The Total Solar Eclipse of 12 November 1966.

ROBERT FLEISCHER, *National Science Foundation*.—The path of totality of this eclipse starts in the Pacific Ocean, crosses South America from Lima, Peru, through Bage, Brazil, and continues across the Atlantic Ocean. Optical, radio, and direct probes will be used to observe the sun, the interplanetary medium, and the earth's atmosphere. Observations will be made from the ground, from airplanes, from balloons, and from rockets. Coordination of proposed United States of America observations by the National Science Foundation results in an opportunity to review the proposed observations in a unified way. Plans of other countries have also come to our attention. The paper presents summaries of the plans from a scientific point of view.

Infrared Spectroscopy with a Cascaded Image Intensifier.

W. KENT FORD, JR., *Department of Terrestrial Magnetism, Carnegie Institution of Washington*, AND PETER B. BOYCE, *Lowell Observatory*.

—Experimental cascaded image intensifiers with S1 primary cathodes have been developed at the Electron Tube Division of RCA for the Carnegie Image Tube Committee. These tubes have stable photocathodes with a broad sensitivity peak between 0.8 and $1.0\ \mu$ and a useful sensitivity out to $1.2\ \mu$. The electron multiplication across a single phosphor-photocathode sandwich gives adequate gain so that with $f/2$ transfer optics single primary photoelectrons are recorded photographically. The limiting resolution on the photographic plate is about 25 lp/mm over a 38-mm-diam field. A simple dry ice cooling system is used to suppress thermal emission from the S1 cathode.

Several of these tubes have been used at Lowell Observatory with the DTM spectrograph on the Perkins reflector of Ohio State and Ohio Wesleyan Universities to obtain exploratory spectra in the $1\text{-}\mu$ region. Representative spectra of late-type stars will be discussed.

These tubes were developed for the Carnegie Image Tube Committee with the assistance of a grant from the National Science Foundation.

Monochromatic Pictures of the Sun in the Mg II Line at 2802.7 Å. KERSTIN FREDGA (introduced by KENNETH L. HALLAM), *NASA/Goddard Space Flight Center*.—During 1965 two rockets have been launched in order to obtain monochromatic pictures of the sun in the singly ionized magnesium line at 2802.7 Å. NASA Aerobee 4:49 GS was launched at UT 14:48, 12 April 1965, and NASA Aerobee 4:145 GS was launched at UT 17:30, 2 December 1965.

The photographic system consists of a Cassegrain-Maksutov telescope, behind which is placed a Solc-type birefringent filter and an automatic camera, using 35-mm Eastman 103-0 film. The birefringent filter has a spectral bandpass (full width at half-intensity) of 4.0 and 3.5 Å, respectively, in the two flights. The instrument was flown with a biaxial solar pointing control permitting a resolution of 1.0 arc-minute in the picture.

The obtained Mg II filter heliograms are compared with simultaneous H α and CaK spectroheliograms. All plage regions in the Mg II pictures correspond very well to the plages in the CaK spectroheliograms. The coarse mottling network is visible in the Mg II pictures. An important observation from both flights concern the relative intensities of different active regions. In the H α pictures there are old fairly faint active regions and newly formed more intense regions. In the Mg II pictures, however, the older regions appear more intense than the younger regions.

The Distances of Some Faint B-Type Stars in Ara. J. A. GRAHAM (introduced by A. A. HOAG), *Kitt Peak National Observatory*.—The results of radial velocity measurements and five color photometry for nine distant B-type stars in Ara are discussed. The radial velocity results when combined with some already published indicate that the stars are spread over a considerable distance in the line of sight and that the ratio of total to selective absorption in this part of the sky is not as large as has been suggested by Johnson. The velocities of the interstellar K lines indicate that they are formed mainly by absorbing material within 2 kpc of the sun.

The Cluster Motion Program of the U. S. Naval Observatory. H. H. GUETTER AND A. R. UPGREN, *U. S. Naval Observatory*.—First epoch photographic plates are being taken of more than 100 open clusters over the next few years with the 61-in. astrometric reflector of the U. S. Naval Observatory. After second epoch plates have been obtained, all plates will be measured on the automatic measuring machine at Washington, D. C., for stellar proper motions. The limiting measurable magnitude is about 18. Three-color photometry as well as radial velocities of the brighter stars are obtained for some of the clusters in the interval between the first and second epoch plates.

For some of the clusters, an extended region surrounding the cluster nucleus has been covered by more than one field. In these cases the stellar motions may reveal the extent of coronae of faint stars