that there is a circular area around the compact object which is darker than the background light of the E galaxy. Spectro-
photometric observations show that this obscuration reddens as it absorbs the light of the E galaxy behind it as would be
expected of dust associated with the compact object. The
ratio of absorption in the blue to absorption in the red is
measured as 0.6 mag ±15%, as expected of a 1/λ redening
law. Absorption lines from gas at the high redshift are
looked for. A probable absorption line at the place of interstellar K redshifted by cz = 13,400 km s⁻¹ is found at
exactly the expected redshift, within the ±1 Å accuracy of
the wavelength calibration. It is concluded that the compact object is slightly in front of but at approximately the same
distance as the E galaxy and that most of its redshift is of
origin other than Doppler motion of recession.

02.03.10 Dust in the External Galaxies, C.-C. WU, Com-
puter Sciences Corporation - The most striking features of
the interstellar extinction curve in the Galaxy are the strong
peak at 2200 Å and the rapid rise farther into the ultraviolet.
Since the total extinction at 2200 Å is about 3.2 times higher
than that in the visual, a strong signature will be present at
2200 Å if a galaxy contains an appreciable amount of dust.
About 100 galaxies have been observed in the ultraviolet by
the Astronomical Netherlands Satellite (ANS) with the inter-
mediate band photometric system whose central wavelengths
are 1500, 1800, 2200, 2500, and 3300 Å. Galaxies like M82
and NGC 621 are known to have high dust content, and their
deficiency of flux in the ultraviolet and particularly at 2200 Å
is striking. The dust in M82 seems to have the same red-
dening properties as that in our Galaxy. Markarian 201 shows
a strong absorption at 2200 Å. As for 3C273, if one can as-
sume that its continuum has a smooth flux distribution, then
the small flux deficiency at 2160 Å (rest wavelength) can be
interpreted as the evidence for the presence of dust. Flux
distributions of galaxies of different Hubble types and Seyfert
galaxies will also be presented. The ANS fluxes of these
galaxies are being used to predict the integration time needed
for the low resolution (~1 Å) spectrograph on board the Inter-
national Ultraviolet Explorer (IUE) which is scheduled to be
launched in December, 1977.

02.04.10 Infrared Radiation by Dust in Type I Seyfert
Galaxies, R. STONEH and R. PIANK, Bowling Green State
University - Observations indicate that the infrared
luminosity of type I Seyfert galaxies is not correlated
with the Balmer decrement, and there is no indication
that dust reddens both the continuum and the Balmer
lines. This can be viewed as evidence that the infrared
excess is not produced by thermal reradiation by dust,
if the dust is to be heated by a central continuum
source. We investigate the possibility that the energy
is carried to the dusty regions by particles. Energetic
particles interacting with clumps of dusty gas will
transform most of their energy into Ly α photons which
are trapped in the gas. The dust is then heated by the
trapped Ly α radiation. We find that such a picture is
consistent with the observations which have been
made. This work has been supported by NASA grant NGR-702

02.05.10 Spectrophotometry of Seyfert 1 and Broad-
Line Radio Galaxies, D. E. OSTERBROCK, Lick Obs., Board
of Studies in Astr. and Ap., UCSC. - Relative emission-
line intensities are given for 36 Seyfert 1 galaxies,
measured from image tube - image dissector spectral
scans taken with the Lick 120-inch telescope. Equivalent
widths for Hβ were measured to link the emission-
line strengths to the continuum. Information is also
given on the broad emission-line profiles, which cover a
wide range in velocity and often appear somewhat asym-
metric. The measured Hα/Hβ/Hγ ratios do not fit the
calculated recombination values and probably indicate
self absorption and collisional excitation from H I in
levels n > 2 are important excitation mechanisms.
Nearly every Seyfert 1 galaxy has Fe II emission in its
spectrum, but there is a wide range of the Fe II
strength. Comparison with measurements of broad-line
radio galaxies shows that in general they have much
weaker (if any) Fe II emission and steeper Balmer
decompositions than Seyfert 1 galaxies. The Fe II emission
strengths in Seyfert 1 galaxies are not well corre-
lated with ultraviolet excess or broad emission-line
width, in apparent disagreement with the resonance-
fluorescence excitation mechanism, though specific
models are needed to test this conclusion. The narrow
emission-line spectra of Seyfert 1 galaxies are similar
to the emission-line spectra of Seyfert 2 galaxies.
The distribution of line widths of Seyfert 1 galaxies
shows that rotation is not the main line-broadening
mechanism.

02.06.10 Survey of Bright Galactic Nuclei, W.C. KEEL
and D.W. WEEDMAN, Dyer Observatory, Vanderbilt Univ.
- Because of the well established evidence that the nuclei
of galaxies sometimes contain powerful but inexplicable
activity, a systematic description of the general nature
of galactic nuclei is important. Can we determine, for
example, what a nucleus looks like before or after a
Seyfert event? To isolate particularly important nuclei
for further intensive study with various techniques, we
have conducted a morphological survey of all galaxies
whose nuclei are a) classified 4 or 5 (semi-stellar or
stellar) in the Byurakan system or b) mentioned in the
notes to the Reference Catalogue of Bright Galaxies as
having "very bright" or "extremely bright" nuclei. Almost