meeting and will be sent to any interested person on receipt of a postcard request. Large telescopes should make it possible to follow this comet, 11th to 13th magnitude at brightest, for a period of at least six months in 1950, perhaps the whole year.

The writer asks that astronomers with large telescopes use them to sight Comet d'Arrest early in 1950 and to keep reporting its position, using those times of inferior seeing conditions when they cannot be used for their regular photometric and sky survey work.

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*Chamberlin Observatory,
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Roach, F. E. and Helen Pettit. The height of [O I] 5577 in the earth's upper atmosphere.

Simultaneous photometric observations of [O I] 5577 at two stations in the Mojave desert separated by 158 km indicate that there is a correlation between the integrated intensity of the radiation and the effective height of its concentration. As the effective height increases the integrated intensity decreases. The rate of change of intensity with height is steeper at the lower heights than at the greater heights suggesting the possibility of a negative exponential law. We have found that if such a relationship exists it is possible to explain the very large scatter in the heights deduced by zenith to horizon observations at a single station. The observations indicate that the emission originates in the 120 to 250 km region of the atmosphere, that the distribution corresponds to an effective "scale height" of 50 to 100 km, and that at 150 km the number of quanta per cm² second is of the order of 10. These numerical data are not applicable to cases of polar aurora and, until further observations are available, it is not known how generally applicable they are either temporally or geographically.

Pasadena, Calif.

Roberts, Walter Orr, Virginia K. Brenton, Martha B. Shapley, and Zdeněk Kopal. New observations of solar spicules.

We have analyzed three coronagraph films taken to show the small hydrogen prominences we have called spicules. The films were made with a 4 Å pass birefringent filter at Climax, Colorado. Two were taken in December 1943; one in February 1946. The frequency distribution of lifetimes shows that the spicules have

very short mean lifetimes of the order of two minutes for all the films. Mean ascent velocities for the spicules on the 1946 film substantially exceed those for the two 1943 films which have mean velocities which are close together. Strong observational selection, however, affects all measures of velocity. Moreover, we cannot be sure that the velocities typical of the larger spicules represent the velocities of the far more frequent smaller spicules which it is difficult to measure. However, the results suggest a time-variation of the mean ascent velocity; this variation may be in phase with general solar activity variations.

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and Department of Electrical Engineering,
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Cambridge, Mass.*

Roques, Paul. The present phase of the solar cycle.

Solar activity during 1949 was quite characteristic of sunspot maximum. Zürich observations have placed the maximum at 1947.5, while American observations place sunspot maximum at 1948.8. This discrepancy, which became evident after March, 1946, is probably due to the increasing factor between Zürich sunspot counts and American sunspot counts.

*Mount Wilson and Palomar Observatories,
Pasadena, Calif.*

Stebbins, Joel, Gerald E. Kron, and J. Lynn Smith. Six-color photometry at the Lick Observatory.

The Crossley reflector has been adapted to the Newtonian form, and a photoelectric photometer with interchangeable receivers has been installed. Improved circuits and a Brown recorder have been substituted for the previous arrangement with a galvanometer. Six-color measures in the range from 3530 to 10,300 Å have been completed for 125 stars additional to the 238 stars previously published by Stebbins and Whitford.

For determination of the scale of stellar temperatures the stars have been compared with a standard lamp run at a color temperature of about 2500° absolute as calibrated by the U. S. Bureau of Standards. This lamp with a small hole in front of the tungsten ribbon filament serves as an artificial star which, operated by portable batteries, has been carried in a jeep to different peaks of Mount Hamilton at distances of 1100 and 3200 feet from the telescope. At the shorter distance this star appears of about zero