ABSTRACTS

24.19

The Automated Plate Scanner Catalog of the Palomar Sky Survey
R.H. Humphreys, R.L. Pennington, W. Zumach (U. Minnesota)

The Automated Plate Scanner is a high speed (3-12lm/sec), high precision computerized measuring machine. The APS has the unique capability to scan two plates (up to 14x24 inches) simultaneously. We have recently linked the scanner to the Cray 2 and ETA 10 at the University's Supercomputer Center. With our greatly expanded computing power, we realized that it was possible to scan and catalog the first epoch POSS in about two years.

The catalog of stars will contain positions, magnitudes, and color for about a billion stellar images. The separate catalog of galaxies will also include data on shape parameters and classification for three to four million galaxies.

24.20

The New Michigan Focal Reducing Camera
G. Aldering, G.D. Bothun (U. Michigan)

We report on the design and performance of a focal reducing camera recently constructed for use at the McCormick Observatory. The camera gives a reduction factor of 4.87, resulting in scales of 1.50 arcsec/pixel and 0.83 arcsec/pixel, and field sizes of 400 square arcmin and 120 square arcmin when used with a 1TI 800 x 800 CCD on the observatory's 1.3 m and 2.4 m telescopes, respectively. These scales make the focal reducing camera ideal for imaging survey projects requiring the coverage of large areas of sky when used on the 1.3 m, while still giving properly sampled images under seeing conditions typically experienced at the 2.4 m. The camera has good throughput across the BVRI spectral range.

25.03

Solar Cycle Variation of the X-Ray Bright Point Population: New Observations
J.D. Moses (American Science and Engineering) and J.M. Davis (NASA/MSFC)

New observations from flights of the ASE High Resolution Soft X-Ray Imaging Solar Research Rocket Payload on 15 August 1987 and 11 December 1987 provide an extension of the previous X-ray bright points population data set into the ascent to maximum of solar cycle 22. Soft X-ray observations from Skylab and rocket flights over the period 1970-1981 show that the number of X-ray bright points varies inversely with the sunspot index (J.M. Davis, 1983, Solar Phys. 88, 337). The new X-ray bright point counts will be compared with the first order prediction extrapolated from solar cycles 20 and 21: \( N_{XRP} = 421.1 N_{SS}/2^{2/3} \) where \( N_{XRP} \) is the corrected X-ray bright point count and \( N_{SS} \) is the weekly average international sunspot number. This result will be discussed in terms of the solar cycle evolution of the structure of the coronal magnetic field.

25.04

Line Broadening of Transition Region and Coronal Emission Lines Observed Above the Solar Limb
D. M. Hassler, G. J. Rottman (LASP/U. of Colorado), T. E. Hotzer (HAO/NCAR)

A sounding rocket experiment on March 17, 1988 provided high-resolution EUV spectra along a solar diameter out to 1.2 R(S) with spatial resolution of 20 x 60 arcseconds. Each spectrum contains transition region and coronal emission lines in the wavelength range of 30 to 200 angstroms.

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