rate wire to its own pulse counter. A deflection coil in the Digicon shifts the spectrum rapidly in 0.03Å steps. A wide angle retarder of magnesium fluoride and sapphire, 3cm thick, provides a wavelength calibration: the light is artificially polarized in such a way that the plane of polarization changes by 180° over every 4Å. For each spectral resolution element, for which the relative brightness is measured with an accuracy of ±0.001 mag., the polarization measurement gives a wavelength accurate to 20.001Å. This calibration relies only on the stability of the retarder which must be kept in a Dewar filled with a mixture of ice and water. To secure a constant light path through the retarder the starlight, transmitted by a large focal-plane diaphragm, forms an image of the telescope mirror inside the retarder.

Session 20: Maricopa Room, 0930–1200

Special Solar Division Symposium: “Observations of the Solar Corona from Skylab”—R. G. Anthony, Chairman

20.0A.03 Problems in Coronal Physics.
R. G. ATHAY, HAO.

20.0B.03 The ATM Observing Program.
O. GARRIOTT, NASA-JSC.

20.0C.03 The Outer Solar Corona as Observed from Skylab: Preliminary Results,
A. I. Poland, J. T. Gosling, E. G. Hildner, R. M. MacQueen, R. H. Munro, and C. L. Ross, High Altitude Observatory, National Center for Atmospheric Research. Initial observations from the HAO White Light Coronograph on the Apollo Telescope Mount on Skylab have recorded the outer solar corona from 1.5 to 6R☉ from sun center for an extended period of time. The observations show dynamic events with time scales ranging from minutes to days. Significant coronal evolution can be discerned in less than one-half a solar rotation with individual features undergoing changes in periods of hours to days. Coronal transient phenomena—principally arch-like structures with approximate expansion rates of 500 km/sec and diameters over 2R☉—cause major reorientation of coronal features by their passage through the coronal medium.

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20.0D.03 A View of the X-Ray Corona.
G. VAIANA, AS & E.

20.0E.03 Preliminary Solar Extreme Ultraviolet Observations from the ATM with the Harvard Instrument.
E. M. REEVES, P. K. POUKAL, W. C. B. MURER, R. W. BOYES, E. J. SCHMIDT, J. G. TIMOTHY, J. E. VENTURAZZA, & G. L. WITTEBROD, Center for Astrophysics, Harvard College Obs., and Smithsonian Astrophysical Obs. - The Harvard spectrometer operates in the extreme ultraviolet region of the spectrum from 280–1350Å with a spatial resolution of 5 arc seconds and a limiting spectral resolution of 1.2Å. The spectrometer is provided with a 5 x 5 arc minute raster to construct spectrophotograms with seven separate channel electron multipliers to cover simultaneously lines formed from 106K to 3 x 109K in the solar atmosphere. Other polychromatic or monochromatic settings permit simultaneous studies over a wide range of excitation energies. The instrument is also provided with alternative operating modes for spectral scanning from a given 5 arc second area, and for observations of rapid time scale phenomena. A sample of the photoelectric data is recovered from the telemetry each orbit to aid in the selection and modification of observing programs.

Selected data will be used to illustrate the interpretation of the new observations in terms of the physical parameters in the solar atmosphere. The chromospheric network has been shown to preserve a well-defined structure corresponding to that in Calcium K for lines through the chromosphere and transition region, but to rather abruptly diffuse and become indistinct in coronal lines such as MgX. Prominences on the solar limb have been studied with 5 arc second resolution over a range of excitation energies, and the optical depths and color temperatures determined at different positions in the prominence. Other areas of data analysis activities will be discussed and illustrated.

20.0F.03 Evolution of X-Ray Structures.