

SHORT COMMUNICATIONS

IDENTIFICATION OF RADIO SOURCES BETWEEN DECLINATIONS -20° AND -30° *

By J. G. BOLTON† and JENNIFER EKERS†

Bolton, Clarke, and Ekers (1965) have recently suggested some 55 identifications for radio sources between declinations -20° and -44° from inspection of the Palomar Sky Survey plates in positions of radio sources in the Parkes catalogue for declinations -20° to -60° (Bolton, Gardner, and Mackey 1964). As the estimated accuracy of the catalogue positions was ~ 0.6 min of arc in both coordinates, identifications were suggested only for objects brighter than ~ 17.5 magnitude in order to avoid chance coincidences.

More precise positions for 54 of the sources between declinations -20° and -33° have now been determined by Shimmins, Clarke, and Ekers (unpublished data). The improved accuracy of these positions reduces the search area to less than one-tenth of that of the catalogue positions and permits identification with objects as faint as ~ 19.5 magnitude. Thirteen new identifications are suggested from a re-examination of the Sky Survey prints in the 54 positions. Seven of these are faint galaxies and five are quasi-stellar objects; the other (1420—27) may either be a quasi-stellar object with some associated nebulosity, or alternatively a very blue galaxy.

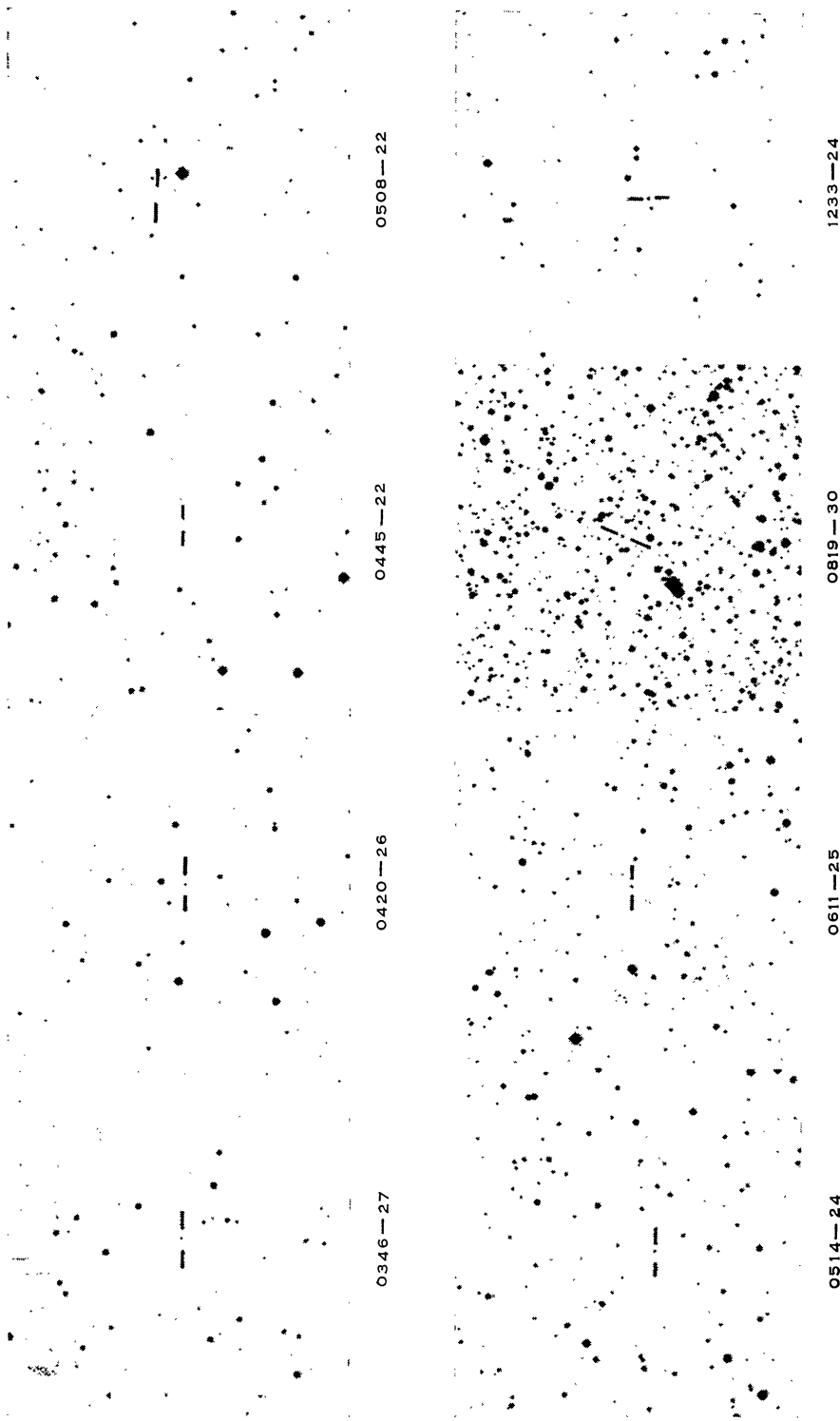
Data on the new identifications are given in Table 1. The positions of the optical counterparts were estimated from the Sky Survey prints with the aid of transparent overlays containing the position of the source and positions of at least six stars from the Yale Catalogue. The positions are given to 0.5 sec in right ascension and 0.1 min of arc in declination, though the uncertainty in measurement could be twice as large. The agreement between the measured optical positions and the radio positions determined by Shimmins, Clarke, and Ekers is better than 0.8 sec in right ascension and 0.3 min of arc in declination. Flux densities and spectral indices for the sources are taken from the Parkes catalogue. Abbreviations in column 6 of Table 1 are: E, elliptical; D, spherical galaxy with diffuse envelope; g, galaxy too faint for classification; and QSO?, possible quasi-stellar object. Photographic magnitudes for the galaxies and visual magnitudes for the quasi-stellar objects were estimated from the Sky Survey prints; for such faint objects, however, the estimates may be in error by as much as one magnitude.

Finding charts for the new identifications are given in Plates 1 and 2. For the galaxies, the charts were prepared from the Sky Survey "E" or red prints and, for the quasi-stellar objects, from the "O" or blue prints.

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† Division of Radiophysics, CSIRO, University Grounds, Chippendale, N.S.W.

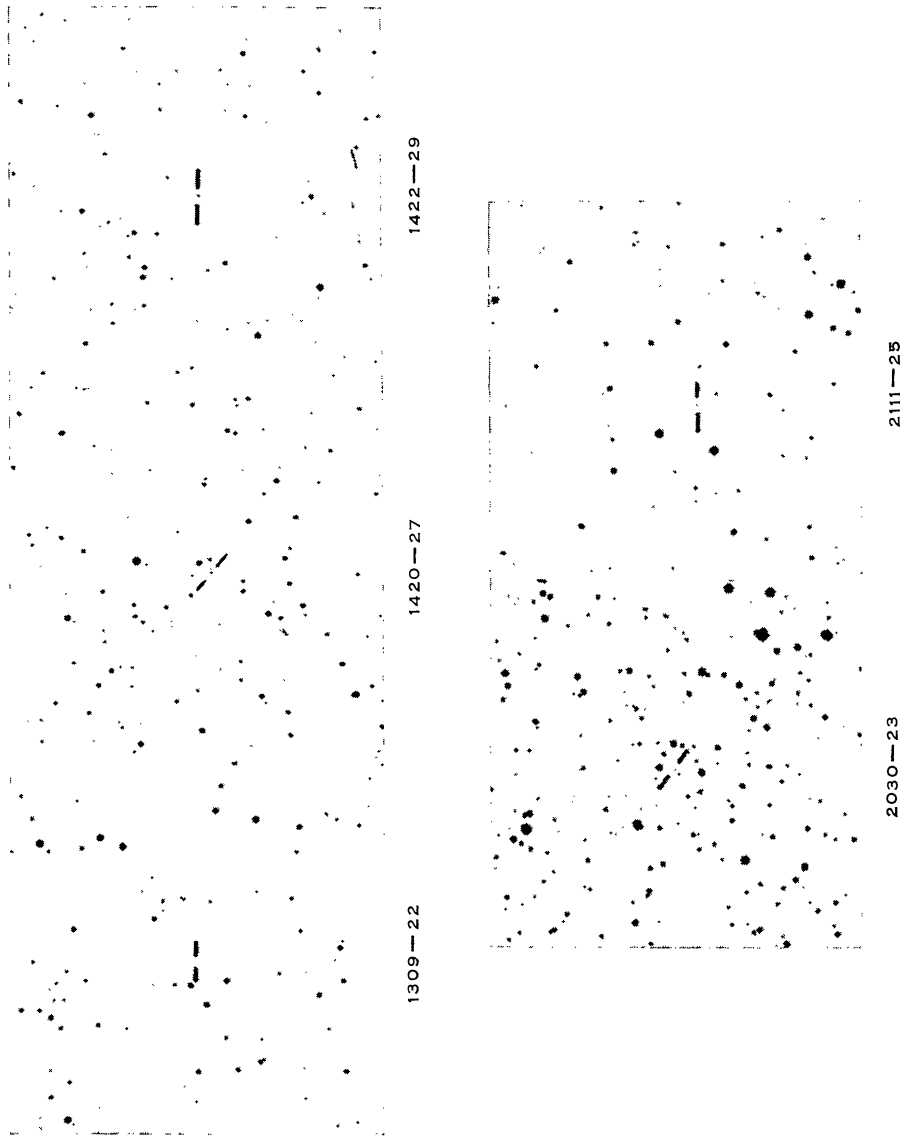
RADIO SOURCES BETWEEN -20° AND -30°



Finding charts for identified objects 0346-27 to 1233-24. Scale is 5 mm = 1 min of arc. North-east is at the top left-hand corner of each chart.

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RADIO SOURCES BETWEEN -20° AND -30°



Finding charts for identified objects 1309—22 to 2111—25. Scale is 5 mm = 1 min of arc. North-east is at the top left-hand corner of each chart.

TABLE I
LIST OF IDENTIFICATIONS

Catalogue Number	Position (1950)			Flux Density at 1410 Mc/s (10 ⁻²⁶ W m ⁻² (c/s) ⁻¹)	Spectral Index	Type	Photo- graphic Magni- tude	Galactic Coordinates		Remarks	Alternate Cat. Nos.
	R.A. h m s	Dec. ° ' "						l ^{II}	b ^{II}		
0346-27	03 46 33.0	-27 59.0		1.4	-0.1	E3	19	224	-51	Curved spectrum	03-210
0420-26	04 20 30.0	-26 23.5		1.4	-0.8	E	18.5	224	-43		04-26
0445-22	04 45 29.0	-22 08.7		2.0		g	20	221	-36		
0508-22	05 08 53.5	-22 05.0		1.9	-0.8	QSO?	18.5	223	-32		05-23
0541-24	05 41 09.5	-24 22.7		1.5	-0.9	QSO?	18.5	228	-25	In obscured region, probably brighter	05-27
0611-25	06 11 31.5	-25 29.8		1.1	-0.8	E	18.5	233	-19		
0819-30	08 19 25.5	-30 01.4		3.0	-0.7	E3	18.2	250	4		08-23
1233-24	12 32 59.5	-24 55.7		2.3	-0.9	QSO?	17	299	38		12-27
1309-22	13 08 58.0	-22 00.9		5.4	-1.2	g	20	309	40	Wyndham (1965) reports no identification for this source. His declination, however, is 30" north of position determined by Shimmins, Clarke, and Ekers	13-23 3C 283
1420-27	14 19 55.0	-27 14.3		2.6	-1.0	QSO?	18	327	31		14-28
1422-29	14 22 32.5	-29 46.8		2.5	-0.9	QSO?	17.5	326	29		14-210
2030-23	20 30 20.0	-23 03.4		3.0	-0.8	D	20	22	-32		20-28
2111-25	21 11 44.5	-25 54.4		2.6		QSO?	19	22	-42	Curved spectrum	

References

- BOLTON, J. G., CLARKE, MARGARET E., and EBERS, R. D. (1955).—*Aust. J. Phys.* **18**: 627.
BOLTON, J. G., GARDNER, F. F., and MACKEY, M. B. (1964).—*Aust. J. Phys.* **17**: 340.
WYNDHAM, J. D. (1965).—*Astr. J.* **70**: 384.