04.02.03 Lyman Alpha Line Profiles from 1.5 to 3.0
Solar Radii, J. L. Kohl, H. Weiser, G. L. Withbroe, R. M. Munro, W. H. Parkinson, and R. M. Noyes. Harvard-Smithsonian Center for Astrophysics and the High Altitude Observatory - The extended coronal Lyman alpha emission observed during the 1979 eclipse has been attributed to the resonant scattering of chromospheric Lyman alpha radiation by neutral hydrogen in the solar corona (Gabriel 1971). The spectral line profile and intensity of this radiation combined with the intensity and polarization of electron scattered visible light contain information about coronal temperatures, densities and velocities. In this paper, preliminary results of the Rocket Lyman Alpha Coronagraph flight of April 13, 1979 are presented. coronal line profiles were obtained for five lines of sight through a streamer between 1.5 and 3.0 solar radii from disk center (R.) and three lines of sight through an apparent polar coronal hole out to 2.0 R. The data are of high quality. For example, the coronal hole profile for a 0.6' x 4' spatial element at 1.8 R. has about 3% statistical fluctuations at line center for a 0.1 A wavelength interval. Stray light contamination appears to be negligible. Wavelength shifts of the coronal line profiles relative to the disk profile and the geocoronal profile were observed. The measured profiles are compared to theoretical profiles and limits on the kinematic temperatures of neutral hydrogen in the corona will be discussed. This work was inspired by the research of O. Woci of the 1970 eclipse data. We are indebted to R. W. Noyes for the suggestion to build a Lyman alpha coronagraph. This work was supported by NASA under Research Grant NASG 5128. Reference: A. H. Gabriel, 1971, Solar Phys., 21, 392.

05.02.03 Lyman-alpha and White Light Observations of the
Outer Solar Corona R. H. Munro, J. L. Kohl, R. M. MacQueen, R. W. Noyes, W. H. Parkinson, H. Weiser, G. L. Withbroe. *DAO/NCAR *MCO/SAO Center for Astrophysics -- During the initial rocket launch of a Lyman-alpha and white light coronagraphic package on 13 April 1979, both the intensity and profile of resonant scattered Lyman-alpha radiation and the intensity and polarization of electron scattered white light were simultaneously measured in the outer solar corona. Observations concentrated upon two coronal features, a streamer and a coronal hole, at a variety of heights from 1.5 to 3.5 R. from solar center. A preliminary analysis of the data, from which it will be possible for the first time to ascertain the temperature of these diverse coronal features at these heights, will be presented. These data will be used to investigate the transport and dissipation of the non-radiative energy flux which heats the corona and drives the solar wind.

06.02.03 Frequency Shift of Solar Oscillations in a
Flaring Region, R. M. Illing and B. W. Lites. LASP, U. of Colorado - Data taken with the Sacramento Peak Vacuum Tower diode array Feb. 10, 1978 include a flaring region. Analysis of the intensity and velocity in H5576A (photosphere) and H5173G (temperature minimum) show the solar oscillation clearly before and after the flare. Spectral analysis of these time series shows that the frequency of the oscillation often shifts from ~400s before to ~250s after the flare. The magnitude of the velocity oscillation becomes much smaller during the flare. The change in frequency is possibly mode switching induced by the flare.

07.02.03 Results of Recent Solar Oscillation Observations
at SCLEA, CAUDELL, T. P., HILL, H. A., LOGAN, J. D., and ZANONI, R. Univ. of Arizona - New observations of the apparent diameter of the Sun recorded in May and June of 1978 have been examined for the long period oscillations. Power spectrum analysis of these time strings has shown the presence of well-defined peaks which are in good frequency agreement with those reported by Brown, Stebbins and Hill (1978, Ap. J. 223, 324) over the frequency range from 0.2 mHz to 3.0 mHz. The reproducibility of this solar phenomena is indicated by the favorable comparison. For the twelve peaks between 0.2 mHz and 1.0 mHz, phase analysis was performed similar to that of H11 and Caudel (1978, Mon. Not. R. astr. Soc. 186, 327). Statistically significant phase coherence was found of each oscillation for eighteen days spread over twenty-three days. The implications are that the oscillations are global in nature and have a high degree of temporal stability. The oscillations in the frequency range between 0.4 mHz and 0.7 mHz are believed to have the simplest model structure (i.e. horizontal structure). Large power level fluctuations on a day-to-day basis have been observed in the earlier work and was attributed to beating between rotationally split modes (see Caudel and Hill, 1978, Proceed. Conf. on Current Problems in Stellar Pulsation Instabilities, Goddard Space Flight Center, June 1-2). This daily variation is observed in the 1978 data and is being used to glean information on the structure of the solar interior. This work was partially supported by the National Science Foundation and the Air Force Geophysical Laboratory.

08.02.03 Analysis of Pulsation Theory Tests in the
Solar Envelope, R. T. Stebbins, Sacramento Peak Ob-
servatory, R. A. Hill, University of Arizona and R. E. Davis, New Mexico State University - Conventional solar pulsation theory makes assumptions about the nature of boundary conditions, the form of radiative dissipation,