10.01.10 The Rotation of M82, C.P. WILSON, YALE UNIV. - Image tube spectrometry of M82 at dispersions of 40 and 65 Å/μm have been measured to determine rotation velocities. Along the major axis, from 10° to 90° radius, the rotation curve is essentially flat with a value of about 25 km/sec. A single spectrum off the major axis indicates that the velocity field within 10° of the nucleus is complex.

10.02.10 Is The Flattening of Elliptical Galaxies Necessarily Due To Rotation? J. J. BINNERY, Princeton Univ. Obs. - There is as yet no conclusive observational evidence to indicate at what redshift z<sub>f</sub> the first massive galaxies formed. In particular we do not know whether the galaxy formation process was dissipative. If z<sub>f</sub> < 10 the formation of galaxies is likely to have involved the formation of pancakes of stars. A numerical simulation of the relaxation process indicates that the final equilibrium configuration of stars will be markedly flattened whether or not the pancake of stars possessed rotation. The form of the equilibrium configuration which is formed in this way from a pancake appears to be consistent with a Hubble luminosity profile. The model is also consistent with the only published rotation curve of an elliptical galaxy in that it suggests that rotation may not always be dynamically important for such elliptical galaxies. Work supported by the Lindemann Trust and Magdalen College, Oxford.

10.03.10 Ejection from the Spiral Galaxy NGC 1097. H. C. ARP, Hale Obs. - Luminous features emanating from the spiral galaxy NGC 1097 were discovered with the U.K. 48-inch (1.2 m) Schmidt telescope (Wolff and White 1975). Deep, high-resolution photographs have now been taken with the 4 m CTIO reflector in Chile. These plates show: (1) Rays 1, 2, and 3 all point exactly back toward the center of NGC 1097 that they would possibly originate from that nucleus. (2) Ray 3 is aligned exactly opposite to Ray 2, in the manner of a "counterjet." (3) Light exposures and Hα emission-line photographs show that just the gaseous H II-region component in the spiral arms has been disturbed where Rays 2 and 3 cross the arms. Because the disturbed regions in the arms are rotated about 15° forward in the direction of rotation of the galaxy, an age of 10<sup>7</sup> yr. and a minimum projected ejection velocity of 5000 km s<sup>-1</sup> can be computed. The photographic evidence alone also shows that the material of the jets consists of some small bodies, possibly some plasma from the parent galaxy and possibly some plasma and/or material given off from the ejecta in its outward passage through the galaxy. The unusual circumstances make these particular jets visible and imply that many spiral galaxies may be similarly ejecting.

10.04.10 Observations of the Peculiar Galaxy NGC 6239 P. R. CHROMET, CUNY & KPMO - NGC 6239 is classified as SB(s)b pec by the de Vaucouleurs, and is included in Markarian's list of objects with strong ultra-violet continua. The observations presented here are direct photographs, long slit spectra, and intermediate band photometry. Most of the line emission from the galaxy arises from four large regions in the "bar". The outermost of these regions is in a higher excitation state than the others, and is primarily responsible for the high u.v. flux. The observations suggest that NGC 6239 is most likely a low-mass magellanic irregular of very late type spiral undergoing a burst of star formation in its central regions. The author was supported in this research as a visiting summer scientist at KPMO and by a grant from the Research Foundation of the CUNY.

10.05.10 The Recent Outburst of PKS 0735+17, and Photometric Histories of Several BL Lac Objects and Selected Continuous Spectra Markarian Galaxies. J.T. POLLOCK, R.L. SCOTT, A.G. SMITH, R.J. LEACOCK, AND P.L. EDWARDS, U. FLA. A photographic light curve obtained at the Rosemary Hill Observatory of the recent 1.5-magnitude outburst from the