U. S. Naval Ordnance Laboratory, Corona, California.—A four-member team observed the eclipse from a site adjacent to that occupied by the Lockheed party in Alaska located on the Richardson Highway about midway between Gulkana Junction and Paxson. Direct color photography included exposure of a 16-mm film following a time-lapse program and a series of 35-mm exposures of the corona. The 16-mm film (Kodachrome II, ASA 25) was exposed using an Arriflex reflex camera with an Angenieux $f2.2$ zoom lens of 10 to 1 ratio (12 to 120-mm focal length), set at 120 mm with three neutral-density filters: namely ND 4.0, ND 1.0, and ND 0.6, combined for exposures of $\frac{1}{2}$ sec exposure time, 1 per sec frame rate, aperture ratio $f22$, changed to $f16$ with use of only ND 0.6 filter during totality. The total phase was also photographed with a Nikon-F sequential camera equipped with a 62-in. focal length, 4-in. telescope. Exposures were programmed at 1 frame per $2\frac{1}{2}$ sec-interval, exposure time 1/125 sec at $f15$. This program emphasized the inner structure of the corona. Both cameras were bore sighted and mounted together in an equatorial mounting driven by a synchronous motor. The flash spectrum at second contact was photographed on hypersensitized M-type film, using a slit spectrograph featuring a stigmatically mounted 2-m radius grating of 600 grooves per mm, giving a dispersion of a little over 15 Å/mm in the first order. Observed features of the spectrum appeared between 8500 and 9500 Å and included the multiplet of *Ca* II, described as $3d\ ^2D-4p\ ^2P^0$, and five members of the Paschen series comprising the fifth through the ninth.

Proper Motion of 3C273. William H. Jefferys, *Yale University Observatory.*—The absolute proper motion of the radio source 3C273 has been determined from measurements on 14 plates covering the period 1887–1963. Two kinds of material were used to establish the proper motion system of the FK3. Eighty-two positions of 14 reference stars were obtained and corrections were applied to reduce them to the fundamental system; and statistical proper motions for 48 reference stars were calculated with the aid of material compiled by Vyssotsky and Williams (*Publ. McCormick Obs.* **10**, 1948).

The material was formed into one set of normal equations and the solution of this system of equations effected by means of principles developed by Eichhorn (*Astron. Nachr.* **285**, 233, 1960) and Jefferys (*Astron. J.* **68**, 111, 1963).

Since the FK3 uses Newcomb's constants of precession, the resulting FK3 proper motion must be corrected for the errors in Newcomb's constants. When this has been done, the absolute proper motion of the object, with its mean error, becomes

$$\mu_\alpha = +0\overset{''}{.}0009 \pm 0\overset{''}{.}0025/\text{yr},$$
$$\mu_\delta = -0\overset{''}{.}0012 \pm 0\overset{''}{.}0025/\text{yr}.$$

Therefore, the absolute proper motion of the object is zero within this rather small mean error, which constitutes strong evidence that the object is extragalactic.

Laboratory Demonstration of Martian Phenomena. S. Karrer and C. C. Kiess, *Georgetown College Observatory.*—Some well-known properties of the nitrogen oxides complex are demonstrated with glass tubes and flasks containing the gases, which can be reduced in temperature with various refrigerants. The significance of these experiments for the Martian atmosphere is discussed. The demonstrations show:

(1) Optical paths through nitrogen dioxide, NO_2, equivalent to that estimated for the planet's atmosphere from its albedo, or to that deduced from the vapor pressure of the tetroxide, N_2O_4, at the polar cap, and from the assumed extent of the convective region of the atmosphere.

(2) Color changes due to variations of temperature and pressure; also the white, bluish, and yellowish colors exhibited by the solid N_2O_4;

(3) Mists of N_2O_4 particles to simulate Martian conditions;

(4) Photo-dissociation of NO_2 and the slowness of recombination;

(5) Influence of the "Martian atmosphere" on surface-colorations when viewed through a screen of NO_2.

Last Geometric Theorem of Poincaré. M. Z. v. Krzywoblocki (introduced by James Stokley), *Michigan State University.*—In 1912, Poincaré enunciated his well-known last geometric theorem, which is of a great importance, in particular for the restricted problem of three bodies. Having only succeeded in treating a variety of special cases, he gave out the theorem for the consideration of other mathematicians. In 1913, G. D. Birkhoff furnished the proof in the simplest two-dimensional case. In subsequent years Birkhoff attempted to modify and to generalize this theorem. But this generalization did not refer to a ring as in the original Poincaré theorem but to a single closed curve in a two-dimensional space or to a single surface or hypersurface in a three- and multidimensional space. In the present work the author generalizes the original Poincaré theorem to n dimensions using a completely different approach. The approach may be