a time period less than the profile sampling interval (22 s), and the duration of a few of the transients is of the order of the sampling interval. These events are usually accompanied by redshifts in the line profile of the order of 10-20 km/sec, and no instances have been found where the shift is toward the blue. The onset of brightening in these events is postulated to be associated with downflowing material.

15.03.03 The Chromospheric Structure of Solar p Mode Oscillations. R. K. Ulrich and Z. J. Raschke, UCLA - Normal mode analysis of a model solar envelope including the chromosphere and corona has been carried out. A chromospheric node occurs for the $p_2$ to $p_6$ modes at a location 100 km to 250 km below the level where the temperature jumps from 7000 K to 20,000 K. This same node also occurs in the $p_2$ mode when the angular frequency exceeds 0.0175 s$^{-1}$. A spectral line formed in the region where this node occurs will not show an oscillatory velocity displacement. Rather, the oscillation will produce a variation in the equivalent of a microturbulent velocity. Thus a variation in central intensity is expected for spectral lines that are not saturated. Because the line broadening depends only on $|v_d/r|$, the frequency of variation of the central intensity should be twice the frequency of the $p$ modes. A second node appears in all modes at a lower level for angular frequencies above 0.028 s$^{-1}$.

15.04.03 Analysis of the Wings of the Mg II $h$ and $k$ Lines in Active Regions and the Chromospheric Network. R. D. Morrison and J. A. Normal mode analysis of the U. of Colo. - Comparison of observed profiles of the wings of the resonance lines of Mg II with synthesized profiles has yielded estimates for the temperature distribution in the upper photospheric layers of several solar active regions, the chromospheric network, and the interior of a supergranular cell. The data were obtained with the NRL normal-incidence spectrograph aboard Skylab and have been described by Bosh and et al. (1976, Ap. J. Suppl. 31, 417). The spatial resolution is 2 x 60 arcsec and the spectral resolution is 0.12 Å. The calculations used the approximation of partial coherent scattering as formulated by Ayres (1975, Ap. J. 201, 799). Since data on the quiet sun are available for comparison, conclusions about the difference in temperature between models for the active regions and the network and those for the quiet sun are free to first order of uncertainties due to the atomic parameters. Differences in the line wings between the network and the quiet sun are slight. In active regions, however, the wings are substantially brighter than they are in the quiet sun. To reproduce this difference requires models with temperature enhancements of at least 200 to 300 K in the layers just below the temperature minimum and 50 to 100 K at the minimum itself. If light from the active regions is assumed to be diluted with light from the quiet sun, still higher temperatures are required.

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15.05.03 The Solar Temperature Minimum. W. Kalkofen, Center for Astrophys. - Recent models of the solar atmosphere show an apparent inconsistency: A theoretical model in radiative equilibrium, assuming LTE and including the effect of blanketing by atomic lines but excluding the effect of heating by mechanical waves (Kurucz, Solar Physics 1974, 34, 17), has a higher temperature than does an empirical model (Vernazza et al., Ap. J. Suppl. 1976, 30, 1), which includes the effect of mechanical heating. It is suggested that the lower temperature of the empirical model is caused by radiative cooling due to deviations from LTE in H*(Kureel effect). Mechanical heating does not affect the temperature below the photosphere. Thus there is no inconsistency.

15.06.05 An Evaluation of a Model Chromosphere for Arcturus Using the 5-Micron Bands of Carbon Monoxide. J. N. Heasley, S. T. Ridgway, D. P. Carbon, R. W. Milkey, D. N. B. Hall, KPNO - Observations of the fundamental vibration-rotation bands of Carbon Monoxide in the spectrum of Arcturus have been compared with synthetic spectra calculated from the model of Ayres and Linsky (1975, Astrophysical Journal, 200, 660). The observations were made with a 10 cm Fourier Transform Spectrometer at the Mayall Telescope and have a resolution comparable to the half width of the individual vibrational-rotational lines. The synthetic spectra have been produced including departures from LTE in the vibrational populations of the ground electronic state of CO (Carbon, Milkey, and Heasley, 1976, Astrophysical Journal, 207, 253). These synthetic spectra have then been convolved with the