Bursts of radiation are associated with some flares, either alone or in combination with SCNA. It is not possible from the data at hand to tell whether these are solar emission or are due to ionospheric effects.

Decreases in the cosmic noise level have also been noticed in association with night-time auroral activity.

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Gehrels, Thomas. Indiana expedition to South Africa, April-June, 1957.

At the Radcliffe Observatory: Photoelectric light-curves were observed with the 74-inch reflector for 3 Trojans, planet Nos. 624, 911, and 1437. All three Trojans showed light-variation of short period.

At the Boyden Observatory: Plates were taken with the ADH telescope, together with Mr. K. Roslund, in order to search for new satellites and for "Trojans" of Saturn. No new satellite was found within $1^{\circ}.5$ of Saturn and down to about 19.5 photographic magnitude. No "Trojan" was found in an area of 18 square degrees, about the preceding Lagrangian point of Saturn, and down to about 19.0 photographic magnitude.

At the Union Observatory: With the Franklin-Adams camera and with the Leiden 16-inch refractor about 13 dozen plates, half-hour exposures on the average, were taken for various purposes: (1) to find and identify the three Trojans for the photoelectric work at the Radcliffe Observatory (they are near the limit of what one can see with the 74-inch); (2) to extend the regular asteroid program of Indiana University to Southern declinations, especially for Trojans in the preceding Lagrangian point of Jupiter (the blinking and the reductions are done jointly with Mr. J. A. Bruwer of the Union Observatory); (3) to determine new photographic magnitudes for some 30 asteroids that could not be reached in the Yerkes Survey.

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Keenan, Philip C. Luminosity classification of long-period variable stars.

It is well known that the Mira variables of relatively short period ($<$ about 250 days) have, on the average, rather high luminosities ($\bar{M}_v \approx -2$ to -3 at normal maxima). Very little is known,

however, regarding the distribution of luminosities among the individual variables. For this reason a program of spectroscopic estimates of luminosities has been begun, using spectrograms having scales from 80 to 100 Å/mm, taken with either the X-spectrograph on the Mt. Wilson 60-inch reflector or the 2-prism spectrograph with $f/1$ camera on the Perkins 69-inch reflector.

The absorption spectra of long-period variables are peculiar in having most of their strongest lines much weaker than in ordinary M-stars of the same temperature types. It has been found possible, however, for variables of types M5e or earlier, to use four line-ratios to estimate what seem to be differences in luminosity. These "luminosity indices" will later require calibration in terms of absolute magnitudes or luminosity classes.

Preliminary classification of 28 variables indicates a considerable dispersion in their luminosities. Among the Mira variables which seem to have the highest luminosity are RT Cyg, T Aqr, and Z Oph.

In several respects Z Oph is remarkable among Mira variables. Since its period is 350 days, the spectral type would be expected to be about M6e at maximum light; instead, the TiO bands become so weak that the type usually falls in the range Ke to M2e near maximum. The weakening of the absorption lines of chromium, calcium and the upper levels of iron is extreme; $Ca\ 4227$ becomes weaker than in the spectrum of any other long-period variable observed on this program. On the other hand, low-level iron lines and the $SrII$ lines are relatively very strong and indicate high luminosity for Z Oph.

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King, Ivan. Tidal forces and the ejection of stars from clusters.

A simple theory of the rate of ejection of stars from a cluster in a tidal field can be worked out in parallelism to the corresponding theory for an isolated cluster. The theory has two parts. The first part calculates what fraction of the stars in a Maxwellian velocity distribution have more than