Measurements of Mars at $\lambda 3.75$ cm from February to June 1965. W. A. DENT, M. J. KLEIN, AND H. D. ALLER, *The University of Michigan*.—The measured blackbody temperature of the Martian disk was $182^\circ\text{K} \pm 11^\circ\text{K}$. The variation of this temperature was less than 5°K between the planetocentric phase angles -24° through opposition to 36° . These results were obtained from more than 200 scans in right ascension and declination taken between February and June 1965 at a wavelength of 3.75 cm (8000 Mc/sec) with the University of Michigan's 85-ft radio telescope.

Daily calibrations were made with respect to Virgo A which had a measured flux density of $(45 \pm 3) \times 10^{-26} \text{ W/m}^2 \text{ cps}^{-1}$. Antenna temperatures were corrected for pointing errors, finite source size effects, and gain variations due to antenna orientation. The principal source of error is the uncertainty in the flux density of Virgo A.

W. M. Sinton has recently reported that the effective infrared temperature of the whole disk is about 240°K . The lower measured temperature at $\lambda 3.75$ cm may be due to emission from a cooler subsurface layer or to a difference between the microwave and infrared emissivities of Mars.

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The Statistics of Stellar Rotation. ARMIN J. DEUTSCH, *Mount Wilson and Palomar Observatories*.—Suppose that the true rotational velocities V of a group of stars are distributed according to the law $f(V)$. If the rotational axes are isotropic, one can show that $f(V)$ must vanish with V^2 ; in this case, the distribution law $\varphi(V \sin i)$ for the observable rotation effect must vanish with $V \sin i$. The observations yield first and second moments for φ that are compatible with an isotropic, Maxwell-Boltzmann law for f . Among stars in the range of colors $+1.0 \leq B - V \leq +1.30$, those having companions sufficiently close and massive constitute most or all of the slow rotators (Abt. H., *Astrophys J. Suppl.* 6, 52, 1961); most of the rotational energy has probably been transferred to orbital energy in these systems. Among stars in the range $-0.03 \leq B - V \leq +0.09$, the objects with $V \sin i \leq 17 \text{ km/sec}$ are an order of magnitude overabundant for the Boltzmann law that characterizes the great majority of stars near A0V. The overabundance can only be explained by superposing upon that Boltzmann distribution another group of stars that are really very slow rotators. These slow rotators are usually neither spectroscopic binaries nor peculiar A stars. Possibly they are all homogeneous stars that have returned to the main sequence after passing through a red-giant stage of stellar evolution.

Comments on Related Flares. HELEN W. DODSON AND E. RUTH HEDEMAN, *McMath-Hulbert Observatory*.—On 18 September 1957 between $12^{\text{h}}45^{\text{m}}$ and $21^{\text{h}}00^{\text{m}}$ UT there took place on the solar disk near $N 20^\circ E 05^\circ$ four major chromospheric brightenings that were reported by the various observers as either two, three, or four major flares. Examination of both hydrogen and calcium spectroheliograms showed that events 1 and 3 were in apparently identical locations within the plage, and that events 2 and 4 formed another set of homologous flares, to use the term currently applied to flares that repeat in the same region. The events can be interpreted either as four separate flares or, as two flares each with two phases and two maxima.

If the first interpretation is correct, the events indicate that at least two families of homologous flares occurred within the same center of activity. Questions regarding possible physical differences between such families of flares immediately arise.

The concomitant radio frequency emission and the detailed development of the flares seem to favor the second interpretation, and the events appear in our Working List of IGY Flares as two flares, each with two maxima.

Beginning	End	Maximum	Importance	Position
$\left\{ \begin{array}{l} < 1303 \\ < 1425 \end{array} \right\}$	$\left\{ \begin{array}{l} > 1425 \\ > 1600 \end{array} \right\}$	$\left\{ \begin{array}{l} 1325 \\ 1530 \end{array} \right\}$	3	$\left\{ \begin{array}{ll} N 23 & E 10 \\ N 20 & E 04 \end{array} \right\}$
$\left\{ \begin{array}{l} < 1722 \\ 1818 \end{array} \right\}$	$\left\{ \begin{array}{l} > 1818 \\ 2110 \end{array} \right\}$	$\left\{ \begin{array}{l} 1740 \\ 1840 \end{array} \right\}$	3+	$\left\{ \begin{array}{ll} N 23 & E 08 \\ N 20 & E 03 \end{array} \right\}$

This latter organization of the events means that the second phase of each flare is considered to be in some sense a consequence or development of phenomena initiated during the first phase. The observations thus suggest that events reported as major flares in the same center of activity with maxima separated by as much as two or more hours may refer, in some cases, to two phases of a complex solar event rather than to independent phenomena.

Either interpretation of the four events on 1957 September 18 indicates that major homologous flares can repeat in less than 5 h and suggests that more information on recurrent flares is desirable.

Satellite Motion about an Oblate Planet for Low and Moderate Eccentricities. B. C. DOUGLAS AND D. S. INGRAM, *TRW Space Technology Laboratories and Pepperdine College*.—Periodic variations in the elements a , i , Ω , $e \sin \omega$, $e \cos \omega$, $(M + \omega)$ up to order $e \cdot J_2$ have been obtained. The terms of order J_2 are similar to those given by Kozai (*Astron. J.* 66, 8, 1961). The addition of terms of order