Three flares have been observed where *direct measurement* of Doppler-shifted features confirm the high velocities inferred from subsequent filament activations. At 2039 UT, June 25, 1960 an importance-2 flare initiated a disturbance which activated and reactivated five separate filaments. Direct measurement resulted in assignment of a minimum velocity of 2500 km/sec to a broad cloudlike feature. The eight flare-initiated disturbances detected to date have transverse velocity components ranging from 550 to 2500 km/sec, suggesting a close relation to flare associated disturbances thought to result in type-II bursts and geomagnetic storms.

The Linear Dimensions of HII Regions. GUIDO MÜNCH, *California Institute of Technology*.—The ionization equilibrium of interstellar hydrogen near hot stars has been studied and has taken into consideration the finite probability for recombination in the ground state. Simultaneous solutions of the transfer equation for radiation beyond the head of the Lyman series and Saha's relation have been found, paying attention to the spherical geometry. For a value $\lambda=0.4$ for the probability of scattering of an UV quantum, it is found that the radius of the sphere of ionized hydrogen increases by a factor of 1.6 with respect to that obtained neglecting the diffuse radiation field (Stromgren's radius). These results are in disagreement with those derived by Pottash and Jefferies (1959, *Ann. d'Astrophys.* 22, 297) owing to an erroneous boundary condition adopted by these authors. In considering the case of a thin spherical shell around the hot star, Pottash and Jefferies impose as boundary condition at the inner boundary the vanishing of the diffuse radiation field. The correct boundary condition is the vanishing of the flux of diffuse radiation throughout the inner volume enclosed by the shell (Milne's "planetary nebula" condition). The numerical integrations and procedures followed by Pottash and Jefferies for the spherical case have not been published in sufficient detail to be compared with our results. It is suspected that their work for this case is also vitiated by the use of a boundary condition with no physical meaning.

Period and Amplitude Variations in β Cephei Stars. G. J. ODGERS, *Dominion Astrophysical Observatory*.—Extensive series of observations of several β Cephei stars have been made and it appears that secular changes of amplitude—generally increasing—and period occur. By making use of the general relationship "period proportional to the inverse of the root of the mean density" an analysis of these effects in terms of long-term changes in the dimensions of these stars can be made. Detailed examination is made of the star BW Vulpeculae, for which observations extending over 35 years exist, and which

shows a marked increase of period together with a large amplitude, which in turn increases, and with an increasing rate.

Tektites and the Cyrillid Shower. JOHN A. O'KEEFE, *Theoretical Division, Goddard Space Flight Center, National Aeronautics and Space Administration, Washington, D. C.*—The name Cyrillids is proposed for the great meteor procession of St. Cyril's day, February 9, 1913, following the precedent by which the Perseids are sometimes called after St. Lawrence's day. [Porter, J. G., 1952, *Comets and Meteor Streams* (Chapman and Hall, London), p. 66.]

The Cyrillids are considered by most students (La Paz, L., 1956, *Meteorites* 1, 402) to have been in orbit around the earth. They entered the atmosphere at exceptionally low speeds along a trajectory nearly parallel to the horizon. Öpik's [1958, *Physics of Meteor Flight in the Atmosphere* (Interscience Publishers, New York)] theory of meteor ablation applied to this case indicates that the droplets should have had diameters of the order of a centimeter instead of the submillimeter droplets associated with some iron meteorite falls. Hanus and Hardcastle have proposed that this is the manner of formation of the tektites, on the basis of their shapes.

The detailed theory predicts a temperature of 2100°, in agreement with the lack of water. It predicts a time of heating of the order of 10 minutes, in agreement with the evidence from magnetic measurements, which give a lower limit and from the presence of streaks of amorphous SiO_2 (lechatelierite) which set an upper limit. The time is confirmed by the apparent conversion of the oxide to FeO . The theory is consistent with the theories of G. Baker (1959, *Mem. Natl. Museum Victoria*, No. 23) on the location of australite flanges and their apparent mode of formation from thin liquid layers.

Intercomparison of Space Velocities and Dispersions of Mira Variables with Those of Other Stars. V. OSVALDS, *Leander McCormick Observatory, University of Virginia*.—After Wilson and Merrill (1942, *Astrophys. J.* 95, 248) the space velocities of Mira variables had been studied by P. G. Kulikovskiy [1948, *Var. Star Bull.* (Russia) 6, 225], J. Ikaunieks (1950, *Fiz. un Mat. Inst. Raksti, Riga II*, 101), and U. S. Safronov [1955, *Var. Star Bull.* (Russia) 10, 236].

The numerical values for velocities and dispersions derived by us agree satisfactorily with those by the others with exception of the $\bar{a}$ component for variables with $P > 300$ days. In our solution it is about 30 km/sec larger. The exceptionally high absolute magnitude and the large space velocity of the second subgroup, $150 < P < 200$ days remain as in