3C273 and 3C345 at a frequency of 448 MHz ($67\text{ cm } \lambda$) with a baseline of 3074 km ($4.6 \times 10^6 \lambda$). These observations indicate that the diameter of these sources is less than 0.02 sec of arc at this frequency.

Observations at this frequency have also been made at a baseline of 183 km ($2.7 \times 10^5 \lambda$) and fringes have been observed from about a dozen sources.

Rotational Velocities of Southern B Stars.

WILLIAM BUSCOMBE, *Mount Stromlo Observatory*.—Direct-intensity tracings from coude spectrograms have been analyzed for about 60 B stars in the region from 3800 to 4900 Å. The original dispersion on the plates is $150\text{ } \mu/\text{Å}$ enlarged to $9\text{ mm}/\text{Å}$ for the profiles.

For each spectral class a group of from three to eight intrinsically sharp absorption lines has been selected, and rotational velocities determined from the width at half-intensity. In addition, equivalent widths have been measured for all the distinct lines.

From the observed profiles it is apparent that several sharp-lined stars near the main sequence have been incorrectly assigned to higher luminosity and temperature classes, on the basis of earlier surveys with spectrograms of lower dispersion.

Stellar Accretion and X-Ray Sources.

A. G. W. CAMERON, *Belfer Graduate School of Science*.—The process of rapid mass accretion onto compact stars has been studied, following Shklovsky's suggestion that such accretion onto a neutron star can be responsible for the features of the Scorpius x-ray source. It is found that in this case, most of the energy is emitted after the infall is halted, and the released gravitational potential energy is about evenly divided between thin-source bremsstrahlung at $\sim 10^{10}\text{ K}$ and thermal x-radiation at 10^7 K . This does not fit the Scorpius source. On the other hand, rapid mass accretion (from a binary companion) onto a white dwarf gives thin-source bremsstrahlung at $\lesssim 10^8\text{ K}$ and a stronger thermal source at $\sim 3 \times 10^5\text{ K}$. Absorption and reradiation by the companion also contribute to visible light. This fits many features of the Scorpius source, including the enhancement of the very soft x radiation.

Photoelectric Photometry of UV Piscium.

ROGER B. CARR, *University of Florida*.—Light curves in the three (U, B, V) colors have been obtained for the eclipsing binary UV Piscium with a 16-in. telescope at the Kitt Peak National Observatory. The 437 individual observations in each color were com-

bined into 68 normal points. The truncated Fourier series representing the normal points outside the eclipses have the coefficients

	A0	A1	A2	B1	B2
V	0.9705	-0.0009	-0.0027	0.0185	-0.0017
	± 0.0007	± 0.0010	± 0.0011	± 0.0008	± 0.0008
B	0.9726	0.0026	-0.0024	0.0199	-0.0020
	± 0.0006	± 0.0009	± 0.0010	± 0.0007	± 0.0007
U	0.9593	0.0126	-0.0077	0.0204	-0.0047
	± 0.0010	± 0.0015	± 0.0017	± 0.0011	± 0.0011

The light curves were rectified with the equations of Russell and Merrill (*Contrib. Princeton Univ. Obs.* No. 26, 1952). An asymmetry represented by the sine term dominates the rectification. No explanation is offered for the failure of the sign of A1 to agree with theory in B and U . A nomographic solution is discussed.

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Variations in the Photometric Properties of RR Lyrae and VZ Cancr with Beat Phase.

C. P. CATALANO AND J. S. NEFF. —The photometric properties of RR Lyrae are compared at two different beat phases. The variations in the photometric properties of VZ Cnc over the entire beat period are discussed.

The values of T_e and $\log g$ at minimum light are derived by comparison with model atmospheres. This method gives values in good agreement with values obtained from scanner observations for RR Lyr and SU Dra, but for VZ Cnc we obtain $T_e = 6900\text{ }^\circ\text{K} \pm 200$ and $\log g = 4.2 \pm 0.5$ to be compared with $T_e = 6200\text{ }^\circ\text{K}$ and $\log g = 2.2$ found by I. J. Danziger and J. B. Oke (*Astrophys. J.* **147**, 151, 1967). Both sets of values have been checked and the reason for the discrepancy has not been discovered.

Critical Considerations on the Theories of Formation of Carbon Cosmic Grains.

FELIX CERNUSCHI AND SAYD CODINA, *Universidad de la Republica, Montevideo, Uruguay*.—Hoyle and Wickramasinghe (*Monthly Notices Roy. Astron. Soc.* **124**, 417, 1962) have proposed a cyclic mechanism for the formation of graphite grains, in the photosphere of class N stars. A more refined calculation on the conditions prevailing in the outer layers of carbon giant stars, by Tsuji (*Ann. Tokyo Obs.* 2nd Ser. **9**, No. 1, 1964), gives a somewhat lower range of temperatures for graphite condensation than that estimated by Hoyle and Wickramasinghe. However, the theory of grain formation in the photospheric envelope of carbon stars is generally accepted as a very plausible one.