is further characterized by a single relaxation time, \( \tau_c \). Using this picture we show how a change \( \Delta \Omega \) of one part in \( 10^6 \) in the angular velocity, \( \Omega \), of the crust can lead to a 1\% change \( \Delta \omega \) in \( \Omega \). We further show that the observable parameter

\[
Q = (\Delta \omega)^3 / \Omega \Delta \Omega
\]

(where \( \Omega \) is the second time derivative of \( \Omega \) after the quake) furnishes a measurement of whether the star is heavy (\( Q \leq 1 \)) or light (\( Q \geq 0 \)); calculations of \( Q \) in terms of the equation of state of neutron star matter will be discussed for the case of a "quadrupolar" quake.

**The Distribution of Nonthermal Radio Emission Regions in the Galaxy.** R. M. Price, Research Laboratory of Electronics, Massachusetts Institute of Technology, Cambridge, Mass.—From observations of the background brightness temperature at radio frequencies near 400 MHz and comparison with known discrete source distributions and characteristics, information about the structure of the nonthermal radio emission of the Galaxy has been obtained. On a large scale, the halo region does not exhibit a uniform or high-volume emissivity. An average-volume emissivity greater than 1\% of that of a characteristic region in the disk is inconsistent with the observed values of brightness temperature. Although there is some evidence for a \( \sin b \) distribution in the brightness temperature from the disk, it is clear that a large portion of the observed emission comes from nearby regions and irregularities in the disk. The distribution of regions of nonthermal emission within both the halo and disk is discussed.

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**On Multiple Absorption Redshifts in Quasar Spectra.** Martin J. Rees, Institute for Advanced Study, Princeton, N. J.—The multiple-absorption redshifts observed in PKS 0237 – 23, Ton 1530, and other objects may arise from gaseous filaments trapped within rapidly expanding remnants of radio clouds ejected from the quasar. Processes are discussed whereby cool filaments could condense during the late stages of the expansion of relativistic plasma clouds, and the parameters of the filaments are estimated. The region responsible for a single set of absorption lines would be comparable in size to the central source of continuum emission, and may be \( \sim 10^4 \) times smaller than the whole cloud. The absorption lines can therefore be narrow (corresponding to differential velocities \( \lesssim 100 \) \( \text{km sec}^{-1} \)) even though the cloud may have been ejected with speed \( \sim c \) and may also have relativistic internal velocities.

The author is on leave from Institute of Theoretical Astronomy, Madingley Road, Cambridge, England.

**OSO-VI: Surges, Flares, and the Development of Active Regions.** E. M. Reeves, A. K. Dupree, L. Goldberg, M. C. E. Huber, R. W. Noyes, W. H. Parkinson, and G. L. Withbroe, Harvard College Observatory, Cambridge, Mass.—The small raster mode of the OSO-VI spacecraft provides spectroheliograms over a 7 min of arc field at 30-sec intervals in single-selected wavelength in the instrument wavelength range. Observations of a small flare in an active region on the disk will be presented together with a sequence showing a surge on the limb observed in CO. Full sun spectroheliograms over a range of ionization energies will be used to illustrate some other aspects of the observations.

**High-Precision Radio Observations of the Period of Pulsar NP 0532.** D. W. Richards, Cornell University, Arecibo Observatory, Arecibo, Puerto Rico, J. M. Rankin, University of Iowa, and C. C. Counselman III, Massachusetts Institute of Technology.—Arrival times of pulses from NP 0532 are monitored at the Arecibo Observatory with an rms accuracy from one day's observations of about 15 \( \mu \)sec at 340 and 318 MHz. Reducing these arrivals to the solar-system barycenter and fitting a 3rd-order polynomial to the arrival phase as a function of time give the following results for the pulsar repetition frequency and its first two time derivatives:

\[
\begin{align*}
\dot{f} &= 30.21209728 \pm 0.00000005 \text{ sec}^{-1} \\
\ddot{f} &=-3.8579 \pm 0.0002 \times 10^{-10} \text{ sec}^{-2} \\
\dot{f} &= 1.3 \pm 0.3 \times 10^{-20} \text{ sec}^{-2}
\end{align*}
\]

epoch: Julian date 2440400.5; units of U.T.C.

**Models for Partially Mixed Stars.** Robert T. Rood, Massachusetts Institute of Technology, Cambridge, Mass.—Theoretical models have been obtained for stars in which part of the hydrogen-rich envelope has been mixed into the helium core at the time of helium flashing. The effect of varying the degree of mixing, carbon production at the flash, and total mass has been determined. While burning hydrogen at the center, these stars evolve in the region just above the subgiant branch. After hydrogen exhaustion at the center, evolution proceeds along the giant branch; however, helium