ing its formation, the calcium plage grew to at least 3000 millionths of the solar hemisphere and became 2.4 times as bright as the dark portions of the mottled background of the K_{232} spectroheliograms. Isophotometric studies of the calcium plage as photographed at the McMath-Hulbert Observatory provide quantitative data for comparison with spot, magnetic, radio flux, and coronal data most kindly made available by astronomers in all parts of the world. At least four flares were observed in the region before it traversed the west limb. No other active regions were observed on the solar disk between August 20 and 25.

To the best of our information, ionospheric disturbances did not accompany the observed flares. It is tempting to associate the recrudescence of geomagnetic activity in early September with the resurgence of observed solar activity in August, though the time relationships here indicated are far from those generally considered acceptable in such matters. The difficulties encountered in this study of a very simple case of solar activity give some indication of the problems that will be inherent in efforts to disentangle the complex solar data during the International Geophysical Year in 1957-58 when the sun will have advanced toward maximum in the eleven-year cycle of activity.

*McMath-Hulbert Observatory,
University of Michigan,
Ann Arbor, Mich.*

Dunn, Richard B. A multiple-image camera for chromosphere photometry.

A new camera has been constructed and is in operation at Sacramento Peak solely for the study of the $H\alpha$ chromosphere. This camera utilizes a 15-inch singlet lens of 956-inch equivalent focal length and a 3.4 Å $H\alpha$ birefringent filter. The optical system employs a series of beam splitters that enable four pictures of a single 12° region of the chromosphere to be taken simultaneously. These pictures differ from each other in occulting, intensity and wave length. The multiple-image feature enables an evaluation of the scattered light and the seeing, and permits a greater usable density range. A complete absolute standardization system is provided. Two types of 35 mm pictures are taken, one a survey completely around the limb and the other a movie at the rate of 16 frames per minute.

*Upper Air Research Observatory,
Sunspot N. Mex.*

Edmondson, Frank K. Radial velocities of 11th magnitude K stars at declination -45° .

Spectra of 147 K stars of 11th photographic magnitude in Selected Areas at $\delta = -45^\circ$ have been taken at the McDonald Observatory in 1952, 1954, and 1955. These spectra have been classified on the Morgan system, and radial velocity measurements are completed for most of them. This completes a program (Edmondson, 1944, 1947, 1948) which will give radial velocities of nearly 850 faint K stars. The northern stars have all been taken from the McCormick proper motion catalogs.

This declination -45° fills the gap of nearly 90° galactic longitude that is inaccessible to most northern hemisphere observatories. Preliminary analysis of the K giants within 10° of the galactic plane shows a normal solar motion, a zero K term, and a galactic rotation effect with amplitude 17.5 km/sec per kpc.

Edmondson, F. K. 1944, *A. J.* 51, 19.

——. 1947, *ibid.* 52, 122.

——. 1948, *ibid.* 54, 35.

*Indiana University,
Bloomington, Ind.*

Eichhorn, Heinrich K. Investigation of the field of the 26-inch McCormick telescope.

For the purpose of investigating motions of clusters in a non-differential way magnitude equation, coma or magnitude distortion, tilt of the plate towards the optical axis and optical distortion of the 26-inch telescope were investigated. The following terms were found significant and must be applied for refined investigations:

- Linear magnitude equation. This varies from exposure to exposure; in an extreme case is $6\mu/\text{mag}$.
- Quadratic term in magnitude. This is significant only in the x measures of some plates.
- Coma, or magnitude distortion. This amounts to about $5\mu/\text{mag}/100\text{ mm}$, lets the brighter stars appear shifted towards the center. It is possibly variable with atmospheric and instrumental conditions.

The corrections a) b) c) are obtained by comparison of main images with diffraction spectra on grating plates.

- Tilt, or the coordinates of true tangential point. This is determined from comparison with reference stars $56 \pm 11\text{ mm}$ (m.e.) to