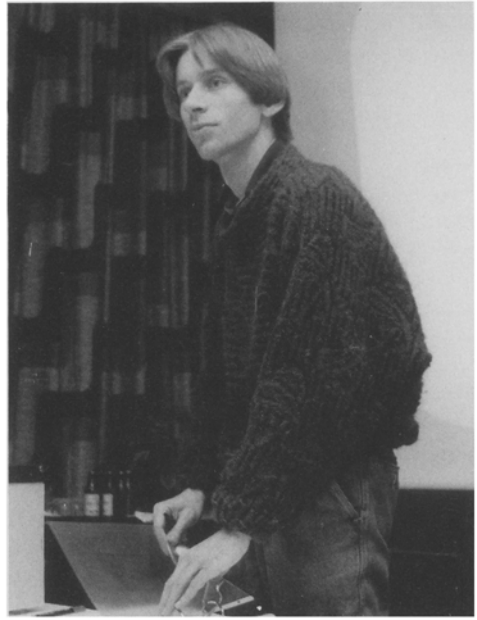


Part V

Quasars



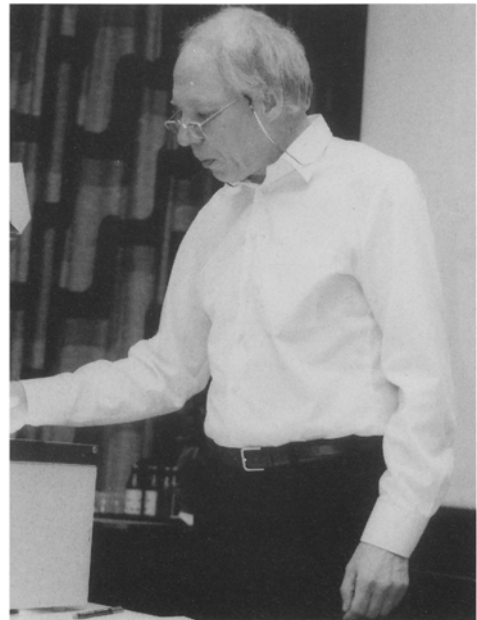
Dieter Engels



Volker Gericke



Christian de Vegt



Klaus Beuermann

Quasar Search on Objective Prism Plates

H.J. Hagen, D. Engels,
D. Groote, D. Reimers
Hamburger Sternwarte
Hamburg-Bergedorf, F. R. Germany

A machine-based search for quasar candidates down to $B \sim 18^m.5$ on objective prism plates is conducted at Hamburg. Our aim is to provide several hundred bright QSOs for the purpose to make follow-on studies on the physics of QSOs and their environment. We are especially interested in peculiar objects like BALs, QSO pairs, and gravitational lenses (Engels *et al.* 1988).

The survey plates are taken with the Schmidt telescope on Calar Alto equipped with a 1:7 objective prism. The dispersion of the spectra on the plates is $\sim 140 \text{ nm mm}^{-1}$ at $H\gamma$. The Kodak IIIa-J emulsion used limits our range to $z \sim 3.3$.

The plates are scanned in Hamburg with a PDS 1010 G microdensitometer controlled by a PDP 11/24 computer. For data storage a 170 MByte disc drive and a 1600 bpi magnetic tape drive are currently available. Machine driver software and all data processing programme have been written in Hamburg and run under RSX 11M plus on the PDP 11/24 (Hagen 1987).

Complete plate scans are made perpendicular to the direction of dispersion in a low-resolution mode. The background is removed automatically. The current scan time is about 16 hours per plate. The scan results in 30 000–50 000 low-resolution spectra (*Fig. 1a*).

Candidates are selected on the basis of the presence of emission lines or a blue continuum. These candidates are scanned in a high-resolution mode and the resulting spectra (*Fig. 1b*) are evaluated by eye. For each field two plates are used to discriminate against plate faults.

First QSO confirmations of the candidates were made through slit spectroscopy with the 3.5 m telescope on Calar Alto/Spain (*Fig. 1d*). We find typically 25–30 quasars per field (25 deg^2) with a limiting magnitude $\sim 18^m.5$.

References

- Engels, D., Groote, D., Hagen, H.J., Reimers, D., 1988. In *Proceedings of the workshop on Optical Surveys for Quasars*, ed. Osmer, P., *Publ. astr. Soc. Pacific*, in press.
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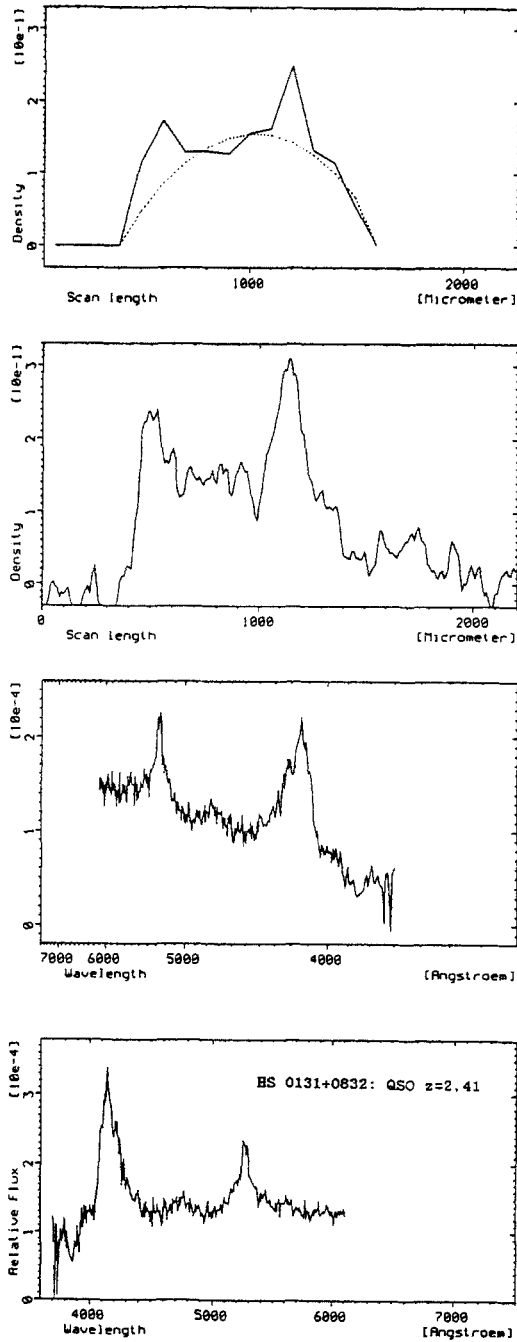


Fig. 1. a) Low-resolution spectrum of a QSO candidate, b) high-resolution spectrum, c) slit-spectrum convoluted with the prism dispersion and d) slit spectrum of the confirmed QSO