The HEAO 1 satellite scanned the entire celestial sphere more than twice during its mission. The A-2 experiment, with its 6 detectors and differing fields of view, provides high resolution measurements of the intensity and spectrum of the x-ray background with minimal systematic errors. We will report the results of a search for large scale deviations from isotropy in the 3 to 50 keV intensity and spectrum of the x-ray sky away from the galactic plane and away from known x-ray sources whose intensity is greater than ~1 UFW. Results will be compared to the first order anisotropy predicted from microwave background measurements.

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12.15.09 Preliminary Results of the HEAO A4 Hard X-ray Sky Survey (12-180 keV). A. LEVINE, F. LANG, P. BYRNE, S.A. COOKE, C.A. DIBSON, J.P. DOTT, J.A. HOFFMAN, S.K. HONE, P.A. PRIMINI, A. SCHARRAHMAKER, W.A. WHEATON, and W.R. LEE, and J.L. MOTHERER and J.L. KNIGHT, N. NOLAN and L.E. PETERSON, UCSD. -- The hard x-ray detectors of the UCSD/MIT experiment aboard HEAO-1 scanned the entire sky every six months of operation. Results of a preliminary analysis of the first six months (August 1977-February 1978) of x-ray data includes a list of sources detected at a high level of significance ( ~6 sources in each of the two detectors). This list contains ~420 sources at x-ray energies ~13 keV, ~30 sources at energies 225 keV, ~15 sources at energies 240 keV, and ~5 sources at 2 ~ 80 keV. Among the more interesting objects detected are Cen A, NGC 4151, GX39-3 (401558-48), Scutum X-1 (M1833-077), Nova Ophiuchi 1977, and a number of other sources close to the galactic center. Variability on time scales of days is clearly evident for a number of these sources. Results from the second 6 months of x-ray scanning will be presented. We expect that when an entire year of data is accumulated the number of sources will increase considerably.

Session 16: 1000–1200 (Room 264)

Galaxy Dynamics

02.16.10 The Gaseous Disk of the So NGC 4203. N. KRUMM, Lick Obs. and D. BURSTEIN, DTM-CW. -- The HI distribution in NGC 4203 has been mapped with the 305 m Arecibo radio dish at 21 cm, using the flat feed which has no appreciable side lobes and a HPBW = 4'. 55 positions centered around N4203 were observed, spaced in intervals of 2' in Dec and 1'7' in R.A. A map composed of these individual spectra, arranged in position on the sky and separated by 2' N-S and 1'7' E-W is given below. The region of interest, defined by the tic-tac-toe area, and the origin of 50' is discussed.

Optical Data

Doherty Mpc(H = 50)

\( M_0 = -20.10 \)

\( r = 2!12 \) kpc

\( e / b = 1.10 \)

Radio Data

\( V_0 = 1084 \) k/s

\( \Delta V_{obs} = 140 \) k/s

\( r_{maj} = 6' - 8' \)

\( r_{min} = 5' - 7' \)

\( \Delta V = 275 \) k/s

Best Estimate

M/L at 40 kpc

\( M = 7 \times 10^8 M_\odot \)

\( M/L = 41 \)

02.16.10 CCD Imagery of the Nuclear Regions of NGC 5102, C. Fitchett, U. British Columbia and Dominion Astrophysical Obs. The NSST/JPL 400x400 CCD has been used to obtain B and R imagery of the nuclear regions of the So galaxy NGC 5102. The central regions of NGC 5102 are dominated by a small (r < 0.5 arcsec), bright (B = -15), blue (B - R = G,3) nucleus. The core array of the nucleus are well matched by that of a star cluster of age ~ 10^8 y. The presence of a blue nucleus explains the feature gradient of the outer disk of NGC 5102. Star formation has also taken place throughout the bulge of NGC 5102. Implications of these observations will be discussed.

03.16.10 Radio Continuum Emission in Blazars. FDR, P.D., Brandes U. -- Twenty-seven ring-type galaxies were surveyed for radio emission at 11.1 cm and 3.7 cm with the NRAO three-element interferometer. [The National Radio Astronomy Observatory (NRAO) is operated by Associated Universities, Inc., under contract with the National Science Foundation.] Most of the galaxies were selected from compilations by Freeman.

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