QSO SEARCH BY SLITLESS SPECTROSCOPY *

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Sandage and I have obtained "grism" plates that redundantly cover one square degree fields centered on ten Selected Areas. We used a grating-prism in the converging beam of the Mayall 4-meter telescope prime focus to photograph 1580 $Å \cdot mm^{-1}$ slitless spectra to a limit of about B = 21.5 (cf. Hoag and Smith 1977).

Emission-line, Q, and ultraviolet excess, U, quasar candidates have been independently selected by two or more persons, and a final list for each plate has been prepared by coordinated review. Spectra of candidates were then measured microdensitometrically and analyzed by procedures described by Vaucher **et al.** (1982). Positions for identification have been determined by tying zero-order images into secondary standards set up by measures of images on plates taken with the A. Lawrence Lowell Astrograph.

The completeness of our lists as a function of magnitude depends not only on the quality of the plates but also on the intrinsic properties of the objects. To the limit we achieve in practice ($19.5 \lesssim B \lesssim 21.5$), we typically find the order of a dozen emission-line, and an equal number of ultraviolet excess quasar candidates per square degree. However, the range in the projected surface density of emission-line candidates is about a factor of three among the fields surveyed.

Results for a representative field are presented in Table 1. Lower-case letters following the serial number in the table refer to previous identifications as follows: a = U283, b = U310, and c = U314 from Usher (1981); d = 18, e = 22, and f = 5C7 from Kron and Chiu (1983). A colon following a Q class symbol indicates that only one emission line was detected, so that a redshift can be determined only by assuming a line identification. Redshifts are provisional and depend on the correctness of line identifications. Continuum magnitudes are estimated at λ1475 Å in the rest frame of the object or at λ4500 Å in the rest frame of the observer if the redshift is not determined.

* Discussion on p.61

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Norman G. Thomas (Lowell) and Barbara G. Vaucher (Pennsylvania State University), Sister Mary Matthew (Mercyhurst College), Barry Feierman (Westtown School), and Gregory Berns (Princeton University) have shared in the work described.

Table 1. S.A. 57 Objects

Ser.	Class	R.A. (1950)	Dec.	Zp	m	Remarks
1	Q:	$13^h03^m48.^s0$	+29°46'04"	--	19.5	λ4740
2	Q	13 03 54.7	29 10 46	2.06	21:	λλ3700, 4800
3	Q	13 04 11.1	29 40 45	2.00	19.7	Lyα, CIV
4	Q:	13 04 20.0	29 34 20	--	21.0	λ3870
5	Q:	13 04 28.5	29 30 11	--	21.0	λ4800
6a	Q	13 04 32.3	29 20 34	2.11	20:	Lyα,CIV
7	U	13 04 41.5	29 17 32	--	--	Possible emission
8	Q:	13 04 56.1	29 25 42	--	20.0	λ4340
9	U	13 04 59.6	29 49 44	--	--	
10	Q:	13 05 27.1	29 24 31	--	20.0	λ4030
11	G	13 05 44.3	29 10 09	--	--	λλ4860, 6560
12b	U	13 05 45.8	29 50 48	--	--	
13d	Q	13 05 49.2	29 41 12	3.15	18.6	Lyα abs., Lyα
14c,e	U	13 05 53.3	29 35 17	--	--	
15	Q:	13 05 54.5	29 57 22	--	20.6	λ3600
16	Q	13 06 02.4	29 23 45	1.59	21.1	CIV, CIII]
17	Q:	13 06 02.5	29 07 53	--	20.7	λ3740
18	Q:	13 06 07.1	29 56 38	--	21:	λ3750
19f	Q:	13 06 26.9	29 28 43	--	20.5	λ3430
20	U	13 06 27.5	29 20 19	--	--	
21	U	13 06 42.1	29 33 28	--	--	
22	G	13 06 47.7	29 08 44	0.02	--	[OIII], Hα
23	U	13 07 17.6	29 29 33	--	--	
24	Q	13 07 50.3	29 50 41	2.22	19.6	Lyα, CIV
25	Q	13 07 54.4	29 50 52	1.75	19.0	Lyα, CIV
26	Q	13 07 58.4	29 42 55	2.21	18.9	Lyα, CIV
27	Q	13 08 07.8	29 37 21	1.36	20.1	CIV, MgII
28	Q	$13^h08^m41.^m8$	+29°42'08"	1.82	17.9	Lyα, CIV

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