been determined for continua and selected strong emission lines between 1200 Å and 2100 Å, using spectra obtained from Skylab and from sounding rockets. We find values of 10 (1600 Å), 5 (1600 Å), 0 (1800 Å), and 1 (2100 Å) for the ultraviolet continuum. The contrast for H Ly-α is 3.5. A minimum value for the solar variability has been derived under three assumptions: (a) the enhanced UV radiation originates from the same plage areas as observed in Ca II K images, (b) our contrast values are typical, (c) average quiet and plage intensities per unit surface area are constant over the solar cycle. A high spatial resolution photograph of a plage obtained from a sounding rocket on 13 February 1978 supports assumption (a) for the 1600 Å continuum. Approximately 20% of the flat disk area was covered by plage at the solar maximum of 1958 according to Sheeley (Ap. J., 147, 1106), while the sunspot number reached a monthly average value in excess of 200. For such a strong solar cycle the ratio of full disk flux at solar maximum to that at solar minimum will be 1 (cont. at 2100 Å), 1.20 (cont. at 1800 Å), 1.60 (cont. at 1600 Å), 2.80 (cont. at 1400 Å), and 1.50 (H Ly-α).

04.13.03 Variations in the Solar Brightness due to Active Regions. G. A. Chapman, San Fernando Observatory, Cal. State U. Northridge, CA 91330 - Observations of faculae and sunspots obtained with the Extreme Limb Photometer (Chapman, G. A., Phys. Rev. Lett. 33, 755, 1975) are presented as fractional changes in the mean solar brightness. Those observations were obtained at λ = 0.52 μm with a bandpass of Δλ = 0.07 μm. Observations were obtained in 1974 and 1975 of sunspots near disk center and faculae near the limb. Estimates of the brightness deficits of sunspots are often made from their area and assumed contrast. Such estimates may be substantially in error preventing accurate comparisons with other forms of synoptic total disk brightness monitors. For example the estimated effect of M. Wilson sunspot No. 19448 (9 Aug. 74) gave a fractional decrease in solar brightness, ΔB/ΔB = -1 x 10^-3 whereas the photometric value was -2.1 x 10^-3. Neglecting the facular areas, 6 or 7 large sunspot groups could give ΔB/ΔB = -1 x 10^-3. We find for sunspots the relation ΔB/ΔB = -6.3 x 10^-1 A, where A is the S.C.D. area in fractions of a hemisphere. For faculae about 6° - 30° from the limb we find ΔB/ΔB = 1 x 10^-3 Å, where A is the McMath area in fractions of a hemisphere. Photometric variations should be about 15% less than the values given above.

05.13.03 The Extreme-Ultraviolet Solar Cycle, J. Gemby Timothy, LASP University of Colorado, Boulder. There is evidence for a large variability in the solar extreme-ultraviolet irradiance over the solar cycle. The magnitude of the variability as a function of wavelength and its relationship to the dynamics of the outer solar atmosphere have yet to be determined. We are initiating a series of measurements to address those questions and will discuss their relevance to SCADM.

06.13.03 Total Solar Energy Output and its Measurement. V. Domingo, Space Science Dept. of ESA, The Netherlands. The present effort to measure the total solar energy output (solar constant) is described and how the present techniques can be improved to be able to measure the expected variations of the solar radiation, is discussed.

07.13.06 Ultraviolet Observations of HE-Herculis. H. Gorsky, A.K. Dupree, L.M. Hartmann, J. Raymond, R.J. Davis, and J. Black. - Harvard-Smithsonian Center for Astrophysics. - We have carried out extensive observations of HE Herculis with HEB. Data has been obtained at all orbital phases but only within several days of the X-ray turn-on that defines the 35-day cycle. Intensities variations appear to be similar to those observed in visible light. The bulk of the continuum radiation can be accounted for by radiation from an X-ray heated photosphere. Excess radiation can be interpreted as originating in an accretion disc for which we can define certain physical parameters. Only emission lines are seen in the spectrum; NV is the strongest spectral line and the ratio of NV to CIV display significant variations with orbital phase.

08.13.06 Gas Stream Observed in the Ultraviolet Spectrum of U Cephei. Y. Kondo and R.E. Stencel NASA/JPL, B.E. McCluskey, Lehigh University. The interacting close binary U Cephei has been observed with the International Ultraviolet Explorer. Nine high resolution spectra in the mid-ultraviolet (1900 - 3200 Å) and one high resolution spectrum in the far-ultraviolet (1200 - 1900 Å) were obtained. The effect of gas streaming are clearly seen in the mid-ultraviolet resonance lines of Fe II (λ2598) and Mg II (λ2795 and 2802), all of which are markedly phase-dependent. The data indicate that much of the gas leaving the B star circles behind the B star and leaves the system. It is suggested that g-mode oscillations in the B star supply part of the energy required to drive the gas out of the system.