(*Mitt. Univ. Stw. Wien* 7, 67, 1954) was selected. Additional unpublished observations from the Naval Observatory program were kindly provided by Dr. Charles Worley. The residuals showed apparent periodicities of 5.5 yr in right ascension and 10.7 yr in declination, with amplitudes of about 0″.020. Two Keplerian perturbations of moderate eccentricity and high inclination will adequately represent the observed deviations, but the possibility of systematic error somewhat larger than previously expected in observations of this type cannot be ruled out at this point. Additional observations with several instruments over the next decade are strongly desirable.

The Allegheny material, consisting of 87 plates spanning the interval 1933–65 with good uniformity, was reduced to a common system with parallax series from McCormick, Yerkes, and Cambridge instruments and with a visual series by Lamp at Kiel. The resulting fractional mass (ratio of the mass of the fainter component to the mass of the system) is 0.498±.012. The value from the photographic material alone is 0.51±.02. The relative parallax from measurements of both components in both coordinates on the Allegheny plates is +0″.273±″.004.

Measurements of the Allegheny parallax series was done with the aid of a grant from the National Science Foundation.

Photometry of NGC 6822. Susan E. Kayser, *Lawrence Radiation Laboratory.*—NGC 6822 is a member of the Local Group, type Irr I, at $\alpha=19^h\ 42^m.1$, $\delta=-14°\ 53'.1$ (1950). Photometry from photographic plates, calibrated by a photoelectric sequence, yields a color–magnitude diagram complete to $V=19.5$ mag ($M_v=-5$ mag). Major features are bright blue supergiants, the brightest star having $M_v=-9$ mag, and a well-populated sequence of extremely red supergiants, only slightly fainter than the blue stars. A large number of these red supergiants are variable.

Thirteen Cepheid variables have been found, for which the period–luminosity relations are $\langle V\rangle=23.35-2.97$ mag log P and $\langle B\rangle=23.80-2.61$ mag log P. These lead to a true distance modulus $(m-M)=23.75\pm0.15$ mag. (The foreground extinction is $A_v=0.8$ mag.) Period–color and period–amplitude relations are similar to those in our own Galaxy and in the Small Magellanic Cloud.

The Detection of the Thermal Radio Emission from Uranus and Neptune at 1.9 cm. K. I. Kellermann and I. I. K. Pauliny-Toth, *National Radio Astronomy Observatory.*—The thermal radio emission from Uranus and Neptune has been measured with the NRAO 140-foot radio telescope at a wavelength of 1.9 cm. The measurements were made by positioning the antenna in such a way that the planet was alternately in the main beam or in a reference beam 6′ away. In each position the difference between the two beams was integrated for 30-sec periods.

The antenna gain was calibrated from observations of Venus, Jupiter, and Saturn which were taken to have temperatures of 500°, 180°, and 200°K, respectively. The measured blackbody disk temperatures for Uranus and Neptune were 220°±35° and 180°±40°K, respectively. In both cases the major error is due to a 15% uncertainty in the calibration. The error due to receiver noise fluctuations was less than ten percent for each planet.

The 1.9-cm value for the temperature of Uranus reported here is somewhat greater than a previous measurement at 11.3 cm made at CSIRO which gave a temperature of 130°±40°K, and is more than twice the temperature expected of a blackbody in thermal equilibrium. There have been no previous measurements of the temperature of Neptune reported either at radio or at infrared wavelengths. The 1.9-cm temperature is again considerably greater than the expected equilibrium value of about 40°K. These high effective temperatures, observed at radio frequencies, suggest either the presence of a greenhouse effect in the atmospheres of Uranus and Neptune or a strong source of internal heating.

An attempt has also been made to detect the thermal emission from the planet Pluto, and an upper limit of 500°K can be placed on its temperature if it is assumed that its radius is equal to that of the earth.

Preliminary Investigation of the Driving Mechanism for Cepheid Pulsation. David S. King, *The University of New Mexico.*—Theoretical calculations indicate that the driving of pulsations in Cepheids and RR Lyrae type stars can be attributed to the properties of an ionizing gas. This driving has been described both in terms of a κ mechanism by Baker and Kippenhahn (*Z. Astrophys.* **54**, 114, 1962) and in terms of a γ mechanism by J. Cox *et al.* (*Astrophys. J.* **144**, 1038, 1966). In real stars one would expect both mechanisms to be operating simultaneously. The relative importance of these two mechanisms may depend on the position of the star in the H-R diagram, and therefore it is useful to retain the concept of two mechanisms.

Numerical methods of calculation as described by A. Cox, Brownlee, and Eilers (*Astrophys. J.* **144**, 1024, 1966) have been used to obtain envelope models of stars in the Cepheid region of the H-R diagram. One of these models (model number PM 50.1), which exhibited instability to radial pulsations, was chosen for a more detailed investigation of the driving mech-