scanned with the PDS microdensitometer at MPIA in Heidelberg where software has been developed to analyse the images. (Cf. P. A. Wehinger, T. Gehren and S. Wyckoff, 1980, Proc. of ESO Workshop on Two Dimensional Photometry (ed. by P. Crane and K. Kjär), in press.) 3C 206 and PKS 0812 +020 (a QSO with z = 0.402), shown in figures 1–4, exhibit significant clustering of diffuse objects near ($\lesssim$ 30–40 arc sec) the QSO's. These cluster objects have apparent integrated magnitudes of ~20–23 at 6000 Å, just below the plate limit of the Palomar Sky Survey. In fact, typical cluster galaxies at z = 0.2 and 0.4 would be expected to have integrated magnitudes within this range, if they are galaxies at their cosmological redshifts.

The PDS digital scans of field stars define the point-spread-function (PSF), for a given plate, to a surface brightness limit of 1–2 per cent of the red night sky (~26–26.5 mag sec^{-2}). The PSF for each plate has been compared with the image profile (mag sec^{-2} versus radial distance in arc sec) of each quasar (see figure 5). Out of a sample of 16 quasars, 12 exhibit extended image profiles which are significantly broader than the stellar image profiles (as defined by the PSF). A point-by-point subtraction of the PSF from the quasar image profile reveals a profile with a surface brightness of $\gtrsim$22–24 mag sec^{-2} and a slope of ~r^{-2} (Hubble law) as expected for elliptical galaxies. The quasars observed thus far were selected from the Optical Quasar Catalog by G. R. Burbidge, A. H. Crowne and H. E. Smith, 1977, *Ap. J. Suppl.*, **33,** 113. In addition, all the QSO's we have observed at ESO thus far are radio-loud. Additional observations are planned to compare radio-loud and radio-quiet quasars, to see what differences can be detected in the underlying galaxies, i.e. which are elliptical galaxies and which are spirals. Since Seyfert galaxies are in general radio-quiet and are spirals (cf. T. Adams, 1977, *Ap. J. Suppl.*, **33,** 19, and P. A. Wehinger and S. Wyckoff, 1977, *M.N.R.A.S.*, **181,** 211), one might expect radio-quiet quasars to be seated in the nuclei of spiral galaxies.

Apparent integrated magnitudes can be obtained for the underlying galaxies extracted from the QSO image profiles. These magnitudes, when combined with their redshifts, and assuming a Hubble constant, H_o = 50 km sec^{-1} Mpc^{-1}, yields absolute magnitudes of the underlying galaxies of –21 to –24, typically 1–3 mag fainter than the quasars. Since the underlying galaxies are diffuse, while the QSO's are point sources, the galaxies have been difficult to detect.

Spectroscopic observations of the underlying galaxies around quasars, as well as associated cluster galaxies, are being obtained with the ESO 3.6-m and the Anglo-Australian Observatory 3.9-m telescopes. The observations employ fast Cassegrain spectrographs and Boksenberg's Image Photon Counting System (IPCS). For 3C 206, one cluster galaxy has been observed (~20 mag, 12 arc sec north-east of the QSO) to have an absorption-line redshift, z = 0.2028 ± 0.0015, in close agreement with the emission-line redshift of the quasar (z = 0.200). A spectrum of the underlying structure, 3–6 arc sec west of the QSO, shows an absorption-line feature of Ca II H and K and a low excitation emission-line spectrum at the same redshift as the QSO, as well as a redder continuum than that in the QSO.

The measured surface brightness, slope of the image profiles, angular diameters versus redshift, and emission- and absorption-line redshifts are leading to a consistent picture of quasars being the nuclei of distant active galaxies, some of which are located in clusters or groups of galaxies. Observations of the type we have described here need to be carried out for both radio QSO's and optical (radio-quiet) QSO's, and also for quasars with different redshifts found in

Change in "Messenger" Editorship

Please be informed that I have resigned in December 1979 as Editor of the ESO *Messenger*. The Director-General has accepted my resignation and will presently appoint another person in this function.

I should like to thank all those who have contributed to the *Messenger* during the past years. With their generous help it has been possible to rapidly publish new information and to stimulate widespread interest in astronomy in general and in ESO in particular. I hope they will continue to write articles, notes, etc. and urge them to support the new editor as actively as possible.

Richard M. West

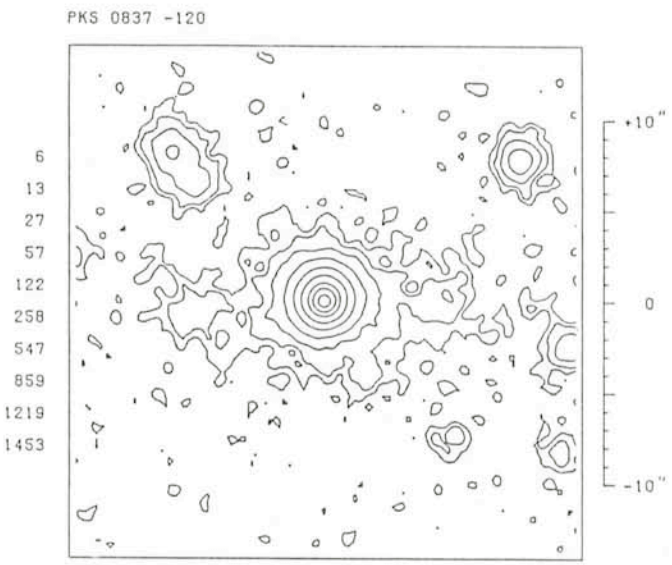

Fig. 3: *PDS logarithmic intensity contour map of 3C 206. Scale is indicated at right. Surface brightness contours are given at left (in per cent of red night sky).*

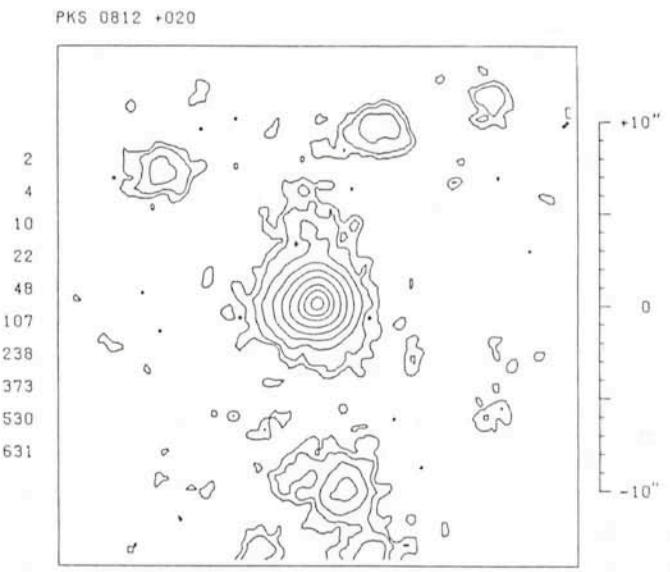

Fig. 4: *PDS logarithmic intensity contour map of PKS 0812+020. Other details same as in figure 3.*