Double Spectrograph at the Cassegrain focus of the Palomar Hale telescope are being used. The primary goal of the survey, which will eventually include a complete sample of ~600 galaxies brighter than B_P = 13, is to determine the faint end of the luminosity function for active galactic nuclei.

Here we will summarize results from the survey of 75 galaxies (Filippenko and Sargent, 1985 March, Ap.J. Submitted). This initial sample, including type 1 Seyferts, 6 of the 30 "Liners" (low-ionization nuclear emission-line regions) originally surveyed by Heckman (1980, Ap. J., 237, 152), and many galaxies suspected of having broad Hα emission.

Compared with the forbidden lines, Hβ exhibits broad wings in 19-28 objects, including 3-5 B or E/S0 galaxies. Of the 24 Liners, B-12 show broad Hα, often at an extremely faint level. [O I] λ6300 is broader than the [S III] λλ6716, 6731 lines in roughly one-third of all Liners, implying that clouds with very different densities exist in the narrow-line regions. Photoionization by a dilute power-law continuum can account for the observed relative intensities of the emission lines, except in galaxies whose nuclei are dominated by H II regions. The data therefore suggest that low-level Seyfert activity may be present in a significant fraction of all nearby spiral galaxies.

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47.03
Speckle Observations of the Nucleus of NGC 1068
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We have used the U. of Ariz. 2.3 m telescope to obtain specklegrams of the nucleus of NGC 1068. Observations were made with violet, green, and far-red continuum filters, selected to exclude contamination from strong emission lines. Most (75-80%) of the green (5500 Å) nuclear light (in the central 3 arc seconds) is concentrated in an unresolved point source. A comparison with the profiles of field stars indicates that this point source is no larger than 16 milliarc seconds, corresponding to a radius of less than half a parsec. By comparing the relative contributions of the point source at each wavelength, we determine its colors. Implications for the nature of this nonstellar point source will be discussed. The extended (starlight) component of red light is analysed in conjunction with conventional surface photometry of Malkan and Oke (1983) to search for a stellar cusp within the central arc second of the galactic bulge.

47.04
Comparison of the Widths of Broad Emission Lines in Seyfert Galaxies and Quasars
C.-C. Wu, C.A. Grady (CSC), A. Bogossed (NASA/GSFC)

The full widths at 10% intensity level are compared for the prominent emission lines: Lyman α, C IV λ1550, C III] λ1909, Mg II λ2800, Hβ and Hα. The widths of the ultraviolet lines are measured from the low dispersion spectra obtained by the International Ultraviolet Explorer (IUE). The widths of optical lines are mostly those published by Osterbrock and Shuder. In Seyfert galaxies, C IV λ1550 is significantly broader than the other emission lines. This indicates that ions of higher ionization potential produce broader emission lines. This phenomenon is not common in high redshift and high luminosity quasars. Wu, Bogossed and Gull and Mushotsky argued earlier...