above the value predicted from the mass-luminosity relation for main sequence stars.

The question of the distribution of light over the surface of the large, greatly distorted A star is of particular interest, but cannot be answered adequately with the present observations.

1. *Pub. A. S. P.* **60**, 248, 1948.
2. *A. J.* **55**, 78, 1950.
3. Cf. Keenan and Morgan in *Astrophysics*, edited by J. A. Hynek, 1951.

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Recht, Albert W. Comet d'Arrest, 1943-50.

Short-period Comet d'Arrest has now been observed at ten appearances since its discovery in 1851. It has become of interest because of its constantly delayed returns, and this paper is a report of progress in following its motion during the last two returns, along with a prediction of the circumstances of its next return in 1957.

By using the best fit to normal places of 1910 and 1923-4 the 1943 return of d'Arrest was predicted with an error in T of -1.2 days, after two unobserved returns in 1930 and 1937. There were 33 observations in 1943-4, 30 by Van Biesbroeck at McDonald and Yerkes Observatories, 2 by Giclas at the Lowell Observatory, and one by Herbig at the Lick Observatory. The same elements with a correction of -1.2 days in T were carried forward to predict the 1950 return with an error of 0.2 day in T . There were 35 observations in the 1950-1 return, 30 again by Van Biesbroeck at McDonald and Yerkes, 2 by Jeffers at Lick, and 3 by Johnson at the Union Observatory at Johannesburg.

The observations for both appearances have been reduced and show a good modern precision. They are being used to form four normal places in 1943-4 and ten normal places in 1950-1. The period of observation in 1950-1 was the longest yet; rediscovered in April by Van Biesbroeck the comet was followed for ten months with the help of the powerful 82-inch McDonald reflector. It would be a fine thing if more large reflectors could be used to obtain observations to help explain the peculiar motion of this faint comet and to check the agreement of its actions with the Whipple theory for delayed and accelerated returns of comets.

We extend our thanks to George Van Biesbroeck of the Yerkes Observatory for these new series of observations which make continued study of d'Arrest possible, and to Arthur W. Beck of Denver, formerly assistant at Steward

and Chamberlin Observatories, for his work in their reduction.

The reductions to normal places and the prediction for the 1957 return of Comet d'Arrest will be published later in the *Astronomical Journal*. Indications are that the return to perihelion in January, 1957, will not be favorable for observation. At similar returns to the sun in 1864, 1884, 1903, 1917, and 1937, Comet d'Arrest was not observed at all. Now, of course, there are larger telescopes which may make observations possible even though the comet will be close to the sun in the sky during the 1956-7 return.

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Rense, Wm. A. and Barbara Todd. Problems in solar ultraviolet spectroscopy.

The solar continuum down to about 1900Å and the Lyman- α line have been successfully studied with rocket spectrographs in connection with programs sponsored by the Naval Research Laboratory and by the Cambridge Research and Development Center. Both normal-incidence and grazing-incidence spectrographs have been used. Several methods have been employed for illuminating the slit with solar radiation during the flight.

The solar spectrum should be extended in the 1900Å-1300Å range in the near future. A few of the other members of the Lyman series and even some helium lines are also likely prospects for future programs. The detection of both soft and hard X-rays by photon-counters has widened the possibilities for the explanation of the formation of the E and D layers in the atmosphere. Optical explorations of these latter radiations is difficult but may be accomplished soon.

New evaluations of the solar constant will soon be made both by direct measurement from rockets and by appropriate correction of the older values with the aid of information about infrared and ultraviolet solar radiations obtained to date from rocket instruments.

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Roberts, W. O., R. Grenchik* and D. E. Billings. Origin of white-light coronal streamers.

Two hypotheses were advanced for the explanation of the shape of individual rays or streamers of the electron corona seen in white light during eclipse, and sometimes found extending to