ceeding those of the external medium, and particle energy densities greater than those of the magnetic fields. Magnetic field strengths are derived at several points along the jet from the synchrotron turnovers and are found to vary as $r^{-1.0\pm0.5}$ where r is the distance from the "core." Models for the kinematics of the superluminal knots, including the acceleration and non-radial motion, are discussed.

32.14

A Magnetoionic Medium in the Radio Galaxy 3C272.1 (M84)

A. H. Bridle (NRAO) and R. A. Laing (RGO)

We have imaged the linearly polarized emission from the weak radio galaxy 3C272.1 (M84) with 3.″9 (290 pc) resolution using the VLA at 1.4 GHz and 4.9 GHz. The results show a banded pattern of E-vector rotation across the radio source. The associated Faraday rotation measure (RM) pattern has been determined using 2.7-GHz data from the Cambridge 5-km telescope to eliminate ambiguities. The RM fluctuates by ±30 rad.m^{-2} over 90″ (7 kpc at M84). These fluctuations are larger than would be expected from the foreground medium in the Galaxy at this galactic latitude (b = 75°). The RM also changes sign abruptly across the nucleus of M84. We therefore associate the RM patterm with a magnetoionic medium ~ 10 kpc in extent within M84. The absence of a similar pattern in the depolarization between 1.4 and 4.9 GHz implies that the magnetoionic medium is in front of, rather than mixed with, the radio source. The medium may correspond to the diffuse component of the soft X-ray emission from M84, in which case the mean field strength along the line of sight through it would be 0.15 to 0.3 μgauss. There must be a large-scale reversal in this magnetic field across the face of 3C272.1.

32.15

X – ray Variability of Mrk 335

M.G.Lee,B.Balick(U.Washington),J.Halpern(Columbia U.), T.Heckman(U.Maryland)

Mrk 335 is an optically bright Seyfert 1 galaxy which is hosted in an early-type galaxy at a red shift $cz \simeq 7500$ km/c. Mrk 335 is known to be variable at optical, ultraviolet and X-ray wavelengths. We report that Mrk 335 has been observed to undergo very strong, rapid, and soft X-ray flare-like variations during ~ 60,000 seconds of conseqtive observations using the *Einstein Observatory* (HRI and MPC) in January 1981. Both the soft flare and a precursor flux decrease evolved on time scales of hours. There appear to have been marginal variations in spectral shape and flux of the hard X-ray component, roughly correlated with the soft X-ray flare. The soft X-ray flare on the rapid time scale may be due to the accretion of material onto a black hole of M $\simeq 10^7$ M$_\odot$ or due to the compactness of Mrk 335 which leads to dominant electron-positron pair production of hard X-ray photons. The "relatively steady" steep spectra of the hard component in combination with the infrared spectrum can be explained by the direct synchrotron or synchrotron self Compton mechanism in the region r ~ 10^{15} cm.

32.16

Broad Emission Line Variability of 20 Seyfert Galaxies

Edward Rosenblatt (UCSC/UCLA), M.A. Malkan (UCLA)

A total of 200 high signal-to-noise spectra of 20 Seyfert galaxies were obtained from 1979 to 1983 on a quarterly basis with the 60" Palomar telescope and a SIT vidicon spectrograph. We have measured several emission line properties including line flux, equivalent width, line width, and asymmetry to analyze broad line variations for these galaxies and place constraints on models of the kinematics and structure of the broad line region. Hβ is the primary focus of the study, although Hγ, He II λ4686, and Fe II λ4570 were also measured when sufficiently strong. Correlations between variability (e.g. timescale and strength), emission line properties (e.g. line width and asymmetry), and global active galaxy properties (e.g. luminosity and radio strength) will also be discussed.

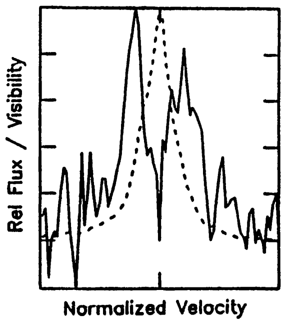
32.17

The Velocity Distribution of Quasar/AGN Broad Emission Line Clouds

R.C. Puetter (U. California, San Diego) and E.N. Hubbard (Titan Systems, San Diego)

Most line profiles studies start with specific dynamical scenarios, derive profiles, and then compare them to observed line profiles. We have taken a different approach. We make modest assumptions concerning cloud ensemble symmetry, cloud angular emission dependence, and direction of motion. We make no assumptions concerning cloud distribution with radius or velocity. Rather, we deduce this dependence by deconvolving the assumed projection effects from observed line profiles. This was done for 23 spectral lines from the sample of Osterbrock and Shuder (1982), assuming 10 combinations of cloud ensemble symmetry and angular emission dependence. We conclude that the line emission arises from preferred velocities. Consistent dynamical scenarios are: (1) ballistic ejection of an optically thin shell, and (2) optically thick or thin emission from roughly thermalized Keplerian orbits such as might be found in globular clusters.

A deconvolution illustrating these results is given for Hα in Mrk 1383 (dotted line = observed profile, solid line = line deconvolution, i.e line brightness as a function of velocity). Clearly visible are two peaks, indicating that this object emits at a preferred velocity of 8000 km/s relative to the local standard of rest (i.e. there are more clouds at this velocity, or clouds with this velocity are brighter).



Session 33: Bright Star Catalogues Display Session, IRC Lobby Wednesday

33.01

The Bright Star Catalogue, 5th Revised Edition

W.H. Warren Jr. (ADC/NSSDC/GSFC), D. Hoffleit (Yale U.)

The fourth revised edition of the machine-readable catalog (Hoffleit 1982, Yale U. Obs.) has been updated with many thousands of new data, including photometry, MK spectral types, and radial velocities. The structure of the computerized remarks file has been modified for easier updating and sorting, and minor changes have been made to the data representation, e.g., numerical coding for special characters (Greek letters, etc.) has been replaced with standard abbreviations and complete data alignment has been effected wherever possible. The machine version of the new catalog will be distributed through the international network of astronomical data centers. We thank