pendicular to radii from R CrA, as found by the author for NGC 2261 and R Mon (*Astrophys. J.* **139**, 759). The directions of some vectors distant from R CrA appear to be influenced by light from T CrA, which is also embedded in NGC 6729.

Measurements of NGC 2261 and R Mon, in February 1964, yielded a V magnitude for R Mon, as this star was isolated by a 12" diaphragm, of 13.1. The integrated magnitude of the nebulosity was 12.4. The colors of R Mon were $B-V = \pm 0.59 \pm 0.05$ and $U-B = -0.13 \pm 0.05$. The nebulosity immediately north of R Mon showed $B-V = +0.49 \pm 0.05$ and $U-B = -0.26 \pm 0.05$. The colors 48" north of R Mon were $B-V = +0.30 \pm 0.05$ and $U-B = -0.31 \pm 0.05$.

A 16-mm picture of NGC 2261 was fabricated from plates of the Lampland collection. A selection of 100 long exposures was made so that each plate showed a change in the shape of NGC 2261. A sequence with four time discontinuities was filmed, covering the period 25 March 1916 to 17 April 1944. The average time separation between successive views of the nebula was 3.4 months. A study of one sequence of density isophotes gave a minimum distance for NGC 2261 of 390 pc from excitation assumed to move at the light-velocity perpendicular to the line of sight.

Ultraviolet Spectrophotometer for Satellite Astronomy. KENNETH HALLAM AND JOHN MAGNUS, *Goddard Space Flight Center*.—An astronomical spectrophotometer is described which was designed for use on OSO-B, the second U. S. Orbiting Solar Observatory. The spectrophotometer is intended to analyze the ultraviolet emission from stars and nebulae. The entrance slit of the spectrophotometer defines the field at the primary focus of a 6-in. Gregorian reflecting telescope. The secondary serves as the collimator for a rotating 1200 lines/mm plane reflection grating. Diffracted light from the grating is collected by an off-axis paraboloid and focused through the exit slit of the photomultiplier. The signal from the photomultiplier is pulse-counted and fed into the magnetic tape storage of the spacecraft. The instrument utilizes the spin of the gyroscopically stabilized satellite to sweep the $1^\circ \times 0.4^\circ$ field over the celestial sphere. Slow precession of the spin axis allows eventual coverage of the whole sky. Ten adjacent wavelength bands of 180 Å width between 1500 Å and 3300 Å are defined by successive steps of the grating. An input flux of 4×10^{-9} erg/sec cm² Å or over results in a statistical error in the output of 2%, while a flux 8×10^{-11} erg/sec cm² Å may be determined within 10% mean error. This sensitivity will permit useful observations of stars 5 stellar magnitudes fainter than the brightest ones. Details of the optical

system and special requirements imposed upon it by characteristics of its special environment are reviewed.

Study of Anomalous Ultraviolet Extinction. R. H. HARDIE, A. M. HEISER, AND D. W. WEEDMAN, *Dyer Observatory*.—The anomalous behavior of the atmospheric extinction in the U band has been recognized by several observers as a factor limiting the accuracy of photometric transformations to the U, B, V system. The dependence of the extinction on the $B-V$ and $U-B$ color indices has been analyzed theoretically from existing spectral scans and also determined observationally. Agreement of the two independent methods is generally good, and suggests a useful, practical method of eliminating this source of error of long standing. Dependence on other parameters such as luminosity class and the over-all general extinction characteristics of the atmosphere have not been computed owing to the absence of sufficient scan data, but empirical observation of these effects is anticipated.

UBV Photometry of the RR Lyrae Variables YZ Boötis and DE Lacertae. ARNOLD M. HEISER AND ROBERT H. HARDIE, *Dyer Observatory*.—Over 200 photoelectric observations on the UBV system have been obtained for each of the two RR Lyrae stars, YZ Boötis and DE Lacertae. YZ Boötis has a period of about $2\frac{1}{2}$ hours and has a relatively repetitive light curve except for the descending branch, which appears to be subject to small changes from cycle to cycle. The position of this variable in the $(U-B), (B-V)$ diagram suggests that it is not reddened. DE Lacertae has a period of about 6 hours and appears to have a repetitive light curve. This variable seems to be reddened by a small amount. Revised ephemerides for the times of maximum brightness have been obtained for both of these stars.

Observations of the 20 July 1963 Partial Solar Eclipse at 4.6 cm. L. A. HIGGS AND N. W. BROTON, *National Research Council, Ottawa, Canada*.—Using a scanning procedure in which an 18' antenna beam circled the moon's periphery throughout the eclipse, observations of the solar brightness distribution at 4.6 cm were obtained at the Algonquin Radio Observatory. The experiment was hampered by equipment difficulties but several interesting features were observed. The brightness temperature of the central portion of the solar disk is found to be $22\,400^\circ \pm 15\%$. One discrete source of emission was clearly apparent on the records having a diameter of 1.25' and an excess brightness tem-