ranges: (a) 0.5-1.8 keV (XAP crystal spectrometer); (b) 4-12 keV (LIP crystal spectrometer); (c) 30-250 keV (GSC hard X-ray detector, also aboard OSO-5), such emission being observed over the same period as the soft X-ray event. The calculated and observed continua agree to a factor of three between 0.5 and 70 keV. At higher energies, the observed spectrum is considerably harder than that calculated from our thermal model. A line feature attributed to Kα transitions in Fe XVII-XIX is much more intense than can be explained by the thermal model. It is concluded that (1) the emission-measure distribution function of the line radiation is able to describe the observed continuum in the range 0.3-70 keV emitted in the same flare, and (2) while very hot material was thus established to be present in this flare, the continuum at energies above ~70 keV and the inner-shell ionization of Fe atoms producing Kα emission occur as a result of some other, perhaps non-thermal, process.

23.10.03 Extreme Ultraviolet Solar Spectra from Skylab-Apollo Telescope Mount.
A. K. DUPREE, P. V. FOUKAL, M. C. E. HUBER, R. W. NOYES, E. M. REEVES, E. J. SCHMIDT, J. G. TIMOTHY, J. E. VERNAZZA, G. L. WITHEBRE, Center for Astrophysics: Harvard College Obs. and Smithsonian Astrophysical Obs.—Emission lines and continua are identified in the EUV spectra of various solar features obtained by the Harvard spectrometer on the Skylab-Apollo Telescope Mount. These photoelectric spectra cover 304-1350 Å with limiting spectral resolution of 1.2 Å and with spatial resolution of 5 arc seconds [Reeves, et al., 1974, Astrophys. J. (Letters), 188, L27]. A complete wavelength scan can take 3.8 minutes. Lines that are useful for plasma diagnostics in the solar chromosphere, transition region, and corona are noted. Particular species of interest include ions of the Beryllium sequence (C III and O V) and the Boron sequence (O IV).

23.12.03 Estimated Molecular Concentrations in SSRA.
J. R. RITZ, JR. & D. H. VERNI, U. Denver. Using the general run of temperature and total pressure values from the work of O. Gingerich et al (1971 Solar Phys. 18, 347) we have computed in LTE the concentrations of a few molecules thought to be of some interest. A very preliminary study of the effect of departure coefficients for species other than the hydrogen atom will be summarized.

Session 24: Hoyt Hall, 1400–1700

24.01.07 2.8 cm Recombination Line Observations of W 49A and E. R. VNEER & V.A. HUGHES, Queen's U. — Recombination line observations were made at 2.8 cm in the direction of W 49A and B with a noise level comparable to that obtained by Chaisson and Ball (Ap J 169, 495, 1971). The H 54a line can be resolved into two components with about the same velocities but different widths. The widths of both components are compatible with emission from HII clouds, the broader line presumably arising in the high-density condensations near the sources of OH and H20 emission. The anomalous line reported by Chaisson and Ball and attributed to H2 is not seen in this data, indicating possible time variability. The C6a line is unusually broad, suggesting that the emission originates within the HII region. The spectrum of W 49B shows no line emission stronger than 0.003K which could be attributed to the +600K/sec feature of Csarsky and Cezarsky (Ap J 183, L43, 1973). The limit on diffuse interstellar emission of H 54a in the direction of W 49B is 0.010K.

24.02.07 On the Interstellar Line U 72.4. K. FOX, U. of Tennessee — In a reported observation of the hyperfine structure of emission from deuterated hydrocyanic acid in the J = 1-0 line in the Orion cloud (R. W. Wilson, A. A. Penzias, K. B. Jefferts,