433-1438

LAGS= 50 N= 1482 DT= .20SEC

MEAN W_2 = -2.9 MEAN W_1 = .3

K	ACOV W_2	ACOV W_1	COV IN	COVOUT	SP W_2	SP W_1	CO	QUA	PER	R	PHI
0	203.5	395.1	218.5	0	19.39	22.10	11.43	0	0	.55	0
1	196.4	374.4	209.3	3.8	30.63	32.64	16.30	2.92	20.00	.52	10.14
2	177.5	321.0	183.0	7.0	20.08	19.00	10.13	2.35	10.00	.53	13.04
3	149.3	242.9	143.2	9.5	22.78	31.87	21.49	2.45	6.67	.80	6.51
4	114.9	151.1	94.6	11.0	38.66	77.56	50.64	3.22	5.00	.93	3.64
5	77.9	57.4	42.4	11.5	39.72	97.71	58.33	1.31	4.00	.94	1.29
6	41.4	-28.3	-8.0	10.9	19.85	61.27	32.27	.77	3.33	.93	1.38
7	8.6	-98.1	-51.9	9.6	6.65	25.56	11.28	1.26	2.86	.87	6.37
8	-18.2	-147.2	-85.8	8.2	2.44	11.61	3.65	.86	2.50	.71	13.19
9	-37.3	-173.4	-107.4	6.8	1.10	6.03	1.24	.54	2.22	.53	23.61
10	-48.0	-177.3	-115.7	5.8	.65	3.39	.71	.25	2.00	.51	19.39
11	-50.4	-161.4	-111.3	5.3	.33	1.95	.40	.04	1.82	.51	5.98
12	-45.2	-129.3	-95.7	5.1	.21	1.23	.25	-0.06	1.67	.51	-13.05
13	-33.8	-85.8	-71.4	5.0	.13	.61	.09	-0.04	1.54	.33	-22.70
14	-18.1	-35.6	-41.4	4.7	.12	.35	.05	-0.03	1.43	.29	-35.09
15	.1	16.0	-8.9	4.2	.11	.30	.05	-0.02	1.33	.31	-23.81
16	19.0	64.5	22.9	3.4	.08	.23	.05	.00	1.25	.38	.71
17	36.6	105.8	51.3	2.6	.05	.15	.03	.00	1.18	.38	7.38
18	51.7	136.7	74.0	1.7	.05	.14	.02	.01	1.11	.27	19.18
19	62.9	155.8	89.6	.9	.04	.13	.01	.01	1.05	.27	48.05
20	69.6	162.3	97.4	.2	.03	.10	.01	.00	1.00	.22	12.24
21	71.5	157.1	97.7	-0.1	.02	.07	.01	-0.00	.95	.29	-16.07
22	68.7	141.4	91.3	-0.0	.02	.07	.01	.00	.91	.32	15.77
23	62.0	117.8	79.5	.4	.02	.06	.01	.01	.87	.33	55.48
24	52.1	88.9	63.8	1.0	.02	.06	.01	.01	.83	.35	55.63
25	40.1	57.2	45.7	2.0	.02	.05	.00	.01	.80	.25	54.72
26	27.1	25.6	26.8	3.2	.02	.05	.00	.00	.77	.20	46.57
27	13.9	-4.0	8.5	4.6	.01	.05	.00	.01	.74	.24	66.24
28	1.6	-29.2	-8.0	6.0	.01	.05	.00	.00	.71	.20	89.97
29	-9.1	-48.3	-21.6	7.5	.01	.05	.00	.00	.69	.12	75.49
30	-17.4	-60.1	-31.5	8.9	.01	.05	.00	.00	.67	.14	47.13
31	-23.0	-64.5	-37.5	10.0	.01	.04	.00	.00	.65	.17	61.30
32	-25.8	-61.9	-39.5	10.8	.01	.04	.00	.00	.63	.15	29.75
33	-25.8	-53.8	-37.7	10.9	.01	.04	.00	-0.00	.61	.08	-39.56
34	-23.2	-41.3	-32.5	10.2	.01	.04	.00	.00	.59	.04	16.51
35	-18.2	-25.5	-24.4	9.0	.01	.04	.00	.00	.57	.18	67.73
36	-11.2	-7.8	-14.1	7.2	.01	.04	.00	.00	.56	.23	77.49
37	-2.6	10.6	-2.2	5.1	.01	.04	-0.00	.00	.54	.24	-77.80
38	7.0	28.6	10.4	2.8	.01	.03	-0.00	.00	.53	.23	-71.44
39	17.2	45.1	22.9	.1	.01	.03	.00	.00	.51	.19	81.90
40	27.3	59.3	34.9	-2.8	.01	.03	.00	.00	.50	.26	31.93
41	36.8	70.2	45.5	-5.7	.01	.03	.00	.00	.49	.27	25.57
42	45.0	77.3	53.8	-8.4	.01	.04	.00	.00	.48	.11	82.75
43	51.7	80.5	59.5	-10.7	.01	.04	-0.00	.00	.47	.19	-25.84
44	56.6	79.7	62.4	-12.5	.01	.03	-0.00	.00	.45	.12	-17.92
45	59.4	75.6	62.6	-13.6	.01	.02	-0.00	-0.00	.44	.09	63.79
46	60.2	68.8	60.3	-13.8	.01	.03	-0.00	-0.00	.43	.29	72.13
47	59.1	60.3	55.9	-13.0	.01	.02	-0.00	-0.00	.43	.30	70.23
48	56.2	50.4	49.9	-11.2	.01	.02	-0.00	-0.00	.42	.02	3.29
49	51.7	39.4	42.6	-8.5	.01	.03	.00	.00	.41	.17	39.11
50	45.9	27.5	34.7	-5.2	.00	.02	.00	.00	.40	.26	.00

CORRELATION COEFFICIENT .771

090 LI-W

BBELS- 14 2-4.0M- 1 7 JUNE-65 1454-1459

LAGS= 50 N= 1395 DT= .20SEC

MEAN W_2= -3.1 MEAN W_1 = -1.8

K	ACOV W_2	ACOV W_1	COV IN	COVOUT	SP W_2	SP W_1	CO	QUA	PER	R	PHI
0	145.2	253.0	150.4	0	14.25	8.10	4.59	0	0	.43	0
1	141.0	242.1	145.1	2.9	21.03	15.76	7.59	1.97	20.00	.43	14.57
2	129.7	213.5	129.6	5.5	14.90	20.02	11.08	1.24	10.00	.65	6.41
3	112.6	170.1	105.9	7.7	25.47	40.06	28.89	.05	6.67	.90	.10
4	91.3	117.3	76.1	9.3	32.93	60.11	42.19	2.40	5.00	.95	3.25
5	67.5	60.3	42.9	10.1	22.77	56.57	33.73	3.97	4.00	.95	6.71
6	42.8	4.4	9.0	10.1	9.28	33.44	16.19	2.07	3.33	.93	7.28
7	19.2	-45.5	-22.6	9.1	2.42	11.11	4.29	.36	2.86	.83	4.83
8	-1.8	-85.9	-49.7	7.4	.64	2.98	.82	-0.05	2.50	.60	-3.39
9	-19.2	-114.4	-70.6	5.1	.42	1.66	.46	-0.10	2.22	.56	-12.60
10	-31.9	-130.0	-84.2	2.5	.20	.88	.18	-0.06	2.00	.45	-16.91
11	-39.6	-132.5	-90.1	-0.0	.16	.60	.12	-0.03	1.82	.40	-15.45
12	-42.2	-123.3	-88.4	-2.2	.15	.40	.08	-0.04	1.67	.37	-24.37
13	-40.0	-104.3	-80.1	-3.7	.11	.24	.07	-0.03	1.54	.46	-24.53
14	-33.7	-78.5	-66.4	-4.6	.06	.14	.02	-0.01	1.43	.27	-19.27
15	-24.2	-48.9	-49.1	-4.7	.05	.11	.01	.01	1.33	.23	48.93
16	-12.7	-18.7	-29.9	-4.1	.03	.07	.00	.01	1.25	.23	68.30
17	-0.3	9.2	-10.6	-2.7	.03	.06	.01	.00	1.18	.25	19.46
18	12.0	32.6	7.2	-0.8	.03	.04	.01	.00	1.11	.24	3.88
19	23.4	49.9	22.5	1.5	.03	.05	.01	.00	1.05	.36	3.89
20	33.1	60.6	34.4	3.9	.03	.05	.01	.00	1.00	.32	5.42
21	40.7	64.5	42.4	6.3	.02	.04	.01	.00	.95	.32	18.66
22	45.8	62.4	46.6	8.2	.02	.03	.01	.01	.91	.37	37.17
23	48.5	55.7	47.3	9.7	.01	.03	.01	.01	.87	.40	38.87
24	48.8	45.8	45.0	10.5	.01	.03	.01	.00	.83	.39	33.31
25	47.1	34.3	40.4	10.8	.01	.02	.01	.00	.80	.41	34.33
26	43.7	22.7	34.5	10.6	.01	.02	.00	.00	.77	.29	41.32
27	39.2	12.2	27.9	9.8	.01	.02	.00	.00	.74	.21	66.04
28	34.0	3.9	21.5	8.5	.01	.02	-0.00	.00	.71	.26	-76.98
29	28.5	-1.7	15.7	6.9	.01	.02	.00	.00	.69	.19	35.85
30	23.2	-4.7	10.9	4.9	.01	.02	.00	-0.00	.67	.28	-32.27
31	18.1	-5.3	7.0	2.9	.01	.01	.00	-0.00	.65	.10	-56.62
32	13.5	-4.3	3.9	.9	.01	.01	-0.00	.00	.63	.17	-11.98
33	9.3	-2.5	1.4	-1.1	.00	.01	-0.00	-0.00	.61	.18	18.66
34	5.4	-0.9	-0.6	-2.7	.00	.01	-0.00	.00	.59	.21	-23.53
35	1.9	-0.2	-2.6	-4.0	.00	.02	-0.00	.00	.57	.38	-83.74
36	-1.2	-0.9	-4.6	-5.0	.00	.02	.00	.00	.56	.32	87.02
37	-4.1	-3.2	-6.8	-5.6	.00	.02	-0.00	.00	.54	.18	-38.21
38	-6.5	-7.0	-9.2	-5.8	.00	.02	-0.00	.00	.53	.23	-25.25
39	-8.3	-11.8	-11.8	-5.7	.00	.02	-0.00	.00	.51	.17	-55.14
40	-9.6	-17.1	-14.3	-5.3	.00	.01	-0.00	.00	.50	.17	-8.73
41	-10.4	-22.6	-16.4	-4.7	.00	.01	-0.00	-0.00	.49	.24	2.94
42	-10.5	-27.5	-18.2	-4.1	.00	.02	-0.00	.00	.48	.26	-1.95
43	-10.1	-31.4	-19.1	-3.5	.00	.02	-0.00	-0.00	.47	.15	16.10
44	-9.0	-33.8	-19.0	-3.1	.00	.02	-0.00	.00	.45	.09	-68.69
45	-7.3	-34.2	-17.6	-2.9	.00	.02	.00	.00	.44	.18	68.88
46	-4.8	-32.3	-15.0	-2.9	.00	.02	.00	-0.00	.43	.10	-24.36
47	-1.8	-27.8	-11.1	-3.1	.00	.02	-0.00	-0.00	.43	.11	38.76
48	1.7	-20.9	-6.0	-3.5	.00	.02	-0.00	.00	.42	.23	-22.68
49	5.6	-12.2	-0.1	-4.1	.00	.02	-0.00	.00	.41	.30	-16.91
50	9.6	-1.9	6.2	-4.7	.00	.01	-0.00	.00	.40	.38	-0.00

CORRELATION COEFFICIENT .785

091 LI-ω

RBFLS 14 03-05M-01 C, 06JUL-65 1502-1508

LAGS= 50 N= 1413 DT= 0.2SEC

MEAN W_F -1.4 MEAN W_2= -2.6

K	ACOV W_1	ACOV W_2	COV IN	COVOUT	SP W_1	SP W_2	CO	QUA	PER	R	PHI
0	196.2	128.4	112.7	0	2.51	12.20	1.64	0	0	.30	0
1	188.6	125.1	109.0	-2.3	5.80	19.82	2.99	-0.17	20.00	.28	-3.19
2	168.3	116.2	98.5	-4.5	15.12	17.28	8.79	-1.71	10.00	.55	-11.00
3	137.6	103.1	82.0	-6.4	44.96	27.14	29.12	-2.86	6.67	.84	-5.61
4	99.2	86.7	61.1	-7.8	61.56	29.28	38.35	-2.87	5.00	.91	-4.29
5	56.3	68.1	37.3	-8.8	40.26	14.75	21.69	-1.82	4.00	.89	-4.80
6	12.3	48.7	12.4	-9.3	16.74	4.18	6.94	-0.66	3.33	.83	-5.42
7	-29.5	29.4	-11.9	-9.2	5.57	1.52	2.12	-0.08	2.86	.73	-2.13
8	-66.4	11.3	-34.1	-8.6	1.13	.58	.40	.03	2.50	.50	4.87
9	-96.1	-4.7	-52.9	-7.6	.66	.38	.21	-0.03	2.22	.42	-9.62
10	-117.0	-18.0	-67.2	-6.2	.41	.24	.07	-0.04	2.00	.27	-31.63
11	-128.8	-28.1	-76.4	-4.6	.30	.21	.11	-0.01	1.82	.44	-4.21
12	-131.2	-34.5	-80.4	-3.0	.20	.16	.09	.02	1.67	.53	15.00
13	-124.8	-37.4	-79.2	-1.5	.15	.12	.05	.04	1.54	.49	39.79
14	-111.1	-36.8	-73.4	0	.08	.08	0	.04	1.43	.43	-85.98
15	-91.8	-33.3	-63.8	1.3	.07	.07	-0.01	-0.02	1.33	.35	55.33
16	-68.8	-27.2	-51.3	2.4	.06	.05	0	-0.06	1.25	1.14	89.30
17	-44.1	-19.3	-35.3	4.7	.06	.04	.04	-0.04	1.18	1.18	-46.31
18	-19.7	-10.1	-21.4	3.7	.05	.03	.04	.01	1.11	1.27	17.69
19	3.2	-0.4	-6.0	3.8	.05	.03	.01	.04	1.05	1.29	77.59
20	23.3	9.2	8.5	3.8	.04	.02	-0.03	.03	1.00	1.39	-37.13
21	39.7	18.3	21.4	3.6	.04	.02	-0.03	-0.02	.95	1.30	27.64
22	52.1	26.3	32.2	3.2	.03	.02	0	-0.04	.91	1.74	-89.86
23	60.5	32.9	40.5	2.8	.03	.02	.04	-0.03	.87	1.87	-31.15
24	65.1	37.9	46.2	2.3	.03	.02	.04	.02	.83	2.13	28.54
25	66.2	41.0	49.3	1.9	.02	.02	0	.05	.80	2.61	86.65
26	64.2	42.1	49.8	1.5	.02	.01	-0.04	.03	.77	3.54	-32.79
27	59.8	41.5	48.0	1.4	.02	.01	-0.04	-0.02	.74	3.89	30.15
28	53.3	39.1	44.0	1.3	.02	.01	0	-0.04	.71	3.89	-84.86
29	45.3	35.2	38.3	1.3	.02	.01	.04	-0.02	.69	3.82	-24.57
30	36.0	30.1	31.2	1.2	.02	.01	.04	.03	.67	3.90	35.34
31	25.7	24.2	23.2	1.2	.02	.01	0	.04	.65	3.96	-86.80
32	14.8	17.7	14.6	1.1	.01	.01	-0.04	.02	.63	4.79	-24.00
33	3.5	10.9	5.8	1.1	.01	0	-0.03	-0.03	.61	5.80	40.72
34	-7.9	4.2	-3.0	1.2	.01	0	.01	-0.04	.59	6.17	-77.28
35	-18.9	-2.2	-11.4	1.3	.01	.01	.04	-0.01	.57	5.48	-16.79
36	-29.0	-7.9	-19.0	1.5	.01	0	.03	.03	.56	6.18	43.52
37	-37.7	-12.8	-25.4	1.7	.01	0	-0.01	.04	.54	7.32	-76.39
38	-44.6	-16.6	-30.5	2.0	.01	0	-0.04	.01	.53	6.73	-11.97
39	-49.2	-19.1	-33.8	2.2	.01	0	-0.03	-0.03	.51	6.52	49.94
40	-51.5	-20.4	-35.5	2.4	.01	0	.01	-0.04	.50	7.03	-72.22
41	-51.0	-20.2	-35.1	2.6	.02	0	.04	-0.01	.49	6.42	-10.97
42	-47.8	-18.8	-32.8	2.8	.01	0	.03	.03	.48	7.44	48.18
43	-41.9	-16.2	-28.7	3.2	.01	0	-0.01	.04	.47	1.1#	-69.40
44	-33.8	-12.6	-23.2	3.6	.01	0	-0.04	.01	.45	3.7#	-7.17
45	-23.7	-8.3	-16.5	3.9	.01	0	-0.02	-0.04	.44	2.3#	55.03
46	-12.2	-3.4	-8.9	4.2	.01	0	.02	-0.04	.43	9.58	-63.36
47	.3	2.0	-1.0	4.3	.02	0	.05	0	.43	7.13	-4.98
48	13.1	7.4	7.0	4.4	.01	0	.03	.04	.42	6.15	54.39
49	25.4	12.5	14.6	4.3	.01	0	-0.02	.04	.41	6.79	-64.71
50	36.6	17.1	21.3	4.2	0	0	-0.02	0	.40	8.36	0

092 LI-W

BBFLS 14 4-6.0M-01 C, 06JUL-65 1511-1517

LAGS= 50 N= 1299 DT= 0.2SEC

MEAN W_F -3.03 MEAN W_2= -3.57

CORRELATION COEFFICIENT .70

K	ACOV W_1	ACOV W_2	COV IN	COVOUT	SP W_1	SP W_2	CO	QUA	PER	R	PHI
0	125.6	79.1	69.7	.0	5.95	9.96	3.43	0	0	.45	0
1	121.1	77.1	67.5	.3	9.48	15.21	4.52	-0.05	20.00	.38	-0.57
2	108.8	71.8	61.1	.7	9.63	10.17	4.87	-0.02	10.00	.49	-0.24
3	90.2	63.9	51.2	1.0	22.48	12.99	14.36	1.20	6.67	.84	4.79
4	67.0	54.2	38.6	1.3	34.60	15.21	21.02	1.23	5.00	.92	3.35
5	41.2	43.5	24.5	1.6	27.53	9.93	14.81	-0.11	4.00	.90	-0.41
6	14.9	32.4	9.8	1.8	11.33	3.27	5.05	-0.46	3.33	.83	-5.16
7	-10.0	21.6	-4.3	2.0	2.44	.75	.84	-0.07	2.86	.63	-4.68
8	-31.7	11.7	-16.9	2.2	.68	.50	.29	.05	2.50	.50	8.86
9	-48.9	3.2	-27.3	2.3	.43	.34	.20	.03	2.22	.54	9.70
10	-60.6	-3.4	-34.9	2.3	.30	.18	.13	.03	2.00	.60	12.28
11	-66.4	-8.1	-39.4	2.2	.17	.11	.08	.01	1.82	.56	10.52
12	-66.3	-10.7	-40.5	1.9	.11	.09	.04	.01	1.67	.44	15.29
13	-60.8	-11.2	-38.6	1.4	.09	.08	.02	-0.01	1.54	.30	-12.26
14	-50.7	-9.9	-33.9	.8	.07	.07	.02	-0.01	1.43	.29	-25.91
15	-37.3	-7.1	-26.9	-0.0	.06	.05	.02	-0.00	1.33	.34	-11.05
16	-21.9	-3.2	-18.3	-0.9	.04	.03	.01	-0.00	1.25	.19	-9.95
17	-5.7	1.5	-8.9	-1.8	.03	.02	.00	-0.00	1.18	.15	-73.67
18	9.7	6.7	.6	-2.6	.03	.02	.00	-0.00	1.11	.20	-48.14
19	23.3	11.8	9.6	-3.2	.02	.01	.00	-0.00	1.05	.19	-35.20
20	34.3	16.4	17.4	-3.7	.02	.01	.00	-0.00	1.00	.12	-41.13
21	42.0	20.3	23.6	-4.0	.02	.01	.00	-0.00	.95	.05	-23.74
22	46.2	23.1	27.9	-4.0	.02	.01	-0.00	.00	.91	.13	-49.84
23	47.0	24.6	30.3	-3.8	.01	.01	-0.00	.00	.87	.13	-10.69
24	44.7	25.0	30.7	-3.3	.01	.01	-0.00	-0.00	.83	.07	9.38
25	40.0	24.2	29.4	-2.5	.00	.00	-0.00	-0.00	.80	.08	35.12
26	33.6	22.3	26.8	-1.6	.01	.01	-0.00	.00	.77	.12	-12.78
27	26.2	19.7	23.2	-0.6	.01	.01	.00	.00	.74	.13	84.52
28	18.5	16.7	18.9	.5	.01	.01	.00	.00	.71	.12	67.12
29	11.1	13.4	14.4	1.5	.01	.00	.00	-0.00	.69	.14	-19.34
30	4.5	10.2	10.0	2.4	.01	.00	.00	-0.00	.67	.31	-25.44
31	-0.8	7.3	6.0	3.1	.01	.01	.00	-0.00	.65	.31	-40.34
32	-5.0	4.8	2.6	3.7	.00	.01	.00	-0.00	.63	.17	-39.60
33	-7.9	2.9	-0.0	4.1	.01	.00	.00	-0.00	.61	.07	-31.84
34	-9.6	1.4	-2.0	4.3	.01	.00	.00	-0.00	.59	.04	-39.89
35	-10.2	.5	-3.3	4.3	.00	.00	.00	-0.00	.57	.09	-3.55
36	-10.0	-0.0	-3.9	4.1	.00	.00	.00	.00	.56	.05	26.78
37	-9.2	-0.1	-4.1	3.7	.00	.00	-0.00	-0.00	.54	.04	62.54
38	-8.2	-0.1	-3.9	3.3	.00	.00	-0.00	-0.00	.53	.03	76.51
39	-7.1	.1	-3.4	2.8	.00	.00	-0.00	.00	.51	.07	-6.45
40	-6.3	.3	-3.0	2.4	.00	.00	-0.00	-0.00	.50	.08	17.29
41	-5.9	.4	-2.6	2.2	.00	.00	.00	-0.00	.49	.06	-50.91
42	-6.0	.5	-2.5	2.1	.00	.00	.00	.00	.48	.07	66.82
43	-6.5	.5	-2.4	2.1	.00	.00	-0.00	.00	.47	.14	-66.97
44	-7.3	.4	-2.5	2.3	.00	.00	-0.00	.00	.45	.30	-48.08
45	-8.3	.3	-2.7	2.5	.00	.00	-0.00	.00	.44	.30	-29.26
46	-9.1	.2	-2.8	2.8	.00	.00	-0.00	.00	.43	.11	-29.08
47	-9.5	.1	-2.8	3.2	.00	.00	-0.00	.00	.43	.26	-77.59
48	-9.3	.0	-2.5	3.5	.00	.00	-0.00	.00	.42	.45	-44.40
49	-8.2	.1	-1.9	3.8	.00	.00	-0.00	.00	.41	.32	-26.28
50	-6.2	.4	-0.8	3.8	.00	.00	-0.00	.00	.40	.22	-0.00

093 LI-W

BBELS 14 05-07M-01 C. 06JUL-65 1520-1525

LAGS= 50 N= 1330 DT= 0.2SEC

MEAN W_F -2.0 MEAN W_E -2.1

K	ACOV W_1	ACOV W_2	COV IN	COVOUT	SP W_1	SP W_2	CO	QUA	PER	R	PHI
0	78.5	65.8	37.5	0	4.23	14.63	1.32	0	2.00	.17	0
1	76.2	64.9	36.5	-0.4	7.86	20.12	2.57	.52	0	.21	11.52
2	70.1	62.4	33.6	-0.7	10.33	8.31	4.23	.73	0	.46	9.83
3	60.8	58.5	29.0	-0.9	18.51	7.58	9.46	-0.18	0	.80	-1.10
4	49.1	53.7	23.0	-1.0	20.69	8.78	11.79	-0.87	0	.88	-4.23
5	35.9	48.2	16.1	-1.1	11.45	4.80	6.44	-0.61	0	.87	-5.45
6	21.9	42.2	8.7	-1.0	3.27	.92	1.31	-0.12	0	.76	-5.26
7	8.1	36.1	1.3	-0.8	.90	.21	.22	.06	0	.53	14.25
8	-4.7	30.3	-5.7	-0.6	.36	.12	.06	.01	0	.30	11.60
9	-15.9	25.0	-11.9	-0.1	.25	.09	.05	0	0	.34	-4.85
10	-25.0	20.5	-16.8	.4	.16	.05	.03	0	0	.38	-5.19
11	-31.5	17.0	-20.4	.9	.09	.03	.01	0	0	.26	-10.30
12	-35.4	14.5	-22.5	1.5	.05	.02	0	-0.01	0	.18	78.88
13	-36.6	13.0	-23.1	2.0	.04	.02	0	0	0	.15	48.22
14	-35.4	12.6	-22.2	2.5	.04	.02	0	0	0	.17	-62.91
15	-32.0	13.2	-19.9	2.9	.04	.02	.01	-0.01	0	.28	-42.43
16	-26.7	14.5	-16.5	3.2	.03	.02	0	-0.01	0	.32	-52.82
17	-20.2	16.5	-12.3	3.3	.03	.01	0	0	0	.37	-31.53
18	-12.8	18.8	-7.6	3.2	.02	.01	.01	0	0	.50	1.88
19	-5.2	21.4	-2.7	3.0	.01	.01	0	0	0	.51	14.50
20	2.1	23.8	2.1	2.7	.01	.01	0	0	0	.36	8.17
21	8.7	26.0	6.3	2.3	.01	.01	0	0	0	.14	31.19
22	14.3	27.6	9.9	1.7	.01	.01	0	0	0	.06	-14.71
23	18.6	28.6	12.6	1.2	.01	.01	0	0	0	.10	-72.81
24	21.6	29.0	14.4	.6	.01	.01	0	0	0	.15	-80.50
25	23.1	28.6	15.2	.1	.01	0	0	0	0	.16	66.23
26	23.3	27.4	15.0	-0.4	.01	0	0	0	0	.11	-74.47
27	22.3	25.6	14.0	-0.8	0	0	0	0	0	.19	-18.87
28	20.3	23.3	12.3	-1.1	0	0	0	0	0	.08	54.79
29	17.4	20.6	9.9	-1.3	0	0	0	0	0	.27	-7.69
30	14.0	17.7	7.2	-1.4	0	0	0	0	0	.35	-27.66
31	10.3	14.6	4.3	-1.5	0	0	0	0	0	.40	-88.11
32	6.5	11.6	1.4	-1.5	0	0	0	0	0	.43	49.55
33	2.8	8.9	-1.3	-1.5	0	0	0	0	0	.24	18.64
34	-0.7	6.5	-3.7	-1.5	0	0	0	0	0	.18	28.36
35	-3.7	4.5	-5.7	-1.5	0	0	0	0	0	.25	5.01
36	-6.1	3.1	-7.1	-1.5	0	0	0	0	0	.09	4.20
37	-8.0	2.2	-7.9	-1.5	0	0	0	0	0	.11	15.76
38	-9.1	1.9	-8.0	-1.5	0	0	0	0	0	.05	18.43
39	-9.4	2.1	-7.5	-1.6	0	0	0	0	0	.10	60.25
40	-9.1	2.8	-6.5	-1.6	0	0	0	0	0	.39	-67.02
41	-8.1	3.9	-5.0	-1.7	0	0	0	0	0	.65	-66.53
42	-6.7	5.4	-3.1	-1.8	0	0	0	0	0	.53	-70.60
43	-4.8	7.1	-1.0	-2.0	0	0	0	0	0	.18	-88.65
44	-2.5	8.8	1.3	-2.0	0	0	0	0	0	.22	-73.43
45	-0.1	10.5	3.5	-2.1	0	0	0	0	0	.39	77.19
46	2.5	12.1	5.6	-2.1	0	0	0	0	0	.04	-86.28
47	4.9	13.3	7.5	-2.1	0	0	0	0	0	.45	56.20
48	7.2	14.3	9.0	-1.9	0	0	0	0	0	.27	73.21
49	9.2	14.8	10.1	-1.7	0	0	0	0	0	.14	-45.11
50	10.8	15.1	10.9	-1.5	0	0	0	0	0	.14	0

094 LI-w

BBELS 14 6-8.0M-01 C. 06JUL-65 1539-1545

LAGS=50 N= 1402 DT= 0.2SEC

MEAN W_1= .08 MEAN W_2= 2.95

CORRELATION COEFFICIENT .58

K	ACOV W_1	ACOV W_2	COV IN	COVOUT	SP W_1	SP W_2	CO	QUA	PER	R	PHI
0	84.7	56.6	40.2	.0	8.83	12.35	2.44	0	0	.23	0
1	82.6	55.8	39.2	.5	12.82	16.40	3.97	2.52	20.00	.32	32.38
2	77.1	53.7	36.5	.9	10.13	7.43	5.18	1.20	10.00	.61	13.01
3	68.7	50.6	32.2	1.4	18.17	8.31	10.68	.40	6.67	.87	2.16
4	58.0	46.5	26.6	1.8	20.48	7.78	11.44	.41	5.00	.91	2.04
5	45.7	41.7	20.1	2.2	10.39	3.26	5.08	.09	4.00	.87	.98
6	32.6	36.6	13.2	2.6	2.43	.55	.87	-0.03	3.33	.75	-2.15
7	19.4	31.3	6.1	3.0	.59	.19	.23	-0.05	2.86	.72	-13.14
8	6.9	26.1	-0.8	3.3	.22	.10	.08	-0.03	2.50	.62	-21.38
9	-4.1	21.3	-7.0	3.5	.15	.06	.06	-0.01	2.22	.62	-13.21
10	-13.3	17.0	-12.2	3.7	.08	.03	.02	.00	2.00	.38	.60
11	-20.3	13.4	-16.3	3.8	.07	.03	.02	.00	1.82	.49	7.94
12	-24.7	10.6	-19.1	3.8	.05	.02	.01	.00	1.67	.47	4.43
13	-26.4	8.8	-20.5	3.8	.04	.01	.01	-0.00	1.54	.54	-2.79
14	-25.8	7.8	-20.6	3.8	.03	.01	.01	.00	1.43	.52	18.64
15	-22.9	7.6	-19.3	3.7	.03	.01	.01	.00	1.33	.55	3.10
16	-18.1	8.2	-16.9	3.7	.03	.01	.01	-0.00	1.25	.41	-16.14
17	-11.8	9.5	-13.7	3.6	.02	.01	.00	-0.00	1.18	.33	-53.15
18	-4.6	11.3	-9.7	3.6	.01	.01	.00	-0.00	1.11	.19	-64.98
19	2.9	13.4	-5.3	3.6	.01	.00	.00	.00	1.05	.29	17.80
20	10.4	15.7	-0.8	3.7	.01	.00	.00	.00	1.00	.38	40.84
21	17.3	18.0	3.6	3.9	.01	.00	.00	.00	.95	.33	8.31
22	23.4	20.2	7.7	4.0	.01	.00	.00	.00	.91	.16	12.71
23	28.3	22.0	11.1	4.1	.01	.00	.00	.00	.87	.11	50.33
24	31.8	23.5	13.9	4.3	.01	.00	.00	.00	.83	.19	87.95
25	33.8	24.4	15.8	4.5	.01	.00	.00	.00	.80	.18	78.66
26	34.3	24.8	16.9	4.7	.01	.00	.00	.00	.77	.17	34.14
27	33.4	24.7	17.0	4.8	.01	.00	.00	-0.00	.74	.33	-27.23
28	31.2	24.0	16.3	5.0	.01	.00	.00	-0.00	.71	.24	-10.59
29	28.1	22.9	15.0	5.2	.01	.00	.00	.00	.69	.32	10.07
30	24.2	21.3	13.0	5.3	.01	.00	.00	.00	.67	.46	11.64
31	19.7	19.5	10.6	5.4	.01	.00	.00	.00	.65	.58	6.40
32	15.1	17.5	7.9	5.5	.00	.00	.00	.00	.63	.52	13.76
33	10.3	15.3	5.1	5.6	.00	.00	.00	.00	.61	.23	20.24
34	5.9	13.2	2.3	5.6	.00	.00	.00	-0.00	.59	.05	-38.74
35	1.8	11.2	-0.3	5.6	.00	.00	.00	-0.00	.57	.27	-42.91
36	-1.5	9.4	-2.7	5.6	.00	.00	.00	-0.00	.56	.46	-22.26
37	-4.3	7.9	-4.5	5.6	.00	.00	.00	-0.00	.54	.72	-11.70
38	-6.4	6.7	-6.0	5.5	.00	.00	.00	-0.00	.53	.78	-5.76
39	-7.6	5.9	-6.9	5.3	.00	.00	.00	.00	.51	.67	2.36
40	-8.1	5.4	-7.2	5.2	.00	.00	.00	.00	.50	.56	26.23
41	-7.7	5.2	-7.0	5.0	.00	.00	.00	.00	.49	.53	33.29
42	-6.7	5.4	-6.2	4.8	.00	.00	.00	.00	.48	.34	36.42
43	-4.9	5.9	-4.9	4.6	.00	.00	.00	.00	.47	.31	18.28
44	-2.7	6.5	-3.3	4.4	.00	.00	.00	-0.00	.45	.59	-0.99
45	-0.0	7.4	-1.3	4.3	.00	.00	.00	-0.00	.44	.79	-8.85
46	2.8	8.4	.9	4.1	.00	.00	.00	-0.00	.43	.70	-5.93
47	6.0	9.4	3.1	4.0	.00	.00	.00	.00	.43	.64	9.77
48	9.1	10.4	5.4	3.9	.00	.00	.00	.00	.42	.66	23.31
49	12.1	11.3	7.5	3.9	.00	.00	.00	.00	.41	.68	12.26
50	14.8	12.1	9.4	3.9	.00	.00	.00	.00	.40	.71	.00

095 LJ-w

BBFLS 14 07-09M-01 C. 06JUL-65 1553-1558

LAGS= 50 N= 1387 DT= 0.2SEC

MEAN W_2= -0.1 MEAN W_1= -1.1

K	ACOV W_2	ACOV W_1	COV IN	COVOUT	SP W_2	SP W_1	CO	QUA	PER	R	PHI
0	49.7	69.4	24.7	0	11.86	9.09	.15	0	0	.01	0
1	49.1	68.0	24.0	-0.6	15.28	12.32	.04	-1.19	20.00	.09	-88.03
2	47.5	64.1	22.0	-1.1	6.40	8.76	2.89	-0.77	10.00	.40	-14.97
3	45.0	58.3	18.9	-1.6	7.03	15.55	8.82	-0.37	6.67	.84	-2.43
4	41.8	50.7	15.0	-2.1	5.96	15.38	8.74	-0.68	5.00	.92	-4.43
5	38.0	42.0	10.3	-2.4	2.23	6.22	3.24	-0.47	4.00	.88	-8.31
6	34.0	32.5	5.3	-2.6	.45	1.19	.46	-0.08	3.33	.64	-9.44
7	29.8	22.7	.1	-2.7	.17	.34	.13	-0.02	2.86	.53	-11.09
8	25.8	13.3	-4.9	-2.7	.09	.10	.04	-0.01	2.50	.47	-11.09
9	21.9	4.6	-9.6	-2.5	.07	.10	.05	.01	2.22	.63	15.13
10	18.4	-2.9	-13.6	-2.3	.03	.05	.02	.01	2.00	.56	20.60
11	15.5	-8.9	-16.8	-2.1	.02	.05	.02	0	1.82	.69	5.40
12	13.1	-13.3	-19.1	-1.8	.02	.03	.02	0	1.67	.71	1.00
13	11.4	-15.8	-20.4	-1.5	.01	.02	.01	0	1.54	.44	15.83
14	10.3	-16.6	-20.6	-1.3	.01	.02	0	0	1.43	.25	37.55
15	9.9	-15.6	-19.8	-1.1	.01	.02	.01	0	1.33	.54	11.13
16	10.0	-13.1	-18.1	-1.0	.01	.01	.01	0	1.25	.62	26.10
17	10.7	-9.3	-15.6	-1.0	.01	.01	0	0	1.18	.56	43.56
18	11.8	-4.6	-12.5	-1.0	0	.01	0	0	1.11	.40	32.11
19	13.3	.9	-8.9	-1.1	.01	.01	0	0	1.05	.43	12.84
20	14.9	6.6	-5.1	-1.2	0	.01	0	0	1.00	.33	21.55
21	16.6	12.2	-1.3	-1.4	0	.01	0	0	.95	.31	12.09
22	18.3	17.5	2.4	-1.7	0	.01	0	0	.91	.40	-5.35
23	19.8	22.3	5.8	-2.0	0	0	0	0	.87	.49	4.92
24	21.1	26.2	8.8	-2.2	0	0	0	0	.83	.56	32.97
25	22.1	29.2	11.2	-2.5	0	.01	0	0	.80	.66	32.07
26	22.7	31.1	12.9	-2.7	0	.01	0	0	.77	.58	26.24
27	23.0	32.0	14.0	-3.0	0	.01	0	0	.74	.48	16.53
28	22.8	31.8	14.3	-3.1	0	.01	0	0	.71	.36	-7.10
29	22.4	30.6	14.1	-3.1	0	.01	0	0	.69	.41	-35.44
30	21.6	28.6	13.3	-3.1	0	0	0	0	.67	.48	-38.29
31	20.6	25.8	12.0	-2.9	0	0	0	0	.65	.58	-20.28
32	19.3	22.5	10.4	-2.6	0	0	0	0	.63	.70	-1.97
33	17.9	18.7	8.4	-2.3	0	0	0	0	.61	.86	6.04
34	16.3	14.7	6.3	-1.9	0	0	0	0	.59	.88	2.55
35	14.7	10.7	4.1	-1.5	0	0	0	0	.57	.76	-1.25
36	13.0	6.8	1.9	-1.0	0	0	0	0	.56	.61	.30
37	11.5	3.1	-0.2	-0.6	0	0	0	0	.54	.68	-5.38
38	10.1	-0.1	-2.0	-0.2	0	0	0	0	.53	.74	-12.68
39	8.8	-2.8	-3.5	.2	0	0	0	0	.51	.79	-11.94
40	7.8	-4.9	-4.6	.4	0	0	0	0	.50	.89	-8.61
41	7.0	-6.2	-5.4	.6	0	0	0	0	.49	.95	-6.01
42	6.4	-6.7	-5.7	.7	0	0	0	0	.48	.98	-1.22
43	6.0	-6.5	-5.6	.8	0	0	0	0	.47	.99	8.45
44	5.9	-5.6	-5.2	.8	0	0	0	0	.45	.95	17.60
45	5.9	-4.1	-4.4	.7	0	0	0	0	.44	.91	16.61
46	6.0	-2.0	-3.3	.6	0	0	0	0	.43	.86	4.50
47	6.3	.5	-2.0	.5	0	0	0	0	.43	.95	-12.17
48	6.6	3.3	-0.6	.3	0	0	0	0	.42	1.04	-13.02
49	7.0	6.1	.8	.2	0	0	0	0	.41	1.10	-7.12
50	7.4	8.8	2.2	.1	0	0	0	0	.40	1.16	0

096 LI-w

BBELS 14 08-10M-01 C, 06JUL-65 1604-1609

LAGS= 50 N= 1278 DT= 0.2SEC

MEAN W_F 0.0 MEAN W_I -1.6

K	ACOV W_1	ACOV W_2	COV IN	COVOUT	SP W_1	SP W_2	CO	QUA	PER	R	PHI
0	49.3	36.4	10.4	0	19.71	6.96	1.35	0	2.00	.12	0
1	49.2	36.0	10.2	-0.4	22.97	11.58	2.97	-0.65	0	.19	-12.35
2	48.8	34.9	9.9	-0.7	4.11	7.69	2.70	-0.82	0	.50	-16.93
3	48.3	33.3	9.4	-1.1	1.36	5.22	1.79	-0.67	0	.72	-20.59
4	47.7	31.2	8.7	-1.4	.67	3.11	.99	-0.30	0	.72	-16.85
5	46.9	28.7	7.8	-1.6	.25	1.21	.37	-0.06	0	.69	-9.84
6	46.1	25.9	6.9	-1.9	.11	.35	.10	-0.02	0	.53	-11.39
7	45.2	23.0	5.9	-2.0	.05	.11	.03	-0.01	0	.47	-20.13
8	44.2	20.1	5.0	-2.1	.03	.04	.02	0	0	.54	-13.84
9	43.3	17.2	4.0	-2.2	.01	.01	0	0	0	.37	30.30
10	42.3	14.5	3.1	-2.2	.01	.01	0	0	0	.26	36.35
11	41.4	12.0	2.2	-2.1	.01	.01	0	0	0	.40	40.07
12	40.5	9.9	1.5	-2.0	.01	.01	0	0	0	.48	12.87
13	39.6	8.0	.8	-1.9	0	.01	0	0	0	.46	13.93
14	38.8	6.6	.3	-1.8	0	.01	0	0	0	.48	-20.20
15	38.1	5.4	-0.2	-1.6	0	0	0	0	0	.44	-5.54
16	37.3	4.6	-0.5	-1.4	0	0	0	0	0	.42	-14.22
17	36.7	4.0	-0.8	-1.2	0	0	0	0	0	.50	-10.66
18	36.0	3.6	-0.9	-1.0	0	0	0	0	0	.89	-16.90
19	35.4	3.5	-1.0	-0.9	0	0	0	0	0	.84	6.39
20	34.9	3.4	-1.1	-0.7	0	0	0	0	0	.76	.20
21	34.3	3.5	-1.1	-0.5	0	0	0	0	0	.79	4.28
22	33.8	3.7	-1.0	-0.4	0	0	0	0	0	.85	4.07
23	33.3	3.8	-1.0	-0.2	0	0	0	0	0	.80	19.71
24	32.8	4.0	-0.9	-0.1	0	0	0	0	0	.65	11.21
25	32.4	4.1	-0.9	-0.1	0	0	0	0	0	.64	17.91
26	31.9	4.2	-0.9	0	0	0	0	0	0	.73	6.11
27	31.5	4.2	-0.8	0	0	0	0	0	0	1.09	11.10
28	31.0	4.1	-0.9	0	0	0	0	0	0	1.44	-3.79
29	30.5	4.0	-0.9	0	0	0	0	0	0	1.46	2.99
30	30.1	3.9	-0.9	-0.1	0	0	0	0	0	1.35	7.65
31	29.6	3.5	-1.0	-0.1	0	0	0	0	0	1.22	8.45
32	29.2	3.2	-1.1	-0.2	0	0	0	0	0	1.11	3.11
33	28.8	2.8	-1.2	-0.2	0	0	0	0	0	1.11	14.20
34	28.3	2.4	-1.3	-0.3	0	0	0	0	0	1.35	4.50
35	27.9	2.0	-1.3	-0.4	0	0	0	0	0	2.78	2.87
36	27.4	1.6	-1.4	-0.4	0	0	0	0	0	0	.79
37	27.0	1.3	-1.5	-0.5	0	0	0	0	0	0	1.63
38	26.6	.9	-1.6	-0.6	0	0	0	0	0	3.50	-7.68
39	26.2	.6	-1.7	-0.6	0	0	0	0	0	2.20	-8.58
40	25.7	.4	-1.8	-0.7	0	0	0	0	0	2.00	-5.26
41	25.3	.2	-1.9	-0.8	0	0	0	0	0	3.36	-3.85
42	24.9	-0.0	-2.0	-0.9	0	0	0	0	0	0.9*	-11.13
43	24.5	-0.2	-2.1	-0.9	0	0	0	0	0	0	-3.03
44	24.1	-0.3	-2.2	-1.0	0	0	0	0	0	0	-1.51
45	23.7	-0.4	-2.3	-1.1	0	0	0	0	0	0	-5.30
46	23.3	-0.5	-2.5	-1.2	0	0	0	0	0	0	-3.01
47	22.9	-0.6	-2.6	-1.3	0	0	0	0	0	0	4.84
48	22.5	-0.8	-2.8	-1.4	0	0	0	0	0	0	5.40
49	22.1	-0.9	-3.0	-1.5	0	0	0	0	0	0	.60
50	21.8	-1.1	-3.2	-1.5	0	0	0	0	0	0	0

097 LI-ω

BBFLS 14 09-114- 1 C. 06JUL-65 1613-1618

LAGS= 50 N= 1422 DT= 0.2SEC

MEAN W_2= 3.6 MEAN W_1= 4.9

K	ACOV W_2	ACOV W_1	COV IN	COVOUT	SP W_2	SP W_1	CO	QUA	PER	R	PHI
0	27.2	47.2	5.7	0	11.44	15.17	1.64	0	0	.12	0
1	27.1	46.9	5.7	-0.2	12.10	20.34	1.78	-0.41	20.00	.12	-13.02
2	26.8	46.2	5.5	-0.3	1.09	6.26	.25	-0.04	10.00	.10	-8.67
3	26.3	45.2	5.1	-0.4	.95	2.21	.63	-0.07	6.67	.43	-6.21
4	25.8	43.8	4.7	-0.5	.82	1.82	.88	-0.21	5.00	.74	-13.29
5	25.1	42.2	4.2	-0.6	.45	.88	.45	-0.11	4.00	.73	-13.78
6	24.5	40.5	3.7	-0.6	.19	.25	.09	-0.07	3.33	.52	-34.97
7	23.8	38.7	3.2	-0.6	.06	.11	.01	-0.02	2.86	.35	-60.45
8	23.2	36.9	2.7	-0.6	.02	.05	0	0	2.50	.16	-21.02
9	22.6	35.2	2.3	-0.5	.01	.02	0	0	2.22	.34	-52.32
10	22.1	33.6	1.9	-0.5	.01	.02	0	0	2.00	.34	-59.28
11	21.8	32.0	1.7	-0.4	.01	.01	0	0	1.82	.09	-8.82
12	21.5	30.7	1.5	-0.3	0	.01	0	0	1.67	.45	-53.32
13	21.3	29.5	1.5	-0.2	0	0	0	0	1.54	.61	-24.08
14	21.2	28.5	1.6	-0.2	0	0	0	0	1.43	4.84	-1.04
15	21.2	27.6	1.8	-0.2	0	0	0	0	1.33	0	-6.56
16	21.3	26.8	2.0	-0.2	0	0	0	0	1.25	0	-69.43
17	21.4	26.2	2.3	-0.2	0	0	0	0	1.18	0	-88.80
18	21.5	25.6	2.7	-0.3	0	0	0	0	1.11	0	85.43
19	21.6	25.0	3.0	-0.3	0	0	0	0	1.05	0	-74.26
20	21.7	24.5	3.4	-0.4	0	0	0	0	1.00	1.61	-75.64
21	21.8	23.9	3.7	-0.5	0	0	0	0	.95	1.21	-59.04
22	21.9	23.3	4.0	-0.6	0	0	0	0	.91	1.25	-27.69
23	22.0	22.6	4.2	-0.6	0	0	0	0	.87	1.90	2.34
24	22.0	21.9	4.3	-0.7	0	0	0	0	.83	0	17.56
25	22.0	21.0	4.4	-0.9	0	0	0	0	.80	0	73.80
26	22.0	20.1	4.3	-1.0	0	0	0	0	.77	0	-20.01
27	21.9	19.1	4.3	-1.1	0	0	0	0	.74	.17	54.77
28	21.8	18.0	4.1	-1.2	0	0	0	0	.71	1.48	-6.23
29	21.8	16.9	3.9	-1.3	0	0	0	0	.69	0	-20.02
30	21.7	15.7	3.6	-1.4	0	0	0	0	.67	1.66	-42.67
31	21.5	14.5	3.3	-1.5	0	0	0	0	.65	.91	-5.93
32	21.4	13.2	3.1	-1.6	0	0	0	0	.63	1.13	32.63
33	21.3	12.0	2.8	-1.7	0	0	0	0	.61	1.47	49.02
34	21.2	10.9	2.5	-1.7	0	0	0	0	.59	5.15	22.74
35	21.0	9.8	2.3	-1.8	0	0	0	0	.57	0	-40.77
36	20.9	8.8	2.1	-1.8	0	0	0	0	.56	0	-42.08
37	20.8	7.9	1.9	-1.9	0	0	0	0	.54	0	-26.71
38	20.6	7.2	1.7	-1.8	0	0	0	0	.53	6.54	-9.65
39	20.5	6.6	1.6	-1.8	0	0	0	0	.51	1.69	16.85
40	20.3	6.1	1.5	-1.7	0	0	0	0	.50	3.22	24.53
41	20.2	5.7	1.4	-1.7	0	0	0	0	.49	0	20.29
42	20.0	5.4	1.3	-1.6	0	0	0	0	.48	0	8.72
43	19.9	5.2	1.3	-1.4	0	0	0	0	.47	0	-7.12
44	19.7	5.0	1.2	-1.3	0	0	0	0	.45	7.45	-19.86
45	19.6	4.9	1.2	-1.2	0	0	0	0	.44	3.33	-20.44
46	19.4	4.8	1.2	-1.1	0	0	0	0	.43	1.78	-10.80
47	19.3	4.7	1.2	-0.9	0	0	0	0	.43	1.33	10.49
48	19.2	4.6	1.1	-0.8	0	0	0	0	.42	1.94	32.36
49	19.0	4.4	1.1	-0.7	0	0	0	0	.41	0	39.24
50	18.9	4.2	1.1	-0.5	0	0	0	0	.40	0	0

098 LI-W

BBELS- 14 2-4.0M-VI 7 JUNE-65 2228-2234

LAGS= 50 N= 1706 DT= .20SEC

MEAN W_2= 4.2 MEAN W_1 = 3.1

K	ACOV W_2	ACOV W_1	COV IN	COVOUT	SP W_2	SP W_1	CO	QUA	PER	R	PHI
0	118.5	211.0	115.5	0	11.31	9.86	4.09	0	0	.39	0
1	115.0	202.6	111.4	2.6	16.68	17.69	5.47	.43	20.00	.32	4.53
2	105.7	180.4	99.6	5.0	11.11	16.73	5.58	-0.13	10.00	.41	-1.35
3	91.8	146.9	81.4	6.8	19.21	31.35	20.09	.82	6.67	.82	2.34
4	74.2	105.9	58.4	8.1	29.60	53.56	37.23	2.81	5.00	.94	4.32
5	54.3	61.2	32.6	8.5	21.58	46.98	29.83	2.98	4.00	.94	5.71
6	33.7	16.9	6.1	8.2	6.08	21.11	9.89	1.56	3.33	.88	8.98
7	13.7	-23.4	-19.1	7.1	1.10	7.29	1.98	.44	2.86	.72	12.58
8	-4.4	-56.8	-41.2	5.5	.55	2.70	.61	.12	2.50	.51	11.30
9	-19.5	-81.5	-58.7	3.4	.24	1.25	.18	.04	2.22	.34	12.30
10	-30.8	-96.3	-70.6	1.2	.23	.81	.22	.00	2.00	.51	.29
11	-37.7	-101.3	-76.4	-1.0	.15	.40	.12	.00	1.82	.50	.08
12	-40.3	-97.0	-75.8	-2.9	.10	.23	.08	-0.01	1.67	.52	-5.50
13	-38.4	-84.7	-69.5	-4.4	.05	.13	.03	-0.01	1.54	.42	-17.98
14	-32.7	-66.4	-58.0	-5.5	.04	.12	.03	-0.01	1.43	.37	-17.86
15	-23.7	-43.8	-42.7	-6.0	.04	.09	.01	.00	1.33	.25	.81
16	-12.3	-19.3	-24.9	-6.0	.04	.07	.02	.00	1.25	.36	4.90
17	.3	5.1	-6.2	-5.5	.03	.07	.01	.00	1.18	.32	4.19
18	13.2	27.5	12.1	-4.5	.03	.06	.01	.00	1.11	.34	1.65
19	25.4	46.3	28.5	-3.3	.02	.05	.01	-0.00	1.05	.32	-4.68
20	35.9	60.4	42.1	-1.8	.02	.04	.01	-0.00	1.00	.30	-10.16
21	44.1	69.2	52.1	-0.3	.02	.03	.00	-0.00	.95	.22	-37.59
22	49.5	72.6	58.1	1.2	.01	.03	.00	-0.00	.91	.29	-35.81
23	52.0	71.0	60.0	2.5	.01	.03	.00	.00	.87	.16	9.85
24	51.5	64.8	58.0	3.6	.02	.03	.00	.00	.83	.17	54.17
25	49.2	55.2	52.6	4.4	.02	.02	.00	.00	.80	.21	66.89
26	42.6	43.2	44.5	4.9	.02	.02	.00	.00	.77	.29	57.73
27	35.0	29.6	34.3	5.1	.01	.02	.00	.00	.74	.17	48.16
28	26.2	15.5	23.0	5.1	.01	.02	.00	-0.00	.71	.17	-24.03
29	16.9	1.8	11.3	4.8	.01	.01	.00	.00	.69	.20	6.85
30	7.7	-10.9	.2	4.3	.01	.01	.00	.00	.67	.35	31.17
31	-0.7	-21.7	-9.7	3.8	.01	.01	.00	.00	.65	.38	40.86
32	-7.8	-30.2	-17.8	3.2	.01	.01	.00	.00	.63	.28	50.35
33	-13.1	-36.1	-23.5	2.6	.01	.01	.00	.00	.61	.11	38.07
34	-16.3	-39.1	-26.7	2.2	.01	.01	.00	-0.00	.59	.13	-20.94
35	-17.3	-39.2	-27.1	1.8	.01	.01	.00	-0.00	.57	.22	-48.43
36	-16.2	-36.4	-25.0	1.5	.01	.01	.00	-0.00	.56	.21	-52.73
37	-13.1	-31.1	-20.6	1.3	.01	.01	.00	-0.00	.54	.09	-30.50
38	-8.4	-23.5	-14.4	1.2	.01	.01	.00	-0.00	.53	.05	-66.63
39	-2.7	-14.4	-7.0	1.2	.00	.01	-0.00	-0.00	.51	.13	9.21
40	3.7	-4.1	1.1	1.1	.00	.01	-0.00	.00	.50	.12	-39.94
41	10.2	6.3	9.1	1.0	.00	.01	.00	.00	.49	.14	78.83
42	16.3	16.3	16.5	.8	.00	.01	-0.00	.00	.48	.25	-86.56
43	21.6	25.1	22.7	.5	.00	.01	-0.00	.00	.47	.39	-52.83
44	25.8	32.0	27.2	.2	.00	.01	-0.00	.00	.45	.37	-31.69
45	28.5	36.6	29.9	-0.1	.00	.01	-0.00	.00	.44	.20	-11.37
46	29.7	38.5	30.6	-0.4	.00	.01	.00	-0.00	.43	.19	-63.48
47	29.2	37.4	29.2	-0.6	.00	.01	.00	-0.00	.43	.37	-70.41
48	27.1	33.7	26.1	-0.7	.00	.01	.00	-0.00	.42	.39	-84.69
49	23.7	27.6	21.6	-0.7	.00	.01	.00	-0.00	.41	.22	-72.82
50	19.4	19.8	16.0	-0.5	.00	.01	.00	-0.00	.40	.15	-0.00

CORRELATION COEFFICIENT .731

099 L III

BBELS 14 1.0M- III 0. 3JUNE65 2357-0008

LAGS= 50 N= 2296 DT= 0.2SEC

MEAN U=-18.6 MEAN W= 1.4

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	89.0	528.2	-21.8	0	2.60	5.71	-0.53	0	0	.14	0
1	76.9	492.5	-21.5	43.6	4.64	10.47	-0.26	.17	20.00	.04	-32.81
2	60.1	406.6	-20.4	81.6	4.47	9.66	.77	.75	10.00	.16	44.02
3	39.8	283.6	-18.0	108.7	8.87	46.56	-2.69	12.97	6.67	.65	-78.27
4	20.5	140.7	-14.2	122.0	15.72	128.24	-11.36	34.71	5.00	.81	-71.88
5	2.7	-2.9	-8.7	121.2	15.48	145.92	-11.39	37.82	4.00	.83	-73.24
6	-10.4	-131.1	-2.0	108.0	10.08	84.73	-1.79	23.46	3.33	.80	-85.64
7	-20.7	-231.9	5.7	86.2	6.56	39.92	2.55	12.19	2.86	.77	78.18
8	-27.3	-298.9	13.1	58.8	4.60	22.70	1.57	6.55	2.50	.66	76.52
9	-30.3	-331.6	19.8	29.2	3.06	13.82	.54	3.63	2.22	.56	81.52
10	-29.9	-331.3	25.1	.7	2.07	8.02	.22	1.74	2.00	.43	82.71
11	-27.7	-304.4	28.2	-23.9	1.74	3.46	.20	.86	1.82	.36	77.04
12	-23.6	-257.3	29.2	-43.9	1.19	1.49	.07	.37	1.67	.29	78.83
13	-17.5	-195.7	27.2	-58.0	.79	.90	.05	.05	1.54	.09	44.83
14	-12.5	-125.9	22.0	-66.3	.80	.85	.09	.09	1.43	.15	44.89
15	-6.4	-53.2	14.6	-69.4	.73	.61	.10	.09	1.33	.20	43.61
16	-0.8	17.8	5.8	-67.6	.56	.39	.06	.04	1.25	.17	35.12
17	4.7	93.6	-3.3	-61.5	.38	.32	.03	0	1.18	.07	-9.43
18	9.1	138.5	-12.5	-52.0	.33	.33	0	-0.03	1.11	.09	-83.17
19	13.5	181.6	-20.5	-39.5	.31	.33	-0.03	-0.06	1.05	.20	60.09
20	15.8	208.9	-26.6	-25.7	.26	.27	-0.04	-0.04	1.00	.23	46.84
21	17.3	218.8	-30.2	-11.8	.23	.18	0	-0.02	.95	.12	89.53
22	17.2	210.7	-31.3	1.7	.20	.17	.02	-0.02	.91	.14	-50.88
23	16.6	187.4	-29.4	13.4	.19	.19	.02	-0.03	.87	.19	-60.11
24	15.3	152.6	-25.0	23.7	.18	.21	.02	-0.03	.83	.19	-52.31
25	14.3	110.3	-19.2	31.1	.16	.18	0	-0.02	.80	.11	-75.16
26	12.0	64.4	-11.7	36.4	.13	.14	-0.02	-0.01	.77	.12	21.04
27	8.8	18.4	-3.9	38.9	.13	.15	-0.02	.01	.74	.18	-22.91
28	5.0	-24.4	3.3	38.8	.15	.17	-0.01	.02	.71	.14	-58.10
29	.6	-61.7	9.3	36.4	.16	.17	.01	.02	.69	.11	53.84
30	-3.4	-92.0	13.9	31.9	.18	.16	.01	.02	.67	.12	47.94
31	-6.4	-114.0	16.8	25.6	.20	.11	0	.01	.65	.08	89.08
32	-7.9	-126.7	18.4	18.8	.16	.08	0	0	.63	.03	-16.75
33	-8.8	-130.3	18.3	12.0	.10	.08	0	-0.01	.61	.10	-64.09
34	-8.7	-124.9	16.7	5.6	.07	.09	0	-0.01	.59	.16	82.76
35	-8.0	-111.9	13.7	-0.3	.07	.12	-0.02	-0.02	.57	.26	45.30
36	-7.2	-91.6	10.1	-5.7	.09	.13	-0.02	-0.02	.56	.26	42.93
37	-6.6	-66.7	5.9	-10.6	.10	.11	-0.01	0	.54	.08	28.99
38	-6.4	-38.6	1.4	-15.5	.10	.11	0	.01	.53	.14	72.22
39	-5.6	-8.0	-3.5	-19.7	.10	.10	.01	0	.51	.09	25.11
40	-4.6	21.9	-8.0	-23.1	.09	.10	.01	-0.01	.50	.17	-52.04
41	-2.5	48.8	-11.5	-25.1	.07	.11	.01	-0.01	.49	.19	-31.47
42	.9	70.6	-14.0	-25.5	.06	.09	.01	0	.48	.17	10.37
43	4.7	85.5	-15.4	-23.5	.07	.06	0	0	.47	.05	-75.27
44	8.3	93.5	-15.7	-19.5	.07	.05	-0.01	0	.45	.19	24.22
45	10.8	93.8	-15.0	-13.3	.09	.05	-0.01	-0.01	.44	.17	60.46
46	12.8	86.6	-13.5	-6.0	.14	.08	.01	0	.43	.06	34.83
47	12.4	73.5	-11.7	1.5	.18	.11	0	.02	.43	.16	79.04
48	11.0	54.9	-9.8	8.7	.16	.09	-0.01	.01	.42	.14	-38.60
49	8.6	33.1	-7.7	14.6	.11	.07	-0.02	-0.01	.41	.20	16.31
50	6.2	10.4	-5.1	19.0	.04	.03	-0.01	0	.40	.14	0

100 LI-w

TM No. 377

BBFLS= 14 2-4.0M- VII 8 JUNE-65

LAGS= 50 N= 1346 DT= .20SEC

MEAN U = -3.4 MEAN W = -1.1

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	115.4	163.0	74.5	0	16.94	15.19	7.63	0	0	.48	0
1	112.8	157.3	72.4	2.8	29.95	25.51	12.09	-0.66	20.00	.44	-3.13
2	104.2	142.7	66.2	5.2	20.27	18.00	6.59	1.04	10.00	.35	8.97
3	96.6	120.9	56.6	7.0	13.47	17.96	7.19	1.57	6.67	.47	12.34
4	84.7	94.2	44.4	8.2	13.73	29.28	15.38	1.98	5.00	.77	7.32
5	71.6	65.0	30.7	8.7	11.68	32.13	16.32	2.83	4.00	.85	9.83
6	58.3	36.1	16.8	8.4	5.40	16.65	7.35	1.66	3.33	.79	12.71
7	45.7	9.7	3.8	7.4	1.80	4.59	1.74	.49	2.86	.63	15.56
8	34.5	-12.2	-7.1	5.8	.71	1.36	.30	.22	2.50	.38	36.46
9	25.2	-28.0	-15.2	3.9	.38	.60	-0.06	.02	2.22	.14	-20.28
10	18.1	-37.0	-19.9	1.8	.29	.41	-0.00	-0.01	2.00	.03	75.64
11	13.3	-39.3	-21.1	-0.2	.12	.21	-0.01	.00	1.82	.07	-0.79
12	10.8	-35.3	-19.0	-2.0	.07	.15	.00	.00	1.67	.04	23.70
13	10.1	-26.2	-14.0	-3.3	.07	.12	-0.00	.02	1.54	.17	-74.82
14	10.9	-13.3	-6.9	-4.2	.07	.10	.00	.02	1.43	.26	86.84
15	12.8	1.7	1.5	-4.6	.04	.06	-0.00	.01	1.33	.10	-87.15
16	15.4	17.1	10.2	-4.5	.03	.06	-0.01	.00	1.25	.14	-12.45
17	18.0	31.3	18.3	-4.0	.03	.07	-0.01	.00	1.18	.28	-14.08
18	20.3	42.9	25.2	-3.4	.03	.07	-0.00	.01	1.11	.28	-82.92
19	21.9	50.9	30.4	-2.6	.02	.04	.00	.01	1.05	.38	77.00
20	22.6	54.9	33.4	-1.8	.02	.03	.00	.01	1.00	.24	89.29
21	22.3	54.8	34.2	-1.0	.02	.03	-0.00	.00	.95	.20	-54.60
22	20.8	50.6	32.8	-0.2	.02	.03	-0.00	.00	.91	.14	-58.73
23	18.2	43.1	29.5	.3	.02	.02	-0.00	.00	.87	.12	-74.82
24	14.8	33.1	24.6	.4	.02	.02	.00	.00	.83	.22	67.19
25	10.8	21.7	18.8	.3	.01	.02	.00	.00	.80	.13	85.47
26	6.7	9.9	12.3	-0.2	.01	.02	-0.00	.00	.77	.12	-14.89
27	2.7	-1.1	5.7	-0.9	.01	.02	.00	.00	.74	.10	72.45
28	-1.1	-10.5	-0.7	-1.9	.01	.02	.00	.00	.71	.26	28.21
29	-4.5	-17.9	-6.3	-3.0	.01	.02	.00	-0.00	.69	.27	-17.53
30	-7.4	-22.9	-10.8	-4.2	.01	.01	.00	-0.00	.67	.33	-45.90
31	-9.7	-25.3	-14.1	-5.5	.01	.01	.00	-0.00	.65	.17	-74.52
32	-11.3	-25.1	-16.0	-6.7	.01	.01	-0.00	.00	.63	.10	-39.02
33	-12.1	-22.4	-16.5	-7.7	.01	.01	-0.00	.00	.61	.08	-46.68
34	-12.1	-17.8	-15.6	-8.4	.01	.01	-0.00	-0.00	.59	.03	74.40
35	-11.3	-11.5	-13.5	-8.6	.01	.01	-0.00	-0.00	.57	.08	49.91
36	-9.9	-4.3	-10.3	-8.4	.01	.01	-0.00	-0.00	.56	.07	61.19
37	-7.8	3.3	-6.2	-7.7	.00	.01	-0.00	-0.00	.54	.03	26.39
38	-5.2	11.0	-1.6	-6.5	.00	.01	.00	-0.00	.53	.04	-86.46
39	-2.5	17.9	3.0	-5.1	.00	.01	.00	-0.00	.51	.20	-63.83
40	.3	23.7	7.5	-3.4	.00	.01	.00	-0.00	.50	.18	-68.73
41	2.7	28.1	11.4	-1.7	.00	.01	-0.00	-0.00	.49	.14	30.93
42	4.6	30.8	14.5	-0.1	.00	.01	-0.00	.00	.48	.12	-12.25
43	5.7	31.9	16.6	1.5	.00	.01	-0.00	.00	.47	.11	-68.77
44	6.2	31.2	17.6	3.0	.00	.01	-0.00	-0.00	.45	.06	29.17
45	5.9	28.9	17.3	4.2	.00	.01	-0.00	-0.00	.44	.13	41.12
46	5.0	25.2	16.0	5.1	.00	.01	-0.00	.00	.43	.11	-45.86
47	3.7	20.5	13.7	5.6	.00	.01	-0.00	.00	.43	.13	-71.19
48	2.1	14.8	10.7	5.7	.00	.01	-0.00	.00	.42	.11	-6.88
49	.5	8.7	7.2	5.5	.00	.01	-0.00	-0.00	.41	.17	2.22
50	-1.1	2.4	3.5	5.1	.00	.00	-0.00	.00	.40	.12	-0.00

CORRELATION COEFFICIENT .543

101 O III

BBELS 14 0.0M-III 0. 06JUL-65 1411-1415

LAGS= 50 N= 1262 DT= 0.25SEC

MEAN U= 30.0 MEAN W= 1.5

CORRELATION COEFFICIENT -1.3

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	257.4	953.2	-162.3	0	4.50	6.52	-1.74	0	0	.32	0
1	226.2	865.5	-152.2	110.4	7.04	13.27	-1.26	-0.12	20.00	.13	5.26
2	174.1	662.2	-123.7	204.6	6.35	21.38	.09	2.89	10.00	.25	88.16
3	106.9	393.9	-80.9	267.0	22.32	87.96	-17.98	30.75	6.67	.80	-59.69
4	38.1	120.3	-32.9	290.1	45.68	181.20	-41.20	72.12	5.00	.91	-60.26
5	-23.2	-116.8	13.6	274.6	47.40	185.68	-34.16	75.52	4.00	.88	-65.66
6	-71.0	-295.4	53.2	230.4	36.05	143.81	-21.54	54.97	3.33	.82	-68.60
7	-101.7	-411.2	80.1	168.2	26.68	109.87	-20.20	38.20	2.86	.80	-62.13
8	-115.2	-467.9	95.2	101.3	17.89	65.21	-13.62	22.27	2.50	.76	-58.55
9	-112.2	-476.1	97.6	36.6	12.61	39.12	-6.71	14.38	2.22	.71	-64.98
10	-99.5	-441.9	90.3	-20.6	5.37	28.78	-2.56	8.69	2.00	.58	-73.57
11	-82.5	-379.4	76.7	-66.2	4.14	18.46	-0.49	2.63	1.82	.31	-79.53
12	-63.3	-297.9	59.8	-98.2	2.54	13.14	-0.35	1.08	1.67	.20	-72.12
13	-44.5	-206.6	43.0	-116.6	2.04	10.15	-0.42	1.36	1.54	.31	-72.74
14	-25.1	-116.8	28.1	-122.9	1.36	7.06	-0.35	1.11	1.43	.38	-72.33
15	-8.4	-36.1	16.3	-120.3	.88	4.16	-0.03	.38	1.33	.20	-84.73
16	6.8	30.8	7.8	-113.1	.75	2.91	-0.04	-0.14	1.25	.10	72.97
17	19.5	82.2	-0.1	-103.7	.85	2.39	-0.05	-0.54	1.18	.38	84.67
18	30.6	117.2	-8.4	-91.2	.88	1.67	.07	-0.44	1.11	.36	-80.67
19	39.6	139.3	-17.6	-76.1	.76	1.06	.05	-0.13	1.05	.16	-70.17
20	46.6	151.4	-27.6	-54.9	.67	.84	0	-0.06	1.00	.08	-89.84
21	52.0	157.4	-38.7	-31.2	.56	.76	-0.02	-0.12	.95	.18	82.56
22	52.9	157.4	-49.8	-7.7	.42	.61	-0.04	-0.12	.91	.26	72.20
23	49.9	153.5	-58.5	11.9	.35	.48	.03	-0.06	.87	.16	-62.92
24	44.9	144.1	-63.9	27.3	.32	.41	.07	-0.01	.83	.21	-6.97
25	37.9	133.9	-65.0	37.2	.26	.36	.03	-0.01	.80	.12	-18.71
26	29.9	122.2	-62.8	44.3	.23	.33	0	-0.02	.77	.06	80.83
27	24.0	111.2	-56.3	48.3	.26	.34	-0.02	-0.01	.74	.07	42.80
28	19.0	97.6	-47.4	51.0	.32	.38	-0.01	-0.03	.71	.08	74.22
29	14.5	76.6	-35.1	53.8	.31	.34	.02	-0.03	.69	.13	-54.86
30	8.0	44.0	-20.3	58.5	.23	.28	.05	-0.02	.67	.20	-20.10
31	1.3	2.5	-4.0	61.9	.24	.27	.03	-0.02	.65	.16	-37.05
32	-7.4	-45.7	13.6	62.9	.28	.21	.02	-0.07	.63	.29	-77.21
33	-16.4	-94.1	30.6	58.9	.27	.16	.04	-0.05	.61	.29	-52.58
34	-25.2	-136.7	44.1	47.4	.23	.19	.04	.02	.59	.20	32.71
35	-32.9	-166.8	53.6	30.3	.21	.23	.03	.03	.57	.18	49.01
36	-37.1	-182.1	59.1	9.2	.22	.24	.04	.01	.56	.19	15.14
37	-37.4	-179.2	60.1	-13.1	.21	.24	.04	.01	.54	.18	10.04
38	-32.7	-158.2	56.9	-33.9	.20	.26	0	0	.53	.01	8.38
39	-25.6	-122.7	47.6	-50.8	.19	.27	-0.02	0	.51	.07	-3.20
40	-17.3	-76.0	33.3	-62.8	.19	.25	-0.02	.02	.50	.14	-40.33
41	-7.7	-25.7	15.3	-68.2	.25	.19	-0.05	.02	.49	.23	-20.20
42	.0	22.6	-2.7	-65.0	.28	.18	-0.06	-0.01	.48	.26	13.50
43	6.7	60.9	-18.9	-54.7	.26	.17	-0.04	-0.03	.47	.21	34.43
44	11.6	84.4	-31.6	-38.3	.26	.16	-0.01	-0.04	.45	.19	75.48
45	15.3	92.5	-38.6	-19.3	.22	.16	-0.02	-0.04	.44	.21	67.11
46	17.4	87.1	-40.1	-2.9	.17	.17	-0.03	0	.43	.20	.21
47	17.3	71.7	-37.4	8.3	.18	.24	-0.01	0	.43	.05	-14.73
48	15.9	54.1	-30.8	10.8	.22	.30	.02	-0.05	.42	.20	-68.10
49	14.5	39.5	-23.9	8.6	.23	.25	.02	-0.06	.41	.27	-74.38
50	12.4	31.0	-16.1	4.0	.11	.10	.01	0	.40	.06	-0.02

BBFLS- 14 .54- 1 8 JUNE-65 1420-1424

LAGS= 50 N= 1136 DT= .20SEC

MEAN U = 31.4 MEAN W = 1.3

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	158.3	688.9	-117.2	0	1.67	3.96	.92	0	0	.36	0
1	138.1	639.1	-111.5	75.7	2.98	9.68	1.46	.81	20.00	.31	29.17
2	111.6	520.4	-94.6	141.0	4.71	14.28	.22	2.92	10.00	.36	85.62
3	74.9	351.6	-68.5	187.2	14.28	47.42	-9.44	17.84	6.67	.78	-62.13
4	34.9	158.0	-36.2	210.9	31.30	145.10	-33.04	51.93	5.00	.91	-57.53
5	-3.0	-33.8	-0.5	209.5	39.08	205.20	-44.27	71.65	4.00	.94	-58.29
6	-35.3	-202.4	33.7	186.1	26.07	135.10	-25.96	48.09	3.33	.92	-61.64
7	-60.3	-332.1	64.5	146.5	10.50	51.20	-5.92	18.10	2.86	.82	-71.88
8	-77.1	-418.2	88.8	96.5	5.78	25.32	-0.61	8.84	2.50	.73	-86.05
9	-85.8	-456.9	103.9	44.3	4.53	18.23	-0.50	6.31	2.22	.70	-85.48
10	-86.8	-451.9	109.6	-5.2	3.03	12.24	-0.13	3.75	2.00	.62	-88.01
11	-80.4	-408.5	103.5	-49.7	2.05	6.11	.15	1.69	1.82	.48	84.98
12	-69.0	-334.2	88.7	-86.2	1.65	2.98	.12	.61	1.67	.28	78.80
13	-52.2	-237.7	67.9	-113.2	1.23	1.99	-0.02	.21	1.54	.13	-83.59
14	-32.7	-129.0	41.4	-128.0	.72	1.70	-0.17	-0.07	1.43	.17	22.68
15	-11.6	-18.0	13.6	-131.6	.54	1.32	-0.13	-0.19	1.33	.27	55.93
16	9.0	86.9	-13.4	-124.3	.47	.67	-0.03	-0.13	1.25	.24	75.05
17	25.5	178.9	-37.2	-106.1	.37	.37	-0.00	-0.06	1.18	.16	88.74
18	39.3	251.7	-56.3	-80.4	.34	.34	.02	-0.02	1.11	.09	-51.63
19	48.4	297.0	-69.3	-49.2	.36	.32	.01	.07	1.05	.20	85.66
20	52.1	311.9	-74.7	-15.9	.32	.30	.04	.07	1.00	.26	59.63
21	51.5	296.4	-72.8	16.2	.22	.34	.06	.06	.95	.32	44.81
22	45.9	252.6	-63.9	44.4	.20	.35	.04	.08	.91	.35	66.75
23	36.9	187.3	-49.8	66.2	.22	.27	.02	.07	.87	.28	72.27
24	25.1	109.3	-31.8	78.9	.20	.18	.00	.00	.83	.02	15.56
25	12.6	28.9	-13.1	82.9	.24	.18	-0.02	-0.03	.80	.19	57.41
26	-0.5	-45.7	4.5	78.1	.25	.24	-0.06	-0.02	.77	.25	22.65
27	-11.7	-108.2	19.7	66.0	.22	.27	-0.04	-0.01	.74	.19	14.32
28	-20.1	-155.0	31.5	49.0	.22	.25	.02	.01	.71	.08	28.56
29	-24.3	-183.5	39.0	28.8	.20	.22	.03	.04	.69	.23	51.27
30	-24.7	-192.7	41.0	9.0	.19	.17	.01	.04	.67	.25	70.76
31	-21.1	-183.4	40.1	-8.6	.23	.16	.02	.04	.65	.22	63.16
32	-16.9	-159.5	35.1	-22.8	.24	.18	.00	.02	.63	.11	82.84
33	-11.2	-124.5	27.6	-33.3	.22	.17	-0.03	.00	.61	.19	-8.11
34	-4.6	-82.6	19.1	-39.0	.17	.15	-0.04	-0.00	.59	.27	6.04
35	1.2	-38.3	9.9	-39.6	.18	.12	-0.02	.01	.57	.18	-24.46
36	6.7	5.4	1.9	-35.2	.22	.11	-0.01	.03	.56	.19	-62.23
37	9.4	45.0	-5.0	-27.4	.23	.12	.01	.01	.54	.09	28.15
38	12.6	78.5	-9.6	-16.8	.25	.14	.06	-0.04	.53	.39	-35.51
39	13.5	102.1	-12.7	-5.8	.23	.15	.06	-0.06	.51	.47	-44.42
40	11.9	114.2	-15.2	5.1	.17	.13	.04	-0.04	.50	.38	-46.53
41	8.2	115.1	-16.0	14.5	.16	.14	.04	-0.03	.49	.32	-41.40
42	4.4	102.1	-15.6	22.1	.19	.15	.00	-0.02	.48	.12	-86.40
43	-0.2	79.1	-13.0	26.7	.21	.16	-0.04	.00	.47	.24	-1.60
44	-4.6	49.0	-10.4	27.1	.24	.17	-0.02	.01	.45	.12	-29.14
45	-7.5	15.5	-7.1	23.6	.24	.14	.00	.00	.44	.02	61.15
46	-9.9	-16.2	-4.9	17.2	.19	.11	-0.00	-0.02	.43	.12	78.25
47	-10.1	-42.4	-3.3	7.7	.21	.10	-0.01	-0.01	.43	.11	62.37
48	-8.8	-61.4	-1.8	-2.1	.22	.09	-0.00	.00	.42	.02	-51.21
49	-6.2	-71.6	-0.5	-11.9	.20	.08	.00	-0.00	.41	.03	-48.13
50	-2.5	-71.8	.3	-19.3	.10	.04	-0.00	-0.00	.40	.02	.01

CORRELATION COEFFICIENT -0.355

103 OIII

BBFLS- 14 1.04- 1 8 JUNE-65 1428-1432

LAGS= 50 N= 1039 DT= .20SEC

MEAN U = 36.2 MEAN W = -1.2

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	117.7	402.6	-78.0	0	1.28	2.69	.19	0	0	.10	0
1	97.7	372.7	-72.5	53.1	1.95	5.88	.20	.66	20.00	.20	73.02
2	78.4	300.4	-58.6	98.7	2.10	9.87	.22	2.83	10.00	.62	85.51
3	49.3	195.0	-38.2	130.6	7.38	25.33	-3.40	10.77	6.67	.83	-72.50
4	18.9	74.5	-15.2	145.2	20.45	67.97	-16.96	29.70	5.00	.92	-60.27
5	-8.9	-44.2	8.4	141.5	28.32	105.96	-26.61	43.97	4.00	.94	-58.81
6	-32.7	-145.5	29.6	121.5	20.09	85.57	-17.50	34.03	3.33	.92	-62.78
7	-50.3	-219.0	46.4	89.8	11.53	45.71	-6.25	18.73	2.86	.90	-71.54
8	-61.6	-258.7	57.4	52.0	6.76	27.15	-3.74	11.35	2.50	.88	-71.76
9	-65.9	-264.2	62.1	13.3	3.24	13.59	-1.94	4.63	2.22	.76	-67.25
10	-64.1	-240.3	60.7	-21.4	1.31	4.52	-0.28	.94	2.00	.41	-73.33
11	-54.9	-193.4	53.8	-49.4	1.15	1.91	-0.24	.52	1.82	.38	-65.57
12	-41.9	-133.9	41.9	-68.3	1.19	1.00	-0.39	.38	1.67	.50	-44.33
13	-25.0	-70.1	27.2	-77.2	1.27	.76	-0.42	.27	1.54	.51	-32.30
14	-8.6	-10.5	11.4	-77.5	1.06	.60	-0.24	.09	1.43	.32	-21.42
15	6.0	40.9	-4.1	-69.8	.70	.44	-0.06	-0.08	1.33	.18	50.06
16	17.1	80.8	-17.2	-57.4	.50	.35	-0.05	-0.12	1.25	.31	65.09
17	24.6	107.8	-27.9	-42.1	.32	.29	-0.04	-0.05	1.18	.22	53.69
18	30.6	122.4	-34.9	-27.0	.21	.22	-0.04	-0.01	1.11	.18	14.82
19	33.6	126.5	-39.7	-12.3	.27	.16	-0.05	-0.01	1.05	.26	6.93
20	34.8	120.5	-41.1	.6	.31	.12	-0.05	-0.00	1.00	.24	4.50
21	33.6	106.0	-39.1	11.9	.28	.09	-0.05	.00	.95	.29	-6.04
22	30.6	85.5	-35.1	22.0	.24	.11	-0.06	.01	.91	.36	-11.88
23	25.8	58.5	-27.7	30.0	.21	.13	-0.03	.01	.87	.20	-23.41
24	18.6	28.2	-17.8	36.2	.20	.11	-0.01	.00	.83	.09	-18.02
25	12.0	-3.1	-6.1	38.9	.22	.10	-0.05	.01	.80	.36	-13.62
26	1.7	-33.1	5.7	38.9	.21	.10	-0.04	.02	.77	.32	-24.02
27	-6.5	-58.9	16.7	34.9	.22	.09	.00	.00	.74	.03	81.74
28	-13.4	-78.3	25.6	28.0	.23	.06	.02	-0.01	.71	.18	-23.94
29	-19.9	-88.4	31.3	17.9	.19	.05	.02	-0.01	.69	.19	-29.70
30	-22.7	-88.6	33.4	5.9	.16	.09	-0.01	-0.01	.67	.08	43.31
31	-23.2	-79.2	31.2	-6.6	.19	.11	-0.02	.00	.65	.16	-6.55
32	-22.2	-60.9	26.5	-18.2	.25	.09	-0.01	.02	.63	.13	-55.29
33	-17.2	-36.1	19.3	-27.3	.24	.07	.01	.01	.61	.10	50.54
34	-11.4	-8.1	10.5	-32.6	.19	.06	.01	.00	.59	.09	6.05
35	-2.8	19.4	1.2	-32.9	.23	.07	-0.01	-0.00	.57	.11	12.42
36	5.5	42.8	-7.4	-29.0	.31	.11	-0.01	-0.01	.56	.09	49.73
37	11.5	59.0	-13.1	-21.4	.26	.11	.02	-0.01	.54	.14	-37.36
38	15.4	66.8	-16.1	-11.5	.22	.07	.02	-0.01	.53	.14	-26.03
39	17.1	65.5	-16.8	-0.7	.30	.05	.00	-0.00	.51	.01	-36.40
40	16.4	56.2	-14.5	9.0	.30	.06	-0.01	-0.00	.50	.10	2.58
41	14.1	41.0	-11.0	16.9	.21	.07	-0.04	.00	.49	.32	-6.59
42	10.6	22.4	-6.8	21.5	.23	.06	-0.03	.02	.48	.30	-39.11
43	7.1	3.9	-3.6	23.1	.30	.06	.01	.03	.47	.23	64.80
44	2.5	-13.0	-0.3	22.4	.35	.08	.01	-0.00	.45	.08	-17.22
45	-1.1	-25.9	1.9	19.0	.33	.11	-0.01	-0.04	.44	.23	77.80
46	-3.8	-36.0	4.1	14.7	.29	.11	-0.03	-0.02	.43	.19	40.57
47	-6.0	-41.4	4.5	10.0	.28	.10	-0.03	.01	.43	.18	-24.91
48	-7.4	-43.6	4.6	5.5	.29	.08	-0.02	.01	.42	.16	-23.26
49	-6.4	-42.7	3.8	1.1	.25	.08	-0.02	-0.00	.41	.12	3.22
50	-6.1	-39.8	2.2	-2.4	.10	.04	-0.00	-0.00	.40	.03	.00

CORRELATION COEFFICIENT -0.359

BBELS- 14 1.5M- 1 8 JUNE-65 1435-1439
LAGS= 50 N= 1022 DT= .20SEC
MEAN U = 37.2 MEAN W = -2.4

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	72.0	243.6	-49.7	0	.60	6.18	-0.19	0	0	.10	0
1	54.8	230.6	-46.9	23.5	1.34	12.57	.04	1.00	20.00	.24	87.87
2	45.5	197.7	-39.6	44.4	2.18	12.52	.56	2.75	10.00	.54	78.53
3	31.4	149.1	-29.1	61.0	6.59	24.76	-3.86	9.21	6.67	.78	-67.23
4	17.5	91.1	-16.1	71.4	15.59	55.95	-15.56	21.57	5.00	.90	-54.19
5	4.0	30.3	-2.4	74.6	17.48	65.73	-18.96	25.02	4.00	.93	-52.84
6	-9.0	-26.8	10.9	71.1	8.70	37.66	-8.67	13.65	3.33	.89	-57.58
7	-18.4	-75.4	23.5	61.0	2.51	13.46	-1.36	4.22	2.86	.76	-72.09
8	-28.1	-111.5	33.3	46.4	1.19	6.62	-0.39	1.76	2.50	.64	-77.40
9	-34.4	-133.1	40.5	29.2	.76	3.38	-0.07	.74	2.22	.46	-84.86
10	-39.5	-140.0	44.1	11.3	1.05	1.43	-0.02	.50	2.00	.41	-87.39
11	-40.3	-133.2	43.7	-5.6	1.22	.75	-0.24	.25	1.82	.36	-45.33
12	-37.4	-114.8	39.5	-20.6	1.09	.43	-0.28	-0.18	1.67	.49	32.20
13	-31.0	-87.9	31.8	-32.2	.98	.30	-0.21	-0.23	1.54	.58	47.63
14	-22.5	-55.8	21.2	-40.8	.74	.25	-0.12	-0.09	1.43	.35	36.25
15	-11.2	-21.7	9.2	-45.2	.42	.20	-0.01	-0.01	1.33	.06	33.43
16	-0.9	11.5	-2.9	-45.8	.33	.15	-0.00	.01	1.25	.05	-84.30
17	8.7	41.4	-14.0	-42.1	.35	.11	-0.03	-0.01	1.18	.17	14.85
18	15.9	65.9	-23.2	-35.2	.29	.09	-0.05	-0.01	1.11	.33	13.35
19	21.4	83.1	-29.8	-25.5	.29	.07	-0.03	.01	1.05	.25	-20.14
20	25.5	92.7	-34.0	-14.2	.31	.05	-0.01	.02	1.00	.18	-57.11
21	26.2	94.0	-35.4	-2.7	.26	.05	-0.01	.00	.95	.11	-17.47
22	25.2	87.8	-34.2	7.6	.24	.07	-0.01	-0.00	.91	.11	19.98
23	22.1	74.7	-30.2	15.9	.27	.06	-0.00	.00	.87	.03	-5.04
24	18.1	56.3	-24.1	22.0	.31	.04	-0.01	.01	.83	.11	-61.04
25	12.0	34.9	-16.2	25.6	.36	.03	-0.00	.01	.80	.11	-67.81
26	5.6	12.0	-7.8	27.4	.30	.03	-0.00	-0.01	.77	.10	73.50
27	-0.2	-10.1	.9	26.4	.21	.03	-0.01	-0.02	.74	.24	66.37
28	-5.3	-29.7	8.7	23.7	.24	.03	-0.00	-0.00	.71	.05	69.22
29	-9.9	-45.1	15.5	19.4	.27	.03	-0.00	-0.00	.69	.00	41.86
30	-14.6	-55.2	20.3	13.4	.23	.04	-0.00	-0.00	.67	.02	24.83
31	-15.7	-59.5	23.0	6.6	.23	.04	-0.00	.01	.65	.10	-70.56
32	-18.5	-58.2	23.2	-0.4	.26	.04	-0.01	.01	.63	.19	-48.62
33	-17.6	-52.0	21.2	-7.0	.25	.04	-0.02	.01	.61	.25	-13.99
34	-14.6	-42.1	17.4	-12.6	.23	.04	-0.03	.00	.59	.35	-0.19
35	-10.0	-29.6	12.4	-16.1	.23	.03	-0.03	.01	.57	.39	-18.67
36	-5.0	-16.2	6.7	-17.5	.22	.02	-0.02	.01	.56	.35	-24.82
37	-1.1	-3.6	1.1	-16.5	.18	.02	-0.02	-0.00	.54	.25	2.80
38	3.6	7.2	-3.7	-14.0	.23	.02	-0.01	.00	.53	.19	-13.66
39	7.8	15.2	-7.5	-10.2	.29	.03	-0.01	.01	.51	.21	-50.97
40	9.8	20.5	-10.3	-5.8	.29	.03	-0.00	.01	.50	.15	-78.13
41	11.7	22.7	-12.3	-1.5	.33	.02	.01	.01	.49	.11	53.93
42	11.7	22.5	-13.0	2.3	.34	.02	.01	.01	.48	.17	35.20
43	10.6	20.1	-12.9	5.5	.28	.02	.01	.00	.47	.14	20.71
44	9.4	16.2	-12.1	7.5	.31	.03	.00	-0.02	.45	.17	-75.64
45	7.0	11.2	-10.5	8.5	.39	.03	-0.00	-0.03	.44	.24	86.75
46	4.1	5.8	-7.6	8.2	.35	.03	-0.00	-0.01	.43	.10	63.38
47	2.2	.4	-4.7	7.1	.28	.02	.00	.01	.43	.12	84.00
48	-0.6	-4.4	-1.5	5.1	.26	.02	.00	.01	.42	.16	83.01
49	-2.9	-8.7	1.7	2.3	.23	.03	-0.01	.01	.41	.20	-39.38
50	-4.8	-12.1	4.5	-0.4	.09	.02	-0.01	.00	.40	.25	-0.00

CORRELATION COEFFICIENT -0.376

BBFLS- 14 2.5M- 1 8 JUNE-65
LAGS= 50 N= 1088 DT= .20SEC
MEAN U = 35.2 MEAN W = -3.3

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	53.7	159.4	-36.6	0	.50	7.80	.37	0	0	.19	0
1	40.8	152.5	-34.6	13.1	1.01	13.97	.29	.80	20.00	.23	70.18
2	34.3	136.3	-29.7	25.0	2.58	13.42	-1.09	3.63	10.00	.64	-73.29
3	24.4	111.6	-22.3	35.4	8.10	25.63	-6.13	11.12	6.67	.88	-61.13
4	14.3	91.5	-13.7	42.8	12.49	39.17	-11.86	16.52	5.00	.92	-54.33
5	5.7	48.5	-4.0	47.2	9.46	31.81	-10.04	12.12	4.00	.91	-50.36
6	-1.6	15.7	5.2	47.9	4.21	16.13	-4.69	5.26	3.33	.86	-48.29
7	-8.2	-14.2	13.7	44.9	1.70	6.67	-1.90	1.82	2.86	.78	-43.80
8	-14.2	-39.0	20.6	39.0	.77	2.00	-0.62	.27	2.50	.54	-23.97
9	-18.9	-57.3	25.7	30.5	.74	.68	-0.13	-0.03	2.22	.19	14.15
10	-24.0	-68.1	28.4	20.8	1.14	.36	-0.10	-0.05	2.00	.18	24.36
11	-26.8	-71.9	29.0	10.9	1.25	.22	-0.14	-0.10	1.82	.33	34.07
12	-27.5	-68.6	27.4	.8	1.00	.19	-0.12	-0.12	1.67	.39	45.52
13	-26.3	-59.7	24.0	-7.9	.75	.15	-0.07	-0.09	1.54	.32	51.63
14	-22.3	-46.7	19.0	-15.3	.55	.12	-0.04	-0.02	1.43	.16	25.42
15	-16.4	-31.3	13.5	-20.6	.38	.08	-0.03	-0.02	1.33	.22	28.74
16	-11.0	-15.1	7.6	-24.2	.24	.05	-0.03	-0.02	1.25	.32	35.94
17	-4.8	.6	1.8	-25.7	.20	.04	-0.03	-0.00	1.18	.32	8.35
18	.5	14.5	-3.1	-25.5	.22	.05	-0.02	.00	1.11	.20	-2.67
19	4.8	26.2	-7.5	-23.8	.25	.04	-0.02	.01	1.05	.16	-21.26
20	8.5	34.9	-10.4	-20.6	.23	.05	-0.02	.02	1.00	.28	-45.14
21	11.4	40.7	-12.7	-16.6	.17	.05	-0.02	.02	.95	.29	-41.83
22	12.5	43.6	-13.9	-12.5	.15	.05	-0.01	.00	.91	.14	-4.50
23	12.9	43.9	-14.3	-8.1	.19	.04	-0.01	-0.01	.87	.15	61.62
24	12.9	42.0	-13.9	-3.8	.19	.03	.00	-0.01	.83	.17	-88.59
25	13.3	38.3	-12.6	-0.0	.17	.02	.00	-0.01	.80	.09	-56.69
26	12.0	33.3	-10.8	3.3	.15	.02	-0.01	-0.00	.77	.15	14.08
27	10.7	27.5	-8.4	6.1	.18	.02	-0.01	-0.01	.74	.22	46.02
28	9.9	20.8	-5.6	8.7	.20	.02	-0.01	-0.00	.71	.11	32.07
29	6.5	14.0	-2.7	10.5	.17	.03	-0.02	.01	.69	.27	-34.95
30	4.1	7.0	.4	11.9	.14	.03	-0.01	.01	.67	.32	-44.89
31	1.1	.3	3.1	12.3	.17	.02	-0.01	.00	.65	.10	-34.12
32	-1.6	-6.1	5.8	12.1	.22	.02	-0.01	-0.01	.63	.19	66.02
33	-3.5	-12.1	7.7	11.1	.26	.02	-0.00	-0.01	.61	.20	82.21
34	-5.4	-17.2	9.0	9.6	.26	.02	.00	-0.01	.59	.14	-83.58
35	-5.7	-21.4	10.0	7.7	.23	.02	-0.00	-0.00	.57	.09	48.58
36	-6.9	-24.3	10.3	5.5	.21	.02	-0.01	-0.00	.56	.11	6.58
37	-6.8	-25.7	9.9	2.8	.18	.02	-0.01	.00	.54	.09	-16.32
38	-6.1	-25.6	8.9	.0	.16	.02	-0.00	.01	.53	.16	-67.08
39	-5.5	-23.9	7.5	-2.8	.19	.02	.01	.02	.51	.29	70.00
40	-3.9	-20.8	5.8	-5.1	.23	.03	.01	.03	.50	.37	65.35
41	-4.0	-16.5	3.7	-7.2	.21	.03	-0.01	.03	.49	.32	-78.92
42	-2.6	-11.4	1.7	-8.2	.22	.03	-0.02	.01	.48	.30	-32.14
43	-1.7	-5.6	-0.4	-8.5	.25	.02	-0.01	.00	.47	.11	-23.28
44	.1	.2	-2.4	-8.1	.23	.02	.01	-0.00	.45	.09	-4.04
45	1.2	5.5	-4.4	-6.8	.23	.02	.01	-0.00	.44	.10	-42.03
46	3.8	9.9	-6.6	-5.1	.23	.02	-0.01	-0.00	.43	.11	38.23
47	6.1	13.2	-8.4	-3.2	.23	.03	-0.02	.01	.43	.23	-27.79
48	7.4	14.7	-9.5	-1.0	.23	.03	-0.02	.01	.42	.33	-30.76
49	8.3	14.4	-10.0	1.1	.19	.03	-0.02	.00	.41	.33	-3.70
50	8.1	12.3	-9.4	3.2	.08	.01	-0.01	-0.00	.40	.32	.00

CORRELATION COEFFICIENT -0.396

106 OIII

BBELS 14 3.0M- 1 0, 06JUL-65 1457-1501
LAGS= 50 N= 1143 DT= 0.2SEC
MEAN U= 18.9 MEAN W= -2.2
CORRELATION COEFFICIENT -.12

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	15.8	186.2	-6.9	0	.20	9.86	-0.29	0	0	.21	0
1	8.7	178.0	-6.7	.4	1.43	16.25	-0.72	-0.36	20.00	.17	26.19
2	8.9	156.8	-6.1	.6	3.00	13.99	-0.91	-0.60	10.00	.17	33.22
3	6.8	125.2	-5.1	.7	2.38	22.37	-0.93	-0.25	6.67	.13	15.21
4	6.2	86.6	-3.9	.8	.84	39.29	-1.43	.11	5.00	.25	-4.57
5	4.2	45.2	-2.5	.8	.64	42.76	-1.72	.56	4.00	.34	-18.04
6	3.2	4.9	-1.1	.8	.78	25.76	-0.86	.85	3.33	.27	-44.64
7	2.1	-30.5	.4	.4	.56	9.92	-0.10	.23	2.86	.10	-65.76
8	1.1	-58.0	1.6	-0.1	.34	2.89	0	-0.20	2.50	.20	88.59
9	.6	-76.0	2.6	-0.8	.26	.89	-0.01	-0.06	2.22	.13	83.75
10	-0.1	-83.8	3.0	-1.6	.21	.58	.03	-0.04	2.00	.14	-58.14
11	-0.6	-81.6	3.1	-2.4	.17	.31	.01	-0.06	1.82	.27	-76.84
12	-1.1	-70.9	3.0	-2.8	.16	.16	.01	-0.02	1.67	.14	-62.94
13	-1.3	-53.8	2.6	-3.1	.14	.12	.01	.02	1.54	.16	65.50
14	-2.1	-32.7	1.9	-3.1	.10	.13	0	.02	1.43	.17	84.22
15	-2.5	-9.9	.9	-2.7	.09	.09	0	.01	1.33	.16	73.79
16	-2.8	11.9	.1	-2.1	.12	.07	.01	.02	1.25	.23	71.48
17	-3.0	30.9	-0.7	-1.5	.14	.06	0	.02	1.18	.21	85.40
18	-3.7	45.5	-1.3	-0.7	.14	.06	-0.01	.01	1.11	.19	-43.08
19	-4.3	55.0	-1.7	0	.11	.05	-0.01	.01	1.05	.22	-25.85
20	-5.0	59.3	-2.0	.6	.08	.04	0	.01	1.00	.14	84.86
21	-5.1	58.3	-2.1	1.1	.10	.03	.01	.01	.95	.21	44.04
22	-5.5	53.2	-1.8	1.2	.14	.04	.01	.01	.91	.20	37.01
23	-4.8	44.8	-1.3	1.3	.13	.03	0	0	.87	.09	39.85
24	-5.6	34.5	-0.6	1.0	.12	.03	0	0	.83	.07	81.85
25	-4.9	23.5	.1	.5	.11	.04	0	.01	.80	.21	71.91
26	-4.8	12.9	.8	-0.2	.10	.03	0	.01	.77	.19	84.77
27	-3.9	3.5	1.5	-0.8	.11	.02	0	.01	.74	.12	-73.19
28	-3.6	-4.5	2.0	-1.4	.10	.02	0	0	.71	.06	-48.47
29	-2.6	-10.8	2.4	-1.5	.11	.01	0	-0.01	.69	.18	82.20
30	-1.9	-15.1	2.6	-1.5	.15	.01	0	-0.01	.67	.25	-66.25
31	-1.2	-17.5	2.4	-1.1	.14	.01	.01	0	.65	.20	-24.09
32	-0.2	-18.0	2.0	-0.3	.11	.01	0	0	.63	.13	-56.49
33	.2	-16.8	1.6	.6	.10	.02	0	0	.61	.09	46.99
34	1.0	-14.1	.8	1.4	.10	.02	-0.01	.01	.59	.21	-49.47
35	.7	-10.1	.4	2.0	.11	.02	0	.01	.57	.19	-60.00
36	2.0	-5.1	-0.3	2.7	.10	.02	0	0	.56	.10	-16.30
37	1.8	.4	-0.8	2.8	.09	.02	0	-0.01	.54	.14	-51.89
38	2.1	6.4	-1.3	2.8	.11	.02	0	0	.53	.13	49.65
39	2.4	12.3	-1.4	2.4	.12	.02	0	0	.51	.08	32.83
40	2.5	17.8	-1.5	1.8	.12	.02	0	0	.50	.06	-32.94
41	2.5	22.6	-1.6	1.1	.12	.02	0	0	.49	.07	-26.93
42	2.5	26.3	-1.7	.2	.12	.01	.01	0	.48	.15	12.62
43	2.5	28.7	-1.9	-0.6	.16	.01	.01	0	.47	.29	-15.69
44	2.7	29.5	-1.8	-1.2	.21	.01	.01	0	.45	.17	-28.34
45	2.2	28.8	-1.8	-1.4	.17	.02	0	0	.44	.09	37.66
46	2.3	26.6	-1.9	-1.4	.16	.02	0	0	.43	.04	59.57
47	2.6	23.5	-1.8	-1.1	.22	.02	-0.01	-0.01	.43	.20	46.30
48	2.3	19.9	-1.6	-0.5	.23	.01	0	-0.01	.42	.15	54.03
49	2.1	16.2	-1.4	.3	.18	.01	0	0	.41	.06	50.98
50	1.7	12.8	-1.3	1.0	.08	.01	0	0	.40	.11	0

107 O III

BBELS 14 3.5M-1 C, 06JUL-65 1508-1512

LAGS= 50 N= 1267 DT= 0.2SEC

MEAN U= 30.45 MEAN W= -3.73

CORRELATION COEFFICIENT -.4[illegible]

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	4[illegible].7	132.0	-36.1	0	.44	4.83	-0.27	0	0	.18	0
1	3[illegible].5	127.0	-34.7	6.4	.76	11.65	-0.51	.73	20.00	.30	-55.00
2	25.3	114.6	-31.1	12.3	1.46	13.98	-1.36	1.82	10.00	.50	-53.12
3	17.6	96.0	-25.6	17.6	7.04	24.70	-8.03	7.48	6.67	.83	-42.99
4	11.1	72.8	-18.3	22.0	11.36	35.48	-14.15	11.54	5.00	.91	-39.20
5	5.8	46.9	-10.2	25.4	6.33	25.06	-9.04	5.97	4.00	.86	-33.43
6	1.8	20.5	-1.7	27.1	1.14	9.71	-2.15	.78	3.33	.69	-19.88
7	-[illegible].5	-4.4	6.8	27.2	.54	3.32	-0.35	-0.10	2.86	.27	15.13
8	-7.8	-26.3	14.5	25.6	.64	1.29	.02	-0.40	2.50	.45	-86.88
9	-12.9	-43.7	21.3	22.3	.73	.64	.04	-0.19	2.22	.29	-79.04
10	-17.3	-55.9	26.2	17.8	.65	.19	-0.02	-0.01	2.00	.08	29.51
11	-21.7	-62.6	29.3	12.2	.78	.14	-0.05	-0.01	1.82	.14	10.54
12	-23.4	-64.0	30.2	6.2	1.11	.09	-0.06	-0.05	1.67	.25	41.97
13	-23.3	-60.6	29.0	-0.1	1.03	.08	-0.06	-0.04	1.54	.23	33.43
14	-21.3	-53.2	26.0	-6.1	.58	.06	-0.01	0	1.43	.06	16.21
15	-17.6	-42.9	21.2	-11.4	.30	.05	0	.02	1.33	.15	-88.18
16	-13.3	-30.4	15.4	-15.7	.31	.06	-0.02	.02	1.25	.19	-48.19
17	-9.1	-17.0	8.8	-18.8	.32	.05	-0.02	.01	1.18	.17	-30.70
18	-4.9	-3.6	2.1	-20.2	.23	.04	-0.01	0	1.11	.09	-19.64
19	-[illegible].5	8.8	-4.3	-20.3	.19	.04	0	.01	1.05	.11	62.97
20	4.2	19.5	-9.9	-19.1	.19	.03	.01	.01	1.00	.18	42.02
21	9.2	28.1	-14.9	-16.8	.16	.03	.01	.01	.95	.12	50.65
22	14.0	34.0	-18.7	-13.6	.12	.03	0	.01	.91	.11	-83.38
23	17.8	37.2	-21.2	-10.0	.12	.03	0	.01	.87	.17	81.55
24	19.8	37.7	-22.2	-6.0	.12	.03	0	0	.83	.10	60.99
25	20.0	35.5	-21.8	-1.9	.12	.02	0	0	.80	.01	-13.53
26	17.9	31.1	-20.1	2.4	.12	.02	0	0	.77	.05	-16.01
27	15.4	24.9	-17.5	6.4	.12	.02	0	.01	.74	.21	-79.61
28	12.9	17.5	-13.9	10.0	.14	.02	0	.01	.71	.24	-85.76
29	9.8	9.4	-9.8	13.2	.17	.02	0	.01	.69	.09	-67.24
30	6.9	1.1	-5.3	15.6	.16	.02	0	-0.01	.67	.11	89.94
31	3.1	-6.8	-0.7	17.1	.17	.01	0	-0.01	.65	.22	73.41
32	-0.3	-14.2	3.8	17.6	.19	.02	-0.01	-0.01	.63	.20	39.62
33	-5.3	-20.7	8.0	16.9	.15	.02	-0.01	0	.61	.17	19.43
34	-7.8	-25.9	11.5	15.3	.12	.01	-0.01	0	.59	.22	-12.56
35	-11.4	-30.1	14.2	12.7	.12	.01	-0.01	0	.57	.19	-12.03
36	-13.5	-33.0	15.9	9.4	.12	.01	-0.01	-0.01	.56	.29	54.57
37	-14.6	-34.7	16.5	5.6	.14	.01	-0.01	-0.01	.54	.39	45.34
38	-14.8	-35.3	16.1	1.3	.16	.01	-0.01	-0.01	.53	.27	25.28
39	-14.4	-34.8	15.1	-3.0	.16	.01	-0.01	0	.51	.16	-19.60
40	-12.3	-32.8	13.1	-7.1	.18	.01	-0.01	0	.50	.19	-26.82
41	-10.1	-29.5	10.6	-10.7	.19	.01	-0.01	0	.49	.19	-26.05
42	-7.3	-24.9	7.6	-13.8	.16	.01	-0.01	0	.48	.14	-25.76
43	-3.9	-18.8	4.4	-16.1	.18	.01	0	0	.47	.01	-29.01
44	-0.9	-11.5	1.0	-17.4	.19	.01	.01	0	.45	.14	11.80
45	1.6	-3.4	-2.5	-18.1	.15	.01	.01	0	.44	.20	22.62
46	4.6	5.1	-5.7	-17.7	.15	.01	0	.01	.43	.16	66.70
47	6.7	13.4	-8.6	-16.6	.20	.01	-0.01	0	.43	.16	-12.01
48	9.7	21.1	-11.0	-14.4	.18	.01	-0.01	-0.01	.42	.23	36.70
49	12.0	27.4	-12.6	-11.6	.19	.01	0	0	.41	.10	-77.56
50	13.0	31.9	-13.7	-7.9	.11	.01	0	0	.40	.08	0

108 OIII
BBELS- 14   4.5M-   I   8 JUNE-65   1524-1528
LAGS= 50   N= 1038   DT= .20SEC
MEAN U = 23.3   MEAN W = -4.4

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	20.4	112.8	-19.1	0	.48	5.82	.69	0	0	.41	0
1	16.7	108.8	-18.3	2.6	.76	11.70	.81	.38	20.00	.30	25.14
2	12.5	98.7	-16.1	5.1	1.07	11.35	-0.31	1.33	10.00	.39	-76.99
3	8.0	83.4	-12.8	7.4	3.40	18.17	-4.16	3.54	6.67	.70	-40.37
4	4.4	64.4	-8.5	9.2	4.71	29.81	-8.47	4.63	5.00	.81	-28.69
5	2.3	42.8	-3.4	10.5	2.52	24.40	-6.10	2.18	4.00	.83	-19.71
6	1.0	20.5	1.9	11.3	.73	8.36	-1.44	.06	3.33	.58	-2.53
7	-0.2	-1.0	7.0	11.5	.58	1.43	-0.08	-0.15	2.86	.19	61.57
8	-1.9	-20.0	11.7	11.1	.57	.46	.02	-0.09	2.50	.18	-78.05
9	-4.3	-35.5	15.6	10.1	.56	.20	.03	.00	2.22	.08	9.37
10	-6.5	-46.5	18.4	8.6	.55	.14	.00	.06	2.00	.22	86.17
11	-8.2	-52.6	20.0	6.6	.57	.11	-0.02	.04	1.82	.19	-69.56
12	-9.0	-53.4	20.4	4.3	.59	.10	-0.04	-0.03	1.67	.22	37.46
13	-8.7	-49.5	19.3	1.9	.65	.08	-0.03	-0.04	1.54	.21	50.89
14	-7.7	-41.4	16.9	-0.5	.55	.08	.02	-0.00	1.43	.10	-4.35
15	-6.7	-30.4	13.6	-3.0	.32	.06	.02	.02	1.33	.20	37.59
16	-5.5	-17.4	9.6	-5.2	.18	.04	.01	.02	1.25	.21	70.74
17	-4.5	-3.7	5.1	-6.9	.12	.03	.01	.01	1.18	.15	36.37
18	-3.0	9.7	.8	-7.9	.10	.03	-0.01	-0.00	1.11	.13	11.18
19	-1.0	21.6	-3.2	-8.2	.08	.03	-0.01	-0.01	1.05	.27	37.80
20	1.1	31.2	-6.8	-8.0	.09	.04	-0.00	-0.01	1.00	.22	66.10
21	3.2	37.8	-9.7	-7.3	.07	.04	-0.01	-0.00	.95	.17	13.99
22	5.0	41.2	-11.8	-6.3	.05	.03	-0.01	.01	.91	.30	-30.22
23	6.1	41.3	-12.9	-4.9	.05	.02	-0.00	.00	.87	.18	-58.37
24	7.0	38.2	-13.0	-3.4	.05	.01	-0.00	-0.00	.83	.10	76.76
25	7.3	32.5	-12.1	-1.8	.05	.02	-0.00	-0.01	.80	.21	78.23
26	7.0	24.8	-10.4	-0.2	.05	.02	-0.00	-0.00	.77	.18	64.88
27	6.9	15.9	-8.0	1.5	.05	.01	-0.00	-0.00	.74	.23	39.88
28	6.4	6.3	-5.1	3.0	.06	.01	-0.01	-0.00	.71	.33	13.95
29	5.6	-3.1	-2.1	4.3	.05	.01	-0.01	-0.00	.69	.37	4.18
30	4.3	-11.8	.8	5.1	.04	.01	-0.01	-0.00	.67	.24	4.51
31	2.7	-19.0	3.5	5.6	.04	.01	.00	.00	.65	.10	31.50
32	.9	-24.4	5.9	5.6	.04	.01	.01	.00	.63	.27	2.46
33	-0.6	-27.7	8.0	5.2	.04	.01	.00	.00	.61	.19	9.03
34	-1.9	-28.9	9.6	4.5	.03	.01	-0.00	.00	.59	.10	-76.25
35	-2.8	-28.1	10.5	3.5	.03	.01	-0.00	-0.00	.57	.06	4.61
36	-3.7	-25.7	10.6	2.3	.05	.01	.00	-0.00	.56	.06	-77.01
37	-4.4	-21.7	9.9	1.1	.06	.01	-0.00	-0.00	.54	.05	63.42
38	-4.7	-16.8	8.8	-0.3	.04	.01	-0.00	.00	.53	.19	-36.46
39	-4.9	-11.2	7.3	-1.5	.04	.01	-0.00	.01	.51	.36	-55.53
40	-5.0	-5.3	5.6	-2.9	.04	.01	-0.00	.00	.50	.20	-42.03
41	-4.8	.4	3.8	-4.2	.04	.01	-0.00	.00	.49	.07	-2.07
42	-3.9	5.6	1.7	-5.3	.04	.01	.00	-0.00	.48	.07	-29.77
43	-2.8	10.1	-0.3	-6.1	.04	.01	.00	.00	.47	.09	15.62
44	-1.5	13.5	-2.4	-6.5	.04	.01	.00	.00	.45	.16	84.34
45	-0.2	15.7	-4.3	-6.5	.04	.01	-0.00	.00	.44	.11	-71.58
46	1.1	16.8	-5.8	-6.1	.03	.01	-0.00	-0.00	.43	.09	19.75
47	2.3	16.7	-6.8	-5.3	.03	.01	-0.00	-0.00	.43	.21	49.05
48	3.0	15.5	-7.5	-4.4	.03	.01	-0.00	-0.00	.42	.13	50.20
49	3.7	13.4	-7.5	-3.3	.03	.01	.00	.00	.41	.11	45.97
50	3.9	10.5	-7.2	-1.9	.02	.01	.00	.00	.40	.14	.00

CORRELATION COEFFICIENT -0.398

109 OIII
BBELS- 14 5.5M- 1 8 JUNE 1539-1542
LAGS= 50 N= 918 DT= .20SEC
MEAN U = 18.3 MEAN W = -4.8

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	16.4	68.3	-3.0	0	1.09	3.58	.39	0	0	.20	0
1	12.4	65.5	-3.0	-0.3	1.58	7.01	.68	.49	20.00	.25	35.73
2	7.6	58.5	-2.9	-0.7	1.09	6.71	-0.02	1.00	10.00	.37	-88.71
3	4.6	48.4	-2.3	-1.1	1.42	8.36	-1.25	1.15	6.67	.49	-42.70
4	3.4	35.8	-1.3	-1.1	1.62	14.86	-1.70	-0.14	5.00	.35	4.54
5	2.9	21.9	-0.1	-0.9	1.40	17.19	-1.03	-1.47	4.00	.37	54.85
6	1.7	7.9	1.0	-0.5	.93	8.21	-0.35	-0.88	3.33	.34	68.50
7	.5	-5.1	2.0	.2	.55	.89	-0.09	-0.11	2.86	.20	48.92
8	-0.0	-16.2	3.1	1.3	.53	.19	.00	-0.02	2.50	.06	-85.11
9	.2	-24.6	4.0	2.3	.67	.21	.04	.01	2.22	.10	11.54
10	.5	-29.8	4.6	3.3	.66	.20	.03	.01	2.00	.09	26.33
11	.1	-31.4	4.9	4.0	.50	.15	.04	.05	1.82	.22	53.85
12	-0.7	-29.7	4.8	4.7	.41	.11	.05	.05	1.67	.35	41.50
13	-1.2	-25.0	4.6	5.1	.32	.06	.03	.01	1.54	.21	23.85
14	-1.2	-17.8	4.2	5.0	.25	.05	.00	.00	1.43	.05	30.85
15	-0.5	-9.0	3.8	4.6	.26	.05	.00	.02	1.33	.17	76.72
16	.4	.5	3.1	3.9	.25	.04	.01	.02	1.25	.17	60.77
17	.8	9.5	2.4	3.0	.23	.03	.01	.01	1.18	.18	42.87
18	1.1	17.3	1.5	2.0	.35	.03	.02	.01	1.11	.23	15.00
19	1.4	23.1	.7	.8	.44	.03	.04	-0.01	1.05	.31	-9.53
20	2.3	26.3	.0	-0.5	.29	.03	.03	-0.01	1.00	.34	-14.82
21	3.1	26.8	-0.5	-1.7	.15	.02	.02	-0.01	.95	.30	-18.09
22	2.7	24.7	-1.1	-2.8	.13	.02	.01	-0.00	.91	.30	-10.14
23	1.8	20.4	-1.4	-3.6	.15	.02	.02	.01	.87	.36	20.57
24	1.5	14.3	-1.7	-4.1	.13	.02	.01	.01	.83	.39	45.58
25	1.8	7.2	-1.8	-4.1	.06	.02	.01	.01	.80	.35	63.93
26	2.0	-0.2	-1.9	-3.8	.05	.02	.00	.01	.77	.28	59.16
27	1.3	-7.2	-2.0	-3.2	.06	.02	.00	.01	.74	.23	76.29
28	.8	-13.0	-2.0	-2.4	.07	.02	-0.00	.00	.71	.08	-59.46
29	.8	-17.2	-1.8	-1.5	.06	.01	-0.00	-0.00	.69	.13	44.72
30	1.2	-19.4	-1.4	-0.4	.04	.01	-0.00	.00	.67	.10	-23.00
31	1.9	-19.5	-1.1	.5	.05	.01	-0.00	-0.00	.65	.05	89.77
32	2.0	-17.7	-0.7	1.3	.05	.01	.00	-0.00	.63	.19	-89.82
33	1.7	-14.1	-0.4	2.2	.04	.01	-0.00	.00	.61	.05	-34.41
34	1.2	-9.4	-0.2	2.9	.04	.01	.00	.00	.59	.14	86.15
35	.9	-4.0	.0	3.3	.03	.01	.00	-0.00	.57	.16	-34.69
36	.9	1.6	.1	3.3	.03	.01	.00	-0.00	.56	.26	-16.79
37	1.2	6.6	.2	3.0	.04	.01	.00	-0.00	.54	.20	-6.19
38	1.2	10.7	.3	2.4	.06	.01	.00	-0.00	.53	.21	-42.90
39	1.0	13.3	.3	1.7	.05	.01	.00	-0.00	.51	.25	-43.30
40	.7	14.3	.4	.8	.03	.01	.00	-0.00	.50	.10	-34.02
41	.9	13.5	.5	-0.1	.03	.01	-0.00	.00	.49	.11	-8.35
42	1.2	11.1	.5	-1.1	.03	.01	-0.00	-0.00	.48	.17	35.62
43	.9	7.2	.3	-2.0	.03	.01	-0.00	-0.00	.47	.10	43.46
44	.4	2.4	.0	-2.7	.03	.01	-0.00	.00	.45	.08	-86.63
45	-0.2	-2.9	-0.3	-3.2	.02	.01	-0.00	.00	.44	.05	-62.50
46	-0.1	-8.0	-0.5	-3.5	.02	.01	-0.00	-0.00	.43	.09	75.85
47	.4	-12.4	-0.7	-3.6	.02	.00	.00	-0.00	.43	.12	-88.93
48	.4	-15.7	-0.9	-3.6	.02	.00	-0.00	.00	.42	.12	-57.02
49	.5	-17.4	-0.9	-3.3	.02	.00	-0.00	.00	.41	.27	-48.99
50	.5	-17.4	-0.8	-2.9	.01	.00	-0.00	.00	.40	.26	-0.00

CORRELATION COEFFICIENT -0.000

110 OIII
BBELS- 14 6.5M- I 8 JUNE-65 1553-1557
LAGS= 50 N= 1083 DT= .20SEC
MEAN U = 15.6 MEAN W = -2.5

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	17.8	77.9	-11.5	0	.48	5.41	-0.10	0	0	.06	0
1	15.0	75.5	-11.2	-0.3	1.04	9.03	-0.03	.24	20.00	.08	-82.41
2	10.7	69.2	-10.3	-0.7	1.28	7.53	-0.35	.95	10.00	.33	-69.70
3	6.2	59.7	-8.9	-0.8	1.98	14.02	-3.12	1.39	6.67	.65	-24.02
4	2.3	47.6	-6.8	-0.9	2.42	21.63	-5.23	.14	5.00	.72	-1.58
5	-1.2	33.9	-4.2	-0.8	1.99	15.00	-2.87	-1.46	4.00	.59	26.97
6	-1.4	19.4	-1.3	-0.4	1.54	3.75	-0.24	-1.18	3.33	.50	78.43
7	-1.8	5.2	1.6	.3	1.09	.47	.15	-0.24	2.86	.40	-57.67
8	-2.1	-7.8	4.4	1.2	.83	.28	.08	.12	2.50	.30	54.04
9	-2.4	-18.9	6.9	2.3	.91	.16	.07	.17	2.22	.49	67.26
10	-2.7	-27.3	9.0	3.5	.84	.13	.04	.09	2.00	.30	63.55
11	-3.1	-32.6	10.4	4.6	.69	.06	.03	.03	1.82	.22	38.03
12	-3.3	-34.9	11.2	5.3	.56	.04	.03	.01	1.67	.20	28.05
13	-3.1	-34.0	11.1	5.6	.41	.03	.00	.01	1.54	.11	79.48
14	-2.9	-30.2	10.3	5.4	.28	.04	.01	-0.01	1.43	.09	-58.25
15	-2.3	-24.1	8.9	4.7	.21	.04	.02	-0.02	1.33	.30	-52.34
16	-1.5	-16.1	6.9	3.5	.15	.03	.02	-0.00	1.25	.33	-6.01
17	-0.6	-6.9	4.7	2.1	.12	.03	.02	.01	1.18	.43	17.99
18	.0	2.7	2.1	.5	.09	.03	.01	-0.01	1.11	.20	-31.68
19	.6	11.9	-0.5	-1.0	.06	.02	-0.00	-0.01	1.05	.29	83.79
20	.9	20.1	-3.0	-2.4	.04	.01	.00	-0.00	1.00	.07	-17.69
21	1.1	26.7	-5.3	-3.6	.05	.02	-0.00	.00	.95	.08	-77.48
22	1.2	31.4	-7.2	-4.5	.05	.02	-0.00	-0.00	.91	.15	59.50
23	1.1	33.7	-8.4	-4.8	.05	.01	-0.00	-0.00	.87	.18	66.12
24	1.1	33.8	-9.2	-4.7	.05	.02	-0.00	-0.00	.83	.17	2.47
25	.9	31.8	-9.3	-4.3	.05	.01	-0.00	.00	.80	.17	-54.80
26	.7	28.0	-8.9	-3.8	.04	.01	.00	.00	.77	.12	85.07
27	.8	22.7	-8.0	-3.1	.03	.01	-0.00	-0.00	.74	.22	25.19
28	.8	16.4	-6.7	-2.3	.04	.01	-0.00	-0.00	.71	.21	35.39
29	.9	9.5	-5.1	-1.3	.04	.01	.00	.00	.69	.09	36.11
30	1.0	2.6	-3.2	-0.3	.04	.01	.00	.00	.67	.21	36.17
31	1.1	-3.9	-1.2	.6	.03	.01	.00	.00	.65	.11	64.41
32	1.0	-9.3	.6	1.4	.03	.01	-0.00	.00	.63	.15	-81.39
33	.8	-13.6	2.3	2.0	.03	.00	.00	.00	.61	.19	68.15
34	.3	-16.5	3.9	2.3	.02	.00	.00	.00	.59	.11	9.02
35	-0.4	-18.0	4.9	2.5	.01	.01	.00	.00	.57	.04	6.38
36	-1.2	-17.9	5.5	2.4	.02	.01	-0.00	.00	.56	.20	-63.40
37	-1.8	-16.6	5.7	2.1	.02	.00	-0.00	.00	.54	.29	-47.82
38	-2.2	-13.8	5.6	1.7	.02	.00	-0.00	.00	.53	.16	-46.24
39	-2.4	-10.3	5.3	1.1	.02	.00	.00	.00	.51	.23	31.98
40	-2.4	-6.1	4.8	.4	.02	.00	.00	.00	.50	.39	29.81
41	-2.1	-1.7	4.0	-0.4	.02	.00	.00	.00	.49	.31	40.47
42	-1.9	2.7	3.2	-1.1	.02	.00	-0.00	.00	.48	.23	-86.66
43	-1.5	6.6	2.2	-1.6	.01	.00	-0.00	.00	.47	.18	-37.47
44	-1.0	10.0	1.1	-1.9	.01	.00	.00	-0.00	.45	.07	-62.75
45	-0.5	12.5	.1	-2.1	.01	.00	.00	.00	.44	.17	29.88
46	-0.0	14.0	-0.8	-2.1	.02	.00	.00	.00	.43	.33	58.57
47	.5	14.5	-1.6	-2.0	.02	.00	.00	.00	.43	.29	64.10
48	.9	14.0	-2.5	-1.7	.01	.00	-0.00	-0.00	.42	.14	48.37
49	1.0	12.6	-3.2	-1.2	.01	.00	-0.00	-0.00	.41	.20	73.76
50	1.2	10.5	-3.7	-0.6	.00	.00	.00	-0.00	.40	.07	-0.01

CORRELATION COEFFICIENT -0.308

III LI-u

BBELS 15 0-2.5M-1 C. 20JUL-65 1922-1929

LAGS= 50 N= 2068 DT= 0.2SEC

MEAN u_1= 6.2 MEAN u_2= 3.1

K	ACOV u_1	ACOV u_2	COV IN	COVOUT	SP u_1	SP u_2	CO	QUA	PER	R	PHI
0	547.0	186.0	221.5	0	4.19	6.38	-1.13	0	0	.22	0
1	512.8	181.0	215.6	-14.3	27.94	22.82	14.93	-2.10	20.00	.60	-7.99
2	429.5	168.6	199.2	-27.0	87.81	51.47	59.04	-9.19	10.00	.89	-8.85
3	316.2	150.4	173.6	-36.8	113.67	54.66	70.57	-14.35	6.67	.91	-11.49
4	194.4	128.3	140.9	-42.7	70.48	25.21	36.12	-10.63	5.00	.89	-16.40
5	81.8	103.9	104.0	-44.6	45.23	9.02	15.24	-5.18	4.00	.79	-18.79
6	-10.1	78.6	65.6	-42.8	62.56	6.34	14.29	-4.77	3.33	.76	-18.46
7	-76.2	53.6	28.6	-38.5	58.94	4.54	10.09	-4.98	2.86	.69	-26.26
8	-115.9	30.0	-4.8	-32.8	29.90	2.15	2.24	-2.89	2.50	.46	-52.12
9	-133.1	8.3	-33.4	-26.8	14.18	.98	-0.15	-1.03	2.22	.28	81.52
10	-133.1	-11.1	-56.6	-21.4	9.57	.59	.02	-0.25	2.00	.11	-84.67
11	-122.6	-28.0	-74.1	-16.8	6.07	.33	-0.02	-0.14	1.82	.10	79.90
12	-108.2	-42.8	-86.8	-13.1	4.24	.25	.04	-0.18	1.67	.18	-77.47
13	-95.9	-55.4	-95.6	-10.4	2.78	.17	.01	-0.04	1.54	.06	-74.81
14	-89.8	-66.1	-101.9	-8.4	1.63	.16	.02	.04	1.43	.09	59.82
15	-92.1	-74.9	-107.0	-6.8	1.18	.14	0	.03	1.33	.08	-84.27
16	-103.4	-81.9	-111.5	-5.0	.97	.10	-0.02	.05	1.25	.17	-72.71
17	-122.4	-86.9	-115.9	-2.6	.69	.07	-0.02	.04	1.19	.19	-61.94
18	-145.9	-89.9	-119.7	.6	.51	.07	-0.01	0	1.11	.07	-4.42
19	-169.6	-90.6	-122.4	4.8	.38	.06	0	0	1.05	.03	82.18
20	-188.3	-89.0	-123.1	9.4	.30	.05	.01	0	1.00	.11	-8.53
21	-197.4	-85.1	-120.9	14.0	.23	.04	.01	0	.95	.13	4.78
22	-193.5	-79.0	-114.9	18.0	.21	.04	.02	0	.91	.25	11.29
23	-176.0	-70.8	-104.7	20.9	.19	.03	.02	0	.87	.26	8.78
24	-145.2	-60.7	-90.3	22.4	.17	.03	.01	0	.83	.22	-11.79
25	-104.2	-49.0	-72.2	22.3	.15	.02	.01	0	.80	.20	3.48
26	-57.1	-36.3	-51.4	20.7	.13	.02	.01	0	.77	.26	18.99
27	-9.3	-23.2	-29.3	18.0	.12	.02	.01	0	.74	.23	8.00
28	37.9	-10.3	-7.5	14.7	.11	.02	.01	0	.71	.15	-12.22
29	77.3	2.0	12.6	11.1	.08	.02	0	0	.69	.13	14.00
30	106.5	13.5	29.9	7.6	.08	.02	.01	0	.67	.16	17.22
31	123.4	23.7	43.4	4.4	.09	.01	0	0	.65	.13	7.10
32	127.4	32.5	52.7	1.3	.09	.01	.01	0	.63	.22	26.10
33	119.8	39.7	58.0	-1.4	.08	.01	.01	0	.61	.27	40.66
34	104.2	45.5	60.1	-3.5	.08	.01	.01	0	.59	.25	17.95
35	85.0	50.0	59.7	-4.6	.08	.01	.01	0	.57	.28	5.60
36	66.5	53.5	57.9	-4.8	.08	.01	.01	0	.56	.31	7.72
37	52.4	56.1	55.7	-4.1	.08	.01	.01	0	.54	.40	8.93
38	44.5	58.3	54.2	-3.0	.07	.01	.01	0	.53	.39	11.13
39	43.5	60.0	54.0	-1.7	.07	.01	.01	0	.51	.30	5.17
40	47.9	61.6	55.3	-0.7	.07	.01	.01	0	.50	.23	-16.12
41	56.2	62.9	57.7	-0.2	.06	.01	0	0	.49	.16	-15.35
42	66.5	63.7	60.6	-0.1	.05	.01	0	0	.48	.16	4.09
43	77.1	63.7	63.2	-0.4	.05	.01	.01	0	.47	.26	-3.80
44	86.2	62.7	64.8	-1.0	.05	.01	.01	0	.45	.36	-17.03
45	92.1	60.4	64.9	-1.9	.06	.01	.01	0	.44	.34	-28.89
46	93.2	56.6	62.9	-3.2	.06	.01	0	0	.43	.19	-19.96
47	88.3	51.5	58.6	-4.6	.05	.01	0	0	.43	.12	12.43
48	76.9	44.9	51.9	-6.0	.05	.01	0	0	.42	.13	-5.07
49	59.3	37.1	42.8	-7.1	.06	.01	0	0	.41	.16	-10.95
50	37.9	28.2	31.5	-8.0	.03	0	0	0	.40	.17	0

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BBELS 15 0-2.5M-II C, 20JUL-65 1940-1947

LAGS= 50 N= 2013 DT= 0.2SEC

MEAN u_2= 1.7 * MEAN u_1= 3.2

K	ACOV u_2	ACOV u_1	COV IN*	COVOUT	SP u_2	SP u_1	CO	QUA	PER	R	PHI
0	209.7	488.4	-123.0	0	6.32	5.78	-0.20	0	0	.03	0
1	204.3	456.8	-120.4	2.7	24.36	42.78	-9.04	4.54	20.00	.31	-26.67
2	192.2	405.9	-111.9	6.0	63.72	116.37	-32.64	15.63	10.00	.42	-25.59
3	174.2	337.8	-98.5	9.5	68.49	123.24	-39.54	9.08	6.67	.44	-12.94
4	152.1	260.5	-81.3	13.4	27.09	62.36	-21.96	-0.90	5.00	.54	2.35
5	126.8	184.8	-61.8	17.6	7.42	35.29	-9.50	.31	4.00	.59	-1.89
6	99.9	114.7	-41.0	21.5	4.51	30.78	-5.50	.69	3.33	.47	-7.12
7	71.9	55.8	-20.9	24.8	2.54	22.92	-3.12	-0.40	2.86	.41	7.29
8	44.2	6.4	-1.9	27.2	1.57	13.34	-1.11	-0.90	2.50	.31	39.08
9	17.2	-38.8	14.7	28.7	.82	8.25	-0.44	-0.73	2.22	.33	59.05
10	-8.3	-68.8	29.1	29.5	.56	5.99	-0.24	-0.16	2.00	.16	34.65
11	-31.9	-93.3	40.9	29.6	.36	3.50	-0.03	-0.01	1.82	.03	10.00
12	-53.2	-115.1	50.3	28.9	.27	2.21	.04	-0.04	1.67	.07	-49.77
13	-72.0	-135.1	57.8	27.6	.16	1.60	.07	-0.08	1.54	.21	-51.41
14	-88.1	-152.5	63.1	26.0	.18	1.27	.05	-0.07	1.43	.18	-52.77
15	-101.5	-166.9	66.5	24.6	.18	1.11	.03	-0.07	1.33	.17	-64.23
16	-111.7	-180.2	68.3	23.3	.14	1.10	0	-0.02	1.25	.05	79.78
17	-118.6	-190.0	68.5	22.2	.07	.95	-0.01	.01	1.18	.07	-44.52
18	-122.2	-196.3	67.3	20.8	.06	.60	0	.03	1.11	.14	86.93
19	-122.6	-201.0	65.1	19.0	.06	.33	.01	.01	1.05	.11	57.15
20	-119.8	-202.7	61.8	16.4	.07	.28	0	.02	1.00	.12	80.14
21	-114.4	-200.4	57.4	12.8	.05	.27	.01	.01	.95	.14	59.94
22	-106.1	-192.7	51.9	8.2	.05	.24	.01	0	.91	.10	-23.10
23	-95.3	-178.7	45.5	2.9	.04	.24	.01	-0.02	.87	.23	-52.22
24	-82.1	-162.3	38.0	-2.9	.04	.31	.01	-0.01	.83	.12	-57.48
25	-67.2	-140.1	30.2	-9.1	.04	.46	0	-0.01	.80	.11	-85.28
26	-51.0	-114.6	21.7	-15.3	.03	.59	0	-0.01	.77	.08	-62.46
27	-34.2	-86.0	13.1	-20.9	.02	.57	0	0	.74	.04	79.39
28	-17.0	-54.8	4.7	-26.1	.02	.46	.01	-0.01	.71	.10	-56.42
29	.1	-25.2	-3.5	-30.4	.02	.33	.02	-0.01	.69	.22	-21.95
30	16.9	3.6	-10.7	-33.9	.02	.23	.01	0	.67	.21	5.64
31	33.1	28.3	-16.9	-37.0	.02	.17	.01	0	.65	.26	-12.39
32	48.1	49.0	-22.2	-39.5	.02	.14	.01	0	.63	.14	-24.05
33	61.9	67.2	-26.2	-41.2	.02	.15	0	-0.01	.61	.10	68.35
34	74.0	81.9	-29.3	-42.1	.02	.19	0	0	.59	.05	72.06
35	84.4	94.9	-31.5	-42.1	.02	.26	.01	0	.57	.16	-10.23
36	92.9	106.1	-33.3	-41.4	.02	.30	.02	-0.01	.56	.26	-21.83
37	99.5	115.7	-34.5	-39.5	.02	.31	.01	0	.54	.17	-17.52
38	104.1	125.8	-35.4	-36.4	.01	.37	0	0	.53	.06	-7.54
39	106.9	134.5	-36.5	-32.7	.01	.47	.01	0	.51	.15	-21.48
40	107.7	142.0	-37.8	-28.1	.02	.40	.01	-0.01	.50	.14	-34.89
41	106.7	147.1	-39.0	-22.6	.02	.25	-0.01	0	.49	.12	23.50
42	103.8	149.1	-39.9	-16.9	.01	.20	-0.01	0	.48	.17	-32.79
43	99.1	148.1	-40.9	-10.3	.01	.18	0	.01	.47	.14	80.30
44	92.7	142.1	-41.6	-3.2	.02	.15	0	0	.45	.09	87.50
45	84.5	133.5	-41.2	3.7	.02	.12	0	0	.44	.07	5.40
46	74.7	122.3	-40.1	10.8	.02	.15	0	0	.43	.02	-4.29
47	63.3	106.8	-38.5	17.6	.02	.22	.01	0	.43	.19	19.63
48	50.8	89.5	-35.5	24.2	.03	.26	.02	.01	.42	.28	26.12
49	37.4	68.9	-31.4	31.0	.03	.26	.02	.01	.41	.25	28.86
50	23.2	46.1	-25.7	36.8	.02	.13	.01	0	.40	.19	0

* SIGN REVERSED ON COV AND CO

113 LI-U

BBFLS- 15 O-2.5M- III 19 JULY-65 2003-2009

LAGS= 50 N= 1705 DT= .20SEC

MEAN U_1 = -3.5 * MEAN U_2 = 6.9

K	ACOV U_1	ACOV U_2	COV IN	COVOUT	SP U_1	SP U_2	CO	QUA	PER	R	PHI
0	475.6	215.6	-242.9	0	5.96	12.97	-1.75	0	0	.20	0
1	455.0	210.9	-237.4	2.3	35.00	32.23	-21.70	-1.37	20.00	.65	3.62
2	402.3	198.6	-221.6	4.0	98.87	58.52	-68.83	-5.33	10.00	.91	4.43
3	326.3	180.3	-196.8	4.8	115.93	61.03	-77.53	-1.30	6.67	.92	.96
4	238.4	157.6	-164.8	4.5	64.72	27.65	-36.86	2.19	5.00	.87	-3.40
5	149.9	132.0	-128.5	3.1	41.31	9.88	-15.27	1.80	4.00	.76	-6.74
6	69.2	105.0	-90.2	.9	44.72	5.86	-11.86	1.88	3.33	.74	-9.01
7	1.9	77.6	-52.3	-2.1	33.50	2.96	-6.45	1.56	2.86	.67	-13.62
8	-49.1	50.9	-16.6	-5.3	16.17	1.54	-1.87	1.07	2.50	.43	-29.74
9	-84.2	25.6	15.5	-8.5	7.58	.81	-0.52	.38	2.22	.26	-35.93
10	-105.1	2.4	43.2	-10.9	4.08	.55	-0.20	.12	2.00	.15	-30.31
11	-115.6	-18.5	66.0	-12.3	2.12	.36	.06	.06	1.82	.09	44.76
12	-119.7	-36.8	84.3	-12.8	1.50	.25	.01	-0.05	1.67	.08	-83.83
13	-121.6	-52.3	98.8	-12.7	.99	.15	-0.02	-0.07	1.54	.19	70.50
14	-123.9	-65.0	110.1	-12.1	.56	.14	-0.07	-0.03	1.43	.27	21.16
15	-128.5	-75.0	118.9	-11.3	.33	.10	-0.03	.03	1.33	.23	-36.90
16	-136.2	-82.3	125.6	-10.4	.33	.08	-0.01	.04	1.25	.29	-79.96
17	-146.7	-86.9	130.3	-9.3	.29	.05	.02	.04	1.18	.35	64.67
18	-158.8	-89.1	132.9	-8.2	.21	.06	.02	.03	1.11	.32	52.78
19	-170.2	-88.8	133.3	-7.1	.12	.05	.02	.02	1.05	.36	52.13
20	-178.3	-86.3	131.3	-6.0	.09	.04	.01	.01	1.00	.25	43.90
21	-180.8	-81.6	126.8	-4.9	.07	.03	.01	.00	.95	.28	16.86
22	-174.1	-75.0	119.6	-3.8	.07	.03	.01	.00	.91	.17	14.37
23	-164.1	-66.7	109.6	-2.5	.06	.03	.00	-0.00	.87	.05	-21.87
24	-144.9	-56.7	96.6	-1.0	.06	.02	-0.00	-0.00	.83	.15	37.49
25	-119.5	-45.3	80.9	.8	.05	.02	-0.01	-0.00	.80	.17	13.71
26	-88.8	-32.8	63.1	3.0	.05	.02	-0.00	-0.00	.77	.16	.94
27	-54.8	-19.7	43.5	5.4	.04	.02	-0.00	.00	.74	.08	-38.78
28	-19.2	-6.5	23.2	7.7	.04	.01	-0.00	.00	.71	.13	-25.49
29	15.5	6.7	2.9	10.0	.03	.01	.00	.00	.69	.07	71.17
30	46.8	19.5	-16.3	12.0	.04	.01	.00	.00	.67	.22	28.09
31	72.9	31.7	-33.8	13.7	.04	.01	.00	.00	.65	.23	81.52
32	92.8	42.9	-48.8	15.2	.03	.01	-0.00	.00	.63	.22	-45.46
33	105.9	52.9	-60.9	16.5	.04	.01	-0.00	-0.00	.61	.12	50.02
34	112.5	61.5	-70.1	17.6	.04	.01	-0.00	-0.00	.59	.15	65.67
35	114.3	68.7	-76.5	18.7	.04	.01	-0.00	-0.00	.57	.15	40.67
36	112.3	74.2	-80.4	19.9	.04	.01	-0.00	-0.00	.56	.27	39.97
37	107.9	78.0	-82.2	21.0	.04	.01	-0.00	-0.00	.54	.29	22.94
38	102.6	80.2	-82.4	22.1	.04	.01	-0.01	.00	.53	.32	-17.01
39	97.4	81.0	-81.6	22.7	.04	.01	-0.00	.00	.51	.28	-46.34
40	92.9	80.3	-80.0	23.0	.04	.01	-0.00	.00	.50	.19	-47.49
41	89.0	78.3	-77.8	22.6	.04	.01	-0.00	.00	.49	.09	-13.56
42	85.3	75.2	-75.0	21.6	.04	.01	.00	.00	.48	.05	57.44
43	81.2	70.8	-71.3	19.7	.03	.00	.00	.00	.47	.19	77.39
44	75.7	65.3	-66.5	16.9	.03	.01	.00	.00	.45	.08	85.74
45	69.6	58.8	-60.2	13.3	.03	.01	.00	-0.00	.44	.11	-43.43
46	59.0	51.6	-52.4	8.9	.03	.01	.00	-0.00	.43	.18	-64.67
47	47.3	43.8	-43.3	4.2	.03	.01	.00	-0.00	.43	.19	-72.95
48	34.0	35.4	-33.2	-0.8	.03	.01	-0.00	-0.00	.42	.13	82.43
49	20.0	26.8	-22.4	-5.5	.03	.01	-0.00	-0.00	.41	.12	36.01
50	6.1	18.1	-11.6	-9.5	.02	.00	-0.00	-0.00	.40	.16	.00

CORRELATION COEFFICIENT -0.758

I/O ERR PG. LIN 60

SIGN REVERSED ON U,O CHANNEL, COV, AND CO

114 LI-u

BBELS 15 0-2.5M-III C, 19JUL-65 2201-2209

LAGS= 50 N= 1555 DT= 0.2SEC

MEAN u_1= 26.4 MEAN u_2= 24.1

CORRELATION COEFFICIENT .71

K	ACOV u_1	ACOV u_2	COV IN	COVOUT	SP u_1	SP u_2	CO	QUA	PER	R	PHI
0	135.0	82.9	75.4	0	2.47	2.99	.69	0	0	.25	0
1	126.1	77.8	73.8	-1.8	10.47	9.81	6.87	-0.07	20.00	.68	-0.59
2	112.0	71.0	69.1	-3.3	28.77	21.97	22.64	.26	10.00	.90	.65
3	92.5	61.8	61.7	-4.7	34.18	22.64	25.14	-0.79	6.67	.90	-1.81
4	69.7	51.0	52.1	-5.3	18.32	9.26	10.63	-1.84	5.00	.83	-9.81
5	46.7	40.6	41.1	-5.4	9.16	3.07	3.23	-1.46	4.00	.67	-24.35
6	25.6	30.5	29.6	-5.0	9.52	2.53	2.37	-0.81	3.33	.51	-18.82
7	7.3	21.1	18.6	-4.0	9.26	2.89	2.33	-0.51	2.86	.46	-12.24
8	-6.8	12.7	8.4	-2.6	5.13	2.51	1.46	-0.44	2.50	.42	-16.88
9	-16.6	5.9	-0.9	-1.3	1.74	1.27	.19	-0.23	2.22	.20	-50.33
10	-23.3	-0.3	-9.1	0	1.00	.62	-0.03	-0.01	2.00	.04	16.70
11	-27.5	-6.0	-16.4	.9	.66	.37	.04	.05	1.82	.13	51.34
12	-30.3	-11.8	-23.0	1.7	.42	.30	.06	.06	1.67	.23	44.96
13	-32.9	-17.6	-28.6	2.2	.27	.19	.01	.01	1.54	.07	64.02
14	-35.9	-23.4	-33.6	2.5	.24	.13	-0.05	.01	1.43	.30	-9.62
15	-39.6	-28.8	-38.2	2.7	.24	.14	-0.07	.03	1.33	.41	-23.68
16	-44.3	-33.6	-42.1	2.8	.20	.17	-0.04	.01	1.25	.23	-14.07
17	-49.0	-37.5	-45.3	2.9	.15	.16	-0.02	-0.01	1.18	.15	33.66
18	-53.1	-40.1	-47.6	3.0	.14	.12	-0.01	0	1.11	.09	-4.67
19	-56.3	-41.5	-48.9	2.9	.14	.11	-0.01	0	1.05	.10	-21.93
20	-57.5	-41.1	-48.5	2.7	.13	.09	-0.01	-0.01	1.00	.10	34.08
21	-56.4	-39.0	-46.4	2.3	.12	.06	0	-0.01	.95	.12	70.56
22	-52.5	-35.7	-42.5	1.6	.10	.05	.01	0	.91	.10	-12.67
23	-45.9	-31.0	-37.2	.8	.09	.05	.01	.01	.87	.17	55.16
24	-36.8	-25.7	-31.1	-0.2	.09	.05	0	.01	.83	.10	-89.94
25	-26.0	-20.2	-24.3	-1.2	.08	.04	-0.01	0	.80	.09	-6.79
26	-15.0	-14.8	-17.4	-1.8	.07	.04	0	0	.77	.09	-71.35
27	-4.2	-9.7	-10.9	-2.2	.08	.04	.01	.01	.74	.25	36.68
28	5.2	-5.0	-4.8	-2.6	.09	.05	.01	0	.71	.18	20.40
29	13.0	-0.3	.8	-2.9	.09	.06	0	0	.69	.05	10.29
30	18.7	4.1	5.6	-3.1	.08	.06	0	0	.67	.04	52.20
31	22.7	8.2	10.2	-3.2	.09	.06	0	0	.65	.03	87.03
32	25.4	12.3	14.3	-3.1	.10	.06	-0.01	0	.63	.12	25.05
33	26.9	16.2	18.0	-2.8	.10	.07	-0.02	-0.01	.61	.25	21.17
34	27.9	20.0	21.9	-2.7	.10	.07	-0.01	0	.59	.07	6.54
35	29.2	23.6	25.5	-2.5	.10	.06	.01	0	.57	.17	1.13
36	30.6	27.2	29.1	-2.7	.09	.05	0	-0.01	.56	.12	-57.69
37	32.6	30.2	32.3	-2.9	.08	.05	0	-0.01	.54	.17	84.71
38	35.0	32.8	34.8	-2.9	.07	.06	.01	-0.01	.53	.25	-51.20
39	37.0	34.8	36.6	-2.9	.07	.06	.01	-0.01	.51	.19	-35.13
40	39.2	36.0	37.5	-2.6	.08	.06	0	0	.50	.02	19.87
41	40.2	36.4	37.3	-2.1	.07	.05	0	0	.49	.04	75.45
42	39.9	35.6	35.7	-1.5	.06	.05	0	-0.01	.48	.16	54.64
43	38.4	33.7	33.5	-0.7	.06	.05	-0.01	0	.47	.12	34.59
44	35.4	30.8	30.3	.2	.07	.06	0	0	.45	.07	-37.01
45	31.0	27.4	26.5	1.1	.07	.05	0	0	.44	.04	-29.53
46	26.0	23.5	22.4	1.7	.07	.04	0	0	.43	.09	-8.89
47	20.5	19.3	18.2	2.1	.07	.05	-0.01	0	.43	.12	19.81
48	14.9	15.1	14.2	2.2	.07	.04	0	0	.42	.08	58.77
49	9.5	11.0	10.4	1.7	.06	.04	0	0	.41	.04	-18.44
50	3.9	7.2	7.0	1.4	.03	.02	0	0	.40	.04	0

115 A LI-u

BBFIS- 15 O-2.5M- V 20 JULY-65 2400-0008

LAGS= 50 N= 2422 DT= .20SEC

MEAN u_2= -9.1 MEAN w_1 = -12.7

K	ACOV u_2	ACOV w_1	COV IN	COVOUT	SP u_2	SP w_1	CO	QUA	PER	R	PHI
0	41.2	121.1	-8.3	0	6.34	16.90	-0.21	0	0	.02	0
1	40.2	118.3	-8.2	-0.4	11.38	35.37	-0.99	-2.04	20.00	.11	64.16
2	38.1	112.1	-7.9	-0.8	9.47	30.66	-3.35	-1.26	10.00	.21	20.55
3	35.5	103.7	-7.4	-1.3	7.00	16.99	-3.27	-0.14	6.67	.30	2.51
4	32.5	94.3	-6.8	-1.6	3.29	7.19	-0.35	-0.07	5.00	.07	10.66
5	29.4	84.5	-5.9	-2.0	1.08	4.33	.20	-0.13	4.00	.11	-32.09
6	26.1	74.8	-5.0	-2.3	.61	2.96	-0.23	-0.23	3.33	.24	45.09
7	22.9	65.8	-4.0	-2.5	.49	1.96	-0.12	-0.10	2.86	.16	39.94
8	19.7	57.4	-2.9	-2.6	.36	1.45	-0.02	.07	2.50	.10	-72.05
9	16.7	49.7	-1.8	-2.6	.23	.84	.01	.05	2.22	.13	75.53
10	13.7	42.6	-0.8	-2.7	.19	.57	.02	.01	2.00	.06	24.28
11	10.9	35.8	.3	-2.7	.14	.45	.03	-0.00	1.82	.13	-5.12
12	8.3	29.4	1.3	-2.8	.09	.29	.00	.01	1.67	.03	71.93
13	6.0	23.4	2.2	-2.8	.08	.16	-0.01	.00	1.54	.09	-2.65
14	3.8	17.7	3.2	-3.0	.07	.12	.00	.00	1.43	.04	53.52
15	1.9	12.4	4.1	-3.2	.05	.11	.01	.00	1.33	.09	37.31
16	.4	7.5	5.0	-3.4	.05	.10	-0.00	-0.00	1.25	.01	62.71
17	-0.8	3.1	5.9	-3.7	.04	.08	.00	-0.00	1.18	.07	-61.49
18	-1.7	-1.0	6.7	-4.0	.03	.07	.00	-0.00	1.11	.11	-33.61
19	-2.2	-4.7	7.3	-4.3	.02	.05	.00	-0.00	1.05	.09	-74.60
20	-2.5	-8.1	7.7	-4.4	.02	.04	-0.00	.00	1.00	.07	-29.17
21	-2.5	-11.0	7.8	-4.5	.02	.05	-0.00	.00	.95	.01	-81.88
22	-2.3	-13.2	7.7	-4.4	.02	.04	.00	-0.00	.91	.05	-0.58
23	-1.8	-14.9	7.4	-4.3	.02	.03	.00	.00	.87	.06	66.81
24	-1.2	-16.1	6.8	-4.0	.01	.02	-0.00	.00	.83	.14	-50.90
25	-0.5	-16.9	5.9	-3.7	.01	.02	-0.00	.00	.80	.09	-88.51
26	.3	-17.3	4.9	-3.5	.01	.02	.00	.00	.77	.15	26.26
27	1.2	-17.5	3.7	-3.2	.01	.02	.00	-0.00	.74	.14	-12.47
28	2.0	-17.5	2.3	-3.1	.01	.02	.00	-0.00	.71	.09	-86.97
29	2.7	-17.4	.7	-3.0	.01	.01	-0.00	-0.00	.69	.11	38.29
30	3.2	-16.9	-0.9	-3.0	.01	.01	-0.00	.00	.67	.15	-6.27
31	3.6	-16.0	-2.5	-3.0	.01	.02	-0.00	-0.00	.65	.20	12.85
32	3.9	-14.7	-3.9	-3.1	.01	.01	-0.00	-0.00	.63	.17	44.49
33	4.1	-13.0	-5.2	-3.1	.00	.01	.00	-0.00	.61	.17	-77.09
34	4.2	-11.0	-6.2	-3.0	.00	.01	-0.00	-0.00	.59	.15	89.33
35	4.3	-9.0	-7.1	-2.8	.00	.01	-0.00	-0.00	.57	.19	86.35
36	4.3	-7.0	-7.9	-2.6	.00	.01	.00	-0.00	.56	.19	-62.56
37	4.2	-5.2	-8.4	-2.4	.00	.01	.00	-0.00	.54	.14	-30.58
38	4.1	-3.7	-8.8	-2.1	.00	.01	.00	-0.00	.53	.06	-18.46
39	3.8	-2.5	-9.0	-1.7	.00	.01	.00	-0.00	.51	.08	-50.44
40	3.4	-1.9	-8.9	-1.2	.00	.01	.00	-0.00	.50	.13	-36.40
41	2.9	-1.8	-8.7	-0.6	.00	.01	.00	-0.00	.49	.24	-49.10
42	2.3	-2.3	-8.2	-0.1	.00	.01	.00	-0.00	.48	.15	-88.62
43	1.7	-3.2	-7.5	.5	.00	.01	-0.00	.00	.47	.19	-8.93
44	1.1	-4.6	-6.5	1.1	.00	.01	-0.00	.00	.45	.18	-31.03
45	.6	-6.4	-5.5	1.8	.00	.01	.00	.00	.44	.04	18.28
46	-0.0	-8.4	-4.4	2.4	.00	.01	.00	-0.00	.43	.07	-47.49
47	-0.6	-10.5	-3.2	3.1	.00	.01	-0.00	-0.00	.43	.09	22.82
48	-1.2	-12.6	-2.1	3.9	.00	.01	-0.00	.00	.42	.17	-18.56
49	-1.8	-14.5	-1.0	4.7	.00	.01	-0.00	.00	.41	.10	-48.54
50	-2.3	-16.3	.1	5.3	.00	.00	.00	.00	.40	.05	.01

CORRELATION COEFFICIENT -0.117

115B * LI-U
BBELS= 15 0-2.5M= VI 20 JULY-56 0930-0934
LAGS= 50 N= 806 DT= .20SEC
MEAN U = -21.00274

K	ACOV	SP	PERIOD	F(MC)
0	98.3	5.2	0	0
1	88.9	14.3	20.0	50.0
2	73.2	16.4	10.0	100.0
3	53.5	11.6	6.7	150.0
4	34.1	7.0	5.0	200.0
5	18.0	4.1	4.0	250.0
6	7.1	5.9	3.3	300.0
7	1.4	11.0	2.9	350.0
8	.9	9.6	2.5	400.0
9	4.3	3.9	2.2	450.0
10	9.7	1.9	2.0	500.0
11	15.3	1.6	1.8	550.0
12	18.1	1.0	1.7	600.0
13	17.4	.6	1.5	650.0
14	13.5	.4	1.4	700.0
15	7.1	.3	1.3	750.0
16	-0.8	.4	1.3	800.0
17	-9.6	.4	1.2	850.0
18	-18.8	.3	1.1	900.0
19	-25.5	.2	1.1	950.0
20	-29.2	.1	1.0	1000.0
21	-29.1	.1	1.0	1050.0
22	-25.2	.1	.9	1100.0
23	-18.2	.1	.9	1150.0
24	-10.3	.1	.8	1200.0
25	-3.1	.1	.8	1250.0
26	1.7	.1	.8	1300.0
27	3.7	.1	.7	1350.0
28	3.1	.1	.7	1400.0
29	-0.4	.1	.7	1450.0
30	-6.2	.1	.7	1500.0
31	-12.9	.1	.6	1550.0
32	-19.0	.1	.6	1600.0
33	-22.7	.1	.6	1650.0
34	-23.7	.1	.6	1700.0
35	-21.2	.1	.6	1750.0
36	-16.7	.1	.6	1800.0
37	-11.2	.1	.5	1850.0
38	-6.0	.1	.5	1900.0
39	-1.7	.1	.5	1950.0
40	.8	.1	.5	2000.0
41	1.4	.1	.5	2050.0
42	.2	.1	.5	2100.0
43	-2.5	.1	.5	2150.0
44	-5.6	.1	.5	2200.0
45	-9.2	.1	.4	2250.0
46	-10.4	.1	.4	2300.0
47	-11.3	.1	.4	2350.0
48	-10.9	.1	.4	2400.0
49	-9.1	.1	.4	2450.0
50	-5.4	.0	.4	2500.0

* 2.5 M CHANNEL OUT

* 2.5m CHANNEL OUT

BBELS 15 1-3.5M-1 C, 20JUL-65 1234-1237

LAGS= 50 N= 620 DT= 0.2SEC

MEAN u_1=-28.3 MEAN u_2=-28.5

K	ACOV u_1	ACOV u_2	COV IN	COVOUT	SP u_1	SP u_2	CO	QUA	PER	R	PHI
0	72.4	49.3	6.0	0	12.33	7.70	-4.27	0	0	.44	0
1	69.7	47.3	5.9	-2.6	18.94	12.00	-4.46	-1.49	20.00	.31	18.51
2	65.7	45.4	5.2	-5.1	13.19	10.41	3.67	-4.35	10.00	.49	-49.83
3	60.1	42.5	4.0	-7.5	11.35	10.42	7.16	-5.34	6.67	.82	-36.73
4	53.4	38.9	2.4	-9.7	5.36	5.02	3.94	-2.69	5.00	.84	-34.26
5	46.8	35.2	.4	-11.3	2.33	.99	.78	-0.58	4.00	.64	-36.90
6	40.1	30.9	-2.0	-12.4	1.61	.50	-0.04	-0.29	3.33	.33	81.71
7	34.1	26.4	-4.9	-13.1	2.19	.41	-0.38	-0.21	2.86	.46	29.59
8	29.3	22.0	-8.0	-13.3	1.88	.27	-0.28	-0.05	2.50	.40	10.37
9	25.2	17.7	-11.2	-13.0	.63	.16	-0.07	.04	2.22	.26	-26.85
10	22.0	13.4	-14.3	-12.4	.13	.13	.01	.02	2.00	.18	72.49
11	19.5	9.6	-17.1	-11.5	.10	.09	.02	.02	1.82	.27	36.94
12	16.9	5.9	-19.5	-10.4	.09	.08	.01	.01	1.67	.25	45.32
13	14.4	2.7	-21.5	-9.1	.09	.07	-0.01	.03	1.54	.42	-80.48
14	11.7	.0	-22.7	-7.6	.09	.06	0	.03	1.43	.37	88.88
15	8.8	-2.2	-23.3	-6.0	.07	.05	.01	.01	1.33	.33	48.60
16	5.9	-3.7	-23.2	-4.3	.06	.05	.02	.01	1.25	.42	20.94
17	3.2	-4.9	-22.5	-2.7	.06	.04	.02	0	1.18	.31	-0.63
18	1.2	-5.6	-21.3	-1.1	.05	.04	0	0	1.11	.05	-49.92
19	.1	-5.5	-19.8	.4	.05	.05	-0.01	.01	1.05	.19	-53.94
20	.2	-4.8	-18.2	2.0	.05	.04	0	0	1.00	.07	61.15
21	1.3	-3.8	-16.4	3.4	.04	.02	0	0	.95	.04	79.79
22	3.3	-2.1	-14.5	4.7	.03	.02	-0.01	0	.91	.23	-26.78
23	5.9	-0.4	-12.5	5.8	.03	.03	-0.01	0	.87	.39	1.24
24	8.7	1.7	-10.5	6.6	.03	.03	-0.01	0	.83	.36	17.37
25	11.4	4.0	-8.4	7.0	.03	.03	-0.01	-0.01	.80	.31	38.26
26	13.5	6.3	-6.5	7.1	.03	.02	0	-0.01	.77	.31	57.02
27	14.9	8.5	-4.5	7.1	.03	.01	0	-0.01	.74	.33	-88.38
28	15.6	10.6	-2.6	6.6	.03	.01	0	-0.01	.71	.46	-80.95
29	15.8	12.5	-0.8	6.0	.02	.01	0	-0.01	.69	.38	73.18
30	15.3	14.1	.8	5.2	.02	.02	0	0	.67	.13	80.82
31	14.6	15.3	2.2	4.3	.02	.03	0	0	.65	.25	-50.22
32	13.9	16.2	3.4	3.5	.02	.02	0	-0.01	.63	.32	-53.40
33	13.6	16.6	4.3	2.5	.02	.02	0	0	.61	.14	-54.41
34	13.6	16.5	4.9	1.5	.02	.03	0	0	.59	.04	-81.31
35	13.7	16.5	5.0	.5	.04	.03	0	0	.57	.06	24.60
36	14.4	15.9	4.9	-0.4	.05	.04	0	0	.56	.09	-16.48
37	14.7	15.1	4.3	-1.0	.04	.04	0	0	.54	.01	-48.36
38	14.8	14.2	3.5	-1.6	.04	.02	0	0	.53	.14	-72.55
39	14.4	12.9	2.7	-2.2	.04	.02	0	0	.51	.10	-11.39
40	13.4	11.6	1.6	-2.7	.03	.03	-0.01	0	.50	.18	-3.63
41	12.0	10.1	.6	-3.3	.03	.03	0	.01	.49	.26	-72.74
42	10.1	8.7	-0.6	-3.9	.02	.03	0	.01	.48	.25	-67.94
43	7.9	6.8	-1.7	-4.2	.02	.03	0	0	.47	.20	-14.05
44	5.7	5.1	-2.9	-4.5	.02	.04	-0.01	0	.45	.23	-9.33
45	3.4	3.2	-4.1	-4.6	.02	.04	-0.01	0	.44	.38	-8.70
46	1.1	1.1	-5.5	-4.3	.02	.03	-0.01	0	.43	.41	3.01
47	-0.8	-0.6	-6.8	-3.9	.02	.02	-0.01	0	.43	.34	35.42
48	-2.8	-2.6	-7.9	-3.2	.02	.02	0	0	.42	.24	61.35
49	-4.4	-4.2	-9.1	-2.4	.02	.02	0	0	.41	.08	-88.88
50	-5.7	-5.5	-10.1	-1.6	.01	.01	0	0	.40	.01	-0.01

117 LI-U

BBFLS- 15 3-5.5M- 1 20 JULY-65 1252-1255

LAGS= 50 N= 649 DT= .20SEC

MEAN U_2 = -26.5 MEAN U_1 = -27.0

K	ACOV U_2	ACOV U_1	COV IN	COVOUT	SP U_2	SP U_1	CO	QUA	PER	R	PHI
0	41.7	59.7	19.0	0	6.65	13.79	2.09	0	0	.22	0
1	39.3	57.4	19.1	1.9	11.89	19.85	4.81	4.46	20.00	.43	42.81
2	38.3	56.0	18.4	3.9	9.91	10.20	5.87	3.79	10.00	.70	32.86
3	36.6	53.8	17.7	5.7	7.29	7.90	4.83	3.47	6.67	.78	35.68
4	33.9	50.7	16.6	7.3	2.92	4.53	1.62	2.03	5.00	.71	51.51
5	31.5	47.5	15.2	8.7	.59	.95	-0.00	.19	4.00	.26	-89.86
6	28.4	43.9	13.6	9.9	.41	.37	.05	-0.05	3.33	.17	-45.68
7	25.2	40.0	11.7	10.8	.20	.28	-0.04	-0.04	2.86	.27	44.34
8	21.9	36.1	9.7	11.4	.13	.15	-0.05	.01	2.50	.33	-10.83
9	18.6	32.3	7.5	11.8	.09	.09	-0.02	.03	2.22	.41	-48.62
10	15.3	28.4	5.6	12.0	.06	.08	-0.00	.01	2.00	.11	-59.21
11	12.3	24.9	3.3	11.7	.05	.07	-0.01	.00	1.82	.22	-22.59
12	9.3	21.9	1.3	11.2	.05	.07	-0.00	.01	1.67	.24	-86.30
13	6.6	19.0	-0.4	10.7	.06	.06	.01	-0.00	1.54	.11	-6.20
14	4.4	16.4	-2.1	9.7	.06	.04	-0.00	-0.01	1.43	.20	89.47
15	2.2	14.8	-3.5	8.7	.04	.04	-0.00	-0.00	1.33	.17	48.76
16	.4	13.2	-4.7	7.6	.03	.04	-0.00	.00	1.25	.09	-66.36
17	-1.0	12.0	-5.7	6.5	.03	.04	-0.01	-0.00	1.18	.16	11.09
18	-2.2	11.6	-6.3	5.5	.04	.04	-0.01	-0.00	1.11	.16	31.98
19	-2.9	11.2	-6.7	4.5	.04	.03	.00	-0.00	1.05	.13	-75.29
20	-3.3	11.4	-6.9	3.7	.03	.03	.00	-0.01	1.00	.22	-52.71
21	-3.4	11.9	-6.8	3.0	.03	.03	.01	-0.00	.95	.23	-26.01
22	-3.1	12.7	-6.5	2.6	.03	.03	.01	.00	.91	.21	8.10
23	-2.8	13.6	-5.9	2.4	.02	.03	-0.00	.00	.87	.18	-67.42
24	-2.1	14.7	-5.4	2.2	.02	.03	-0.01	.00	.83	.34	-16.51
25	-1.3	15.7	-4.5	2.6	.03	.04	-0.01	-0.01	.80	.38	27.72
26	-0.4	16.7	-3.5	2.8	.03	.04	-0.00	-0.01	.77	.33	75.36
27	.7	17.7	-2.5	3.5	.03	.03	.00	-0.01	.74	.33	-63.11
28	1.9	18.2	-1.4	3.9	.04	.02	.00	-0.00	.71	.22	-41.94
29	2.9	18.6	-0.3	4.7	.03	.02	.00	-0.01	.69	.21	-76.38
30	3.9	18.8	.8	5.5	.03	.03	.00	-0.01	.67	.24	-68.48
31	4.9	18.4	1.9	6.3	.03	.03	.01	.00	.65	.25	10.88
32	5.6	17.8	2.6	7.3	.04	.06	.01	.00	.63	.18	21.42
33	6.3	16.9	3.2	8.2	.04	.07	-0.00	-0.01	.61	.10	85.92
34	6.5	15.7	3.6	9.2	.04	.05	-0.01	-0.00	.59	.16	38.83
35	6.7	14.0	3.8	9.9	.05	.04	-0.01	-0.00	.57	.19	14.59
36	6.4	12.3	3.8	10.7	.06	.03	-0.01	-0.00	.56	.21	16.12
37	6.0	10.5	3.5	11.2	.06	.04	-0.01	-0.00	.54	.23	18.86
38	5.3	8.5	3.2	11.6	.04	.05	-0.00	-0.01	.53	.18	85.34
39	4.3	6.4	2.4	11.8	.05	.04	.01	-0.01	.51	.31	-35.18
40	3.2	4.2	1.6	11.7	.05	.04	.00	.00	.50	.05	11.75
41	1.9	2.2	.6	11.6	.05	.04	-0.01	.01	.49	.34	-43.64
42	.5	.2	-0.6	11.1	.05	.03	-0.01	.01	.48	.30	-34.44
43	-0.8	-1.5	-1.9	10.8	.05	.03	-0.01	-0.01	.47	.46	44.47
44	-2.3	-3.2	-3.3	10.2	.04	.04	-0.01	-0.01	.45	.47	38.42
45	-3.9	-4.5	-4.6	9.6	.05	.04	-0.02	.00	.44	.37	-7.40
46	-5.0	-5.7	-6.0	8.8	.04	.04	-0.02	-0.00	.43	.42	3.05
47	-6.3	-6.9	-7.3	8.2	.02	.03	-0.01	-0.01	.43	.44	33.83
48	-7.5	-7.7	-8.6	7.5	.02	.03	-0.00	-0.00	.42	.10	16.12
49	-8.3	-8.5	-9.8	7.1	.02	.03	-0.00	.01	.41	.23	-77.76
50	-8.9	-8.9	-10.9	6.5	.01	.01	-0.00	.00	.40	.12	-0.01

CORRELATION COEFFICIENT .381

BBELS= 15 J=4.5M= 1 20 JULY-65 1241-1244

LAGS= 50 N= 552 DT= .20SEC

MEAN U_2 = -28.2 MEAN U_1 = -28.1

K	ACOV U_2	ACOV U_1	COV IN	COVOUT	SP U_2	SP U_1	CO	QUA	PER	R	PHI
0	45.7	76.2	30.7	0	6.83	8.79	3.24	0	0	.42	0
1	40.9	67.9	30.4	1.9	12.12	18.40	6.18	3.48	20.00	.48	29.35
2	40.0	64.8	29.0	3.6	9.04	16.53	6.57	3.48	10.00	.61	27.87
3	37.6	61.4	27.0	5.1	6.98	12.27	7.28	2.79	6.67	.84	20.95
4	34.3	54.9	23.8	6.4	4.40	7.83	5.10	1.79	5.00	.92	19.31
5	31.0	47.9	20.3	7.6	1.57	2.97	1.67	.45	4.00	.80	14.99
6	27.4	41.3	16.8	8.6	.68	1.13	.41	-0.08	3.33	.48	-11.34
7	23.5	34.7	12.6	9.3	.42	1.18	.27	.02	2.86	.39	4.72
8	20.0	27.8	8.8	9.8	.22	.88	.12	.04	2.50	.29	17.39
9	15.9	22.1	5.4	10.0	.12	.42	.04	-0.01	2.22	.18	-15.99
10	13.0	16.5	2.2	10.1	.10	.14	-0.01	.03	2.00	.25	-62.22
11	10.2	12.0	-0.8	9.7	.11	.12	-0.01	.03	1.82	.26	-72.16
12	7.1	7.9	-3.1	9.4	.09	.12	.00	.01	1.67	.14	73.82
13	5.7	4.3	-4.9	8.6	.07	.14	-0.01	.02	1.54	.17	-70.44
14	3.5	.7	-6.2	7.9	.07	.14	-0.02	.02	1.43	.27	-50.11
15	2.4	-1.8	-7.1	6.9	.08	.12	-0.01	.00	1.33	.16	-16.16
16	1.2	-4.2	-7.2	6.1	.07	.11	-0.02	-0.00	1.25	.19	13.18
17	.9	-5.9	-7.3	5.1	.07	.12	-0.02	.01	1.18	.25	-27.26
18	.4	-6.5	-6.9	4.5	.06	.13	-0.02	.02	1.11	.31	-52.62
19	.4	-7.9	-5.7	3.7	.05	.13	-0.00	.01	1.05	.18	-70.83
20	.5	-7.0	-4.5	2.9	.06	.09	.00	-0.00	1.00	.04	-30.98
21	1.1	-5.8	-3.3	2.3	.06	.07	.00	-0.01	.95	.10	-77.80
22	1.1	-4.3	-1.7	2.4	.05	.12	-0.01	.01	.91	.16	-24.23
23	2.0	-3.5	.2	2.0	.05	.18	-0.02	.02	.87	.28	-39.22
24	2.9	-1.8	1.7	2.0	.06	.18	-0.02	.01	.83	.21	-42.10
25	3.3	-0.5	2.9	2.1	.06	.13	-0.00	.00	.80	.05	-29.51
26	4.1	.4	4.2	2.4	.06	.15	.00	-0.01	.77	.08	-57.55
27	4.4	1.1	5.2	2.8	.07	.19	-0.02	.00	.74	.20	-12.04
28	4.8	.1	5.5	3.3	.09	.20	-0.04	.02	.71	.32	-26.09
29	4.7	.1	5.9	3.9	.11	.20	.00	.01	.69	.05	63.23
30	4.6	-0.7	5.9	4.3	.10	.19	.04	-0.01	.67	.27	-8.90
31	4.1	-2.4	5.8	4.5	.07	.17	.03	-0.00	.65	.27	-7.04
32	3.7	-3.8	5.0	4.6	.05	.20	.02	.01	.63	.21	26.99
33	3.0	-5.0	4.4	4.7	.07	.23	.02	.01	.61	.18	31.87
34	2.2	-6.5	3.7	4.3	.08	.22	.02	.01	.59	.15	18.14
35	1.3	-7.3	2.4	4.3	.08	.15	.02	.00	.57	.17	2.13
36	.1	-9.4	1.4	3.9	.09	.12	.01	-0.01	.56	.15	-19.36
37	-0.8	-9.6	.4	3.8	.12	.16	.01	.01	.54	.07	42.50
38	-2.3	-10.3	-0.4	3.6	.15	.14	.01	.01	.53	.06	52.42
39	-3.2	-11.8	-1.3	3.3	.14	.14	-0.01	-0.01	.51	.07	48.79
40	-4.5	-11.4	-1.9	3.3	.10	.17	-0.02	-0.01	.50	.14	23.12
41	-5.4	-11.1	-2.2	3.5	.07	.14	-0.01	-0.00	.49	.06	5.65
42	-6.1	-11.1	-2.5	3.3	.06	.10	-0.00	.00	.48	.07	-31.68
43	-7.1	-9.9	-2.7	3.7	.07	.11	-0.02	.01	.47	.21	-23.03
44	-7.3	-9.2	-2.5	4.1	.06	.15	-0.01	.00	.45	.13	-22.68
45	-7.9	-7.6	-2.0	4.0	.07	.18	-0.01	.00	.44	.09	-28.58
46	-8.2	-5.1	-1.8	4.3	.12	.14	-0.02	.01	.43	.19	-35.63
47	-8.1	-3.7	-0.9	5.0	.13	.09	-0.01	.00	.43	.11	-4.55
48	-7.9	-2.2	-0.1	5.5	.11	.09	.00	-0.03	.42	.25	-88.42
49	-7.5	-1.1	.4	6.2	.08	.10	-0.01	-0.02	.41	.25	75.51
50	-6.3	.1	1.2	7.4	.03	.05	-0.01	-0.00	.40	.17	.00

CORRELATION COEFFICIENT .521

119 ΣI-W

BBFLS= 16 1-0-3.5M-VII 8 SEP-65 0200-0207

LAGS= 50 N= 1849 DT= .20SEC

MEAN W_2= -0.9 * MEAN W_1= .4

K	ACOV W_2	ACOV W_1	COV IN	COVOUT	SP W_2	SP W_1	CO	QUA	PER	R	PHI
0	83.6	158.0	-52.8	0	9.72	12.02	1.27	0	0	.12	0
1	82.6	155.0	-52.1	2.0	25.78	40.08	-10.43	3.98	20.00	.35	-20.90
2	80.2	148.2	-50.1	4.0	28.31	53.08	-23.86	7.41	10.00	.64	-17.25
3	76.8	138.4	-46.9	5.9	14.09	31.73	-14.18	4.05	6.67	.70	-15.93
4	72.4	126.6	-42.7	7.7	2.78	9.49	-3.14	.35	5.00	.61	-6.44
5	67.2	113.4	-37.7	9.4	1.31	4.20	-1.51	-0.02	4.00	.64	.79
6	61.4	99.5	-32.0	10.9	.50	2.14	-0.50	-0.02	3.33	.48	2.18
7	55.1	85.3	-25.9	12.2	.23	1.28	-0.15	.01	2.86	.27	-2.20
8	48.4	71.1	-19.6	13.3	.19	1.06	-0.10	-0.01	2.50	.22	6.97
9	41.5	56.9	-13.0	14.2	.14	.87	-0.07	-0.01	2.22	.21	4.10
10	34.5	42.8	-6.5	14.9	.08	.56	-0.05	.01	2.00	.25	-12.40
11	27.4	29.0	.0	15.3	.07	.30	-0.05	.01	1.82	.38	-10.81
12	20.5	15.5	6.3	15.4	.06	.20	-0.03	-0.00	1.67	.28	4.00
13	13.8	2.6	12.2	15.3	.05	.15	-0.00	-0.02	1.54	.20	76.76
14	7.4	-9.6	17.8	14.9	.03	.10	.00	-0.01	1.43	.23	-82.03
15	1.3	-20.7	22.8	14.3	.02	.07	.00	-0.00	1.33	.11	-13.26
16	-4.4	-30.7	27.3	13.4	.02	.07	.00	.00	1.25	.12	1.73
17	-9.6	-39.3	31.3	12.3	.01	.05	.00	-0.00	1.18	.07	-69.13
18	-14.4	-46.7	34.8	11.1	.01	.04	-0.00	-0.00	1.11	.19	47.54
19	-18.5	-52.7	37.8	9.8	.01	.04	-0.00	-0.00	1.05	.14	62.59
20	-22.2	-57.4	40.2	8.3	.02	.04	-0.00	-0.00	1.00	.05	86.65
21	-25.3	-61.1	42.2	6.7	.01	.03	-0.00	.00	.95	.09	-87.62
22	-27.9	-63.7	43.7	5.0	.01	.03	-0.00	.00	.91	.12	-89.25
23	-29.9	-65.4	44.6	3.3	.01	.02	.00	.00	.87	.16	86.55
24	-31.4	-66.2	45.0	1.5	.01	.02	.00	.00	.83	.23	85.86
25	-32.3	-66.2	44.9	-0.2	.01	.02	-0.00	.00	.80	.15	-69.44
26	-32.7	-65.2	44.2	-1.9	.01	.02	-0.00	.00	.77	.09	-13.53
27	-32.6	-63.2	43.1	-3.4	.01	.02	-0.00	.00	.74	.04	-50.16
28	-32.0	-60.3	41.4	-4.9	.01	.02	-0.00	.00	.71	.09	-64.14
29	-30.7	-56.5	39.3	-6.2	.00	.02	-0.00	.00	.69	.20	-42.41
30	-28.9	-51.9	36.7	-7.5	.00	.02	-0.00	.00	.67	.25	-57.01
31	-26.7	-46.6	33.6	-8.6	.01	.02	-0.00	.00	.65	.16	-68.26
32	-23.9	-40.8	30.0	-9.5	.00	.01	.00	.00	.63	.12	67.33
33	-20.7	-34.8	25.9	-10.3	.01	.01	.00	.00	.61	.20	38.16
34	-17.2	-28.4	21.6	-10.9	.00	.01	.00	-0.00	.59	.11	-9.95
35	-13.3	-21.7	17.0	-11.4	.00	.02	-0.00	.00	.57	.06	-15.81
36	-9.3	-15.0	12.3	-11.7	.00	.01	-0.00	.00	.56	.17	-56.74
37	-5.2	-8.4	7.5	-11.9	.00	.01	.00	-0.00	.54	.07	-39.71
38	-1.0	-1.9	2.6	-11.9	.00	.01	.00	-0.00	.53	.18	-73.21
39	3.1	4.5	-2.1	-11.7	.00	.01	.00	.00	.51	.12	83.19
40	7.2	10.5	-6.8	-11.4	.00	.01	.00	.00	.50	.32	72.06
41	11.1	16.1	-11.2	-10.8	.00	.01	.00	.00	.49	.17	55.38
42	14.9	21.2	-15.5	-10.1	.00	.01	.00	-0.00	.48	.15	-87.37
43	18.5	25.9	-19.5	-9.3	.00	.01	-0.00	-0.00	.47	.19	85.57
44	21.8	30.1	-23.1	-8.3	.00	.01	-0.00	.00	.45	.04	-4.96
45	24.6	33.6	-26.2	-7.4	.00	.01	-0.00	.00	.44	.04	-65.40
46	27.1	36.4	-28.8	-6.4	.00	.01	.00	-0.00	.43	.07	-50.62
47	29.1	38.5	-30.8	-5.3	.00	.01	-0.00	-0.00	.43	.10	36.67
48	30.6	39.8	-32.2	-4.2	.00	.01	-0.00	.00	.42	.15	-19.83
49	31.6	40.3	-33.0	-3.0	.00	.01	.00	.00	.41	.20	70.14
50	32.1	40.1	-33.2	-1.8	.00	.00	.00	.00	.40	.28	.00

CORRELATION COEFFICIENT -0.459

* SIGN REVERSED ON ONE CHANNEL, COV IN, CO

120 OIII (θ = 5°)

BBELS 16 0.5M-01 0. 08SEP-65 1340-1346

LAGS= 50 N= 702 DT= 0.2SEC

MEAN U=-19.7 MEAN W= .4

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	56.9	256.2	-7.6	0	1.37	5.88	.78	0	0	.27	0
1	49.2	241.5	-7.5	16.8	3.30	26.00	-0.40	1.51	20.00	.17	-75.06
2	33.7	206.1	-6.7	29.1	4.18	52.11	-1.94	2.11	10.00	.19	-47.35
3	14.6	158.2	-5.4	33.6	3.35	45.75	-0.82	1.55	6.67	.14	-62.25
4	-2.2	106.9	-3.8	29.5	3.17	24.95	-0.98	1.43	5.00	.19	-55.46
5	-13.9	60.7	-2.1	19.2	5.06	24.95	-2.28	2.50	4.00	.30	-47.61
6	-18.4	24.7	0	6.8	4.83	19.42	-2.38	2.10	3.33	.33	-41.47
7	-16.9	.3	2.1	-4.8	5.93	14.82	-1.31	5.17	2.86	.57	-75.75
8	-11.6	-13.0	4.3	-12.6	8.81	18.09	.65	9.94	2.50	.79	86.25
9	-4.6	-18.2	6.4	-15.5	6.49	11.71	1.31	6.85	2.22	.80	79.21
10	2.2	-18.7	7.6	-13.3	2.79	4.00	.14	2.28	2.00	.68	86.47
11	7.5	-18.2	7.7	-7.4	1.77	2.02	-0.21	1.22	1.82	.65	-80.39
12	10.6	-18.8	6.4	.5	1.43	1.55	.01	.98	1.67	.66	89.34
13	10.7	-22.7	4.1	8.3	1.16	1.39	-0.18	.69	1.54	.56	-75.60
14	8.1	-30.5	1.1	14.5	.74	.99	-0.19	.31	1.43	.43	-58.01
15	3.2	-41.5	-1.8	17.6	.47	.44	.03	.15	1.33	.33	79.64
16	-2.0	-54.0	-3.6	16.7	.35	.21	.04	.05	1.25	.24	48.66
17	-6.6	-65.3	-4.2	12.1	.21	.20	0	.05	1.18	.23	84.56
18	-9.1	-72.9	-3.4	5.4	.10	.17	.01	.03	1.11	.23	69.10
19	-8.9	-74.9	-1.5	-2.4	.08	.17	0	-0.01	1.05	.10	-87.64
20	-6.4	-71.3	1.1	-8.8	.09	.13	0	-0.03	1.00	.24	-80.88
21	-2.4	-64.4	3.8	-12.5	.08	.09	.02	0	.95	.20	-1.51
22	2.1	-56.7	6.5	-11.9	.07	.09	.02	.01	.91	.26	25.11
23	5.6	-51.4	8.8	-7.5	.07	.09	0	-0.03	.87	.39	-83.04
24	6.6	-49.6	9.9	-0.5	.07	.07	0	-0.04	.83	.60	-89.66
25	5.2	-51.9	9.7	7.1	.06	.05	0	-0.03	.80	.49	-86.16
26	.9	-57.0	8.3	13.0	.05	.05	0	-0.03	.77	.49	-87.60
27	-4.7	-62.8	6.2	16.1	.06	.04	0	-0.01	.74	.30	71.10
28	-10.1	-67.3	4.0	15.6	.05	.04	-0.01	0	.71	.13	25.48
29	-13.6	-67.9	2.7	11.4	.04	.06	.01	0	.69	.16	10.83
30	-15.2	-62.3	3.0	4.3	.05	.07	.02	-0.01	.67	.40	-25.55
31	-14.1	-50.7	4.6	-4.0	.07	.05	.02	-0.02	.65	.43	-46.17
32	-10.4	-32.6	6.9	-11.2	.04	.05	0	-0.01	.63	.24	-67.92
33	-5.0	-8.8	8.8	-16.2	.02	.06	0	0	.61	.09	-3.28
34	1.4	17.7	9.1	-18.0	.03	.04	.01	0	.59	.24	26.06
35	8.0	43.7	7.9	-16.4	.04	.03	.01	0	.57	.26	14.04
36	13.0	65.7	5.6	-11.6	.03	.04	.01	.01	.56	.37	22.98
37	15.8	81.0	3.0	-4.6	.02	.04	.01	.01	.54	.41	34.34
38	15.6	87.9	.7	3.3	.02	.02	0	0	.53	.20	22.91
39	12.8	87.1	-0.9	10.5	.02	.03	0	0	.51	.12	66.26
40	7.7	80.0	-1.7	16.1	.02	.04	0	.01	.50	.29	-64.19
41	1.9	68.5	-1.8	18.9	.03	.03	-0.01	.01	.49	.42	-40.68
42	-3.4	54.9	-1.5	17.8	.03	.02	-0.01	0	.48	.26	4.66
43	-6.5	41.6	-0.7	12.6	.04	.02	0	-0.01	.47	.44	-69.41
44	-7.1	29.9	.8	4.5	.05	.01	.01	-0.01	.45	.48	-50.91
45	-4.5	21.9	3.0	-4.4	.03	.02	0	0	.44	.18	10.05
46	.3	18.1	5.4	-12.6	.03	.03	.01	0	.43	.25	31.06
47	5.8	17.7	7.0	-18.1	.03	.02	.01	0	.43	.31	-8.38
48	10.5	19.3	7.8	-20.4	.05	.02	.01	-0.01	.42	.43	-48.47
49	13.0	21.0	7.3	-19.6	.05	.03	.01	-0.01	.41	.44	-50.72
50	13.1	21.4	5.8	-16.8	.02	.02	.01	0	.40	.32	0

121 OIII ($\theta = 20°$)

BBFLS- 16 .5M- 2
LAGS= 50 N= 1227 DT= .20SEC
MEAN U = -19.8 MEAN W = .6

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	66.1	266.1	-10.3	0	1.33	3.70	.09	0	0	.04	0
1	53.8	246.6	-8.8	17.1	2.77	24.17	.72	-0.98	20.00	.15	-53.73
2	35.9	201.6	-3.5	30.0	2.77	49.71	1.97	-2.22	10.00	.25	-48.54
3	13.2	141.9	4.5	35.9	2.32	43.07	2.14	-0.99	6.67	.24	-24.85
4	-9.2	80.1	12.4	32.3	2.80	23.27	1.70	.14	5.00	.21	4.81
5	-24.8	27.3	18.6	20.3	3.07	15.17	1.53	-0.87	4.00	.26	-29.71
6	-33.4	-8.6	20.9	2.9	4.69	14.20	-1.32	1.32	3.33	.23	-44.95
7	-32.5	-24.9	18.8	-15.9	11.95	27.09	-6.61	11.57	2.86	.74	-60.25
8	-23.8	-24.1	13.0	-31.4	14.87	31.58	-7.40	16.11	2.50	.82	-65.32
9	-9.7	-12.6	4.2	-40.2	9.43	16.90	-2.93	8.07	2.22	.72	-70.07
10	5.9	2.7	-5.2	-39.9	2.92	5.81	-0.25	1.60	2.00	.39	-81.10
11	19.4	14.9	-13.1	-30.7	1.26	3.11	-0.27	.01	1.82	.13	-1.74
12	27.8	18.7	-18.6	-15.0	.70	2.35	-0.28	-0.47	1.67	.43	59.21
13	28.7	11.4	-20.5	2.9	.43	1.49	-0.09	-0.30	1.54	.39	73.81
14	22.5	-6.6	-19.0	19.1	.39	.66	.04	-0.00	1.43	.07	-1.68
15	11.5	-32.2	-14.2	28.9	.50	.42	.14	.12	1.33	.40	40.21
16	-0.9	-61.2	-7.2	30.6	.44	.30	.13	.02	1.25	.36	10.08
17	-12.3	-88.5	1.0	23.9	.30	.30	.04	-0.05	1.18	.22	-48.71
18	-19.5	-108.6	8.4	11.5	.21	.30	.01	-0.07	1.11	.27	-80.51
19	-22.0	-118.3	12.9	-3.2	.19	.20	.01	-0.04	1.05	.21	-75.15
20	-19.6	-115.3	14.0	-16.6	.18	.11	.01	-0.02	1.00	.13	-66.29
21	-12.8	-100.5	11.3	-26.3	.18	.14	.02	-0.00	.95	.11	-13.53
22	-3.7	-78.1	6.0	-30.4	.18	.17	.04	-0.03	.91	.27	-34.59
23	5.9	-53.8	-1.1	-28.6	.19	.16	.05	-0.04	.87	.34	-39.28
24	14.0	-32.9	-7.6	-21.0	.18	.13	.02	-0.02	.83	.18	-46.43
25	12.6	-18.9	-12.5	-9.5	.17	.12	-0.00	-0.01	.80	.06	88.09
26	18.3	-13.9	-14.4	3.5	.14	.12	.02	-0.01	.77	.16	-15.41
27	14.2	-17.4	-13.7	15.4	.12	.12	.03	.00	.74	.26	4.24
28	6.4	-27.6	-10.6	24.0	.12	.09	.02	.01	.71	.18	26.02
29	-2.2	-40.1	-5.4	27.5	.11	.07	.01	.01	.69	.15	57.55
30	-9.9	-50.9	.3	25.6	.11	.06	.01	.00	.67	.11	7.20
31	-15.5	-56.4	5.1	19.1	.11	.06	-0.00	-0.01	.65	.07	81.13
32	-17.6	-55.0	7.8	9.5	.11	.06	-0.00	-0.00	.63	.06	63.47
33	-14.6	-46.3	8.6	-0.1	.12	.07	.01	.01	.61	.14	29.83
34	-12.9	-31.6	7.4	-8.5	.10	.06	.02	.01	.59	.24	31.95
35	-7.0	-12.5	4.7	-13.2	.07	.05	.02	.00	.57	.32	8.57
36	-0.5	8.9	2.0	-14.1	.09	.05	.02	.01	.56	.35	20.93
37	5.8	30.0	-0.2	-10.8	.11	.06	.02	.02	.54	.38	39.75
38	10.6	47.9	-1.5	-4.5	.10	.06	.03	.02	.53	.37	31.69
39	13.7	60.3	-1.6	3.5	.09	.06	.01	.01	.51	.24	38.89
40	13.8	66.2	-0.9	11.0	.10	.05	.00	.01	.50	.14	66.09
41	11.7	65.4	.4	16.9	.10	.04	.01	.00	.49	.09	17.37
42	7.7	59.4	2.4	20.0	.10	.04	.00	.00	.48	.04	64.16
43	3.3	50.3	4.3	19.4	.11	.05	-0.01	.01	.47	.20	-49.78
44	-1.3	40.9	6.0	15.0	.12	.05	-0.00	.01	.45	.09	-50.70
45	-4.8	33.3	7.4	8.3	.11	.05	.01	.00	.44	.17	6.74
46	-6.4	29.7	8.2	.2	.09	.04	.01	.01	.43	.24	38.83
47	-6.3	31.3	8.4	-7.8	.10	.05	-0.00	-0.01	.43	.10	53.50
48	-4.5	36.7	7.8	-14.0	.12	.05	-0.01	-0.03	.42	.35	64.86
49	-2.9	44.8	6.5	-17.0	.11	.05	-0.01	-0.01	.41	.18	57.29
50	-0.5	53.4	4.5	-16.3	.05	.03	-0.00	-0.00	.40	.04	.00

CORRELATION COEFFICIENT -0.078

122 OIII (θ=50°)

BBELS 16 .5M= 4 0, 08SEP=65 1420-1425
LAGS= 50 N= 1374 DT= 0.25EC
MEAN U=-18.4 MEAN W= -0.9
CORRELATION COEFFICIENT -0.1

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	37.7	278.0	-11.2	0	.68	6.78	-0.67	0	0	.31	0
1	32.0	240.2	-10.0	6.5	2.31	31.35	-0.92	-3.64	20.00	.44	75.77
2	22.1	205.7	-6.7	10.9	3.18	54.23	-0.59	-5.69	10.00	.44	84.07
3	10.3	159.8	-2.5	11.9	2.58	43.90	-1.17	-3.99	6.67	.39	73.57
4	-0.0	110.7	1.4	8.6	2.52	25.85	-0.83	-1.02	5.00	.16	50.97
5	-7.0	66.9	3.6	1.8	2.72	21.10	.25	.55	4.00	.08	65.49
6	-10.3	32.8	3.6	-6.9	2.89	16.28	.27	1.71	3.33	.25	80.92
7	-10.5	11.3	1.7	-15.7	4.62	16.74	-0.79	4.56	2.86	.53	-80.13
8	-8.2	-0.4	-0.9	-23.3	5.41	18.01	-2.24	6.11	2.50	.66	-69.88
9	-4.1	-4.3	-3.7	-27.9	3.69	11.49	-2.11	3.83	2.22	.67	-61.17
10	.5	-4.6	-5.2	-28.4	1.86	4.90	-1.07	1.13	2.00	.52	-46.54
11	4.8	-4.5	-5.6	-24.7	.94	2.92	-0.69	-0.02	1.82	.42	1.25
12	7.2	-8.3	-4.7	-18.5	.63	2.47	-0.41	-0.19	1.67	.37	24.43
13	7.2	-15.1	-2.7	-11.1	.53	1.59	-0.13	.03	1.54	.14	-11.97
14	5.0	-26.0	-0.1	-4.5	.47	1.01	-0.09	.12	1.43	.22	-54.06
15	1.3	-38.4	2.5	0	.45	.80	-0.07	.03	1.33	.13	-23.98
16	-2.6	-52.0	4.4	1.5	.39	.72	-0.02	-0.01	1.25	.04	29.40
17	-5.7	-64.4	5.2	.3	.27	.73	.03	.04	1.18	.10	53.33
18	-7.3	-73.3	5.1	-3.0	.17	.74	.03	.06	1.11	.18	64.66
19	-7.4	-77.7	4.1	-7.1	.12	.68	.01	.05	1.05	.16	82.98
20	-6.4	-76.9	2.0	-10.2	.09	.56	.02	0	1.00	.08	7.96
21	-4.4	-71.0	0	-11.7	.08	.54	.03	-0.04	.95	.20	-53.89
22	-2.0	-62.4	-1.9	-10.3	.08	.57	0	-0.03	.91	.13	-83.61
23	.3	-54.3	-3.9	-7.2	.06	.54	0	-0.02	.87	.10	82.85
24	1.7	-48.4	-4.8	-3.8	.04	.52	0	-0.01	.83	.10	84.10
25	2.2	-46.4	-5.4	.3	.05	.54	-0.01	-0.03	.80	.21	72.86
26	1.5	-47.2	-5.1	3.8	.05	.59	0	-0.03	.77	.16	-82.10
27	.0	-51.2	-4.0	6.5	.05	.59	.02	.01	.74	.11	27.97
28	-2.1	-56.5	-2.4	7.8	.04	.54	.01	.02	.71	.11	64.42
29	-4.1	-60.4	-0.8	7.9	.04	.54	-0.01	0	.69	.04	21.38
30	-5.7	-60.2	-0.1	7.3	.03	.52	-0.01	.01	.67	.10	-27.57
31	-6.6	-55.4	-0.2	5.2	.04	.50	-0.01	.02	.65	.17	-72.36
32	-6.9	-46.9	-1.0	2.8	.04	.51	0	.01	.63	.09	76.44
33	-6.6	-34.3	-1.8	.6	.03	.51	0	0	.61	.01	-14.91
34	-5.7	-20.6	-3.1	-1.3	.04	.50	-0.01	-0.01	.59	.08	28.17
35	-4.1	-6.6	-3.4	-1.9	.04	.48	-0.01	0	.57	.09	-4.93
36	-2.0	6.6	-3.6	-1.9	.04	.50	0	.01	.56	.07	78.34
37	-0.0	17.8	-2.0	-0.3	.04	.52	.03	.02	.54	.20	30.84
38	1.8	27.0	-0.1	1.2	.04	.52	.02	0	.53	.12	14.03
39	2.9	32.7	1.9	2.8	.04	.52	0	-0.01	.51	.10	-86.79
40	3.5	37.3	3.7	4.4	.03	.50	0	.01	.50	.06	-80.41
41	3.6	40.7	5.0	5.5	.03	.49	0	.02	.49	.18	87.48
42	3.1	40.9	5.4	6.3	.03	.50	.01	0	.48	.06	-25.79
43	2.4	38.6	5.5	6.4	.03	.49	-0.01	-0.01	.47	.11	66.86
44	1.4	34.9	4.9	5.1	.04	.49	-0.02	0	.45	.16	.73
45	.2	30.0	4.4	4.2	.04	.52	-0.01	0	.44	.04	-30.96
46	-0.9	25.0	4.3	3.7	.03	.52	.01	.01	.43	.09	49.40
47	-1.8	21.1	4.0	3.3	.03	.49	0	.01	.43	.09	-75.29
48	-2.1	18.5	3.5	2.5	.04	.46	.01	0	.42	.08	18.78
49	-1.6	16.8	3.3	1.9	.03	.44	.01	.01	.41	.13	20.45
50	-0.4	16.3	2.7	1.8	.01	.22	0	0	.40	.01	.04

123 OIII (θ=80°)
BBFLS= 16 .5M= VI 8 SEP-65 1431-1436
LAGS= 50 N= 1152 DT= .20SEC
MEAN U = -12.9 MEAN W = -1.2

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	39.4	250.8	-15.1	0	1.72	4.80	-0.01	0	0	.00	0
1	35.4	235.6	-13.3	-6.4	4.05	26.71	.11	-3.66	20.00	.35	-88.21
2	28.3	200.5	-8.3	-12.1	4.76	53.28	.15	-9.04	10.00	.57	-89.07
3	19.2	153.0	-1.6	-16.8	4.07	47.98	.26	-9.03	6.67	.65	-88.32
4	10.4	103.5	5.2	-20.7	3.55	26.39	-0.35	-6.40	5.00	.66	86.92
5	2.8	60.3	10.4	-23.7	3.75	16.13	-1.70	-4.71	4.00	.64	70.16
6	-2.5	28.5	12.9	-26.2	3.72	12.83	-2.05	-1.39	3.33	.36	34.21
7	-5.3	9.4	12.4	-28.4	4.14	16.59	-3.11	1.61	2.86	.42	-27.42
8	-5.6	1.2	9.3	-29.8	3.61	17.86	-3.93	1.36	2.50	.52	-19.08
9	-4.2	-0.5	4.6	-30.2	1.94	11.52	-2.51	.08	2.22	.53	-1.73
10	-2.0	-0.8	-0.4	-28.9	1.01	6.55	-1.21	-0.47	2.00	.51	21.26
11	.4	-3.7	-4.3	-25.5	.65	4.16	-0.55	-0.59	1.82	.49	47.02
12	2.3	-11.6	-6.5	-20.5	.39	1.72	-0.11	-0.36	1.67	.46	72.30
13	3.4	-24.3	-6.8	-14.6	.28	.66	-0.06	-0.17	1.54	.40	70.47
14	3.4	-40.7	-5.8	-8.5	.22	.55	-0.01	-0.08	1.43	.25	80.46
15	2.3	-57.7	-3.6	-3.0	.17	.40	.03	-0.03	1.33	.18	-47.92
16	.6	-72.9	-1.3	.9	.12	.31	.00	-0.00	1.25	.01	-71.65
17	-1.2	-84.0	.6	3.1	.10	.26	-0.02	.01	1.18	.14	-15.55
18	-2.9	-90.5	1.8	3.5	.08	.20	-0.02	.00	1.11	.13	-5.57
19	-4.1	-92.3	2.0	2.7	.09	.17	-0.01	.00	1.05	.08	-17.84
20	-4.6	-89.7	1.5	1.2	.08	.13	-0.01	.01	1.00	.13	-49.20
21	-4.4	-83.1	.3	-0.5	.06	.11	-0.01	-0.00	.95	.14	1.73
22	-3.8	-74.5	-1.1	-1.9	.06	.11	-0.01	-0.01	.91	.19	66.63
23	-2.7	-64.4	-2.2	-2.4	.05	.10	.00	-0.01	.87	.22	-72.38
24	-1.6	-53.8	-2.7	-2.0	.04	.08	.01	-0.01	.83	.28	-52.06
25	-0.7	-44.5	-2.5	-0.8	.04	.06	.01	-0.01	.80	.25	-51.43
26	-0.2	-37.3	-1.7	1.2	.03	.04	.00	-0.00	.77	.05	-39.25
27	-0.3	-33.1	-0.4	3.5	.03	.05	-0.01	.01	.74	.21	-46.15
28	-0.9	-32.0	1.1	6.0	.04	.06	-0.01	.00	.71	.17	-26.50
29	-1.9	-33.1	2.6	8.5	.03	.06	-0.01	-0.00	.69	.16	38.25
30	-3.1	-34.6	4.1	10.8	.03	.04	-0.00	-0.00	.67	.15	62.15
31	-4.0	-35.0	5.0	12.6	.02	.04	-0.00	-0.00	.65	.15	78.20
32	-4.6	-31.8	5.2	13.7	.02	.04	.00	-0.01	.63	.21	-72.43
33	-4.6	-24.8	4.3	13.8	.02	.05	.00	-0.00	.61	.14	-26.81
34	-3.8	-13.8	2.3	13.3	.03	.05	.00	-0.00	.59	.08	-1.76
35	-2.1	-0.1	-0.5	11.9	.03	.04	.00	.00	.57	.02	62.39
36	-0.1	13.7	-3.6	10.0	.02	.04	-0.00	-0.00	.56	.02	81.73
37	1.7	25.5	-6.2	8.0	.02	.05	.00	-0.00	.54	.06	-29.55
38	3.1	34.0	-7.8	6.1	.02	.05	.00	.00	.53	.17	60.90
39	4.4	38.8	-8.0	4.8	.02	.04	.00	.01	.51	.23	56.17
40	5.2	41.3	-7.0	4.2	.02	.04	.00	.00	.50	.18	22.09
41	5.1	41.4	-5.0	4.2	.02	.03	-0.00	.00	.49	.11	-85.49
42	4.3	41.0	-2.4	4.7	.02	.04	-0.01	.00	.48	.25	-29.51
43	3.2	40.5	.1	5.6	.03	.04	-0.00	.00	.47	.08	-72.44
44	2.0	40.6	2.3	6.2	.03	.04	.01	.00	.45	.24	11.91
45	1.4	41.4	3.7	6.6	.03	.04	.01	-0.00	.44	.31	-10.94
46	1.0	42.4	4.6	6.4	.03	.05	.01	-0.00	.43	.36	-18.47
47	1.0	43.4	4.7	5.3	.03	.06	.01	-0.00	.43	.26	-2.43
48	1.3	43.9	4.5	3.0	.03	.05	.01	-0.00	.42	.15	-7.07
49	1.8	43.6	3.9	-0.6	.03	.03	.00	-0.00	.41	.17	-43.83
50	2.2	41.3	2.9	-4.8	.02	.01	.00	-0.00	.40	.13	-0.00

CORRELATION COEFFICIENT -0.151

124 OIII (θ=350)

BBFLS- 16 .5M- III 8 SEP-65 1441-1446

LAGS= 50 N= 1205 DT= .20SEC

MEAN U = -13.3 MEAN W = -2.3

K	ACOV U	ACOV W	COV IN	COVOUT	SP U	SP W	CO	QUA	PER	R	PHI
0	30.3	239.2	-5.2	0	3.17	5.16	.02	0	0	.00	0
1	29.1	228.5	-4.6	-4.7	5.63	33.26	.68	-2.96	20.00	.22	-77.05
2	23.9	204.5	-2.8	-9.0	4.48	67.10	1.00	-8.99	10.00	.52	-83.63
3	18.8	172.2	-0.5	-12.9	3.30	54.94	-0.50	-8.06	6.67	.60	86.44
4	14.0	138.1	1.8	-16.2	2.29	23.72	-1.43	-3.67	5.00	.53	68.79
5	9.8	106.1	3.7	-18.8	1.94	12.18	-0.81	-1.87	4.00	.42	66.63
6	6.8	78.8	5.1	-20.7	2.18	7.02	-0.52	-0.52	3.33	.19	45.07
7	4.8	56.3	5.5	-22.1	2.31	8.85	-1.00	.20	2.86	.23	-11.24
8	3.8	37.8	5.1	-22.9	1.64	10.69	-1.39	-0.08	2.50	.33	3.25
9	3.6	21.9	4.0	-22.9	.87	5.93	-0.86	-0.07	2.22	.38	4.80
10	3.9	7.6	2.6	-22.2	.46	2.45	-0.20	.05	2.00	.19	-14.43
11	4.5	-6.3	1.3	-20.9	.38	1.70	-0.08	-0.11	1.82	.17	54.81
12	5.1	-20.8	.5	-18.9	.34	1.46	-0.05	-0.12	1.67	.19	67.18
13	5.4	-36.4	.2	-16.4	.20	1.25	.02	-0.05	1.54	.10	-70.97
14	5.3	-52.7	.5	-13.8	.16	.76	-0.02	-0.02	1.43	.08	55.60
15	4.6	-69.6	.8	-11.3	.15	.42	-0.01	.01	1.33	.05	-43.31
16	3.6	-85.5	1.4	-8.8	.12	.33	.00	.02	1.25	.11	83.97
17	2.4	-99.3	1.6	-6.5	.09	.27	-0.04	.01	1.18	.24	-13.22
18	1.1	-109.3	1.6	-4.4	.07	.20	-0.04	.01	1.11	.35	-13.95
19	-0.1	-114.2	1.0	-2.3	.04	.13	-0.02	.00	1.05	.22	-5.36
20	-1.1	-113.6	-0.1	-0.3	.04	.10	-0.01	-0.01	1.00	.23	32.01
21	-1.6	-108.0	-1.6	1.3	.04	.09	-0.01	-0.00	.95	.09	6.88
22	-1.5	-99.1	-3.3	2.8	.04	.07	-0.00	.00	.91	.11	-49.69
23	-1.0	-88.9	-4.7	4.1	.03	.08	-0.00	.00	.87	.09	-5.08
24	-0.3	-79.5	-5.8	5.1	.02	.08	-0.00	-0.00	.83	.05	20.17
25	.4	-72.2	-6.2	6.0	.02	.06	-0.00	-0.00	.80	.06	.84
26	1.1	-67.2	-6.1	7.0	.03	.06	-0.00	-0.00	.77	.13	82.98
27	1.5	-64.1	-5.5	8.0	.02	.06	.00	-0.01	.74	.26	-74.40
28	1.5	-61.8	-4.5	9.4	.02	.05	.00	-0.01	.71	.34	-64.65
29	1.3	-59.3	-3.3	10.9	.02	.05	.01	-0.01	.69	.35	-59.01
30	1.1	-55.5	-2.1	12.5	.02	.05	.01	-0.01	.67	.28	-45.54
31	.9	-49.8	-1.3	14.0	.02	.03	.00	.00	.65	.20	12.10
32	.8	-41.2	-1.0	15.3	.01	.03	.00	.00	.63	.25	41.75
33	.8	-29.4	-1.2	16.1	.01	.03	.00	.00	.61	.17	35.32
34	.7	-14.8	-1.5	16.1	.01	.03	.00	-0.00	.59	.07	-55.90
35	.5	1.5	-1.7	15.3	.01	.03	.00	-0.00	.57	.17	-57.10
36	.4	18.5	-1.3	13.9	.01	.03	.00	-0.00	.56	.15	-22.08
37	.2	34.7	-0.5	12.3	.01	.03	.00	.00	.54	.05	62.06
38	.4	48.2	.5	10.8	.01	.03	-0.00	.00	.53	.17	-48.20
39	.8	57.7	1.2	9.5	.01	.02	-0.00	.00	.51	.27	-11.49
40	1.5	63.2	1.9	8.4	.01	.02	-0.00	-0.00	.50	.29	11.64
41	2.5	65.2	2.4	7.6	.01	.03	-0.00	.00	.49	.16	-6.63
42	3.5	64.6	2.9	7.0	.01	.03	.00	.00	.48	.15	22.43
43	4.3	62.3	3.1	6.4	.01	.03	.01	.00	.47	.33	3.10
44	4.7	59.2	3.4	5.8	.01	.03	.00	.00	.45	.23	7.78
45	4.7	56.7	3.6	5.2	.01	.03	-0.00	.00	.44	.11	-39.21
46	4.3	54.8	3.9	4.5	.01	.03	-0.00	.00	.43	.30	-13.62
47	3.6	53.4	4.1	3.4	.01	.04	-0.00	.00	.43	.10	-11.88
48	3.0	52.7	4.4	2.1	.01	.04	.00	-0.00	.42	.17	-7.25
49	2.4	52.0	4.6	.3	.01	.04	.01	-0.00	.41	.32	-4.46
50	2.1	50.9	4.8	-1.6	.01	.02	.01	-0.00	.40	.38	-0.00

CORRELATION COEFFICIENT -0.061

I/O ERR P6, LIN 60

Auto-Spectra of Wave Meter Data

Following are plots of the auto-covariance spectra of the wave velocity components measured with the wave meter systems. Curves are presented for series 001-124 - BBELS-5 through BBELS-16. (Series 017 and 070 are not listed.) On each plot the pertinent information is given for the particular measurement. The statistical nomenclature is defined as follows:

N = The number of interpolated data points.

ΔT = The time interval spacing (sec) of the interpolated data; $N\Delta T$ = the length of the record.

m = Number of time lags for computation of auto-covariance (and covariance function) and hence the divisions on the frequency scale. The frequency resolution is $100\ (2\ m\Delta T)^{-1}$ in millicycles per second.

DF = The degrees of freedom calculated by the equation approximately equal to $\frac{2N}{m}$. By use of curves in figure III-3, the given value can be determined for an 80% confidence limit band (assuming the spectral data are approximately Gaussian distributed).

σ_X^2 = The variance of the velocity component X ($cm^2\ sec^{-2}$).

$\bar{X}$ = The mean value of the quantity X ($cm\ sec^{-1}$) over the sampling period N.

$\overline{u'w'}$ = The covariance of u' and w' at zero lag in $cm^2\ sec^{-2}$ (given for measurements of u and w only).

r = The correlation coefficient in the case of OMDUM measurements of u and w.

$$r(u,w) = \frac{\overline{u'w'}}{\sqrt{\sigma_u^2 \sigma_w^2}}$$

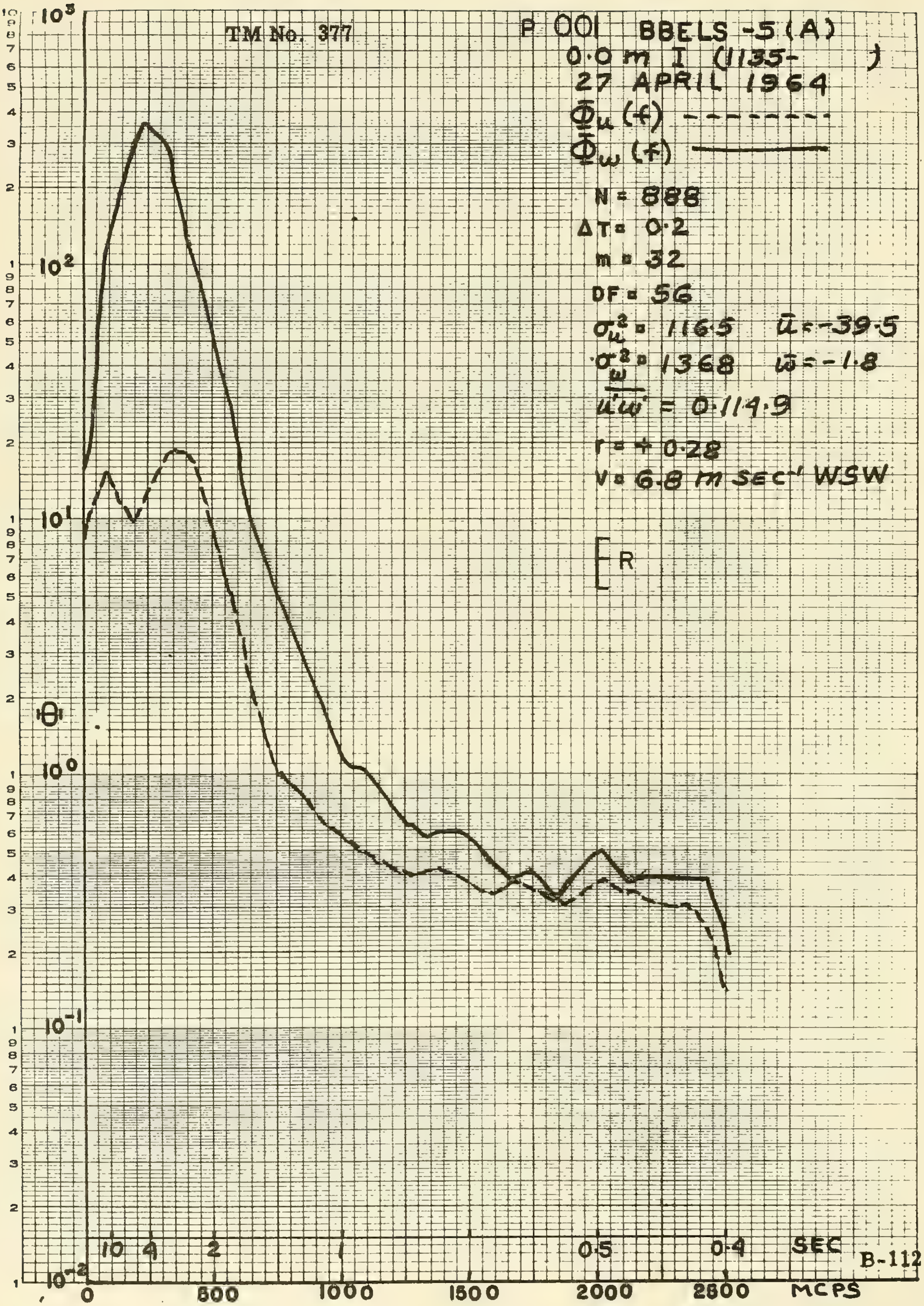
In the case of LIMDUM measurements giving pairs of u_1 and u_2 (or w_1 and w_2):

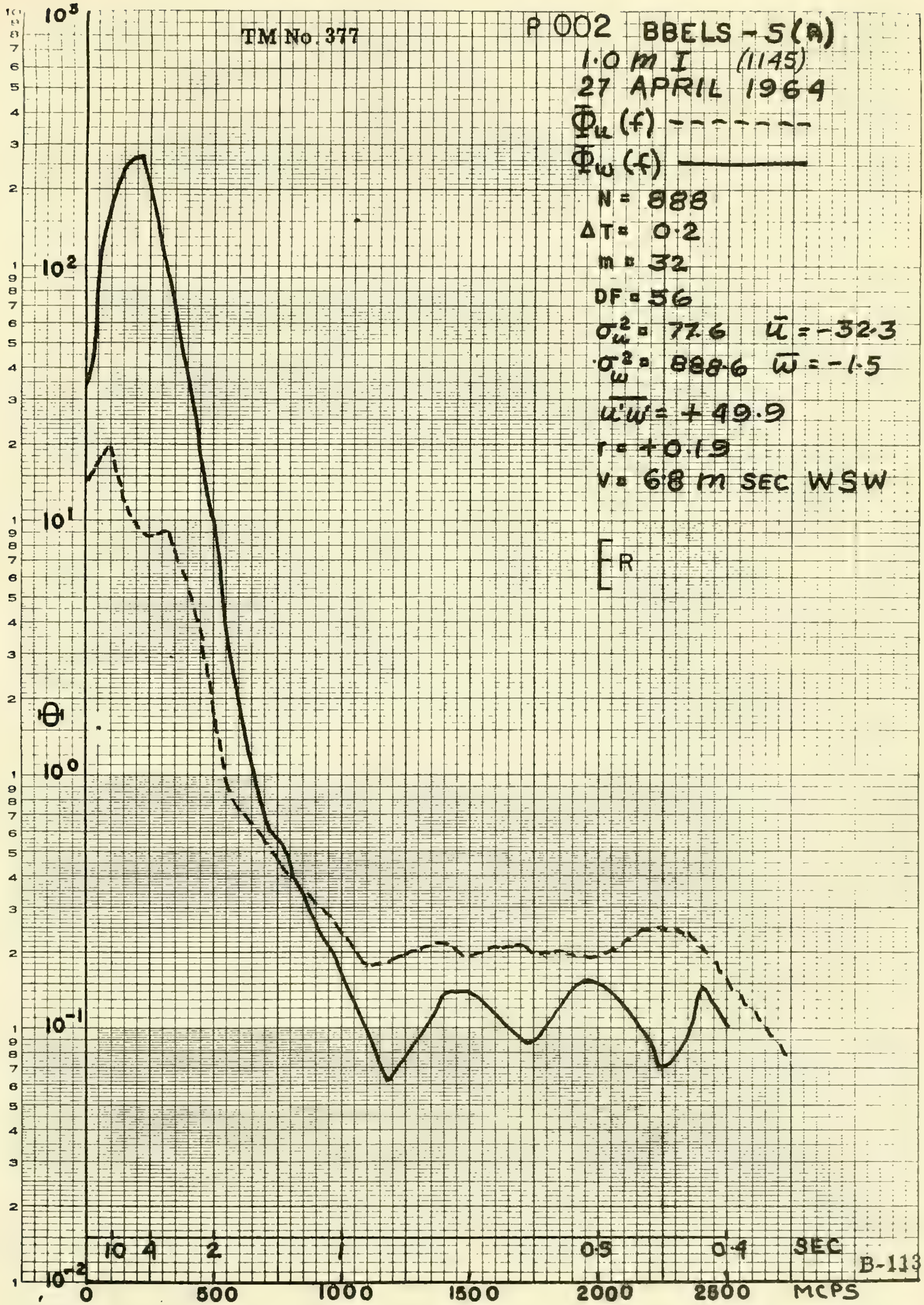
$$r(u_1 u_2) = \frac{\overline{u_1' u_2'}}{\sqrt{\sigma_{u_1}^2 \sigma_{u_2}^2}}$$ and similarly for w_1 and w_2.

V = The estimated wind speed ($m\ sec^{-1}$) at the time of measurement.

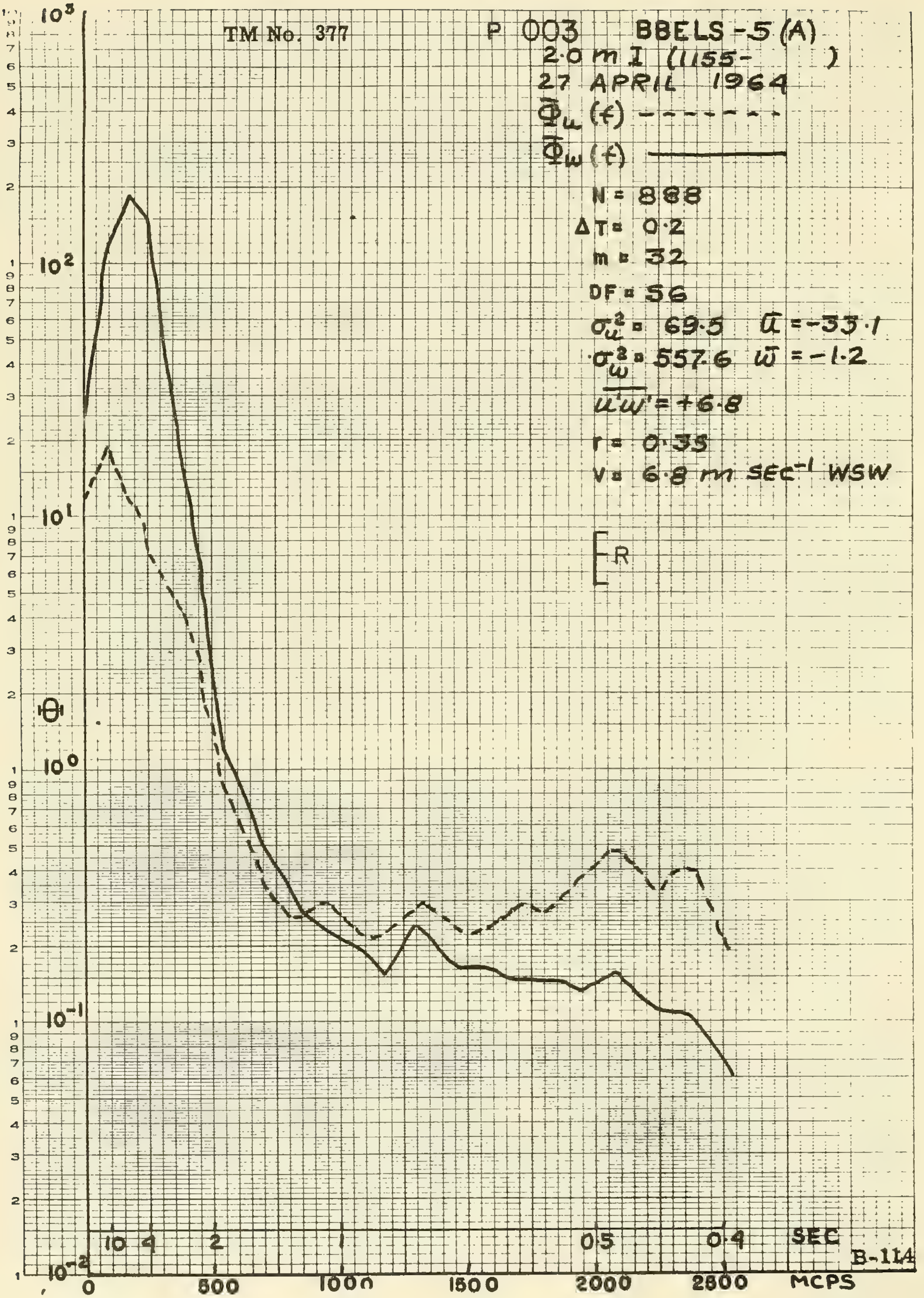
[R = The vertical extension of the 80% confidence range when the middle cross bar is centered on the spectrum point.

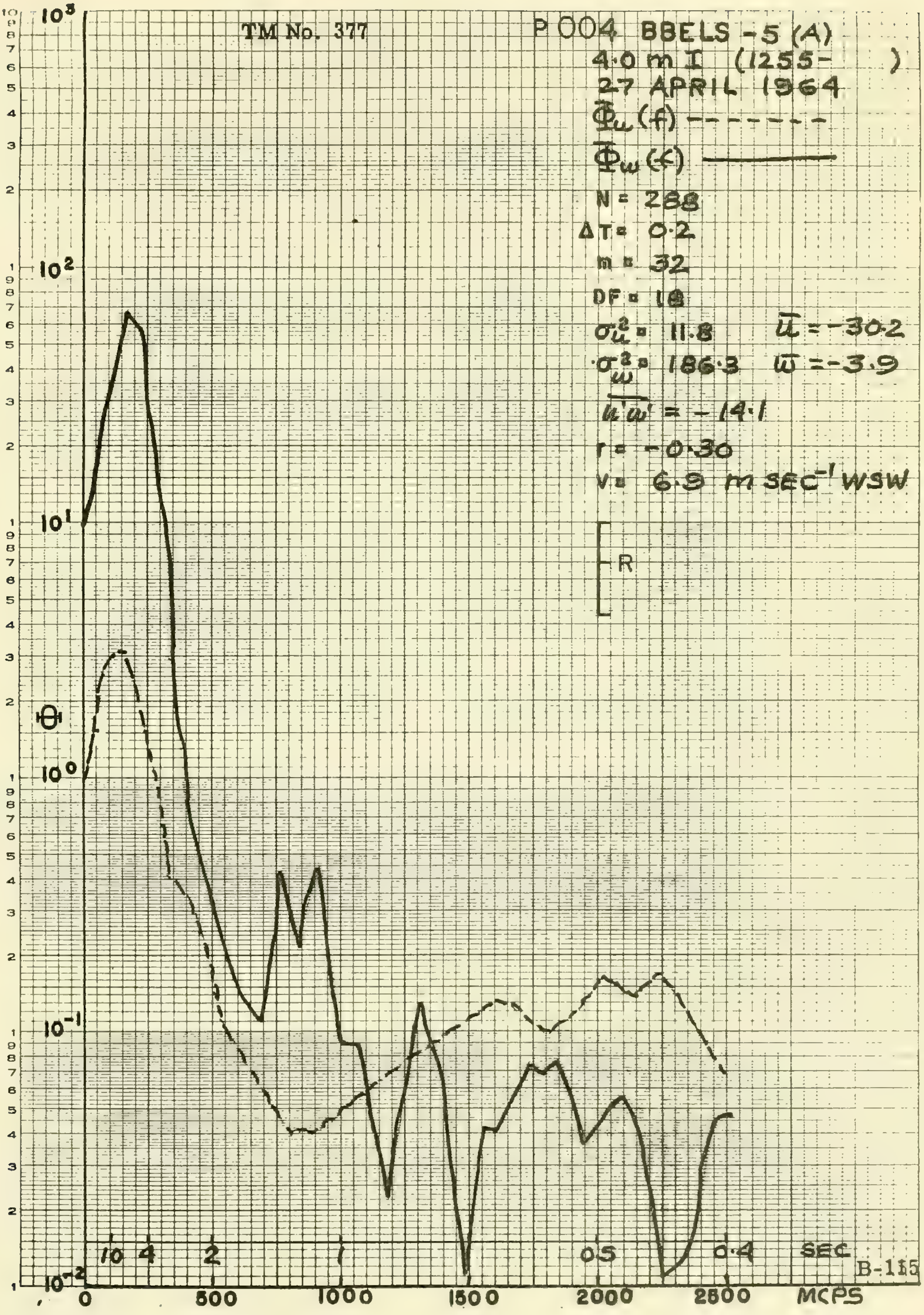
Note: In series 120 through 124 the angle θ appears, indicating the azimuth of the u meter with respect to the direction of propagation of the wind waves.


TM No. 377
P 001 BBELS -5 (A)
0·0 m I (1135-)
27 APRIL 1964
Φu (f) --------
Φw (f) ———
N = 888
ΔT = 0·2
m = 32
DF = 56
σu² = 116·5 ū = -39·5
σw² = 1368 w̄ = -1·8
u'w' = 0·114·9
r = + 0·28
V = 6·8 m sec⁻¹ WSW
R
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 1 0·5 0·4 SEC
0 500 1000 1500 2000 2500 MCPS
B-112



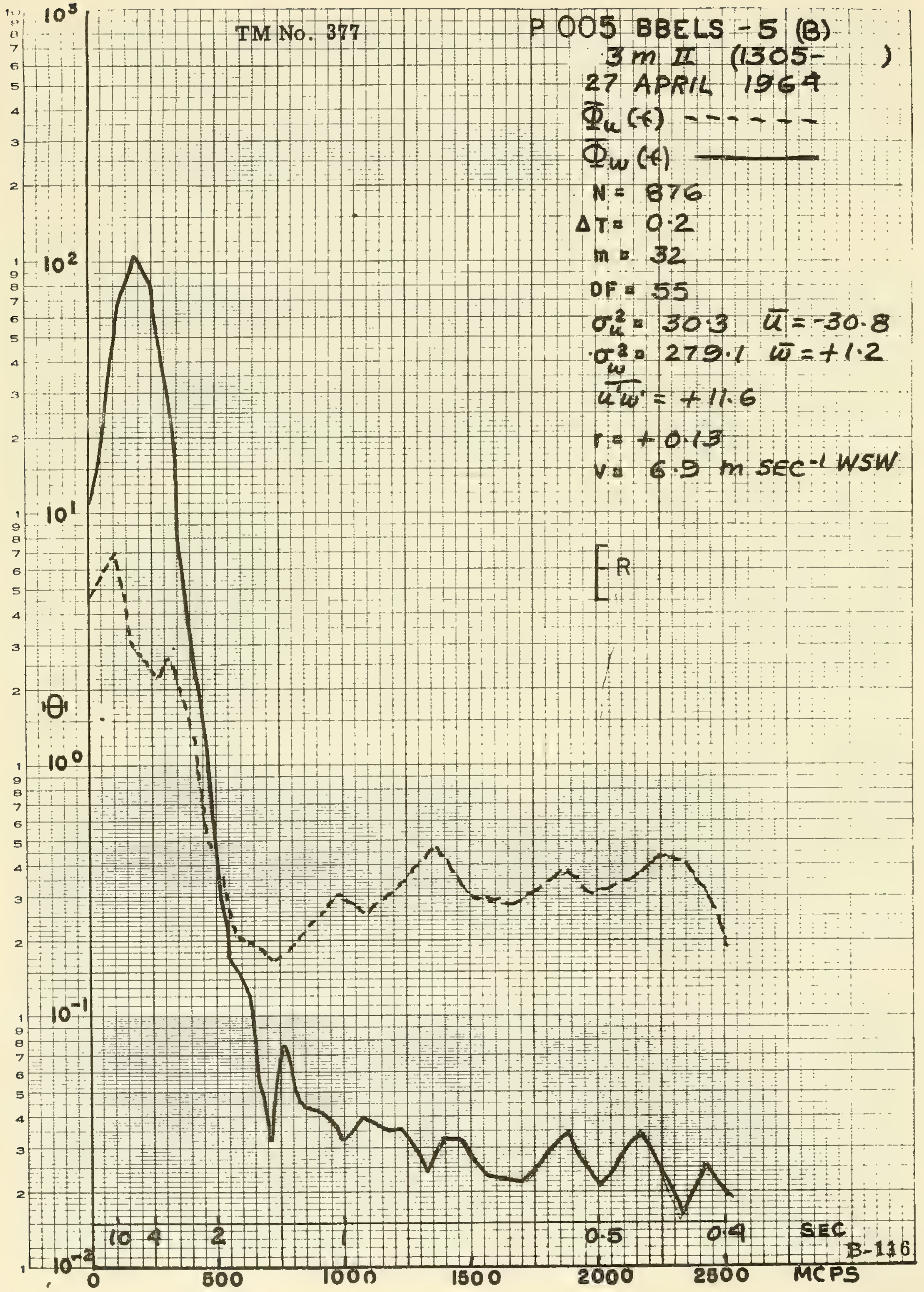
TM No. 377
P 002 BBELS - 5(A)
1.0 m I (1145)
27 APRIL 1964
Φu (f) - - - - - - -
Φw (f) ———
N = 888
ΔT = 0.2
m = 32
DF = 56
σu² = 77.6 ū = -32.3
σw² = 888.6 w̄ = -1.5
u'w' = +49.9
r = +0.19
V = 6.8 m SEC WSW
R
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-113
5 CYCLES X 10 DIVISIONS PER INCH
MADE IN U.S.A.

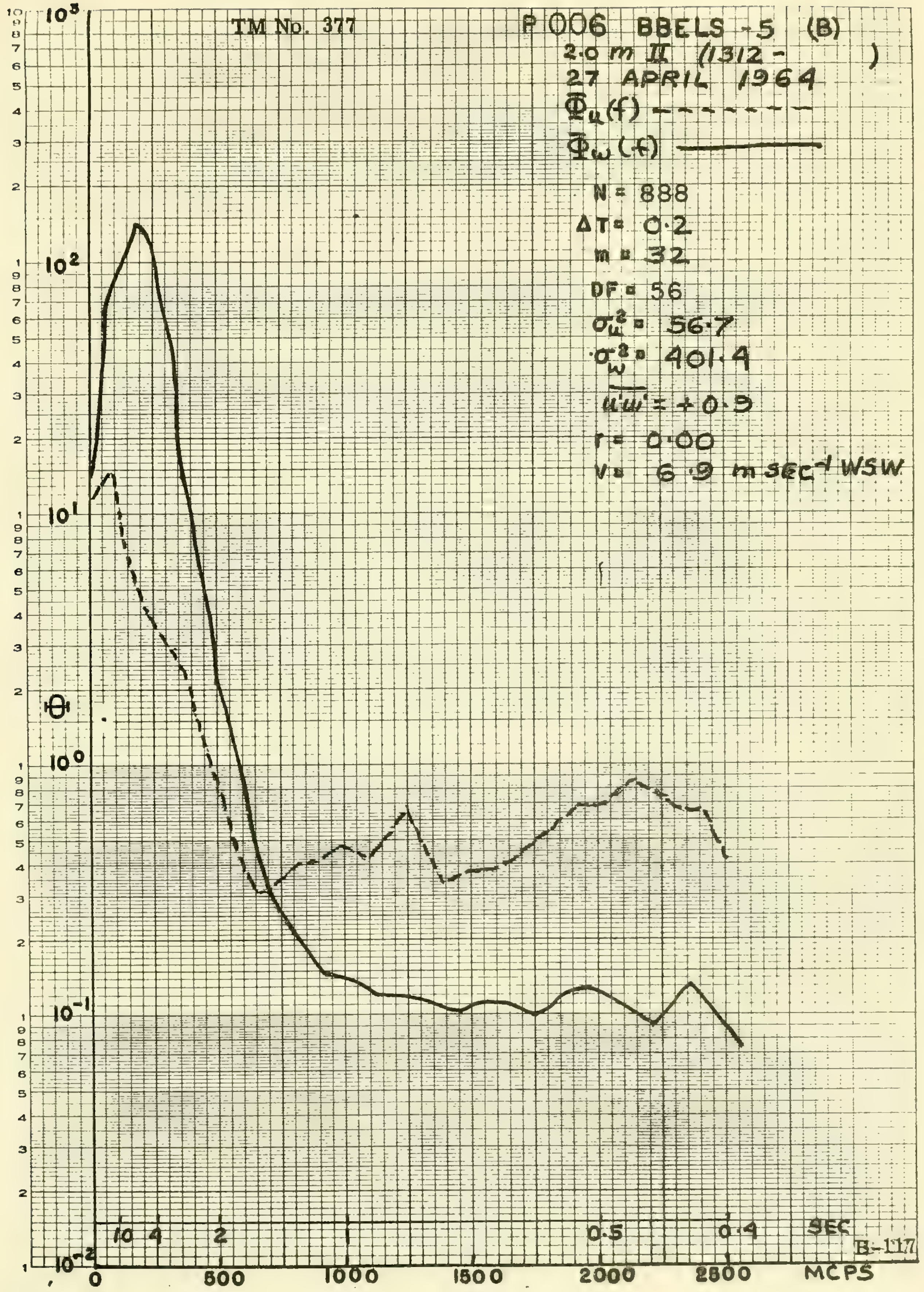

TM No. 377
P 003 BBELS - 5 (A)
2.0 m I (1155-)
27 APRIL 1964
$\bar{\Phi}_u(f)$ - - - - - - -
$\bar{\Phi}_w(f)$ ———
N = 888
ΔT = 0.2
m = 32
DF = 56
σ_u^2 = 69.5 $\bar{u}$ = -33.1
σ_w^2 = 557.6 $\bar{w}$ = -1.2
$\overline{u'w'}$ = +6.8
r = 0.35
V = 6.8 m sec^{-1} WSW
R
Φ
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-114



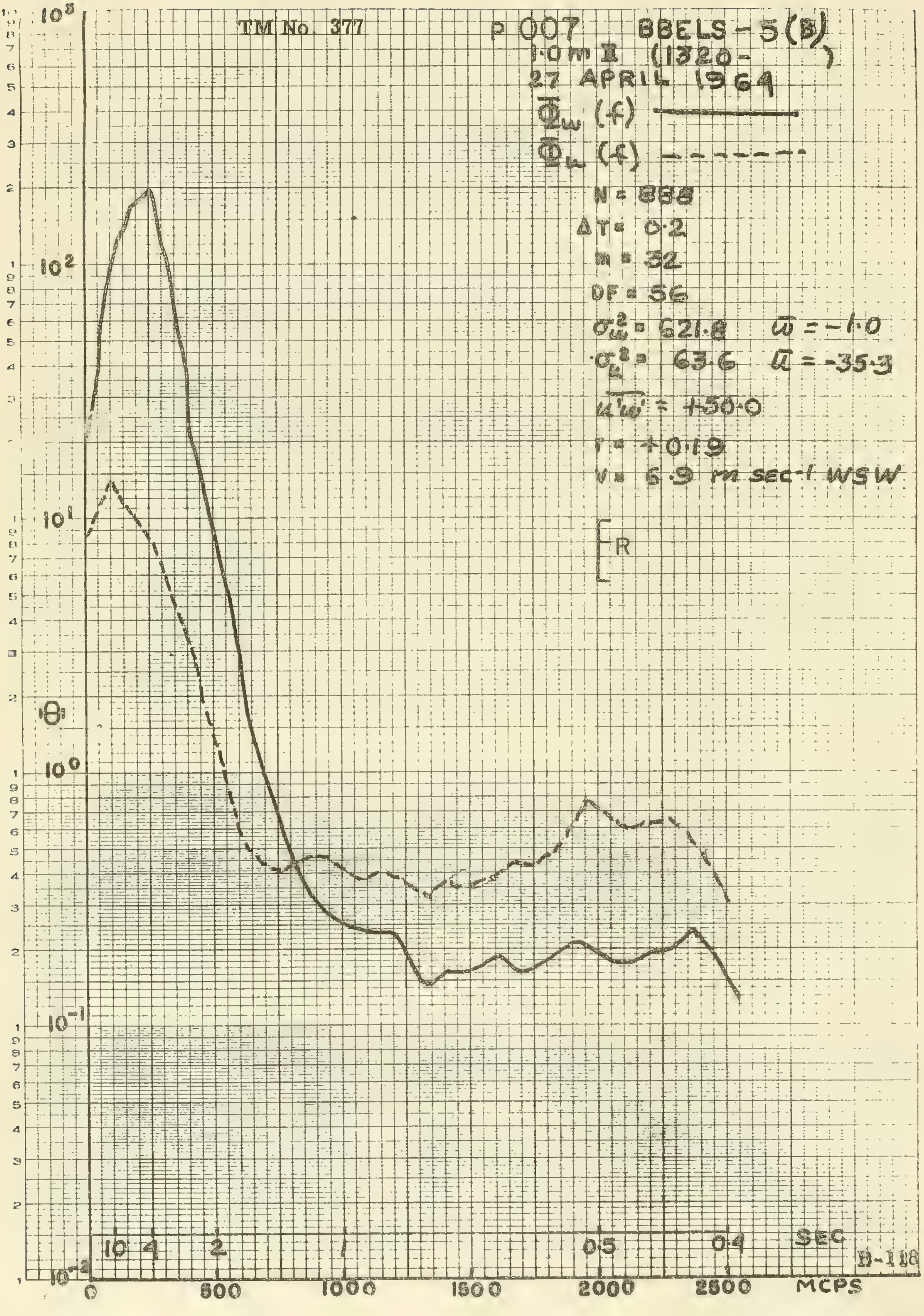
TM No. 377
P 004 BBELS -5 (A)
4·0 m I (1255-)
27 APRIL 1964
Φu(f) ------
Φw(f) ——
N = 288
ΔT = 0·2
m = 32
DF = 18
σ²u = 11·8 ū = -30·2
σ²w = 186·3 w̄ = -3·9
u'w' = -14·1
r = -0·30
V = 6·9 m SEC⁻¹ WSW
R
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 1 0·5 0·4 SEC
0 500 1000 1500 2000 2500 MCPS
5 CYCLES X 10 DIVISIONS PER INCH
MADE IN U. S. A.

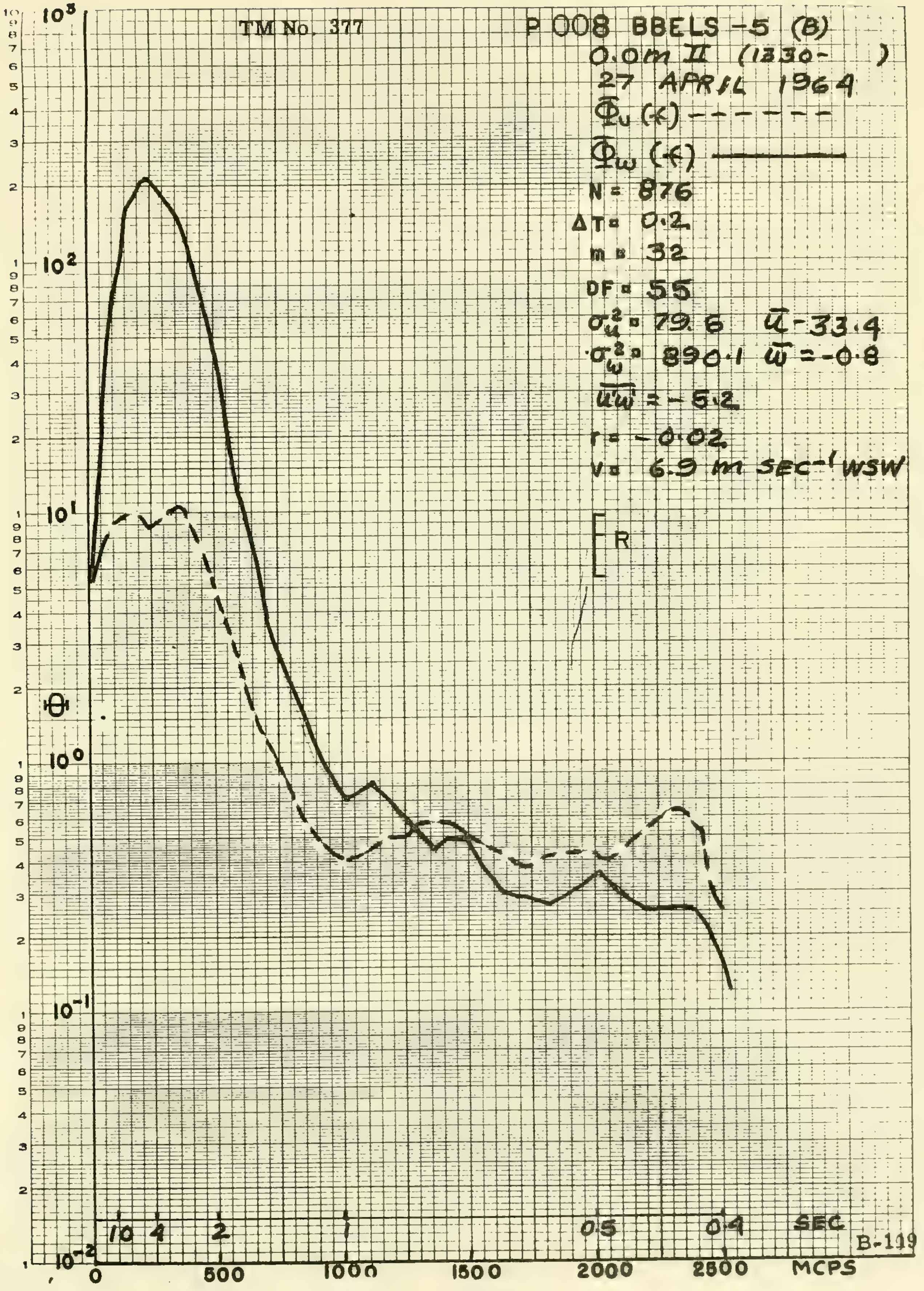
B-115

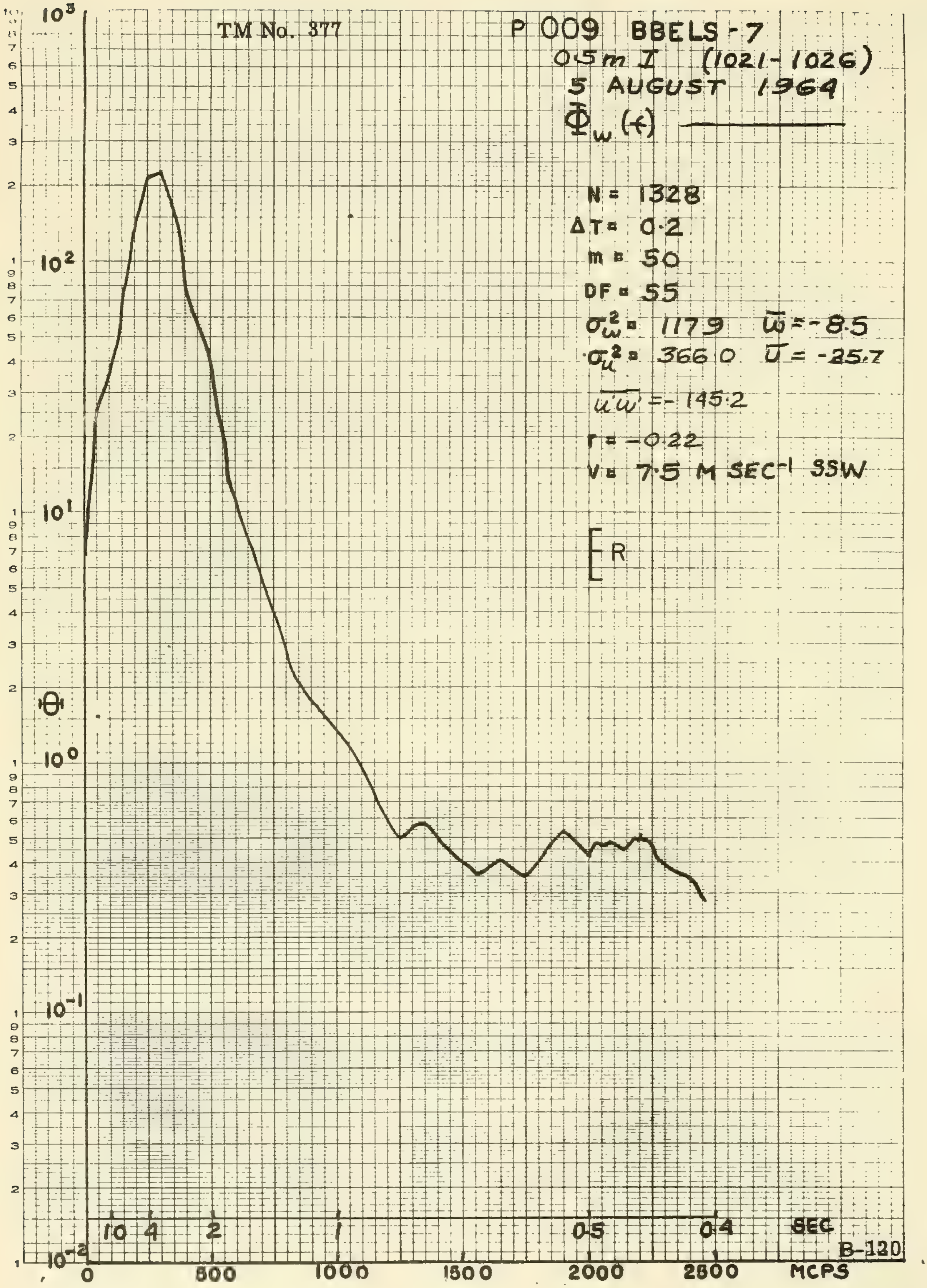

TM No. 377
P 005 BBELS - 5 (B)
3 m II (1305-)
27 APRIL 1964
Φu (f) - - - - - - -
Φw (f) ———
N = 876
ΔT = 0·2
m = 32
DF = 55
σu² = 30·3 ū = -30·8
σw² = 279·1 w̄ = +1·2
u'w' = +11·6
r = +0·13
V = 6·9 m SEC⁻¹ WSW
R
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 1 0·5 0·4 SEC
0 500 1000 1500 2000 2500 MCPS
B-116



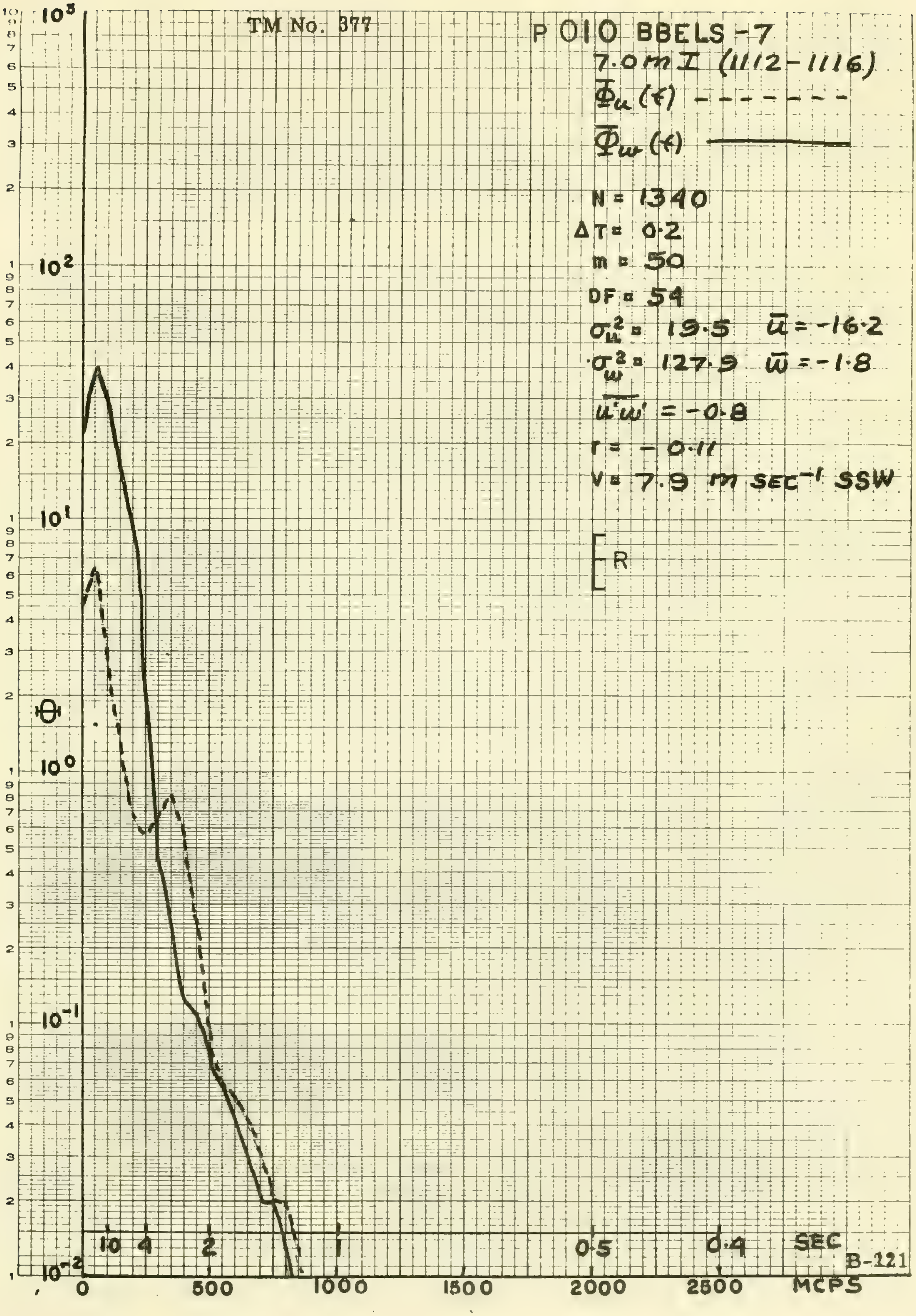
TM No. 377
P 006 BBELS -5 (B)
2.0 m II (1312 -)
27 APRIL 1964
$\Phi_u(f)$ - - - - - - -
$\Phi_w(f)$ ———
N = 888
ΔT = 0.2
m = 32
DF = 56
σ_u^2 = 56.7
σ_w^2 = 401.4
$\overline{u'w'}$ = +0.9
r = 0.00
V = 6.9 m sec⁻¹ WSW
Φ
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
5 CYCLES X 10 DIVISIONS PER INCH
MADE IN U.S.A.

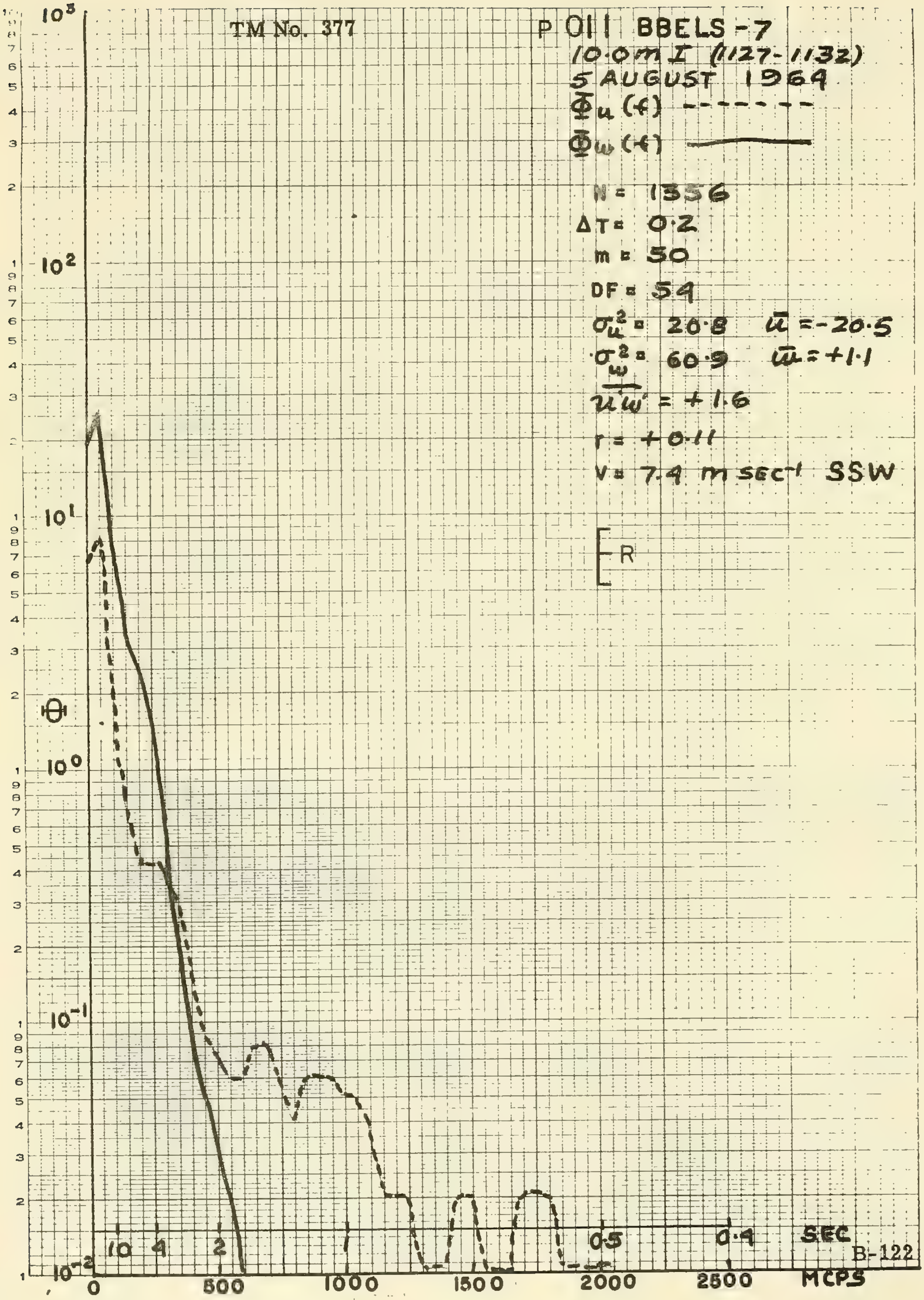

TM No. 377
P 007 BBELS - 5 (B)
1·0 m II (1320-)
27 APRIL 1964
Φw (f)
Φu (f)
N = 888
ΔT = 0·2
m = 32
DF = 56
σw² = 621·8 w̄ = -1·0
σu² = 63·6 ū = -35·3
u'w' = +50·0
r = +0·19
V = 6·9 m sec-1 WSW
R
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 1 0·5 0·4 SEC
0 500 1000 1500 2000 2500 MCPS
B-118

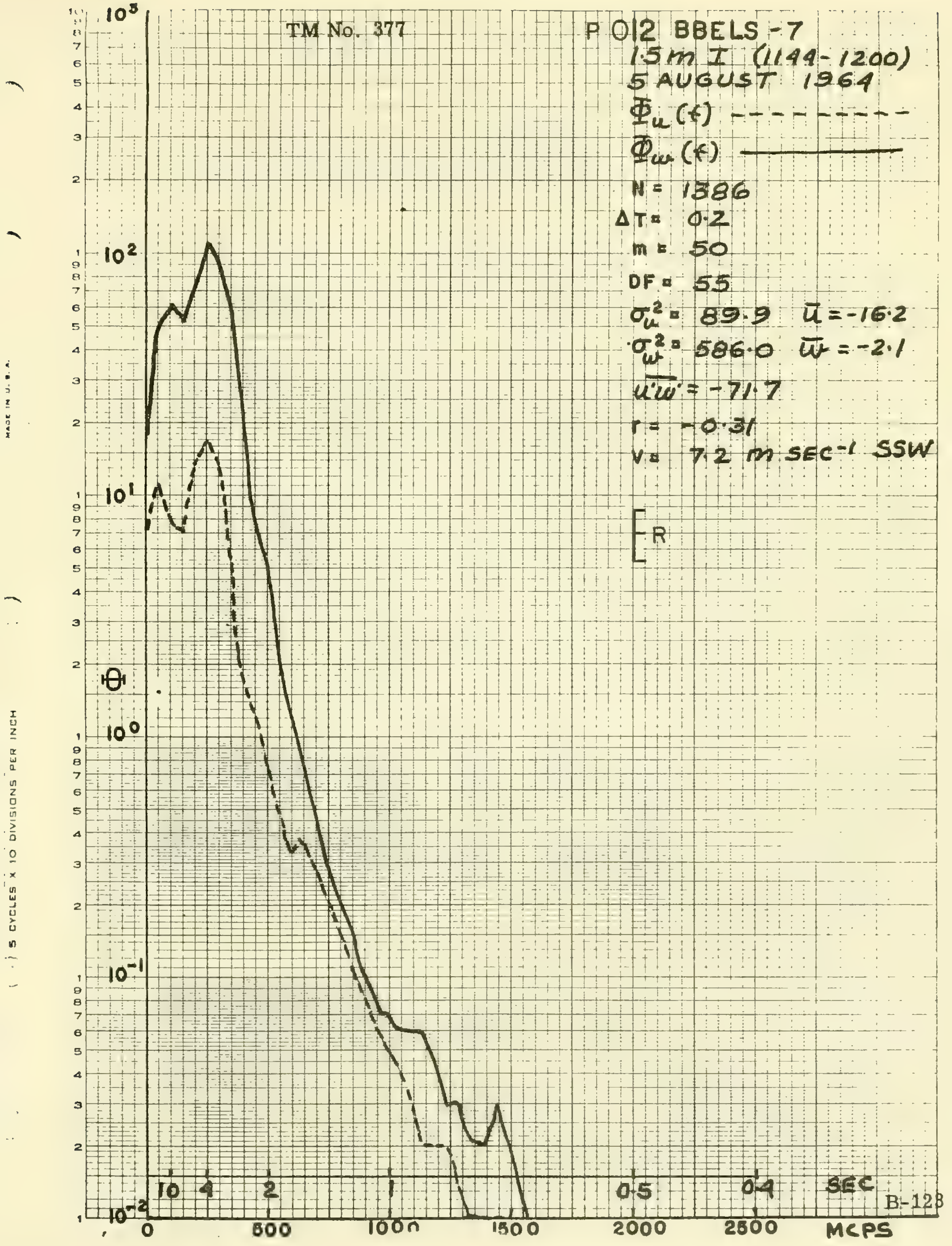

TM No. 377
P 008 BBELS -5 (B)
0.0m II (1330-)
27 APRIL 1964
Φu (f) - - - - - - -
Φw (f) ————
N = 876
ΔT = 0.2
m = 32
DF = 55
σu² = 79.6 ū -33.4
σw² = 890.1 w̄ = -0.8
uw = -5.2
r = -0.02
V = 6.9 m sec⁻¹ WSW
R
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-119
5 CYCLES x 10 DIVISIONS PER INCH
MADE IN U.S.A.



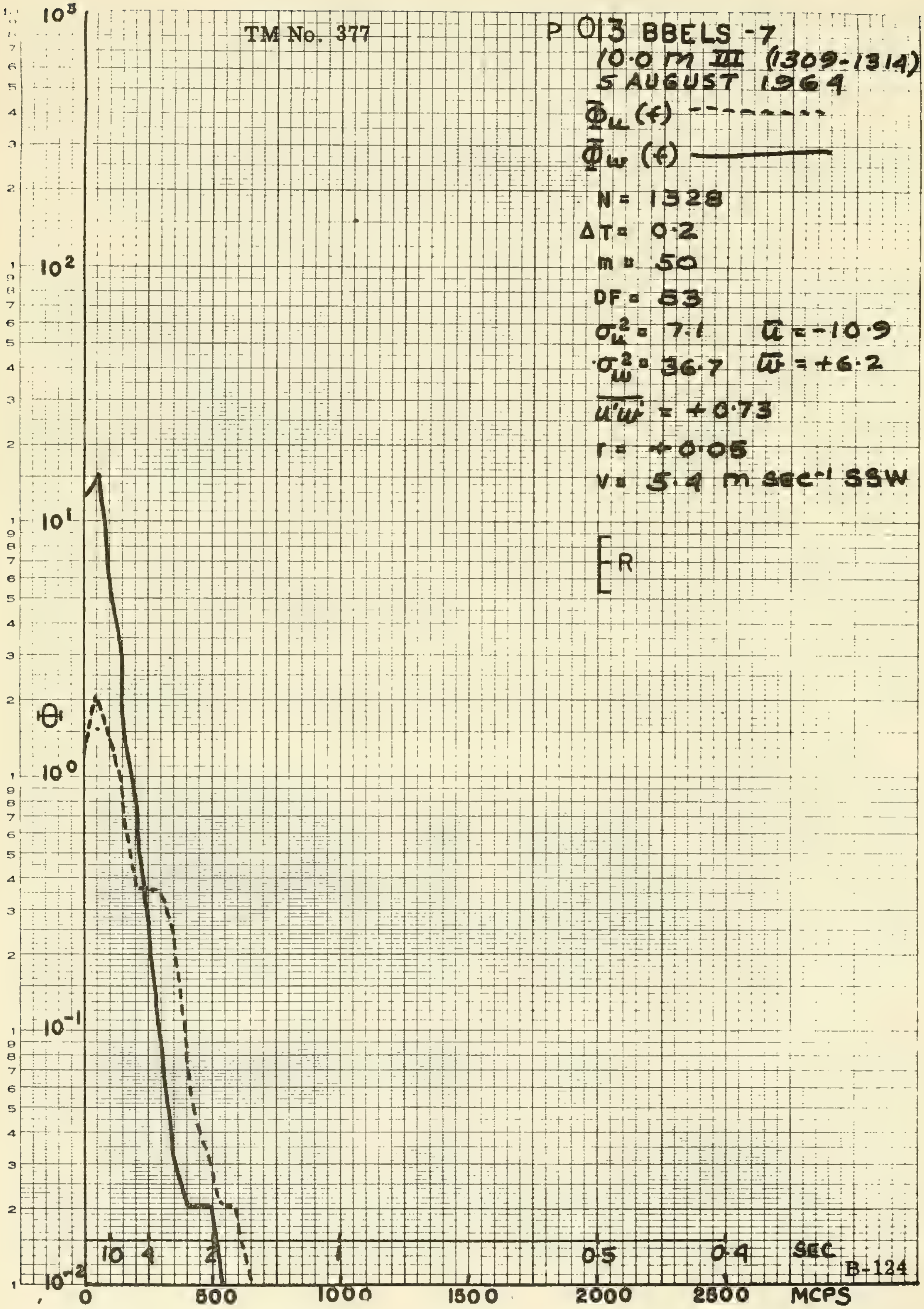
TM No. 377
P 009 BBELS - 7
0.5 m I (1021 - 1026)
5 AUGUST 1964
Φ_w (f)
N = 1328
ΔT = 0.2
m = 50
DF = 55
σ_w² = 117.9 w̄ = -8.5
σ_u² = 366.0 Ū = -25.7
u'w' = -145.2
r = -0.22
V = 7.5 M SEC⁻¹ SSW
R
Θ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-120

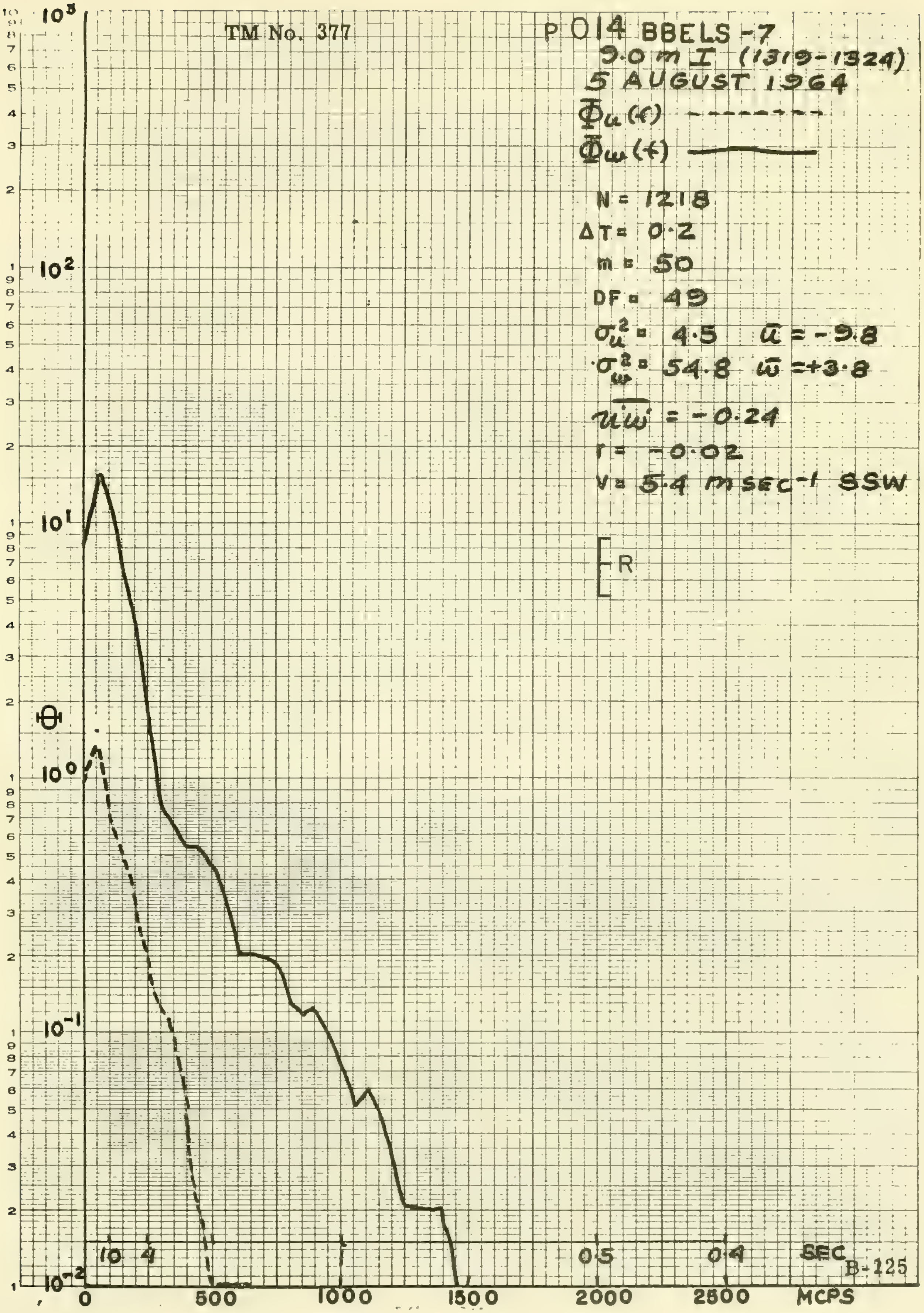

P O10 BBELS - 7
7.0 m I (1112-1116)
$\overline{\Phi}_u(f)$ - - - - - - -
$\overline{\Phi}_w(f)$ ———
N = 1340
ΔT = 0.2
m = 50
DF = 54
σ_u^2 = 19.5 $\bar{u}$ = -16.2
σ_w^2 = 127.9 $\bar{w}$ = -1.8
$\overline{u'w'}$ = -0.8
r = -0.11
V = 7.9 m sec^{-1} SSW
R
Φ
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS


P 011 BBELS - 7
10.0 m I (1127-1132)
5 AUGUST 1964
Φu (f) - - - - - - -
Φw (f) ————
N = 1356
ΔT = 0.2
m = 50
DF = 54
σu² = 20.8   ū = -20.5
σw² = 60.9   w̄ = +1.1
u'w' = +1.6
r = +0.11
V = 7.4 m sec⁻¹ SSW
R
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10
4
2
0.5
0.4
SEC
0
500
1000
1500
2000
2500
MCPS



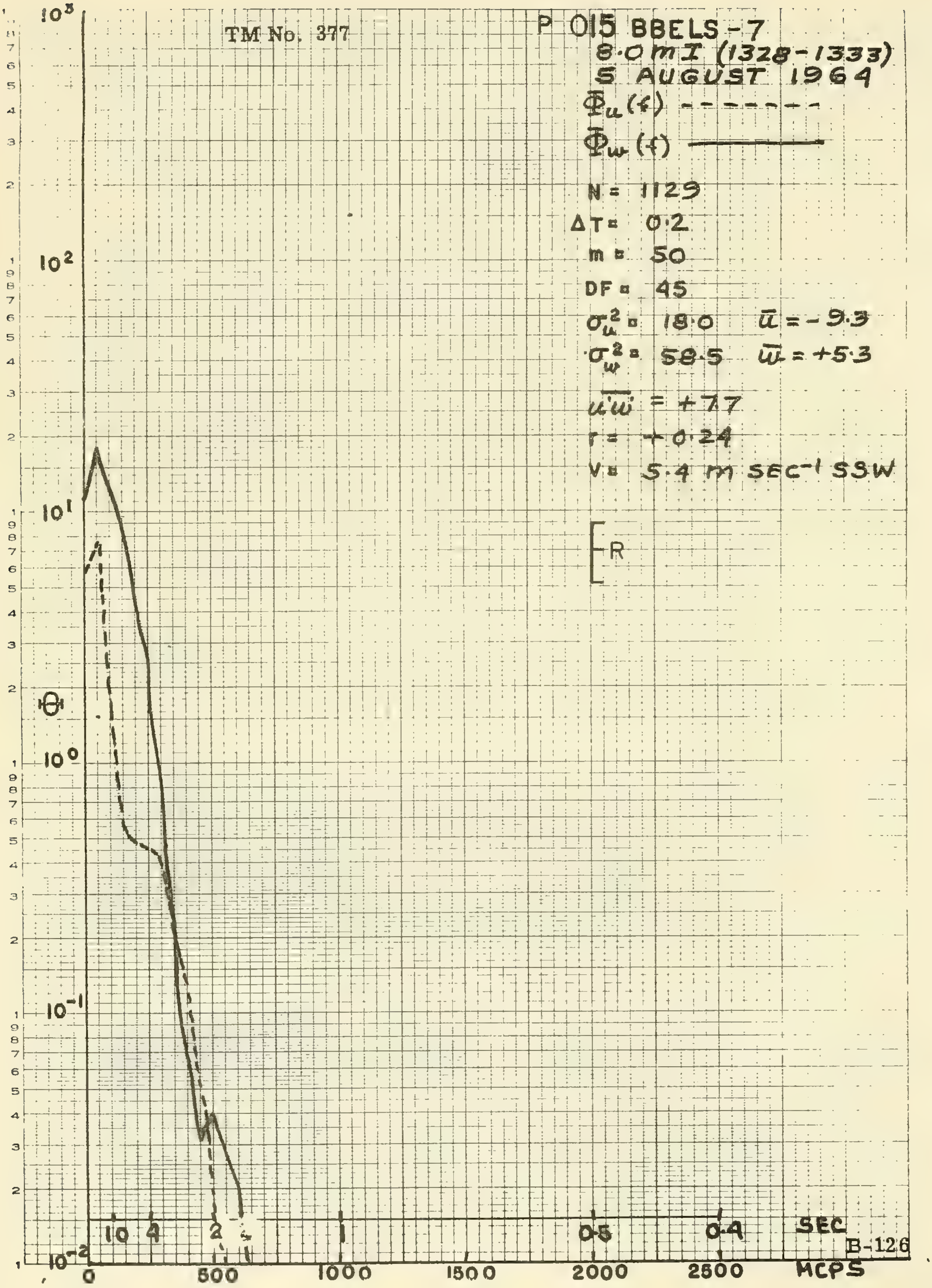
TM No. 377
P 012 BBELS - 7
1.5 m I (1144 - 1200)
5 AUGUST 1964
Φu (f)
Φw (f)
N = 1386
ΔT = 0.2
m = 50
DF = 55
σu² = 89.9 ū = -16.2
σw² = 586.0 w̄ = -2.1
u'w' = -71.7
r = -0.31
V = 7.2 m SEC⁻¹ SSW
R
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
5 CYCLES X 10 DIVISIONS PER INCH
MADE IN U.S.A.


TM No. 377
P 013 BBELS -7
10.0 m III (1309-1314)
5 AUGUST 1964
$\bar{\Phi}_u(f)$ ---------
$\bar{\Phi}_w(f)$ ———
N = 1328
ΔT = 0.2
m = 50
DF = 53
σ_u^2 = 7.1 $\bar{u}$ = -10.9
σ_w^2 = 36.7 $\bar{w}$ = +6.2
$\overline{u'w'}$ = +0.73
r = +0.05
V = 5.4 m sec⁻¹ SSW
R
Φ
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-124



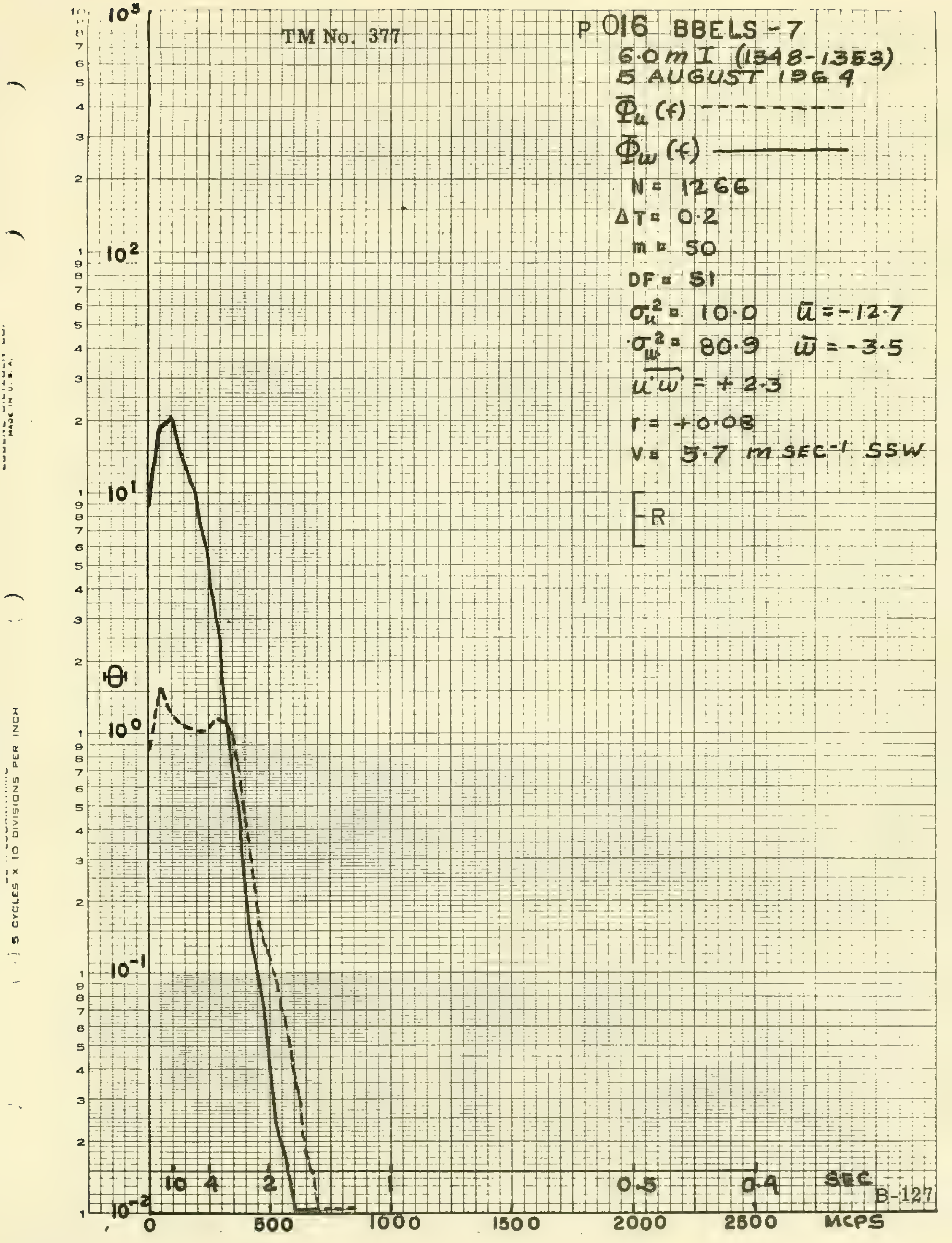
TM No. 377
P 014 BBELS -7
9.0 m I (1319-1324)
5 AUGUST 1964
Φu(f) ---------
Φw(f) ———
N = 1218
ΔT = 0·2
m = 50
DF = 49
σu² = 4.5 ū = -9.8
σw² = 54.8 w̄ = +3.8
u'w' = -0.24
r = -0.02
V = 5.4 m sec⁻¹ SSW
R
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
0
500
1000
1500
2000
2500
MCPS
10 4
0.5
0.4
SEC

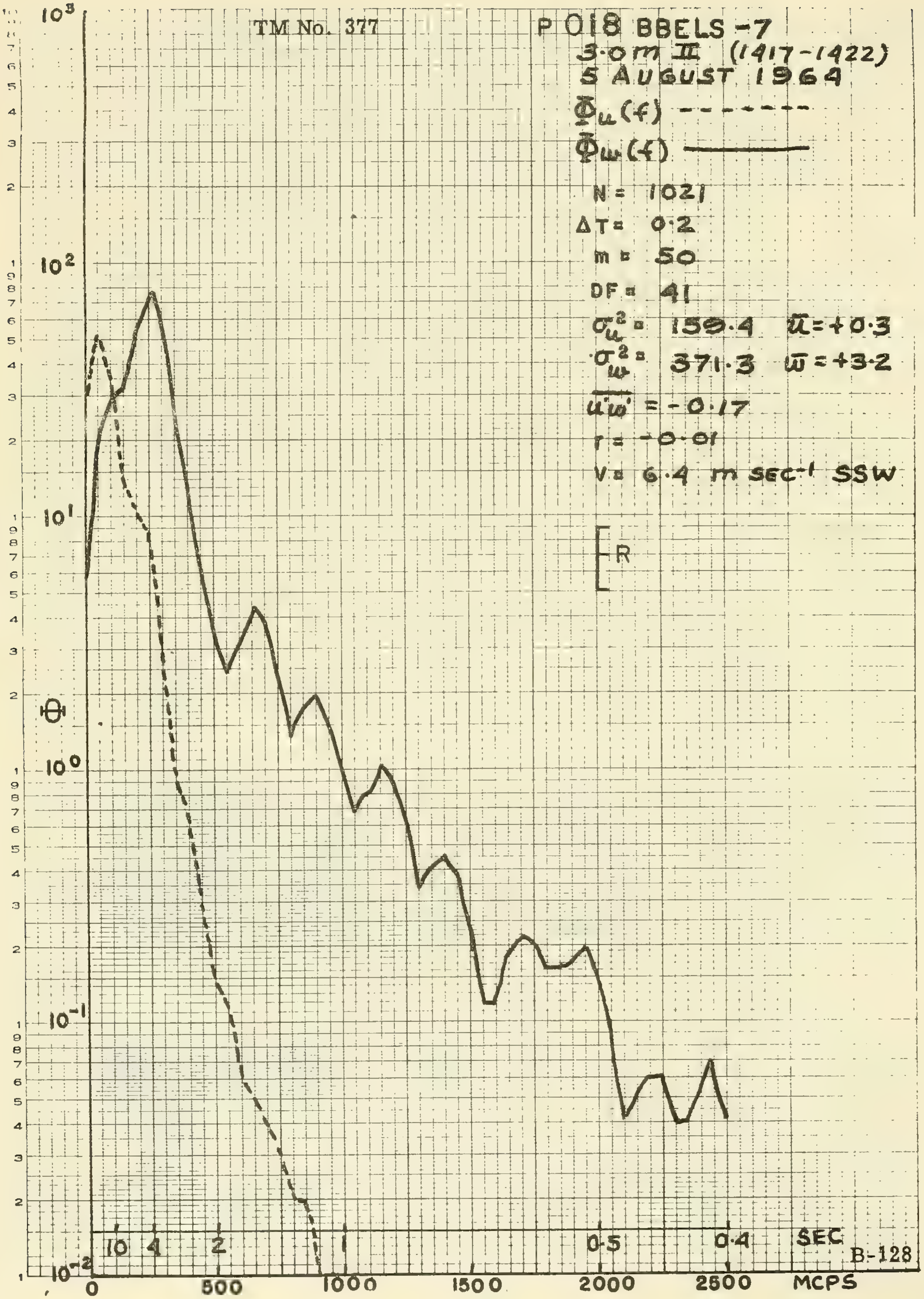
B-125



TM No. 377
P 015 BBELS-7
8.0 m I (1328-1333)
5 AUGUST 1964
Φu(f) --------
Φw(f) ———
N = 1129
ΔT = 0.2
m = 50
DF = 45
σu² = 18.0   ū = -9.3
σw² = 58.5   w̄ = +5.3
u'w' = +7.7
r = +0.24
V = 5.4 m SEC⁻¹ SSW
R
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS

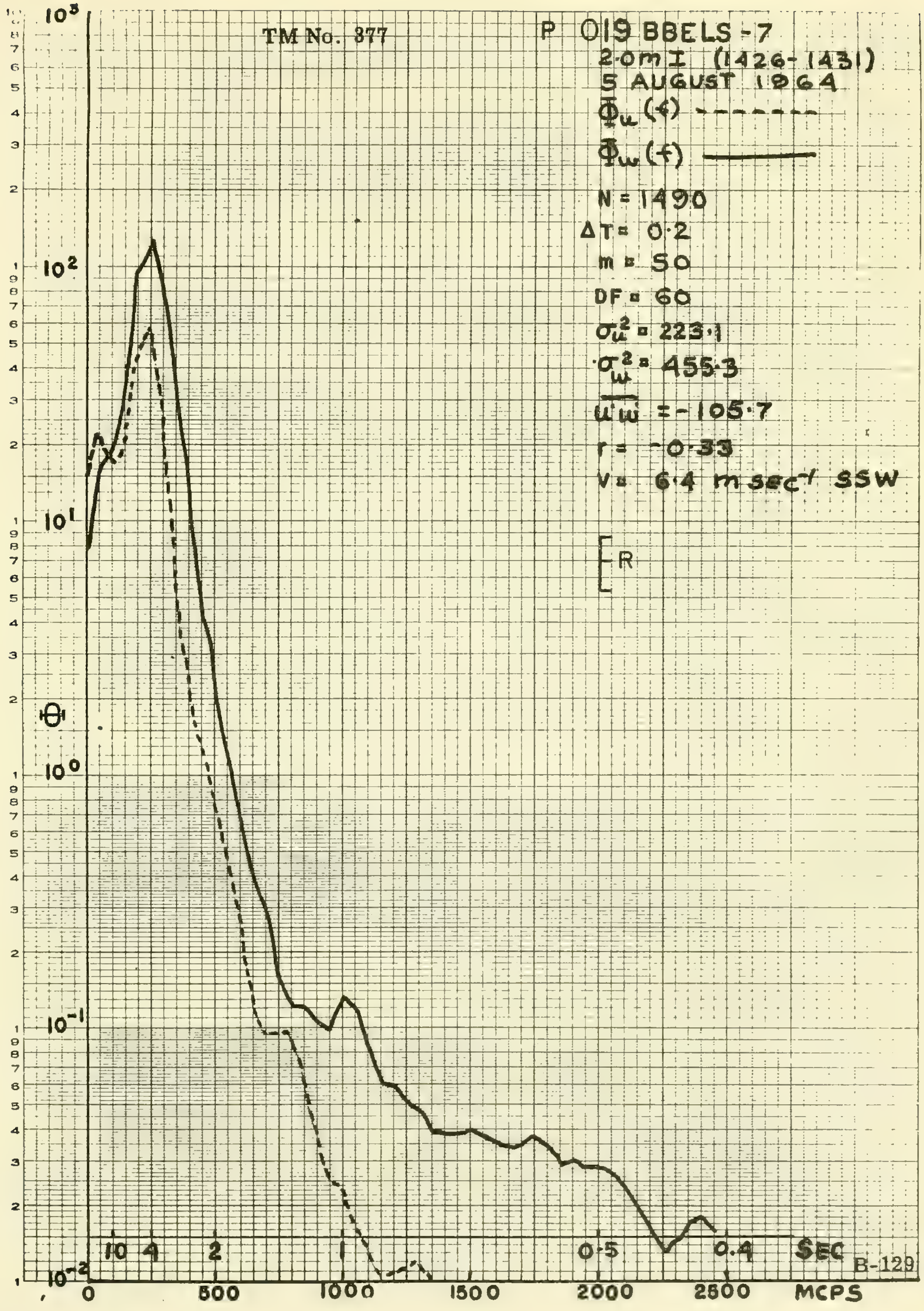
B-126

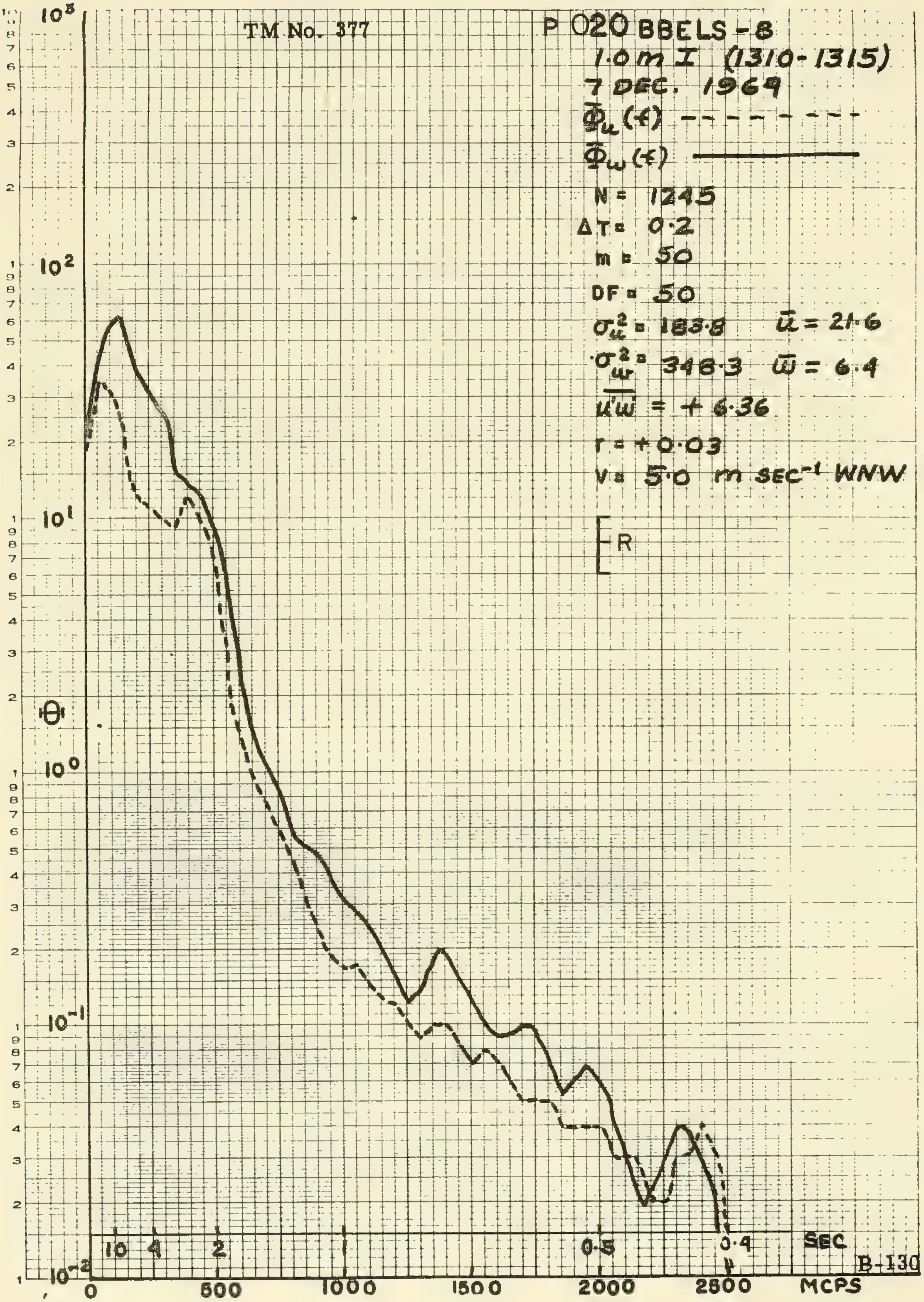

P 016 BBELS - 7
6.0 m I (1348-1353)
5 AUGUST 1964
$\bar{\Phi}_u(f)$ - - - - - - -
$\bar{\Phi}_w(f)$ ————
N = 1266
ΔT = 0.2
m = 50
DF = 51
σ_u^2 = 10.0 $\bar{u}$ = -12.7
σ_w^2 = 80.9 $\bar{w}$ = -3.5
$\overline{u'w'}$ = + 2.3
r = +0.08
V = 5.7 m sec⁻¹ SSW
R
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
5 CYCLES X 10 DIVISIONS PER INCH



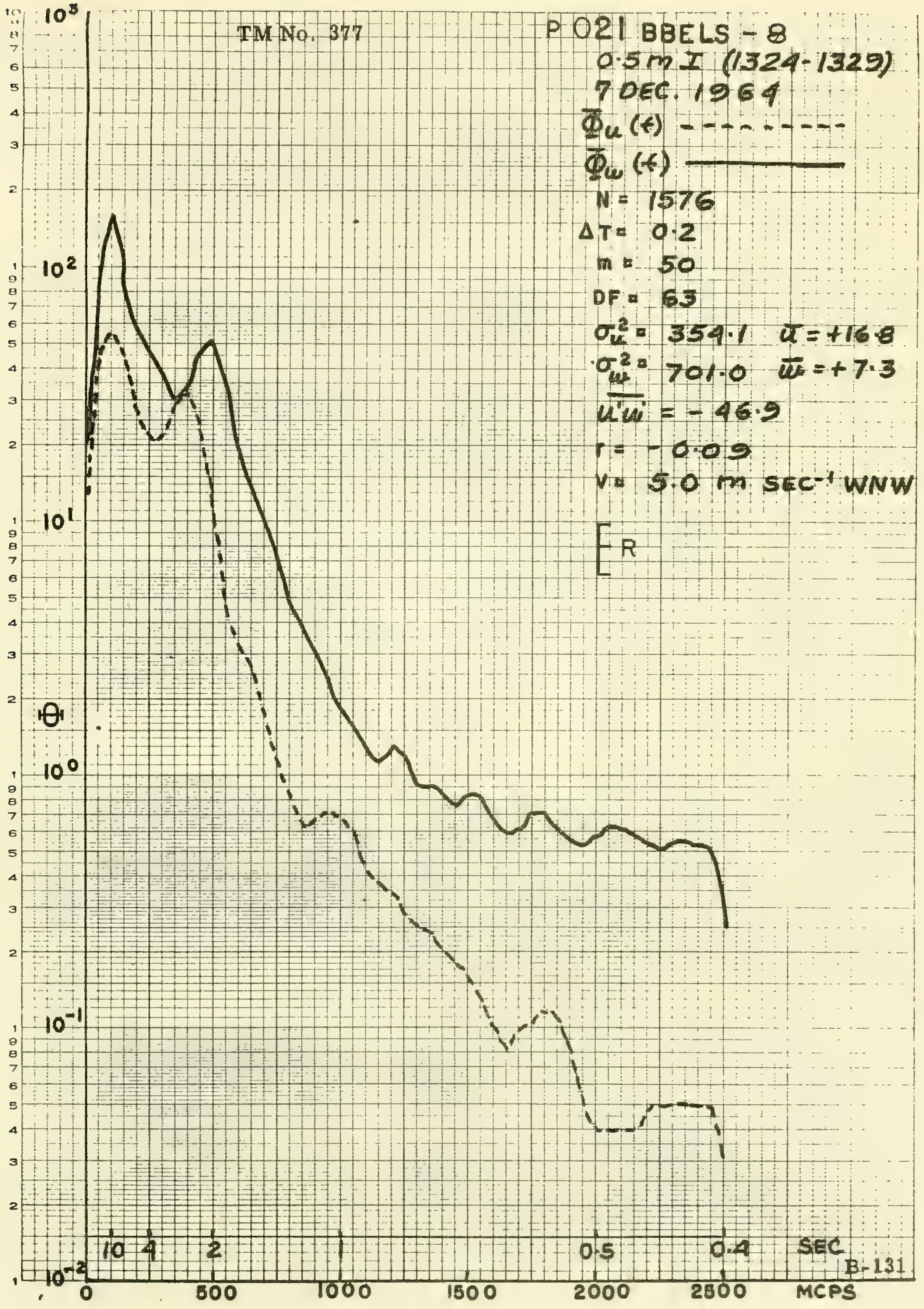
TM No. 377
P 018 BBELS -7
3·0m II (1417-1422)
5 AUGUST 1964
Φu(f) --------
Φw(f) ———
N = 1021
ΔT = 0·2
m = 50
DF = 41
σu² = 159·4 ū = +0·3
σw² = 371·3 w̄ = +3·2
u'w' = -0·17
r = -0·01
V = 6·4 m sec⁻¹ SSW
R
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 1 0·5 0·4 SEC
0 500 1000 1500 2000 2500 MCPS

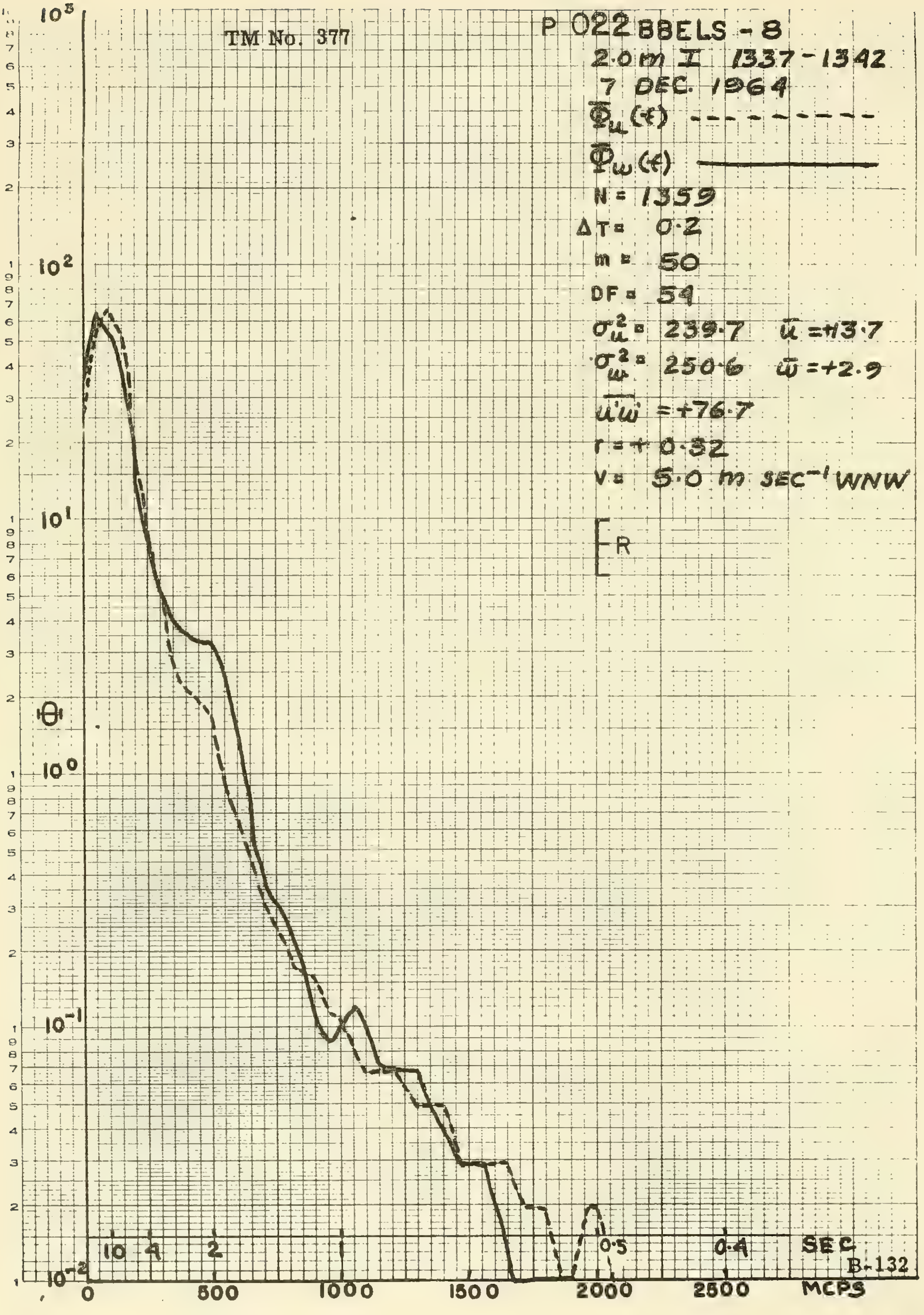
B-128

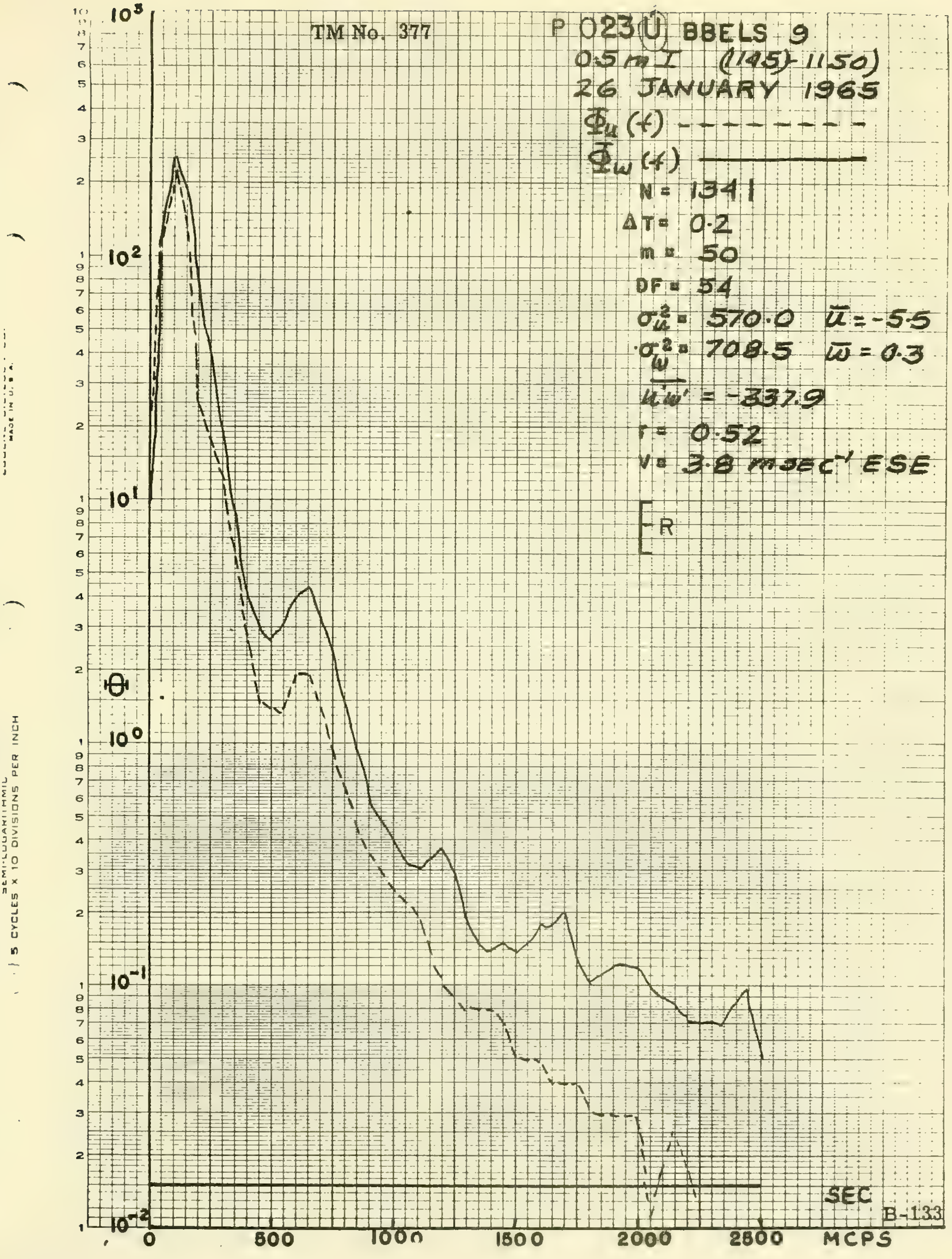

TM No. 377
P 019 BBELS -7
2.0m I (1426-1431)
5 AUGUST 1964
$\Phi_u(f)$ - - - - - -
$\Phi_w(f)$ ———
N = 1490
ΔT = 0.2
m = 50
DF = 60
σ_u^2 = 223.1
σ_w^2 = 455.3
$\overline{uw}$ = -105.7
r = -0.33
V = 6.4 m sec^{-1} SSW
R
Φ
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-129
5 CYCLES x 10 DIVISIONS PER INCH
MADE IN U.S.A.

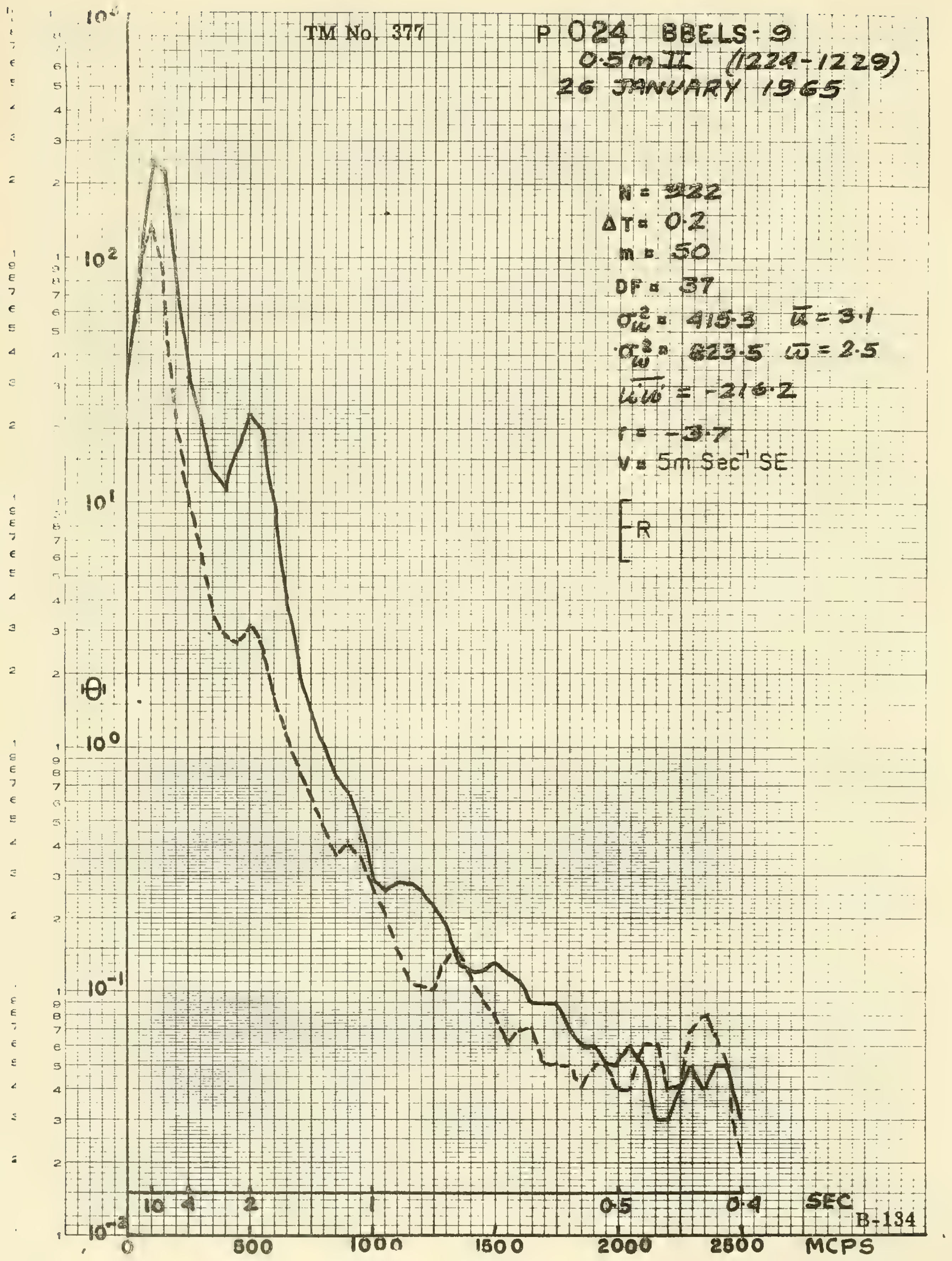

P 020 BBELS - 8
1.0 m I (1310-1315)
7 DEC. 1969
$\Phi_u(f)$ - - - - - - - -
$\Phi_w(f)$ ————
N = 1245
ΔT = 0.2
m = 50
DF = 50
σ_u^2 = 183.8 $\bar{u}$ = 21.6
σ_w^2 = 348.3 $\bar{w}$ = 6.4
$\overline{u'w'}$ = + 6.36
r = + 0.03
V = 5.0 m sec^{-1} WNW
R
Φ
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS

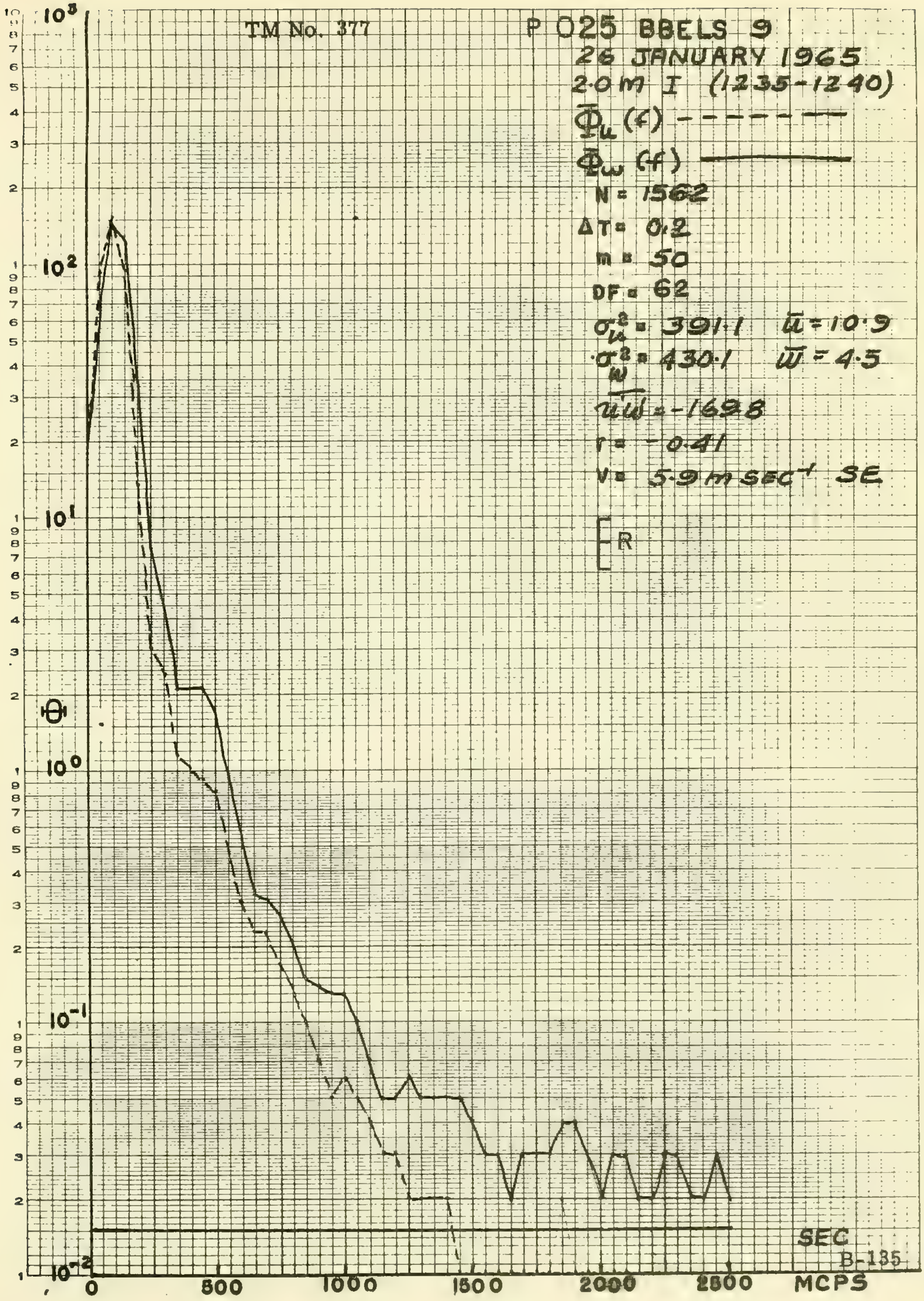
B-130


TM No. 377
P O21 BBELS - 8
0.5 m I (1324-1329)
7 DEC. 1964
$\bar{\Phi}_u(f)$ - - - - - -
$\bar{\Phi}_w(f)$ ———
N = 1576
ΔT = 0.2
m = 50
DF = 63
σ_u^2 = 354.1 $\bar{u}$ = +16.8
σ_w^2 = 701.0 $\bar{w}$ = +7.3
$\overline{u'w'}$ = - 46.9
r = - 0.09
V = 5.0 m SEC^{-1} WNW
R
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
Φ
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-131
1/5 CYCLES x 10 DIVISIONS PER INCH

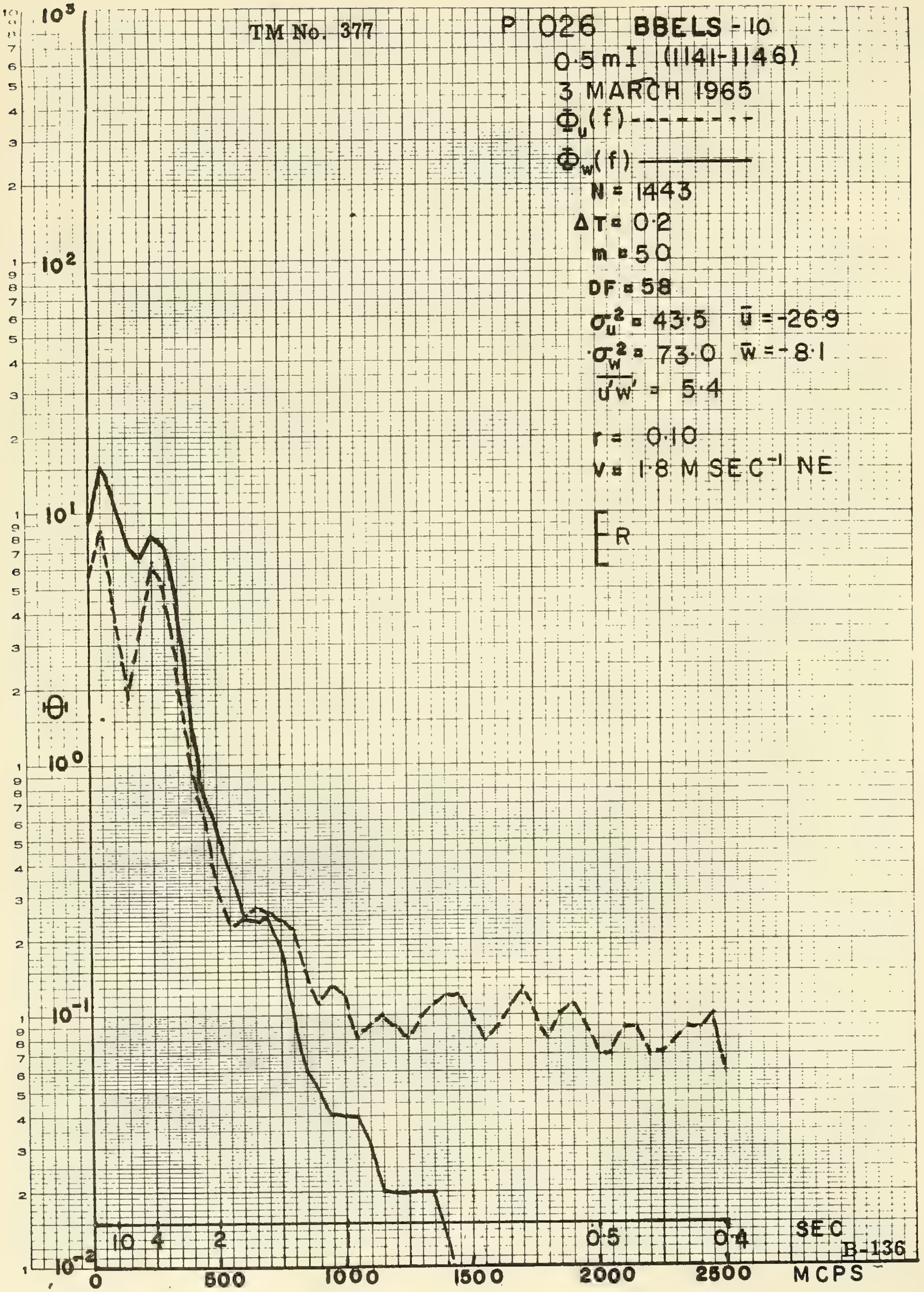

TM No. 377
P 022 BBELS - 8
2.0 m I 1337 - 1342
7 DEC. 1964
Φu(f) - - - - - - - -
Φw(f) ————
N = 1359
ΔT = 0.2
m = 50
DF = 54
σu² = 239.7 ū = +13.7
σw² = 250.6 w̄ = +2.9
u'w' = +76.7
r = + 0.32
V = 5.0 m sec⁻¹ WNW
R
Θ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-132

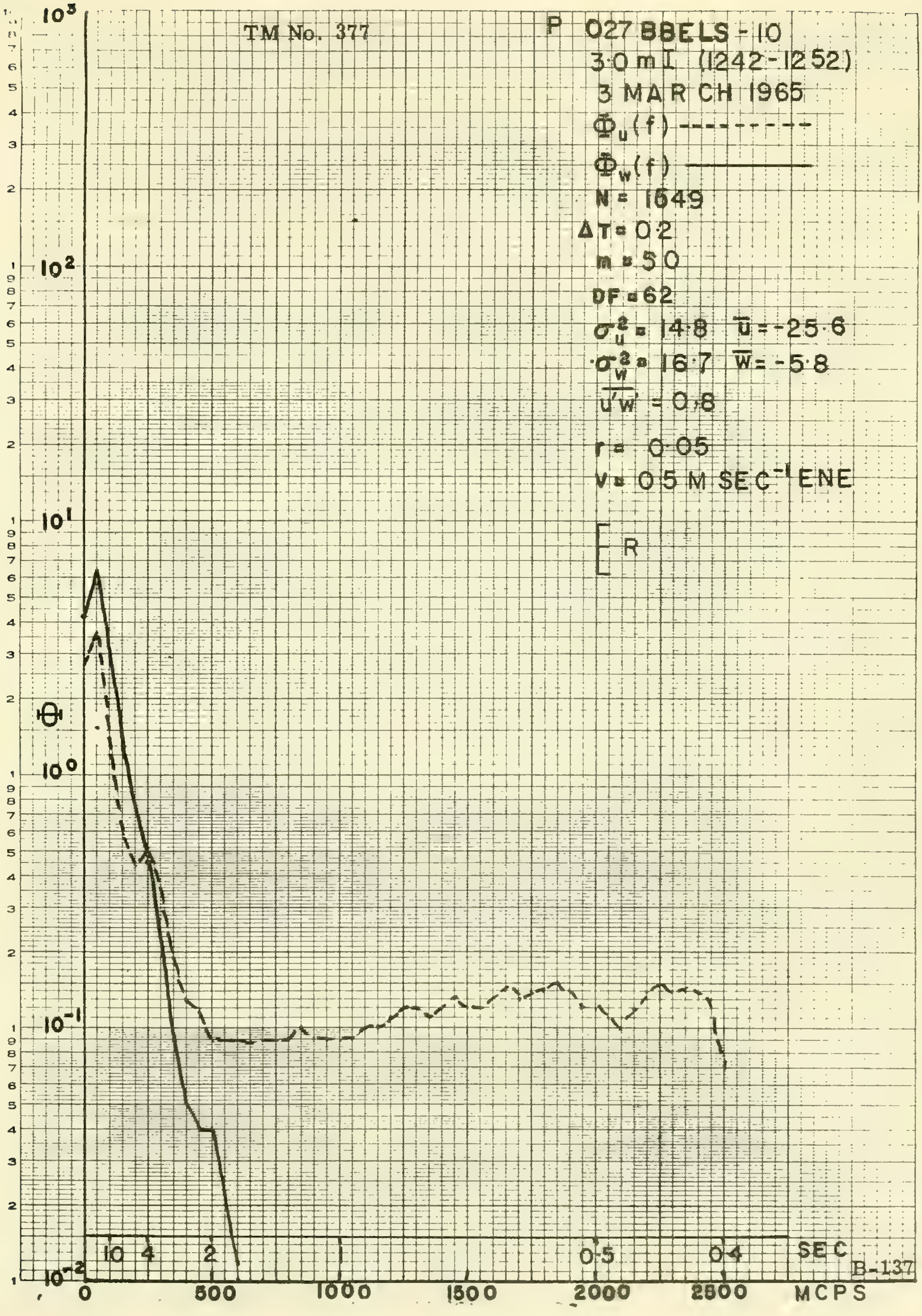

P 023 U BBELS 9
0.5 m I (1145-1150)
26 JANUARY 1965
Φu (f) - - - - - - - -
Φw (f) ————
N = 1341
ΔT = 0.2
m = 50
DF = 54
σu² = 570.0 ū = -5.5
σw² = 708.5 w̄ = 0.3
u'w' = -337.9
r = 0.52
V = 3.8 m sec⁻¹ ESE
R
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
SEC
0
500
1000
1500
2000
2500
MCPS
SEMI-LOGARITHMIC
5 CYCLES X 10 DIVISIONS PER INCH
MADE IN U.S.A.


TM No. 377
P 024 BBELS-9
0·5m II (1224-1229)
26 JANUARY 1965
N = 322
ΔT = 0·2
m = 50
DF = 37
σ²u = 415·3 ū = 3·1
σ²w = 823·5 w̄ = 2·5
u'w' = -216·2
r = -3·7
V = 5m Sec⁻¹ SE
R
Θ
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 1 0·5 0·4 SEC
0 500 1000 1500 2000 2500 MCPS
B-134



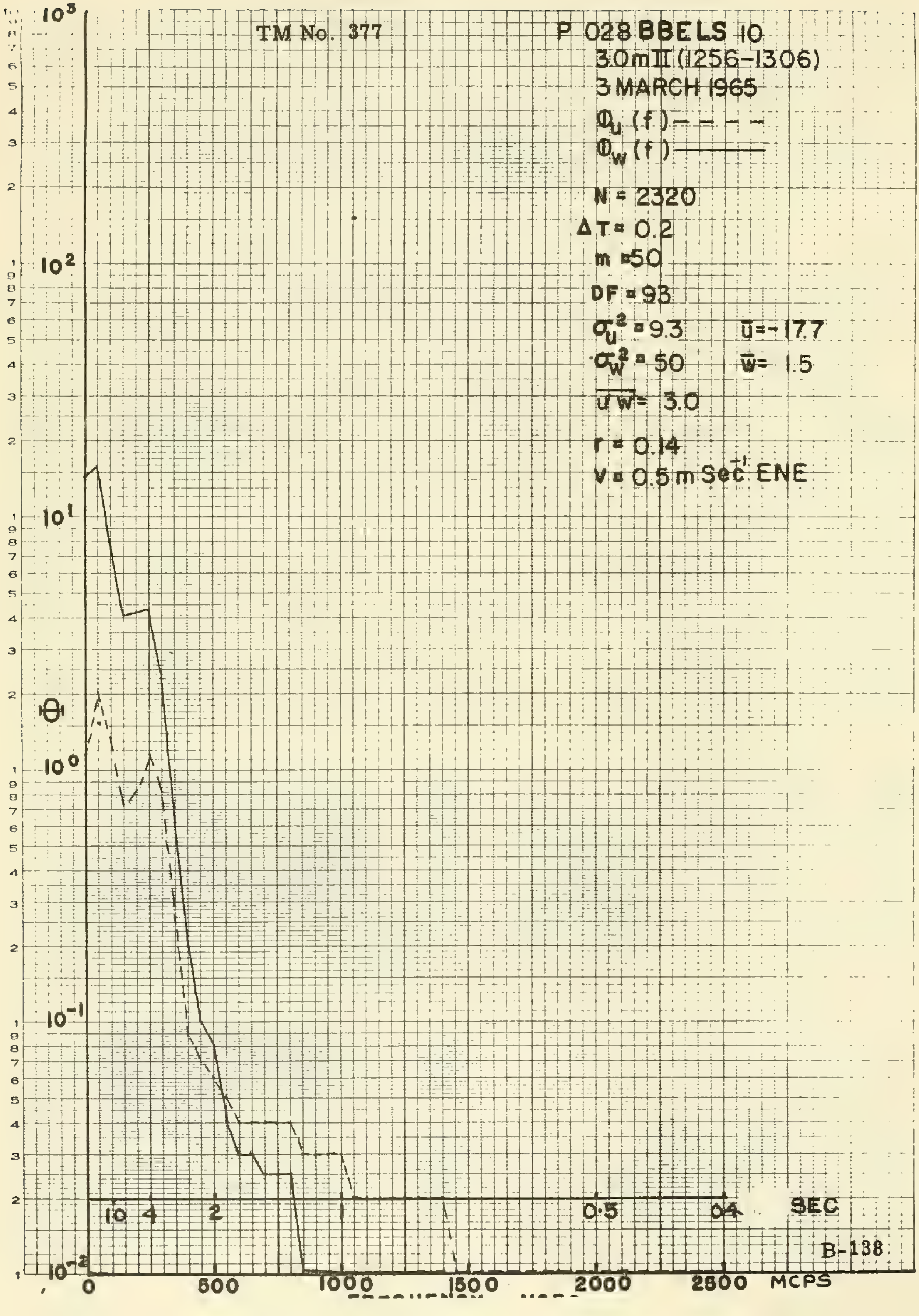
TM No. 377
P 025 BBELS 9
26 JANUARY 1965
2.0 m I (1235-1240)
Φu (f) - - - - - -
Φw (f) ————
N = 1562
ΔT = 0.2
m = 50
DF = 62
σu² = 391.1 ū = 10.9
σw² = 430.1 w̄ = 4.5
uw = -1698
r = -0.41
V = 5.9 m sec⁻¹ SE
R
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
0
500
1000
1500
2000
2500
MCPS
SEC
B-135
5 CYCLES X 10 DIVISIONS PER INCH
MADE IN U.S.A.

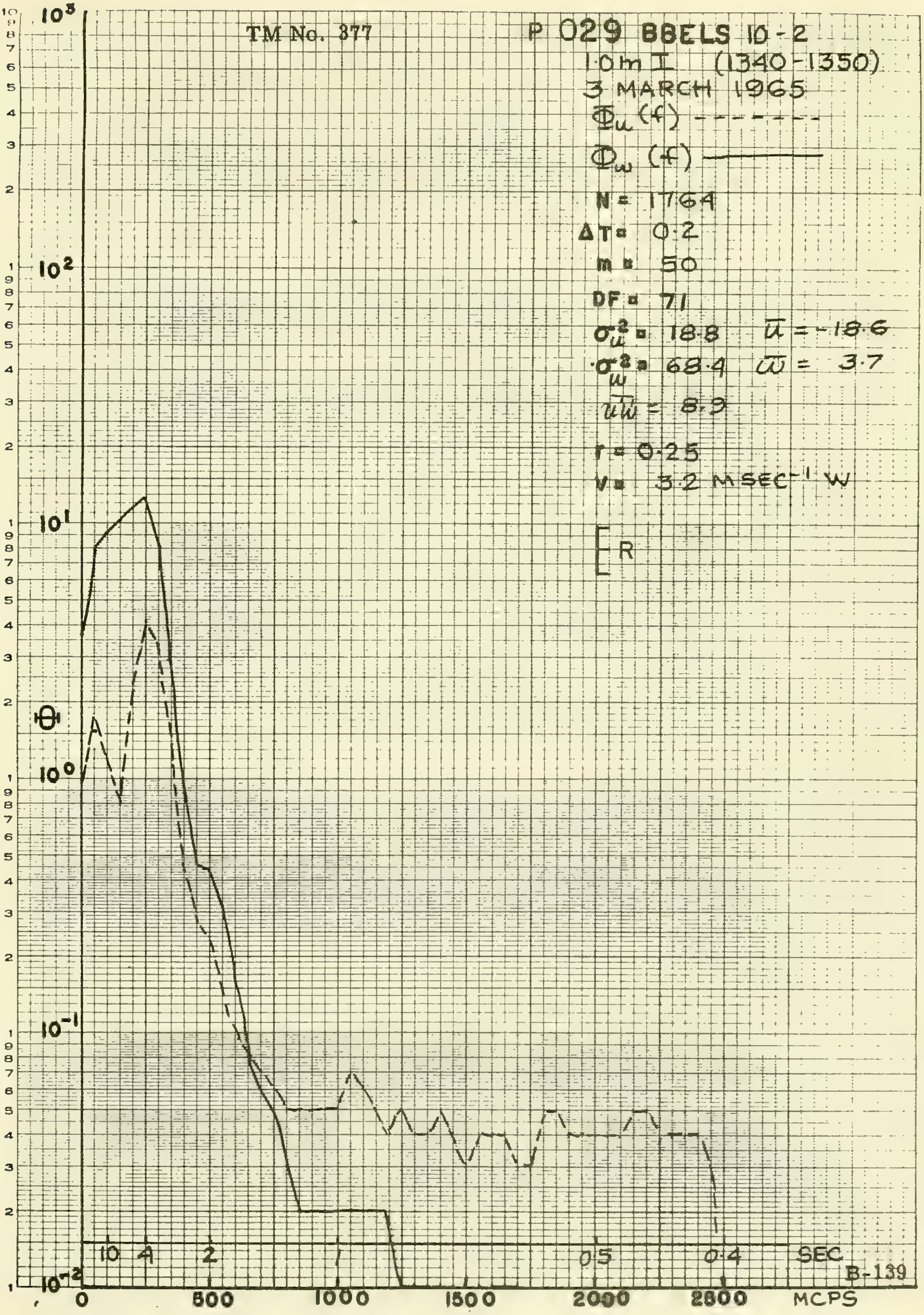

P 026 BBELS - 10
0·5 m I (1141-1146)
3 MARCH 1965
$\Phi_u(f)$ - - - - - - - -
$\Phi_w(f)$ ————
N = 1443
ΔT = 0·2
m = 50
DF = 58
σ_u^2 = 43·5 $\bar{u}$ = -26·9
σ_w^2 = 73·0 $\bar{w}$ = -8·1
$\overline{u'w'}$ = 5·4
r = 0·10
v = 1·8 M SEC^{-1} NE
R
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
Φ
10
4
2
0·5
0·4
SEC
0
500
1000
1500
2000
2500
MCPS

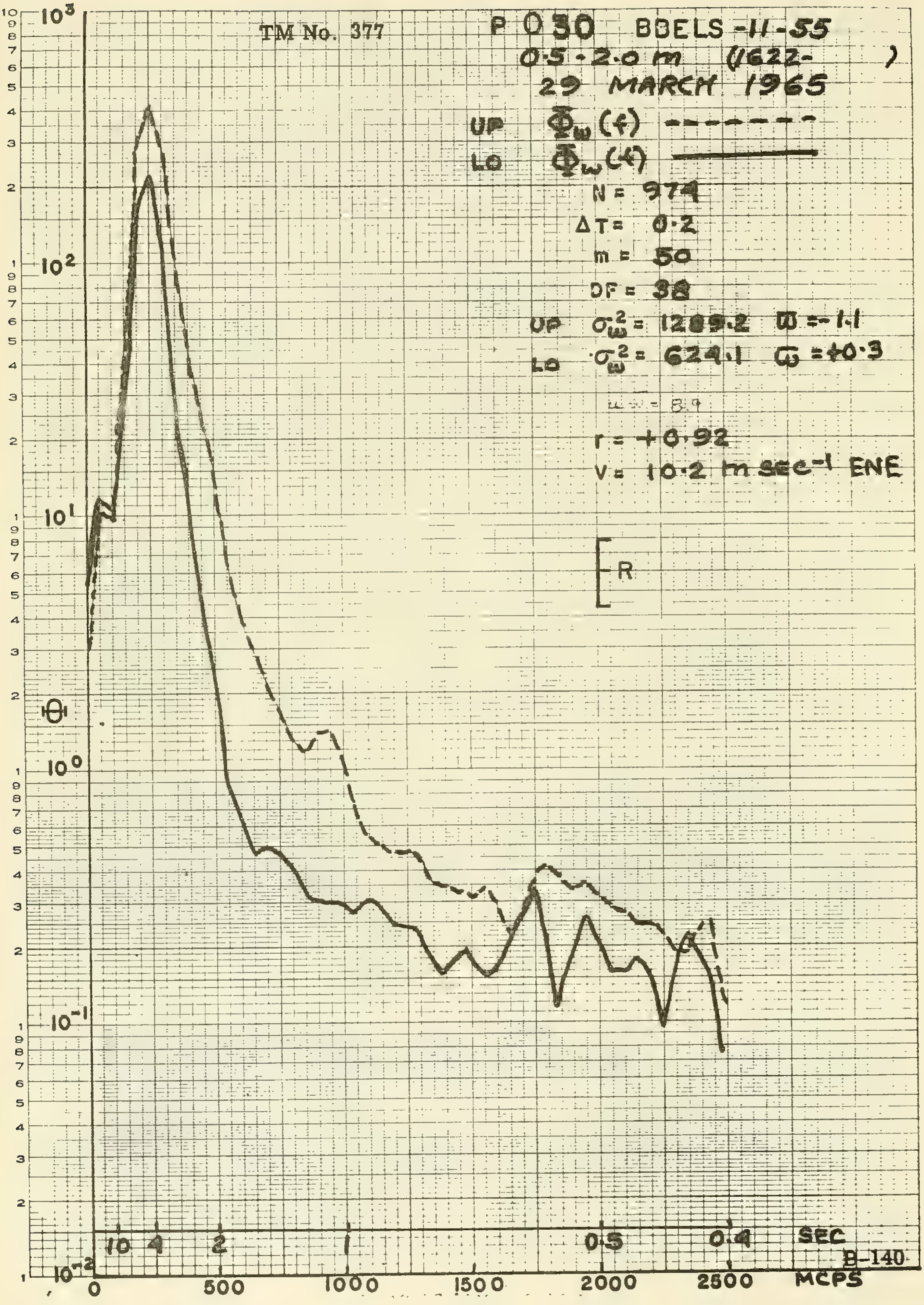


TM No. 377
P 027 BBELS - 10
3·0 m I (1242-1252)
3 MARCH 1965
Φu(f) ---------
Φw(f) ———
N = 1649
ΔT = 0·2
m = 50
DF = 62
σu² = 14·8 ū = -25·6
σw² = 16·7 w̄ = -5·8
u'w' = 0·8
r = 0·05
V = 0·5 M SEC⁻¹ ENE
R
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 1 0·5 0·4 SEC
0 500 1000 1500 2000 2500 MCPS

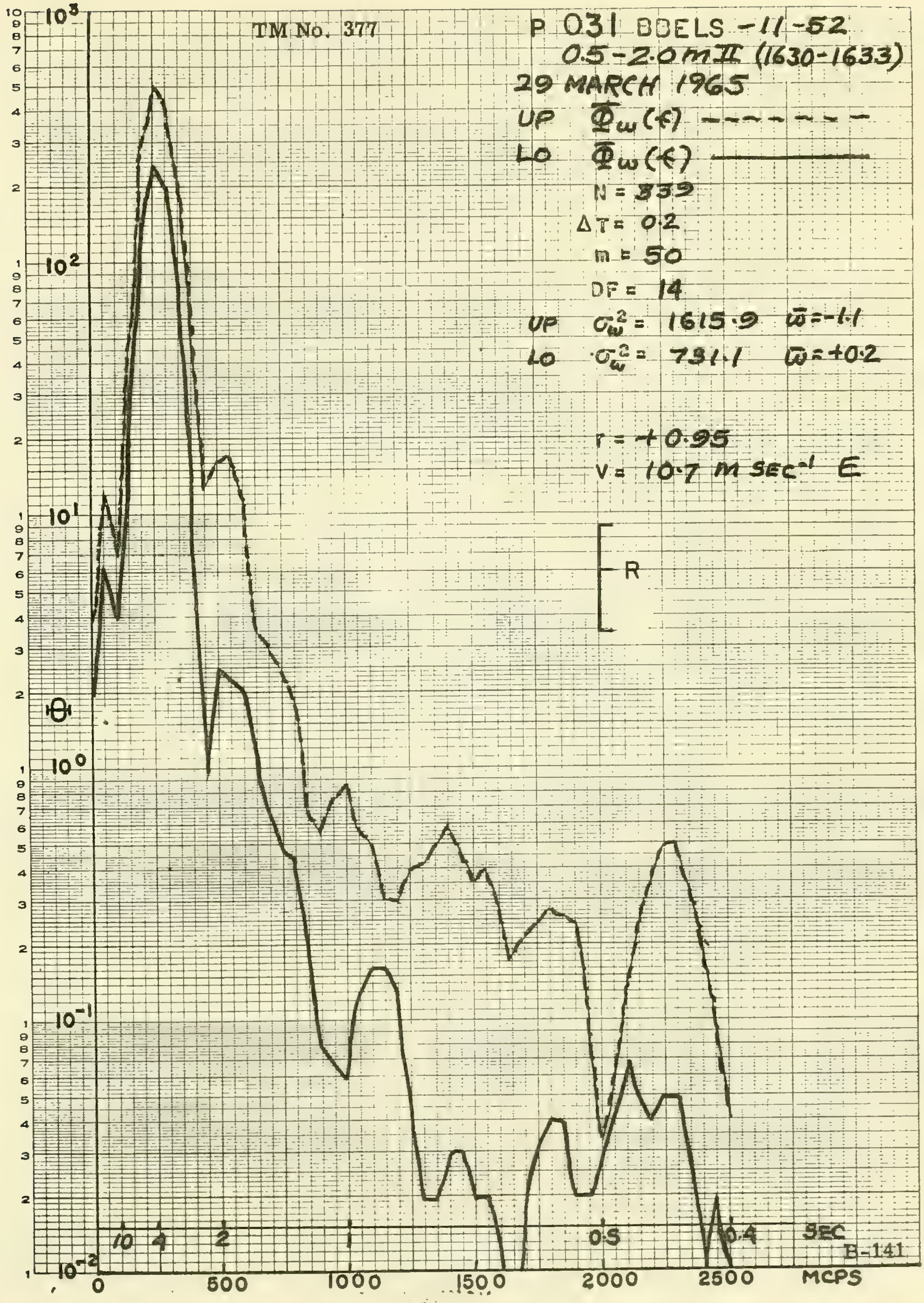
B-137

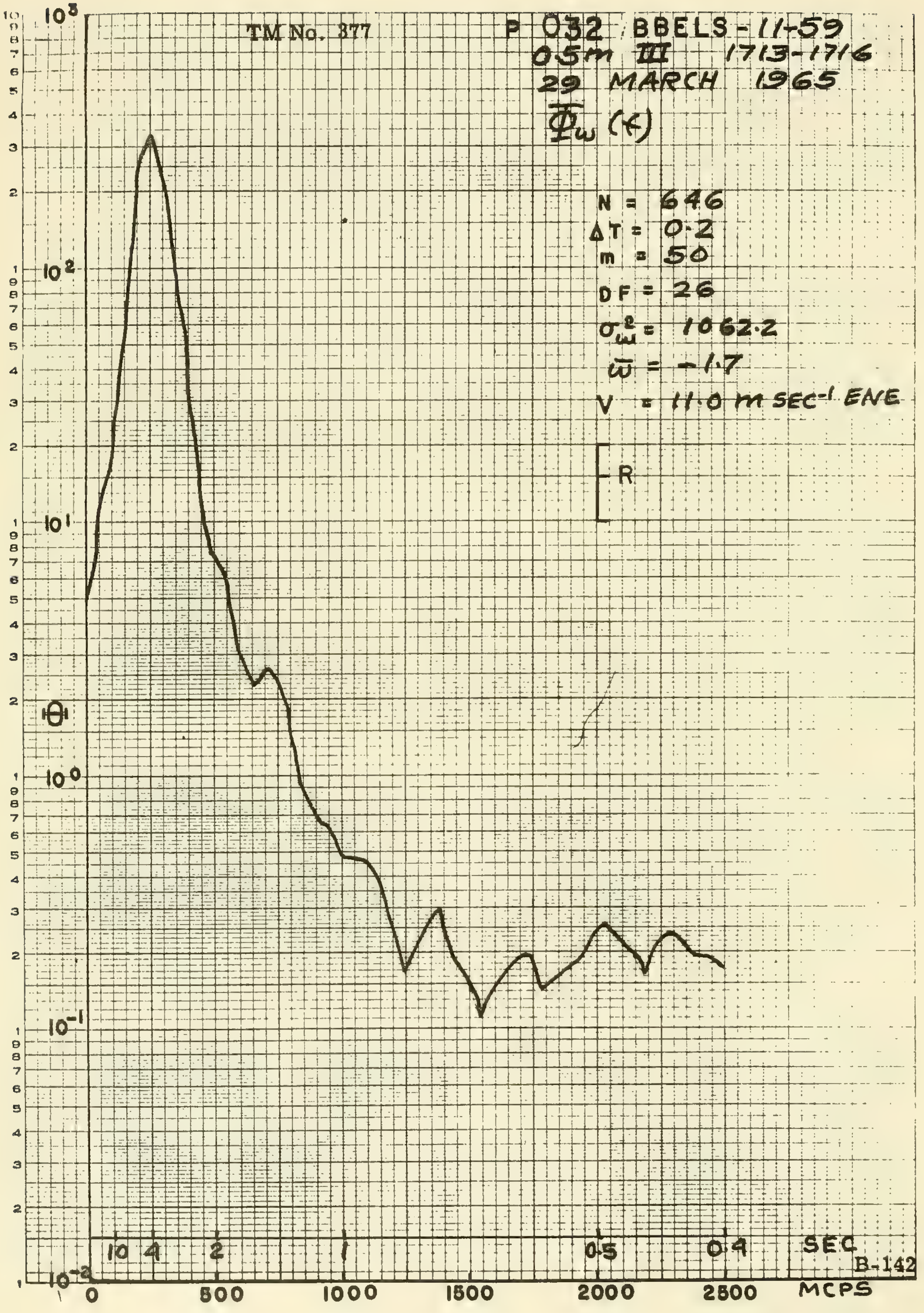

TM No. 377
P 028 BBELS 10
3.0m II (1256-1306)
3 MARCH 1965
Φu (f) - - - -
Φw (f) ———
N = 2320
ΔT = 0.2
m = 50
DF = 93
σu² = 9.3
ū = -17.7
σw² = 50
w̄ = 1.5
u'w' = 3.0
r = 0.14
V = 0.5 m Sec⁻¹ ENE
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-138


TM No. 377
P 029 BBELS 10-2
10m I (1340-1350)
3 MARCH 1965
Φu (f) - - - - - - -
Φw (f) ————
N = 1764
ΔT = 0.2
m = 50
DF = 71
σu² = 18.8 ū = -18.6
σw² = 68.4 w̄ = 3.7
uw = 8.9
r = 0.25
V = 3.2 MSEC⁻¹ W
R
A
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-139

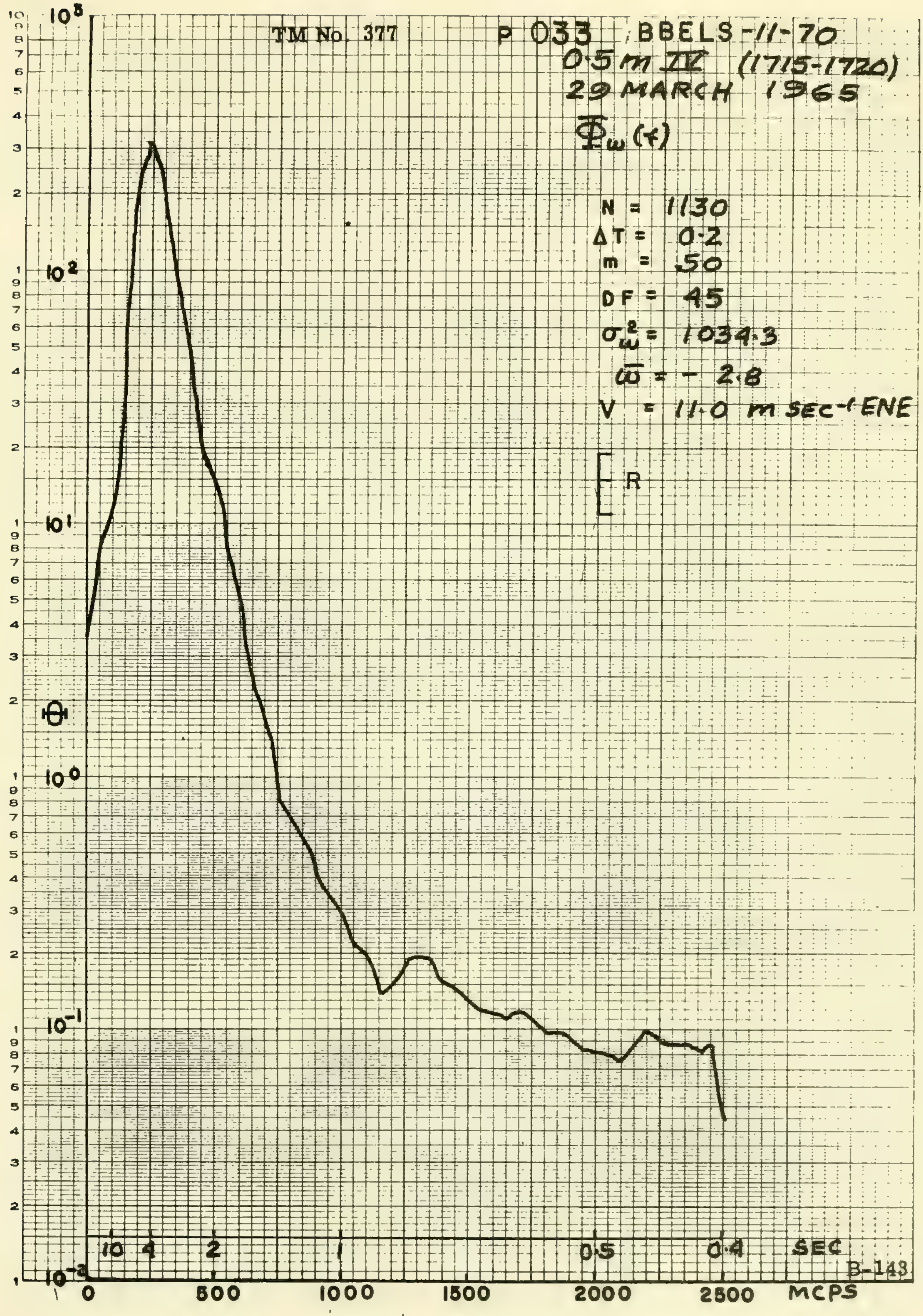


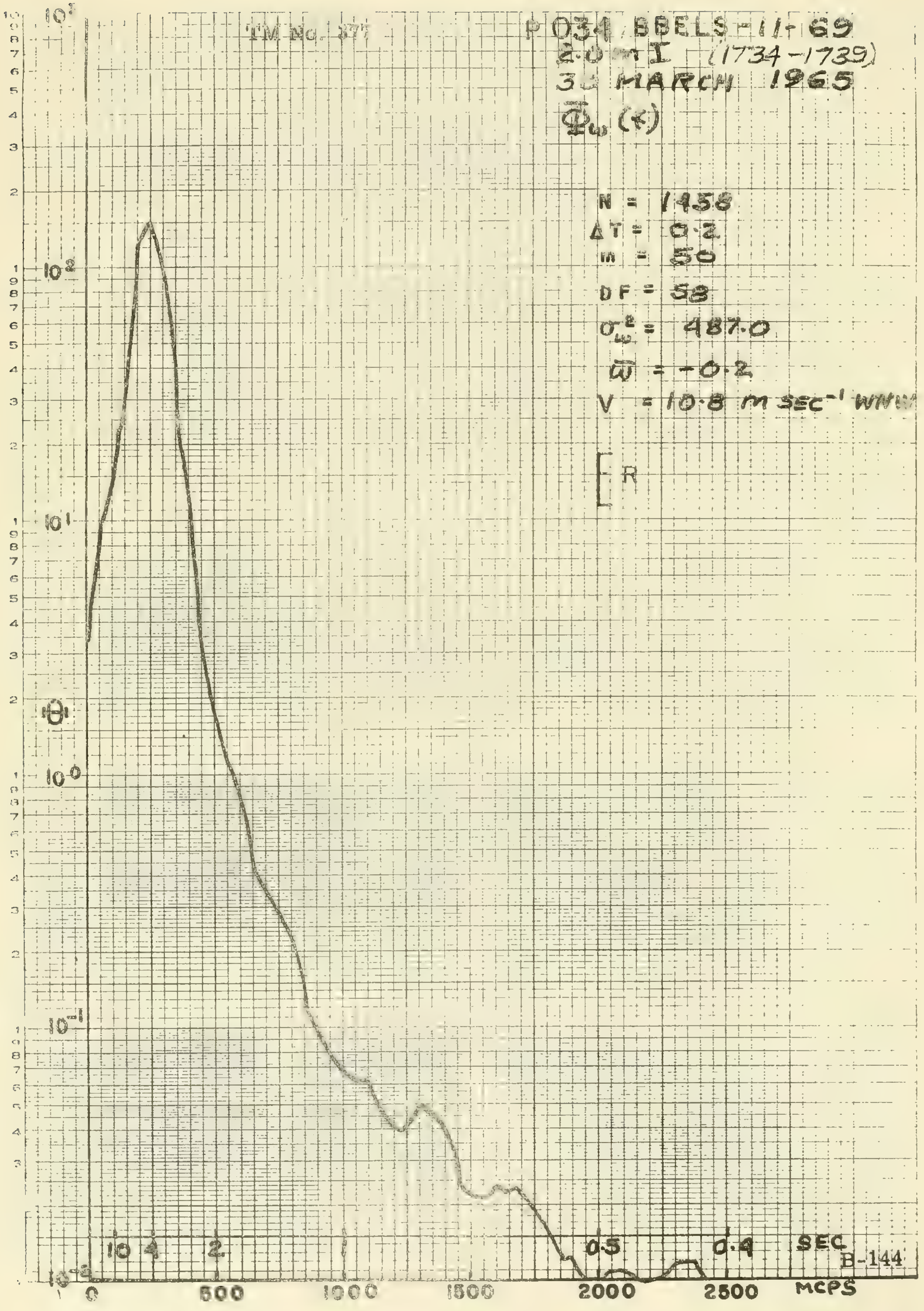
TM No. 377
P 030 BBELS-11-55
0.5-2.0 m (1622-)
29 MARCH 1965
UP $\Phi_w(f)$ --------
LO $\Phi_w(f)$ ————
N = 974
ΔT = 0.2
m = 50
DF = 38
UP σ_w^2 = 1289.2 $\overline{w}$ = -1.1
LO σ_w^2 = 624.1 $\overline{w}$ = +0.3
r = +0.92
V = 10.2 m sec⁻¹ ENE
R
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-140

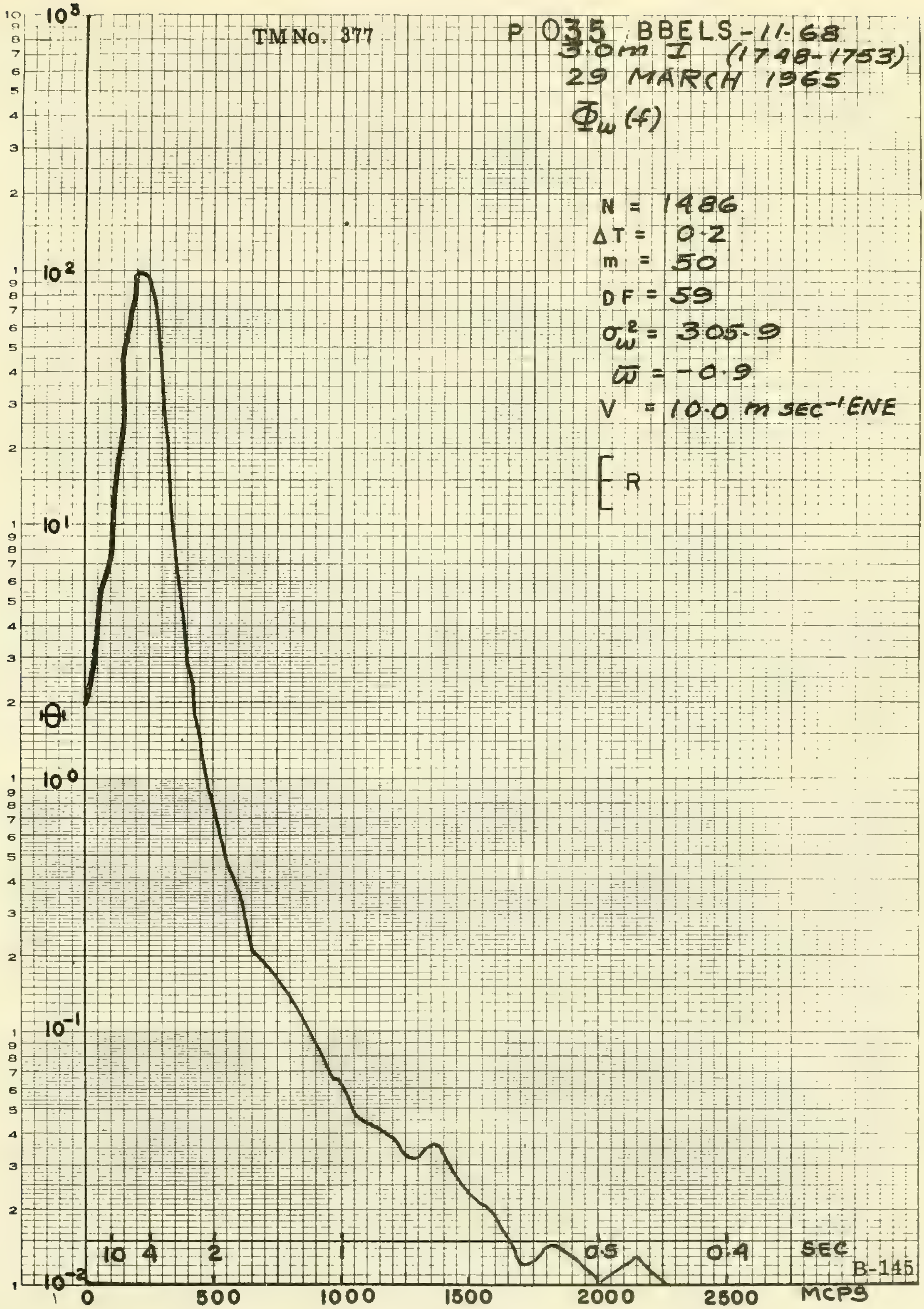

TM No. 377
P 031 BDELS -11-52
0.5-2.0 m II (1630-1633)
29 MARCH 1965
UP Φw(f) - - - - - - -
LO Φw(f) ———
N = 339
ΔT = 0.2
m = 50
DF = 14
UP σw² = 1615.9 w̄ = -1.1
LO σw² = 731.1 w̄ = +0.2
r = +0.95
V = 10.7 M SEC⁻¹ E
R
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-141
EUGENE DIETZGEN CO.
MADE IN U. S. A.
SEMI-LOGARITHMIC
5 CYCLES X 10 DIVISIONS PER INCH

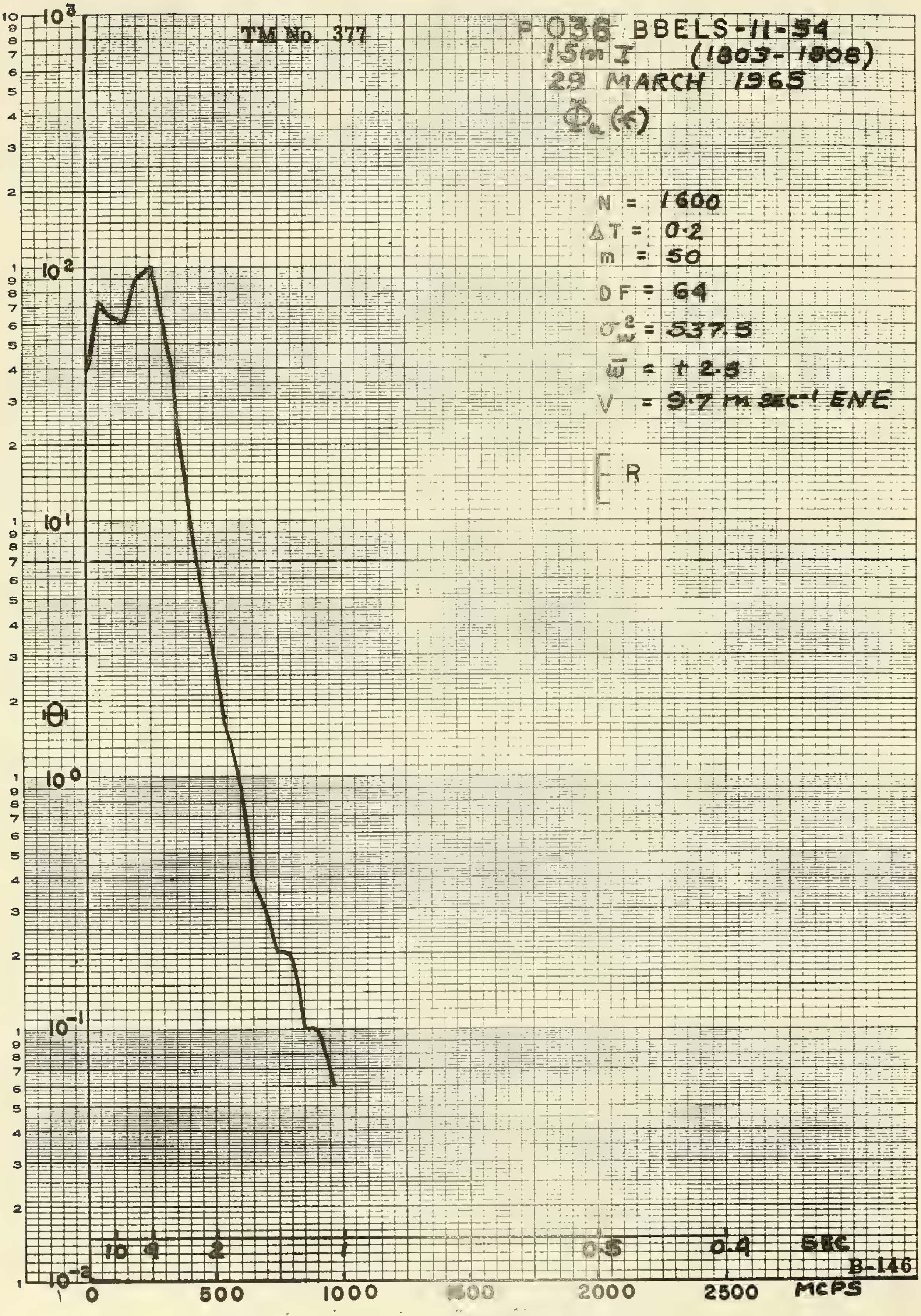


TM No. 377
P 032 BBELS - 11-59
05m III 1713-1716
29 MARCH 1965
$\overline{\Phi}_w(f)$
N = 646
ΔT = 0·2
m = 50
DF = 26
σ_w^2 = 1062·2
$\bar{w}$ = -1·7
V = 11·0 m sec^{-1} ENE
R
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-142

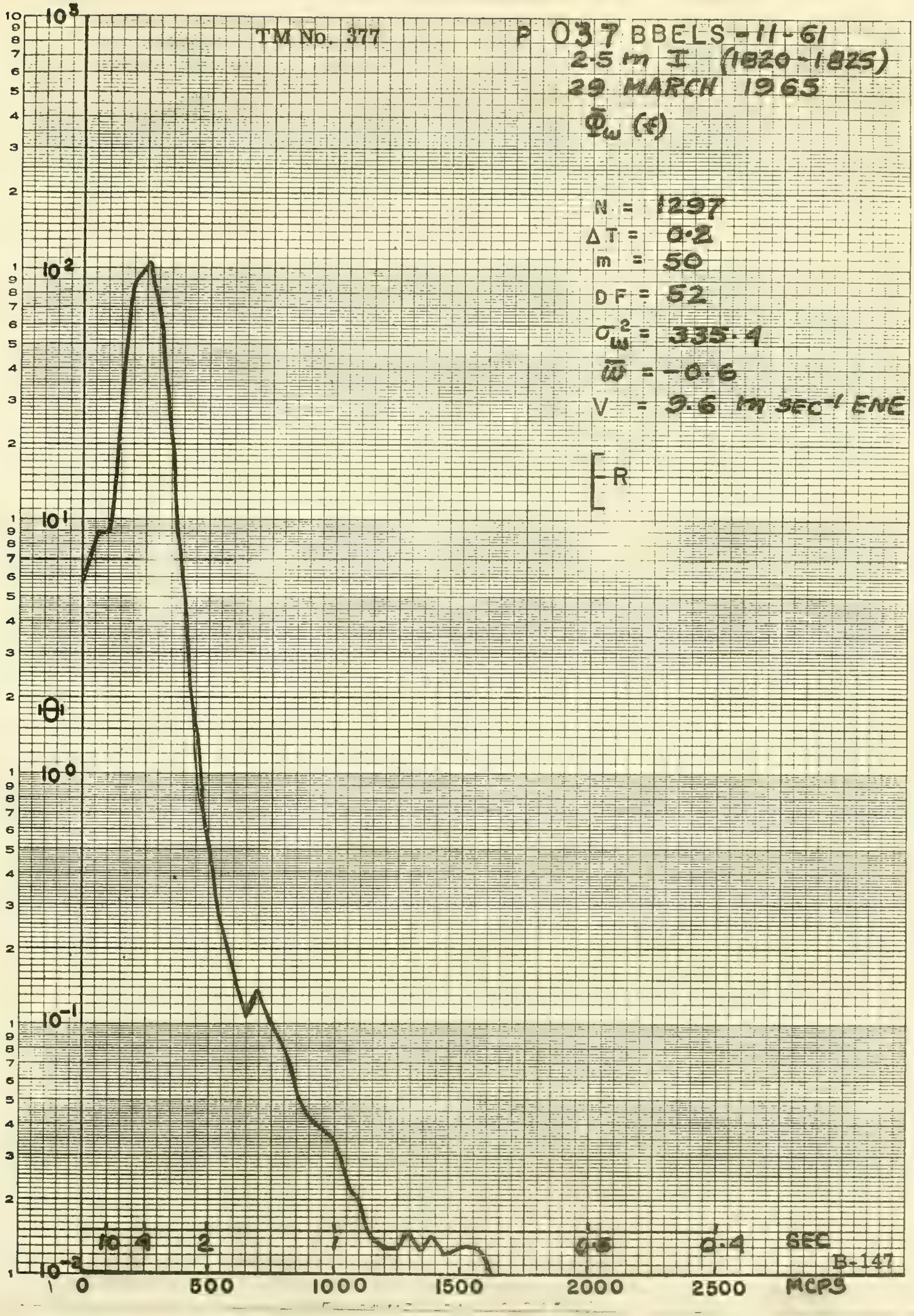

TM No. 377
P 033 BBELS-11-70
0·5 m IV (1715-1720)
29 MARCH 1965
$\Phi_\omega(f)$
N = 1130
ΔT = 0·2
m = 50
DF = 45
σ_ω^2 = 1034·3
$\bar{\omega}$ = − 2·8
V = 11·0 m sec⁻¹ ENE
R
Φ
10 4 2 1 0·5 0·4 SEC
0 500 1000 1500 2000 2500 MCPS
B-143
5 CYCLES x 10 DIVISIONS PER INCH

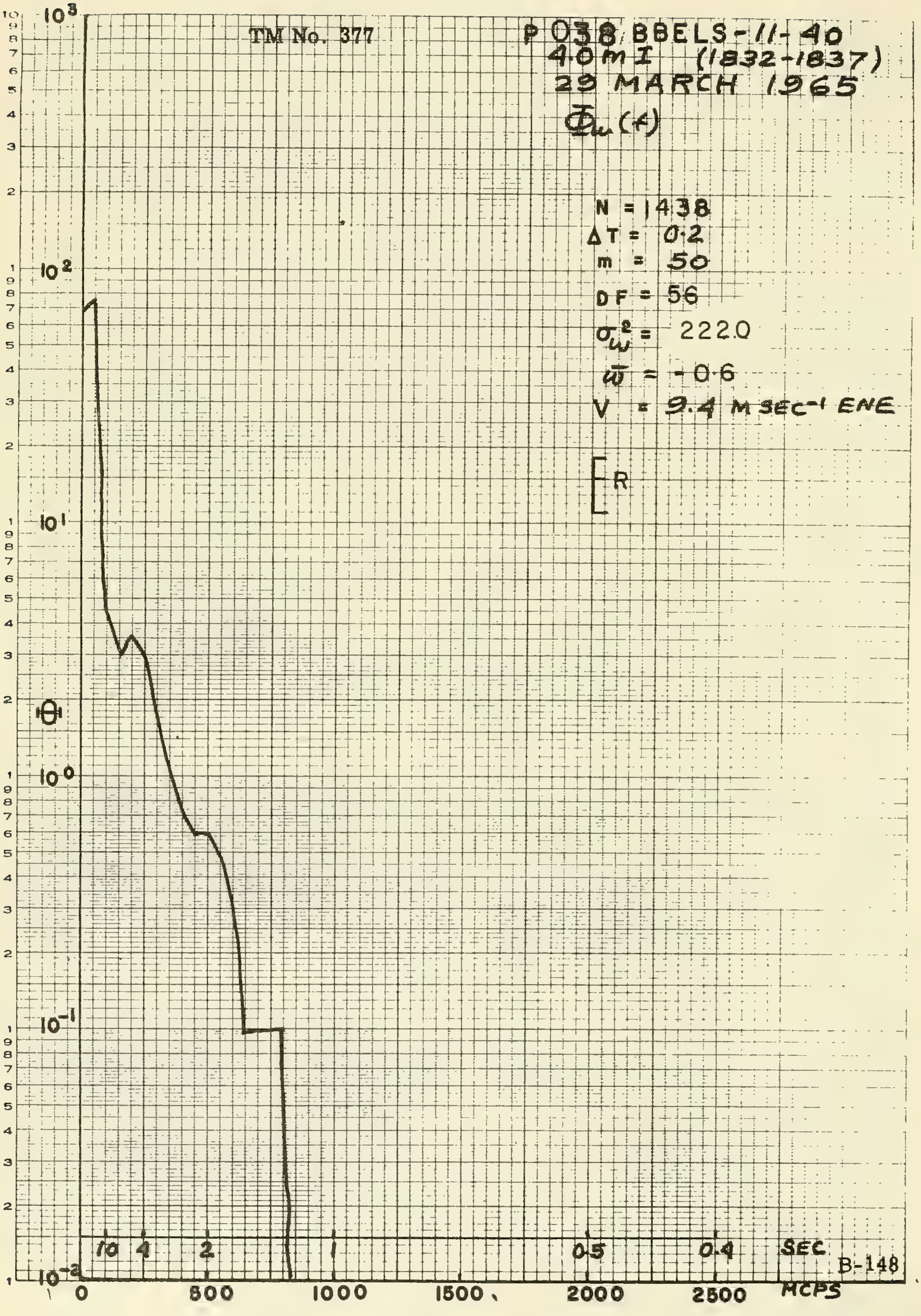

P034 BBELS-11-69
2.0 m I (1734-1739)
30 MARCH 1965
$\bar{\Phi}_w(f)$
N = 1456
ΔT = 0.2
m = 50
DF = 58
σ_w^2 = 487.0
$\bar{w}$ = -0.2
V = 10.8 m sec⁻¹ WNW
R
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
Φ
10
4
2
0.5
0.4
SEC
0
500
1000
1500
2000
2500
MCPS

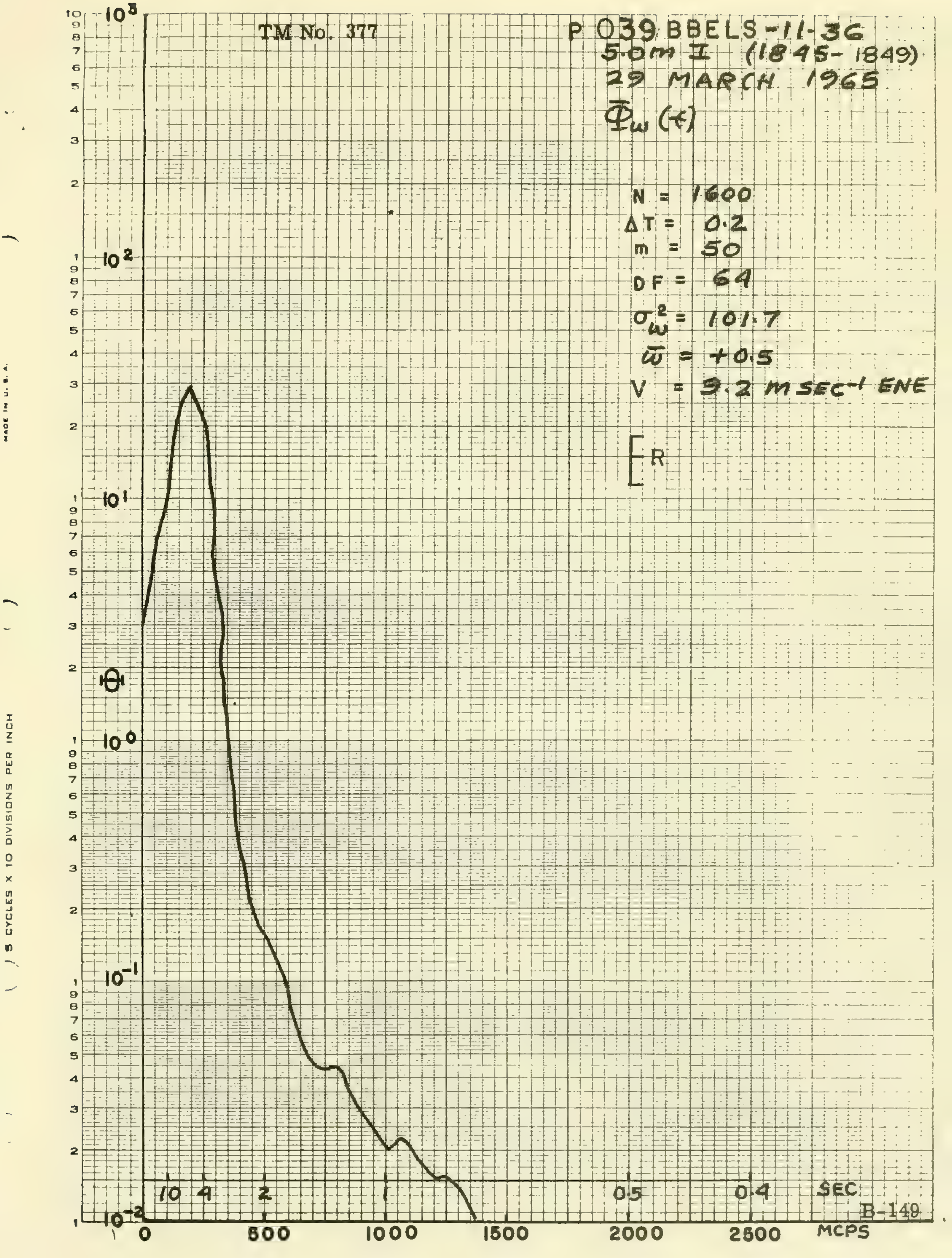

TM No. 377
P 035 BBELS-11-68
3.0m I (1748-1753)
29 MARCH 1965
$\Phi_w(f)$
N = 1486
ΔT = 0.2
m = 50
DF = 59
σ_w^2 = 305.9
$\bar{w}$ = −0.9
V = 10.0 m sec⁻¹ ENE
R
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-145
5 CYCLES x 10 DIVISIONS PER INCH
MADE IN U.S.A.

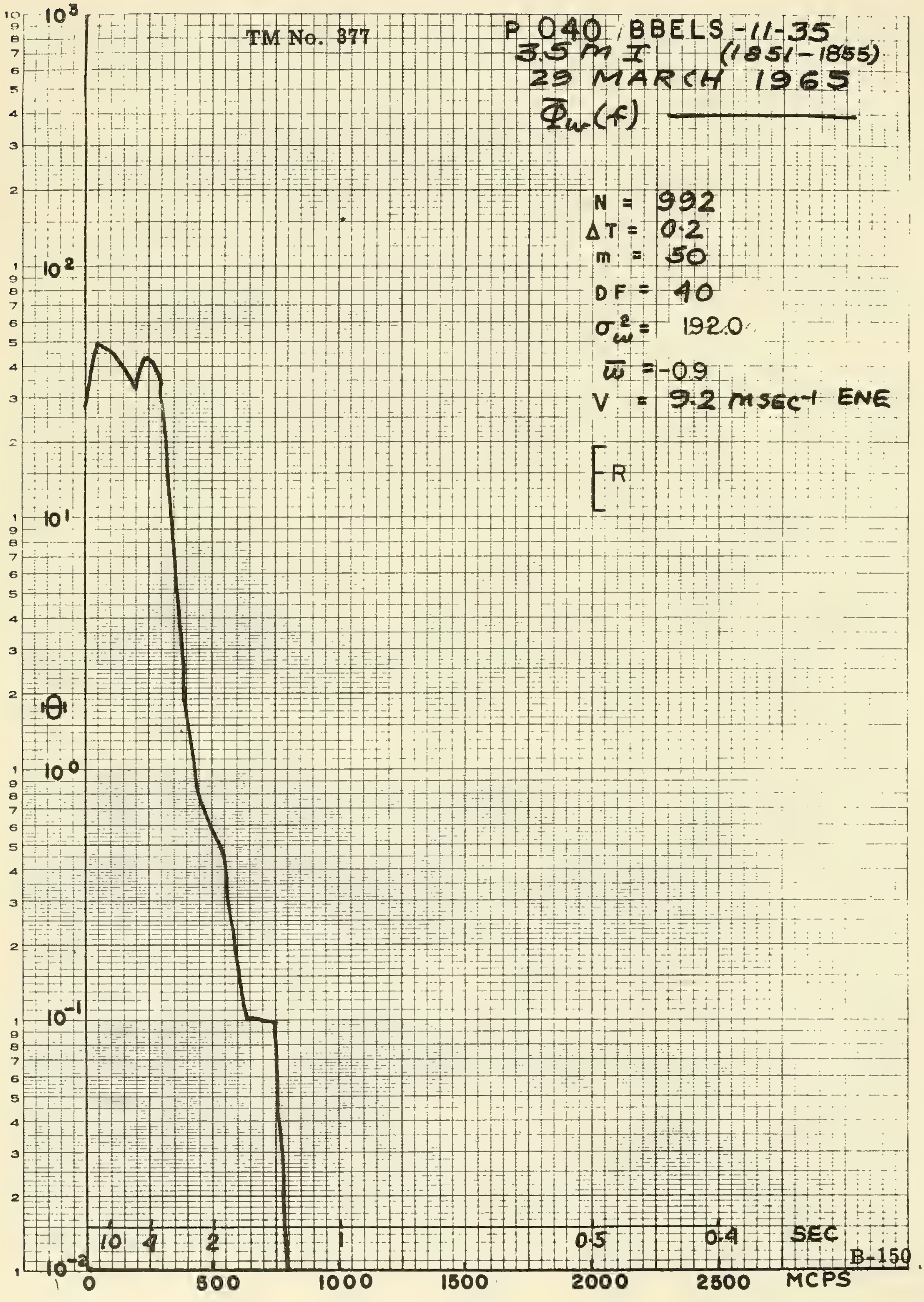


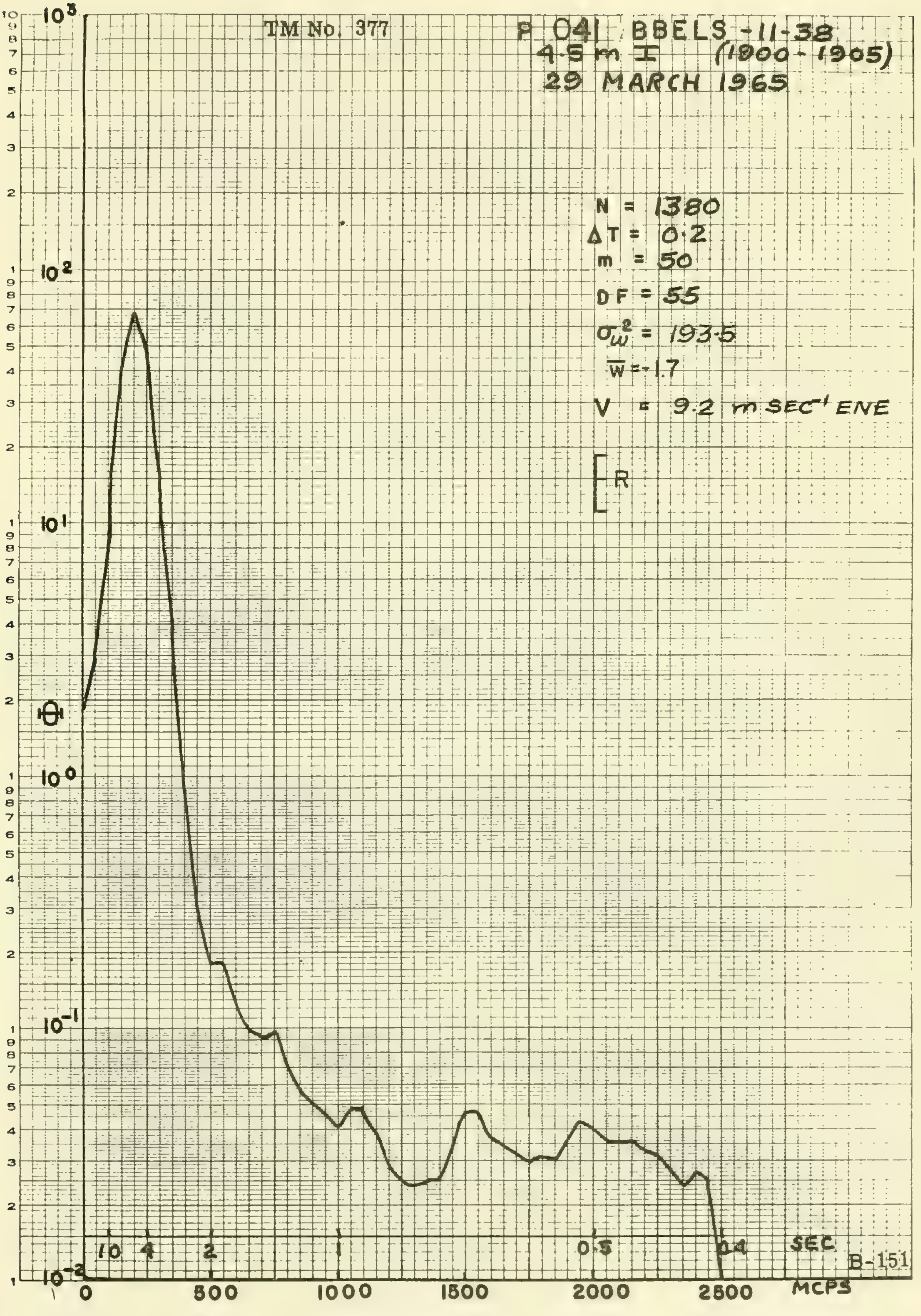
TM No. 377
P 036 BBELS-11-54
15m I (1803-1808)
29 MARCH 1965
Φu(f)
N = 1600
ΔT = 0·2
m = 50
DF = 64
σw² = 537.5
w̄ = +2.5
V = 9.7 m sec⁻¹ ENE
R
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 1 0.5 0.4 SEC
0 500 1000 2000 2500 MCPS
B-146

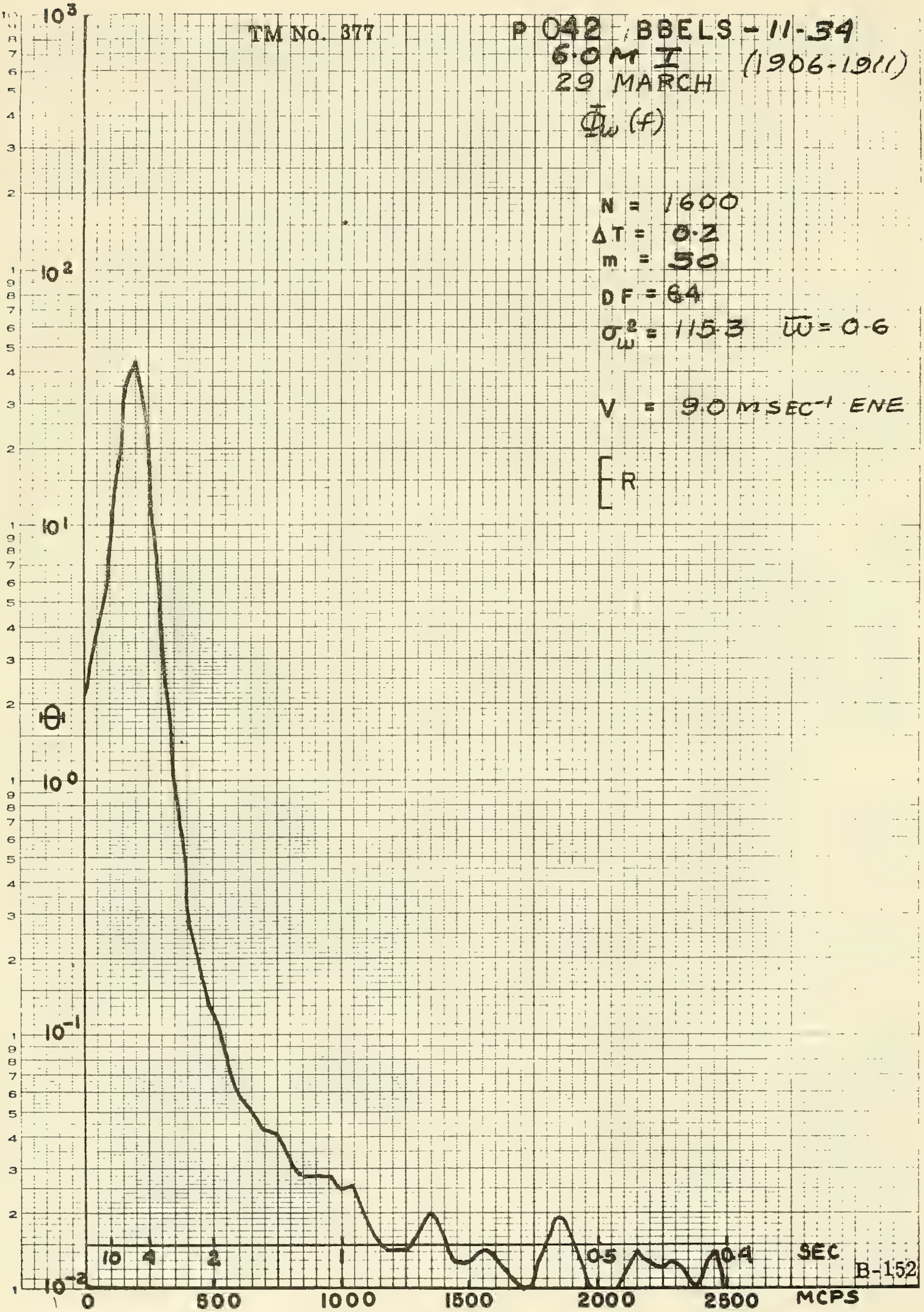

TM No. 377
P 037 BBELS - 11 - 61
2.5 m I (1820 - 1825)
29 MARCH 1965
$\bar{\Phi}_w(f)$
N = 1297
ΔT = 0.2
m = 50
DF = 52
σ_w^2 = 335.4
$\bar{w}$ = -0.6
V = 9.6 m sec⁻¹ ENE
R
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-147
5 CYCLES X 10 DIVISIONS PER INCH

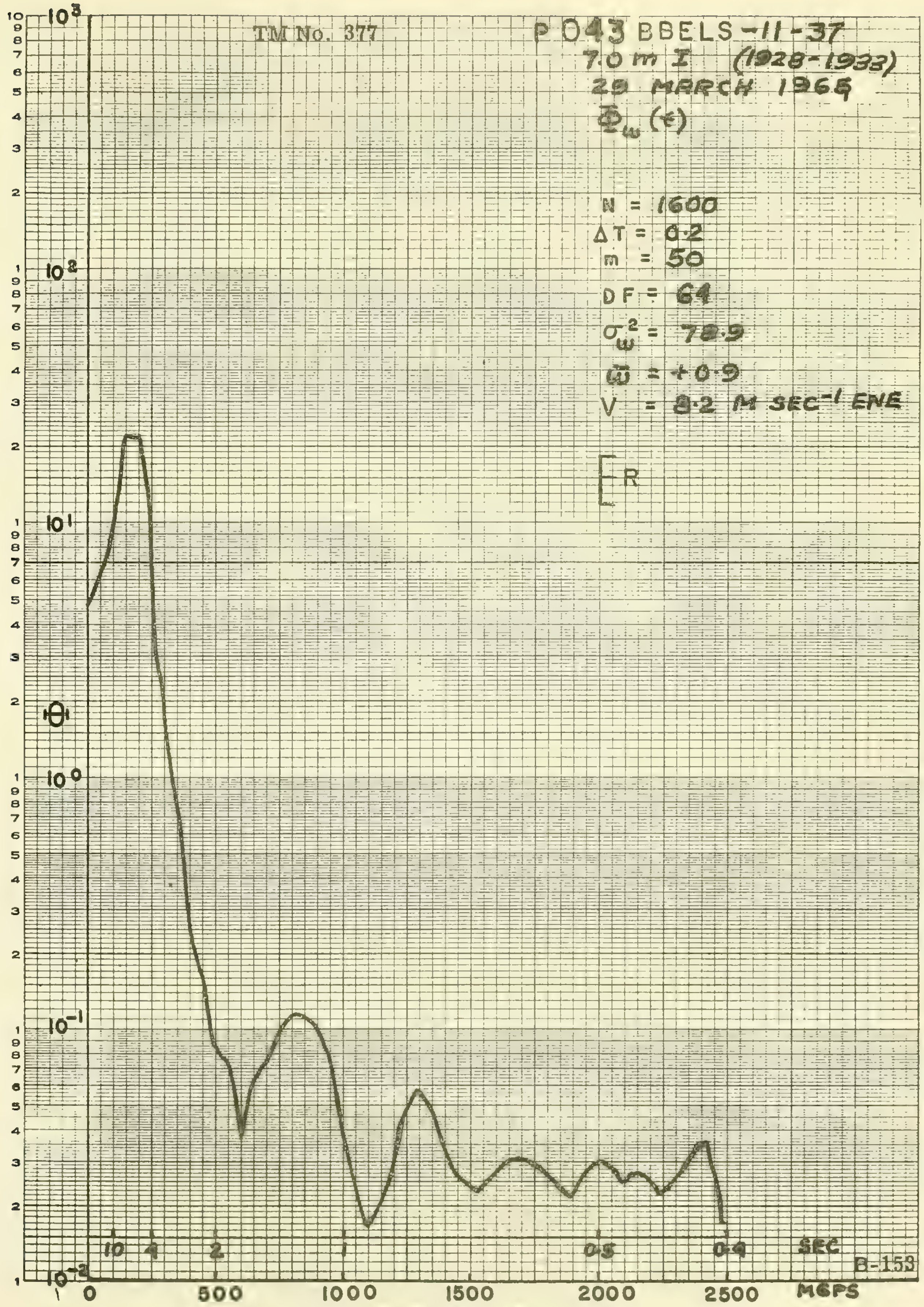

P 038 BBELS-11-40
40 m I (1832-1837)
29 MARCH 1965
Φw(f)
N = 1438
ΔT = 0.2
m = 50
DF = 56
σw² = 222.0
w̄ = -0.6
V = 9.4 M SEC⁻¹ ENE
R
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10
4
2
1
0.5
0.4
SEC
0
500
1000
1500
2000
2500
MCPS


TM No. 377
P 039 BBELS-11-36
5.0m I (1845-1849)
29 MARCH 1965
$\Phi_w(f)$
N = 1600
ΔT = 0.2
m = 50
DF = 64
σ_w^2 = 101.7
$\bar{w}$ = +0.5
V = 9.2 m sec⁻¹ ENE
R
Φ
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
10
4
2
1
0.5
0.4
SEC
0
500
1000
1500
2000
2500
MCPS
B-149
5 CYCLES X 10 DIVISIONS PER INCH
MADE IN U.S.A.

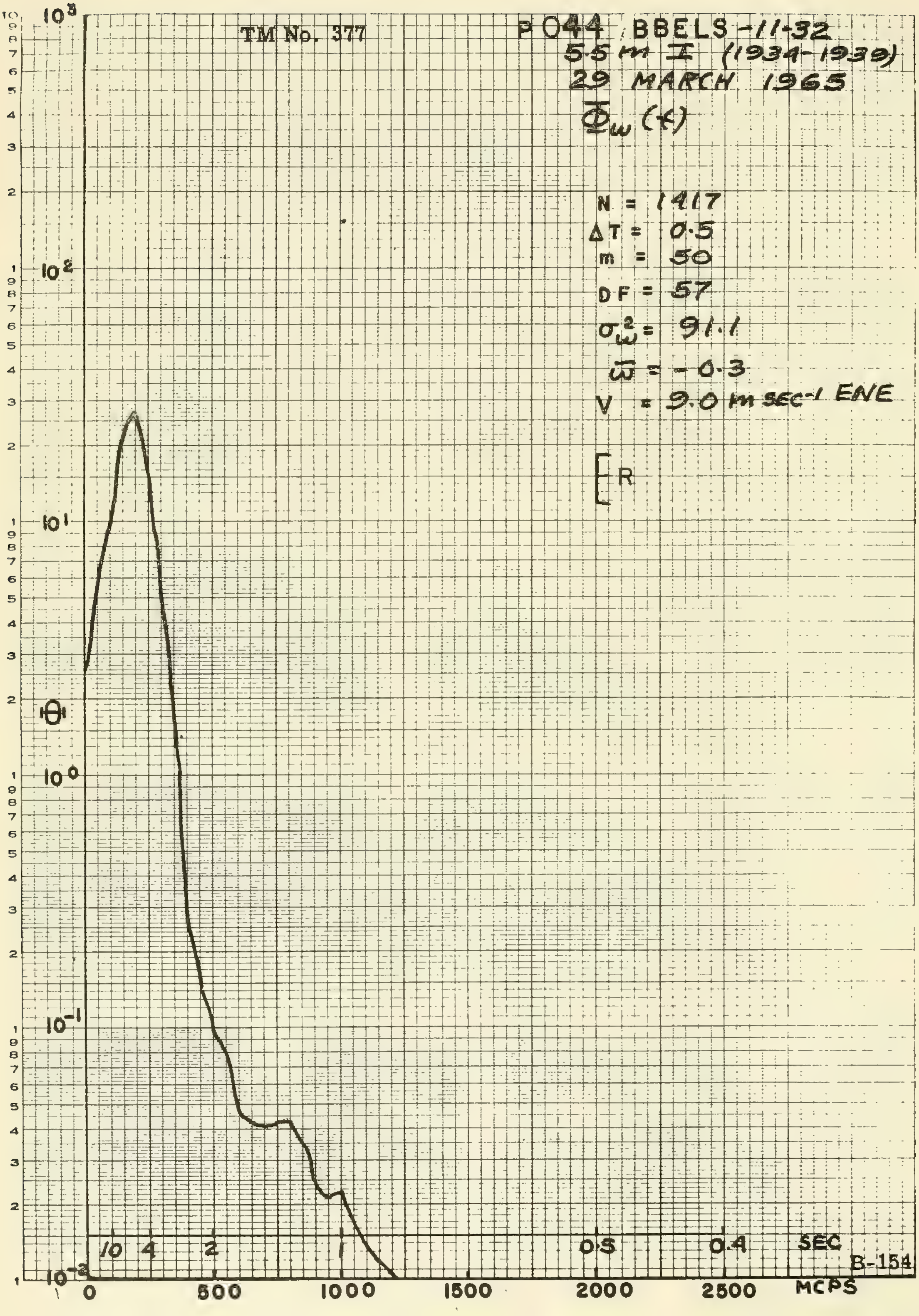

TM No. 377
P 040 BBELS -11-35
3.5 m I (1851-1855)
29 MARCH 1965
$\bar{\Phi}_w(f)$
N = 992
ΔT = 0.2
m = 50
DF = 40
σ_w^2 = 192.0
$\bar{w}$ = -0.9
V = 9.2 m sec⁻¹ ENE
R
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10
4
2
1
0.5
0.4
SEC
0
500
1000
1500
2000
2500
MCPS
B-150

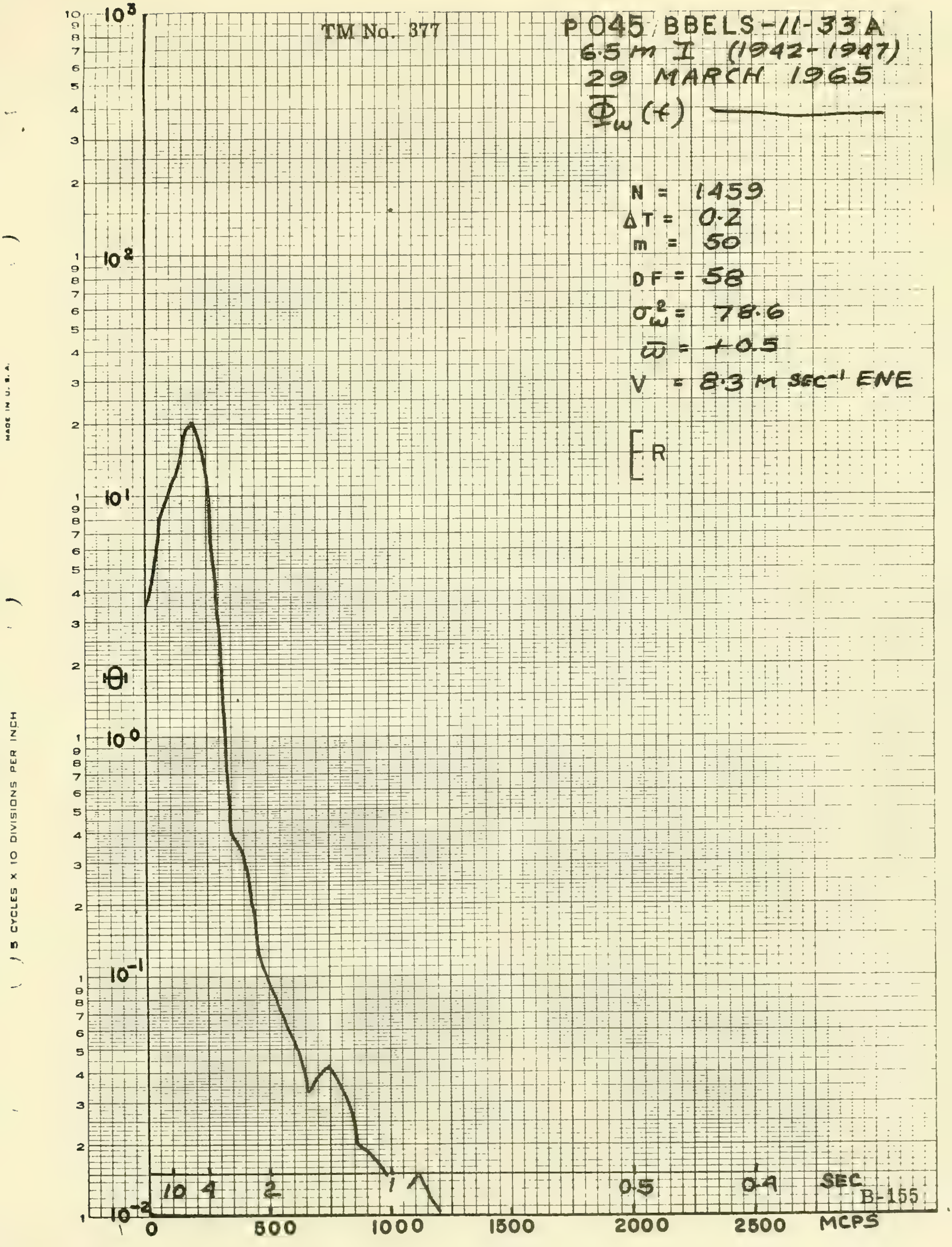

P 041 BBELS -11-38
4·5 m I (1900-1905)
29 MARCH 1965
N = 1380
ΔT = 0·2
m = 50
DF = 55
σ²w = 193·5
w̄ = -1.7
V = 9.2 m SEC⁻¹ ENE
R
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 1 0·5 0·4 SEC
0 500 1000 1500 2000 2500 MCPS


TM No. 377
P 042 BBELS - 11-34
6.0 M I
(1906-1911)
29 MARCH
$\bar{\Phi}_w(f)$
N = 1600
ΔT = 0.2
m = 50
DF = 64
σ_w^2 = 115.3 $\overline{w}$ = 0.6
V = 9.0 m sec⁻¹ ENE
R
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
Φ
10
4
2
1
0.5
0.4
SEC
0
500
1000
1500
2000
2500
MCPS
B-152

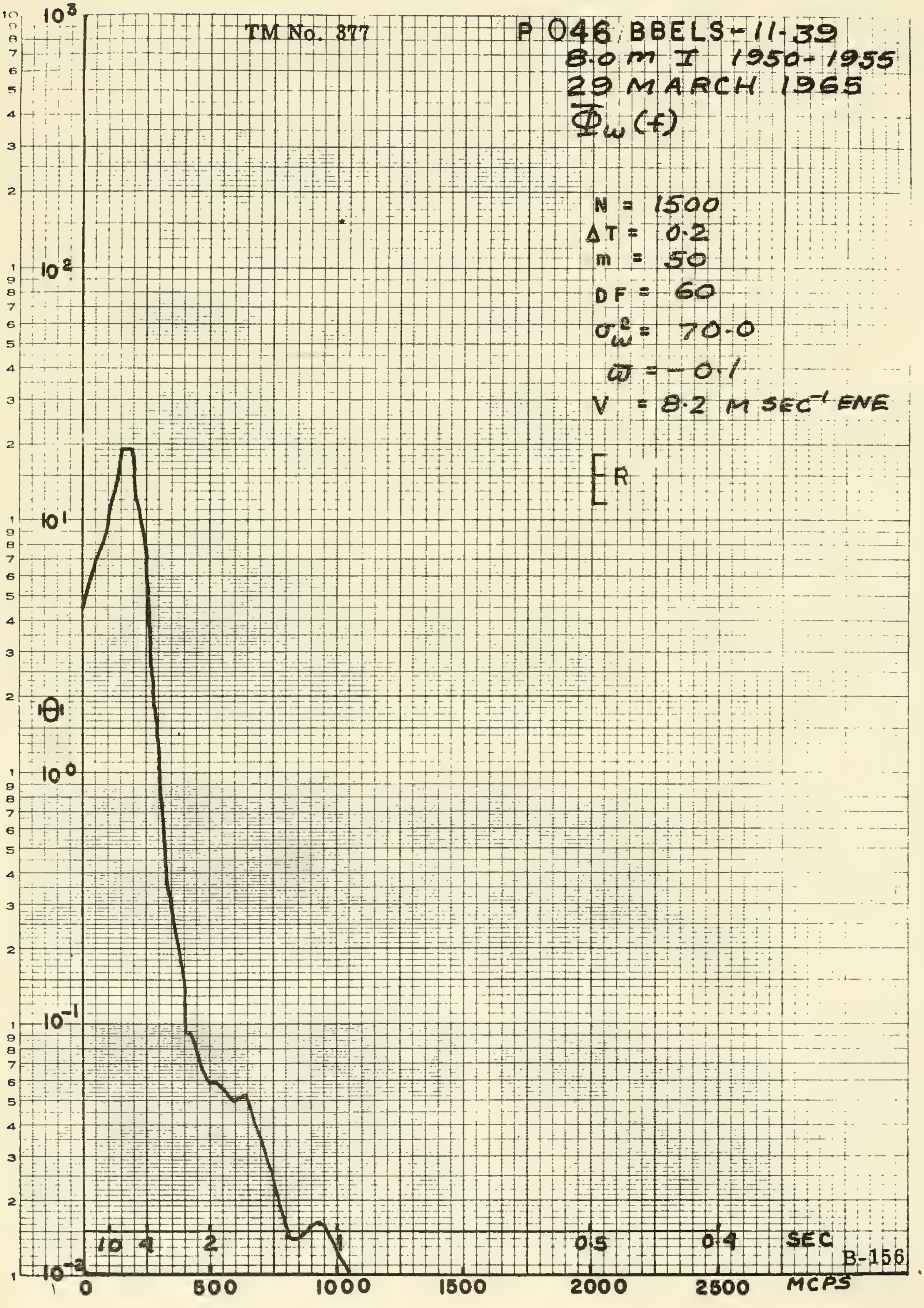


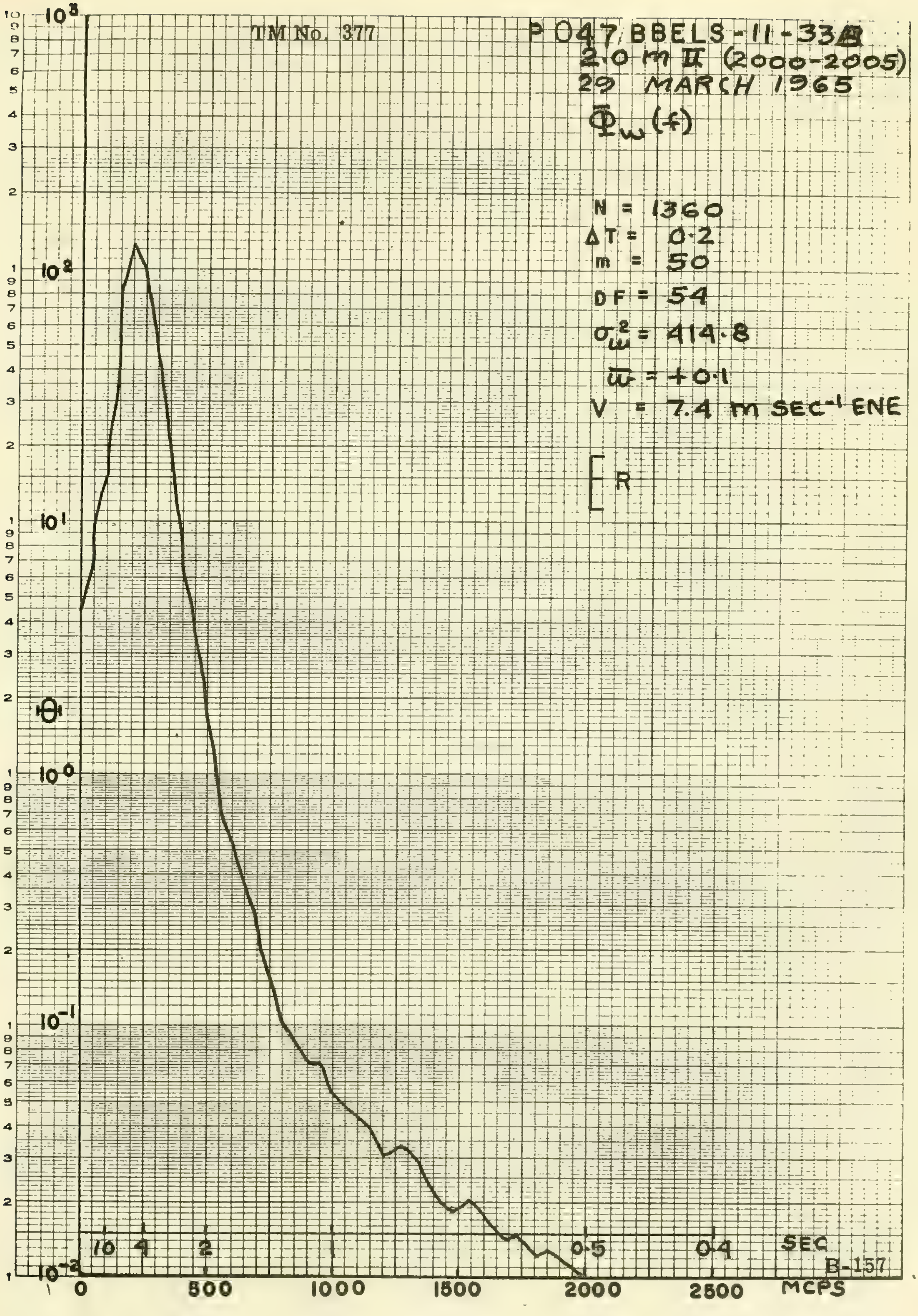
TM No. 377
P 043 BBELS -11-37
7.0 m I (1928-1933)
29 MARCH 1965
$\Phi_w(\epsilon)$
N = 1600
ΔT = 0.2
m = 50
DF = 64
σ_w^2 = 78.9
$\bar{w}$ = +0.9
V = 8.2 M SEC⁻¹ ENE
ER
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
Φ
10
4
2
1
0.5
0.4
SEC
0
500
1000
1500
2000
2500
MCPS
B-153
MADE IN U. S. A.
5 CYCLES X 10 DIVISIONS PER INCH

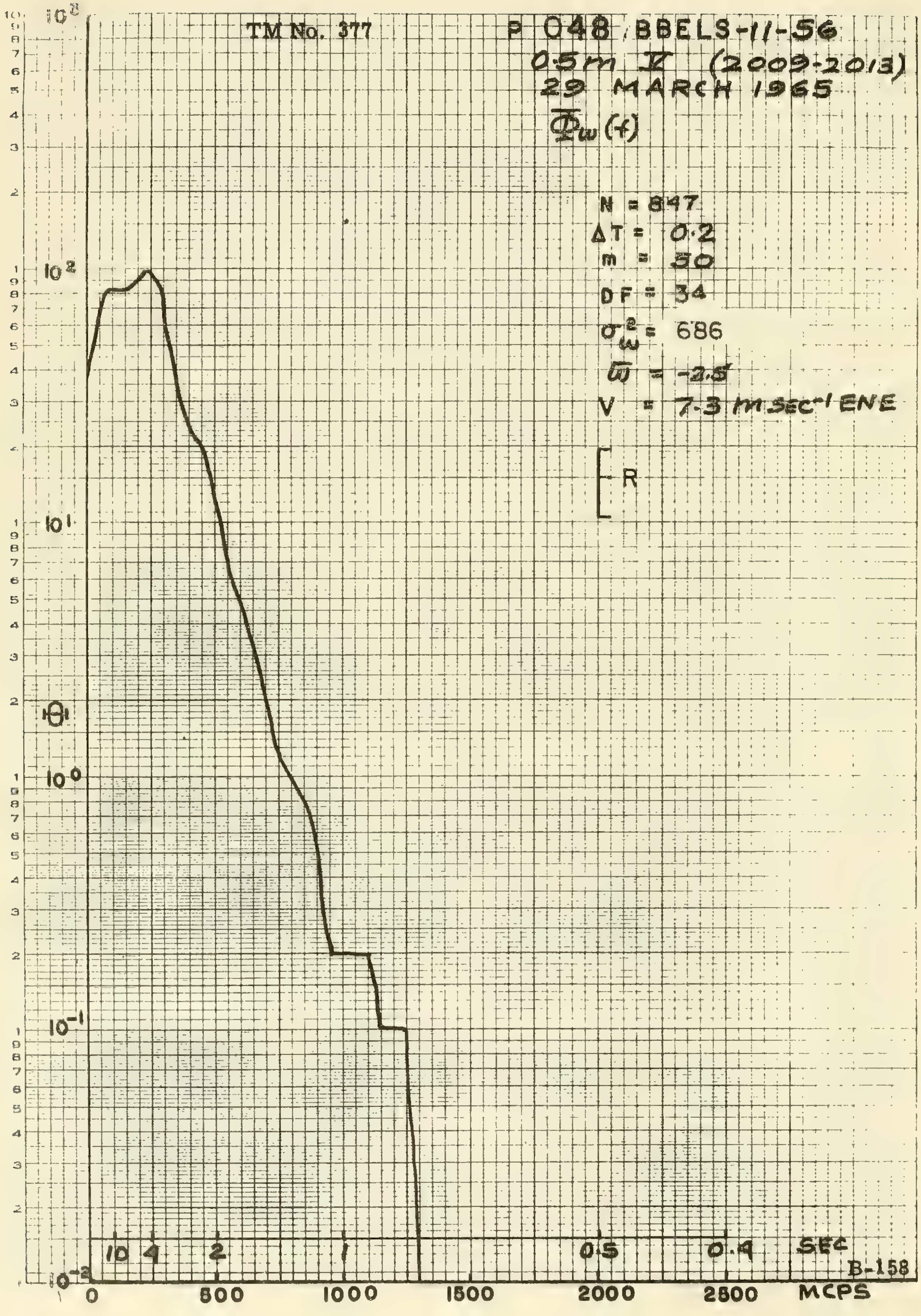

P 044 BBELS -11-32
55 m I (1934-1939)
29 MARCH 1965
$\overline{\Phi}_w(f)$
N = 1417
ΔT = 0.5
m = 50
DF = 57
σ_w^2 = 91.1
$\bar{w}$ = -0.3
V = 9.0 m sec-1 ENE
R
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS



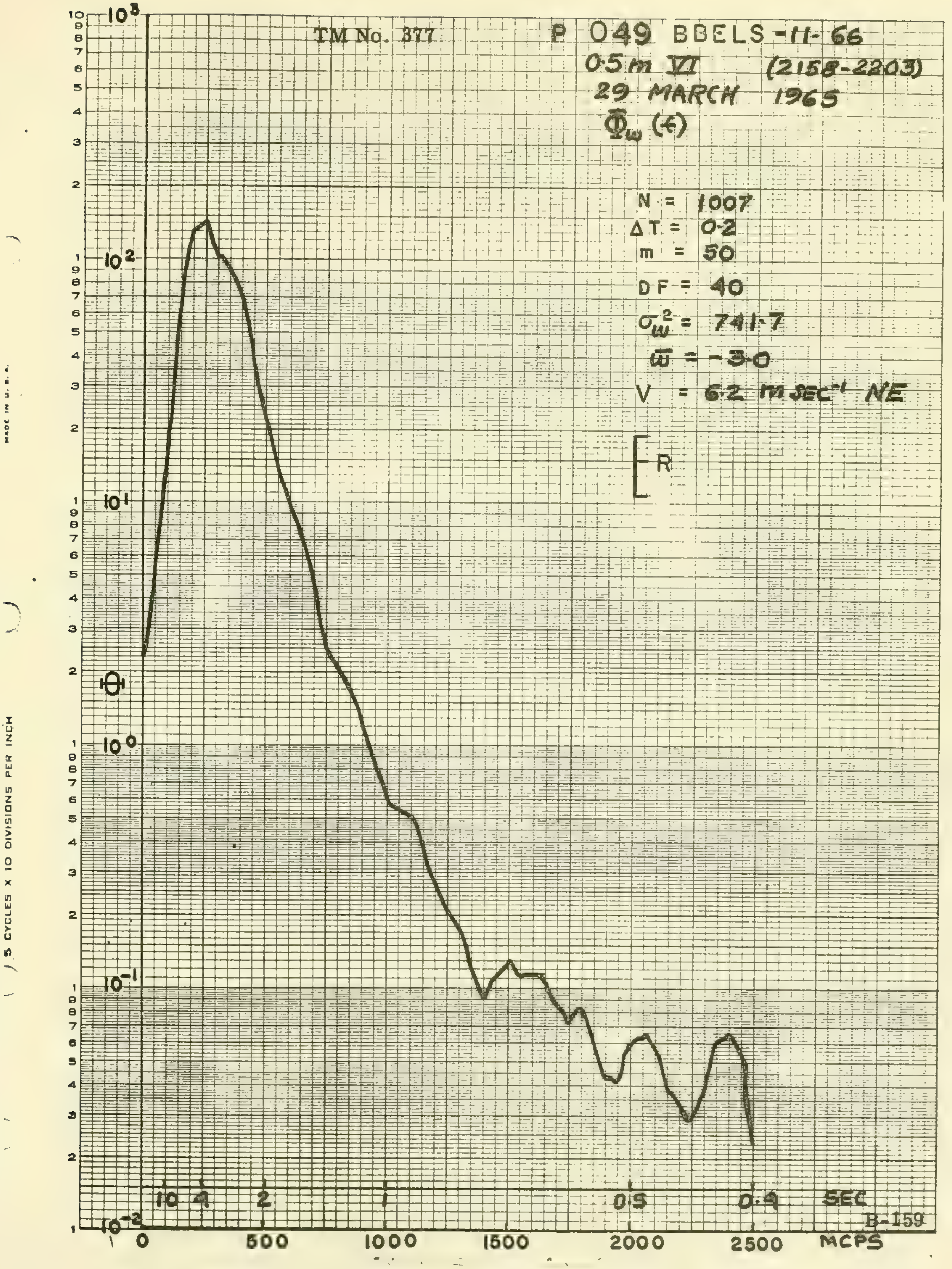
TM No. 377
P 045 BBELS-11-33A
6.5 m I (1942-1947)
29 MARCH 1965
$\Phi_\omega(f)$
N = 1459
ΔT = 0.2
m = 50
DF = 58
σ^2_ω = 78.6
$\bar{\omega}$ = +0.5
V = 8.3 m sec⁻¹ ENE
R
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10
4
2
1
0.5
0.4
SEC
0
500
1000
1500
2000
2500
MCPS
B-155
5 CYCLES X 10 DIVISIONS PER INCH
MADE IN U.S.A.

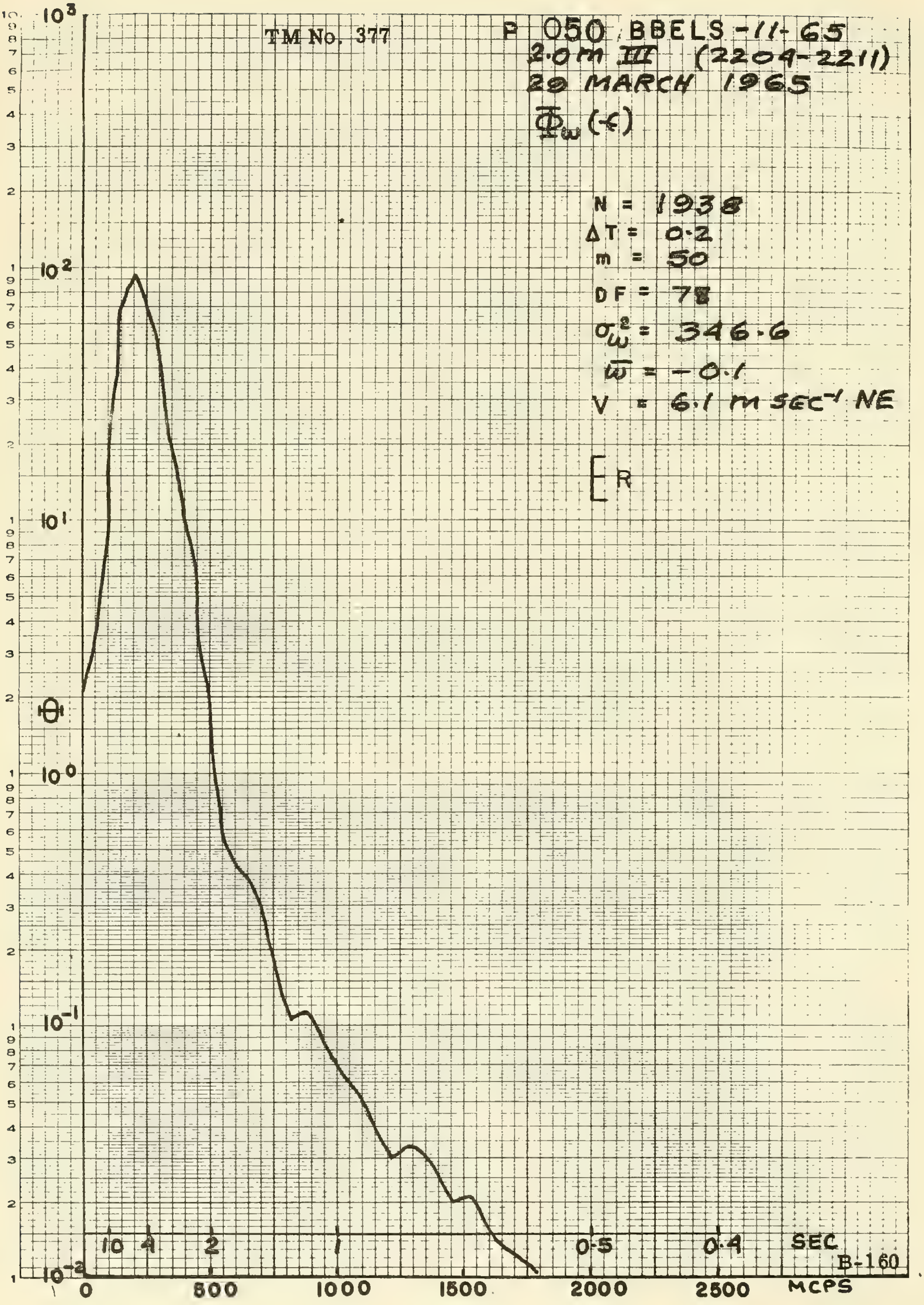

TM No. 377
P 046 BBELS-11-39
8.0 m I 1950-1955
29 MARCH 1965
$\Phi_w(f)$
N = 1500
ΔT = 0.2
m = 50
DF = 60
σ_w^2 = 70.0
$\bar{\omega}$ = -0.1
V = 8.2 M SEC^{-1} ENE
R
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
Φ
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-156


TM No. 377
P 047 BBELS-11-33B
2.0 m II (2000-2005)
29 MARCH 1965
$\Phi_w(f)$
N = 1360
ΔT = 0.2
m = 50
DF = 54
σ_w^2 = 414.8
$\bar{w}$ = +0.1
V = 7.4 m SEC⁻¹ ENE
R
Φ
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-157
3 CYCLES X 10 DIVISIONS PER INCH
MADE IN U.S.A.

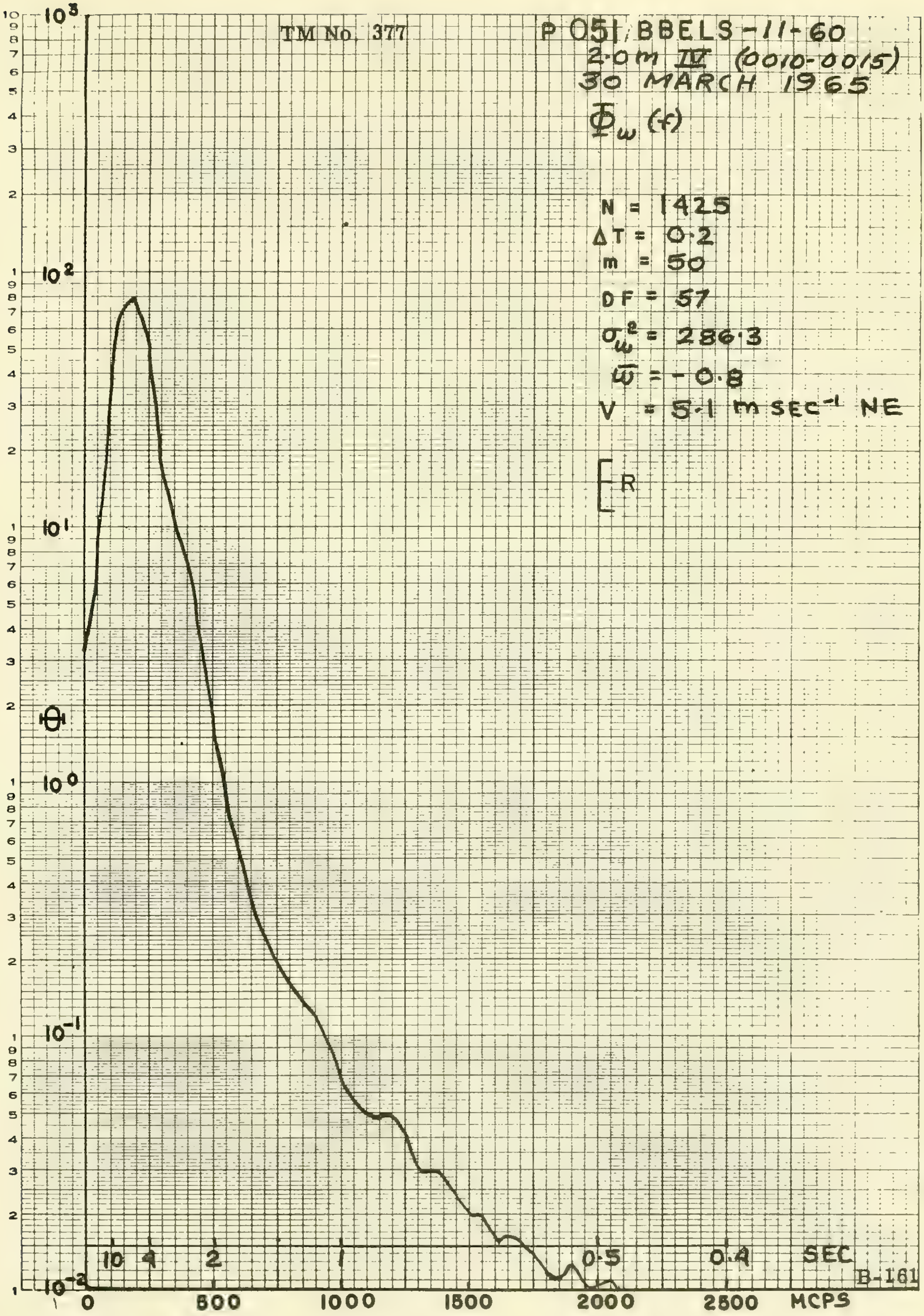


TM No. 377
P 048 BBELS-11-56
0.5m II (2009-2013)
29 MARCH 1965
$\overline{\Phi}_w(f)$
N = 847
ΔT = 0.2
m = 50
DF = 34
σ_w^2 = 686
$\overline{w}$ = -2.5
V = 7.3 m.sec⁻¹ ENE
R
10^2
10^1
10^0
10^{-1}
10^{-2}
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-158

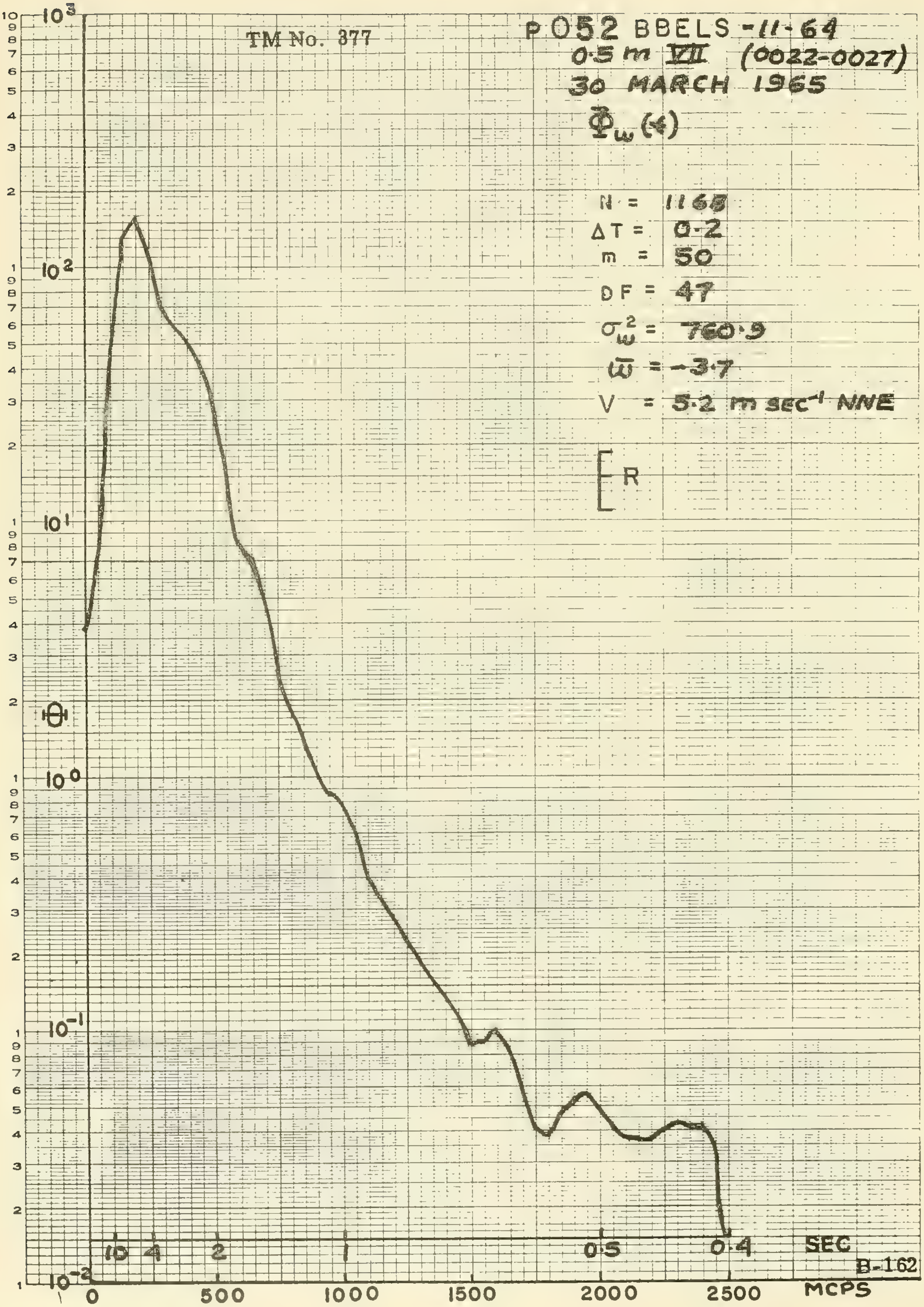

TM No. 377
P 049 BBELS-11-66
0.5 m VI (2158-2203)
29 MARCH 1965
Φ̄w (ε)
N = 1007
ΔT = 0.2
m = 50
DF = 40
σw² = 741.7
w̄ = -3.0
V = 6.2 m SEC⁻¹ NE
R
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
5 CYCLES X 10 DIVISIONS PER INCH
MADE IN U.S.A.

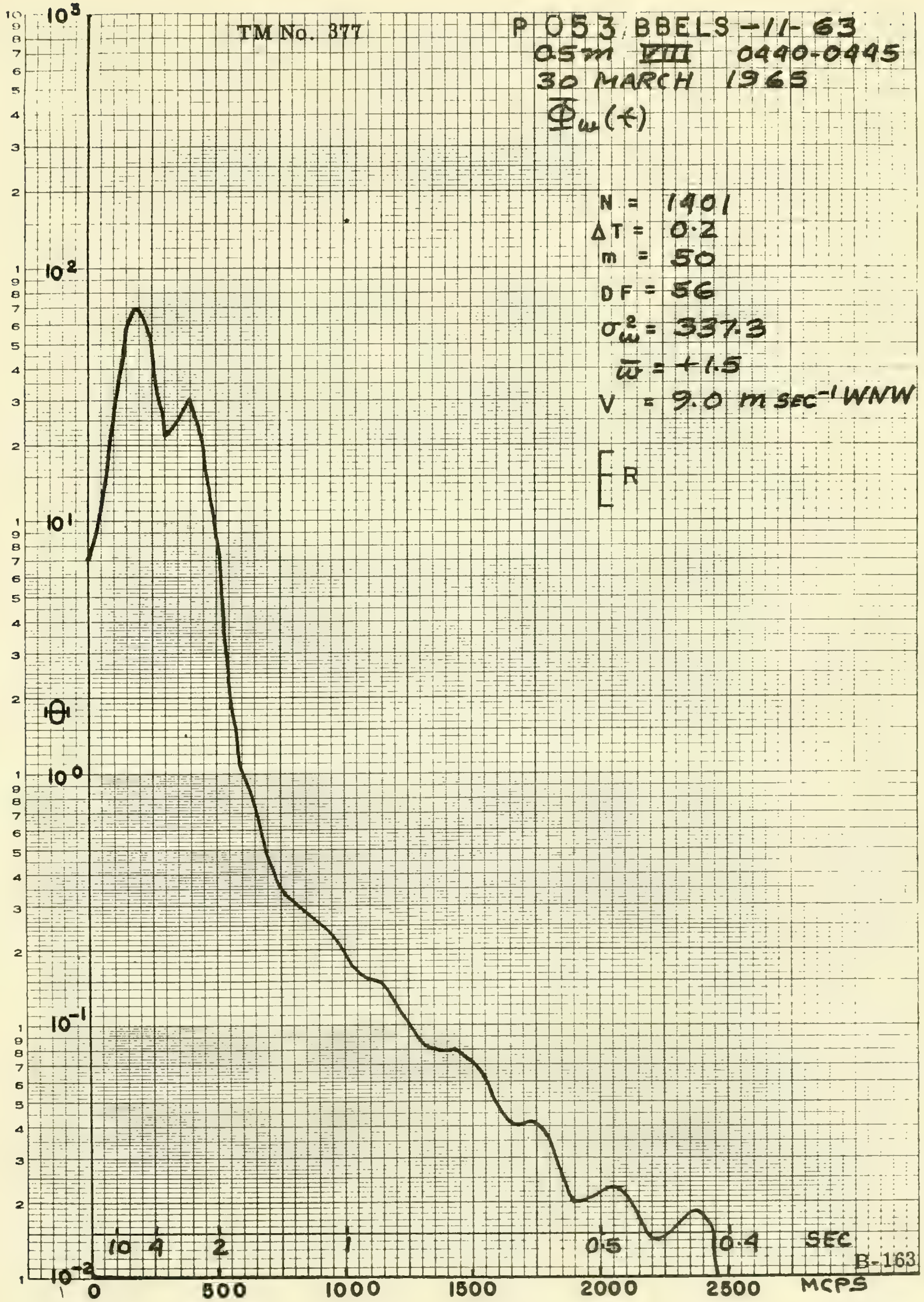


TM No. 377
P 050 BBELS -11-65
2.0m III (2204-2211)
29 MARCH 1965
$\Phi_w(f)$
N = 1938
ΔT = 0.2
m = 50
DF = 78
σ_w^2 = 346.6
$\bar{w}$ = -0.1
V = 6.1 m sec⁻¹ NE
ER
Φ
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-160

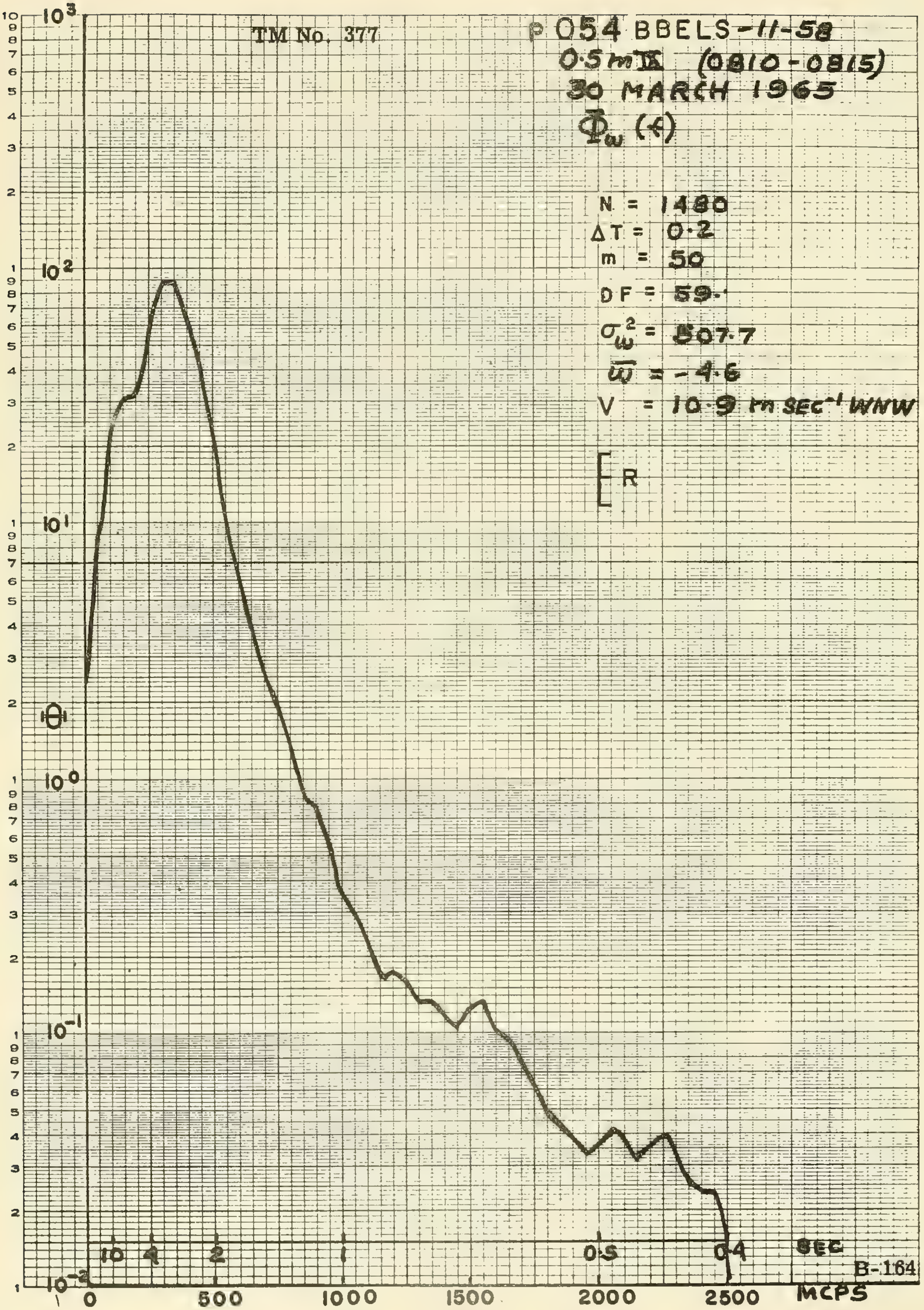


TM No. 377
P 051 / BBELS - 11 - 60
2.0m IV (0010-0015)
30 MARCH 1965
$\Phi_\omega(f)$
N = 1425
ΔT = 0.2
m = 50
DF = 57
σ_ω^2 = 286.3
$\bar{\omega}$ = - 0.8
V = 5.1 m SEC^{-1} NE
R
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
Φ
10
4
2
1
0.5
0.4
SEC
0
500
1000
1500
2000
2500
MCPS
B-161
5 CYCLES X 10 DIVISIONS PER INCH

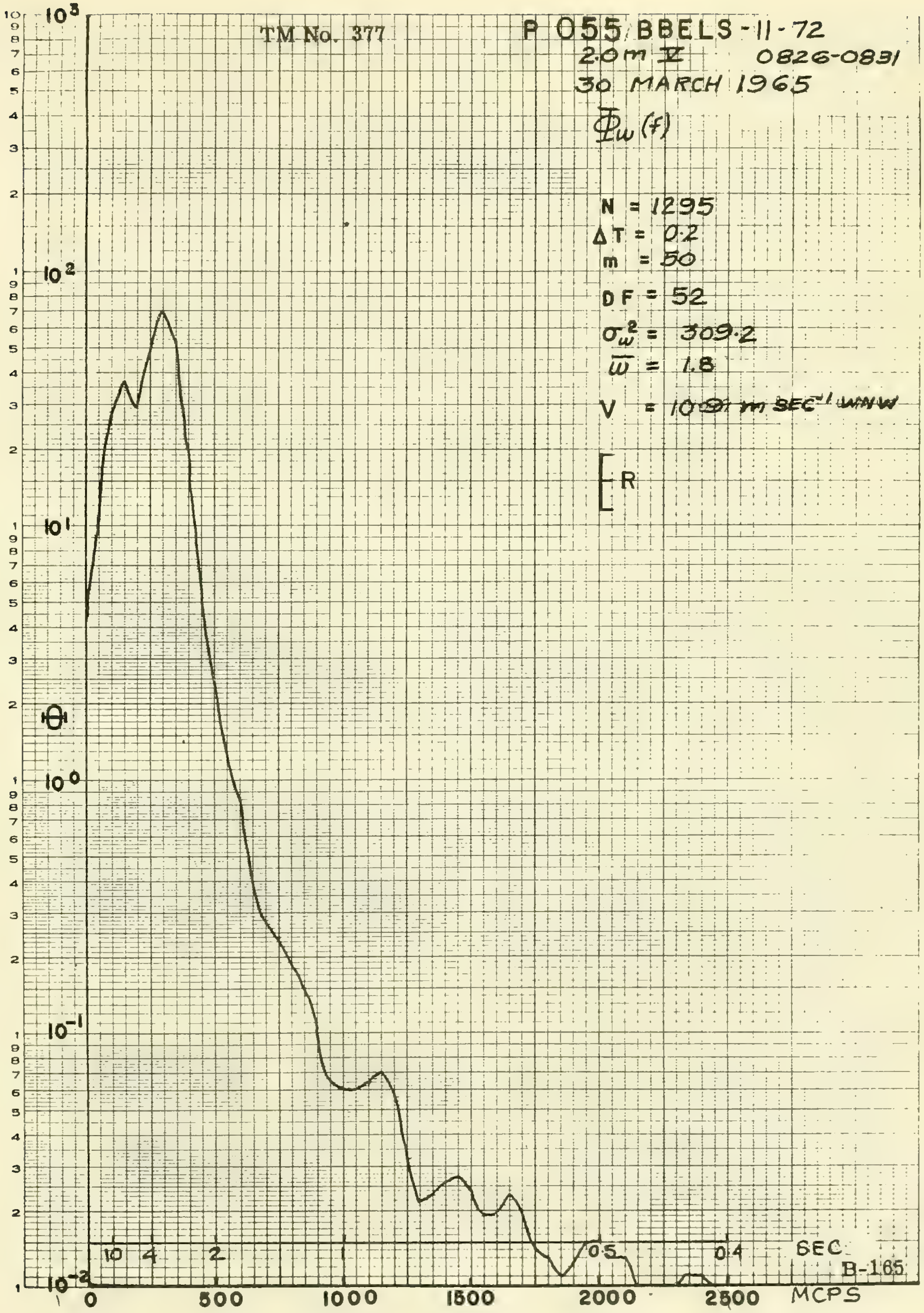

TM No. 377
P 052 BBELS -11-64
0.5 m VII (0022-0027)
30 MARCH 1965
$\Phi_w(4)$
N = 1168
ΔT = 0.2
m = 50
DF = 47
σ_w^2 = 760.9
$\bar{w}$ = -3.7
V = 5.2 m sec⁻¹ NNE
R
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
Φ
10
4
2
1
0.5
0.4
SEC
0
500
1000
1500
2000
2500
MCPS
B-162

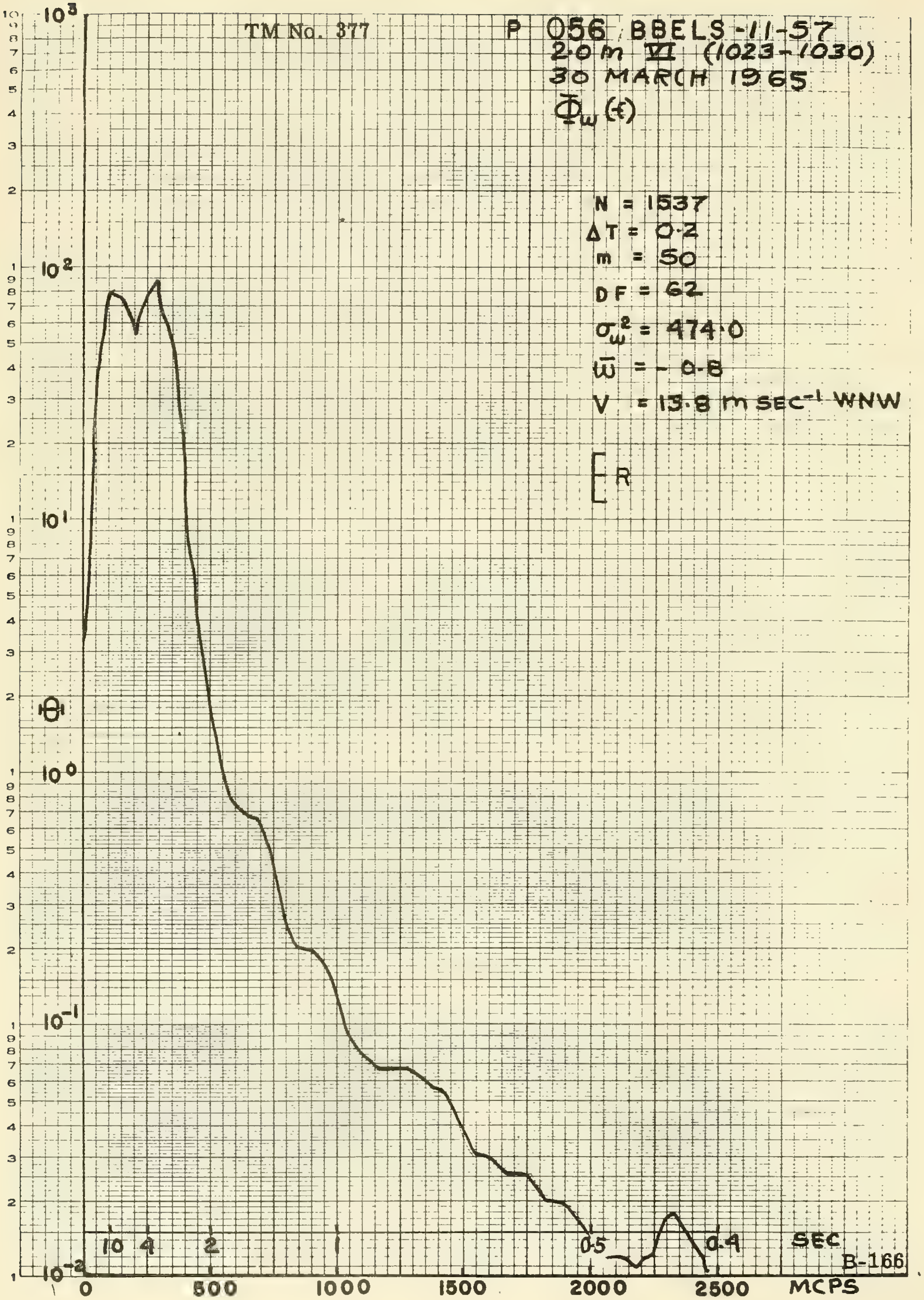


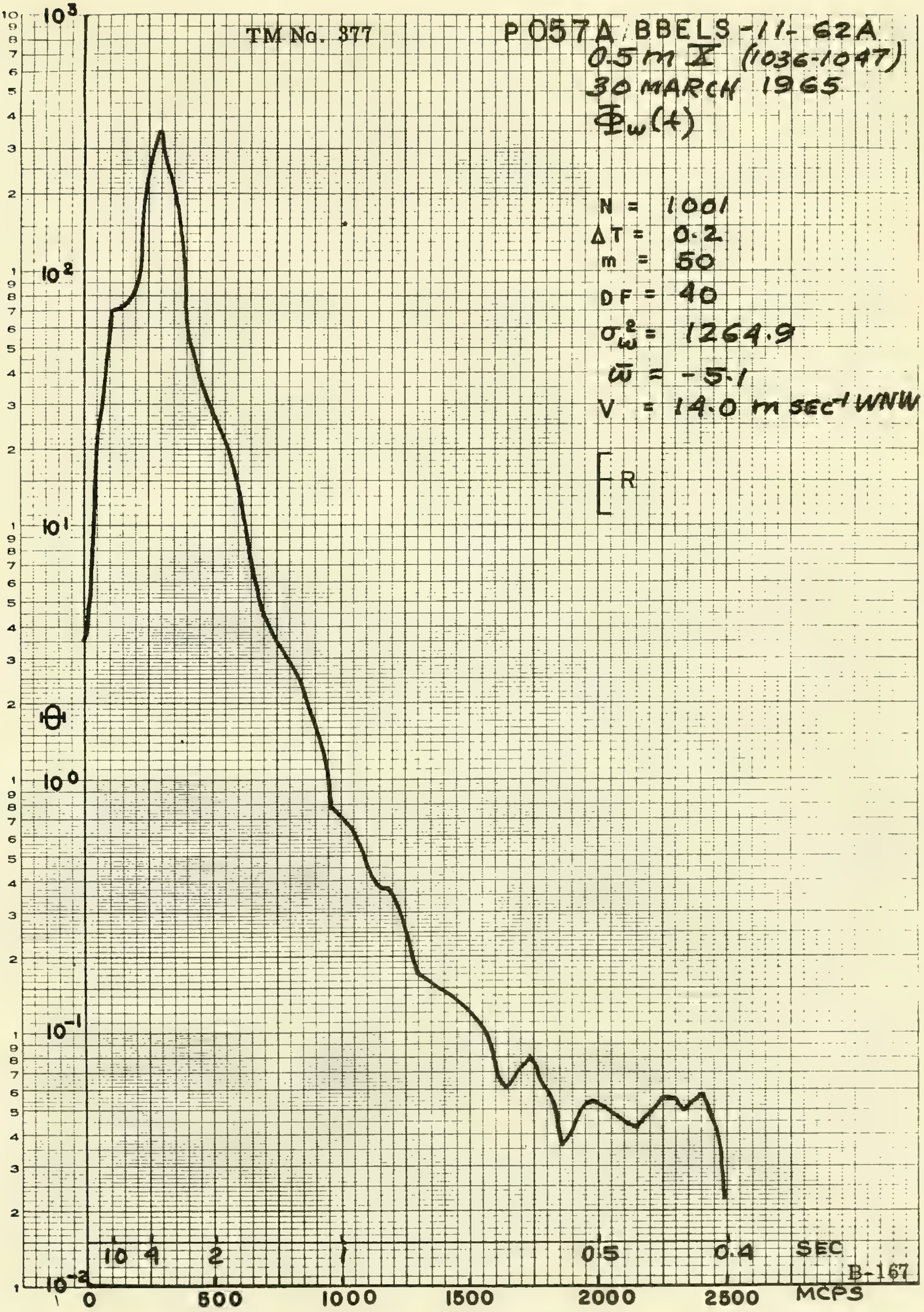
TM No. 377
P 053 BBELS -11- 63
0.5m VIII 0440-0445
30 MARCH 1965
$\Phi_w(f)$
N = 1401
ΔT = 0.2
m = 50
DF = 56
σ_w^2 = 337.3
$\bar{w}$ = +1.5
V = 9.0 m sec⁻¹ WNW
R
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
Φ
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-163

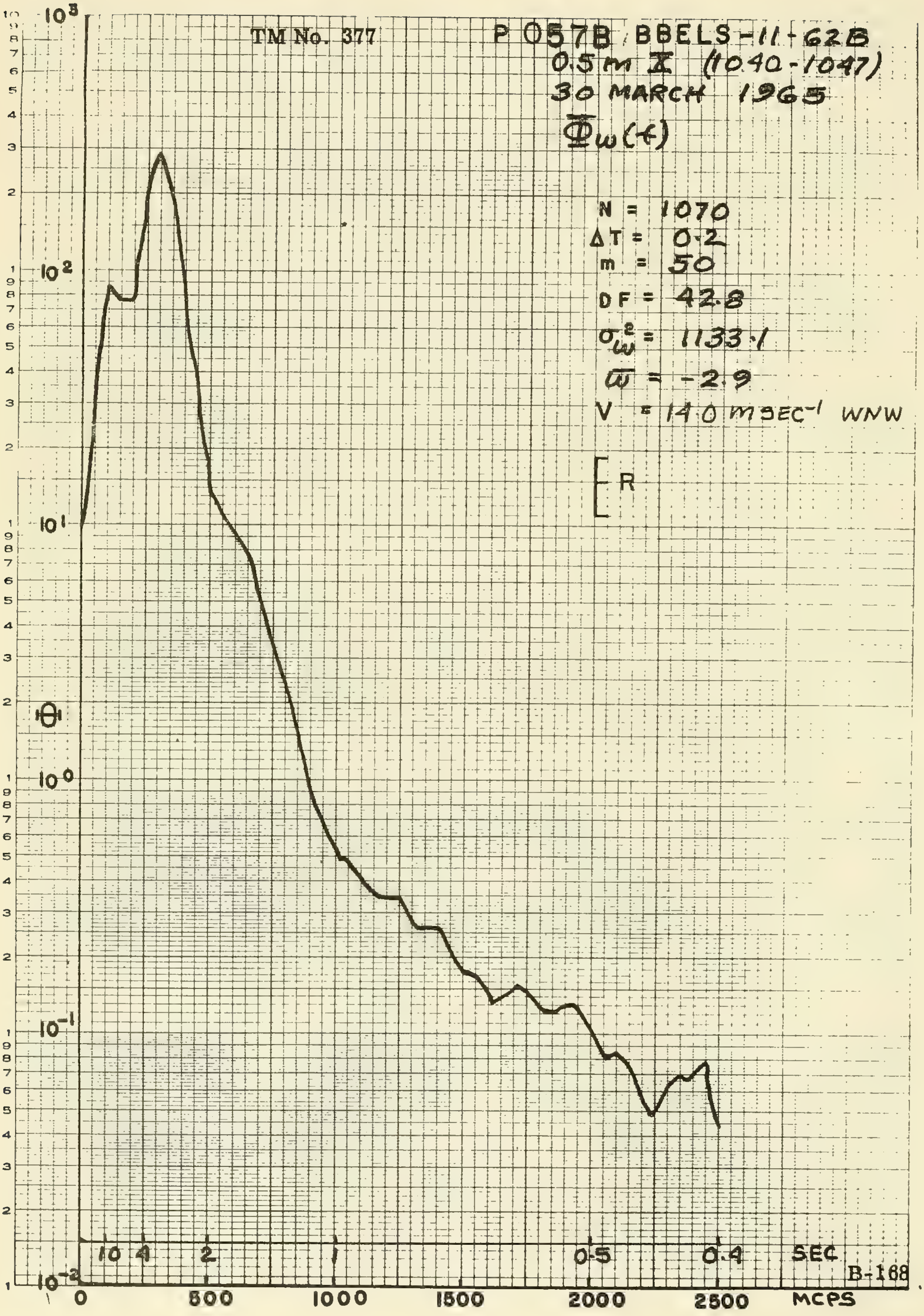


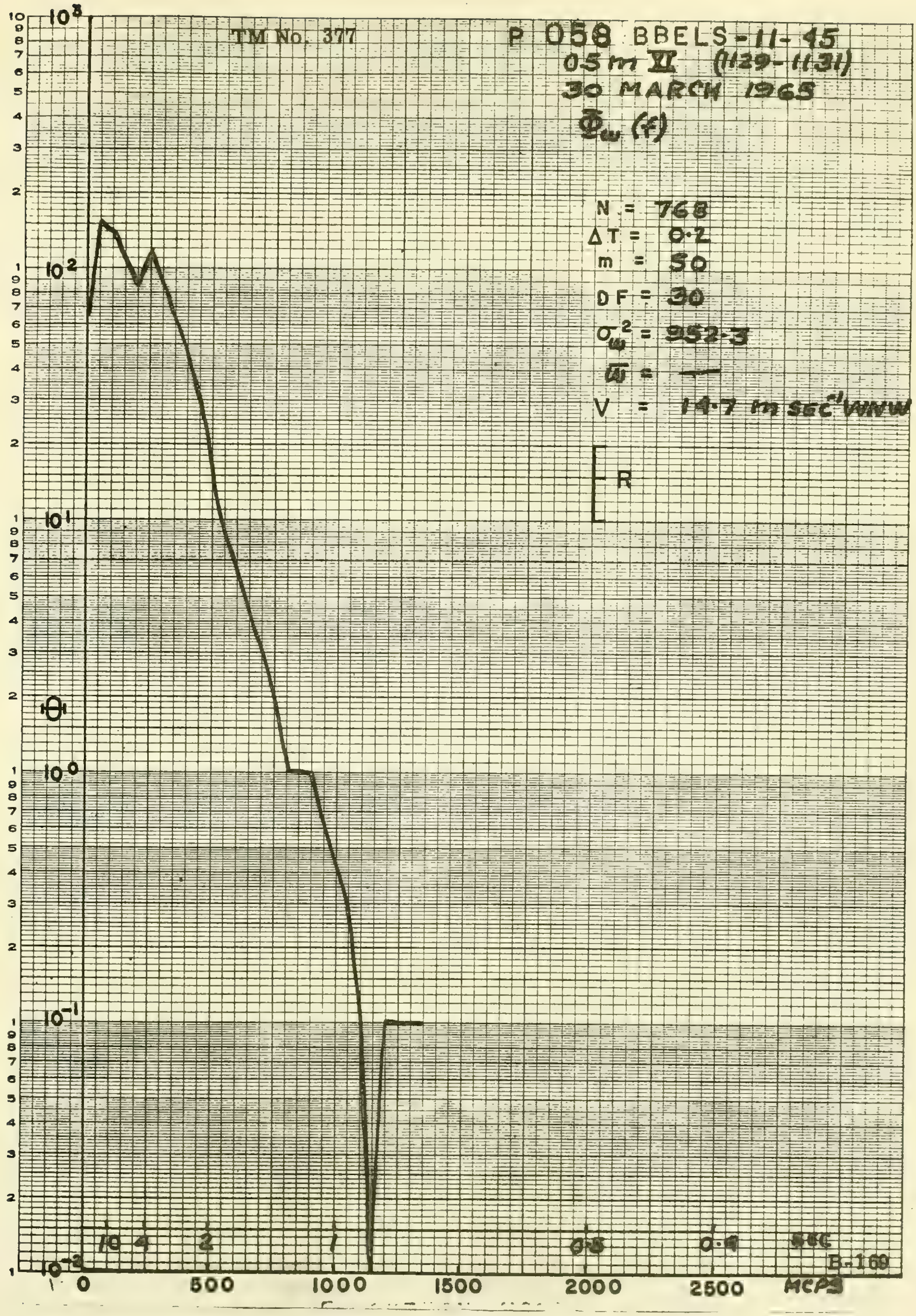
TM No. 377
P 054 BBELS-11-58
0·5 m IX (0810-0815)
30 MARCH 1965
Φ_w (f)
N = 1480
ΔT = 0·2
m = 50
DF = 59·
σ_w² = 507·7
w̄ = -4·6
V = 10·9 m sec⁻¹ WNW
R
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 1 0·5 0·4 SEC
0 500 1000 1500 2000 2500 MCPS
B-164


P 055 BBELS-11-72
2.0m Ⅳ 0826-0831
30 MARCH 1965
Φw(f)
N = 1295
ΔT = 0.2
m = 50
DF = 52
σw² = 309.2
w̄ = 1.8
V = 10.9 m SEC⁻¹ WNW
R
10³
10²
10¹
10⁰
10⁻¹
10⁻²
Φ
10
4
2
1
0.5
0.4
SEC
0
500
1000
1500
2000
2500
MCPS

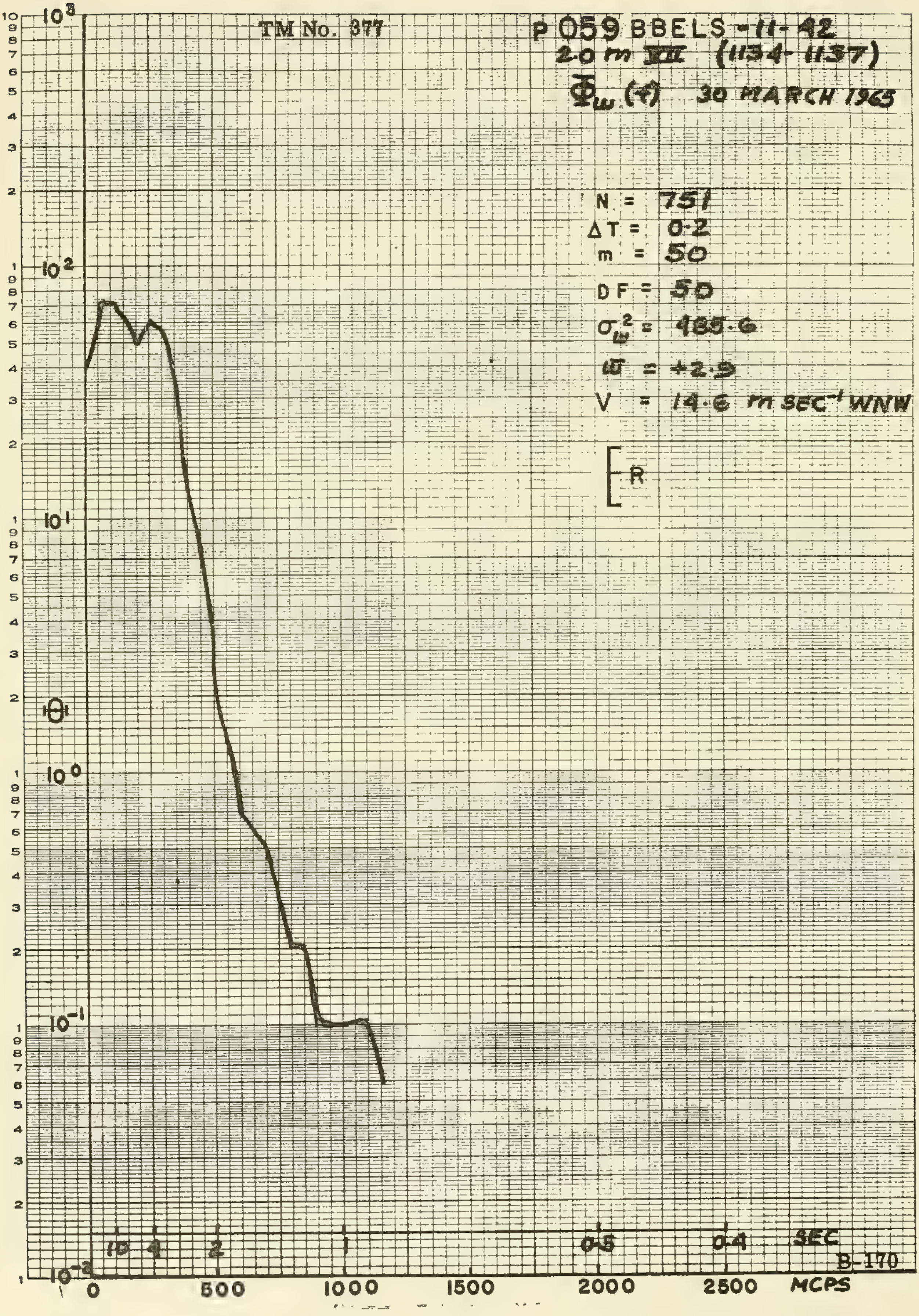

TM No. 377
P 056 BBELS-11-57
2.0m VI (1023-1030)
30 MARCH 1965
$\Phi_w(t)$
N = 1537
ΔT = 0.2
m = 50
DF = 62
σ_w^2 = 474.0
$\bar{w}$ = - 0.8
V = 13.8 m SEC⁻¹ WNW
R
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
Φ
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-166


P057A BBELS-11-62A
0.5m X (1036-1047)
30 MARCH 1965
Φw(t)
N = 1001
ΔT = 0.2
m = 50
DF = 40
σω² = 1264.9
ω̄ = -5.1
V = 14.0 m sec⁻¹ WNW
R
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS

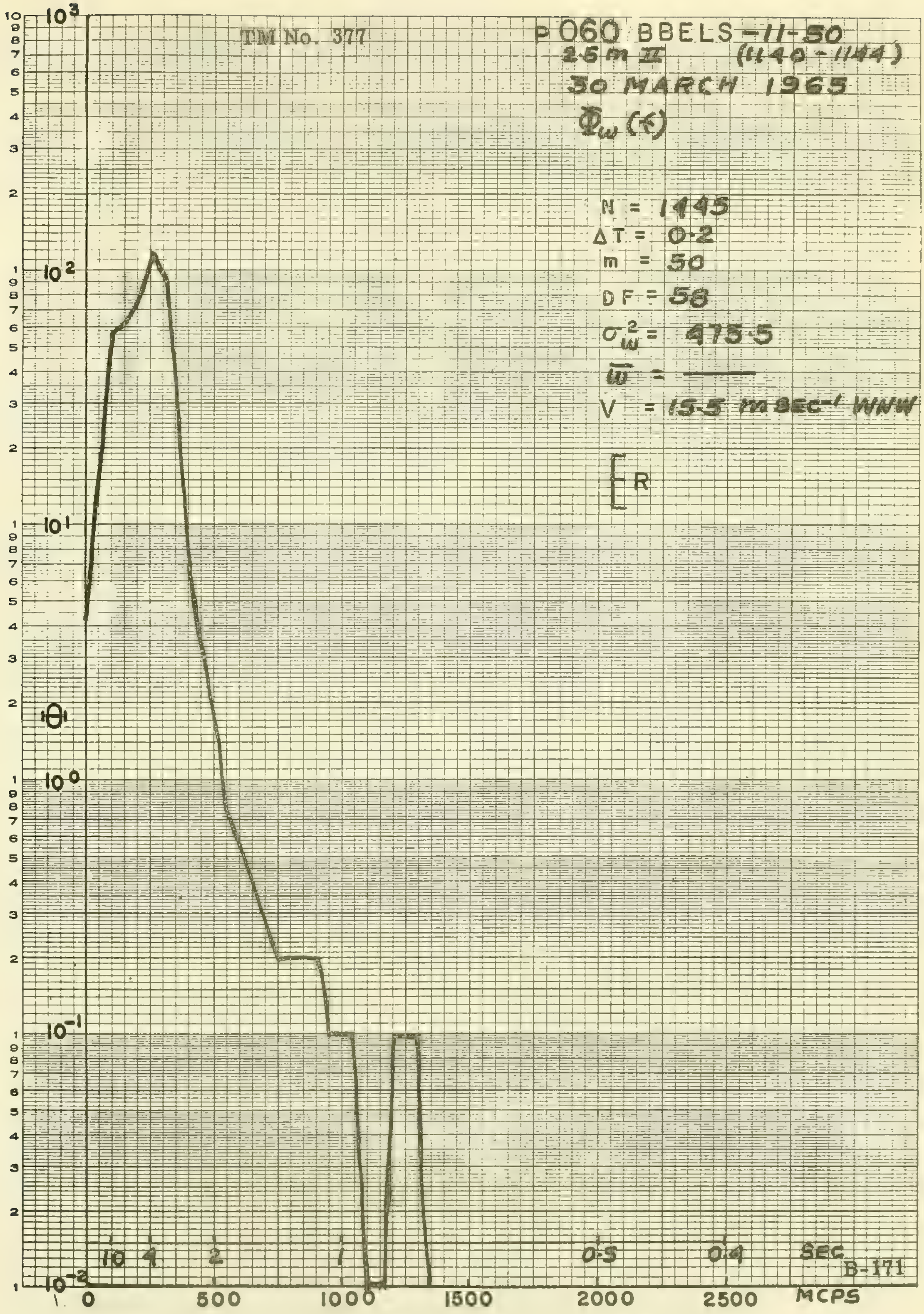

P 057B BBELS-11-62B
0.5m X (1040-1047)
30 MARCH 1965
$\Phi_w(f)$
N = 1070
ΔT = 0.2
m = 50
DF = 42.8
σ_w^2 = 1133.1
$\bar{w}$ = -2.9
V = 14.0 m sec⁻¹ WNW
R
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS

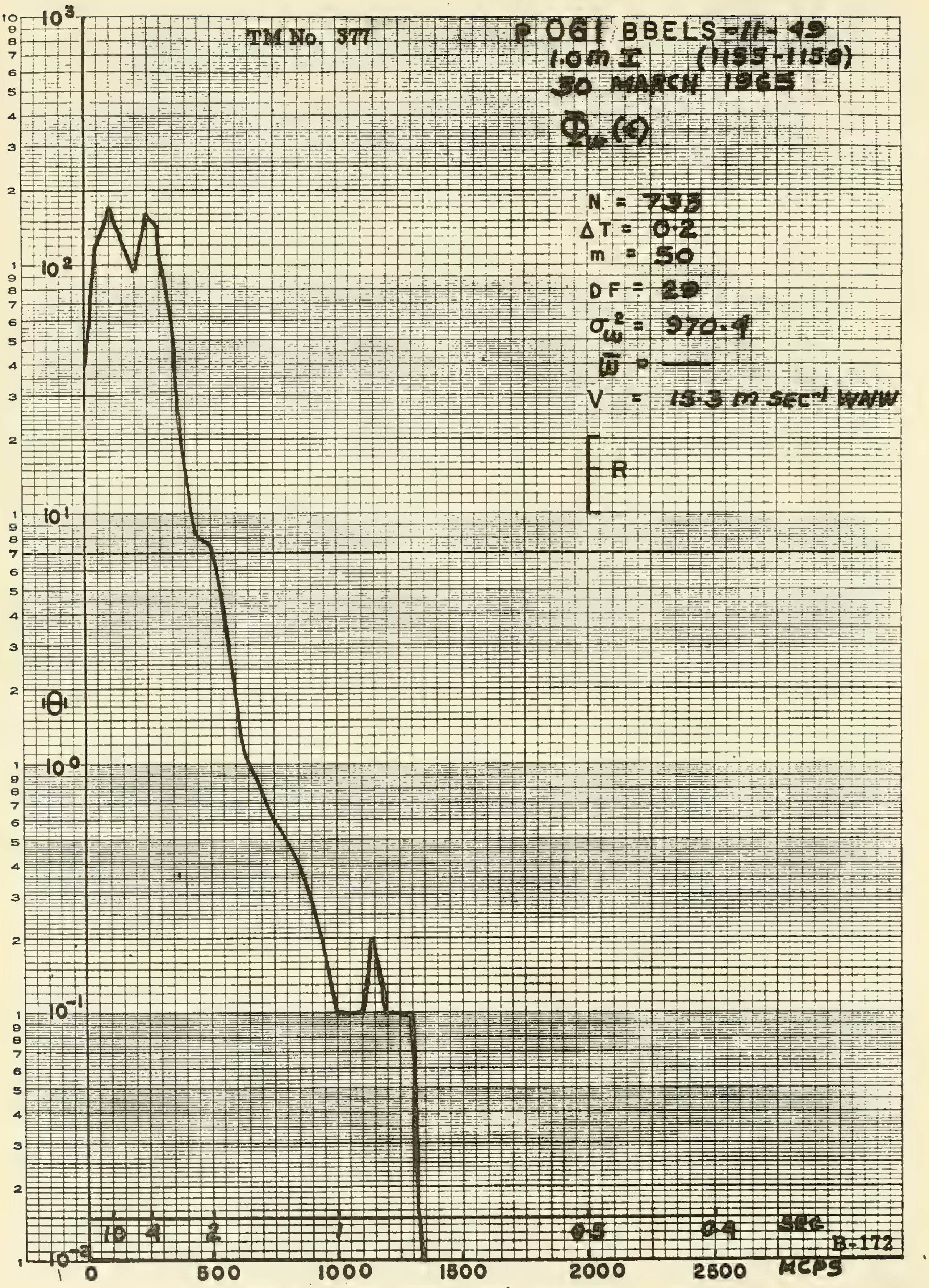


TM No. 377
P 058 BBELS-11-45
05 m XI (1129-1131)
30 MARCH 1965
$\Phi_w(f)$
N = 768
ΔT = 0·2
m = 50
DF = 30
σ_w^2 = 952·3
$\bar{w}$ = —
V = 14·7 m sec⁻¹ WNW
R
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
Φ
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-169
5 CYCLES X 10 DIVISIONS PER INCH

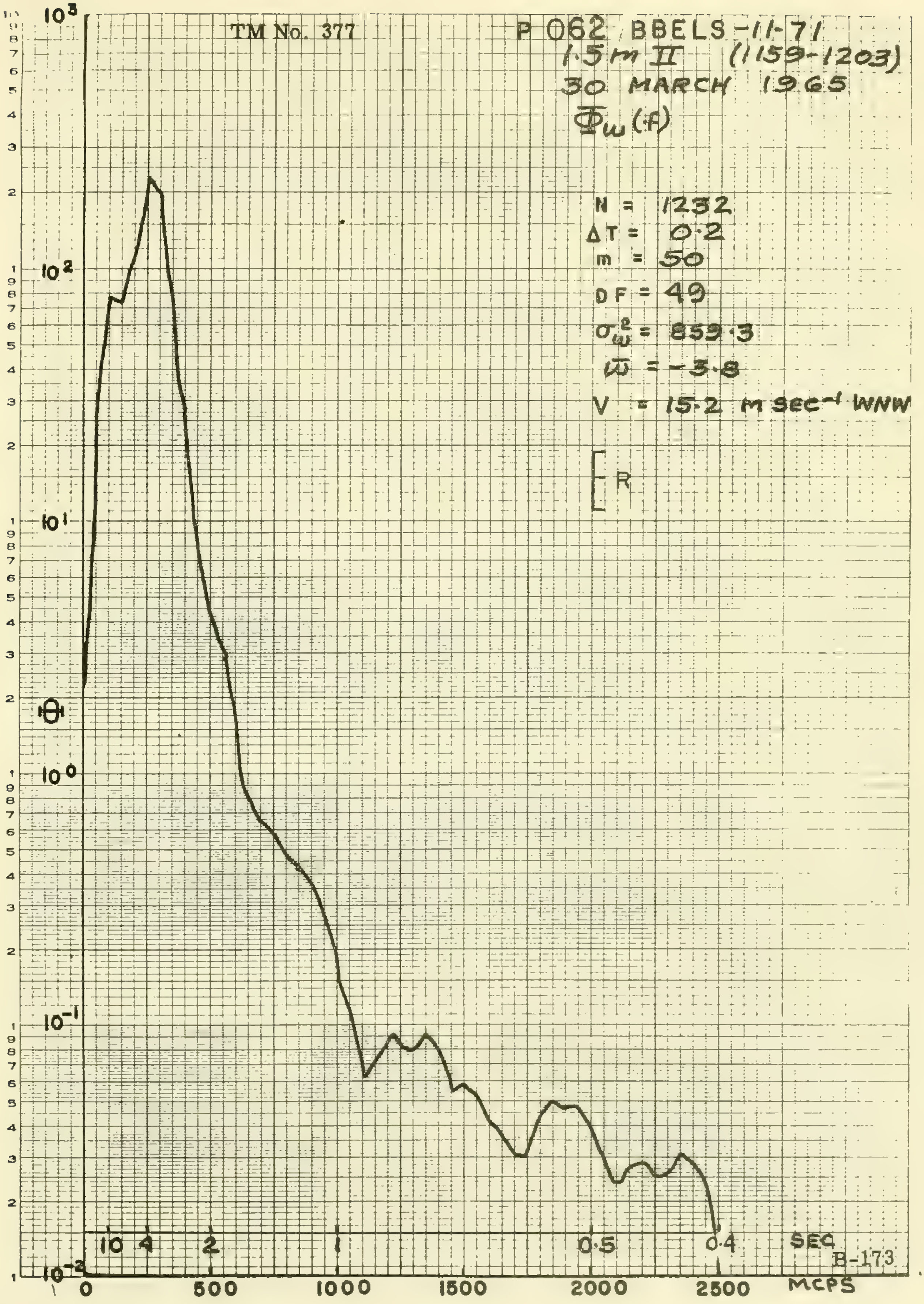


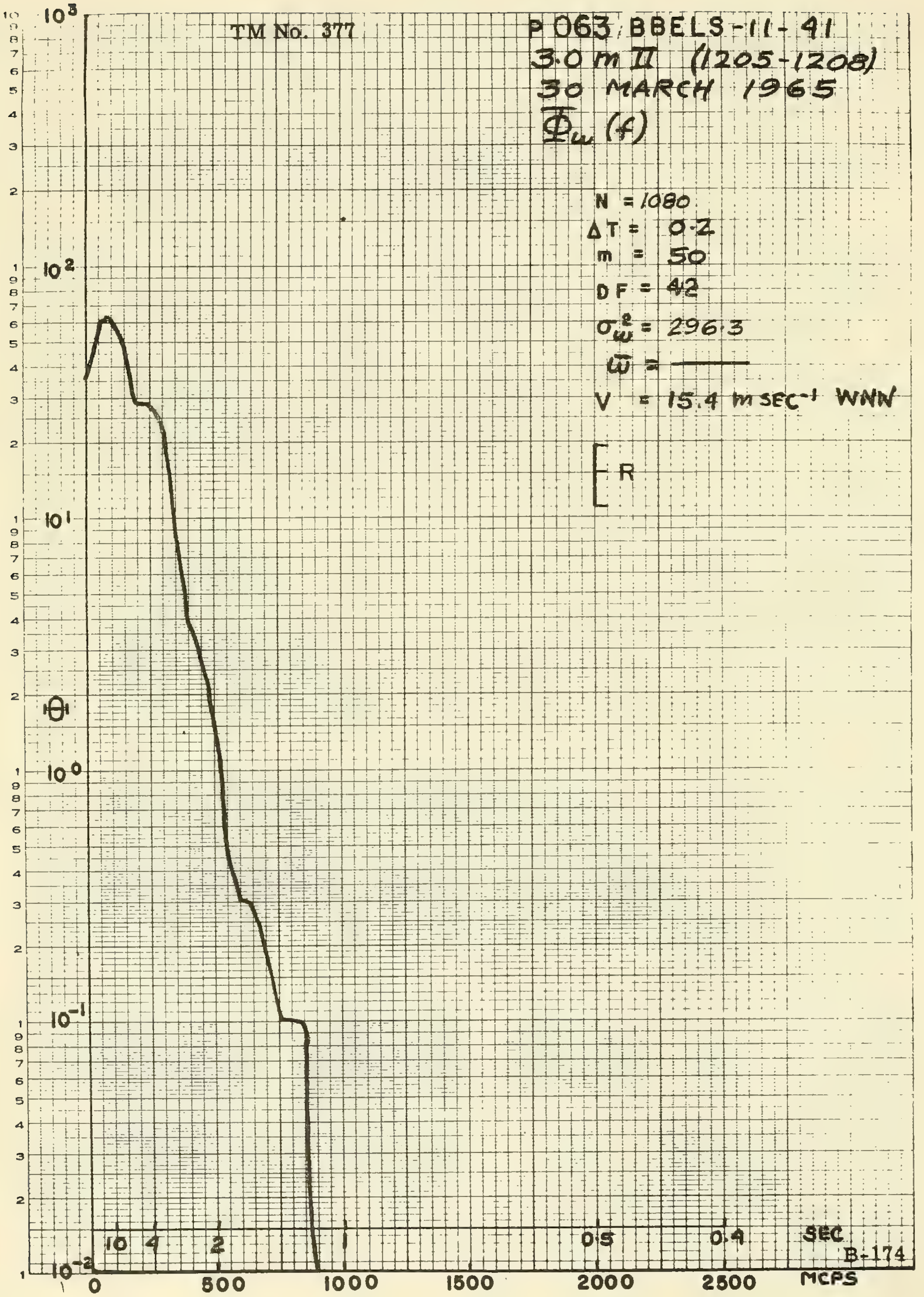
TM No. 377
P 059 BBELS - 11 - 42
2.0 m VII (1134-1137)
Φw(f) 30 MARCH 1965
N = 751
ΔT = 0·2
m = 50
DF = 50
σw² = 485·6
w̄ = +2·9
V = 14·6 m SEC⁻¹ WNW
R
10³
10²
10¹
10⁰
10⁻¹
10⁻²
0
500
1000
1500
2000
2500
MCPS
10
4
2
1
0·5
0·4
SEC
B-170

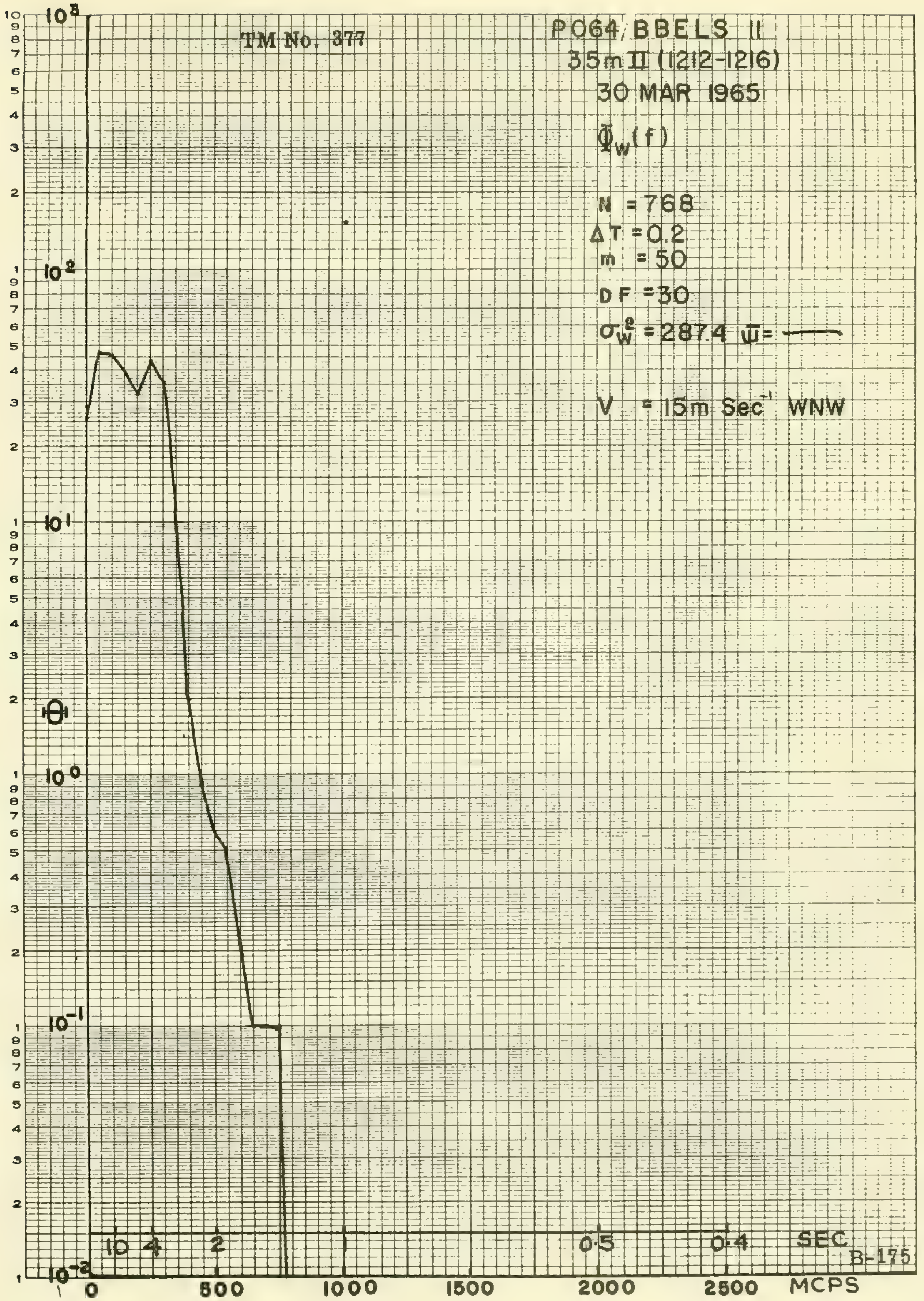

P 060 BBELS -11-50
2·5 m II (1140 - 1144)
30 MARCH 1965
Φw (f)
N = 1445
ΔT = 0·2
m = 50
DF = 58
σw² = 475·5
w̄ = ———
V = 15·5 m sec⁻¹ WNW
R
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 1 0·5 0·4 SEC
0 500 1000 1500 2000 2500 MCPS
5 CYCLES X 10 DIVISIONS PER INCH
MADE IN U.S.A.

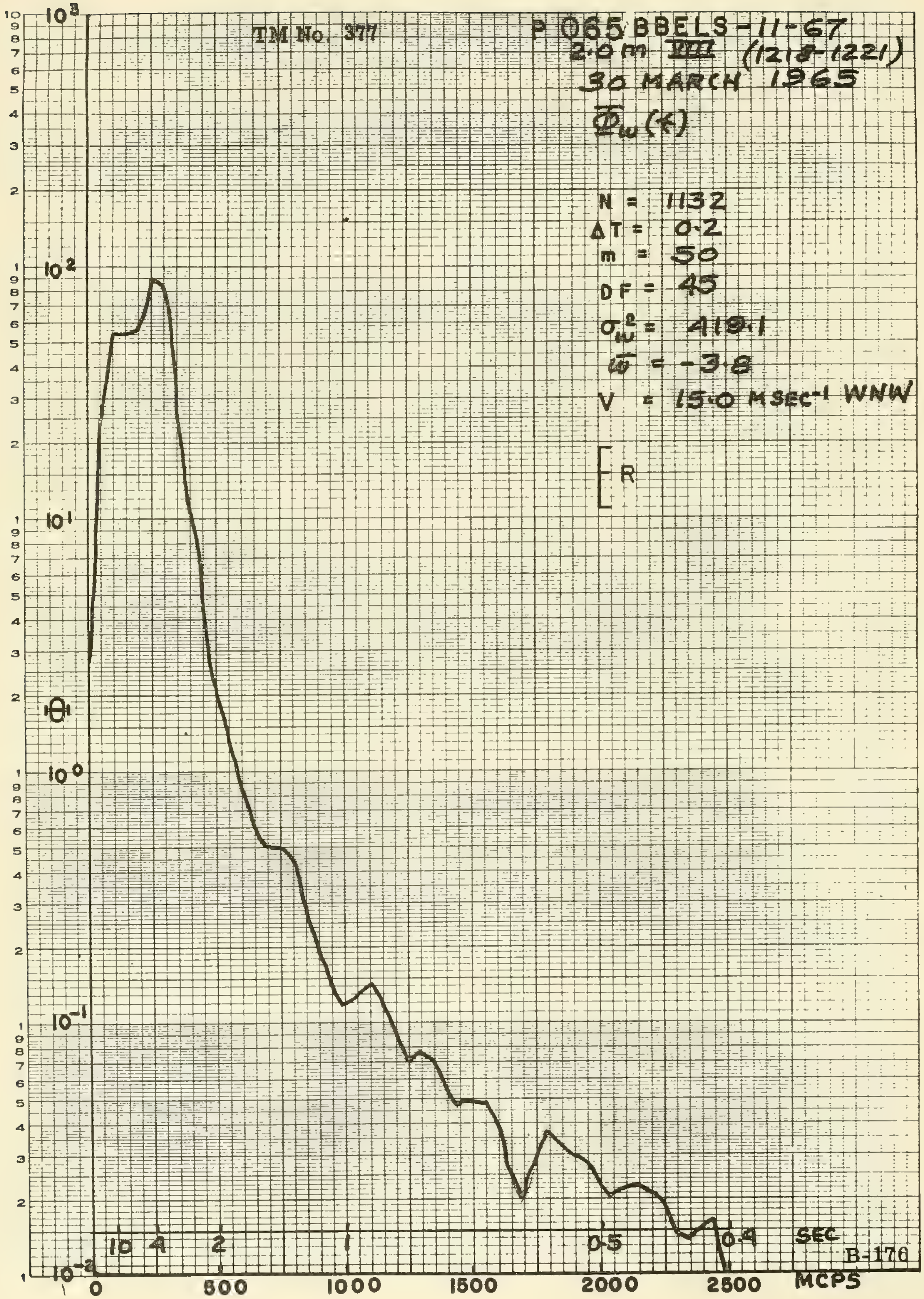


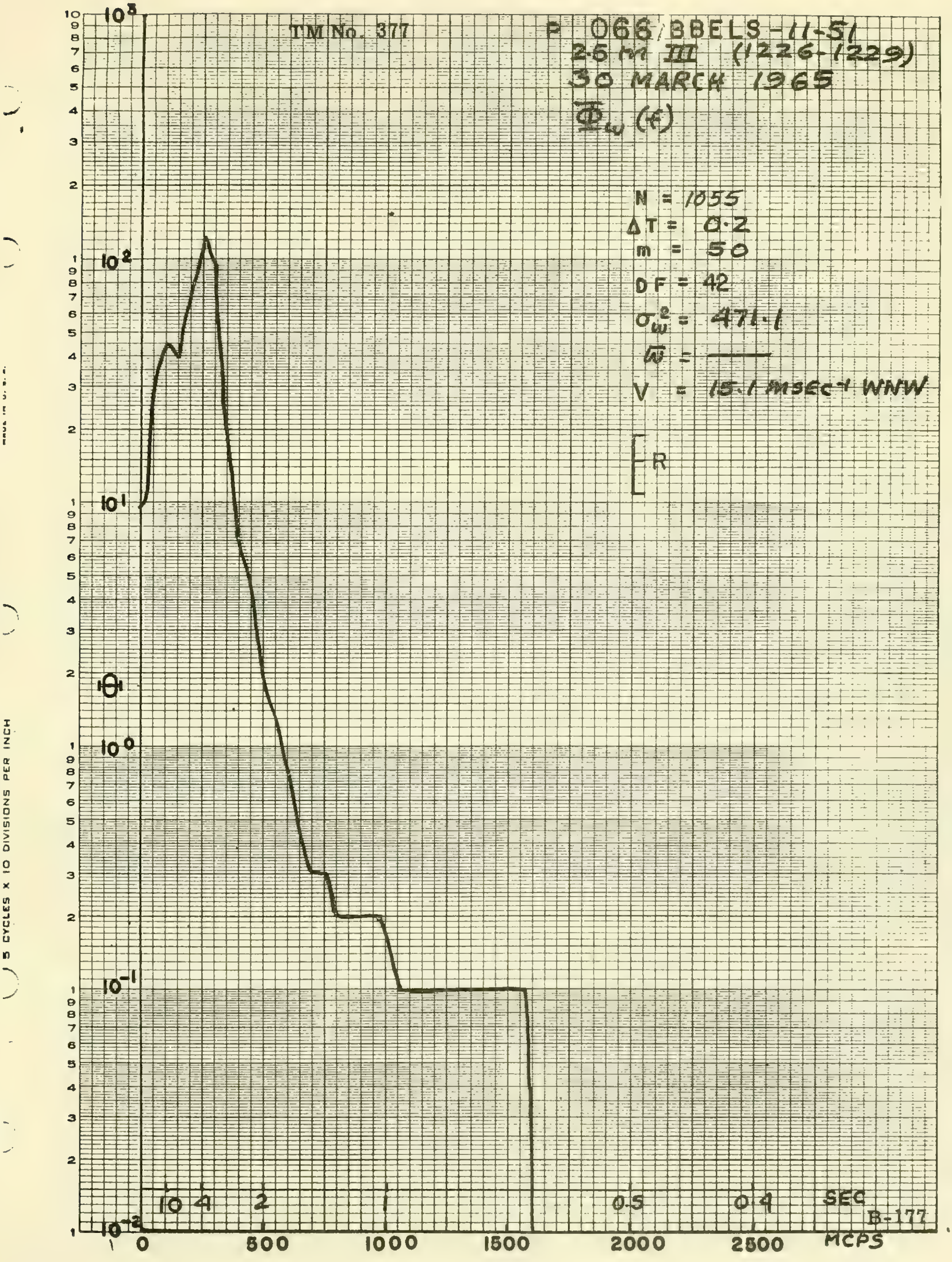
TM No. 377
P 061 BBELS-11-49
1.0m I (1155-1158)
30 MARCH 1965
$\Phi_w(\epsilon)$
N = 733
ΔT = 0·2
m = 50
DF = 29
σ_w^2 = 970·4
$\bar{w}$ = ——
V = 15·3 m sec⁻¹ WNW
R
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
Θ
10 4 2 1 0·5 0·4 SEC
0 500 1000 1500 2000 2500 MCPS
B-172

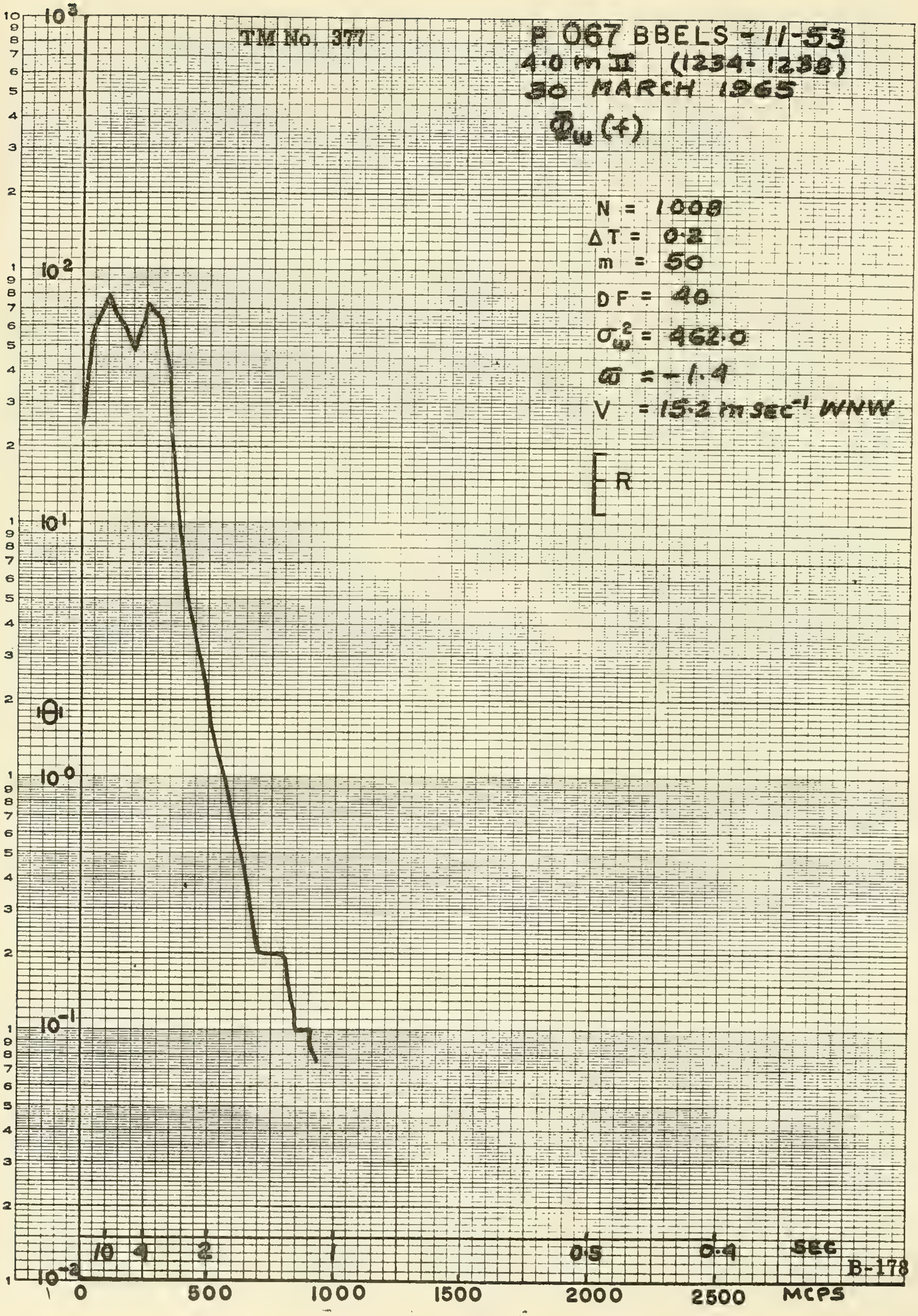

TM No. 377
P 062 BBELS-11-71
1·5 m II (1159-1203)
30 MARCH 1965
Φw (f)
N = 1232
ΔT = 0·2
m = 50
DF = 49
σw² = 859·3
w̄ = -3·8
V = 15·2 m sec⁻¹ WNW
R
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 1 0·5 0·4 SEC
0 500 1000 1500 2000 2500 MCPS
B-173

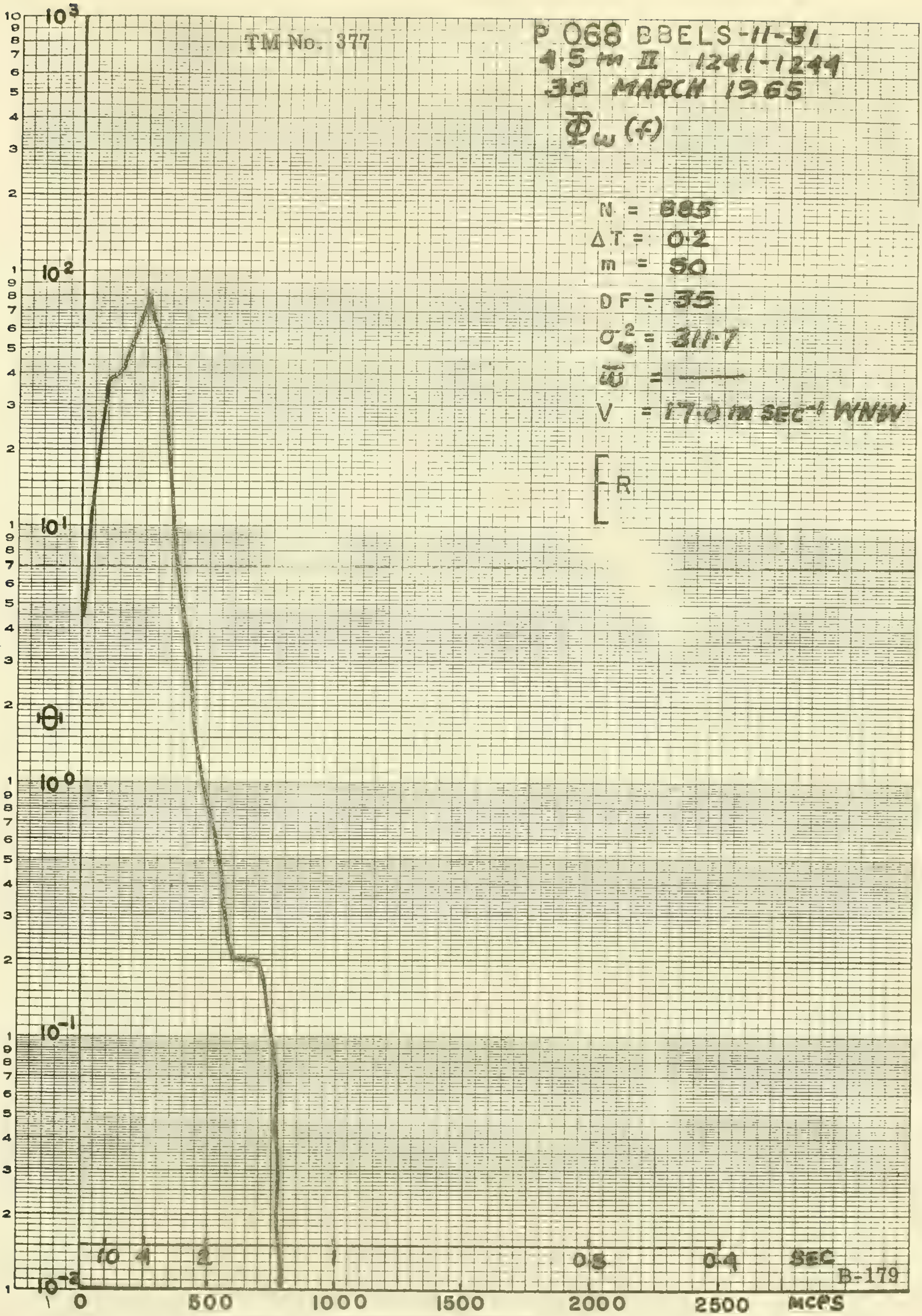

P 063 BBELS-11-41
3.0 m II (1205-1208)
30 MARCH 1965
$\Phi_w(f)$
N = 1080
ΔT = 0.2
m = 50
DF = 42
σ_w^2 = 296.3
$\bar{w}$ = ——
V = 15.4 m sec⁻¹ WNW
R
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
Θ
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS


TM No. 377
P064/BBELS II
3.5m II (1212-1216)
30 MAR 1965
$\tilde{\Phi}_W(f)$
N = 768
ΔT = 0.2
m = 50
DF = 30
σ_W^2 = 287.4 $\tilde{\Phi}$ =
V = 15m Sec^{-1} WNW
10^3
10^2
10^1
$\tilde{\Phi}$
10^0
10^{-1}
10^{-2}
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-175
5 CYCLES X 10 DIVISIONS PER INCH
MADE IN U.S.A.


TM No. 377
P 065 BBELS - 11 - 67
2.0 m VIII (1218-1221)
30 MARCH 1965
$\bar{\Phi}_w(k)$
N = 1132
ΔT = 0.2
m = 50
DF = 45
σ_w^2 = 419.1
$\bar{w}$ = -3.8
V = 15.0 MSEC^{-1} WNW
R
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
Φ
10
4
2
1
0.5
0.4
SEC
0
500
1000
1500
2000
2500
MCPS
B-176

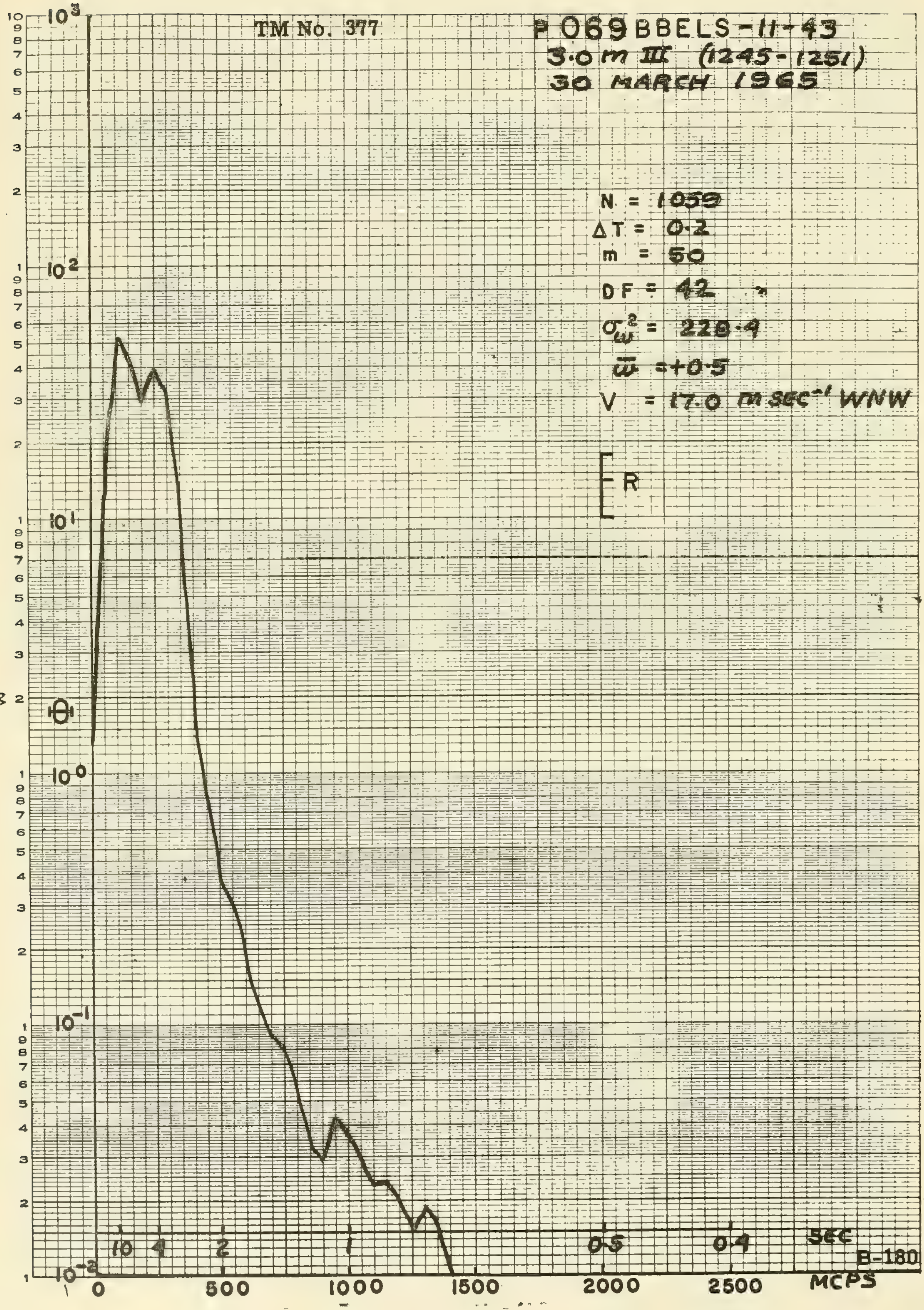

TM No. 377
P 066/BBELS-11-51
2·5 m III (1226-1229)
30 MARCH 1965
$\Phi_w(f)$
N = 1055
ΔT = 0·2
m = 50
DF = 42
σ_w^2 = 471·1
$\bar{w}$ =
V = 15·1 msec⁻¹ WNW
R
Θ
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-177
5 CYCLES x 10 DIVISIONS PER INCH


TM No. 377
P 067 BBELS - 11-53
4·0 m II (1234-1238)
30 MARCH 1965
Φ_ω(f)
N = 1008
ΔT = 0·2
m = 50
DF = 40
σ_ω² = 462·0
ω̄ = -1.4
V = 15·2 m sec⁻¹ WNW
R
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-178

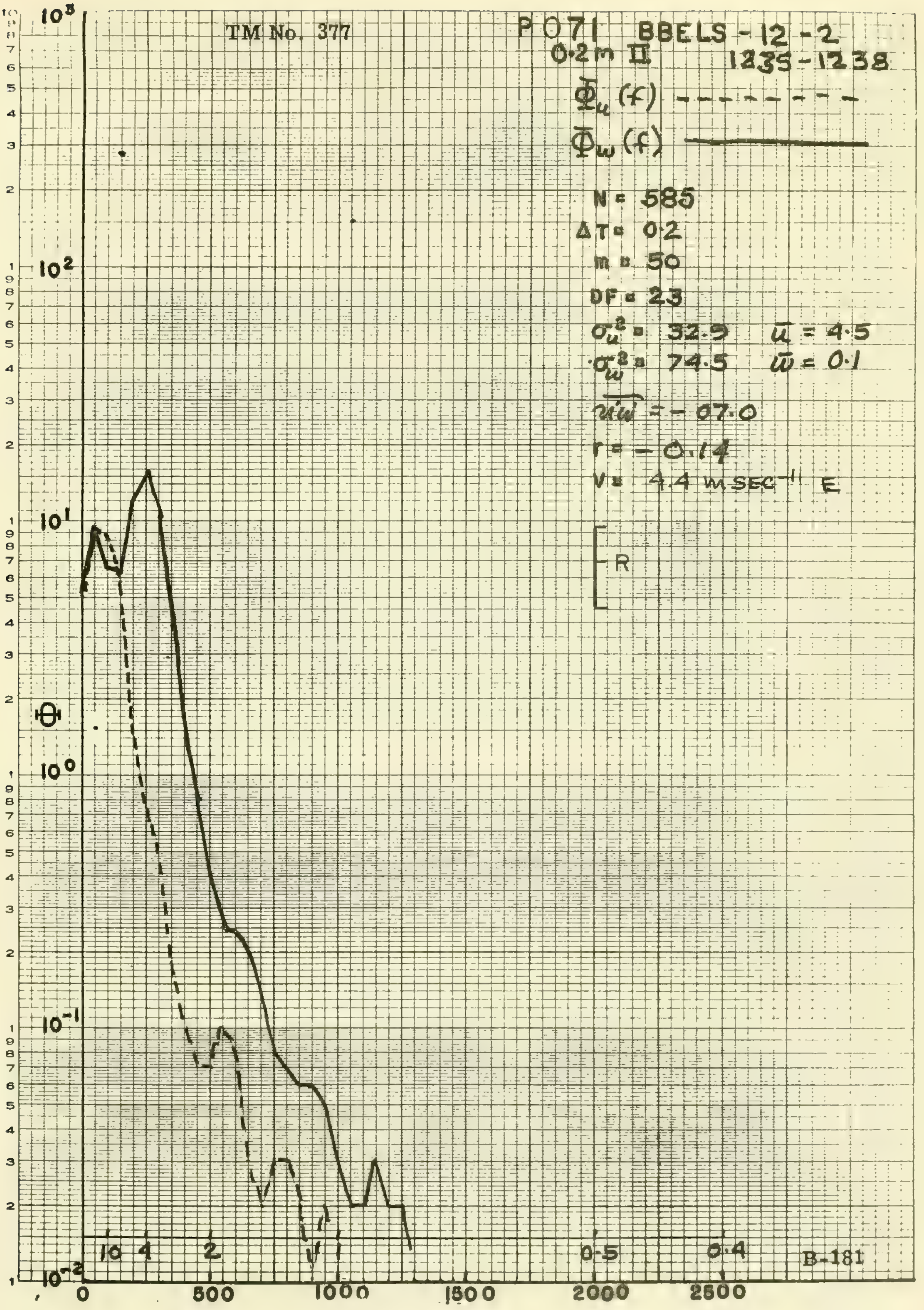


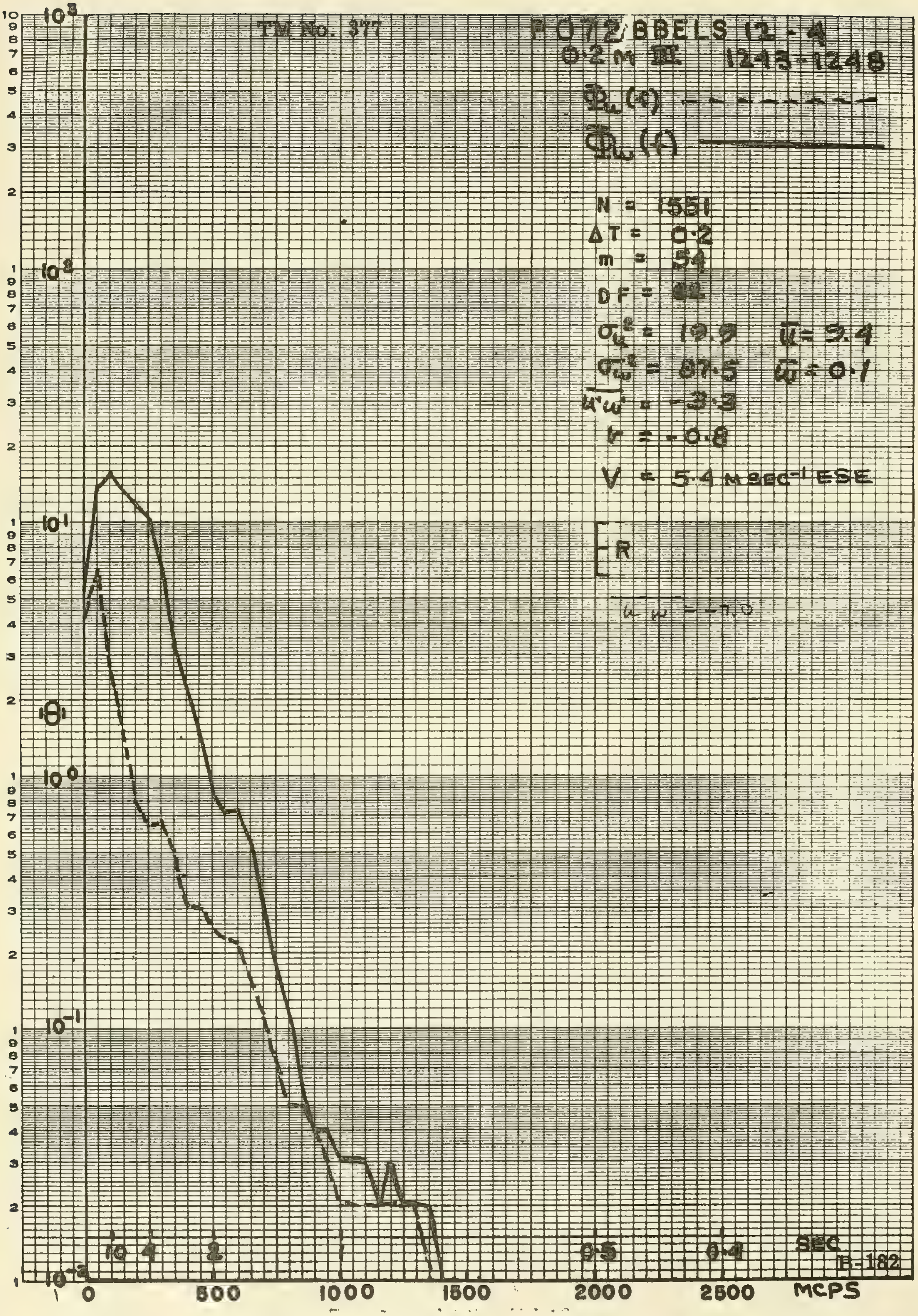
TM No. 377
P 068 BBELS-11-31
4.5 m II 1241-1244
30 MARCH 1965
$\Phi_w(f)$
N = 885
ΔT = 0.2
m = 50
DF = 35
σ_w^2 = 311.7
$\bar{w}$ = ——
V = 17.0 m sec⁻¹ WNW
R
Φ
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
10 4 2 1 0.8 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
5 CYCLES x 10 DIVISIONS PER INCH
MADE IN U. S. A.

B-179

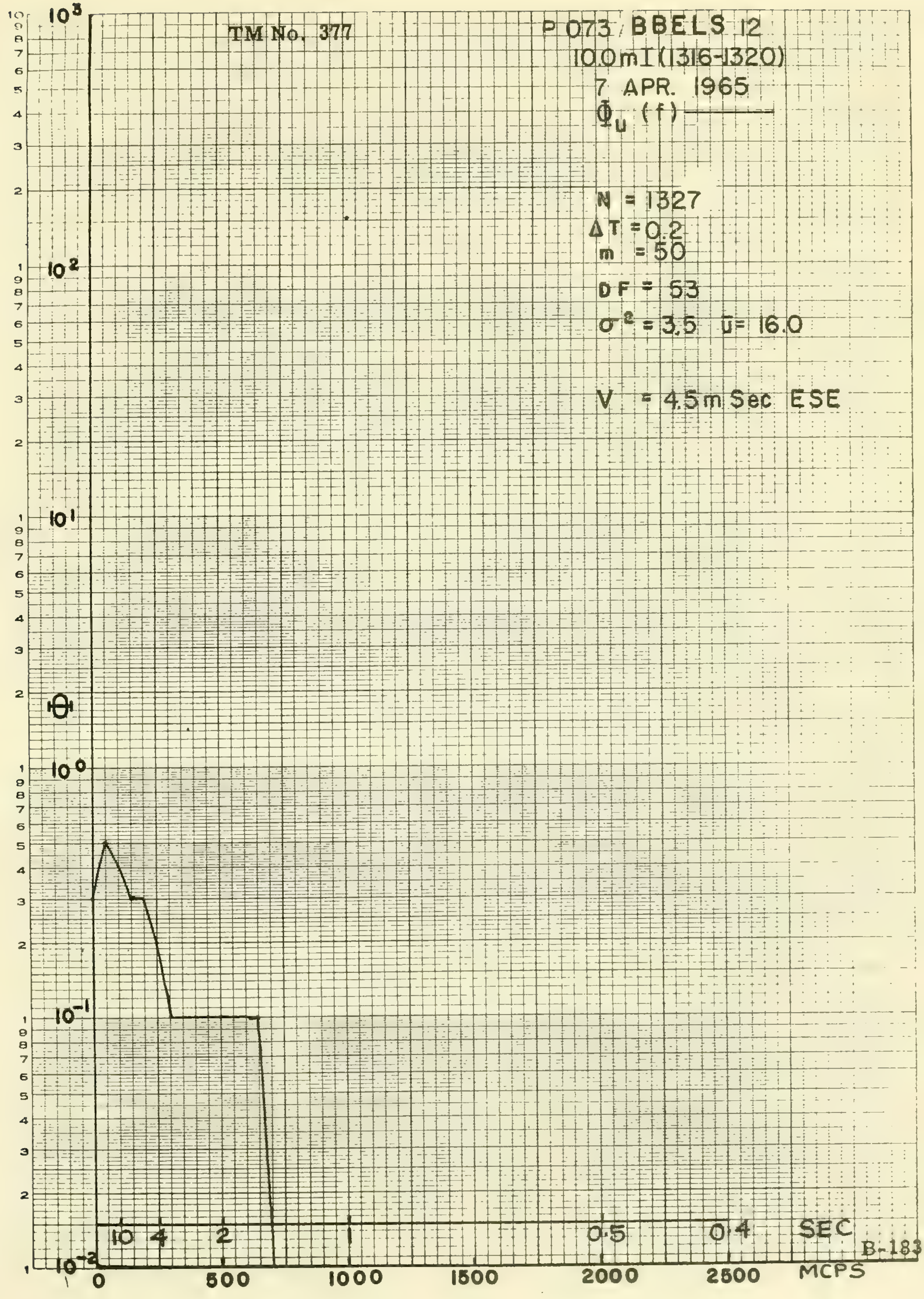


TM No. 377
P 069 BBELS-11-43
3·0 m III (1245-1251)
30 MARCH 1965
N = 1059
ΔT = 0·2
m = 50
DF = 42
σ_w^2 = 228·4
w̄ = +0·5
V = 17·0 m sec⁻¹ WNW
R
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 1 0·5 0·4 SEC
0 500 1000 1500 2000 2500 MCPS
B-180


TM No. 377
P071 BBELS-12-2
0.2m II 1235-1238
$\Phi_u(f)$ - - - - - - -
$\Phi_w(f)$ ———
N = 585
ΔT = 0.2
m = 50
DF = 23
σ_u^2 = 32.9 $\bar{u}$ = 4.5
σ_w^2 = 74.5 $\bar{w}$ = 0.1
$\overline{u'w'}$ = -07.0
r = -0.14
V = 4.4 m sec⁻¹ E
R
Φ
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
10 4 2 0.5 0.4
0 500 1000 1500 2000 2500
B-181
5 CYCLES X 10 DIVISIONS PER INCH
MADE IN U.S.A.

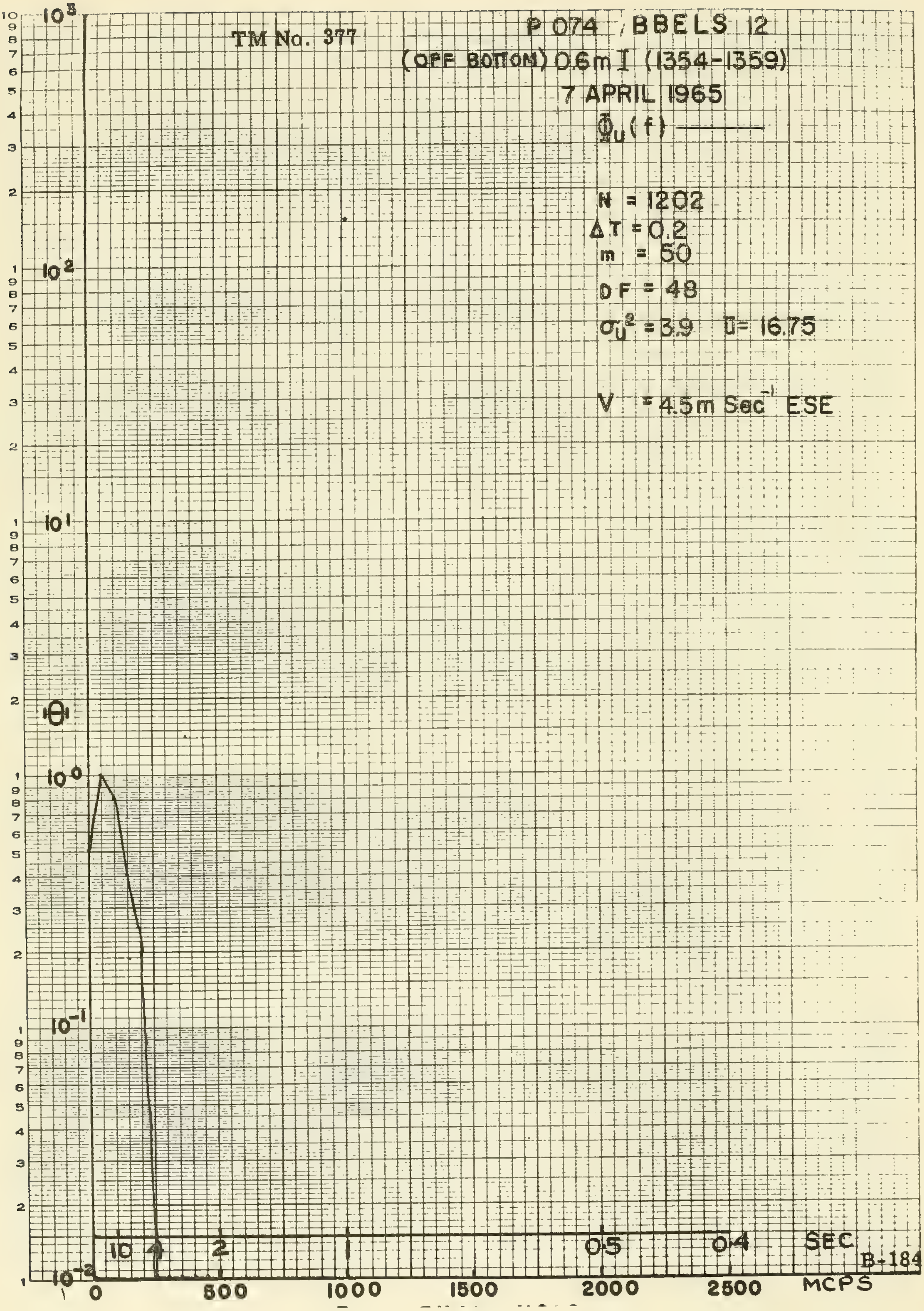


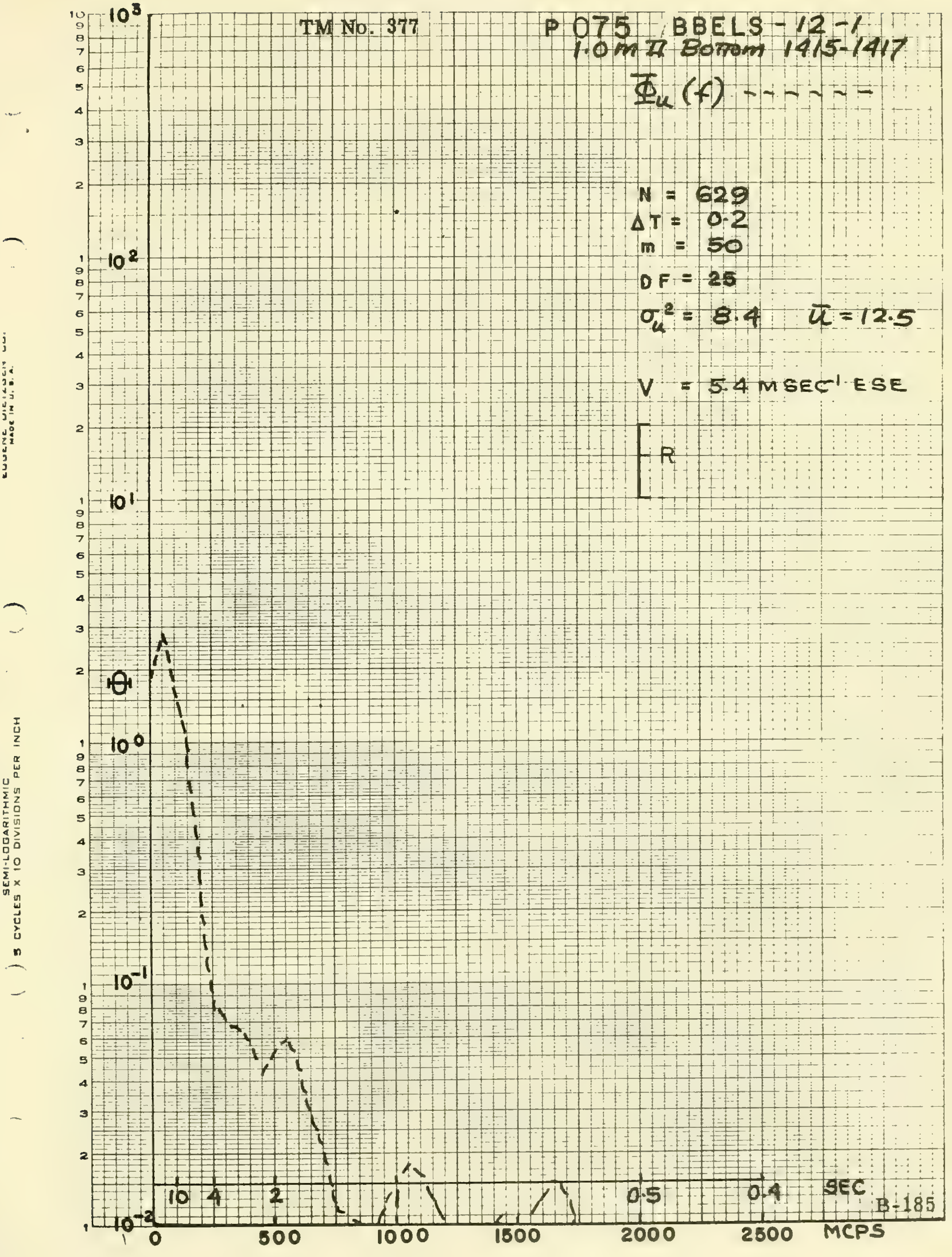
TM No. 377
F072/BBELS 12-4
0·2 m III 1245-1248
N = 1551
ΔT = 0·2
m = 54
V = 5·4 m sec⁻¹ ESE
R
0
500
1000
1500
2000
2500
MCPS
10
4
2
0·5
0·4
SEC
B-182



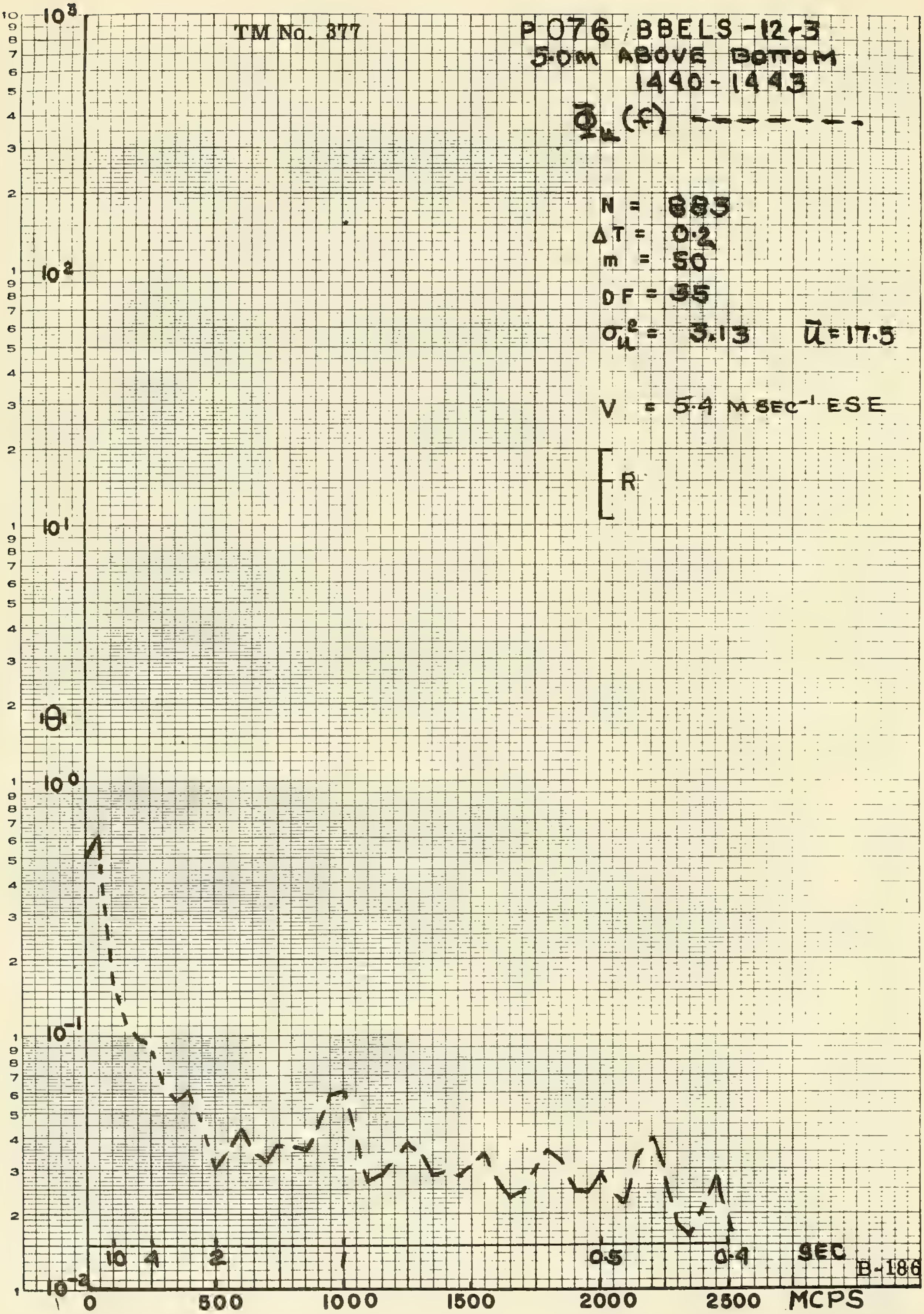
TM No. 377
P 073 BBELS 12
10.0mI (1316-1320)
7 APR. 1965
Φ_u (f)
N = 1327
ΔT = 0.2
m = 50
DF = 53
σ^2 = 3.5 $\bar{u}$ = 16.0
V = 4.5 m Sec ESE
Φ
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
SEMI-LOGARITHMIC
5 CYCLES X 10 DIVISIONS PER INCH

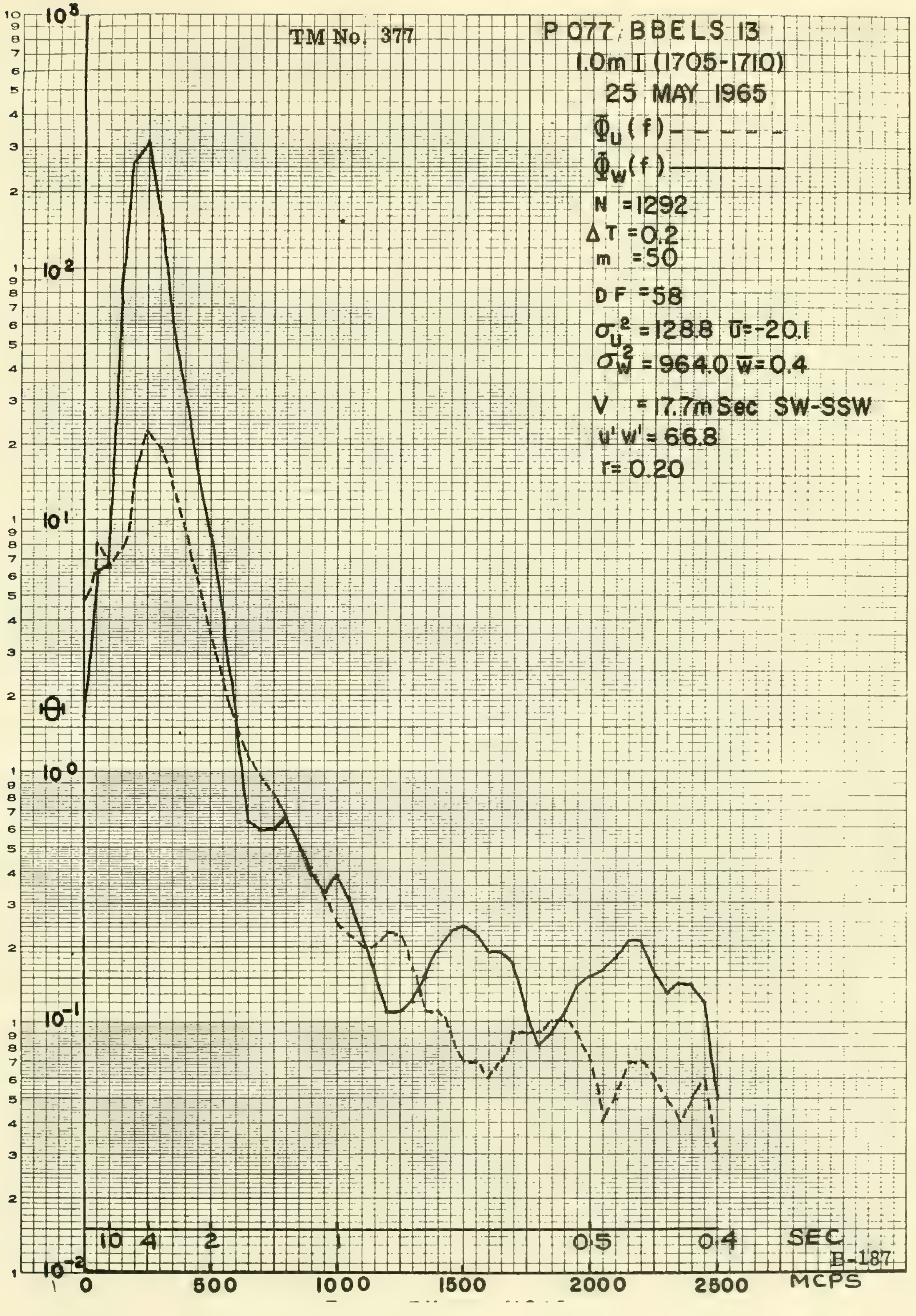
B-183

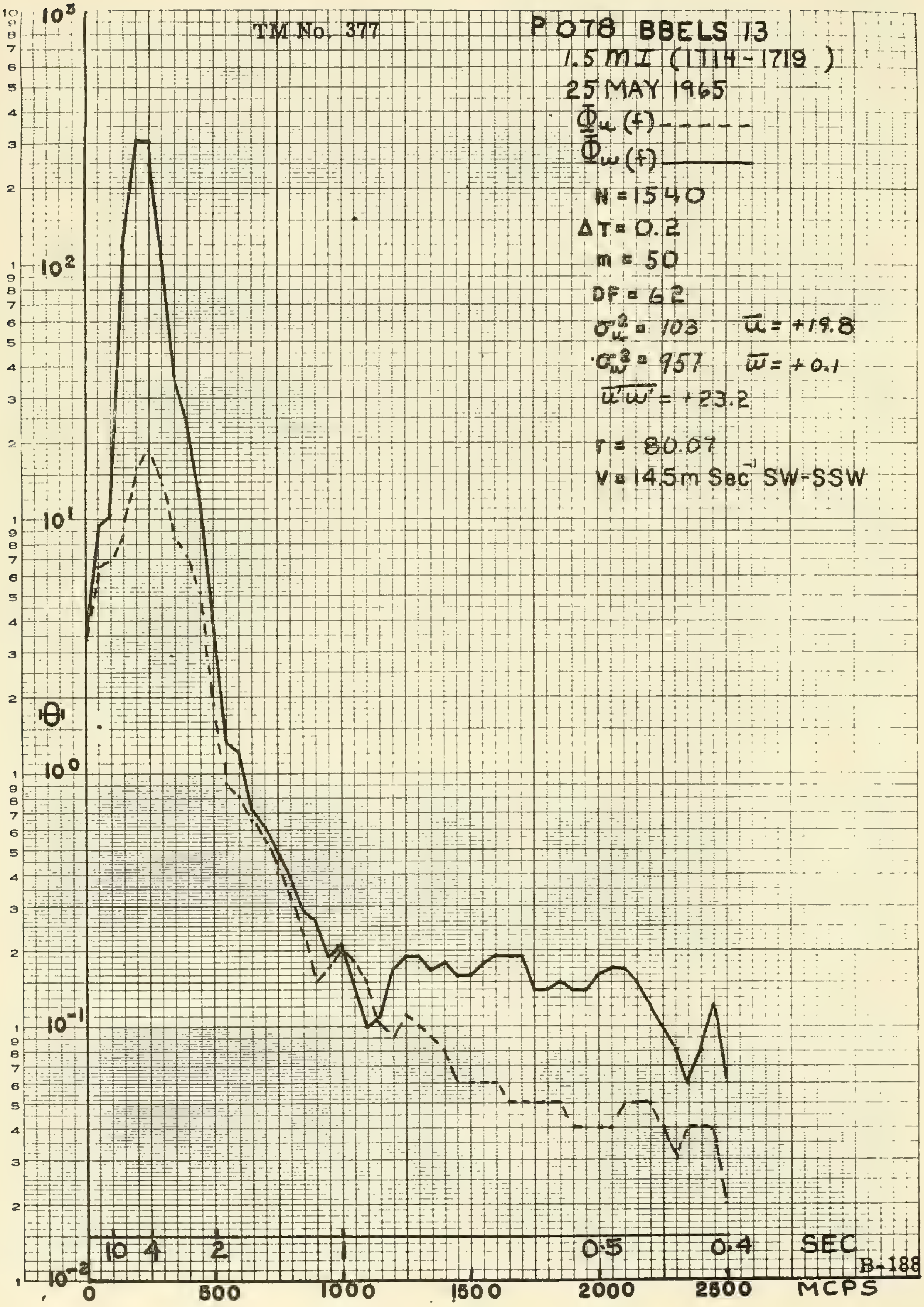

TM No. 377
P 074 BBELS 12
(OFF BOTTOM) 0.6m I (1354-1359)
7 APRIL 1965
$\bar{\Phi}_u(f)$
N = 1202
ΔT = 0.2
m = 50
DF = 48
σ_u^2 = 3.9 Ū = 16.75
V = 4.5m Sec^{-1} ESE
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
Φ
10
4
2
1
0.5
0.4
SEC
0
500
1000
1500
2000
2500
MCPS
B-184

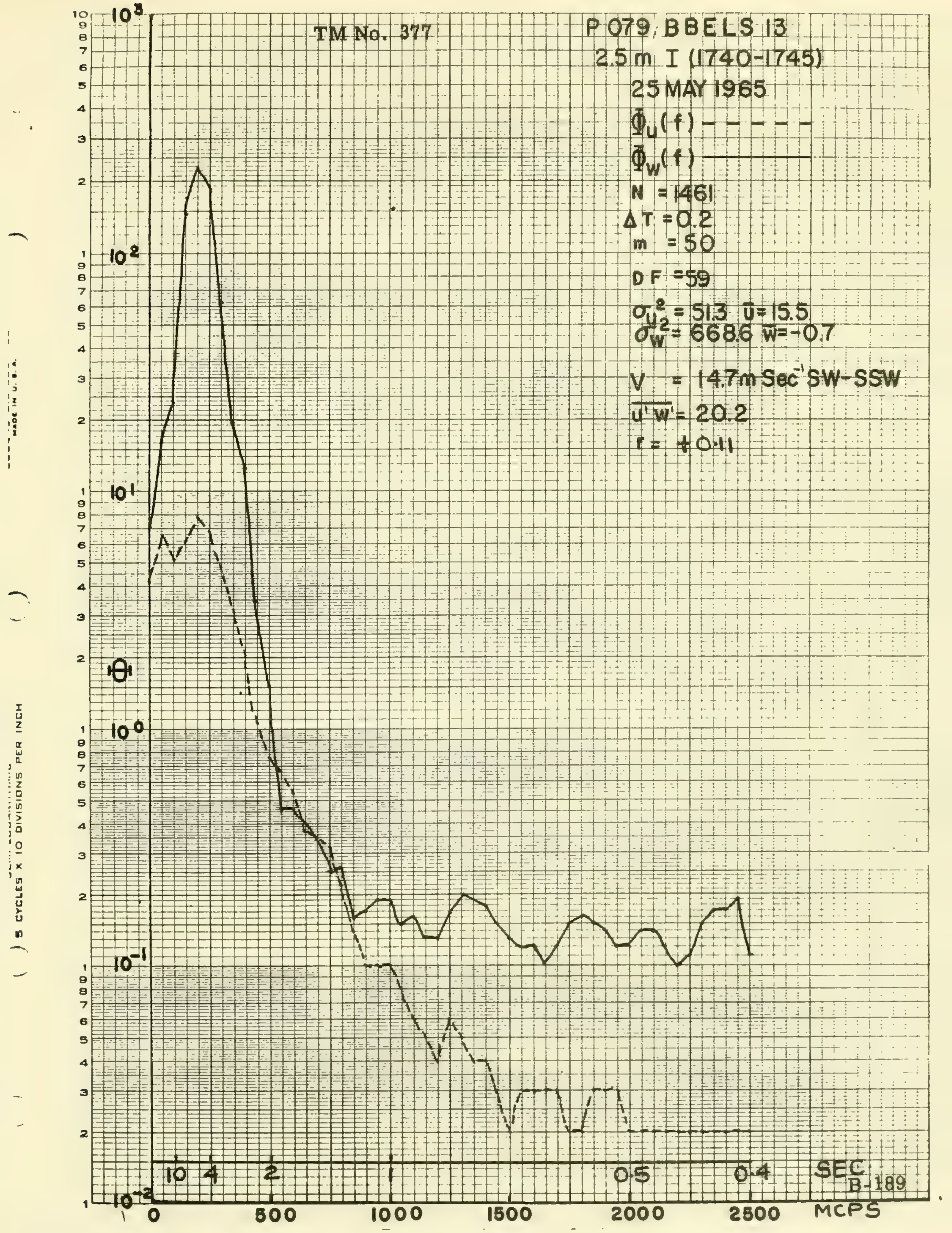


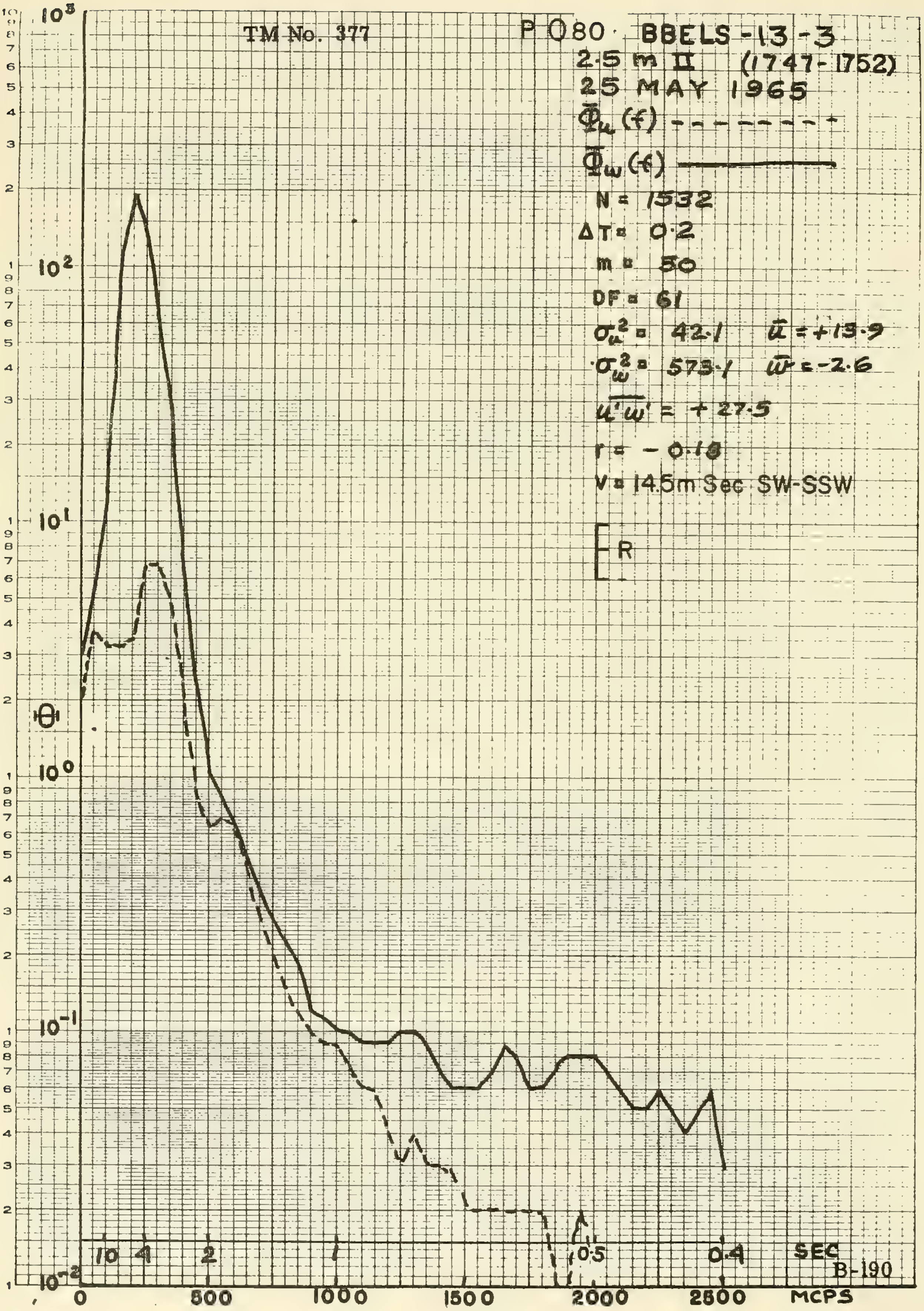
TM No. 377
P 075 BBELS - 12 - 1
1.0 m II Bottom 1415-1417
$\Phi_u(f)$ - - - - - -
N = 629
ΔT = 0.2
m = 50
DF = 25
σ_u^2 = 8.4 $\bar{u}$ = 12.5
V = 5.4 MSEC^{-1} ESE
R
Φ
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
10 4 2 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-185
SEMI-LOGARITHMIC
5 CYCLES X 10 DIVISIONS PER INCH

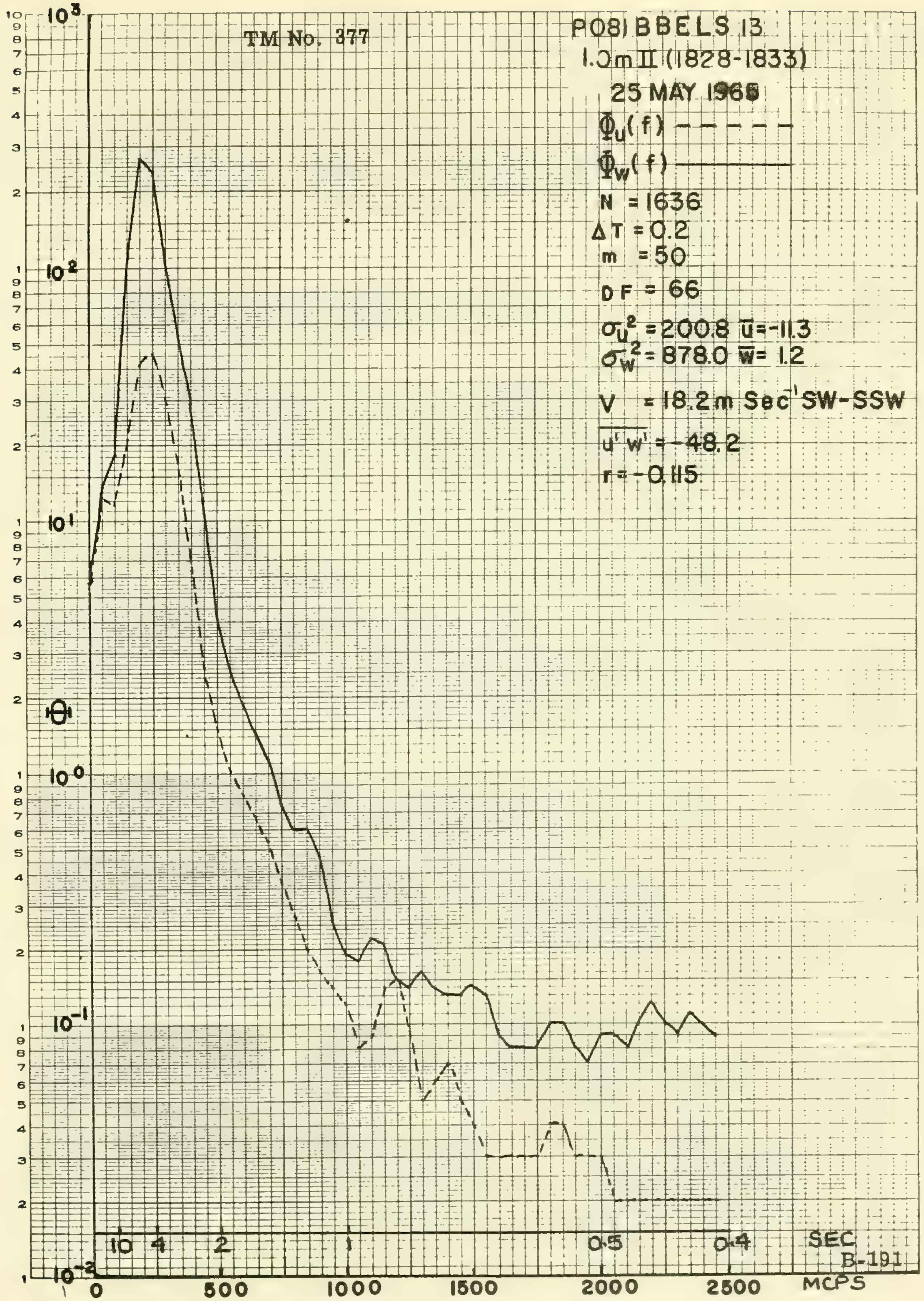

P 076 BBELS - 12 - 3
5.0m ABOVE BOTTOM
1440 - 1443
$\bar{\Phi}_u(f)$ - - - - - - -
N = 883
ΔT = 0.2
m = 50
DF = 35
σ_u^2 = 3.13 $\bar{U}$ = 17.5
V = 5.4 M SEC^{-1} ESE
R
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
Φ
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS

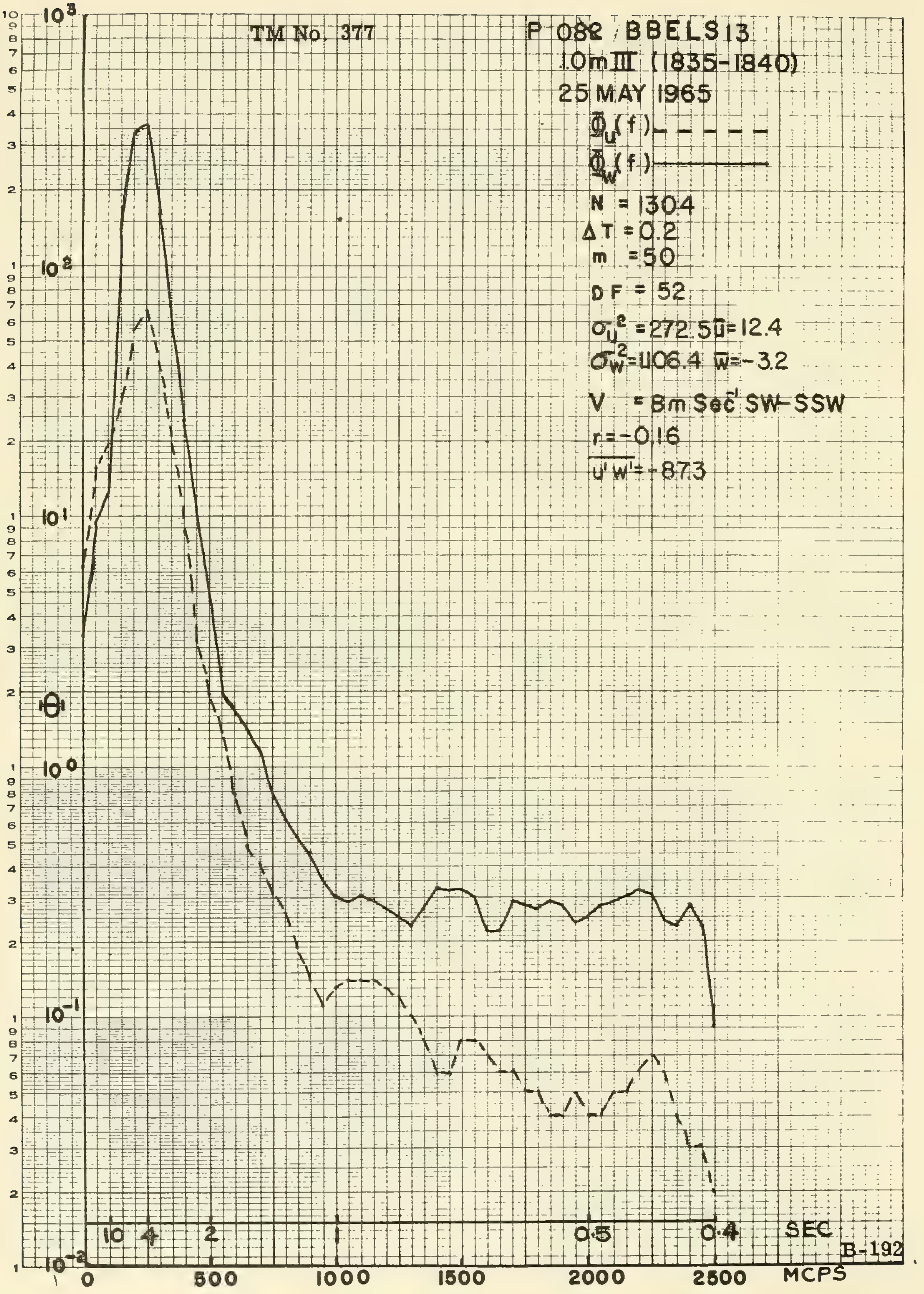

TM No. 377
P 077 BBELS 13
1.0m I (1705-1710)
25 MAY 1965
$\Phi_U(f)$ - - - - -
$\Phi_W(f)$ ———
N = 1292
$\Delta T = 0.2$
m = 50
DF = 58
$\sigma_u^2 = 128.8$ $\bar{U} = -20.1$
$\sigma_w^2 = 964.0$ $\bar{w} = 0.4$
V = 17.7m Sec SW-SSW
$u'w' = 66.8$
r = 0.20
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
Φ
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-187
5 CYCLES X 10 DIVISIONS PER INCH
MADE IN U.S.A.

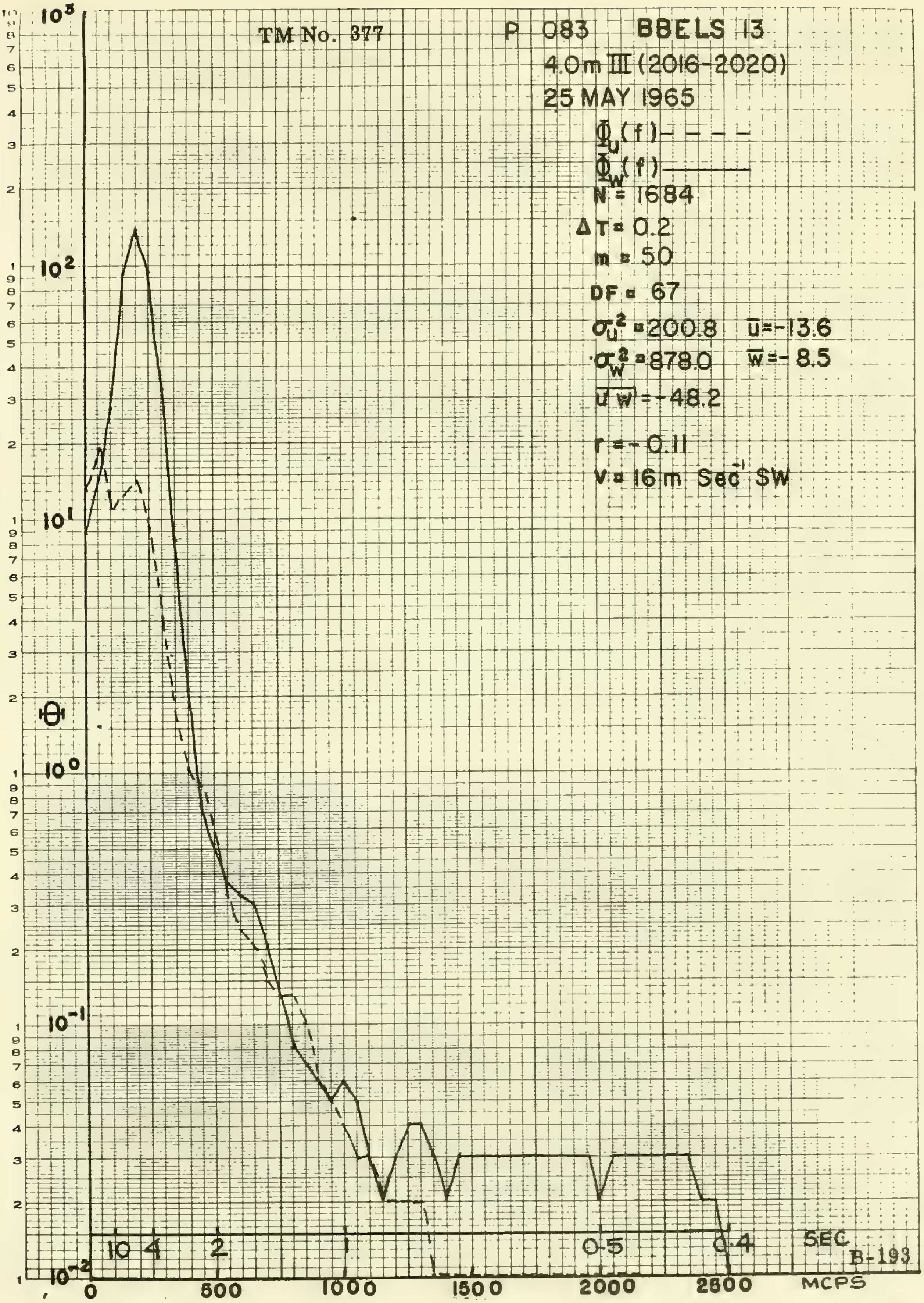

TM No. 377
P 078 BBELS 13
1.5 MI (1714-1719)
25 MAY 1965
$\Phi_u(f)$ - - - - -
$\Phi_w(f)$ ———
N = 1540
ΔT = 0.2
m = 50
DF = 62
σ_u^2 = 103 $\bar{u}$ = +19.8
σ_w^2 = 957 $\bar{w}$ = +0.1
$\overline{u'w'}$ = +23.2
r = 80.07
V = 14.5m Sec^{-1} SW-SSW
Φ
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-188


TM No. 377
P 079 BBELS 13
2.5 m I (1740-1745)
25 MAY 1965
$\bar{\Phi}_u(f)$
$\bar{\Phi}_w(f)$
N = 1461
ΔT = 0.2
m = 50
DF = 59
σ_u^2 = 51.3 $\bar{u}$ = 15.5
σ_w^2 = 668.6 $\bar{w}$ = -0.7
V = 14.7 m Sec⁻¹ SW-SSW
$\overline{u'w'}$ = 20.2
r = +0.11
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10
4
2
1
0.5
0.4
SEC
0
500
1000
1500
2000
2500
MCPS
B-189
5 CYCLES X 10 DIVISIONS PER INCH
MADE IN U.S.A.

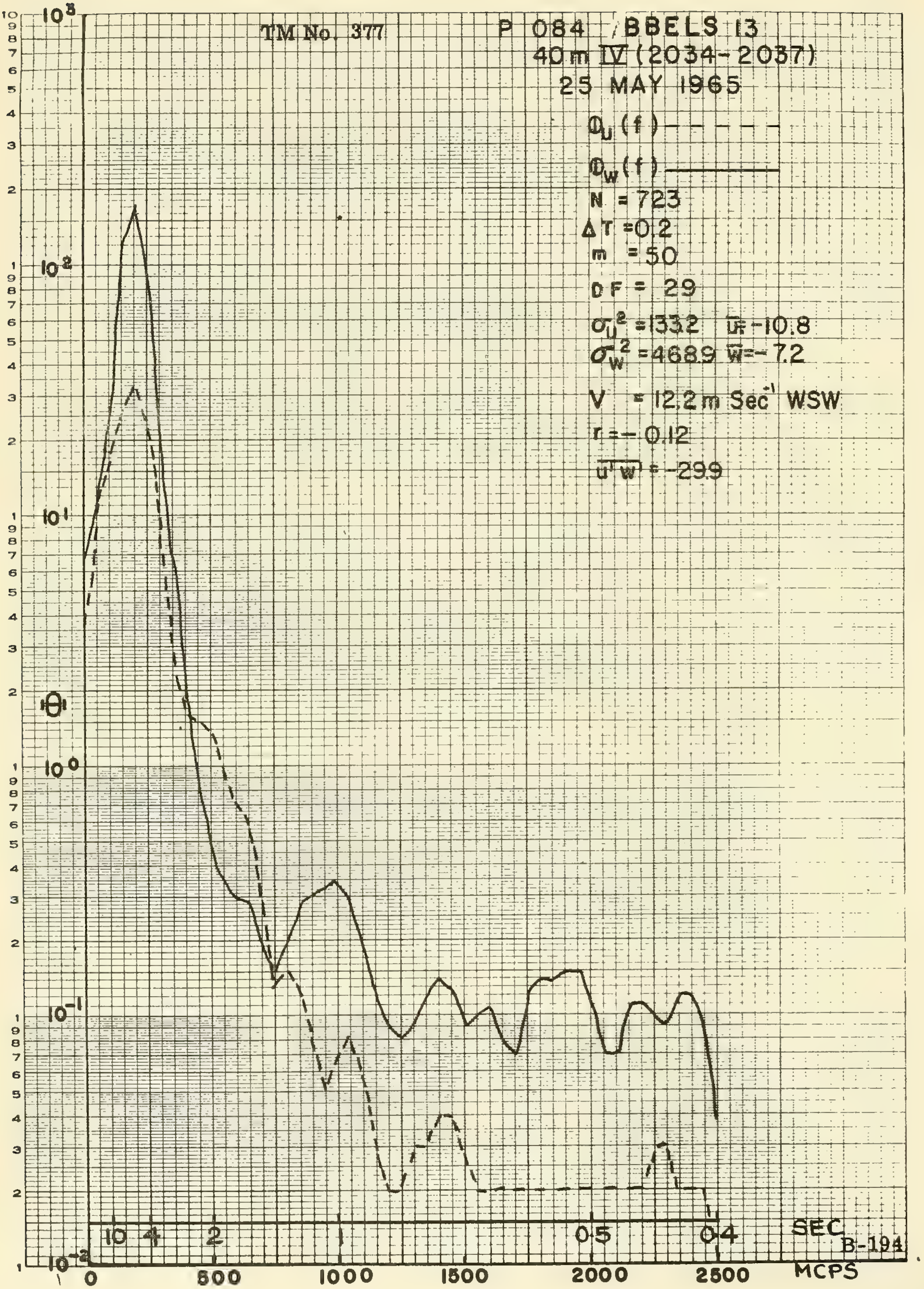

P 080 · BBELS-13-3
2.5 m II (1747-1752)
25 MAY 1965
$\bar{\Phi}_u(f)$ - - - - - - - -
$\bar{\Phi}_w(f)$ ———
N = 1532
ΔT = 0.2
m = 50
DF = 61
σ_u^2 = 42.1 $\bar{u}$ = +13.9
σ_w^2 = 573.1 $\bar{w}$ = -2.6
$\overline{u'w'}$ = +27.5
r = -0.18
V = 14.5m Sec SW-SSW
R
Φ
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
10
4
2
1
0.5
0.4
SEC
0
500
1000
1500
2000
2500
MCPS

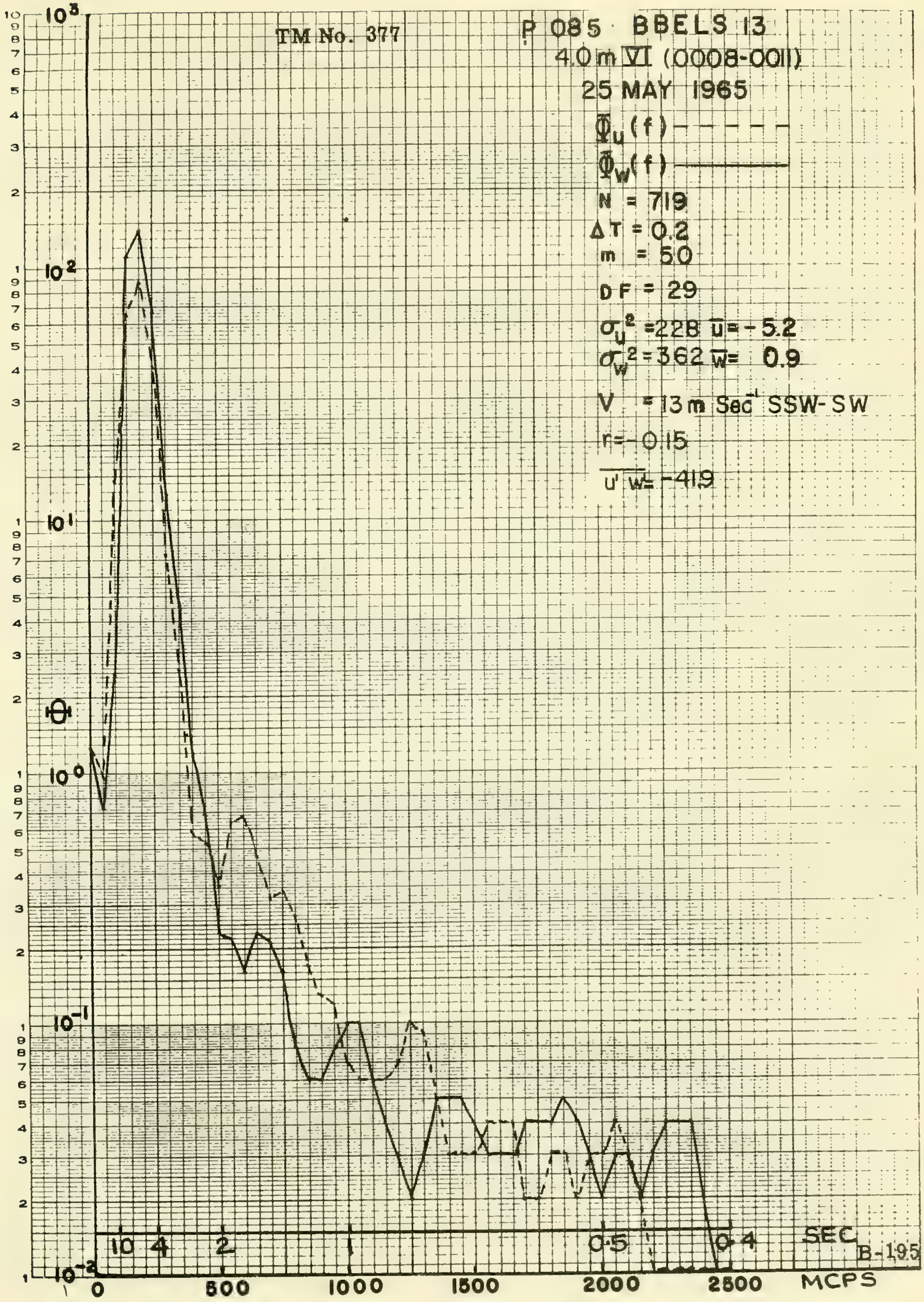

TM No. 377
PO8I BBELS 13
1.0m II (1828-1833)
25 MAY 1965
$\Phi_u(f)$ - - - - -
$\Phi_w(f)$ ———
N = 1636
ΔT = 0.2
m = 50
DF = 66
σ_u^2 = 200.8 $\bar{u}$ = -11.3
σ_w^2 = 878.0 $\bar{w}$ = 1.2
V = 18.2 m Sec^{-1} SW-SSW
$\overline{u'w'}$ = -48.2
r = -0.115
Φ
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-191


TM No. 377
P 082 BBELS 13
1.0m III (1835-1840)
25 MAY 1965
Φu(f)
Φw(f)
N = 1304
ΔT = 0.2
m = 50
DF = 52
σu² = 272.5 ū = 12.4
σw² = 106.4 w̄ = -3.2
V = 8m Sec⁻¹ SW-SSW
r = -0.16
u'w' = -87.3
10³
10²
10¹
10⁰
10⁻¹
10⁻²
Φ
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-192

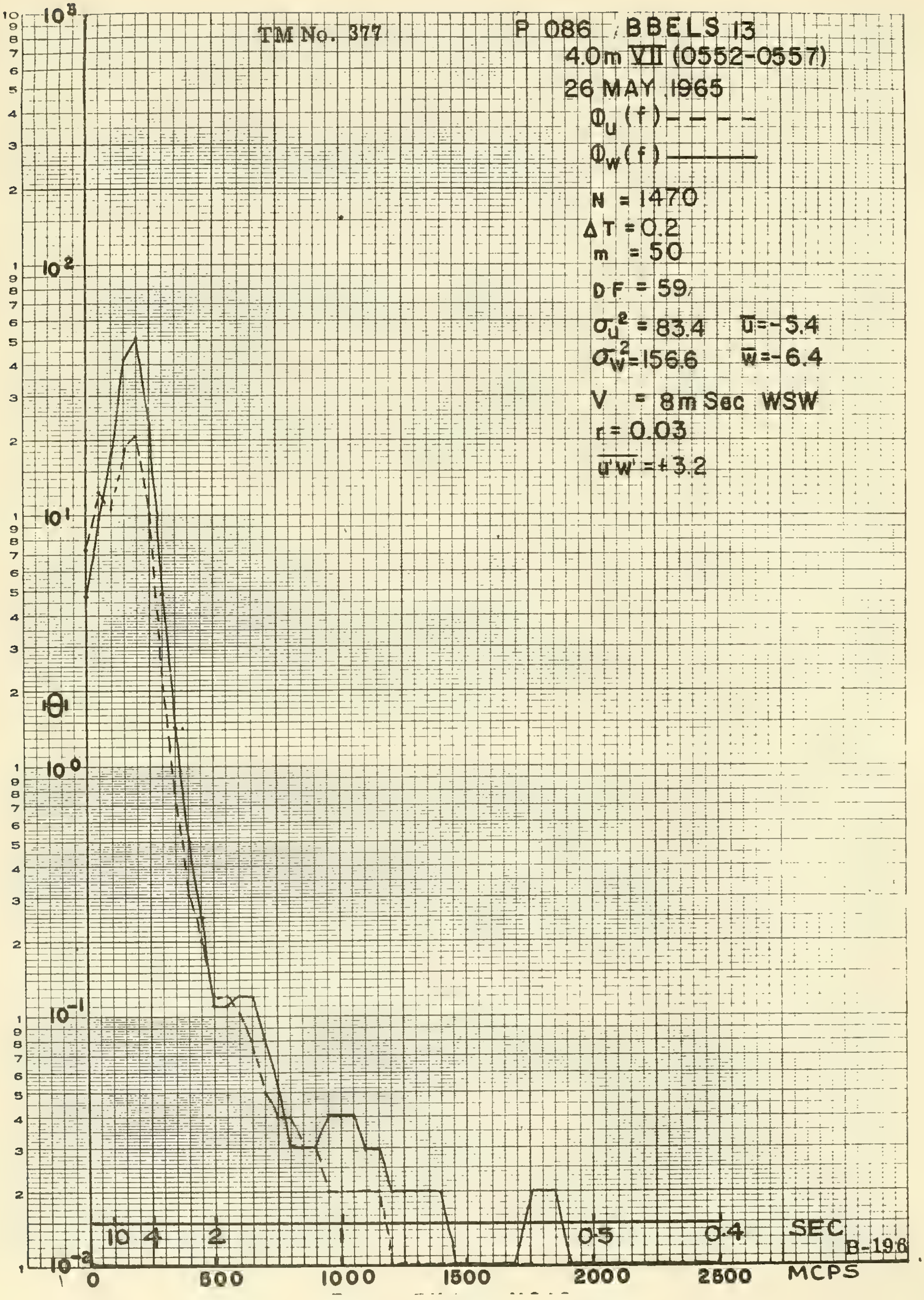


TM No. 377
P 083 BBELS 13
4.0m III (2016-2020)
25 MAY 1965
Φu(f) - - - -
Φw(f) ———
N = 1684
ΔT = 0.2
m = 50
DF = 67
σu² = 200.8 ū = -13.6
σw² = 878.0 w̄ = - 8.5
u'w' = -48.2
r = - 0.11
V = 16 m Sec⁻¹ SW
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-193
MADE IN U.S.A.
5 CYCLES X 10 DIVISIONS PER INCH


TM No. 377
P 084 /BBELS 13
40 m IV (2034-2037)
25 MAY 1965
Φ_U(f) - - - -
Φ_W(f) ———
N = 723
ΔT = 0.2
m = 50
DF = 29
σ_U² = 13.32 U = -10.8
σ_W² = 46.89 W = -7.2
V = 12.2 m Sec⁻¹ WSW
r = -0.12
u'w' = -29.9
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-194

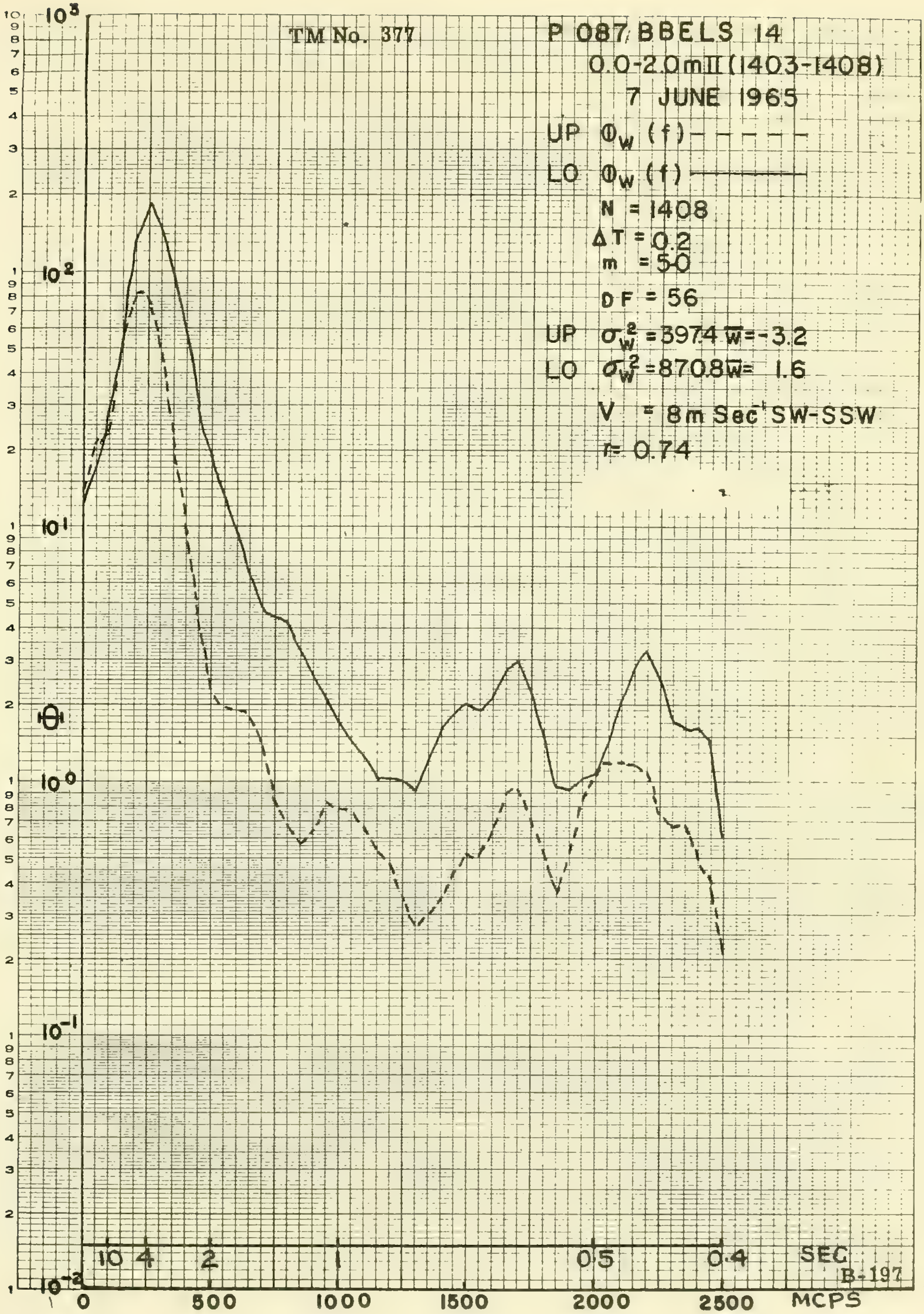


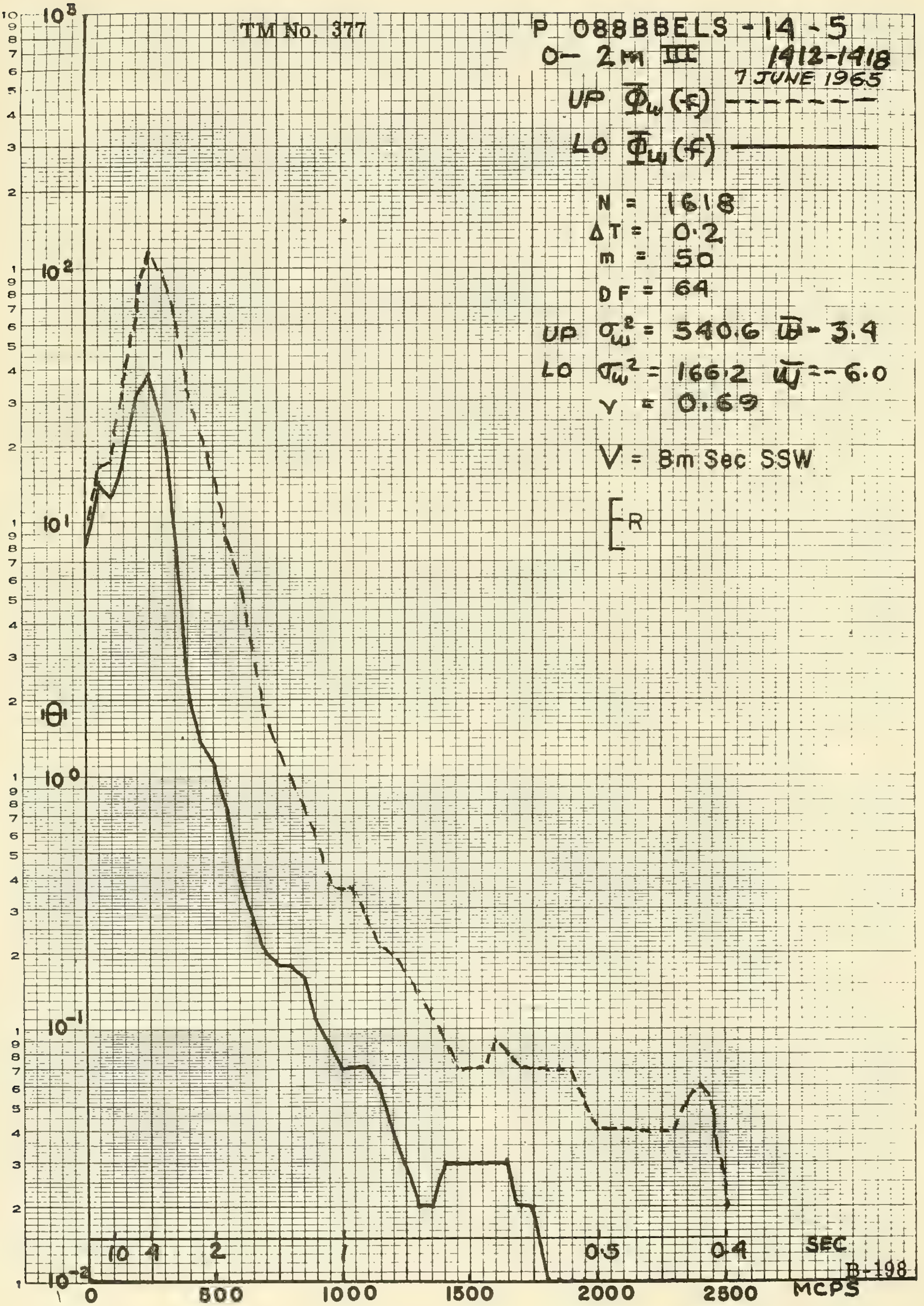
TM No. 377
P 085 BBELS 13
4.0 m VI (0008-0011)
25 MAY 1965
Φu(f) - - - - -
Φw(f) ———
N = 719
ΔT = 0.2
m = 50
DF = 29
σu² = 228 ū = -5.2
σw² = 362 w̄ = 0.9
V = 13 m Sec⁻¹ SSW-SW
r = -0.15
u'w' = -419
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-195
5 CYCLES X 10 DIVISIONS PER INCH



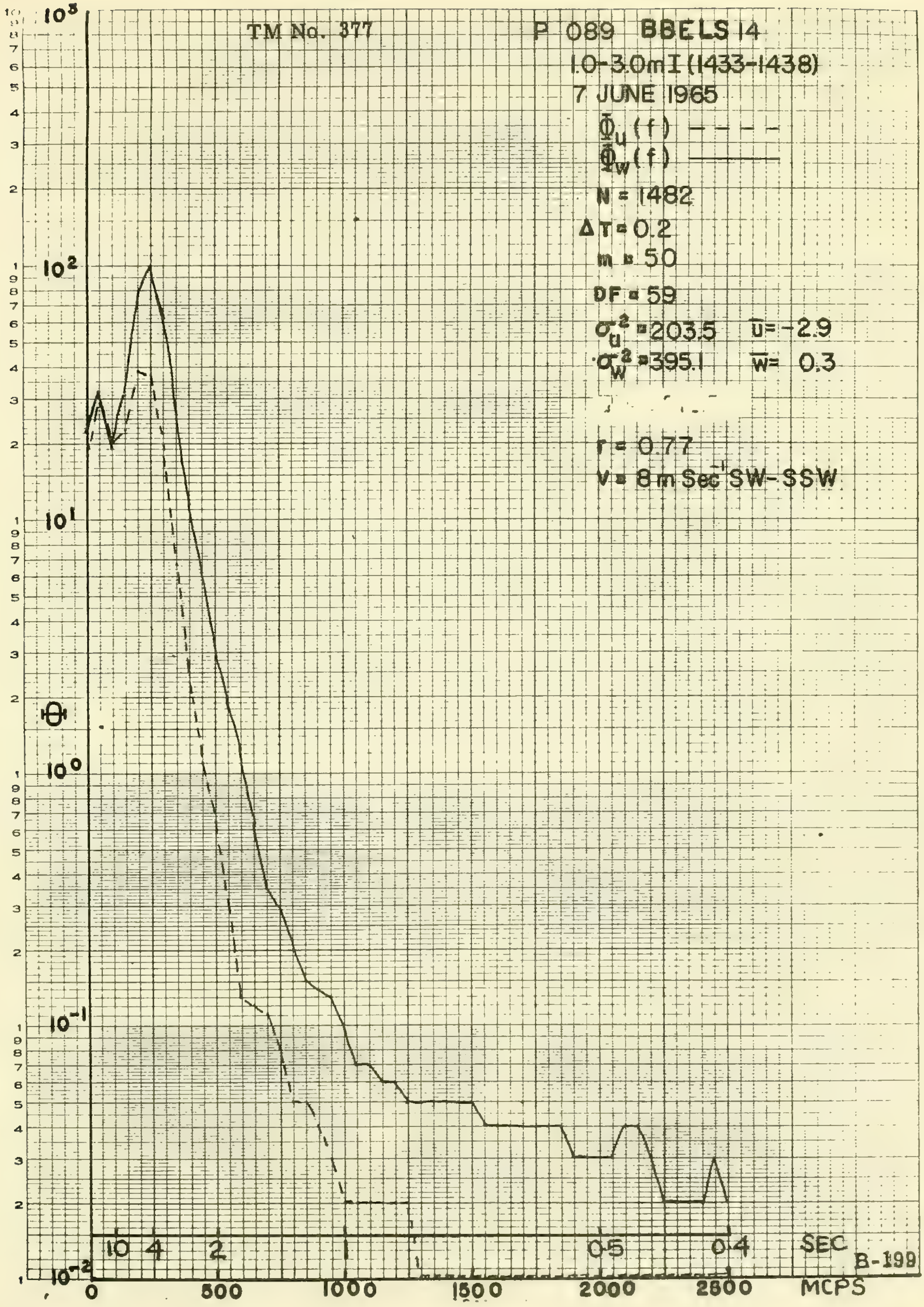
TM No. 377
P 086 BBELS 13
4.0m VII (0552-0557)
26 MAY 1965
$\Phi_u(f)$ - - - -
$\Phi_w(f)$ ———
N = 1470
ΔT = 0.2
m = 50
DF = 59
σ_u^2 = 83.4 $\overline{u}$ = -5.4
σ_w^2 = 156.6 $\overline{w}$ = -6.4
V = 8 m Sec WSW
r = 0.03
$\overline{u'w'}$ = +3.2
Φ
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS

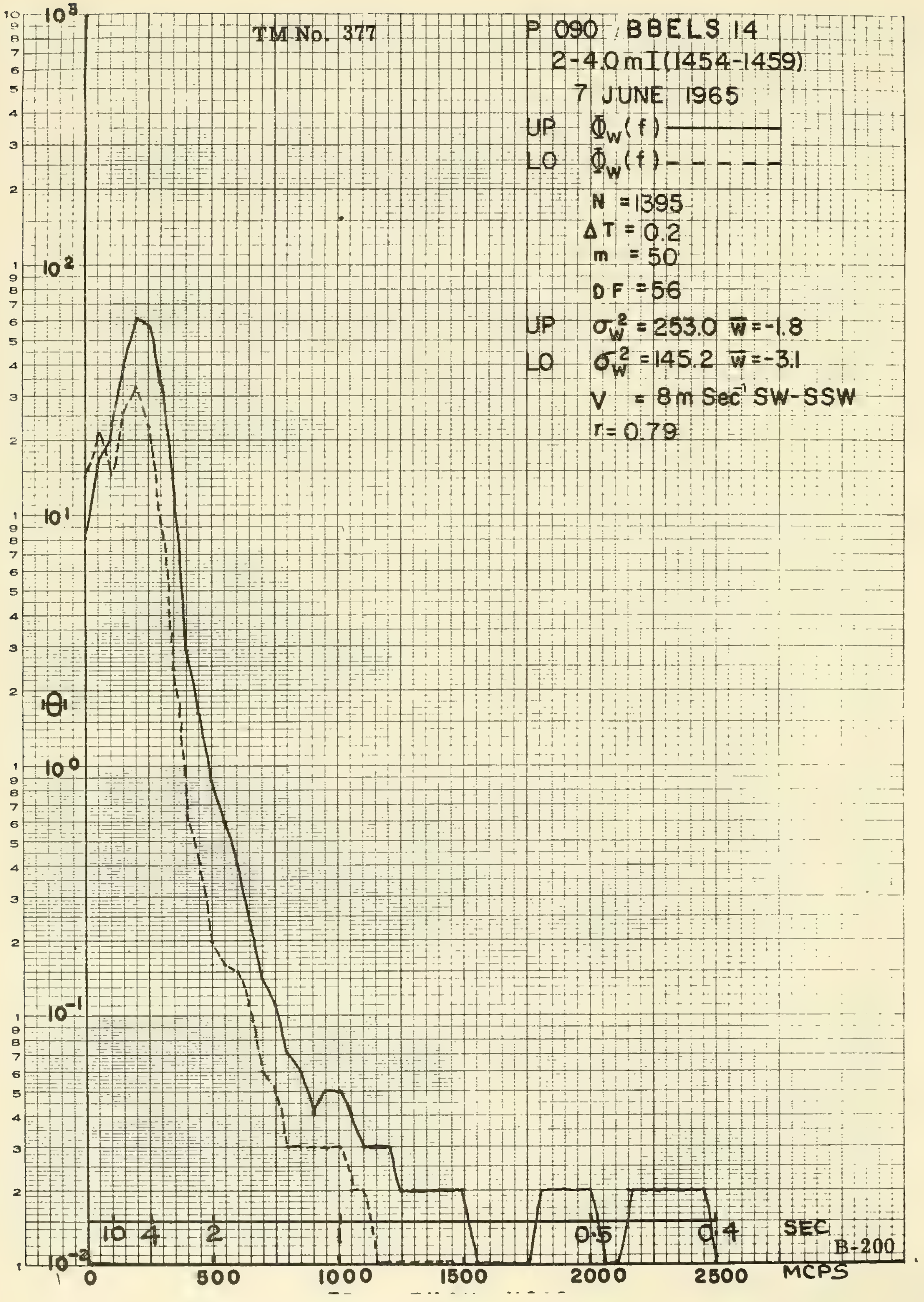
B-196


TM No. 377
P 087 BBELS 14
0.0-2.0m II (1403-1408)
7 JUNE 1965
UP Φw (f) - - - - -
LO Φw (f) ———
N = 1408
ΔT = 0.2
m = 50
DF = 56
UP σw² = 3974 w̄ = -3.2
LO σw² = 8708 w̄ = 1.6
V = 8m Sec⁻¹ SW-SSW
r = 0.74
10³
10²
10¹
10⁰
10⁻¹
10⁻²
Φ
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-197
5 CYCLES X 10 DIVISIONS PER INCH
MADE IN U.S.A.

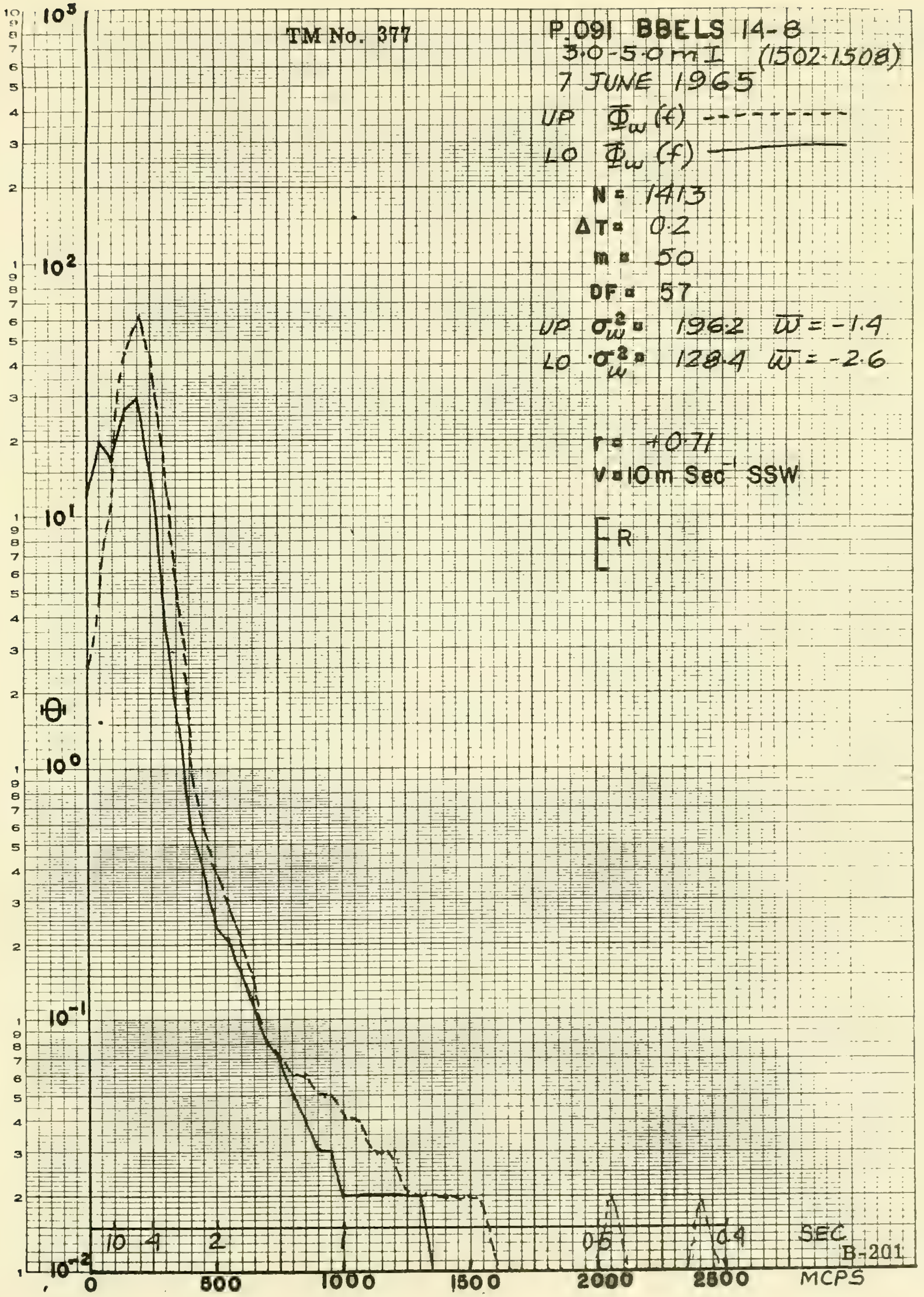


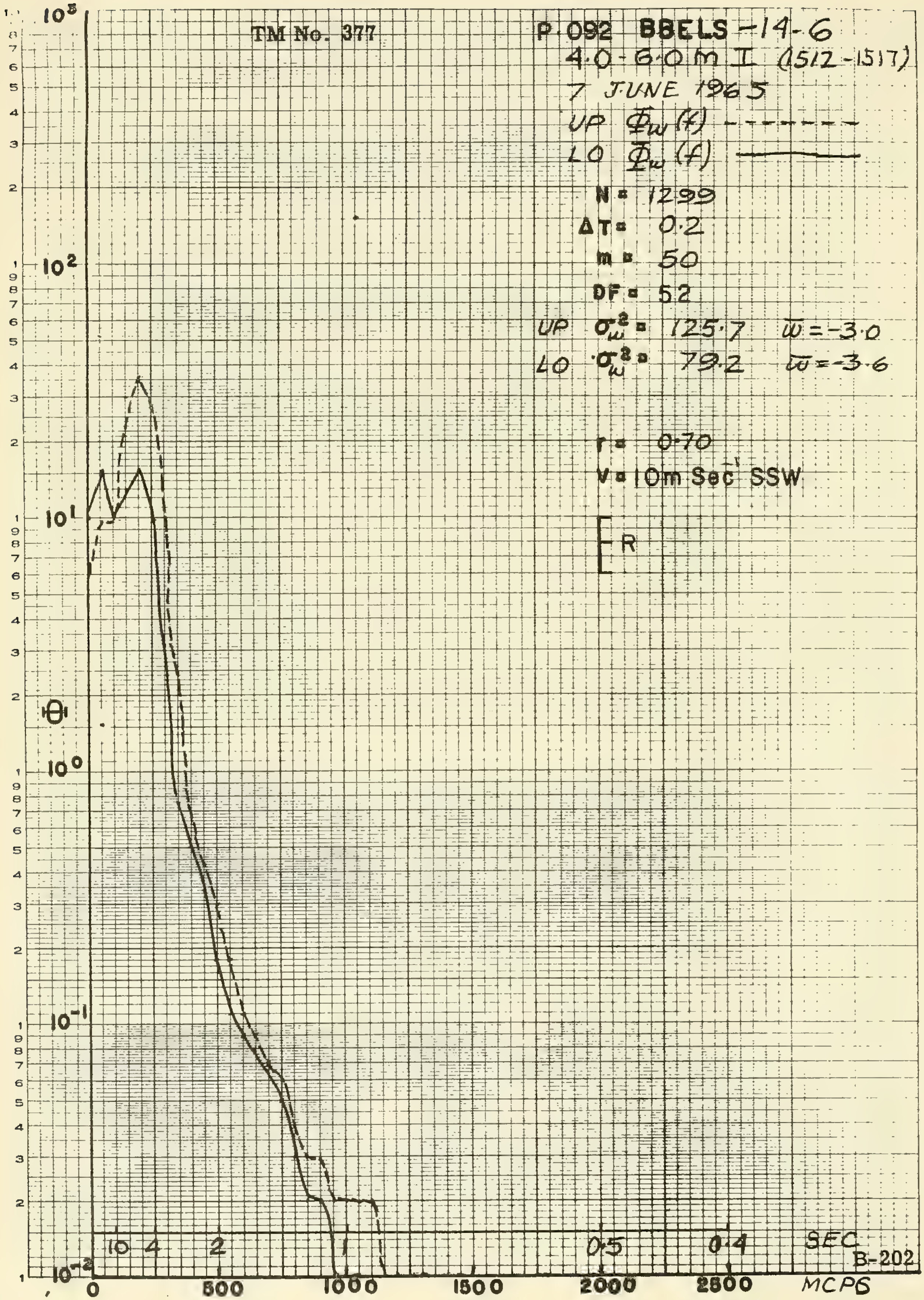
TM No. 377
P 088BBELS - 14 - 5
0 - 2m III
1412-1418
7 JUNE 1965
UP $\overline{\Phi}_w(f)$
LO $\overline{\Phi}_w(f)$
N = 1618
ΔT = 0.2
m = 50
DF = 64
UP σ_w^2 = 540.6 $\overline{W}$ = 3.4
LO σ_w^2 = 166.2 $\overline{W}$ = -6.0
γ = 0.69
V = 8m Sec SSW
R
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
Φ
10
4
2
1
0.5
0.4
SEC
0
500
1000
1500
2000
2500
MCPS
B-198

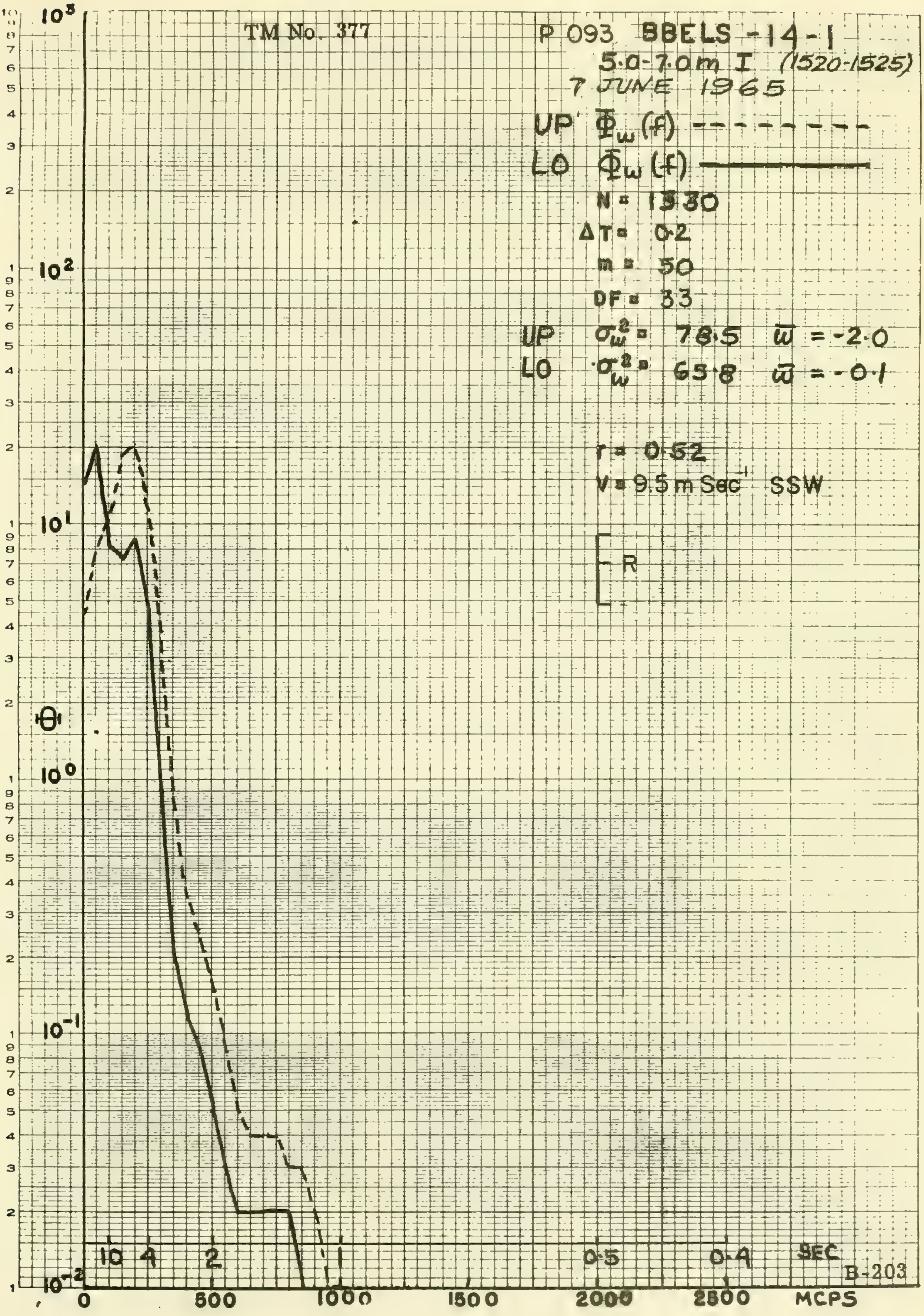

TM No. 377
P 089 BBELS 14
1.0-3.0m I (1433-1438)
7 JUNE 1965
Φu(f) - - - -
Φw(f) ——
N = 1482
ΔT = 0.2
m = 50
DF = 59
σu² = 203.5 ū = -2.9
σw² = 395.1 w̄ = 0.3
r = 0.77
V = 8 m Sec⁻¹ SW-SSW
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-199
5 CYCLES X 10 DIVISIONS PER INCH
MADE IN U.S.A.

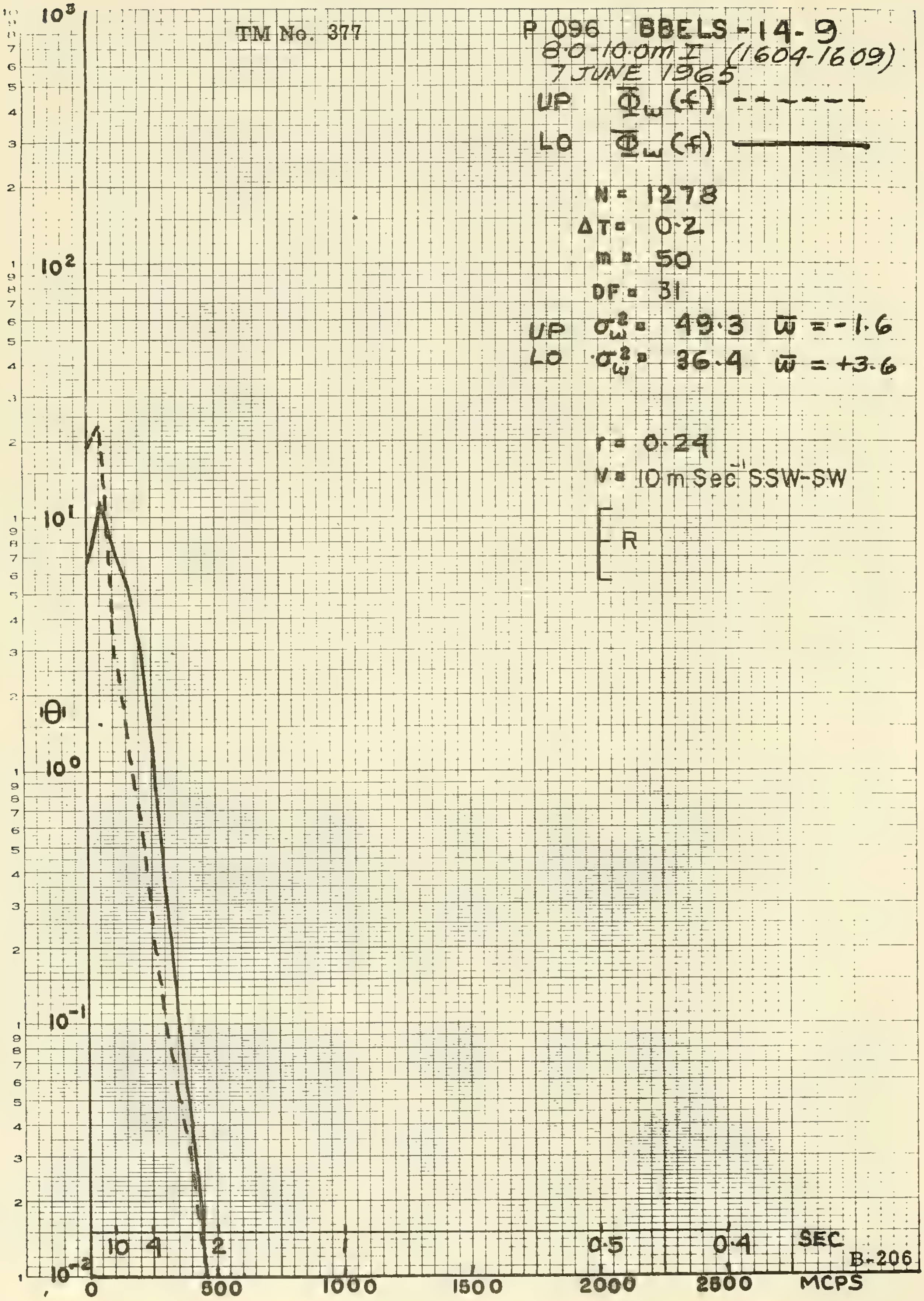


TM No. 377
P 090 BBELS 14
2-4.0 m I (1454-1459)
7 JUNE 1965
UP Φw(f) ———
LO Φw(f) - - - - -
N = 1395
ΔT = 0.2
m = 50
DF = 56
UP σw² = 253.0 w̄ = -1.8
LO σw² = 145.2 w̄ = -3.1
V = 8 m Sec⁻¹ SW-SSW
r = 0.79
10³
10²
10¹
10⁰
10⁻¹
10⁻²
Φ
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-200

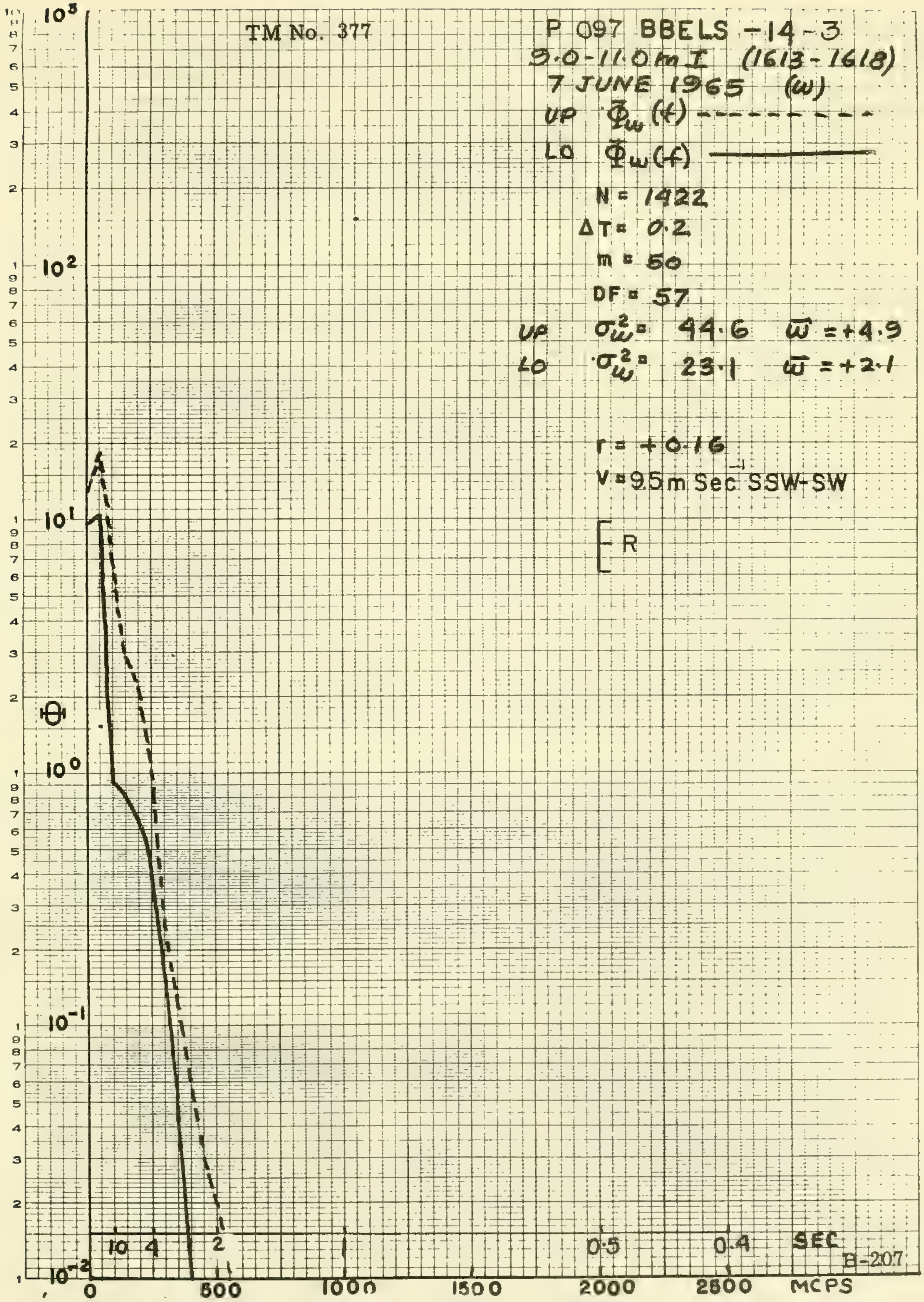

TM No. 377
P.091 BBELS 14-8
3·0-5·0 m I (1502-1508)
7 JUNE 1965
UP $\bar{\Phi}_w(f)$ ---------
LO $\bar{\Phi}_w(f)$ ———
N = 1413
ΔT = 0·2
m = 50
DF = 57
UP σ_w^2 = 196·2 $\bar{w}$ = -1·4
LO σ_w^2 = 128·4 $\bar{w}$ = -2·6
r = +0·71
V = 10 m Sec^{-1} SSW
R
Φ
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
10 4 2 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-201
5 CYCLES X 10 DIVISIONS PER INCH
MADE IN U.S.A.


TM No. 377
P 092 BBELS -14-6
4.0-6.0 m I (1512-1517)
7 JUNE 1965
UP $\Phi_w(f)$ - - - - -
LO $\Phi_w(f)$ ———
N = 1299
ΔT = 0.2
m = 50
DF = 52
UP σ_w^2 = 125.7 $\bar{w}$ = -3.0
LO σ_w^2 = 79.2 $\bar{w}$ = -3.6
r = 0.70
V = 10m Sec^{-1} SSW
R
Θ
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-202

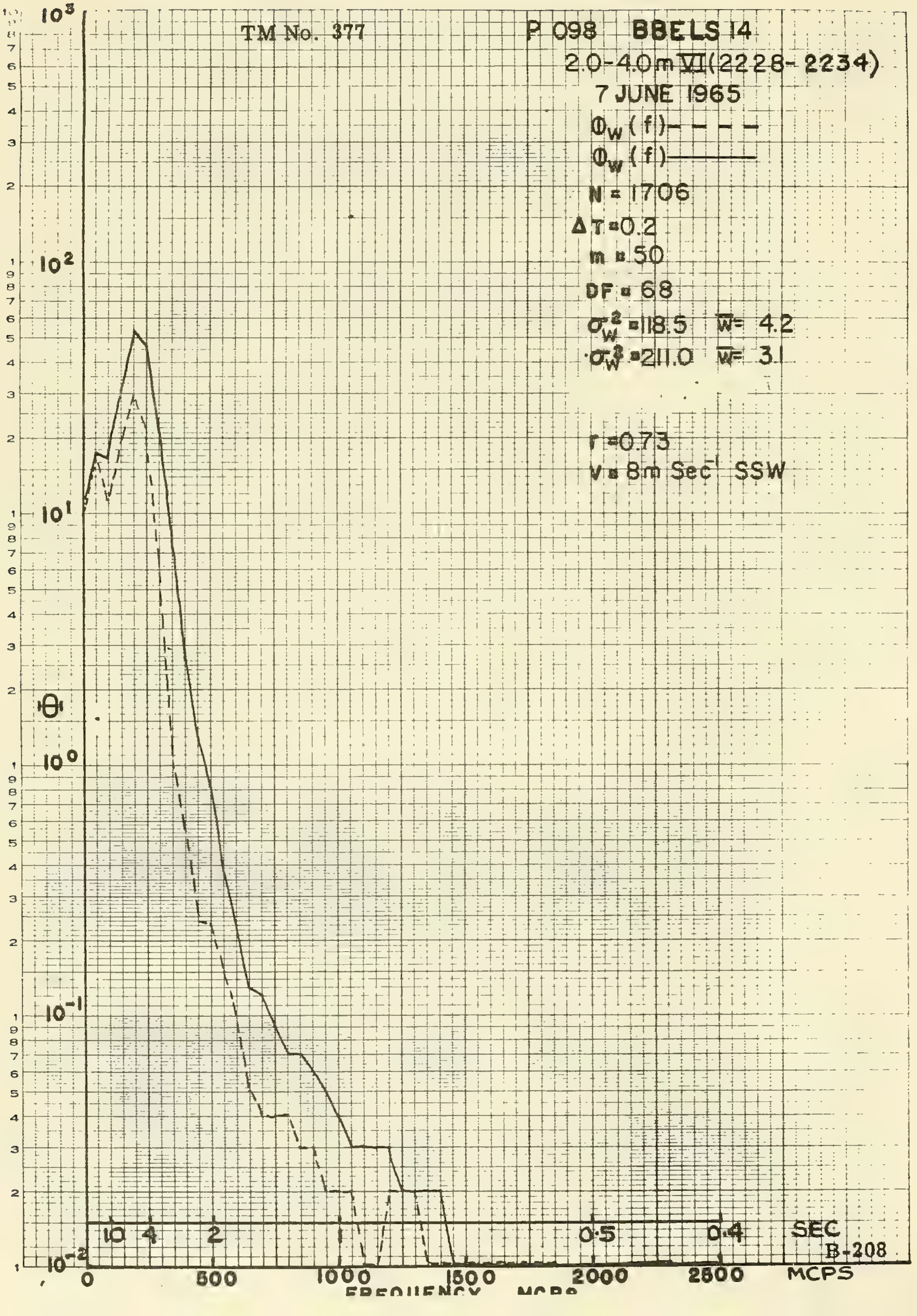

TM No. 377
P 093 BBELS - 14 - 1
5.0-7.0 m I (1520-1525)
7 JUNE 1965
UP Φw(f) - - - - - - - -
LO Φw(f) ————
N = 1330
ΔT = 0.2
m = 50
DF = 33
UP σw² = 78.5 w̄ = -2.0
LO σw² = 65.8 w̄ = -0.1
r = 0.52
V = 9.5 m Sec⁻¹ SSW
R
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-203

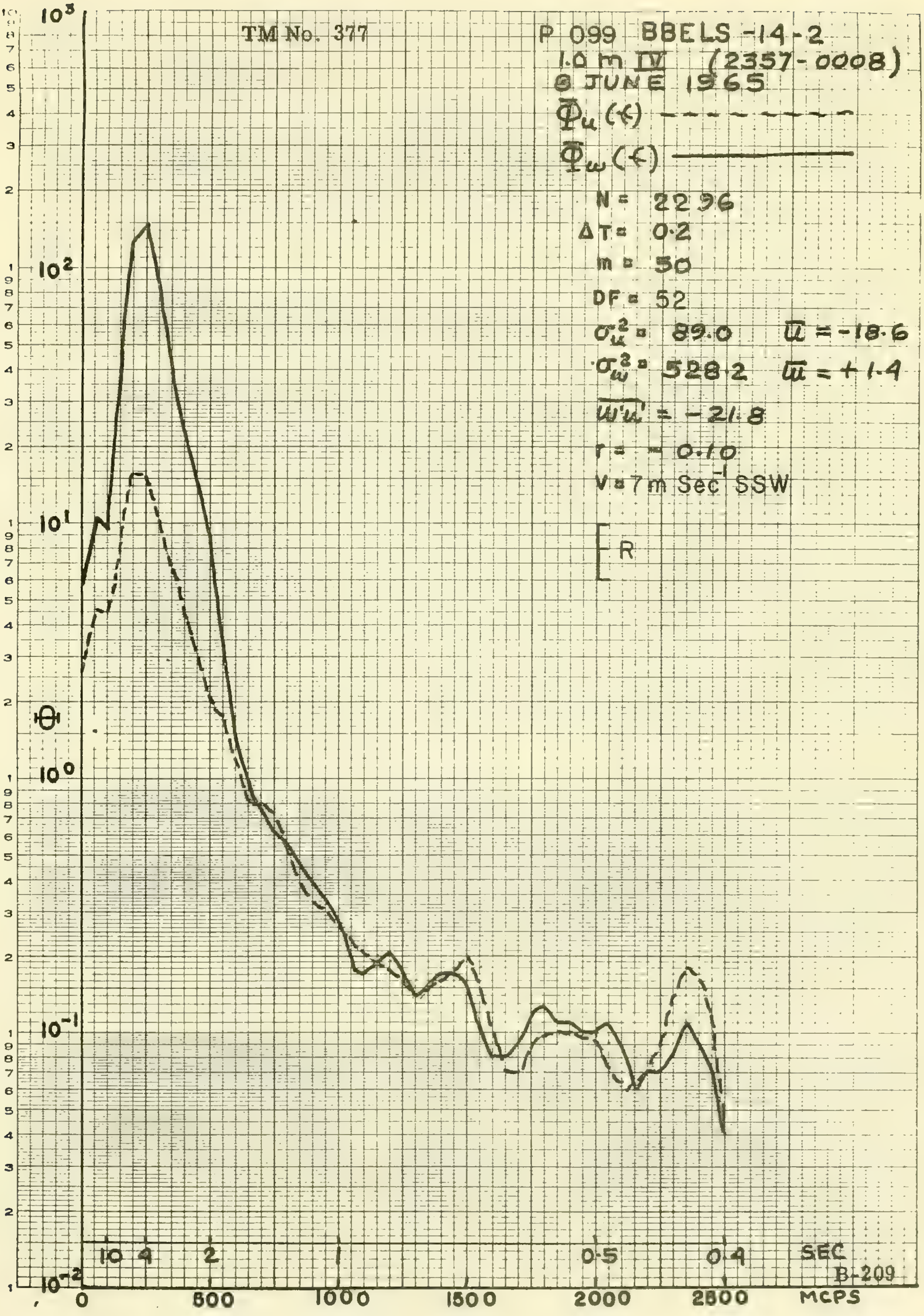


TM No. 377
P 096 BBELS-14-9
8.0-10.0m I (1604-1609)
7 JUNE 1965
UP Φw (f)
LO Φw (f)
N = 1278
ΔT = 0.2
m = 50
DF = 31
UP σw² = 49.3 w̄ = -1.6
LO σw² = 36.4 w̄ = +3.6
r = 0.24
V = 10 m Sec⁻¹ SSW-SW
R
Θ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10
4
2
0.5
0.4
SEC
0
500
1000
1500
2000
2500
MCPS
B-206

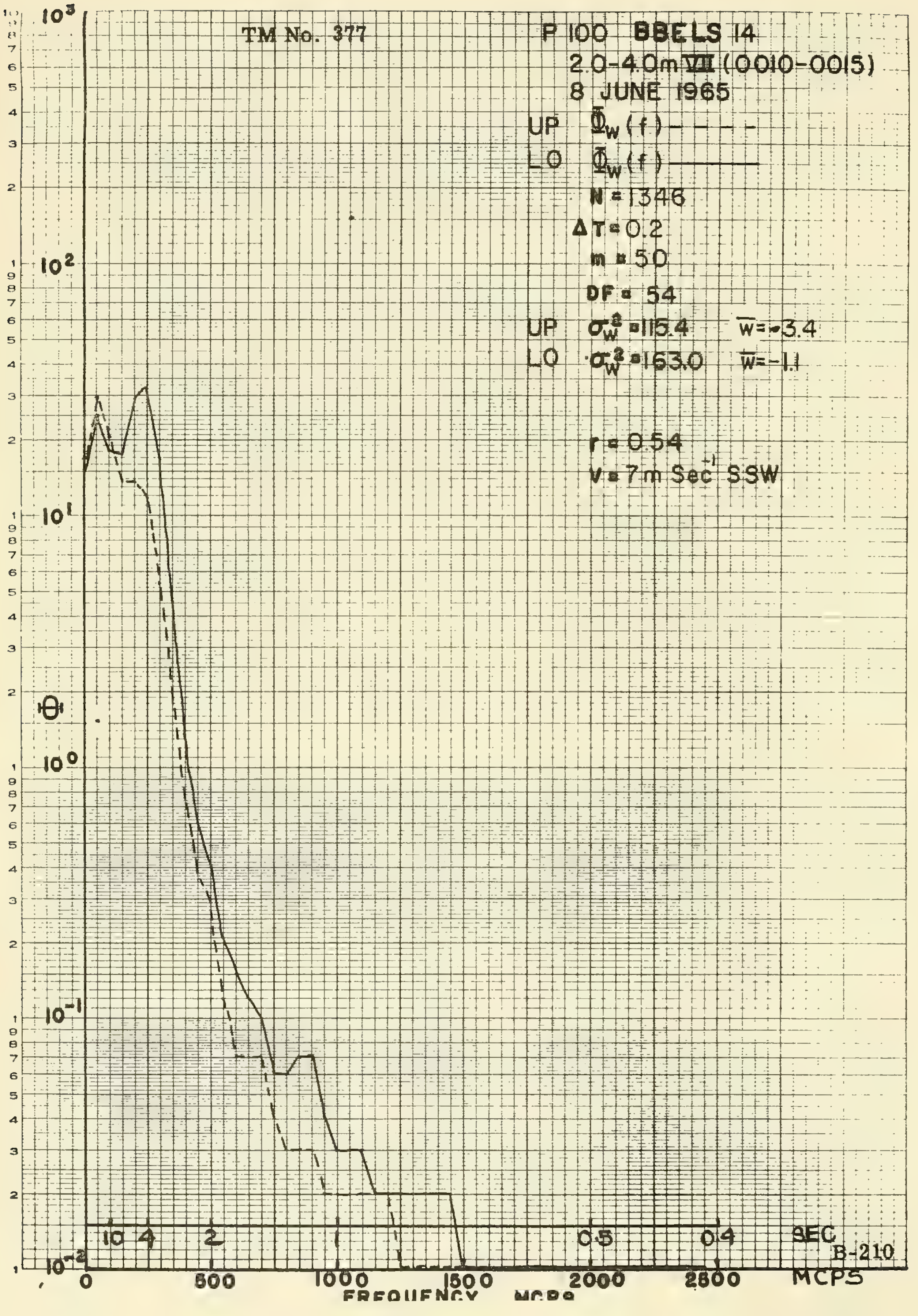


TM No. 377
P 097 BBELS -14-3
9.0-11.0 m I (1613-1618)
7 JUNE 1965 (w)
UP Φw(f) - - - - - - - -
Lo Φw(f) ———
N = 1422
ΔT = 0.2
m = 50
DF = 57
UP σw² = 44.6 w̄ = +4.9
Lo σw² = 23.1 w̄ = +2.1
r = +0.16
V = 9.5 m Sec⁻¹ SSW-SW
R
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-207
5 CYCLES x 10 DIVISIONS PER INCH
MADE IN U.S.A.

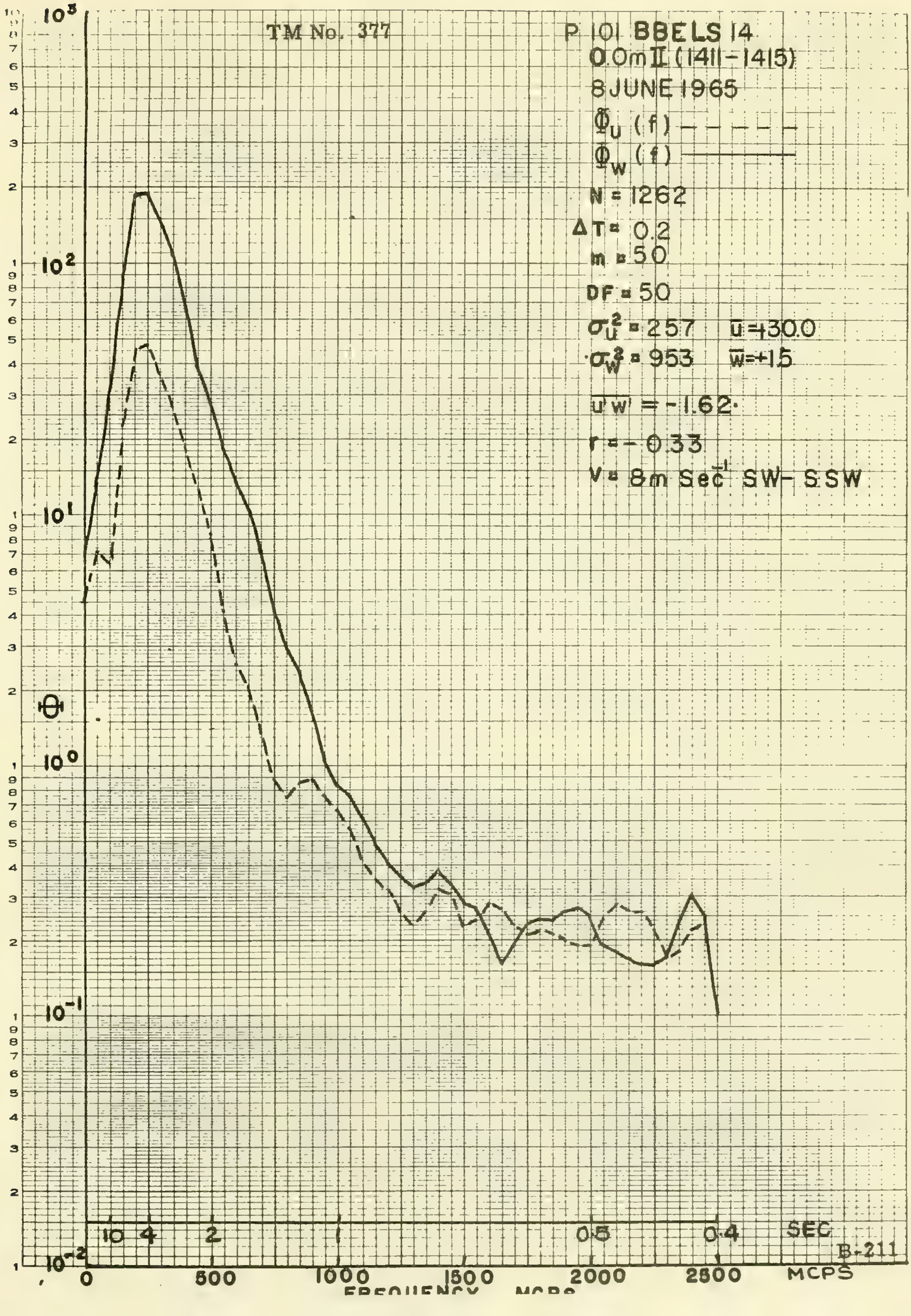

TM No. 377
P 098 BBELS 14
2.0-4.0 m VI (2228-2234)
7 JUNE 1965
Φw (f) - - - -
Φw (f) ———
N = 1706
ΔT = 0.2
m = 50
DF = 68
σw² = 118.5 w̄ = 4.2
σw² = 211.0 w̄ = 3.1
r = 0.73
V = 8m Sec⁻¹ SSW
Θ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
FREQUENCY MCPS
B-208

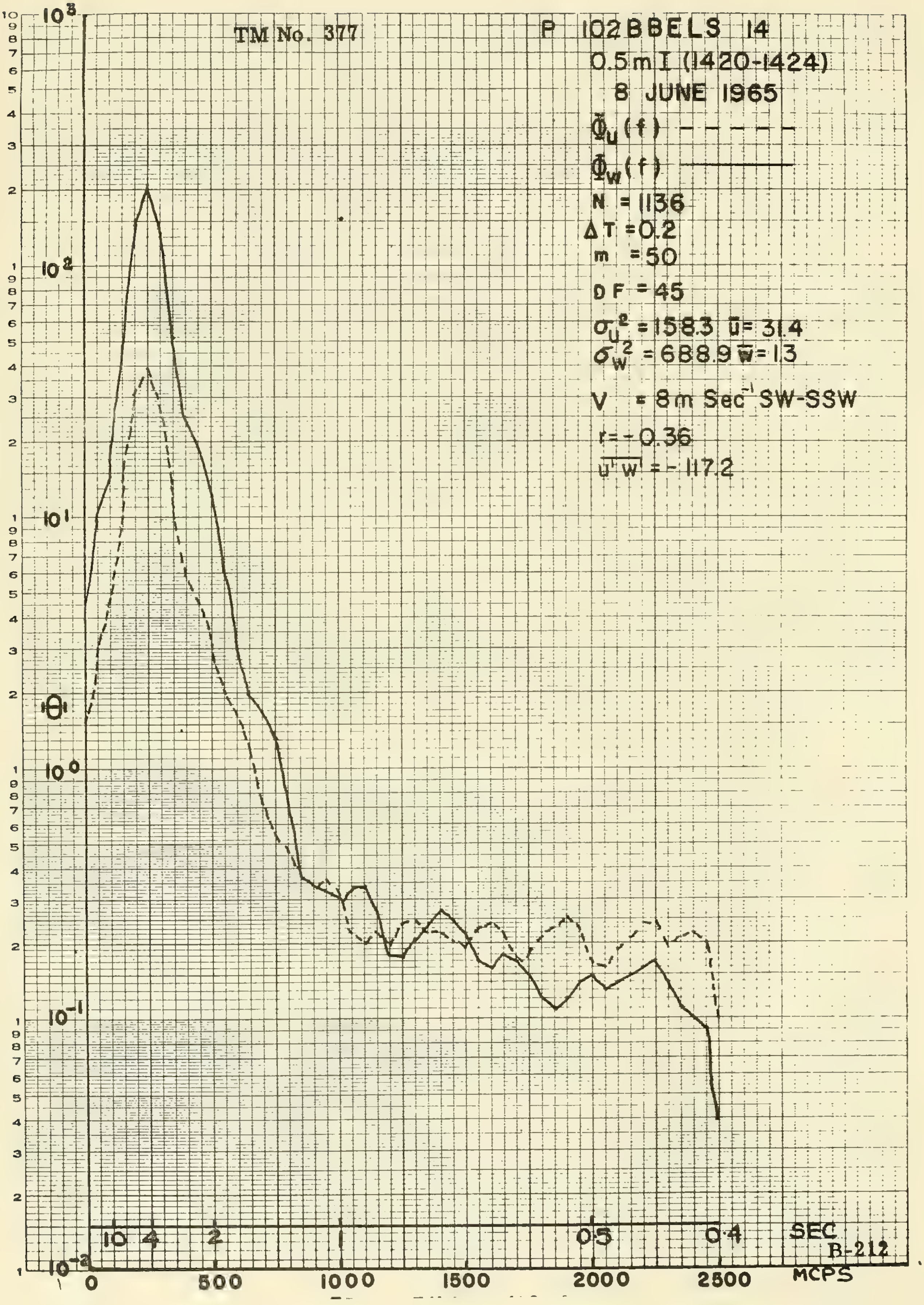


TM No. 377
P 099 BBELS -14-2
1.0 m IV (2357-0008)
8 JUNE 1965
Φu(f) - - - - - - -
Φw(f) ———
N = 2296
ΔT = 0.2
m = 50
DF = 52
σu² = 89.0   ū = -18.6
σw² = 528.2   w̄ = +1.4
w'u' = -21.8
r = -0.10
V = 7m Sec⁻¹ SSW
R
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-209
5 CYCLES X 10 DIVISIONS PER INCH

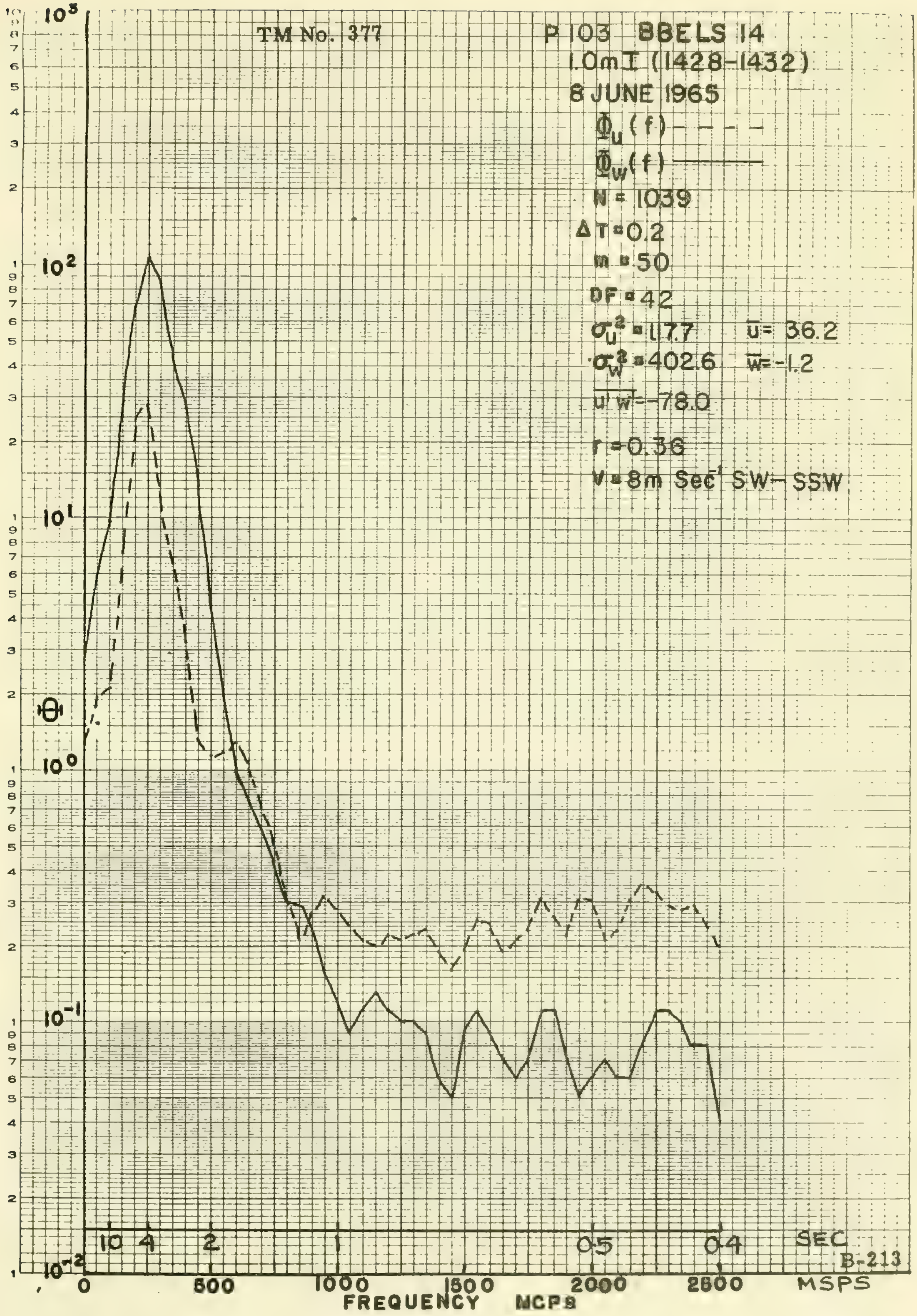


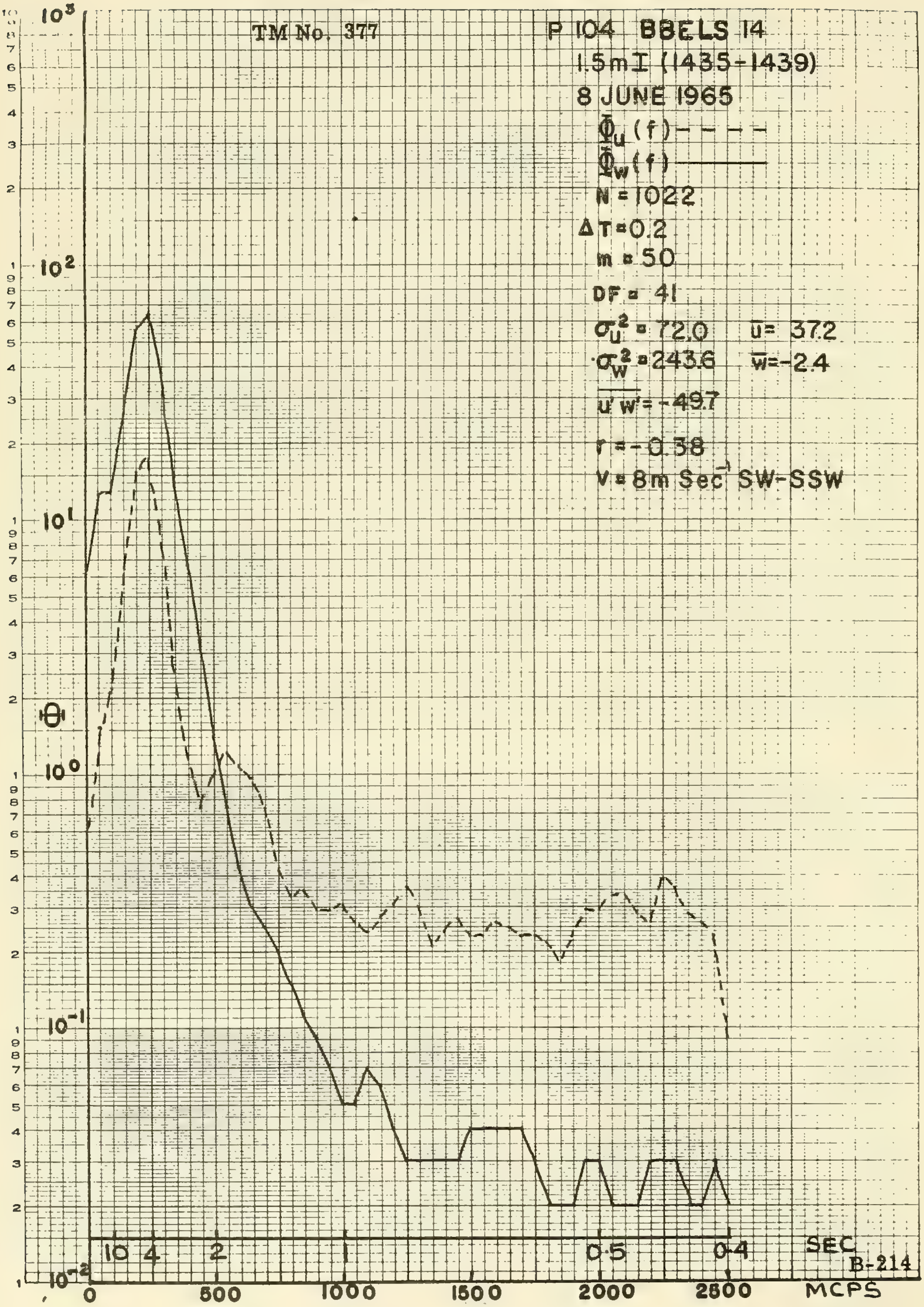
TM No. 377
P 100 BBELS 14
2.0-4.0m VII (0010-0015)
8 JUNE 1965
UP $\bar{\Phi}_w(f)$ - - - -
LO $\bar{\Phi}_w(f)$ ———
N = 1346
ΔT = 0.2
m = 50
DF = 54
UP σ_w^2 = 115.4 $\bar{w}$ = -3.4
LO σ_w^2 = 163.0 $\bar{w}$ = -1.1
r = 0.54
V = 7 m Sec^{-1} SSW
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
Φ
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
FREQUENCY MCPS
B-210

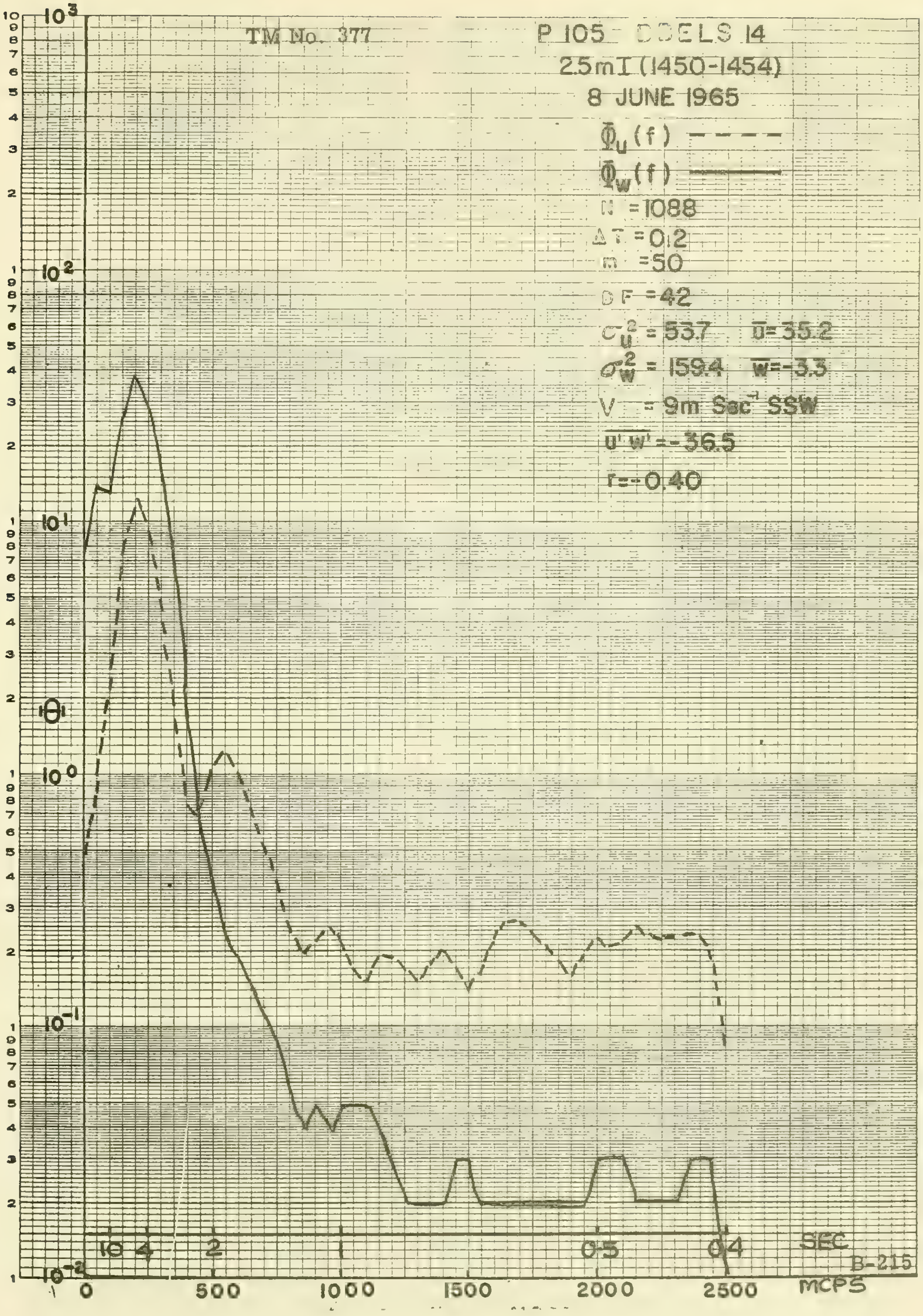

P 101 BBELS 14
0.0m II (1411-1415)
8 JUNE 1965
Φu (f) - - - -
Φw (f) ———
N = 1262
ΔT = 0.2
m = 50
DF = 50
σu² = 257   ū = +30.0
σw² = 953   w̄ = +1.5
u'w' = -1.62
r = -0.33
V = 8m Sec⁻¹ SW-SSW
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
FREQUENCY MCPS



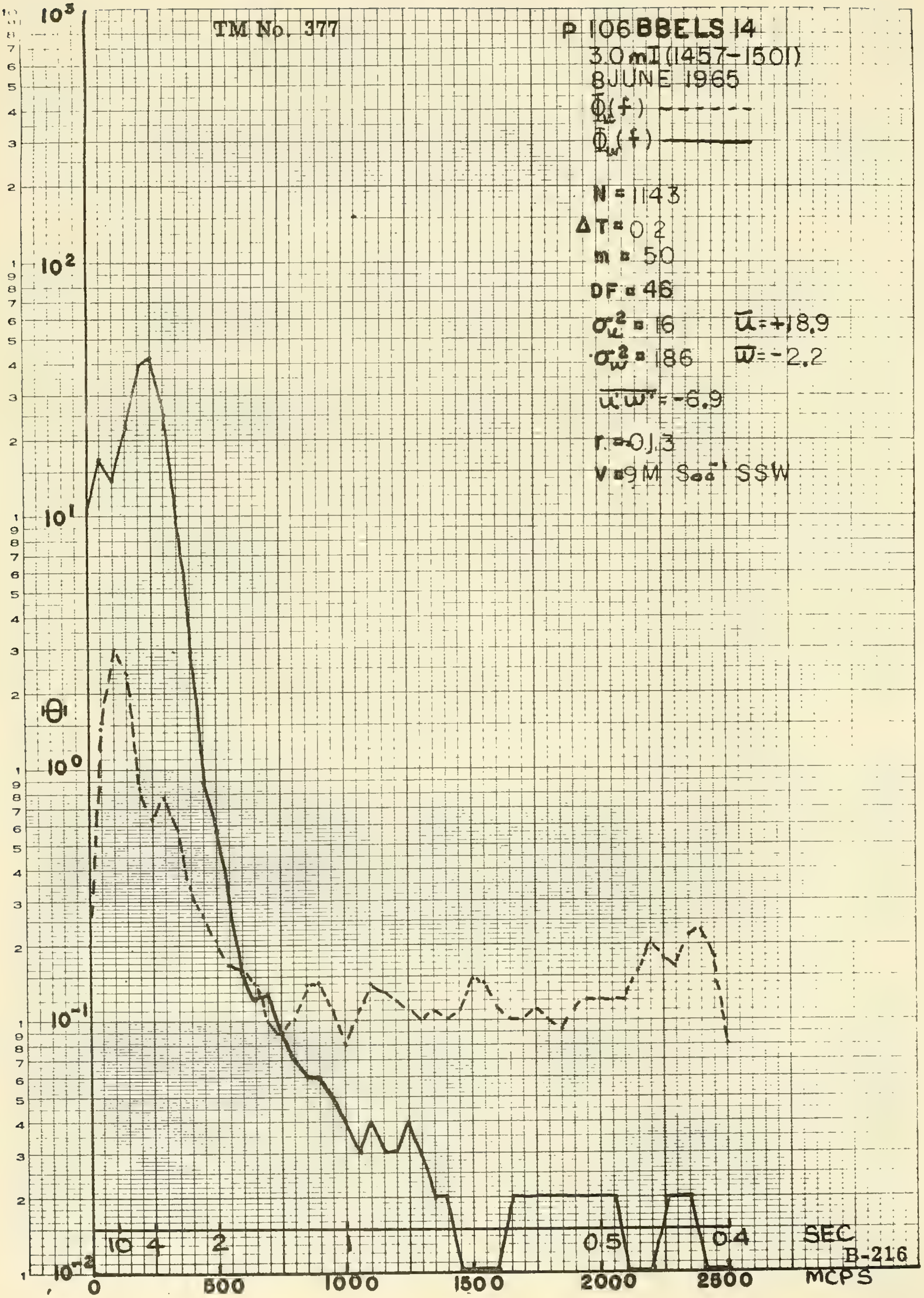
TM No. 377
P 102BBELS 14
0.5m I (1420-1424)
8 JUNE 1965
Φu(f) - - - - - -
Φw(f) ————
N = 1136
ΔT = 0.2
m = 50
DF = 45
σu² = 1583 ū = 31.4
σw² = 688.9 w̄ = 1.3
V = 8m Sec⁻¹ SW-SSW
r = -0.36
u'w' = -117.2
10³
10²
10¹
10⁰
10⁻¹
10⁻²
Θ
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-212

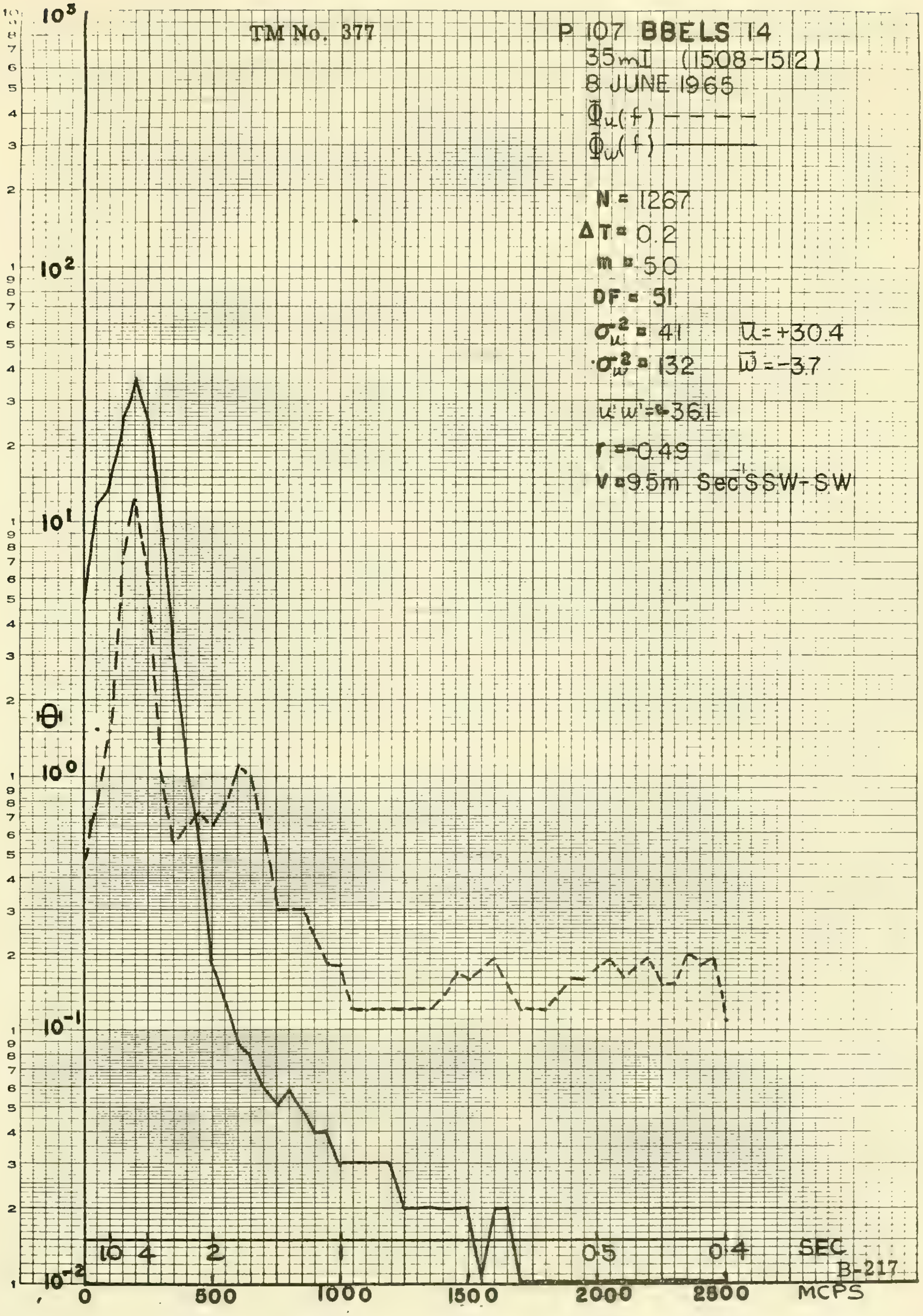

TM No. 377
P 103 BBELS 14
1.0m I (1428-1432)
8 JUNE 1965
$\Phi_u(f)$ - - - -
$\Phi_w(f)$ ———
N = 1039
ΔT = 0.2
m = 50
DF = 42
σ_u^2 = 117.7 $\bar{u}$ = 36.2
σ_w^2 = 402.6 $\bar{w}$ = -1.2
$\overline{u'w'}$ = -78.0
r = 0.36
V = 8m Sec^{-1} SW-SSW
Φ
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MSPS
FREQUENCY MCPS
B-213
5 CYCLES X 10 DIVISIONS PER INCH
MADE IN U.S.A.

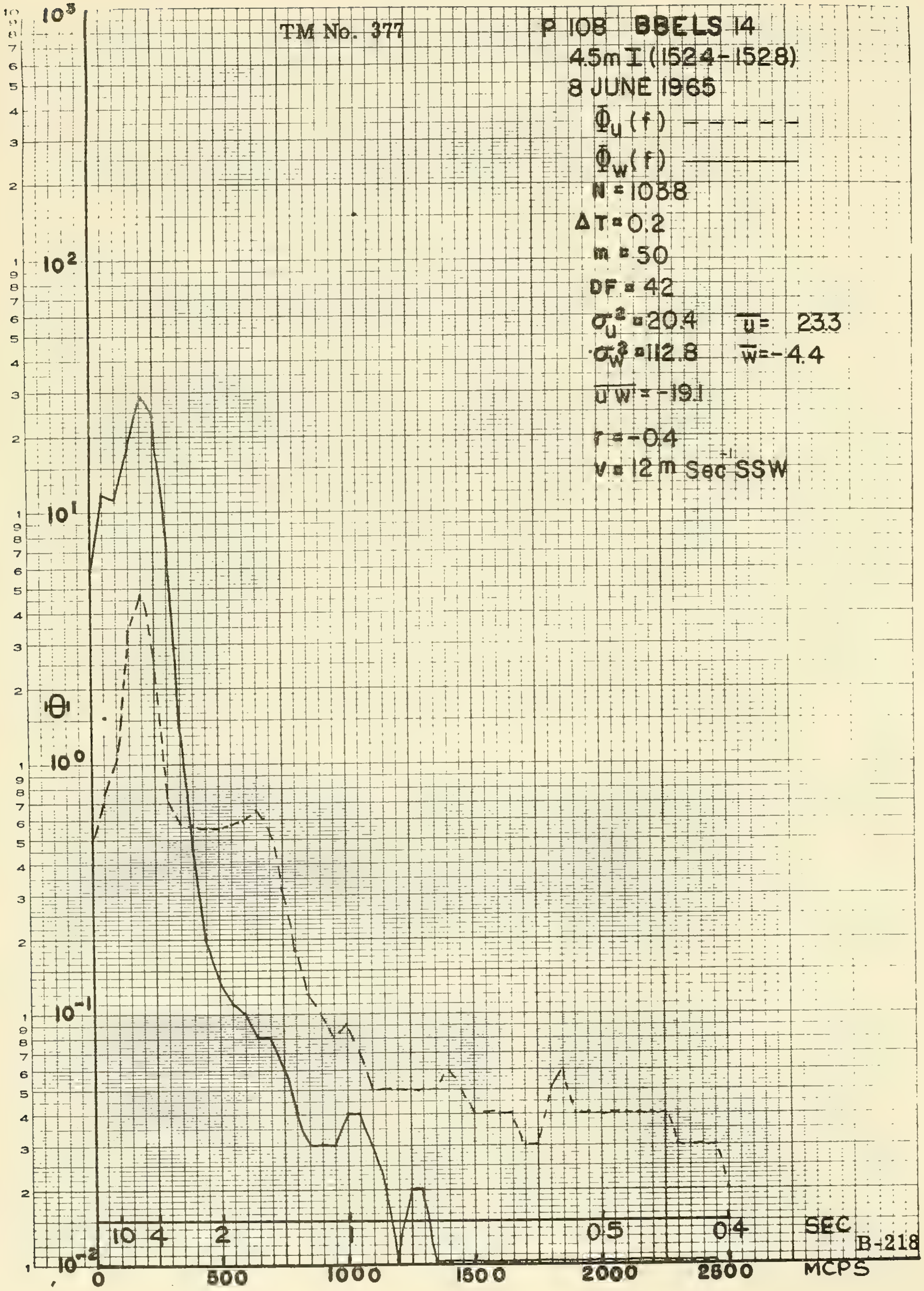

TM No. 377
P 104 BBELS 14
1.5m I (1435-1439)
8 JUNE 1965
$\Phi_u(f)$ - - - -
$\Phi_w(f)$ ———
N = 1022
ΔT = 0.2
m = 50
DF = 41
σ_u^2 = 72.0 $\bar{u}$ = 37.2
σ_w^2 = 243.6 $\bar{w}$ = -2.4
$\overline{u'w'}$ = -49.7
r = -0.38
V = 8m Sec^{-1} SW-SSW
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
Φ
10
4
2
1
0.5
0.4
SEC
0
500
1000
1500
2000
2500
MCPS
B-214

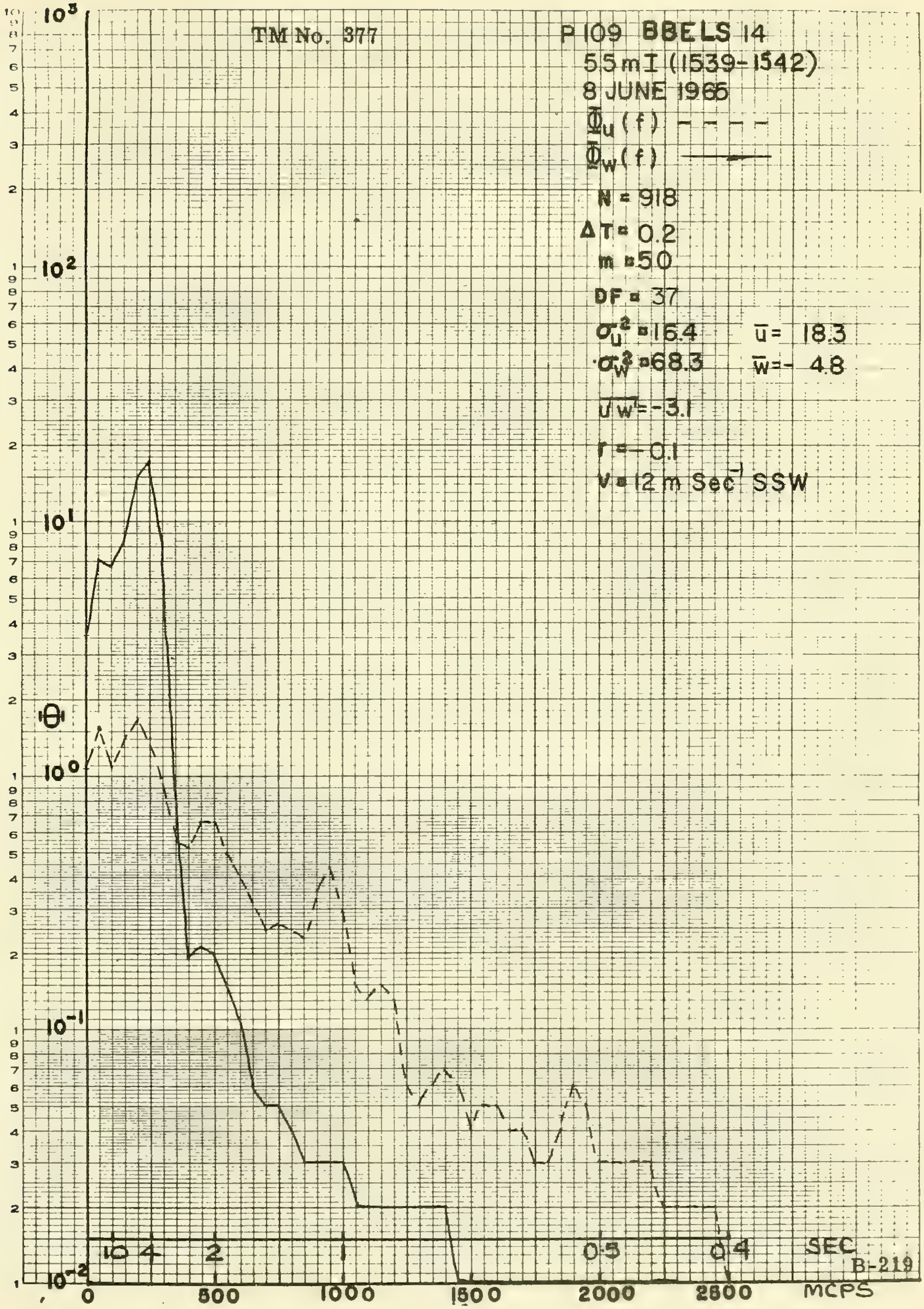


TM No. 377
P 105 DDELS 14
2.5mI (1450-1454)
8 JUNE 1965
$\bar{\Phi}_u(f)$ - - - -
$\bar{\Phi}_w(f)$ ———
N = 1088
ΔT = 0.2
m = 50
DF = 42
σ_u^2 = 53.7 $\bar{U}$ = 35.2
σ_w^2 = 159.4 $\bar{w}$ = -3.3
V = 9m Sec⁻¹ SSW
$\overline{u'w'}$ = -36.5
r = -0.40
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
Φ
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-215
5 CYCLES X 10 DIVISIONS PER INCH
MADE IN U.S.A.

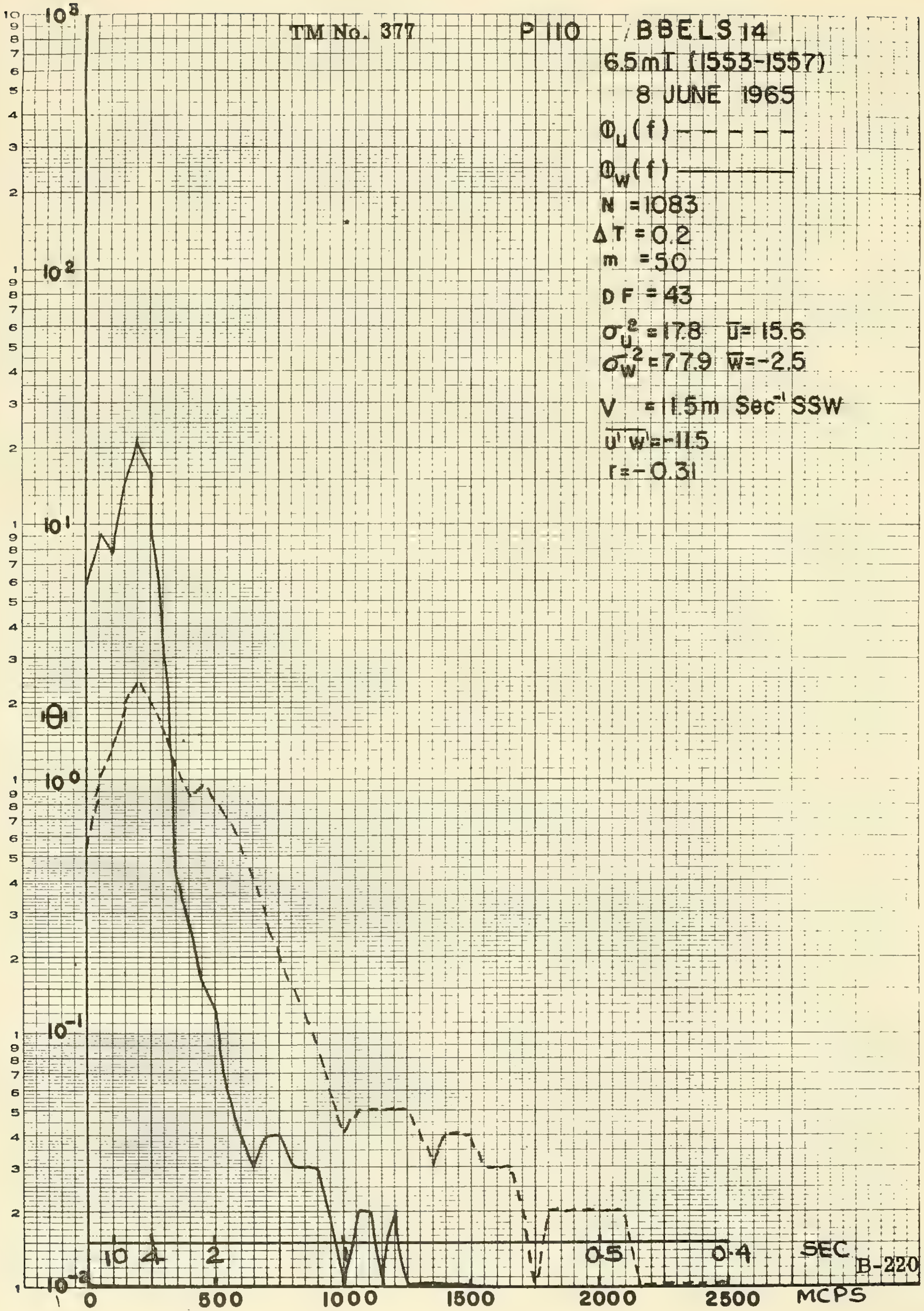

TM No. 377
P 106 BBELS 14
3.0 m I (1457-1501)
8 JUNE 1965
Φ(f) - - - - -
Φw(f) ———
N = 1143
ΔT = 0.2
m = 50
DF = 46
σu² = 16
ū = +18.9
σw² = 186
w̄ = -2.2
u'w' = -6.9
r = 0.13
V = 9 M Sec⁻¹ SSW
10³
10²
10¹
10⁰
10⁻¹
10⁻²
Θ
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-216


TM No. 377
P 107 BBELS 14
35mI (1508-1512)
8 JUNE 1965
Φu(f) - - - -
Φw(f) ———
N = 1267
ΔT = 0.2
m = 50
DF = 51
σu² = 41
ū = +30.4
σw² = 132
w̄ = -3.7
u'w' = +36.1
r = -0.49
V = 9.5m Sec⁻¹ SSW-SW
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-217
SEMI-LOGARITHMIC
5 CYCLES X 10 DIVISIONS PER INCH
MADE IN U.S.A.

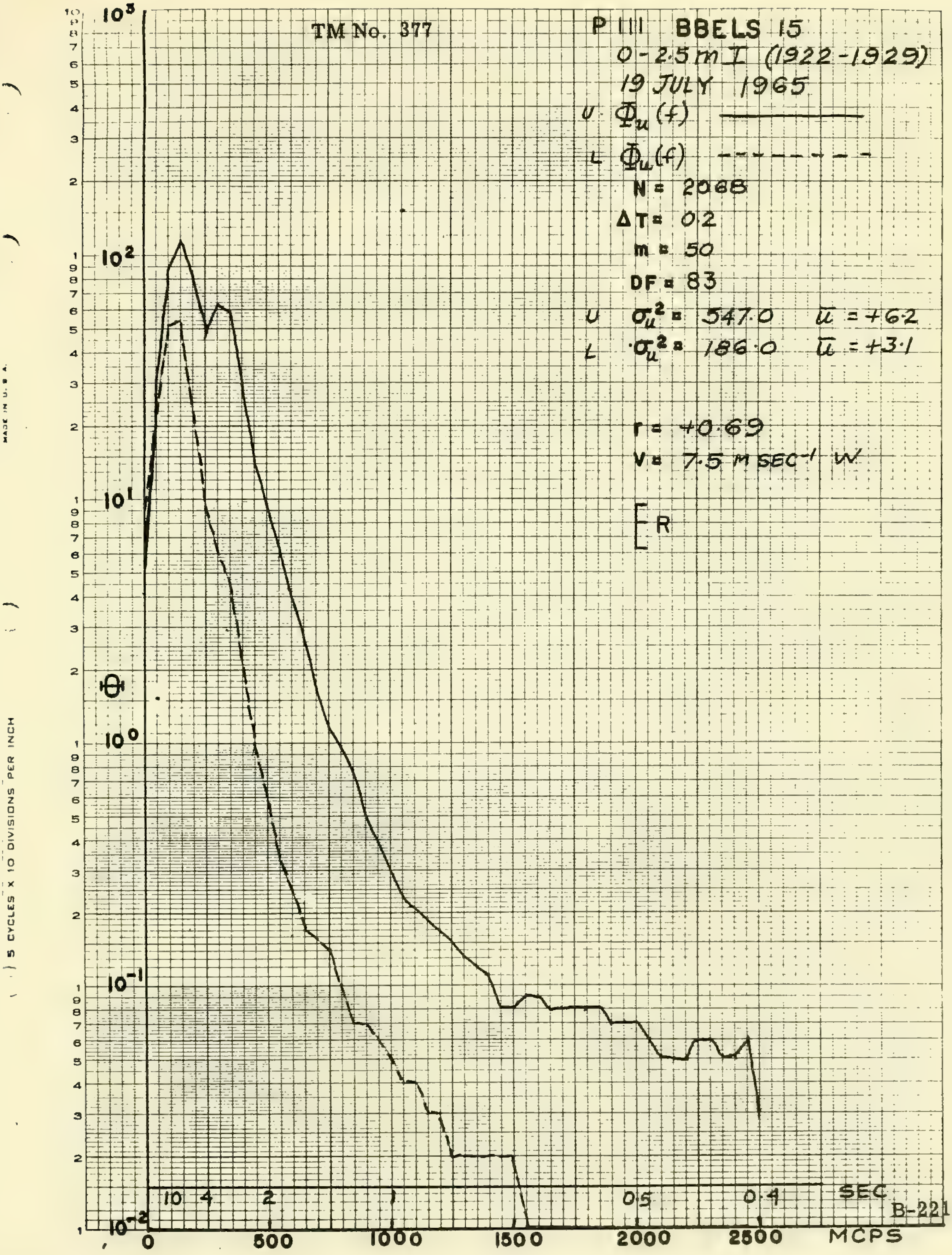

TM No. 377
P 108 BBELS 14
4.5m I (1524-1528)
8 JUNE 1965
Φu(f) - - - - -
Φw(f) ———
N = 1038
ΔT = 0.2
m = 50
DF = 42
σu² = 20.4
ū = 23.3
σw² = 112.8
w̄ = -4.4
u'w' = -19.1
r = -0.4
V = 12 m Sec⁻¹ SSW
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
SEC
10 4 2 1 0.5 0.4
0 500 1000 1500 2000 2500
MCPS
B-218



TM No. 377
P 109 BBELS 14
55 m I (1539-1542)
8 JUNE 1965
Φu(f) - - - -
Φw(f) ———
N = 918
ΔT = 0.2
m = 50
DF = 37
σu² = 15.4
ū = 18.3
σw² = 68.3
w̄ = -4.8
u'w' = -3.1
r = -0.1
V = 12 m Sec⁻¹ SSW
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4
2
1
0.5
0.4
SEC
0
500
1000
1500
2000
2500
MCPS
B-219
SEMI-LOGARITHMIC
5 CYCLES × 10 DIVISIONS PER INCH
EUGENE DIETZGEN CO.
MADE IN U.S.A.

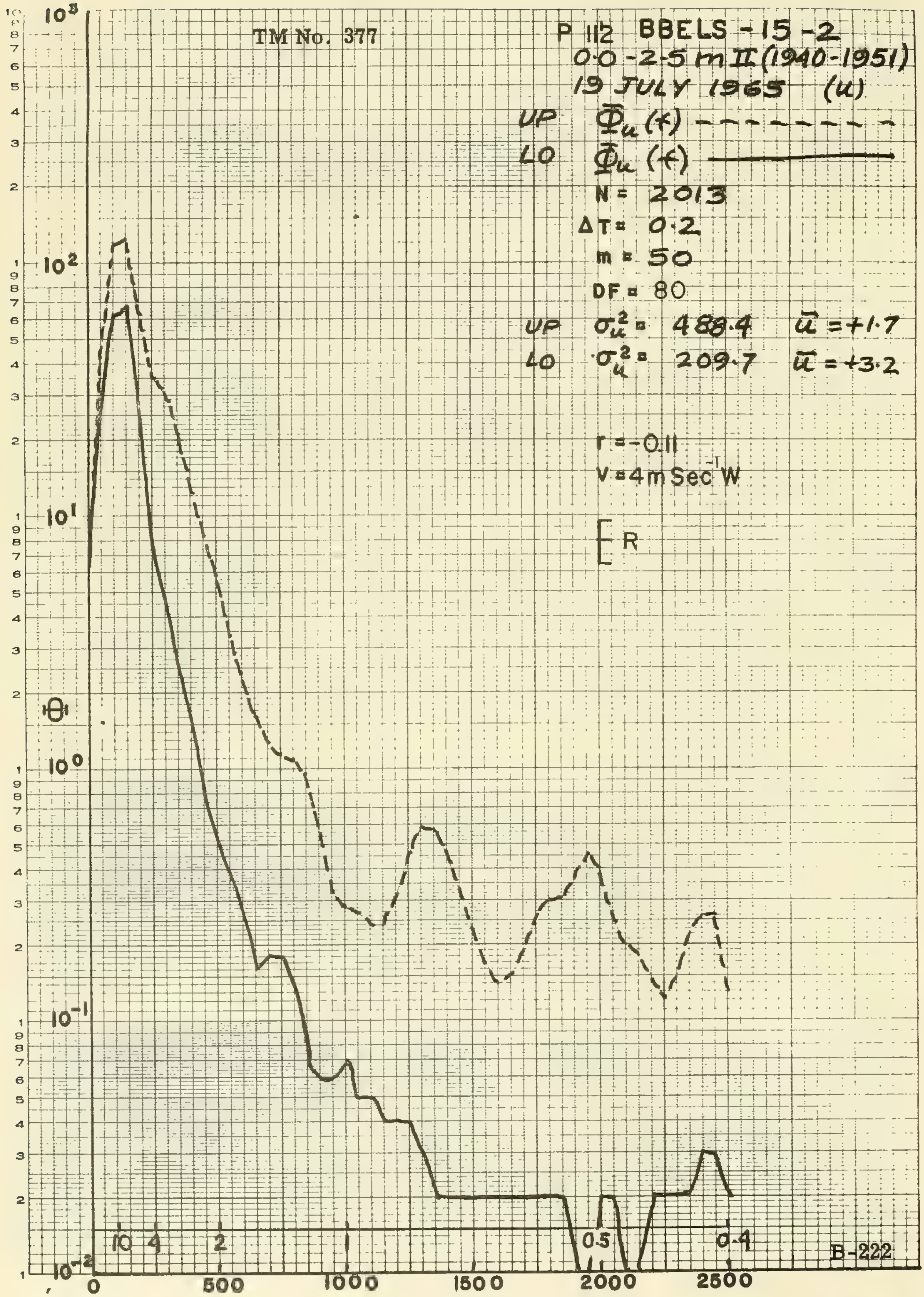


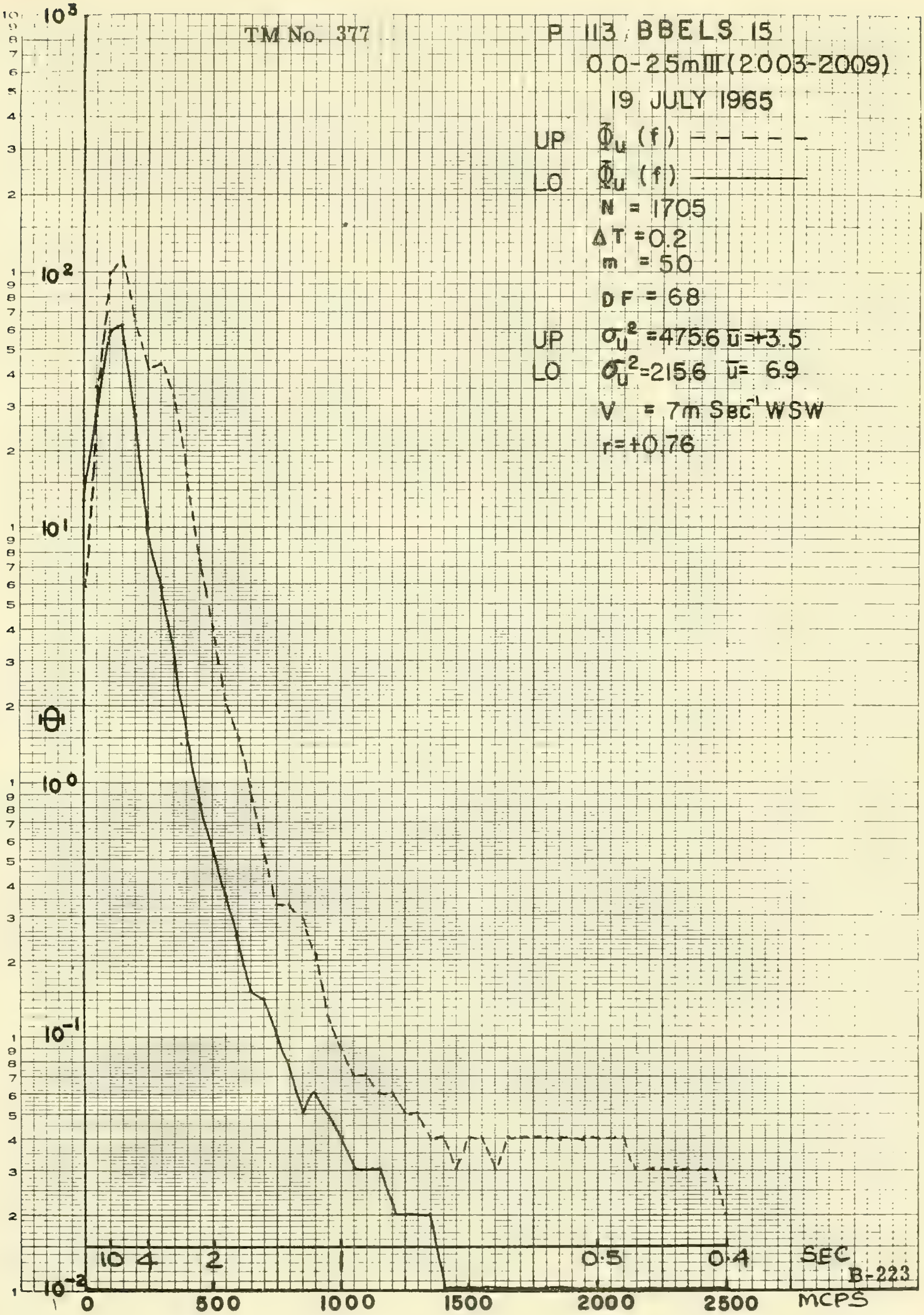
TM No. 377
P 110
BBELS 14
6.5 m I (1553-1557)
8 JUNE 1965
Φu(f) - - - - -
Φw(f) ———
N = 1083
ΔT = 0.2
m = 50
DF = 43
σu² = 17.8 ū = 15.6
σw² = 77.9 w̄ = -2.5
V = 11.5 m Sec⁻¹ SSW
u'w' = -11.5
r = -0.31
Φ
10 4 2 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-220



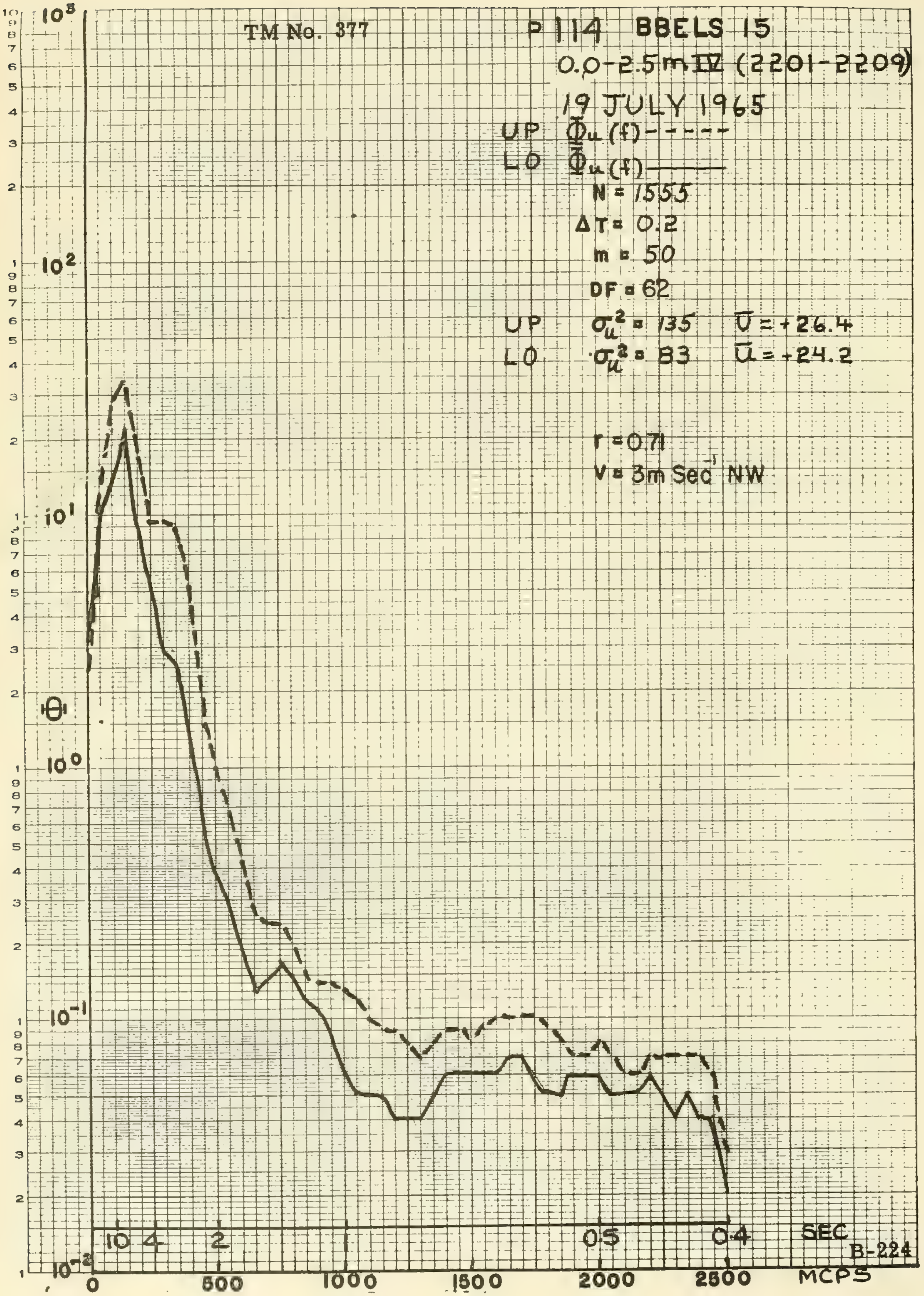
TM No. 377
P III BBELS 15
0-2.5m I (1922-1929)
19 JULY 1965
U $\Phi_u(f)$
L $\Phi_u(f)$
N = 2068
ΔT = 0.2
m = 50
DF = 83
U σ_u^2 = 547.0 $\bar{u}$ = +6.2
L σ_u^2 = 186.0 $\bar{u}$ = +3.1
r = +0.69
V = 7.5 M SEC⁻¹ W
R
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
5 CYCLES X 10 DIVISIONS PER INCH
MADE IN U.S.A.

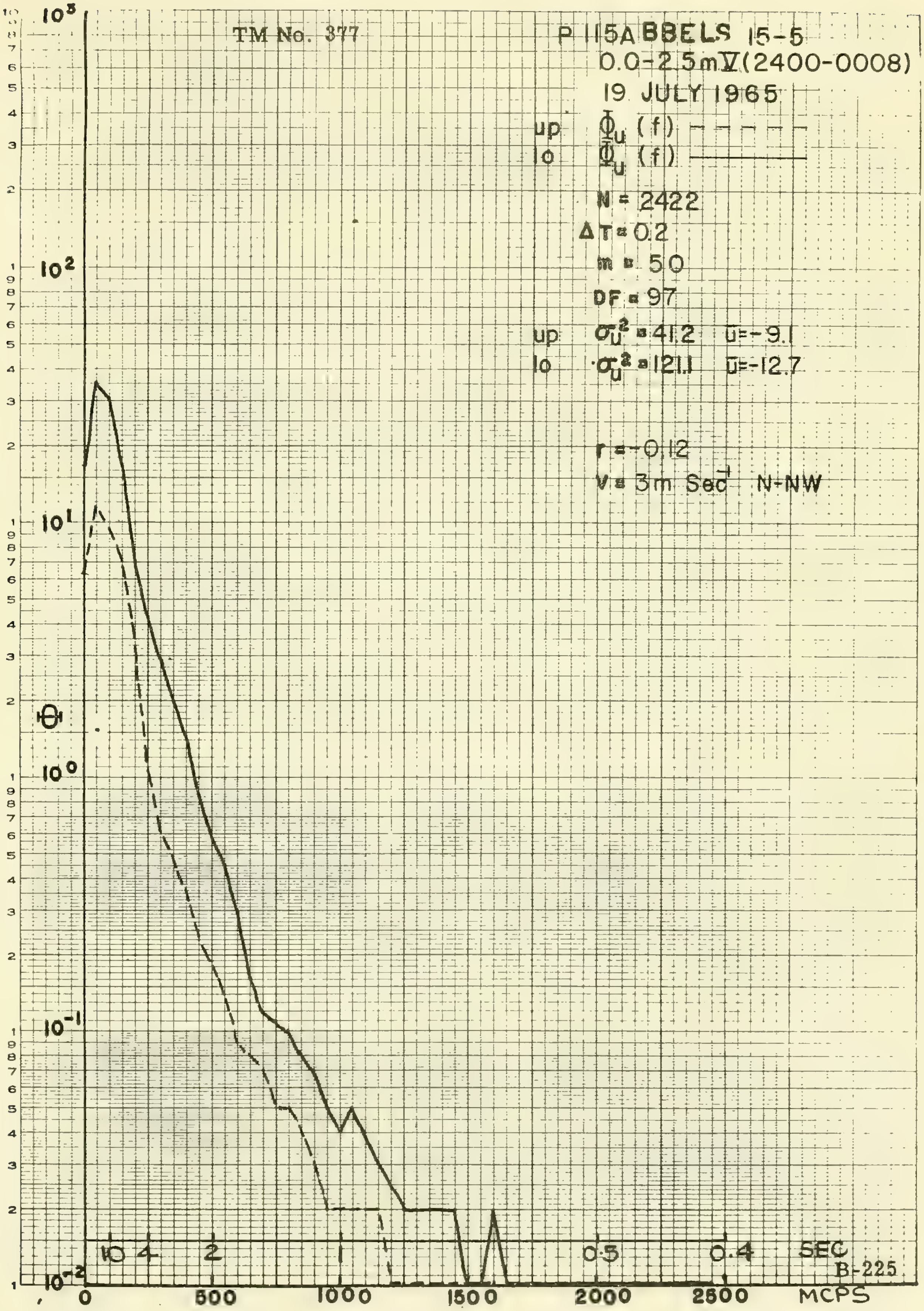
B-221

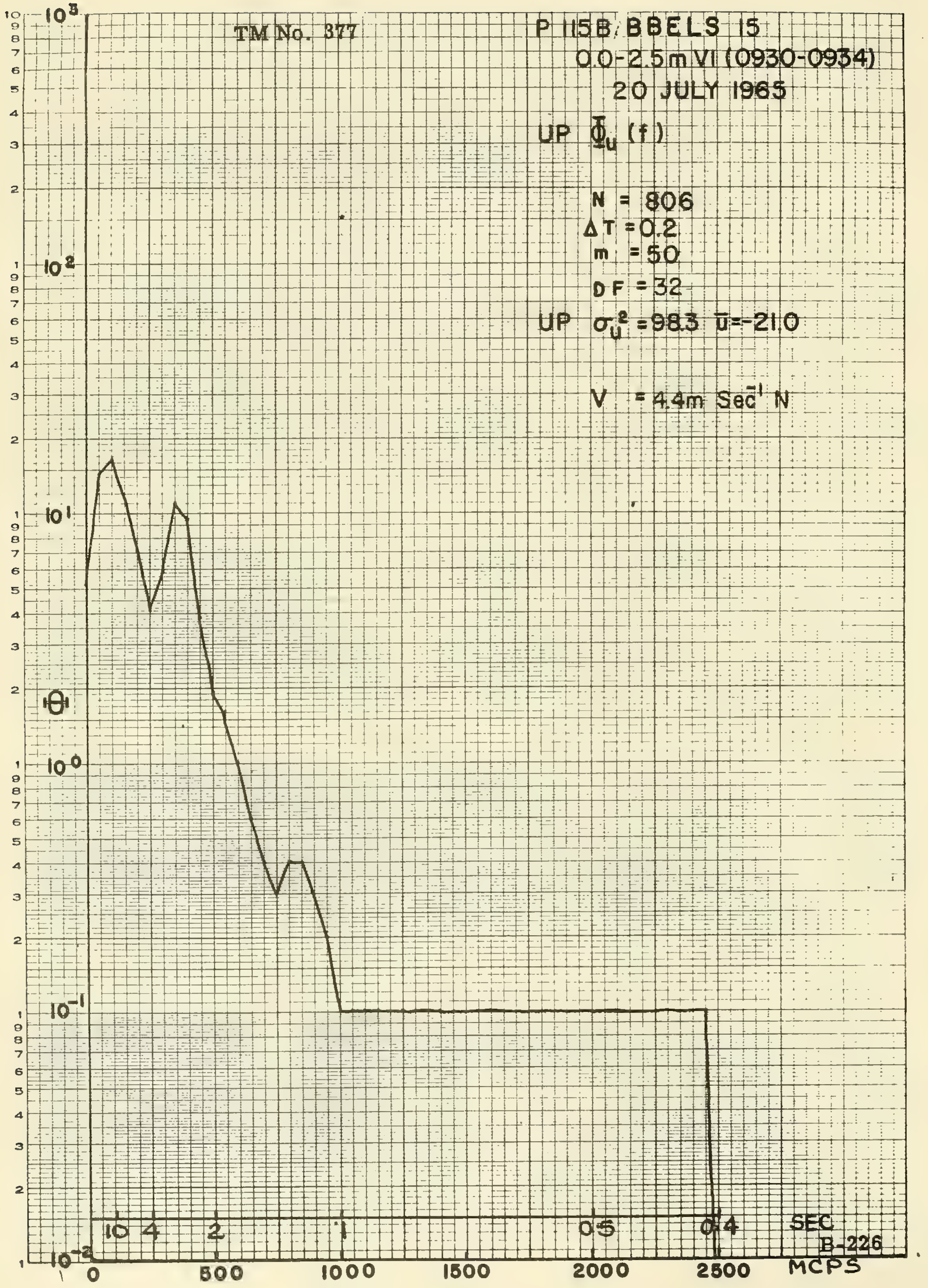

P 112 BBELS - 15 - 2
0.0 - 2.5 m II (1940-1951)
19 JULY 1965 (u)
UP $\Phi_u(f)$ - - - - - - - -
LO $\Phi_u(f)$ ————
N = 2013
ΔT = 0.2
m = 50
DF = 80
UP σ_u^2 = 488.4 $\bar{u}$ = +1.7
LO σ_u^2 = 209.7 $\bar{u}$ = +3.2
r = -0.11
V = 4 m Sec^{-1} W
R
Θ
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
10
4
2
1
0.5
0.4
0
500
1000
1500
2000
2500



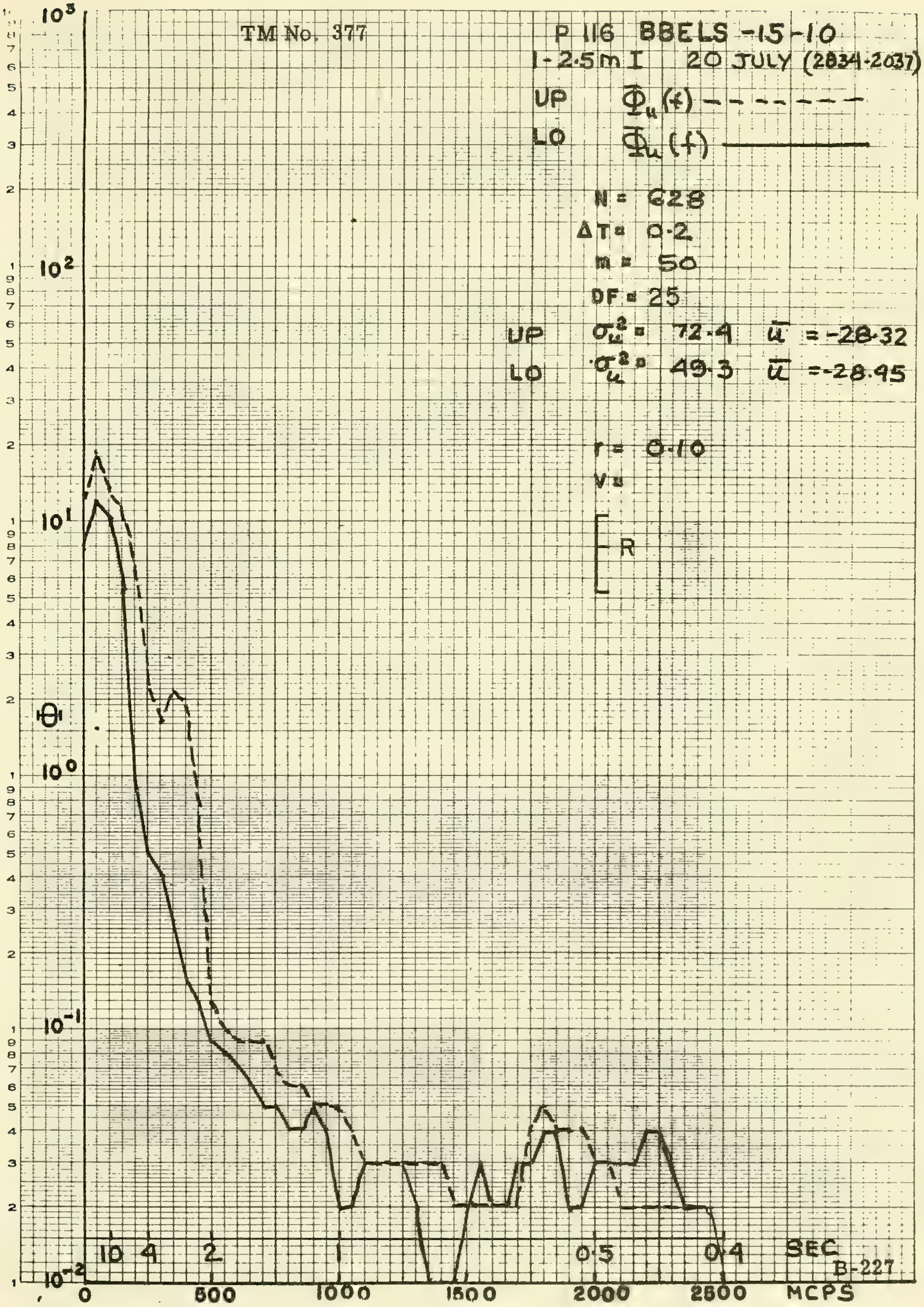
TM No. 377
P 113 BBELS 15
0.0-25mIII (2003-2009)
19 JULY 1965
UP Φu (f) - - - - -
LO Φu (f) ———
N = 1705
ΔT = 0.2
m = 50
DF = 68
UP σu² = 475.6 ū = +3.5
LO σu² = 215.6 ū = 6.9
V = 7m Sec⁻¹ WSW
r = +0.76
10³
10²
10¹
10⁰
10⁻¹
10⁻²
Φ
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-223
5 CYCLES X 10 DIVISIONS PER INCH
MADE IN U.S.A.


TM No. 377
P 114 BBELS 15
0.0-2.5 m IV (2201-2209)
19 JULY 1965
UP Φu (f) - - - - -
LO Φu (f) ———
N = 1555
ΔT = 0.2
m = 50
DF = 62
UP σu² = 135 Ū = +26.4
LO σu² = 83 Ū = +24.2
r = 0.71
V = 3m Sec⁻¹ NW
Θ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-224

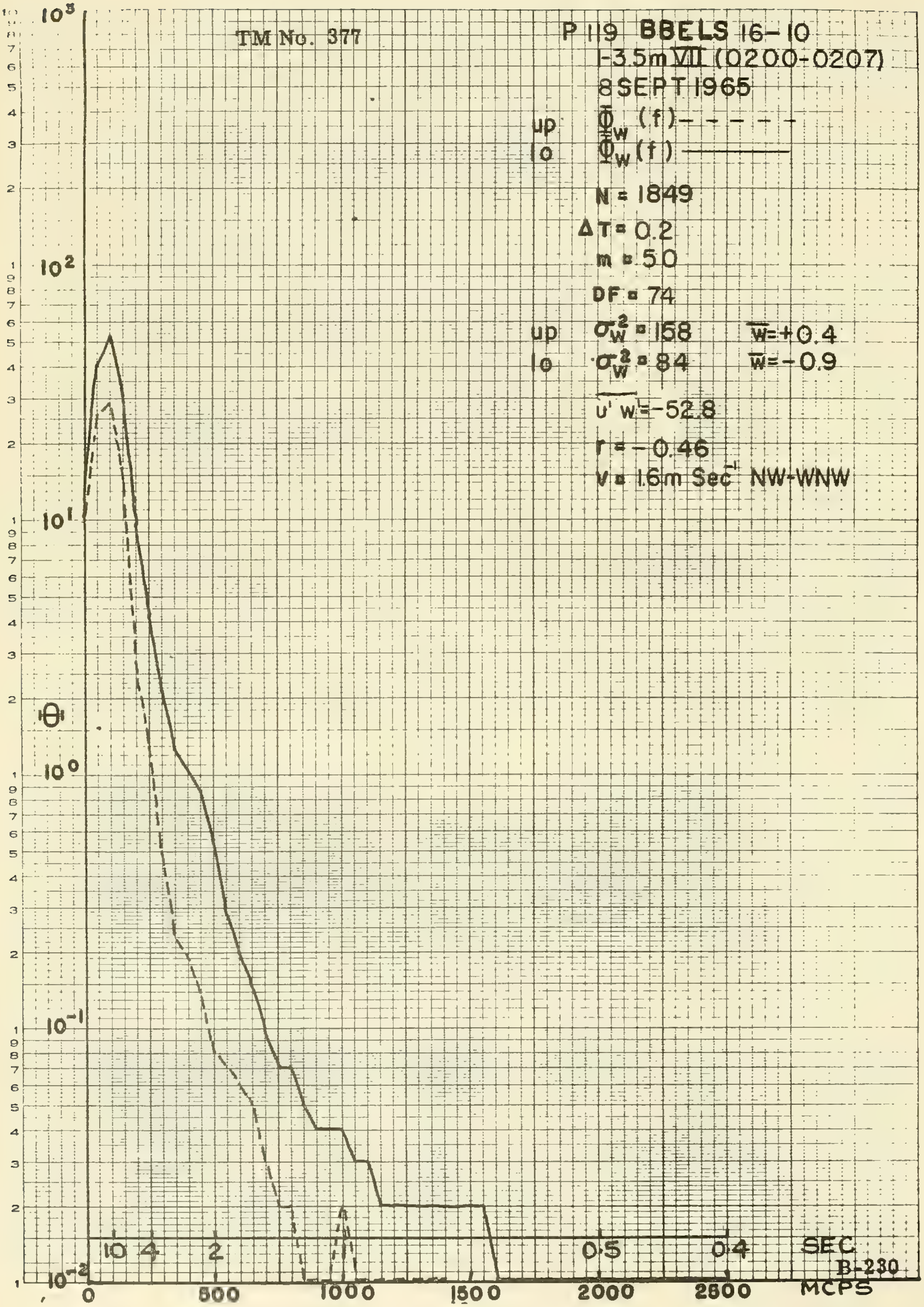

TM No. 377
P 115A BBELS 15-5
0.0-2.5mV (2400-0008)
19 JULY 1965
up Φu (f) - - - - -
lo Φu (f) ———
N = 2422
ΔT = 0.2
m = 50
DF = 97
up σu² = 41.2 ū = -9.1
lo σu² = 121.1 ū = -12.7
r = -0.12
V = 3m Sec⁻¹ N-NW
10³
10²
10¹
10⁰
10⁻¹
10⁻²
Φ
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-225
5 CYCLES X 10 DIVISIONS PER INCH
MADE IN U.S.A.



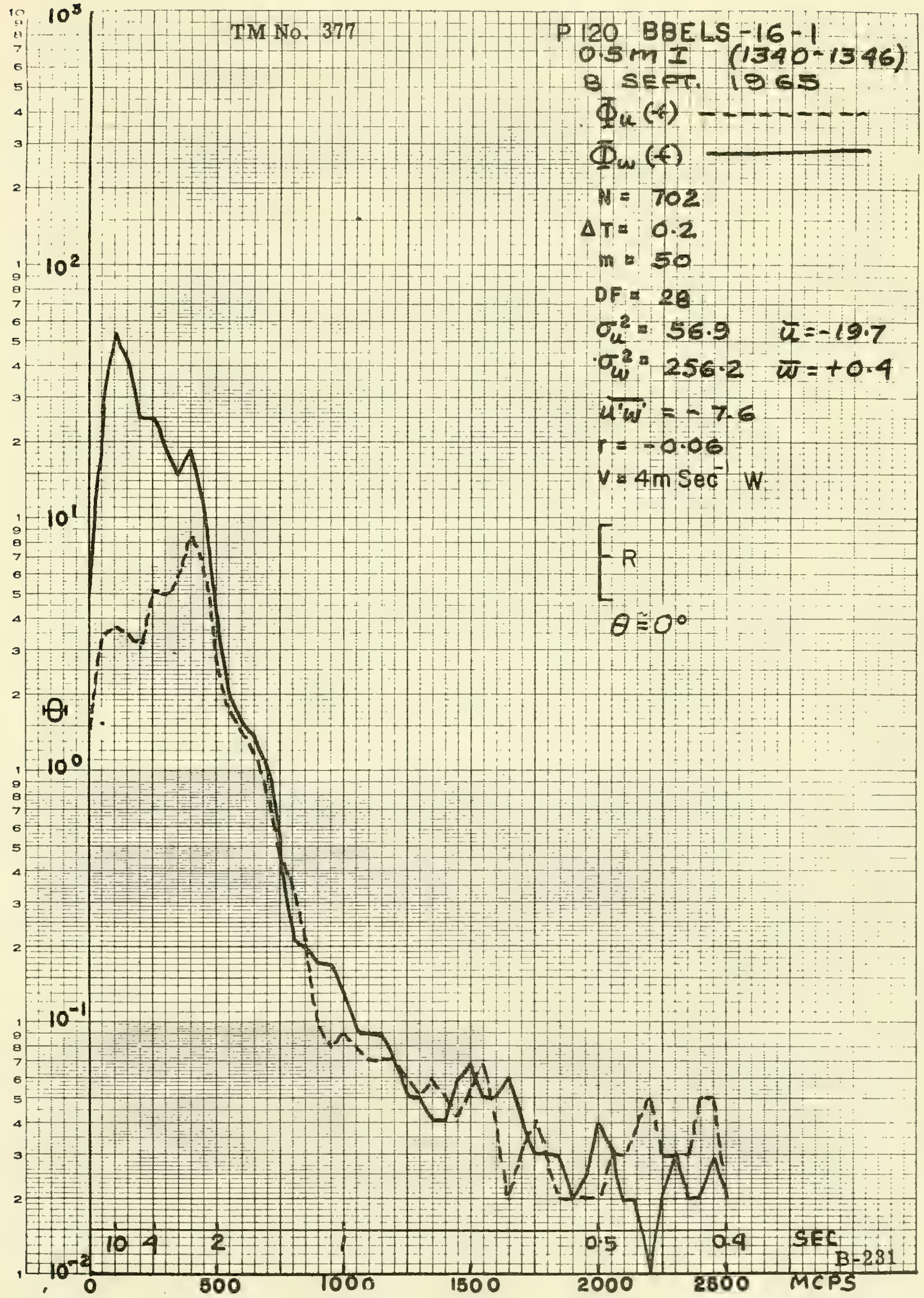
TM No. 377
P 115B/BBELS 15
0.0-2.5m VI (0930-0934)
20 JULY 1965
UP Φ_u (f)
N = 806
ΔT = 0.2
m = 50
DF = 32
UP σ_u^2 = 98.3 $\bar{u}$ = -21.0
V = 4.4m Sec^{-1} N
Φ
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-226



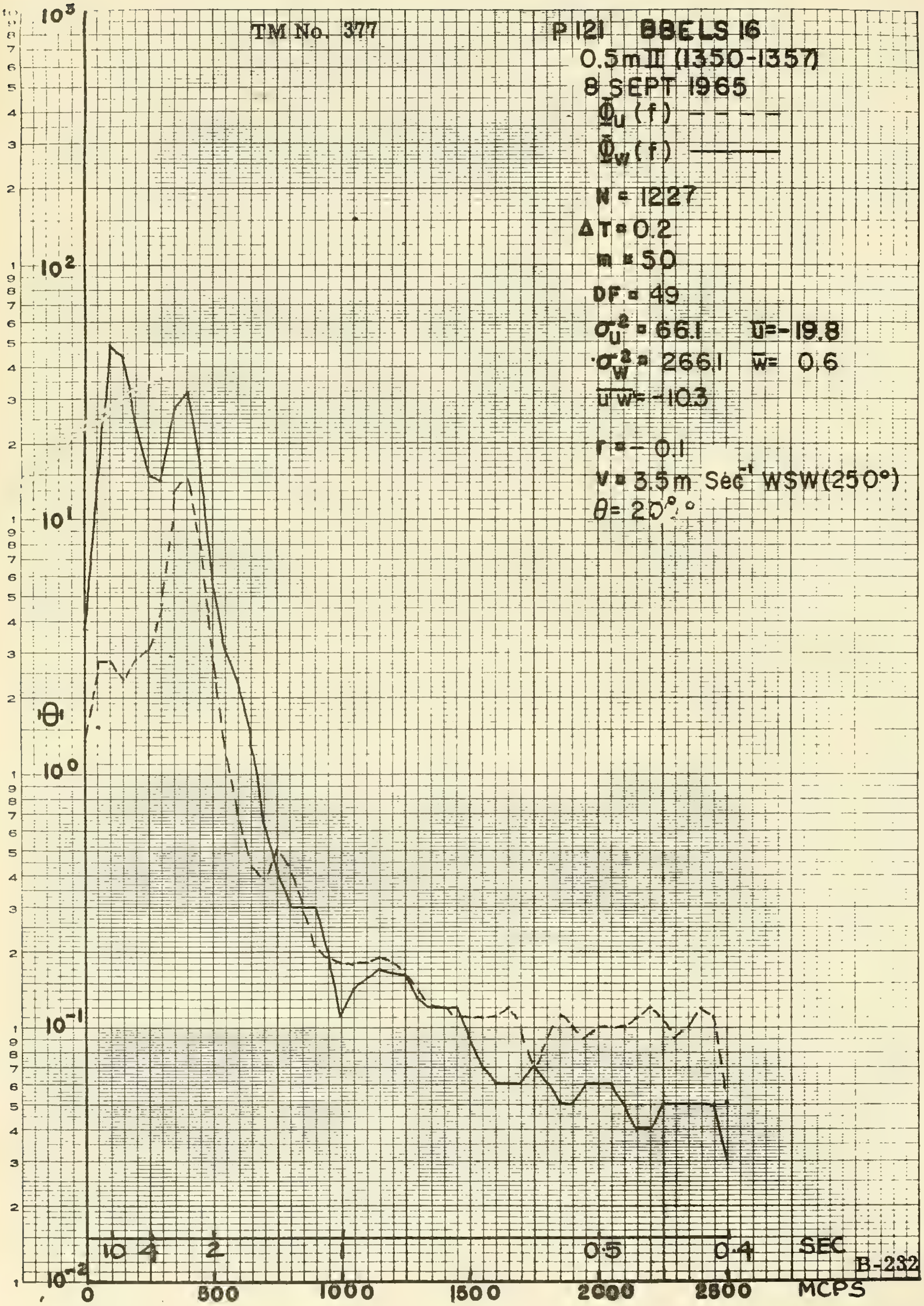
TM No. 377
P 116 BBELS -15-10
1-2.5 m I 20 JULY (2034-2037)
UP Φu(f) - - - - - -
LO Φu(f) ———
N = 628
ΔT = 0.2
m = 50
DF = 25
UP σu² = 72.4 ū = -28.32
LO σu² = 49.3 ū = -28.45
r = 0.10
V =
R
Φ
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-227
5 CYCLES X 10 DIVISIONS PER INCH

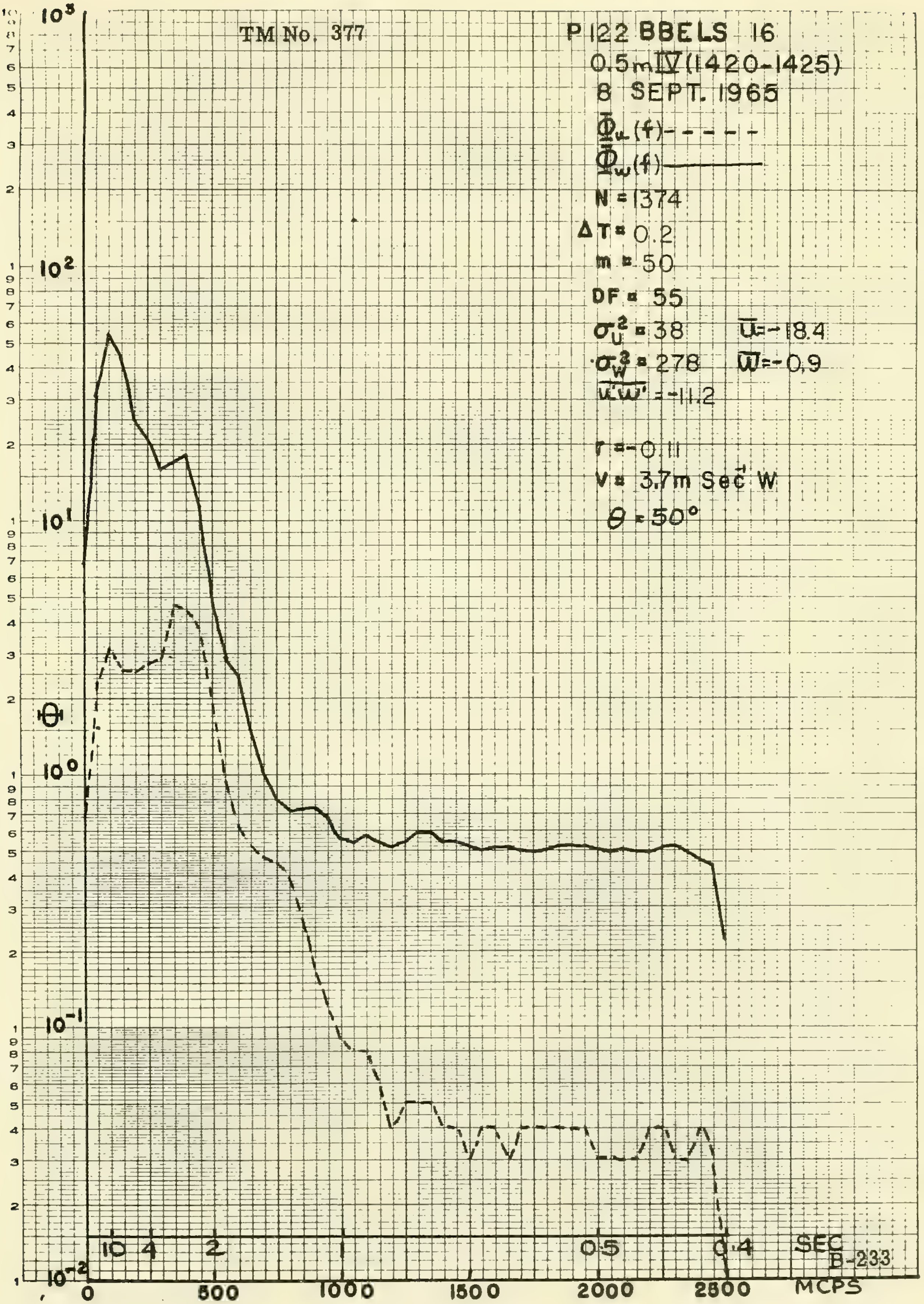


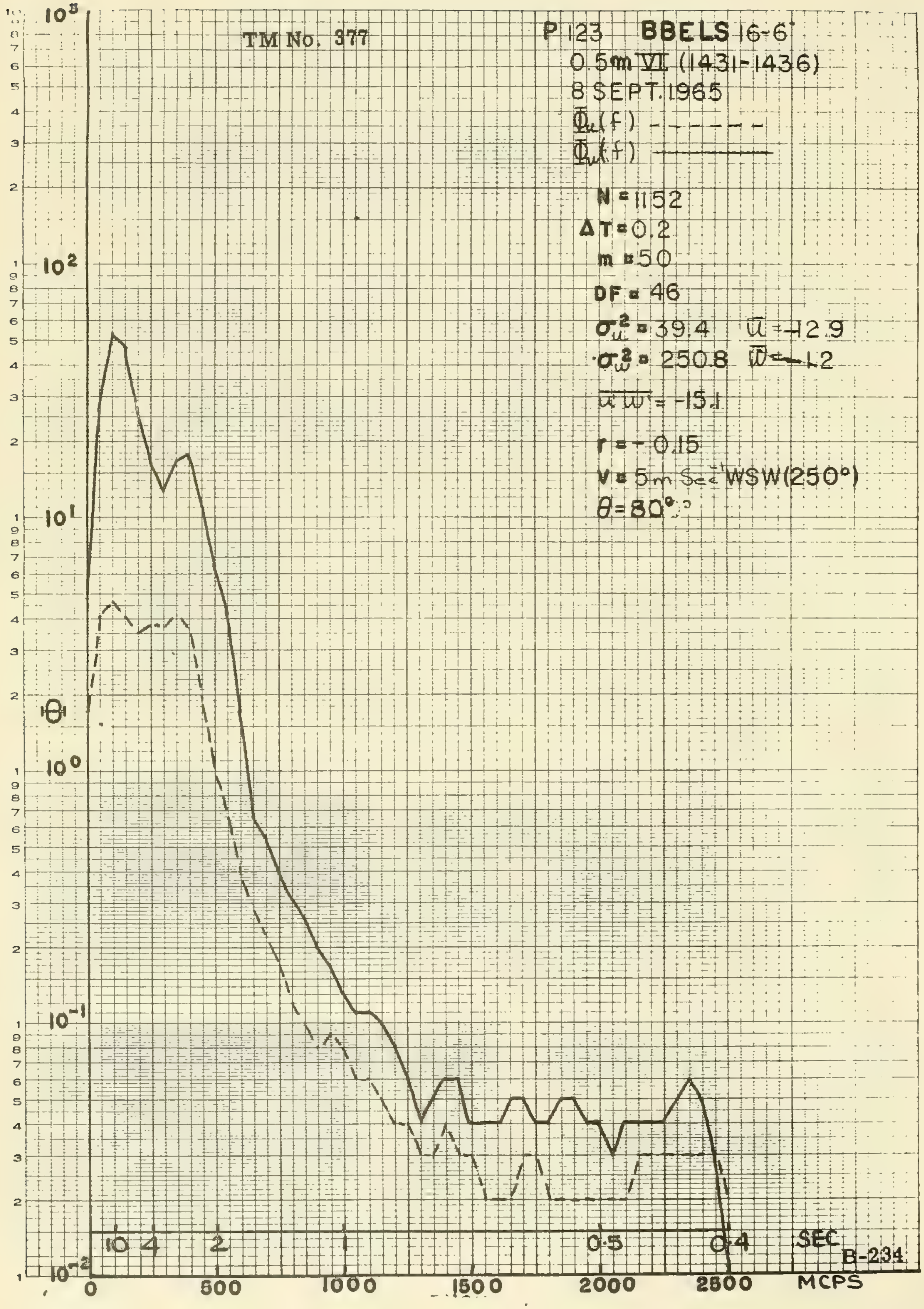
TM No. 377
P 119 BBELS 16-10
I-3.5m VII (0200-0207)
8 SEPT 1965
up Φ_w (f) - - - - - -
lo Φ_w (f) ———
N = 1849
ΔT = 0.2
m = 50
DF = 74
up σ_w^2 = 158 $\overline{w}$ = +0.4
lo σ_w^2 = 84 $\overline{w}$ = -0.9
$\overline{u'w'}$ = -52.8
r = -0.46
V = 1.6m Sec^{-1} NW-WNW
Φ
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
10 4 2 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-230



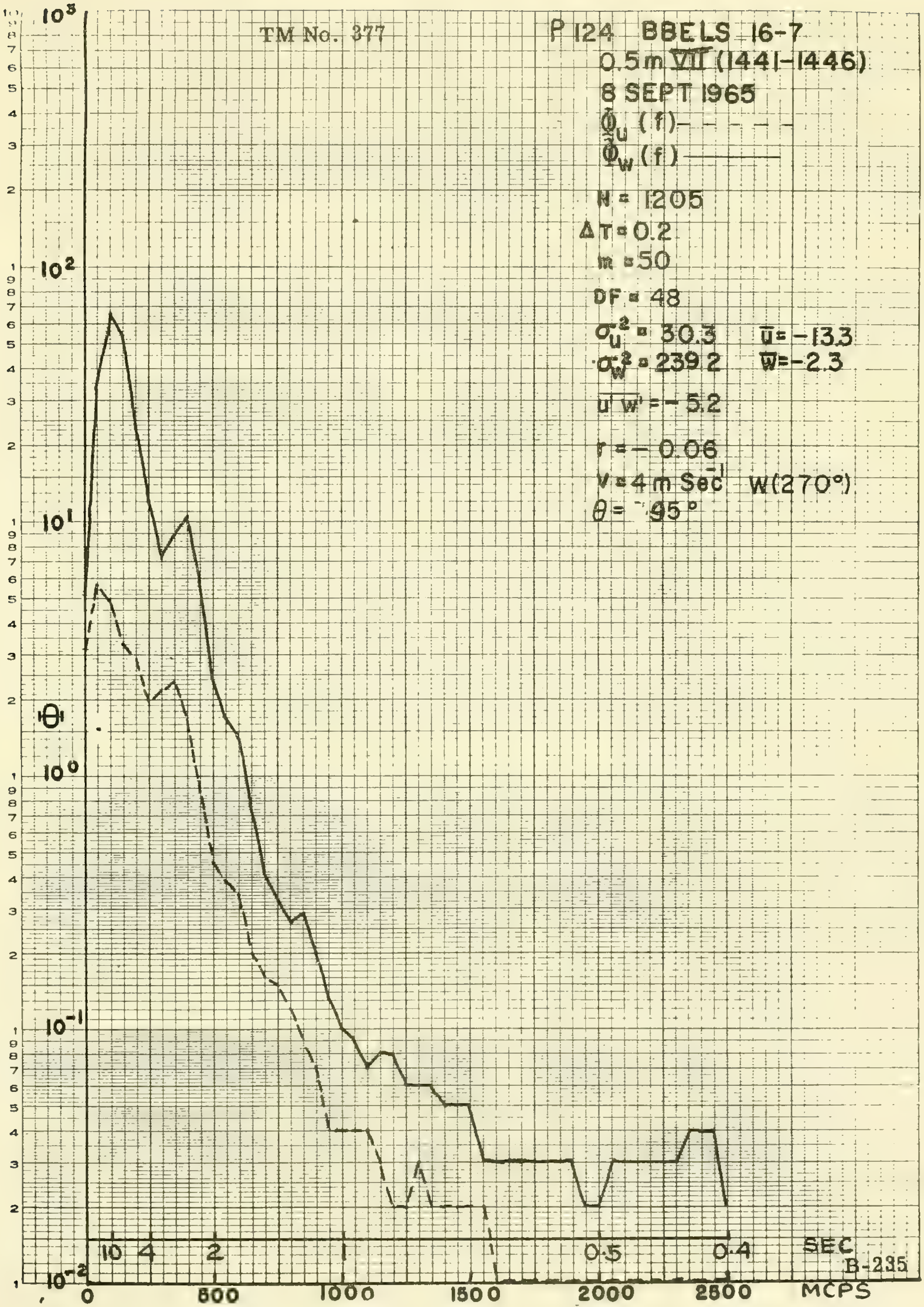
TM No. 377
P 120 BBELS-16-1
0.5 m I (1340-1346)
8 SEPT. 1965
Φu (f) - - - - - - - -
Φw (f) ————
N = 702
ΔT = 0.2
m = 50
DF = 28
σu² = 56.9 ū = -19.7
σw² = 256.2 w̄ = +0.4
u'w' = -7.6
r = -0.06
V = 4m Sec⁻¹ W
R
θ ≈ 0°
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-231
5 CYCLES X 10 DIVISIONS PER INCH
MADE IN U.S.A.


TM No. 377
P 121 BBELS 16
0.5m II (1350-1357)
8 SEPT 1965
$\bar{\Phi}_u(f)$ - - - -
$\bar{\Phi}_w(f)$ ———
N = 1227
ΔT = 0.2
m = 50
DF = 49
σ_u^2 = 66.1 $\bar{u}$ = -19.8
σ_w^2 = 266.1 $\bar{w}$ = 0.6
$\overline{u'w'}$ = -10.3
r = - 0.1
V = 3.5 m Sec^{-1} WSW (250°)
θ = 20°
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
Φ
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-232


TM No. 377
P 122 BBELS 16
0.5m IV (1420-1425)
8 SEPT. 1965
$\Phi_u(f)$ - - - - -
$\Phi_w(f)$ ———
N = 1374
ΔT = 0.2
m = 50
DF = 55
σ_u^2 = 38
$\bar{u}$ = -18.4
σ_w^2 = 278
$\bar{w}$ = -0.9
$\overline{u'w'}$ = -11.2
r = -0.11
V = 3.7m Sec^{-1} W
θ = 50°
Φ
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
10
4
2
1
0.5
0.4
SEC
0
500
1000
1500
2000
2500
MCPS
B-233



TM No. 377
P 123 BBELS 16-6
0.5m VI (1431-1436)
8 SEPT. 1965
Φu(f) - - - - - -
Φw(f) ———
N = 1152
ΔT = 0.2
m = 50
DF = 46
σu² = 39.4 ū = -12.9
σw² = 250.8 w̄ = -1.2
u'w' = -15.1
r = -0.15
V = 5 m Sec⁻¹ WSW (250°)
θ = 80°
10³
10²
10¹
10⁰
10⁻¹
10⁻²
Φ
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-234

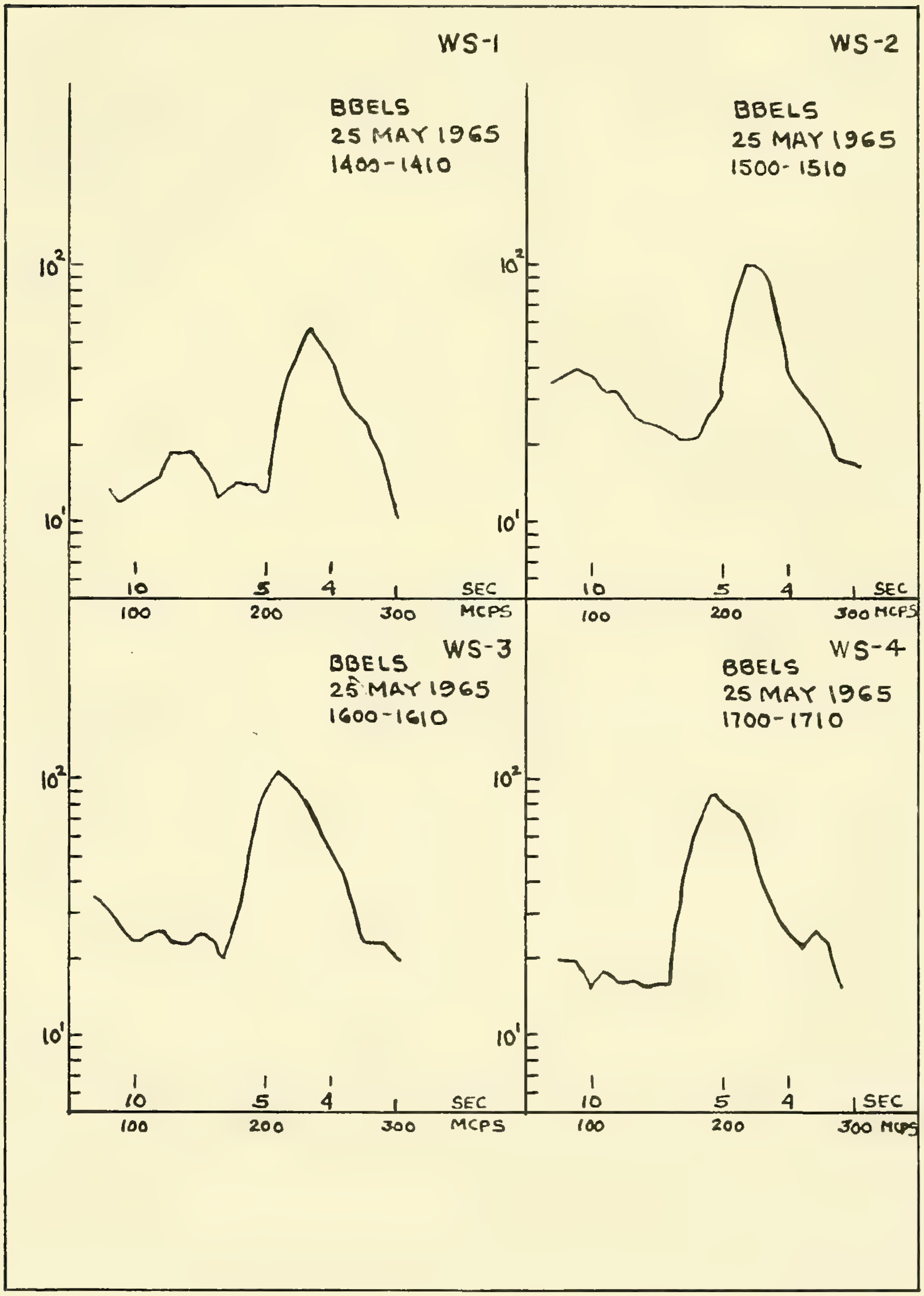


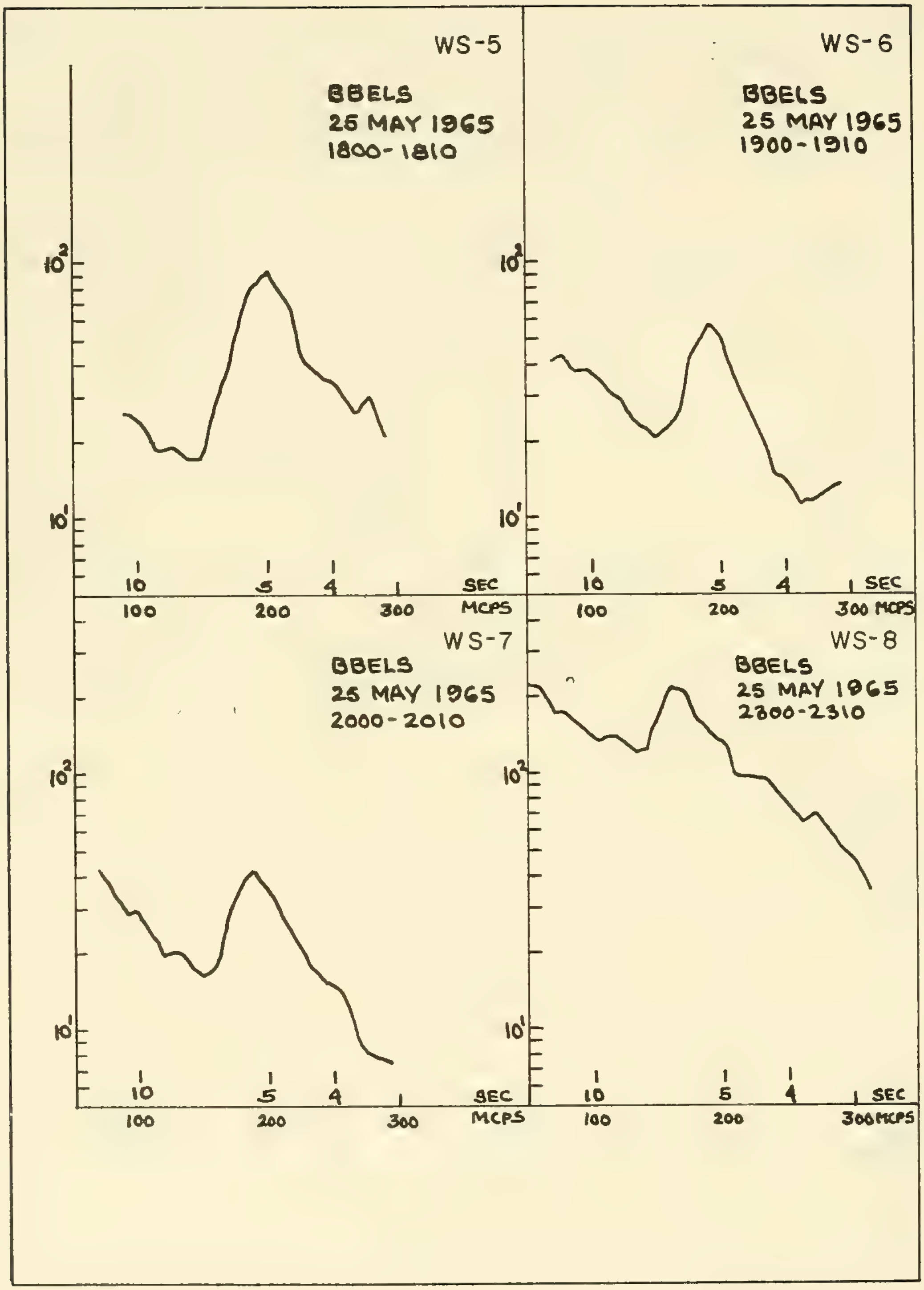
TM No. 377
P 124 BBELS 16-7
0.5 m VII (1441-1446)
8 SEPT 1965
Φ_u (f) - - - -
Φ_w (f) ———
N = 1205
ΔT = 0.2
m = 50
DF = 48
σ_u^2 = 30.3
$\bar{u}$ = -13.3
σ_w^2 = 239.2
$\bar{w}$ = -2.3
$\overline{u'w'}$ = - 5.2
r = - 0.06
V = 4 m Sec^{-1} W(270°)
θ = 95°
Φ
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
10 4 2 1 0.5 0.4 SEC
0 500 1000 1500 2000 2500 MCPS
B-235
5 CYCLES X 10 DIVISIONS PER INCH

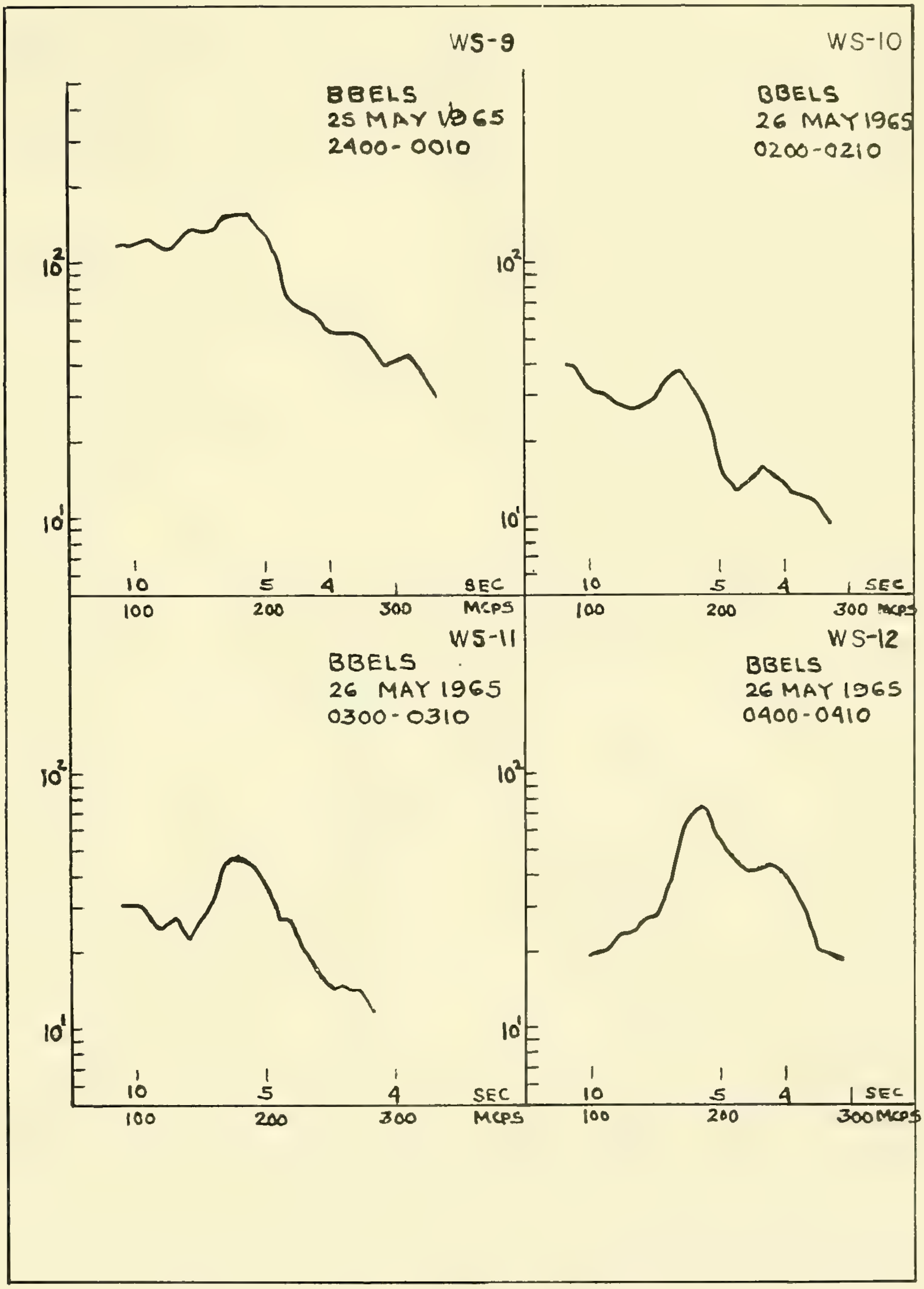
Auto-Spectra of Wave Staff Data

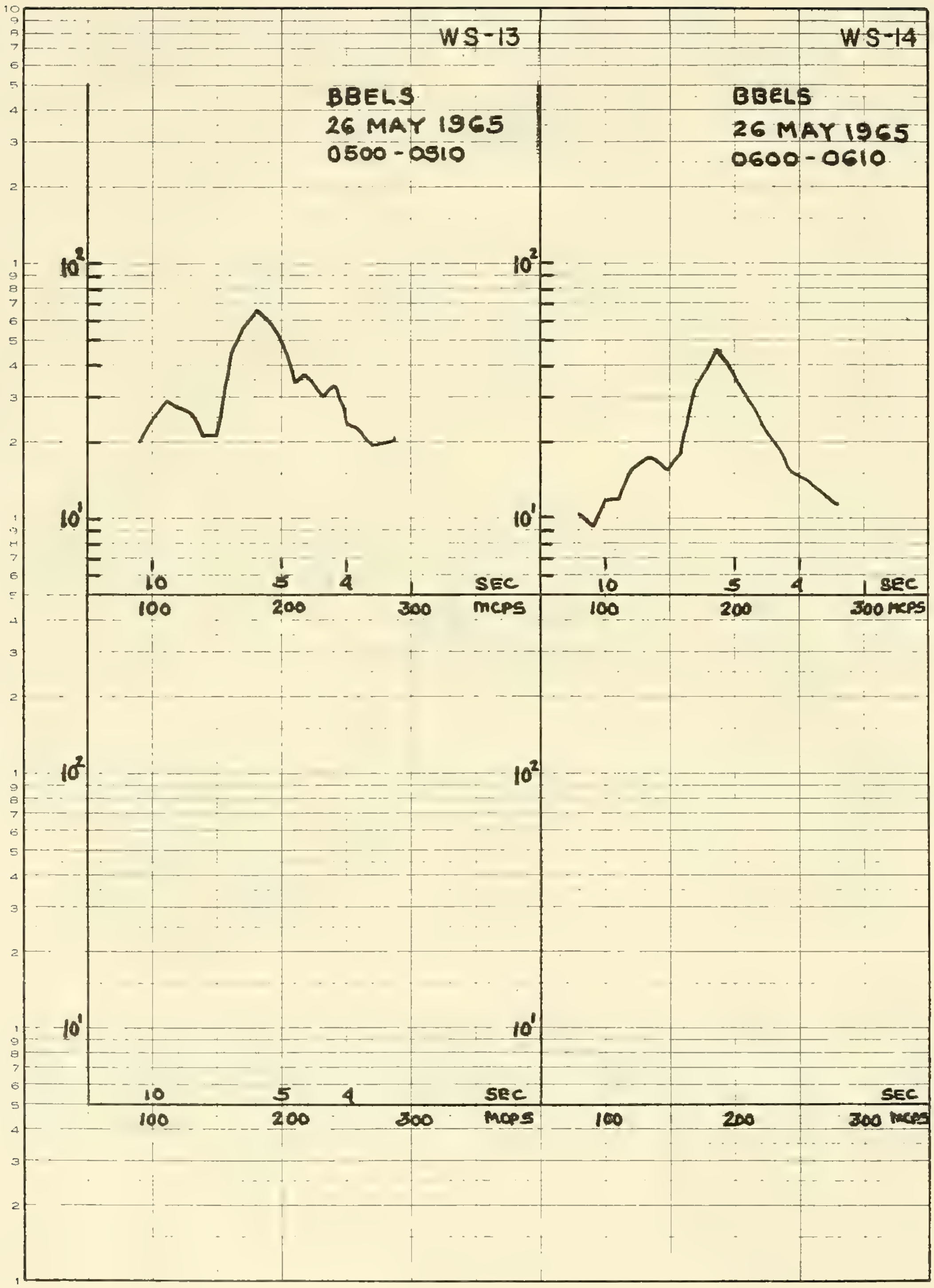
Following are plots of waves staff data obtained on BBELS using the CERC wave staff system (see chapter IV). Plots WS-1 through WS-14 are spectral data obtained from the CERC analog auto-spectrum analyzer. The curves have been translated to the Tukey spectrum equivalents using the method noted in chapter IV. The ordinate values, however, are to be considered relative magnitudes of cm^2 per cycle per second (cm^2 sec).

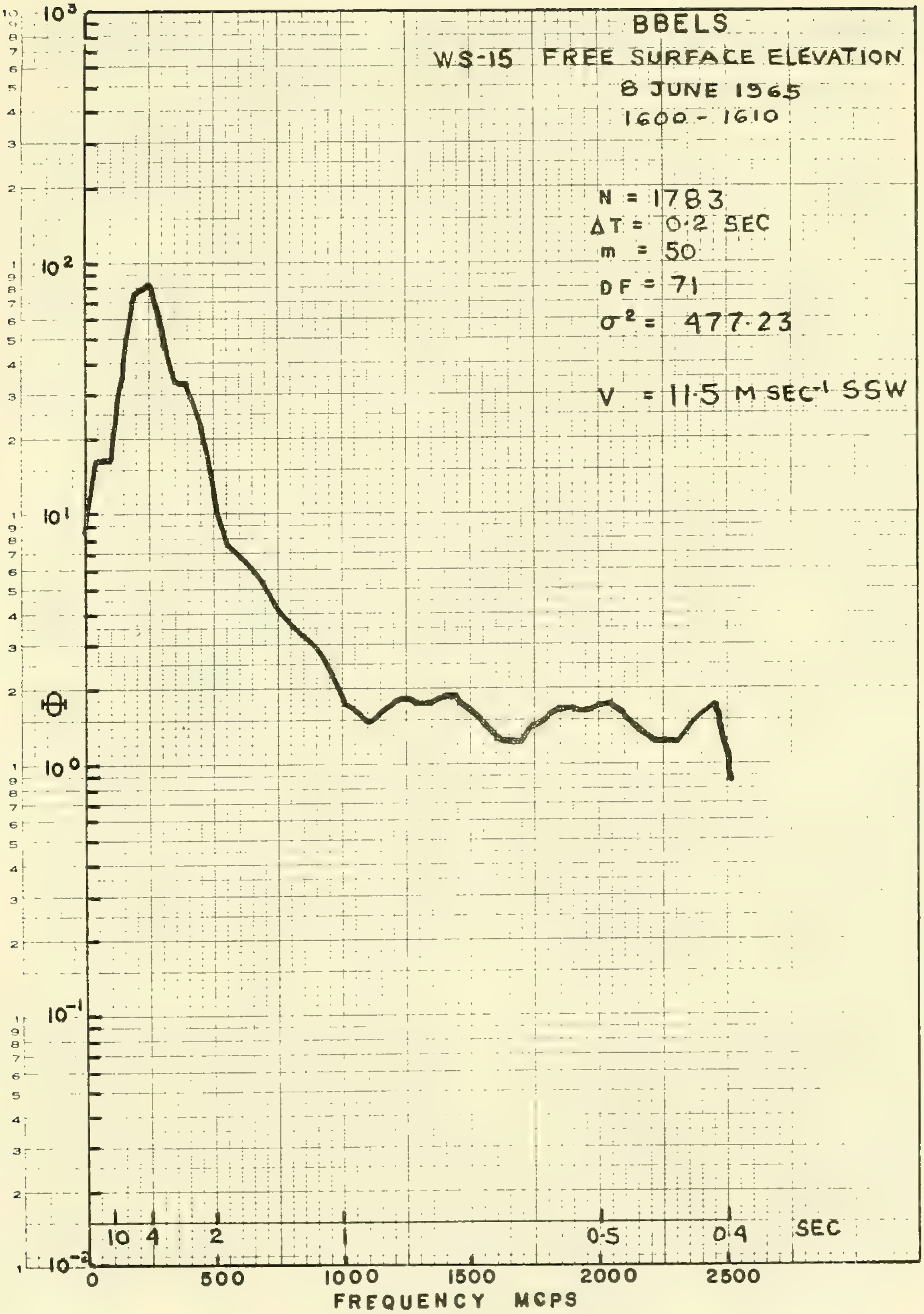
Plots WS-15 and WS-16 are also auto-spectra of CERC wave staff data. However, the data were read off the CERC paper tape record aboard BBELS and processed at the NUWS computer laboratory. The interpolated data were then analyzed with the NUWS Tukey spectrum analysis program.

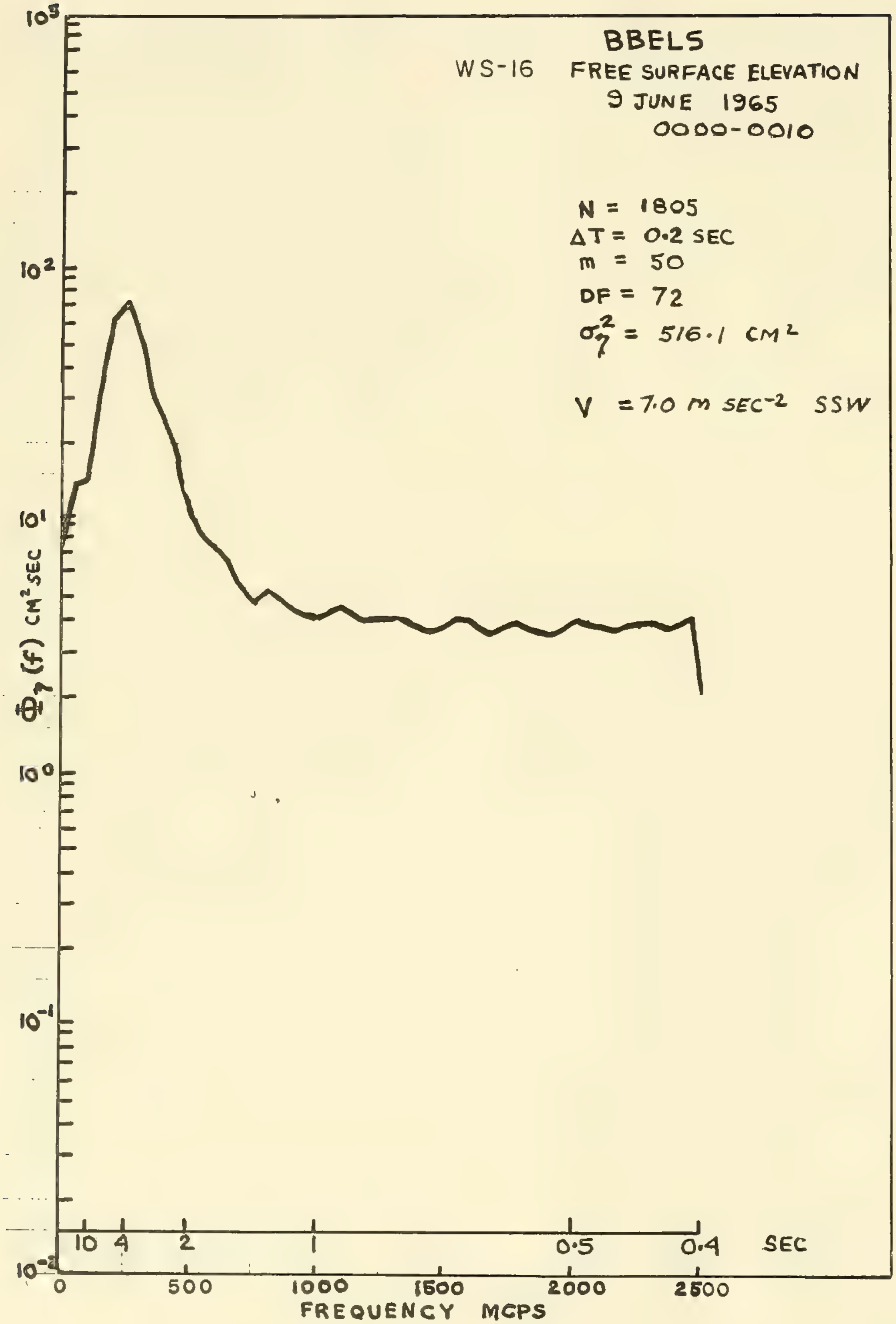

WS-1
BBELS
25 MAY 1965
1400-1410
WS-2
BBELS
25 MAY 1965
1500-1510
WS-3
BBELS
25 MAY 1965
1600-1610
WS-4
BBELS
25 MAY 1965
1700-1710
10²
10¹
10
5
4
SEC
100
200
300
MCPS


WS-5
BBELS
25 MAY 1965
1800-1810
WS-6
BBELS
25 MAY 1965
1900-1910
WS-7
BBELS
25 MAY 1965
2000-2010
WS-8
BBELS
25 MAY 1965
2300-2310
10
5
4
SEC
100
200
300
MCPS


WS-9
BBELS
25 MAY 1965
2400-0010
WS-10
BBELS
26 MAY 1965
0200-0210
WS-11
BBELS
26 MAY 1965
0300-0310
WS-12
BBELS
26 MAY 1965
0400-0410
10 5 4 SEC
100 200 300 MCPS


WS-13
BBELS
26 MAY 1965
0500 - 0510
WS-14
BBELS
26 MAY 1965
0600 - 0610
10^2
10^1
10
5
4
SEC
100
200
300
MCPS


BBELS
WS-15 FREE SURFACE ELEVATION
8 JUNE 1965
1600 - 1610
N = 1783
ΔT = 0·2 SEC
m = 50
DF = 71
σ² = 477·23
V = 11·5 M SEC⁻¹ SSW
Φ
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10
4
2
1
0·5
0·4
SEC
0
500
1000
1500
2000
2500
FREQUENCY MCPS


BBELS
WS-16 FREE SURFACE ELEVATION
9 JUNE 1965
0000-0010
N = 1805
ΔT = 0·2 SEC
m = 50
DF = 72
σ_η^2 = 516·1 CM²
V = 7·0 m SEC⁻² SSW
$\Phi_\eta(f)$ CM² SEC
10³
10²
10¹
10⁰
10⁻¹
10⁻²
10 4 2 1 0·5 0·4 SEC
0 500 1000 1500 2000 2500
FREQUENCY MCPS

APPENDIX C

MISCELLANEOUS TABULATED DATA

Wave Meter Calibration Data

Rotating Boom Calibration of OMDUM II - The OMDUM II wave meter system was calibrated using the rotating boom tow system of the Department of Civil Engineering, Worcester Polytechnical Institute, Worcester, Mass., on 11 and 15 June 1964.

The calibration equipment details and procedures are discussed in chapter II. The following two series (1 and 2) contain tabulations of the calibration data used for preparing the calibration curves of figures II-9 and II-12.

Series 1. Data were tabulated from OMDUM II towed at steady speed with the w cylinder axis parallel to the tangential velocity vector V_T (figure II-10). The water temperature was 20.6°C. These data include run number, V_T (cm sec^{-1}), pulses per cycle per sec (pcps), and time spacing between voltage pulses (milliseconds per cycle).

Run	V_T	cm sec^{-1}	pcps	msec cycle^{-1}
1	+u	23.7	4.76	210.0
2	"	38.4	7.94	126.0
3	"	50.9	10.99	91.0
4	"	59.4	12.35	81.0
5	"	74.1	14.71	68.0
6	"	82.6	17.39	57.5
7	"	101.5	21.51	46.5
8	"	114.9	24.10	41.5
9	"	132.0	27.78	36.0
10	"	147.2	30.77	32.5
11	"	162.8	33.22	30.1
12	"	172.2	35.97	27.8
13	-u	24.1	5.03	199.0
14	"	36.0	8.93	112.0
15	"	49.1	10.64	94.0
16	-u	67.1	14.81	67.5
17	"	81.1	17.39	57.5
18	"	100.0	21.51	46.5
19	"	112.2	23.53	42.5
20	"	125.3	26.32	38.0
21	"	142.7	29.41	34.0
22	"	158.2	33.44	29.9
23	"	178.6	36.50	27.4

Run	V_T	cm sec^{-1}	pcps	msec $cycle^{-1}$
24	-w	22.0	4.50	222.0
25	"	37.8	8.33	120.0
26	"	49.7	10.87	92.0
27	"	65.5	14.18	70.5
28	"	79.6	16.26	61.5
29	"	99.4	21.05	47.5
30	"	111.0	23.81	42.0
31	"	126.2	27.03	37.0
32	"	143.0	29.85	33.5
33	"	157.6	33.78	29.6
34	"	186.5	41.32	24.2
35	+w	21.9	4.13	242.0
36	"	35.4	7.25	138.0
37	"	50.0	10.58	94.5
38	"	64.0	13.79	72.5
39	"	81.4	18.69	53.5
40	"	96.0	21.28	47.0
41	"	110.4	24.10	41.5
42	"	127.4	27.78	36.0
43	"	140.2	30.49	32.8
44	"	160.0	35.21	28.4
45	"	175.0	38.02	26.3

Series 2. The w meter of OMDUM II was towed at steady speeds for various values of ϕ, the angle subtending the w meter axis and the tangential velocity V_T. The water temperature was 22.8°C.

	Run	V_T cm sec^{-1}	msec $cycle^{-1}$
	46	9.45	592.0
	47	37.79	122.0
	48	17.07	302.0
	49	77.13	180.0
(ϕ = -20°)	50	47.24	99.5
	51	53.95	82.5
	52	67.06	71.5
	53	75.90	61.5
	54	112.17	42.5
	55	18.90	30.4
	56	37.49	132.0
	57	54.25	86.0
(ϕ = -40°)	58	75.89	70.5
	59	98.76	52.0
	60	118.26	43.5
	61	146.61	35.5

	Run	V_T cm sec^{-1}	msec cycle^{-1}
	62	17.98	400.0
	63	37.80	164.0
	64	47.24	120.0
(Ø = -60°)	65	66.14	96.5
	66	98.15	64.6
	67	98.15	61.6
	68	129.5	48.5
	69	19.51	604.0
	70	37.49	282.0
	71	51.51	208.0
(Ø = -80°)	72	66.72	170.0
	73	98.15	119.0
	74	130.76	78.5
	75	157.58	64.0
	77	12.59	480.0
	78	34.14	160.0
	79	48.16	108.0
(Ø = +20)	80	74.67	69.5
	81	107.90	48.0
	82	135.33	39.5
	83	157.89	33.2
	84	22.86	300
	85	43.89	148.0
	86	60.66	103.5
(Ø = +40)	87	71.63	92.0
	88	103.94	42.5
	89	133.81	39.0
	90	157.28	40.5
	91	188.67	34.4
	92	28.96	346.0
	93	46.94	194.0
	94	56.08	158.0
(Ø = +60°)	95	74.37	114.5
	96	104.85	83.5
	97	134.42	67.5
	98	160.02	36.0
(Ø = +80)	99	43.59	256.0

Towing Tank Calibrations of OMDUM III and LIMDUM I (individual meters) - The following are tabulations of the tow tank calibration data of the OMDUM III and LIMDUM I (individual meters) obtained with the Capt. Mary P. Converse Tow Tank, in Marion, Mass. Details of the experimental setup and procedures are given in chapter II. The data presented were used to prepare calibration curves in figure II-21. An explanation of the table headings follows.

Serial: The numbered sequence of runs of steady velocity response. N or S indicates the towing direction as north or south.

V_T (cm sec^{-1}): The average speed of the carriage between two fixed points on the tank.

V_1 V_2, and V_3 (cm sec^{-1}): These are carriage velocities calculated at the beginning, middle, and end of the steady speed towing. They are derived from measurements of the drive shieve rotation and knowledge of its circumference.

T_p (msec $cycle^{-1}$): This is the average interval of time between voltage pulses from the ducted meter.

The value of angle θ subtended by the cylinder axis and the towing direction is also given in the tables. It is estimated that the uncertainty in θ is about $\pm 2°$.

Series 1. This series comprises calibration data for steady towing of individual ducted meters.

Serial	V_T	V_1	V_2	V_3	T_p
u meter $\theta = 0°$					
1 S	12.6	12.5	12.5	12.7	288.7
2 N	9.1	9.2	9.1	9.2	430.7
3 S	8.2	8.1	8.3	8.2	509.0
4 N	7.0	7.0	7.2	7.0	612.7
5 S	9.5	9.6	9.6	9.6	412.3
6 N	12.3	12.3	12.4	12.4	289.7
9 S	14.6	14.4	14.7	14.7	239.2
10 N	18.2	18.1	18.2	18.3	183.8
11 S	27.8	27.5	28.1	27.9	117.2
12 N	28.4	28.2	28.2	28.2	115.5
13 S	54.4	53.7	55.1	54.4	58.0
14 N	47.0	47.4	-	47.5	67.9
15 S	71.0	69.8	70.8	70.6	44.03
16 N	79.0	-	79.4	-	39.68
17 S	64.9	67.1	-	65.8	47.92
18 N	65.8	65.9	65.7	65.5	47.52

Serial	V_T	V_1	V_2	V_3	T_p
19 S	44.0	43.3	44.0	44.0	73.61
20 N	92.5	91.0	92.9	91.6	33.48
21 S	64.9	63.8	65.1	65.1	48.39
22 N	117.1	116.1	118.0	117.1	26.49
23 S	92.4	92.7	92.7	92.7	33.47
24 N	148.9	149.7	149.2	148.2	20.99
25 S	142.5	141.6	141.1	142.0	22.01
26 N	130.9	132.7	131.6	130.0	24.41
27 S	176.0	175.6	177.7	177.0	17.75
28 N	166.2	165.2	164.6	165.0	18.92
29 S	210.7	205.5	211.4	214.4	15.54
30 N	166.6	170.2	166.4	167.7	17.22
31 S	8.25	8.11	8.14	8.26	638.8
u meter $\theta = 10°$					
32 S	7.7	7.6	-	7.6	635.0
33 N	14.6	14.5	14.5	14.5	235.9
34 S	7.47	7.4	7.5	7.4	628.6
35 N	12.5	12.5	12.5	12.4	281.3
u meter $\theta = 20°$					
36 S	7.0	6.8	6.9	6.9	760.9
37 N	6.5	6.5	6.6	6.5	744.3
u meter $\theta = 45°$					
38 S	7.0	7.4	7.7	7.7	337.55
39 N	15.1	15.0	15.0	15.1	265.7
40 S	21.2	21.2	21.2	21.3	184.1
41 N	23.2	23.1	23.1	23.0	164.5
42 S	51.0	53.1	51.3	52.5	90.84
43 N	67.8	67.6	69.7	68.6	53.38
44 S	127.3	128.2	127.1	128.5	28.81
45 N	120.0	120.2	120.9	120.5	29.54
u meter $\theta = 60°$					
47 N	15.1	15.0	14.9	15.0	357.1
49 N	11.9	11.9	12.1	12.0	467.5
50 S	83.3	83.2	84.0	83.5	57.36
51 N	33.2	33.3	33.0	33.5	152.3
u meter $\theta = 80°$					
52 S	39.9	39.8	39.5	40.2	420.0
53 N	23.0	22.9	23.1	23.2	797.8
54 S	57.5	57.2	57.9	57.9	252.7
55 N	63.5	61.9	63.7	62.8	227.3

Serial	V_T	V_1	V_2	V_3	T_p
u meter θ = 10°					
56 S	39.3	38.8	39.1	39.8	80.84
57 N	54.8	54.7	54.7	54.7	57.15
58 S	136.1	134.7	136.8	136.8	22.73
59 N	50.7	50.7	50.7	50.7	60.35
u meter θ = 20°					
60 S	12.6	12.6	12.6	12.6	281.8
61 N	28.5	28.1	28.6	28.6	114.5
62 S	46.0	45.6	45.8	46.0	69.88
63 N	78.0	76.9	77.6	77.4	40.02
64 S	172.1	169.6	174.2	172.2	18.59
w meter θ = 0°					
65 S	9.6	9.6	9.7	9.7	425.1
66 N	7.3	7.2	7.2	7.3	773.0
67 S	19.6	19.5	19.7	19.6	173.1
68 N	34.6	34.8	34.8	34.3	93.6
69 S	26.6	26.2	26.2	26.4	126.3
70 N	24.8	25.2	24.8	24.9	135.1
71 S	54.9	55.1	54.6	54.7	58.42
72 N	45.2	45.5	44.6	44.8	71.20
73 S	102.6	99.8	102.8	102.3	30.86
74 N	76.1*	75.3	75.5	75.3	42.78
75 S	153.6	149.2	153.3	153.3	20.65
76 N	140.0	139.4	141.6	141.1	23.00

* Wire lying in front of cylinder.

Series 2. This series comprises calibration data for steady towing of coupled meters (OMDUM III). The same tabulated variables are given as in series 1, except that values of both $T_p(u)$ and $T_p(w)$ are given as the output for each meter. Blank spaces in the T_p columns indicate no meter response. The estimated uncertainty in θ is about 2°.

Serial	V_T	V_1	V_2	V_3	$T_p(u)$	$T_p(w)$
θ = 0°						
1 S	6.9	7.1	7.3	7.2	-	643.6
2 N	11.6	11.7	11.8	11.6	-	269.8
3 S	28.5	28.6	28.7	28.4	-	98.74
4 N	18.1	17.8	18.1	18.1	-	152.9
5 S	51.5	51.3	51.3	51.6	-	53.41
6 N	77.8	76.9	77.2	76.8	-	34.3
7 S	99.2	97.4	99.8	99.3	443.0	27.37
8 N	123.5	123.2	123.5	122.9	-	21.68

Serial	V_T	V_1	V_2	V_3	$T_p(u)$	$T_p(w)$
$\theta = 10° \pm 2°$						
9 S	7.1	7.1	7.1	7.1	-	657.6
10 N	10.6	10.4	10.6	10.5	-	302.3
11 S	21.3	21.2	21.5	21.3	-	135.6
12 N	35.5	35.1	36.0	35.1	-	77.57
13 S	64.9	64.5	64.3	64.4	379.8	42.52
14 N	144.2	144.8	143.9	142.9	-	18.98
$\theta = 20° \pm 2°$						
15 S	9.2	9.1	9.1	9.2	-	409.4
16 N	22.0	22.1	22.0	21.9	400.1	132.8
17 S	34.9	35.1	35.4	35.1	223.9	82.76
18 N	58.5	58.5	58.1	58.1	124.8	48.18
19 S	136.1	133.9	136.8	137.7	48.82	21.01
$\theta = 45° \pm 2°$						
21 S	11.5	11.3	11.4	11.6	335.0	386.5
22 N	9.9	9.0	9.7	9.9	436.1	441.6
23 S	21.5	21.8	21.4	21.2	165.2	172.1
24 N	51.6	51.9	51.9	51.3	67.0	68.1
25 S	-	28.4	28.6	28.4	121.3	126.7
28 N	30.9	30.8	30.9	30.6	113.2	116.3
29 S	80.0	79.6	70.8	79.6	41.44	43.33
$\theta = 60° \pm 2°$						
30 N	9.9	9.9	9.8	9.6	381.5	704.9
31 S	20.9	20.9	20.8	21.0	150.9	247.2
32 N	49.1	48.8	48.6	48.9	60.58	97.65
33 S	24.9	25.0	24.8	24.9	126.1	204.9
34 N	76.7	75.3	75.3	75.1	38.02	61.44
35 S	142.3	143.4	142.9	144.8	20.78	33.88
$\theta = 80° \pm 2°$						
37 S	8.4	8.5	8.4	8.4	423.1	-
38 N	18.3	18.3	18.4	18.3	160.5	-
39 S	32.4	32.6	32.8	32.6	87.84	919.1
40 N	46.8	46.8	46.9	46.3	59.59	783.6
41 S	152.9	153.3	154.9	154.3	20.36	194.4

Environmental Data for BBELS Current Measurements

Two series of horizontal current measurements were made at the BBELS and are discussed in chapter IV. Figures IV-6 and IV-10 show plots of the current data and the tidal height associated with the two series. The raw tide level data are presented here for completeness, along with the wind and sea conditions for the periods depicted in the plots. For further information regarding the environmental measurements see chapter IV.

Series 1 (1964) - The series 1 record (plotted in figure IV-6) covers 29 April (1200 hours) through 11 May (1200 hours).

Tide Level Data. These data were abstracted from the Coast and Geodetic Survey raw data tapes and are given at local time (EST). The wave height η is in centimeters.

t	η (cm)	t	η (cm)	t	η (cm)	t	η (cm)
(29 April)		(30 April)					
12	253 241	01	238 223	14	214 198	03	204 198
13	226 210	02	210 198	15	195 195	04	192 186
14	207 201	03	192 189	16	195 195	05	183 183
15	201 201	04	186 183	17	201 207	06	186 195
16	201 204	05	186 189	18	210 220	07	201 207
17	204 214	06	195 204	19	226 235	08	217 226
18	220 232	07	210 217	20	241 247	09	235 244
19	241 250	08	232 241	21	250 262	10	247 250
20	259 268	09	250 253	22	271 275	11	253 353
21	274 284	10	259 259	23	278 278	12	853 250
22	290 284	11	259 259	24	271 265	13	241 285
23	284 281	12	253 244	(1 May) 01	250 241		
24	271 253	13	235 223	02	226 220		

t	η (cm)	t	η (cm)	t	η (cm)	t	η (cm)
14	226	08	201	02	250		214
	220		207		241	21	217
15	210	09	217	03	229		217
	204		223		220	22	223
16	198	10	232	04	214		229
	195		241		204	23	232
17	198	11	247	05	204		241
	198		250		201	24	247
18	204	12	256	06	198	(4 May)	250
	210		253		198	01	253
19	217	13	247	07	198		253
	223		247		198	02	256
20	229	14	241	08	201		250
	229		223		204	03	250
21	241	15	223	09	210		244
	247		210		214	04	229
22	256	16	204	10	217		223
	265		201		226	05	210
23	268	17	195	11	229		210
	288		192		238	06	201
24	271	18	192	12	247		198
(2 May)	268		198		253	07	198
01	265	19	201	13	253		192
	256		204	14	250	08	12
02	241	20	207		244		195
	226		214	15	238	09	204
03	217	21	220		232		204
	210		226	16	226	10	207
04	201	22	235		217		214
	198		241	17	210	11	223
05	195	23	250		201		229
	192		256	18	198	12	235
06	192	24	259		201		288
	192	(3 May)	262	19	204	13	241
07	195	01	262		204		244
	198		259	20	204	14	247

t	η (cm)	t	η (cm)	t	η (cm)	t	η (cm)
	250	08	201		238	19	214
15	244		198	02	244		204
	241	09	198		247	20	198
16	235		198	03	253		195
	229	10	201		253	21	192
17	223		204	04	253		189
	217	11	210		250	22	186
18	210		214	05	244		186
	207	12	220		238	23	189
19	201		229	06	229		189
	201	13	238		217	24	195
20	198		244	07	207	(7 May)	204
	201	14	247		198	01	214
21	204		250	08	192		223
	204	15	253		189	02	235
22	207		253	09	186		244
	217	16	250		186	03	250
23	223		244	10	183		256
	229	17	235		186	04	262
24	207		229	11	189		262
(5 May)	247	18	220		198	05	259
01	256		210	12	201		250
	256	19	204		204	06	241
02	259		201	13	223		235
	256	20	198		232	07	223
03	256		195	14	241		210
	256	21	195		247	08	198
04	250		198	15	250		192
	254	22	198		250	09	186
05	235		204	16	253		186
	229	23	207		250	10	180
06	220		210	17	244		180
	214	24	220		241	11	183
07	210	(6 May)	226	18	235		186
	207	01	232		223	12	192

t	η (cm)
	198
13	204
	217
14	229
	288
15	247
	353
16	262
	265
17	271
	268
18	259
	253
19	244
	238
20	223
	210
21	198
	192
22	186
	183
23	183
	183
24	186
(8 May)	195
01	201
	210
02	220
	232
03	244
	256
04	262
	268
05	271
	271

t	η (cm)
06	268
	262
07	253
	241
08	229
	217
09	207
	198
10	192
	189
11	186
	186
12	189
	192
13	201
	210
14	220
	235
15	247
	259
16	271
	281
17	290
	296
18	296
	290
19	284
	271
20	259
	241
21	226
	210
22	201
	195
23	189

t	η (cm)
	186
24	186
(9 May)	186
01	192
	198
02	207
	217
03	229
	244
04	259
	268
05	278
	287
06	290
	290
07	284
	275
08	265
	247
09	235
	223
10	210
	201
11	195
	195
12	189
	189
13	195
	204
14	210
	223
15	235
	250
16	268
	284

t	η (cm)
17	293
	305
18	311
	314
19	314
	308
20	296
	281
21	265
	250
22	232
	217
23	204
	195
24	189
(10 May)	186
01	180
	180
02	183
	189
03	201
	217
04	232
	250
05	265
	281
06	290
	299
07	302
	299
08	290
	278
09	265
	247
10	235

t	η (cm)
	217
11	201
	195
12	189
	183
13	180
	183
14	189
	195
15	207
	223
16	238
	256
17	271
	287
18	299
	311
19	317
	317
20	311
	302

t	η (cm)
21	287
	271
22	353
	235
23	214
	201
24	192
(11 May)	183
01	177
	174
02	171
	171
03	174
	186
04	198
	210
05	229
	250
06	268
	284
07	293

t	η (cm)
	299
08	299
	296
09	284
	271
10	353
	232
11	214
	195
12	180

Wind Speed and Direction Data. These data were obtained from the Coast Guard Log Book at BBELS.

Day	Time (EST)	Wind Speed (cm sec^{-1})	Wind Direction From °T
29 April	00	7.0	080
	04	7.0	080
	08	7.0	080
	12	10.0	090
	16	7.0	090
	20	7.0	-
30 April	00	7.0	045

Day	Time (EST)	Wind Speed (cm sec^{-1})	Wind Direction (From) (°T)
	04	4.3	045
	08	4.3	045
	12	4.3	045
	16	4.3	045
	20	4.3	045
1 May	00	4.3	045
	04	4.3	045
	08	4.3	045
	12	2.5	045
	16	4.3	025
	20	4.3	025
2 May	00	4.3	045
	04	4.3	045
	08	4.3	045
	12	2.7	045
	16	2.7	045
	20	2.7	045
3 May	00	1.0	025
	04	1.0	025
	08	1.0	075
	12	1.0	045
	16	1.0	045
	20	1.0	045
4 May	00	0	-
	04	0	-
	08	0	-
	12	0	-
	16	1.0	180
	20	1.0	135
5 May	00	1.0	025
	04	2.5	025
	08	2.5	025
	12	2.5	025
	16	2.5	025
	20	2.5	090

Day	Time (EST)	Wind Speed (cm sec^{-1})	Wind Direction (From) (°T)
6 May	00	1.0	045
	04	2.5	075
	08	2.5	045
	12	1.0	045
	16	1.0	180
	20	1.0	165
7 May	00	0	-
	04	1.0	225
	08	1.0	225
	12	1.0	225
	16	4.4	225
	20	6.9	225
8 May	00	2.5	225
	04	2.5	250
	08	2.5	250
	12	2.5	225
	16	4.4	225
	20	4.4	225
9 May	00	1.0	225
	04	2.6	225
	08	2.6	225
	12	2.6	225
	16	4.4	225
	20	6.9	225
10 May	00	1.0	225
	04	1.0	250
	08	1.0	225
	12	4.4	225
	16	4.4	225
	20	6.9	280
11 May	00	2.6	270
	04	4.4	280
	08	2.6	270

Series 2 (1965) - The series 2 record (plotted in figure IV-10) covers from 24 November (1230 hours) to 25 November (1000 hours).

Tide Level Data. These data were abstracted from the Coast and Geodetic Survey raw data tapes and are given at local time (EST).

t	η (cm)
24 November	189
13	189
	183
14	180
	180
15	183
	189
16	198
	210
17	223
	235
18	244
	259
19	268
	274
20	274
	274
21	268
	259
22	244
	229
23	216
	204
25 November	
00	189
	192

t	η (cm)
01	189
	192
02	195
	198
03	204
	210
04	220
	232
05	241
	253
06	265
	277
07	290
	299
08	305
	309
09	302
	298
10	286
	265
11	250
	232
12	220

Wind Speed and Direction and Sea State Data. These data were obtained from the Coast Guard Log Book at BBELS.

Day	Time (EST)	Wind Speed (m sec^{-1})	Wind Direction (From) (^{o}T)	Estimated Sea Height (cm)
November 24	12	6.2	315	30
	16	5.3	000	30
	20	6.2	315	30
November 25	00	3.8	335	30
	04	2.6	315	30
	08	2.2	180	Calm
	12	2.2	180	Calm
	16	6.2	210	30
	20	8.5	210	60
November 26	00	6.7	210	30
	04	14.8	210	90
	08	11.0	220	60
	12	4.4	220	30
	16	3.5	210	60

Wave Model Data

The following are the computer listings of the Tukey spectrum analysis and the raw u and w tabulations associated with the wave models discussed in chapter V. The symbols used on the spectra tables are defined in the explanation of the plots and listings in appendix B. The definitions are also discussed in chapter III. (Note that the symbols $\phi_{uw}^{in}(\tau)$ and $\phi_{uw}^{out}(\tau)$ represent the in-phase and out-of-phase covariance functions, respectively). In the raw data tabulations the units are cm sec^{-1}, and the consecutive values run from left-to-right.

RBM

RANDOM DATA

K	$\Phi_u(\tau)$	$\Phi_w(\tau)$	$\Phi_{uw}^{IN}(\tau)$	$\Phi_{uw}^{OUT}(\tau)$	$\Phi_u(f)$	$\Phi_w(f)$	$C_{uw}(f)$	$Q_{uw}(f)$
0	14.922	16.354	-3.703	.000	.127	.061	.019	.000
1	-.010	1.008	.486	.888	.226	.114	.013	.050
2	-1.500	-.750	.065	-2.915	.143	.301	-.023	.050
3	-.102	-1.319	.501	-1.690	.171	.658	.000	-.035
4	-.733	-.456	.570	1.423	.537	.802	-.001	-.189
5	-1.956	-1.289	1.090	-.841	.885	.900	-.167	-.325
6	-.357	-.170	-.081	.463	.703	.851	-.277	-.290
7	-2.134	-3.437	.745	.368	.474	.517	-.231	-.143
8	.054	-1.109	-1.052	-.044	.542	.327	-.176	-.092
9	1.333	-1.921	-.046	.953	.422	.400	-.116	-.174
10	-.648	.718	-.542	1.112	.372	.658	-.172	-.188
11	.145	.071	.732	.370	.561	.742	-.150	-.126
12	2.926	.424	-.664	-.024	.430	.598	.058	-.126
13	.627	1.416	-1.120	.072	.251	.713	.028	-.100
14	1.113	-.090	.924	.243	.575	.751	-.168	.050
15	-.584	-.549	.811	-.977	.833	.472	-.209	.150
16	.549	-.263	.684	-.221	.564	.462	-.141	.118
17	.440	-1.171	.291	-.544	.433	.475	-.032	.118
18	1.284	.548	-.508	.656	.470	.372	-.027	.147
19	-3.325	2.438	-.252	.086	.367	.481	-.109	.224
20	-2.676	-.381	1.219	.929	.510	.565	-.160	.354
21	-.055	.080	-.397	-1.270	.806	.511	-.240	.387
22	1.783	-.244	.337	.783	.794	.393	-.107	.320
23	.167	2.470	-.385	-.530	.581	.456	-.050	.271
24	.145	1.832	-2.228	.659	.378	.631	-.229	.214
25	1.295	-.963	.715	-.754	.270	.506	-.200	.092
26	-.643	-1.248	.864	.494	.272	.289	-.110	-.003
27	-.072	.484	-.824	-.253	.328	.237	-.043	-.063
28	-1.341	-1.110	1.315	.045	.438	.214	.031	-.126
29	.594	-1.532	.327	-.990	.349	.273	-.041	-.039
30	1.398	-1.132	-1.166	-.538	.262	.536	-.207	-.007
31	-1.911	-.545	.052	.174	.498	.714	-.300	-.157
32	.069	-.446	-.860	.375	.338	.358	-.154	-.000

CORRELATION COEFFICIENT -.23709

RANDOM-BIASED DATA - ω

PSEUDO DATA RUN 1

600 032 1 1 0 0

2	3	0	3	-2	-1	-1	-3	-5	7	2	1
2	2	-1	-1	-6	3	5	1	-1	1	-3	-1
1	3	-1	1	0	-3	-7	4	4	-2	1	3
-2	-3	-7	-9	1	3	-5	3	1	-6	4	-1
-7	-2	1	-8	-1	3	-2	7	1	6	-3	-9
-4	2	-7	-1	1	1	0	6	5	1	0	1
-7	2	-3	-1	-8	-3	-1	4	2	-1	6	-1
5	1	-1	2	-3	-1	1	1	0	-5	-7	6
1	4	3	-9	3	1	-3	-7	2	-4	-1	3
-1	0	-1	-9	5	1	7	-7	-2	-3	1	-1
-1	4	6	-3	-7	3	1	-1	-1	0	9	3
-1	-9	2	-4	1	0	-3	-1	-1	1	3	4
2	-9	4	7	-3	-1	-1	0	-1	-8	6	6
2	3	0	3	-2	-1	-1	-3	-5	7	2	1
2	2	-1	-1	-6	3	5	1	-1	1	-3	-1
1	3	-1	1	0	-3	-7	4	4	-2	1	3
-2	-3	-7	-9	1	3	-5	3	1	-6	4	-1
-7	-2	1	-8	-1	3	-2	7	1	6	-3	-9
-4	2	-7	-1	1	1	0	6	5	1	0	1
-7	2	-3	-1	-8	-3	-1	4	2	-1	6	-1
5	1	-1	2	-3	-1	1	1	0	-5	-7	6
1	4	3	-9	3	1	-3	-7	2	-4	-1	3
-1	0	-1	-9	5	1	7	-7	-2	-3	1	-1
-1	4	6	-3	-7	3	1	-1	-1	0	9	3
-1	-9	2	-4	1	0	-3	-1	-1	1	3	4
2	-9	4	7	-3	-1	-1	0	-1	-8	6	6
2	3	0	3	-2	-1	-1	-3	-5	7	2	1
2	2	-1	-1	-6	3	5	1	-1	1	-3	-1
1	3	-1	1	0	-3	-7	4	4	-2	1	[illegible]
-2	-3	-7	-9	1	3	-5	3	1	-6	4	-1
-7	-2	1	-8	-1	3	-2	7	1	6	-3	-9
-4	2	-7	-1	1	1	0	6	5	1	0	1
-7	2	-3	-1	-8	-3	-1	4	2	-1	6	-1
5	1	-1	2	-3	-1	1	1	0	-5	-7	[illegible]
1	4	3	-9	3	1	-3	-7	2	-4	-1	[illegible]
-1	0	-1	-9	5	1	7	-7	-2	-3	1	-1
-1	4	6	-3	-7	3	1	-1	-1	0	9	[illegible]
-1	-9	2	-4	1	0	-3	-1	-1	1	3	4
2	-9	4	7	-3	-1	-1	0	-1	-8	6	6
2	3	0	3	-2	-1	-1	-3	-5	7	2	1
2	2	-1	-1	-6	3	5	1	-1	1	-3	-1
1	3	-1	1	0	-3	-7	4	4	-2	1	3
-2	-3	-7	-9	1	3	-5	3	1	-6	4	-1
-7	-2	1	-8	-1	3	-2	7	1	6	-3	-9
-4	2	-7	-1	1	1	0	6	5	1	0	1
-7	2	-3	-1	-8	-3	-1	4	2	-1	6	-1
5	1	-1	2	-3	-1	1	1	0	-5	-7	6
1	4	3	-9	3	1	-3	-7	2	-4	-1	3
-1	0	-1	-9	5	1	7	-7	-2	-3	1	-1
-1	4	6	-3	-7	3	1	-1	-1	0	9	3

RBM-2

RANDOM-BIASED DATA - u

-1	-3	2	6	-5	-3	3	1	7	-1	-2	-2
1	9	2	7	2	-3	-2	-1	3	-1	-6	-7
-1	-6	5	2	3	1	4	-2	-1	1	-3	-1
1	7	2	1	1	-6	-4	-1	-7	3	1	3
1	8	-1	3	4	-1	-2	-7	5	9	1	-2
-3	-7	4	-1	-2	-7	5	0	0	-1	5	5
6	1	-2	4	3	-3	1	-9	-1	3	-1	-1
0	2	7	-3	-4	1	-3	-7	-4	3	1	-3
5	-3	-4	2	2	-4	-7	6	-1	3	1	-2
3	3	-6	-3	1	-7	-9	-3	4	2	-1	8
8	6	3	2	1	-5	-1	3	0	-4	-2	-1
1	1	-3	5	1	7	-8	-2	-1	3	-1	7
-7	3	-1	1	1	6	-4	7	-3	5	-2	-7
-1	-3	2	6	-5	-3	3	1	7	-1	-2	-2
1	9	2	7	2	-3	-2	-1	3	1	-6	-7
-1	-6	5	2	3	1	4	-2	-1	1	-3	-1
1	7	2	1	1	-6	-4	-1	-7	3	1	3
1	8	-1	3	4	-1	-2	-7	5	9	1	-2
-3	-7	4	-1	-2	-7	5	0	0	-1	5	5
6	1	-2	4	3	-3	1	-9	-1	3	-1	-1
0	2	7	-3	-4	1	-3	-7	-4	3	1	-3
5	-3	-4	2	2	-4	-7	6	-1	3	1	-2
3	3	-6	-3	1	-7	-9	-3	4	2	-1	8
8	6	3	2	1	-5	-1	3	0	-4	-2	-1
1	1	-3	5	1	7	-8	-2	-1	3	-1	7
-7	3	-1	1	1	6	-4	7	-3	5	-2	-7
-1	-3	2	6	-5	-3	3	1	7	-1	-2	-2
1	9	2	7	2	-3	-2	-1	3	1	-6	-7
-1	-6	5	2	3	1	4	-2	-1	1	-3	-1
1	7	2	1	1	-6	-4	-1	-7	3	1	3
1	8	-1	3	4	-1	-2	-7	5	9	1	-2
-3	-7	4	-1	-2	-7	5	0	0	-1	5	5
6	1	-2	4	3	-3	1	-9	-1	3	-1	-1
0	2	7	-3	-4	1	-3	-7	-4	3	1	-3
5	-3	-4	2	2	-4	-7	6	-1	3	1	-2
3	3	-6	-3	1	-7	-9	-3	4	2	-1	8
8	6	3	2	1	-5	-1	3	0	-4	-2	-1
1	1	-3	5	1	7	-8	-2	-1	3	-1	7
-7	3	-1	1	1	6	-4	7	-3	5	-2	-7
-1	-3	2	6	-5	-3	3	1	7	-1	-2	-2
1	9	2	7	2	-3	-2	-1	3	1	-6	-7
-1	-6	5	2	3	1	4	-2	-1	1	-3	-1
1	7	2	1	1	-6	-4	-1	-7	3	1	3
1	8	-1	3	4	-1	-2	-7	5	9	1	-2
-3	-7	4	-1	-2	-7	5	0	0	-1	5	5
6	1	-2	4	3	-3	1	-9	-1	3	-1	-1
0	2	7	-3	-4	1	-3	-7	-4	3	1	-3
5	-3	-4	2	2	-4	-7	6	-1	3	1	-2
3	3	-6	-3	1	-7	-9	-3	4	2	-1	8
8	6	3	2	1	-5	-1	3	0	-4	-2	-1

000000

SUM

SINE WAVE

K	$\phi_u(\tau)$	$\phi_w(\tau)$	$\phi_{uw}^{IN}(\tau)$	$\phi_{uw}^{OUT}(\tau)$	$\Phi_u(f)$	$\Phi_w(f)$	$C_{uw}(f)$	$Q_{uw}(f)$
0	49.899	50.027	.000	.000	.010	.006	-.001	.000
1	29.248	29.063	-.040	-40.226	-.015	-.023	-.003	.004
2	-15.344	-15.338	-.101	-47.315	.027	.025	-.003	-.008
3	-47.282	-47.257	.002	-15.268	-.019	-.010	-.006	.035
4	-40.237	-40.188	.035	29.236	.058	.057	-.009	-.031
5	-.001	.073	.080	49.730	-.073	-.083	-.005	.077
6	40.126	40.222	.056	29.182	.190	.189	-.000	-.179
7	47.256	47.117	-.056	-15.357	-.493	-.495	-.007	.498
8	15.429	15.188	-.087	-47.218	3.029	2.991	-.028	-3.005
9	-29.234	-29.209	-.007	-40.160	19.609	19.554	-.026	-19.583
10	-49.698	-49.722	-.050	.043	22.392	22.390	.013	-22.389
11	-29.264	-29.035	.157	40.188	5.588	5.622	.027	-5.606
12	15.370	15.367	.087	47.181	-.651	-.629	.013	.642
13	47.243	47.137	.007	15.292	.219	.233	.007	-.226
14	40.174	40.131	-.057	-29.217	-.094	-.084	.005	.090
15	.102	-.120	-.132	-49.718	.055	.051	.006	-.050
16	-40.160	-40.256	-.087	-29.212	-.007	-.024	.006	.022
17	-47.316	-47.185	.047	15.281	.028	.022	.003	-.023
18	-15.456	-15.204	.052	47.333	-.014	-.007	.001	.013
19	29.149	29.193	.092	40.223	.008	.018	.000	-.007
20	49.899	50.027	.000	.000	-.007	-.002	-.000	.007
21	29.250	29.060	-.043	-40.226	.004	.012	.003	-.004
22	-15.342	-15.341	-.103	-47.315	-.001	.030	.012	.005
23	-47.281	-47.259	.001	-15.268	.005	.036	.012	-.003
24	-40.238	-40.187	.037	29.237	.000	.006	.002	.002
25	-.003	.076	.083	49.730	.018	.013	-.007	.006
26	40.125	40.223	.058	29.182	.016	.013	-.009	.012
27	47.256	47.116	-.057	-15.358	.004	.010	-.001	.002
28	15.430	15.184	-.090	-47.219	-.001	.026	.002	.008
29	-29.234	-29.212	-.010	-40.160	.004	.039	.002	.010
30	-49.698	-49.722	-.050	.044	-.000	.011	.001	.004
31	-29.264	-29.032	.160	40.189	.005	.012	-.006	-.001
32	15.369	15.370	.090	47.180	.003	.011	-.006	.000

CORRELATION COEFFICIENT .00000

SUM - I

SINUSOIDAL-UNBIASED DATA - ω

PSEUDO DATA RUN 2

600 032 1 1 0 0

0	8	9	3	-5	-10	-7	3	9	9	0	-8
-9	-3	6	13	6	-3	-10	-8	0	9	9	3
-5	-10	-7	3	9	9	0	-8	-9	-3	6	10
6	-3	-10	-8	0	8	9	3	-5	-10	-7	3
9	9	0	-8	-9	-3	6	10	6	-3	-10	-8
0	8	9	3	-5	-10	-7	3	9	9	0	-8
-9	-3	6	10	6	-3	-10	-8	0	8	9	3
-5	-10	-7	3	9	9	0	-8	-9	-3	6	10
06	-3	-10	-8	0	8	9	3	-5	-10	-7	3
9	9	0	-8	-9	-3	6	10	6	-3	-10	-8
0	8	9	3	-5	-10	-7	3	9	9	0	-8
-9	-3	6	13	6	-3	-10	-8	0	9	9	3
-5	-10	-7	3	9	9	0	-8	-9	-3	6	10
6	-3	-10	-8	0	8	9	3	-5	-10	-7	3
9	9	0	-8	-9	-3	6	10	6	-3	-10	-8
0	8	9	3	-5	-10	-7	3	9	9	0	-8
-9	-3	6	10	6	-3	-10	-8	0	8	9	3
-5	-10	-7	3	9	9	0	-8	-9	-3	6	10
06	-3	-10	-8	0	8	9	3	-5	-10	-7	3
9	9	0	-8	-9	-3	6	10	6	-3	-10	-8
0	8	9	3	-5	-10	-7	3	9	9	0	-8
-9	-3	6	13	6	-3	-10	-8	0	9	9	3
-5	-10	-7	3	9	9	0	-8	-9	-3	6	10
6	-3	-10	-8	0	8	9	3	-5	-10	-7	3
9	9	0	-8	-9	-3	6	10	6	-3	-10	-8
0	8	9	3	-5	-10	-7	3	9	9	0	-8
-9	-3	6	10	6	-3	-10	-8	0	8	9	3
-5	-10	-7	3	9	9	0	-8	-9	-3	6	10
06	-3	-10	-8	0	8	9	3	-5	-10	-7	3
9	9	0	-8	-9	-3	6	10	6	-3	-10	-8
0	8	9	3	-5	-10	-7	3	9	9	0	-8
-9	-3	6	13	6	-3	-10	-8	0	9	9	3
-5	-10	-7	3	9	9	0	-8	-9	-3	6	10
6	-3	-10	-8	0	8	9	3	-5	-10	-7	3
9	9	0	-8	-9	-3	6	10	6	-3	-10	-8
0	8	9	3	-5	-10	-7	3	9	9	0	-8
-9	-3	6	10	6	-3	-10	-8	0	8	9	3
-5	-10	-7	3	9	9	0	-8	-9	-3	6	10
06	-3	-10	-8	0	8	9	3	-5	-10	-7	3
9	9	0	-8	-9	-3	6	10	6	-3	-10	-8
0	8	9	3	-5	-10	-7	3	9	9	0	-8
-9	-3	6	13	6	-3	-10	-8	0	9	9	3
-5	-10	-7	3	9	9	0	-8	-9	-3	6	10
6	-3	-10	-8	0	8	9	3	-5	-10	-7	3
9	9	0	-8	-9	-3	6	10	6	-3	-10	-8
0	8	9	3	-5	-10	-7	3	9	9	0	-8
-9	-3	6	10	6	-3	-10	-8	0	8	9	3
-5	-10	-7	3	9	9	0	-8	-9	-3	6	10
06	-3	-10	-8	0	8	9	3	-5	-10	-7	3
9	9	0	-8	-9	-3	6	10	6	-3	-10	-8

SUM - 2

SINUSOIDAL- UNBIASED DATA - u

→ -10	-6	3	9	9	0	-7	-10	-4	6	10	6
-3	-9	-9	0	8	8	3	-7	-10	-6	3	9
9	0	-7	-10	-4	6	10	6	-3	-9	-9	0
8	8	3	-7	-10	-6	3	9	9	0	-7	-10
-4	6	10	6	-3	-9	-9	0	8	8	3	-7
-10	-6	3	9	9	0	-7	-10	-4	6	10	6
-3	-9	-9	0	8	8	3	-7	-10	-6	3	9
9	0	-7	-10	-4	6	10	6	-3	-9	-9	0
8	8	3	-7	-10	-6	3	9	9	0	-7	-10
-4	6	10	6	-3	-9	-9	0	8	8	3	-7
-10	-6	3	9	9	0	-7	-10	-4	6	10	6
-3	-9	-9	0	8	8	3	-7	-10	-6	3	9
9	0	-7	-10	-4	6	10	6	-3	-9	-9	0
8	8	3	-7	-10	-6	3	9	9	0	-7	-10
-4	6	10	6	-3	-9	-9	0	8	8	3	-7
-10	-6	3	9	9	0	-7	-10	-4	6	10	6
-3	-9	-9	0	8	8	3	-7	-10	-6	3	9
9	0	-7	-10	-4	6	10	6	-3	-9	-9	0
8	8	3	-7	-10	-6	3	9	9	0	-7	-10
-4	6	10	6	-3	-9	-9	0	8	8	3	-7
-10	-6	3	9	9	0	-7	-10	-4	6	10	6
-3	-9	-9	0	8	8	3	-7	-10	-6	3	9
9	0	-7	-10	-4	6	10	6	-3	-9	-9	0
8	8	3	-7	-10	-6	3	9	9	0	-7	-10
-4	6	10	6	-3	-9	-9	0	8	8	3	-7
-10	-6	3	9	9	0	-7	-10	-4	6	10	6
-3	-9	-9	0	8	8	3	-7	-10	-6	3	9
9	0	-7	-10	-4	6	10	6	-3	-9	-9	0
8	8	3	-7	-10	-6	3	9	9	0	-7	-10
-4	6	10	6	-3	-9	-9	0	8	8	3	-7
-10	-6	3	9	9	0	-7	-10	-4	6	10	6
-3	-9	-9	0	8	8	3	-7	-10	-6	3	9
9	0	-7	-10	-4	6	10	6	-3	-9	-9	0
8	8	3	-7	-10	-6	3	9	9	0	-7	-10
-4	6	10	6	-3	-9	-9	0	8	8	3	-7
-10	-6	3	9	9	0	-7	-10	-4	6	10	6
-3	-9	-9	0	8	8	3	-7	-10	-6	3	9
9	0	-7	-10	-4	6	10	6	-3	-9	-9	0
8	8	3	-7	-10	-6	3	9	9	0	-7	-10
-4	6	10	6	-3	-9	-9	0	8	8	3	-7
-10	-6	3	9	9	0	-7	-10	-4	6	10	6
-3	-9	-9	0	8	8	3	-7	-10	-6	3	9
9	0	-7	-10	-4	6	10	6	-3	-9	-9	0
8	8	3	-7	-10	-6	3	9	9	0	-7	-10
-4	6	10	6	-3	-9	-9	0	8	8	3	-7
-10	-6	3	9	9	0	-7	-10	-4	6	10	6
-3	-9	-9	0	8	8	3	-7	-10	-6	3	9
9	0	-7	-10	-4	6	10	6	-3	-9	-9	0
8	8	3	-7	-10	-6	3	9	9	0	-7	-10
-4	6	10	6	-3	-9	-9	0	8	8	3	-7 →

SBM

BIASED SINE WAVE

K	$\phi_u(\tau)$	$\phi_w(\tau)$	$\phi_{uw}^{IN}(\tau)$	$\phi_{uw}^{OUT}(\tau)$	$\Phi_u(f)$	$\Phi_w(f)$	$C_{uw}(f)$	$Q_{uw}(f)$
0	49.899	53.927	-1.799	.000	.010	.006	-.002	.000
1	29.248	31.308	-1.094	-41.776	-.015	-.025	-.002	.005
2	-15.344	-16.535	.448	-49.064	.027	.029	-.004	-.009
3	-47.282	-50.953	1.703	-15.818	-.019	-.007	-.005	.037
4	-40.237	-43.249	1.482	30.338	.058	.065	-.011	-.032
5	-.001	.124	.079	51.584	-.073	-.091	-.003	.080
6	40.126	43.333	-1.364	30.256	.190	.195	-.010	-.185
7	47.256	50.769	-1.754	-15.912	-.493	-.542	.008	.517
8	15.429	16.327	-.661	-48.997	3.029	3.222	-.136	-3.117
9	-29.234	-31.470	1.045	-41.659	19.609	21.070	-.731	-20.315
10	-49.698	-53.621	1.749	.049	22.392	24.124	-.792	-23.226
11	-29.264	-31.274	1.203	41.690	5.588	6.058	-.173	-5.817
12	15.370	16.528	-.488	48.952	-.651	-.669	.038	.661
13	47.243	50.784	-1.695	15.837	.219	.262	.002	-.240
14	40.174	43.220	-1.486	-30.293	-.094	-.089	.009	.093
15	.102	-.071	-.131	-51.564	.055	.057	.001	-.056
16	-40.160	-43.294	1.365	-30.310	-.007	-.017	.002	.013
17	-47.316	-50.889	1.746	15.831	.028	.029	.000	-.029
18	-15.456	-16.407	.603	49.084	-.014	-.010	.002	.012
19	29.149	31.448	-.953	41.772	.008	.015	.002	-.011
20	49.899	53.927	-1.799	.000	-.007	-.003	.002	.005
21	29.250	31.306	-1.097	-41.776	.004	.013	.003	-.005
22	-15.342	-16.538	.445	-49.064	-.001	.028	.012	.002
23	-47.281	-50.954	1.702	-15.818	.005	.034	.012	-.005
24	-40.238	-43.249	1.484	30.339	.000	.006	.002	.001
25	-.003	.128	.082	51.584	.018	.012	-.009	.001
26	40.125	43.335	-1.362	30.255	.016	.011	-.011	.006
27	47.256	50.769	-1.755	-15.913	.004	.011	-.001	.001
28	15.430	16.323	-.664	-48.998	-.001	.036	.002	.009
29	-29.234	-31.473	1.043	-41.658	.004	.052	.002	.012
30	-49.698	-53.621	1.749	.051	-.000	.016	.001	.004
31	-29.264	-31.271	1.206	41.690	.005	.011	-.006	-.001
32	15.369	16.531	-.485	48.951	.003	.011	-.006	.000

CORRELATION COEFFICIENT -.03469

Sinusoidal-Biased Data-ω

PSEUDO DATA RUN 3

600 032 1 1 0 0

0	8	9	3	-5	-10	-7	3	9	9	0	-8
-9	-3	6	10	6	-3	-10	-8	0	8	9	3
-5	-10	-7	3	9	9	0	-8	-9	-3	6	10
6	-3	-10	-8	0	8	9	3	-5	-10	-7	3
9	9	0	-8	-9	-3	6	10	6	-3	-10	-8
0	8	9	3	-5	-10	-7	3	9	9	0	-8
-9	-3	6	10	6	-3	-10	-8	0	8	9	3
-5	-10	-7	3	9	9	0	-8	-9	-3	6	10
6	-3	-10	-8	0	8	9	3	-5	-10	-7	3
9	9	0	-8	-9	-3	6	10	6	-3	-10	-8
9	9	0	-8	-9	-3	6	10	6	-3	-10	-8
-9	-3	6	10	6	-3	-10	-8	0	8	9	3
9	9	0	-8	-9	-3	6	10	6	3	-10	-8
0	8	9	3	-5	-10	-7	3	9	9	0	-8
-9	-3	6	10	6	-3	-10	-8	0	8	9	3
6	-3	-10	-8	0	8	9	3	-5	-10	-7	3
6	-3	-10	-8	0	8	9	3	-5	-10	-7	3
9	9	0	-8	-9	-3	6	10	6	-3	-10	-8
0	8	9	3	-5	-10	-7	3	9	9	0	-8
6	-3	-10	-8	0	8	9	3	-5	-10	-7	3
-5	-10	-7	3	9	9	0	-8	-9	-3	6	10
-5	-10	-7	3	9	9	0	-8	-9	-3	6	10
6	-3	-10	-8	0	8	9	3	-5	-10	-7	3
9	9	0	-8	-9	-3	6	10	6	-3	-10	-8
0	8	9	3	-5	-10	-7	3	9	9	0	-8
6	-3	-10	-8	0	8	9	3	-5	-10	-7	3
9	9	0	-8	-9	-3	6	10	6	-3	-10	-8
-5	-10	-7	3	9	9	0	-8	-9	-3	6	10
0	8	9	3	-5	-10	-7	3	9	9	0	-8
9	9	0	-8	-9	-3	6	10	6	-3	-10	-8
-5	-10	-7	3	9	9	0	-8	-9	3	6	10
0	8	9	3	-5	-10	-7	3	9	9	0	-8
-5	-10	-7	3	9	9	0	-8	-9	3	6	10
-9	-3	6	10	6	-3	-10	-8	0	8	9	3
0	8	9	3	-5	-10	-7	3	9	9	0	-8
-5	-10	-7	3	9	9	0	-8	-9	-3	6	10
6	-3	-10	-8	0	8	9	3	-5	-10	-7	3
6	-3	-10	-8	0	8	9	3	-5	-10	-7	3
9	9	0	-8	-9	-3	6	10	6	-3	-10	-8
-5	-10	-7	3	9	9	0	-8	-9	-3	6	10
0	8	9	3	-5	-10	-7	3	9	9	0	-8
6	-3	-10	-8	0	8	9	3	-5	-10	-7	3
-5	-10	-7	3	9	9	0	-8	-9	-3	6	10
6	-3	-10	-8	0	8	9	3	-5	-10	-7	3
0	8	9	3	-5	-10	-7	3	9	9	0	-8
-9	-3	6	10	6	-3	-10	-8	0	8	9	3
6	-3	-10	-8	0	8	9	3	-5	-10	-7	3
6	-3	-10	-8	0	8	9	3	-5	-10	-7	3
5	-10	-7	3	9	9	0	-8	-9	-3	6	10
6	-3	-10	-8	0	8	9	3	-5	-10	-7	3 →

SBM-2

SINUSOIDAL-BIASED DATA - u

-10	-6	3	9	10	1	-7	-10	-4	6	11	7
-3	-9	-9	0	8	9	4	-7	-10	-6	3	9
10	1	-7	-10	-4	6	11	7	-3	-9	-9	0
8	9	4	-7	-10	-6	3	9	10	1	-7	-10
-4	6	11	7	-3	-9	-9	0	8	9	4	-7
-10	-6	3	9	10	1	-7	-10	-4	6	11	7
-3	-9	-9	0	8	9	4	-7	-10	-6	3	9
10	1	-7	-10	-4	6	11	7	-3	-9	-9	0
8	9	4	-7	-10	-6	3	9	10	1	-7	-10
-4	6	11	7	-3	-9	-9	0	8	9	4	-7
-4	6	11	7	-3	-9	-9	0	8	9	4	-7
-3	-9	-9	0	8	9	4	-7	-10	-6	3	9
-4	6	11	7	-3	-9	-9	0	8	9	4	-7
-10	-6	3	9	10	1	-7	-10	-4	6	11	7
-3	-9	-9	0	8	9	4	-7	-10	-6	3	9
8	9	4	-7	-10	-6	3	9	10	1	-7	-10
8	9	4	-7	-10	-6	3	9	10	1	-7	-10
-4	6	11	7	-3	-9	-9	0	8	9	4	-7
-10	-6	3	9	10	1	-7	-10	-4	6	11	7
8	9	4	-7	-10	-6	3	9	10		-7	-10
10	1	-7	-10	-4	6	11	7	-3	-9	-9	0
10	1	-7	-10	-4	6	11	7	-3	-9	-9	0
8	9	4	-7	-10	-6	3	9	10	1	-7	-10
-4	6	11	7	-3	-9	-9	0	8	9	4	-7
-10	-6	3	9	10	1	-7	-10	-4	6	11	7
8	9	4	-7	-10	-6	3	9	10	1	-7	-10
-4	6	11	7	-3	-9	-9	0	8	9	4	-7
10	1	-7	-10	-4	6	11	7	-3	-9	-9	0
-10	-6	3	9	10	1	-7	-10	-4	6	11	7
-4	6	11	7	-3	-9	-9	0	8	9	4	-7
10	1	-7	-10	-4	6	11	7	-3	-9	-9	0
-10	-6	3	9	10	1	-7	-10	-4	6	11	7
10	1	-7	-10	-4	6	11	7	-3	-9	-9	0
-3	-9	-9	0	8	9	4	-7	-10	-6	3	9
-10	-6	3	9	10	1	-7	-10	-4	6	11	7
10	1	-7	-10	-4	6	11	7	3	9	-9	0
8	9	4	-7	-10	-6	3	9	10	1	-7	-10
8	9	4	-7	-10	-6	3	9	10	1	-7	-10
-4	6	11	7	-3	-9	-9		8	9	4	-7
10	1	-7	-10	-4	6	11	7	3	9	-9	0
-10	-6	3	9	10	1	-7	-10	-4	6	11	7
8	9	4	-7	-10	-6	3	9	10	1	-7	-10
10	1	-7	-10	-4	6	11	7	-3	-9	-9	0
8	9	4	-7	-10	-6	3	9	10	1	-7	-10
-10	-6	3	9	10	1	-7	-10	-4	6	11	7
-3	-9	-9	0	8	9	4	-7	-10	-6	3	9
8	9	4	-7	-10	-6	3	9	10	1	-7	-10
8	9	4	-7	-10	-6	3	9	10	1	-7	-10
10	1	-7	-10	-4	6	11	7	3	-9	-9	0
8	9	4	-7	-10	-6	3	9	10	1	-7	-10 →

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APPENDIX D

DIGITAL COMPUTER PROGRAMS

The various computer programs discussed in chapter III are presented here in abbreviated form for the convenience of those wishing to consider similar analysis of oceanographic data. These programs were used on one or all of the following digital computers.

(1) An International Business Machine (I.B.M.) 7090 digital computer at the Massachusetts Institute of Technology Computation Center.

(2) An I.B.M. 1620 and a Control Data Corporation (C.D.C.) 3200 digital computer at the Naval Underwater Weapons Research and Engineering Station computer laboratory.

The programs are in standard fortran language. A brief statement of definitions of non-standard or unique symbols and other helpful information are included.

The programs listed here were designed specifically for the wave studies. However, they can be made generally applicable to stationary time series data.

Velocity Conversion Program (VELTIME)

This program (discussed in chapter III) converts the punch card data, which contains the sign and relative time of voltage pulse occurrence (along with zero crossover information), into uninterpolated velocity data (cm sec^{-1}). The raw data punch cards contain five sequential pieces of data. A negative velocity is indicated by the number 2 (two) in the output listing.

Abbreviations used are:

EMSEC = The chart speed of the Sanburn recorder read in mm sec^{-1}.

IND(k) = Indicator of the direction of the positive pulses on the strip chart (to provide the proper sign for the velocity values);

i.e., IND = { 0 denotes upward pulses
1 denotes zero crossing
2 denotes downward pulses.

Combination Spectrum Program (Program BBELS)

This flexible program contains three subprograms which include linear interpolation, orthogonal velocity corrections (of OMDUM III data), and spectrum analysis. The input is the velocity time data generated in the velocity

```
      PROGRAM VELTIME
      DIMENSION X(4500),IND(4500)
    1 I=2
      NN=1
      N=1
      READ(60,100)EMSEC
      READ(60,102)X(1),IND(1),X(2),IND(2),X(3),IND(3),X(4),IND(4),X(5),
     1IND(5)
    8 IF(X(I) .LT. 999999)9,5
    9 IF(IND(I)-1)70,16,70
   70 IF(IND(I)-IND(I-1))16,71,16
   16 I=I+1
   28 IF(I-(5*N+1))8,7,22
   22 N=N+1
      GO TO 28
    7 READ(60,102)X(I),IND(I),X(I+1),IND(I+1),X(I+2),IND(I+2),X(I+3),
     1IND(I+3),X(I+4),IND(I+4)
      GO TO 8
   71 CONTINUE
   14 D=X(I)-X(I-1)
      TIME=(X(I)+X(I-1))/2.
      D=((D/15.6)/EMSEC)*1000.
      TIME=TIME/15.6
      TIME=TIME/EMSEC
      IF(D .LE. 20.99)36,37
   36 Y=(D-15.54)/(7410.2907E-05-7837.2527E-06*D)+210.70000
      GO TO 25
   37 IF(D .LE. 33.48)38,39
   38 Y=(D-23.00)/(5994.0137E-05-8476.9629E-06*D)+140.000
      GO TO 25
   39 IF(D .LE. 93.62)40,41
   40 Y=.66680522E-07*D**5-.14699011E-04*D**4+.72463350E-03*D**3
      Y=Y+.55538870E-01*D**2-.69160109E+01*D+.25032362E+03
      GO TO 25
   41 IF(D .LE. 239.2)42,43
   42 Y=(D-115.5)/(.20498400-.038643265*D)+28.40
      GO TO 25
   43 Y=(D-288.7)/(34.199517-.16685755*D)+12.60
   25 IF(IND(I)-1)26,26,27
   27 Y=-1.*Y
   26 WRITE(10,101)Y,TIME,I
      WRITE(61,101)Y,TIME,I
      I=I+1
      NN=NN+1
      GO TO 28
    5 END FILE 10
      REWIND 10
      DO 60 K=1,NN
      READ(10,101)Y,TIME,I
      WRITE(62,101)Y,TIME,I
   60 CONTINUE
      REWIND 10
  100 FORMAT(F6.0,I3,I3,F4.0)
  101 FORMAT(F10.5,F10.5,I5)
  102 FORMAT(5(F6.0,I2,8X))
      GO TO 1
      END
```

conversion program. The input can be a single time series (as w(t)), a paired time series (as u(t), w(t)) from the OMDUM system, which may or may not be corrected; or a paired time series from the LIMDUM system (as w_1 and w_2, or u_1 and u_2). The usual auto-spectrum analysis is performed on the single time series. On all paired time series both the auto-spectrum and cross-spectrum operations are performed (as discussed in chapter III). The interpolation program (entitled PROGRAM BBELS) is discussed in chapter III. The correction program is entitled SUBROUTINE CORRECT. The third program, the spectrum analysis, is entitled SUBROUTINE SPECTRA. The following abbreviations are used.

u(I) = Interpolated velocity data from u meter (or upper meter)

w(I) = Interpolated velocity from vertical w (or lower meter)

M1 = Number of lags for spectral estimates (limit is set at 100)

CODE = { 0 denotes single time series
1 denotes OMDUM data
-1 denotes LIMDUM data

IO1 = Number of series

YO2 = Depth of instrument

IO3 = The nth measurement at the particular depth.

YO4 = Time interval (sec)

U(J) = Uninterpolated velocity

T(J) = Time of occurrance of U(J) velocity.

Note: The CDC 3200 program has a capacity to take 32×10^3 single time series data pieces or 2400 data pairs.

```
      PROGRAM BBFLS
      DIMENSION T(2400),V(2400)
      COMMON VNEW(2400), YNEW(2400)
  731 READ(60,600) M1,CODE
      READ(60,604)I01,Y02,I03,Y04
      WRITE(61,605)I01,Y02,I03
      WRITE(62,605)I01,Y02,I03
 1000 FORMAT(1X,10H OK SO FAR)
   10 FORMAT(2F10.5,I1)
   11 FORMAT(1X,2F10.5,I5)
  600 FORMAT(I4,F4.0,I4,I4)
  604 FORMAT(5X,I3,F4.1,I2,F5.2)
  605 FORMAT(1H1,6HBBFLS-,I3,3X,F3.1,2HM-,I3)
      A=.2
      Z=.2
      M=1
      B=.2
      N=0
      J=1
   15 READ(60,10) V(J),T(J),LL
      N=N+1
      J=J+1
      IF (LL)2,15,2
    2 DO 90 J=2,N
    9 IF(T(J-1)-A)4,5,21
   21 A=A+Z
      GO TO 9
    4 IF(T(J)-A) 90,90,5
    5 TDIFF=T(J)-T(J-1)
      VDIFF=V(J)-V(J-1)
    6 TNUM=A-T(J-1)
      IF(T(J-1)-A)8,20,21
    8 RATIO=TNUM/TDIFF
      DINTP=RATIO*VDIFF
      VNEW(M)=V(J-1)+DINTP
      GO TO 220
   20 VNEW(M)=V(J-1)
  220 WRITE(61,11) VNEW(M),A,M
      M=M+1
      TEST=TDIFF-TNUM
      IF(TEST-B)90,90,25
   25 A=A+Z
      GO TO 6
   90 CONTINUE
      JJ=M-1
      IF(CODE)732,555,732
  732 AA=.2
      WRITE(61,1000)
      Z=.2
      MO=1
      NO=0
      J=1
   16 READ(60,10) V(J),T(J),LL
      NO=NO+1
      J=J+1
      IF(LL)22,16,22
```

```
   22 DO 990 J=2,NO
   98 IF (T(J-1)-AA) 44,55,210
  210 AA=AA+Z
      GO TO 98
   44 IF (T(J)-AA) 990,990,55
   55 TDIFF=T(J)-T(J-1)
      VDIFF=V(J)-V(J-1)
   66 TNUM=AA-T(J-1)
      IF (T(J-1)-AA) 88,211,210
   88 RATIO=TNUM/TDIFF
      DINTP=RATIO*VDIFF
      YNEW(MO)=V(J-1)+DINTP
      GO TO 222
  211 YNEW(MO)=V(J-1)
  222 WRITE(61,11) YNEW(MO),AA,MO
      MO=MO+1
      TEST=TDIFF-TNUM
      IF (TEST-B) 990,990,250
  250 AA=AA+Z
      GO TO 66
  990 CONTINUE
      WRITE(61,1000)
      IF(M-MO)888,443,777
  777 JJ=MO-1
      GO TO 443
  888 JJ=M-1
  443 IF(CODE) 555,555,444
  444 CALL CORRECT (JJ)
  555 CALL SPECTRA (JJ,CODE,M1,Y04,I01,Y02,I03)
      GO TO 731
      END

        3200 FORTRAN DIAGNOSTIC RESULTS - FOR   BBELS

NO ERRORS
```

```
      SUBROUTINE CORRECT (JJ)
      COMMON U(2400), W(2400)
      REAL LOGF
      WRITE(61,1000)
      DO 999 J=1,JJ
      IF (W(J)) 4,99,4
    4 Y=U(J)/W(J)
      YY=ABSF(Y)
      IF (YY-1.5649) 10,11,11
   10 X=(((-.71624037*YY-3.5271192)*YY+1.1616579)*YY+47.905764)*YY
      X=X-.0001549985
      GO TO 90
   11 IF(YY-29.743803) 111,111,1111
 1111 X=ATANF(YY)
      X=X*57.295788
      GO TO 90
  111 X=(LOGF(YY-1.2058034)+9.7816200)/.14598791
   90 THETA=X
      IF (Y) 3,98,2
    2 IF (THETA-45.) 18,18,19
   18 RYTH=(-.001+.000085*THETA)*(THETA)+1.00
      A=90.-THETA
      IF(A-70.) 122,122,121
  122 RXTH=-.00009*(A*A)+.01238*A+.758
      GO TO 20
  121 RXTH=-.0005*(A*A)+.071*A-1.34
      GO TO 20
   19 IF (THETA-70.) 118,118,119
  118 RYTH=-.00009*(THETA*THETA)+.01238*THETA+.758
      A=90.-THETA
      GO TO 120
  119 RYTH=(-.0005*(THETA*THETA)+.071*THETA-1.34)
      A=90.-THETA
  120 RXTH=(-.001+.000085*A)*(A)+1.00
   20 IF (U(J)) 7,98,8
    7 THETA=270.-THETA
      GO TO 9
    8 THETA=90.-THETA
    9 U(J)=U(J)/RXTH
      W(J)=W(J)/RYTH
      GO TO 25
   98 IF (W(J)) 87,88,88
   87 THETA=270.
      W(J)=-W(J)
      U(J)=0.
      GO TO 25
   88 THETA=90.
      W(J)=W(J)
      U(J)=0.
      GO TO 25
    3 IF (THETA-45.) 28,28,29
   28 RYTH=(-.001+.000085*THETA)*THETA+1.00
      A=90.-THETA
      IF(A-70.) 222,222,221
  222 RXTH=(-.00009*(A*A)+.01238*A+.758)
      GO TO 30
```

```
  221 RXTH=(-.0005*(A*A)+.071*A-1.34)
      GO TO 30
   29 IF (THETA-70.) 218,218,219
  218 RYTH=(-.00009*(THETA*THETA)+.01238*THETA+.758)
      A=90.-THETA
      GO TO 220
  219 RYTH=(-.0005*(THETA*THETA)+.071*THETA-1.34)
      A=90.-THETA
  220 RXTH=(-.001+.000085*A)*(A)+1.00
   30 IF (U(J)) 37,98,38
   37 THETA=90.+THETA
      GO TO 40
   38 THETA=270.+THETA
   40 U(J)=U(J)/RXTH
      W(J)=W(J)/RYTH
   25 PRINT 6,U(J),W(J),THETA
      GO TO 999
   99 IF (U(J)) 103,102,101
  101 THETA=0.
      U(J)=U(J)
      W(J)=0.
      GO TO 25
  102 THETA=0.
      U(J)=0.
      W(J)=0.
      GOTO 25
  103 THETA=180.
      U(J)=U(J)
      W(J)=0.
      GO TO 25
   77 FORMAT(F10.5)
    6 FORMAT(2F10.5,F7.2)
  666 FORMAT (I5)
 1000 FORMAT(1X,10H OK SO FAR)
  999 CONTINUE
      RETURN
      END

        3200 FORTRAN DIAGNOSTIC RESULTS - FOR    CORRECT


NULL STATEMENT NUMBERS
     666         77
```

```
      SUBROUTINE SPECTRA(N,CODE,M1,Y04,I01,Y02,I03)
      DIMENSION A(100),B(100),C(100),D(100),E(100),F(100)
      COMMON X(2400),Y(2400)
      PI=3.14159
      WRITE(61,605)I01,Y02,I03
      SUMX=0.0
      SUMY=0.0
      IF(CODE)11,12,11
   11 DO 5 I=1,N
      SUMX=SUMX+X(I)
    5 SUMY=SUMY+Y(I)
      EN=N
      SUMY=SUMY/EN
      SUMX=SUMX/EN
      WRITE (62,606) M1,N,Y04
      WRITE (61,606) M1,N,Y04
      WRITE(62,607)SUMX
      WRITE(61,607)SUMX
      WRITE(62,608)SUMY
      WRITE(61,608)SUMY
      WRITE(62,609)
      WRITE(61,609)
      DO 973 I=1,N
      X(I)=X(I)-SUMX
  973 Y(I)=Y(I)-SUMY
      GO TO 16
   12 DO 4 I=1,N
    4 SUMX=SUMX+X(I)
      EN=N
      SUMX=SUMX/EN
      WRITE(62,606) M1,N,Y04
      WRITE(61,606) M1,N,Y04
      WRITE(62,607)SUMX
      WRITE(61,607)SUMX
      WRITE(61,603)
      WRITE(62,603)
      DO 913 I=1,N
  913 X(I)=X(I)-SUMX
   16 M=M1-1
      M2=M1+1
      DO 22 L=1,M2
      SUM1=0.0
      SUM2=0.0
      SUM3=0.0
      DO 23 I=L,N
      LZ=I-L+1
      SUM1=SUM1+X(LZ)*X(I)
      SUM2=SUM2+X(LZ)
   23 SUM3=SUM3+X(I)
      ZZ=N-L+1
      COEF=1./ZZ
      COEF2=COEF**2
      A(L)=COEF*SUM1-COEF2*SUM2*SUM3
      IF(CODE) 25,24,25
   25 SUM4=0.0
      SUM5=0.0
```

```
      SUM6=0.0
      SUM7=0.0
      SUM8=0.0
      DO 26 I=L,N
      LZ=I-L+1
      SUM4=SUM4+Y(LZ)*Y(I)
      SUM5=SUM5+Y(LZ)
      SUM6=SUM6+Y(I)
      SUM7=SUM7+X(LZ)*Y(I)
   26 SUM8=SUM8+Y(LZ)*X(I)
      B(L)=COEF*SUM4-COEF2*SUM5*SUM6
      C(L)=COEF*SUM7-COEF2*SUM2*SUM6
      D(L)=COEF*SUM8-COEF2*SUM5*SUM3
      E(L)=(D(L)+C(L))/2.
      F(L)=(D(L)-C(L))/2.
   24 CONTINUE
   22 CONTINUE
      DO 27 K=1,M2
      IF(K-1) 28,28,29
   28 ZM1=M1
      DELT=1./(2.*ZM1)
      GO TO 32
   29 IF(K-M2)31,28,28
   31 ZM1=M1
      DELT=1./ZM1
   32 SUM1=0.0
      SUM2=0.0
      SUM3=0.0
      SUM4=0.0
      EM1=M1
      CAY=K-1
      DO 33 L=2,M2
      EL=L-1
      GUT=(1.+COSF(PI*EL/EM1))*COSF(PI*CAY*EL/EM1)
      SUM1=SUM1+GUT*A(L)
      IF (CODE) 35,33,35
   35 SUM2=SUM2+GUT*B(L)
      SUM3=SUM3+GUT*E(L)
      SUM4=SUM4+(1.+COSF(PI*EL/EM1))*SINF(PI*CAY*EL/EM1)*F(L)
   33 CONTINUE
      X1=DELT*(SUM1+A(1))
      IF(CODE)37,36,37
   37 Y1=DELT*(SUM2+B(1))
      Z=DELT*(SUM3+E(1))
      W=DELT*SUM4
      R=SQRT((Z**2+W**2)/(X1*Y1))
      T=ATANF(W/Z)
      T=T/.0174533
      P=Z/SQRT(X1*Y1)
      Q=W/SQRT(X1*Y1)
      KK=K-1
      XLQ=M1
      XLQP=KK
      FXLP=(2.*XLQ*Y04)/XLQP
      WRITE(61,602)KK,A(K),B(K),E(K),F(K),X1,Y1,Z,W,FXLP,R,T
      WRITE(62,602)KK,A(K),B(K),E(K),F(K),X1,Y1,Z,W,FXLP,R,T
      GO TO 27
```

```
36 KK=K-1
   XLQ=M1
   XLQP=KK
   FXLP=(2.*XLQ*Y04)/XLQP
   FREQ=1000./FXLP
   WRITE(62,602)KK,A(K),X1,FXLP,FREQ
   WRITE(61,602)KK,A(K),X1,FXLP,FREQ
27 CONTINUE
   IF(CODE)39,38,39
39 CC=E(I)/SQRT(A(I)*B(I))
   WRITE(62,3)CC
   WRITE(61,3)CC
38 CONTINUE
609 FORMAT(48HK    ACOV U   ACOV W   COV IN   COV OUT SP U     SP W,28H   CO
   1    QUA     PER      R     PHI)
608 FORMAT(1X,8HMEAN W =,F10.5)
607 FORMAT(1X,8HMEAN U =,F10.5)
605 FORMAT(1H1,6H8BFLS-,I3,3X,F3.1,2HM-,I3)
602 FORMAT(I3,2F9.3,2F8.1,7F6.2)
606 FORMAT(I3,4HLAGS,3X,I5,11HDATA POINTS,5X,3HDT=,F4.2,3HSEC)
603 FORMAT(38H K      ACOV       SP     PERIOD      F(MC))
  3 FORMAT(23HCORRELATION COEFFICIENT,F10.5)
   RETURN
   END

     3200 FORTRAN DIAGNOSTIC RESULTS - FOR   SPECTRA

0 ERRORS
0AD,56
IN,30,NM
```

Head-to-Tail Vector Plot Program (entitled PROGRAM NUWS)

This program (discussed in chapter III) prepares data punch cards from current meter data (consisting of current vector speed and direction). These cards are then placed in the Benson-Lehner electro-plotter, which plots the head-to-tail vector plot.

The abbreviations used are the following:

D = Direction of current (°T)

S = Magnitude of vector (cm sec^{-1})

$L = \begin{cases} 1 & \text{signifies end of data} \\ 0 & \text{continue reading.} \end{cases}$

```
      PROGRAM NUWS
   10 XX=0
   11 YY=0
      K=1
    1 READ 2,DATE,S,D,L
    2 FORMAT(F6.1,25X,F6.0,24X,F4.0,I1)
      IF(L)10,5,10
    3 FORMAT(3F10.2,I4)
    5 IF (90.-D)4,6,6
    6 THETA=(90.-D)*.01745329
      GO TO7
    4 THETA=(450.-D)*.01745329
    7 X=S*COSF(THETA)
      Y=S*SINF(THETA)
      XX=XX+X
      YY=YY+Y
      PUNCH 3,DATE,XX,YY,K
      PRINT 3,DATE,XX,YY,K
      K=K+1
      GO TO 1
      END
```

```
        3200 FORTRAN DIAGNOSTIC RESULTS - FOR    NUWS


 NULL STATEMENT NUMBERS
        11
LOAD,56
```

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13. ABSTRACT

Ducted impeller wave meters were suspended from the Buzzards Bay Entrance Light Station to measure particle motions in wind waves at various depths beneath the free surface. The motions recorded display quasisinusoidal oscillations having an approximate 90° phase shift between the horizontal and vertical velocity components that lie normal to the wave crests. The wave kinetic energy associated with the variances in the wave motions shows a strong depth attenuation, but this attenuation is not as great as the exponential energy decrease exhibited by a classical trochoidal wave. Integrals of the wave kinetic energy contained in the water column were approximately equal to the estimated potential energy of the waves.

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3. Sea Surface
4. Wind Waves
5. Wave Meters (ocean)
6. Wave Motions

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