
Two-dimensional cylindrical hydrodynamic models of neutral and collisionally ionized stellar wind-cloudlet interactions are calculated as possible models for H-II objects. For cool, neutral winds the cloudlet shape is distorted and displaced in the direction of the wind. For hot winds interacting with spherical mass concentrations, a bow shock is formed; but the highest temperatures and largest ionization fraction occurs on the lee side of the cloudlet. Winds interacting with a globule imbedded near the surface of an elongated cloudlet produce the largest ionization at the cloud face nearest the symmetry axis and along the cloud surface facing the wind. Irregularities in the cloudlet surface facing the wind obscure "hot spots" having temperatures approximately $10^7$ deg. K. These may be the source of observed ultraviolet fluxes. One model of an annular stellar wind incident upon a toroidal obstacle (an adjacent, dense molecular cloud) is calculated. Density enhancement due to the wind converging as it flows through the torus nozzle (focusing) does not occur, but a vortex forms in the flow field well below the torus opening. The vortex produces density and temperature enhancements that could be alternative models for the H-II objects.

MONDAY AFTERNOON
Open Meeting of the Committee on the Status of Women
1245–1330 (UMC 235)

George Ellery Hale Prize Lecture
"Enjoyment in an Astronomical Occupation"
John W. Evans (Sacramento Peak Observatory)
1330–1430 (Main Ballroom)

ENJOYMENT IN AN ASTRONOMICAL OCCUPATION,
by John W. Evans, Sacramento Peak Observatory

I assume that the Hale Lecture should have at least a nodding acquaintance with the contributions for which the prize is given. Accordingly, I will talk briefly about my beginnings in several research areas and instrument developments, and more at length about their expansion and evolution, mostly by other workers. Some of them have gone far beyond anything I anticipated, and all too often beyond my full understanding. They have revealed the most surprising things about the Sun and enhanced its significance as a star. This is a welcome tendency in the eyes of those of us who have watched with appreciation the drift of solar astronomy away from Hale's original concept that the Sun is interesting primarily because it is a convenient representative of the universe of stars.

I shall also have something to say about the problems of building the Sacramento Peak Observatory in the isolation of a New Mexico mountain top.

Session 9: QSO's and Radio Surveys 1430–1630 (Main Ballroom)

09.01 Another Close Quasar Pair, D. W. Weedman, Penn State U. A pair of quasars separated by 1'2 has been found with an emission line at the same wavelength in each. This separation is close to the 6" separation for the original lensed quasar 0957+561AB. The spectra were noted on a survey plate obtained with the grating ruled corrector lens on the Canada-France-Hawaii Telescope and were confirmed with a grating/prism plate from the KPNO 4-m. The emission feature in each spectrum has $\lambda = 3930$ Å and is probably not Na or CI IV 1350 because other features should then be visible that are not seen. Both components of the pair are faint, having estimated 4500 Å continuum magnitudes of 20 and 21. The NE component (1950: $23^h 45^m 47.0^s$, $20^0 40' 40"$) is brighter by at least a magnitude on both discovery plates, but the images are comparable (<20) on the blue Sky Survey print. This implication of variability indicates the object may be a good candidate for checking a gravitational lens hypothesis.

This CFHT survey found 93 emission-line quasars, 70 of which were on only 4 plates. At least 500 more quasars discovered with similar spectroscopic survey techniques are already in the literature. Such techniques are ideal for searching for close pairs with similar spectra, but only one other possibly lensed pair has been found previously in this way.

I thank the NSF for research support and the CFHT Corp. for observing time as a visiting astronomer.

09.02 The Association of QSOs with Groups of Galaxies, H. R. French, Univ. of Okla., and J. E. Ginn, Princeton Univ. Obs. - From deep TI-A J plates obtained with the Palomar 48-inch Schmidt telescope, we have determined the density of galaxies near each of 25 low redshift QSOs ($z < 0.35$). This density was compared to the background galaxy density which we determined in the same manner for each plate. The density of galaxies near the QSO was consistently higher than the background; the Kolmogorov-Smirnov (rank ordering) test rejects the hypothesis that the two distributions are identical at the 99% confidence level. This cannot result from nonuniformities in the plates or in the counting procedure: the background was determined at two places on each plate and these were in excellent agreement statistically. Because it was not known which was the QSO field at the time of counting, the results cannot have been subconsciously biased to this result. We conclude therefore that QSOs tend to be located in groups or clusters of galaxies rather than as isolated objects in space. It should be noted that this study does not address the question of the nature of QSO redshifts, nor is it affected by it.

09.03 Gravitational Lenses and the Apparent Association of QSOs and Bright Galaxies, W.C. Keel, Lick Obs., Red. of Studies on Astron. and Astrophys., U. Calif., Santa Cruz. - The distribution of projected separations between QSOs and bright galaxies is derived, taking into