Rotationally Forced Ejection in Stellar Evolution. D. NELSON LIMBER, *The University of Chicago*.—The problem considered is that of the hydrodynamics of circumstellar envelopes formed through rotationally forced ejection. Under reasonable simplifying assumptions, the velocity and density fields in and near the equatorial plane have been derived for steady-state solutions corresponding to rotationally forced ejection at a constant rate. This problem has the general character of the solar wind problem but differs from the latter in the following four essential respects: (1) the force field is augmented by centrifugal forces, (2) the geometry departs from spherical symmetry, (3) turbulence is expected to play an important role, and (4) the envelope is required, by assumption, to move matter outward at a rate set by the evolution of the body of the star. It has been shown that physically consistent steady-state solutions appear to be possible under rather general conditions, and these solutions will be used to test further the hypothesis of rotationally forced ejection as an explanation of the Wolf-Rayet phenomenon and of possible related phenomena (cf. *Astrophys. J.* 139, 1251; 140, 386). However, it has also been shown that stars with velocities of escape that are too large (e.g., certain subdwarfs and all white dwarfs) cannot maintain circumstellar envelopes at the temperatures required for steady-state conditions to carry off mass at any appreciable rate. It appears that any such star that is subject to rotationally forced ejection would ultimately react by explosively ejecting matter. The observational data pertaining to novae and to related objects have been examined with a view to their possible interpretation in such terms. The hypothesis appears to be quite attractive in a number of respects, ranging from the position of the explosive variables in the H-R diagram to their frequent occurrence in close binaries and to the frequent appearance of axial symmetry in the ejection process.

Explorer XX Measurements of Galactic Spectral Flux Density. DONALD S. LUND, *National Bureau of Standards, Boulder*.—Explorer XX measures galactic spectral flux density at six frequencies between 1.5 and 7.2 Mc/sec. This experiment is capable of (a) providing synoptic measurements (in contrast to rocket flights) [Alexander, J. K., and Stone, R. G. (to be published); Huguenin, G. R., Lilley, A. E., McDonough, W. H., and Papagiannis, M. D., *Harvard College Obs. Rept.* HSRP-107, 1963; Walsh, D., Haddock, F. T., and Schulte, H. F., *COSPAR, 6th Plenary Meeting, Warsaw 1963*]. (b) providing measurements above most of the ionosphere [in contrast to ground-based measurements (Ellis, G. R. A., *Nature* 204, 171, 1964)], and

(c) providing calibrated measures [in contrast to Alouette I (Hartz, T. R., *Ann. Astrophys.* 27, 823, 1964)]. Typical values found for a hemisphere centered near the galactic north pole are:

Frequency	Spectral flux density
1.5 Mc/sec	Less than 3×10^{-20} W m ⁻² cps ⁻¹
2.0	4×10^{-20}
2.8	3×10^{-20}
3.7	1.4×10^{-19}
5.5	2.2×10^{-19}
7.2	2.1×10^{-19}

Variability of flux density by factors of 3 or 4 are often observed. This variability seems to stem from a number of factors, of which the following have been considered: (a) Man-made interference, (b) naturally occurring interference (such as sferics), (c) temperature effects in receivers, and (d) detuning of antennas by local plasma.

Determining the Circulation of a Planetary Atmosphere from the Motion of Identifiable Features. NORMAN J. MACDONALD AND FRED WARD, *Air Force Cambridge Research Laboratories, L. G. Hanscom Field*.—It is interesting to speculate how an extraterrestrial observer might measure the motions of the earth's atmosphere and the conclusions he might reach concerning the nature of that circulation. The observer might choose to measure the daily proper motions of some easily identifiable feature such as regions where the albedo is relatively high or low. In the terrestrial atmosphere, such spots are associated with concentrations of vorticity that can be easily discriminated and tracked each day. There is an exchange of material between these features and the surrounding environment. The vorticity concentrations are also interacting with the general circulation. Nevertheless, by measuring the motions of these earth spots the observer could correctly deduce the basic nature of the terrestrial circulation including the role the eddy structures play in maintaining the earth's angular velocity gradient. The implication of these results to the study of the circulation in the solar atmosphere is discussed.

On the Association of Solar Flares with Sunspots. PATRICK S. MCINTOSH, *Sacramento Peak Observatory*.—The first sunspot group photographed with the Sacramento Peak continuous white-light patrol (described in *Sky and Telescope* 27, 280) has been studied for the relationship between the sunspot evolution and flare activity. Near the time of the explosive importance 2+ flare of 20–21 September