within three minutes of one another during the seven hour observing gap. We also illustrate an instance of repeated flare brightenings of a single small region separated by about three hours, and an example of sympathetic activity following a subflare.

26.02.03 Preliminary Results from the S-056 X-ray Telescope Experiment on the Skylab - Apollo Telescope Mount. J. H. UNDERWOOD and D. L. MCKENZIE, Aerospace Corp., and J. E. MILLIGAN and A. C. DEL OACH, NASA - The S-056 x-ray telescope and x-ray event analyzer aboard the Apollo Telescope Mount are briefly described. X-ray photographs of a variety of solar phenomena are presented to illustrate the spatial, spectral and temporal resolution which is obtained with this instrument.


The flare which occurred at 1420 UT on 16 June 1973 in McMath region 12397 was observed by the S-056 instrument on the ATM in several x-ray wavelengths. Magnetograms of the longitudinal component of the fields obtained at the San Fernando Observatory were made preceding and following the flare. A large loop which accompanied the flare in x-rays was observed to overlay the neutral line of the longitudinal fields in region 12387. One end of this loop, located near the neutral line of Mt. Wilson sunspot 19207, was a strong x-ray emission source preceding the flare. The opposite end was located in a region of weak fields and low x-ray emission. Comparison of x-ray structure with magnetic fields in the corona is made by extrapolation of the photospheric fields by means of a scalar potential.

26.04.03 On the Nature of Plasma Arcs in Solar Active Regions. R. Gaewski, AS&G. - A mechanism is proposed explaining the structures consisting of plasma arcs, as observed in x-ray photographs of solar active regions. It is suggested that the width of the arcs corresponds to the cut-off wavelength of a Rayleigh-Taylor instability which develops due to a difference in density between the plasma in the surrounding region. The transverse component of the magnetic field necessary to stabilize the instability at a wavelength corresponding to the width of the arcs is estimated to be of the order of 0.1 Gs.

26.05.03 Solar Prominences in the EUV as Observed from ATM. E. J. SCHMIDT, P. V. FOULAR, M. C. E. HUBER, R. W. NOYES, E. M. REEVES, J. G. TIMOTHY, J. E. VENNAZZA, and G. L. WITHERBO. Center for Astrophysics; Harvard College Observatory and Smithsonian Astrophysical Observatory. - The Harvard Solar Satellite Project’s EUV Spectroheliograph aboard Skylab has obtained thousands of spectroheliograms and spectral scans of quiescent prominences. The digital raster scans show structure in prominences down to the resolution limit of 5". Observations of a prominence near the limb were made in 10 lines and 3 continuum points. The prominence appears optically thick in Lyman a and the Lyman continuum, and optically thin in the lines toward 912Å. It is visible in absorption or by lack of emission in lines which lie on the Lyman or Hε continua. The lines of ions formed between 1 and 7 x 10³ {K} show brightening at the top of the prominence, which indicates either an integration along the transition sheath or a lower temperature gradient, depending on the geometry assumed. Contours of the Ly{sub a} ratio I(A883)/I(A810) show that the T{sub color} minimum (~6000 {K}) coincides with the lower portions of the prominence. The parts furthest above the limb have T{sub color} ≥10,000 {K}. Further analysis of line ratios and intensities will determine the density as well as the thermal structure and the radiative and conductive energy balance for comparison with theory.

26.06.03 A Study of the Active Region McMath 12417 with the Harvard ATM EUV Spectrometer. P. V. FOULAR, M. C. E. HUBER, R. W. NOYES, E. M. REEVES, E. J. SCHMIDT, J. G. TIMOTHY, J. E.