1472, 1964)—whether to have stars of the same age at different distances, or stars at the same distance of different ages—can best be explained in terms of the first alternative.

The Flux and Brightness Distribution of the Sun at 26.3 Mc/sec. W. M. CRONYN AND W. C. ERICKSON, *University of Maryland*.—Occasional flux measurements of the sun have been taken at 26.3 Mc/sec with the Clark Lake Radio telescope since 1960. Daily strip scans of the sun were taken with an *E-W* beamwidth of 14' and a *N-S* beamwidth of 92' during July and August of 1963 and during April, May, July, August, and September of 1964. The flux decreased from roughly 2000 flux units (equivalent disk temperature $T_D = 1.5 \times 10^6$ °K) for the 1960–1962 period to an average of 820 flux units for the 1964 observations ($T_D = 0.75 \times 10^6$ °K). The change of flux in the course of the 1964 observations was quite pronounced, with less than 600 flux units being recorded several times in July. (Low values of flux were also recorded during the second week of September but instrumental difficulties make these values uncertain.) Apparent half-widths of strip-scan distributions of the quiet sun varied between 40' and 60'.

The daily strip scans for various periods were combined to obtain average strip scans. Radial brightness distributions were then extracted for each of these periods by assuming circular symmetry. The average extracted central brightness for 1964 was about 2×10^5 °K, but this value may be roughly a factor-of-2 lower than the true central brightness temperature due to the elliptical, rather than circular, shape of the corona at solar minimum.

Theoretical brightness temperatures were calculated using van de Hulst's solar minimum and solar maximum electron density distributions (*Bull. Astron. Inst. Neth.* 11, 135, 1950) assuming a two million degree corona and an H:He ratio of 1.15. The calculated equivalent disk temperatures of 0.8×10^6 and 1.5×10^6 are in good agreement with the measured flux at solar minimum and (near) solar maximum, respectively.

This work has been sponsored by the National Science Foundation under grant NSF-GP-3393, and the computer time was supported in part through the facilities of the Computer Science Center of the University of Maryland.

The Spectrum of the Nonthermal Planetary Nebula NGC 3242. STANLEY CZYZAK, *Wright-Patterson Air Force Base*, JAMES KALER, *Univer-*

sity of Illinois, DONALD J. FAULKNER, *Mt. Stromlo Observatory and University of London*, AND L. H. ALLER, *University of California, Los Angeles*.—Recent radio-frequency measurements (Menon and Terzian 1965) have shown that NGC 3242 has a nonthermal component to its low-frequency radiation. The optical spectrum of the nebula, however, appears to be normal—resembling that of a similar high-excitation object NGC 7662 which has been rather intensively studied. We have undertaken a spectrophotometric study involving photoelectric and photographic methods to measure line intensities in the region $\lambda 3600$ to $\lambda 5007$. Determination of electron densities and temperatures by methods involving forbidden lines yields $T_e = 12\,000$ °K and $N_e = 6000$ electrons/cm³; the latter value is also substantiated by surface brightness measurements.

Variation in the Radio Emission of 3C273 and Other Quasi-Stellar Sources. W. A. DENT, *The University of Michigan*.—Evidence is presented for the first time for a variable radio emission of the quasi-stellar radio sources 3C273, 3C279, and 3C345. Until the recent announcement of a cyclic variation of 100 days period in CTA 102 at 940 Mc/sec by Sholometsky, no variations in the radio emission of extragalactic sources had been reported. During the 1000 days between July 1962 and April 1965 the measured flux density at 8000 Mc/sec of 3C273 increased 40% from 23.6 to 33.3 in units of 10^{-26} W m⁻² cps⁻¹. The radio variation of this double source is attributed to the quasi-stellar B component for which Smith and Hoffleit have reported optical variations.

Measurements of the quasi-stellar sources 3C279 and 3C345 suggest a net decrease of about 17 and 19%, respectively, in their 8000 Mc/sec radio emission over the past year. Like 3C273, the sources 3C279 and 3C345 have a composite spectra with the principal contribution at 8000 Mc/sec due to a flat spectral component. The quasi-stellar sources 3C147 and 3C286 which have steeper and noncomposite radio spectra do not show obvious or large rates of variation.

The short-time scale of the observed radio variations suggests that the linear size of the varying component of these sources is probably of the order of a few light years. Future angular diameter measurements of these varying components will test the assumption that these sources are at great cosmological distances.

Research sponsored by the Office of Naval Research under Contract Nonr-1224(16), Authority No. NR 370-390 and NR 373-000X.