

Optical Identification of Southern Radio Sources. II*

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Abstract

From a study of the fields of 11 southern radio sources, six identifications are suggested with faint galaxies and three with compact objects, while two fields appear blank to the limits of the photographs. Additional material for one previously identified field is also given.

In this note we present the results of optical studies in the fields of 11 southern radio sources. The radio positions have been determined by Hunstead (1972) with the Molonglo cross. The optical material, taken with an image tube at two foci of the Cerro Tololo 152 cm (60 in.) telescope; the astrometric transfers made from wide-field plates taken with the Curtis Schmidt telescope; and the reduction procedures followed those of the earlier investigation reported in Part I (Hunstead *et al.* 1971). No filters were used for the image-tube photographs.

The results are summarized in Table 1. The magnitudes given for the identifications are eye-estimates which are subject to moderately large errors. In the two cases of probable blank fields, the coordinates of some reference object are given in columns 3 and 6 to facilitate future investigations. In two other cases, indicated specifically in the notes to the table, identifications with extremely faint diffuse objects at our plate limits are suggested; the possibility of misidentification with a plate flaw is conceivable here.

Finding charts are given in Figs 1 and 2. These were prepared from the image-tube plates and the field is 6' arc square. With the hope that the additional photographic material may be useful to some investigators, a chart has also been included for the source 0842-75, which has been previously identified by Hunstead (1971) with an 18^m compact object.

Acknowledgments

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References

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Table 1. Data for southern sources

(1) Source	(2) Radio R.A. (1950)* h m s			(3) Optical R.A. (1950) h m s			(4) $ \Delta\alpha/\epsilon_\alpha $	(5) Radio Dec. (1950)* ° ' "	(6) Optical Dec. (1950) ° ' "	(7) $ \Delta\delta/\epsilon_\delta $	(8) S_{408} * (f.u.)	(9) Optical object§	(10) Notes
0110-69	01	10	02:67±0.39	01	10	02:85±0.16	0.4	-69 15 54.9±2.3	-69 15 53.6±1.7	0.46	5.8	v. faint g	1
0119-63	01	19	52:85±0.31	01	19	52:35±0.08	1.6	-63 24 45.7±2.2	-63 24 43.4±0.5	1.0	5.2	17 ^m C	
0129-51	01	29	13:64±0.22	01	29	13:24±0.11	0.9	-51 17 01.9±2.5	-51 16 55.7±0.8	2.4	3.5	18 ^m g	2
0223-71	02	23	18:20±0.60†	02	23	15:51±0.11	4.4	-71 13 14.5±4.1†	-71 13 13.1±0.6	0.3	5.2	16 ^m C	3
0230-66	02	30	51:40±0.50†	02	30	56:52±0.13†	—	-66 39 54.6±3.9†	-66 39 24.8±1.2†	—	4.2	—	4
0354-48	03	54	00:94±0.29†	03	54	00:67±0.05	0.9	-48 31 40.0±3.4†	-48 31 44.5±1.0	1.0	3.6	v. faint g	5
0420-62	04	20	18:99±0.13	04	20	17:85±0.10	7.0	-62 30 41.3±1.2	-62 30 41.1±1.6	0.1	10.7	19 ^m g	6
0443-59	04	43	28:24±0.16	04	43	28:08±0.10	0.9	-59 30 20.2±1.6	-59 30 23.6±2.1	1.3	3.6	17 ^m C	
2207-45	22	07	16:24±0.16	22	07	17:70±0.03†	—	-45 57 33.3±2.0	-45 58 20.9±1.2†	—	3.8	—	7
2213-45	22	13	52:15±0.14	22	13	52:16±0.03	0.1	-45 36 46.5±1.7	-45 36 41.6±0.6	2.7	4.2	19 ^m g	8
2252-53	22	52	51:40±0.19	22	52	51:48±0.30	0.2	-53 01 40.6±1.8	-53 01 46.4±0.8	2.9	6.2	g	9

* Radio data quoted from Hunstead (1972).

† Radio position based on only one scan.

‡ Not an identification; see note specific to marked object.

§ Classification of optical objects: g, galaxy too faint for classification; C, compact object of stellar appearance, possible QSO.

|| Notes on identifications:

(1) 0110-69. The field is centred on a cluster of galaxies. The proposed identification is doubtful and could easily be a plate flaw. For reference the elongated object to the south-west is at R.A. 01^h 10^m 00^s. 54, Dec. -69° 16' 10". 8, a distance of 17" from the radio position.

(2) 0129-51. This is possibly a rather complex field. A faint object (8".09 east, 1".1 south of the radio position is either a plate flaw or a jet running north-east to south-west. (Note added in proof: new plates of 0129-51 confirm the identification; there is no evidence of a jet.)

(3) 0223-71. The large value of $|\Delta\alpha/\epsilon_\alpha|$ makes the identification doubtful.

(4) 0230-66. The field is blank to the plate limit. The bright star to the north is listed in columns 3 and 6 for reference only.

(5) 0354-48. The object is clearly visible on the two plates.

(6) 0420-62. The object is in a cluster of galaxies.

(7) 2207-45. The field is apparently blank. A small density fluctuation at the radio position has been taken for a plate flaw but is conceivably a very faint galaxy.

(8) 2213-45. The object is near the centre of a rich cluster of galaxies.

(9) 2252-53. The proposed identification is doubtful. The marked object is the brightest of a compact group of faint images extending to the west, but misidentification with a plate flaw is conceivable.

Figs 1 and 2. Finding charts for the 11 identifications and one other field. Suggested identifications are marked between bars. For apparently blank fields, the radio position is marked with a circle and the reference object given in Table 1 is marked between bars. Each field represents an area approximately 6' arc square and has a scale of 6".7 arc per mm; north-east is at the top left-hand corner.

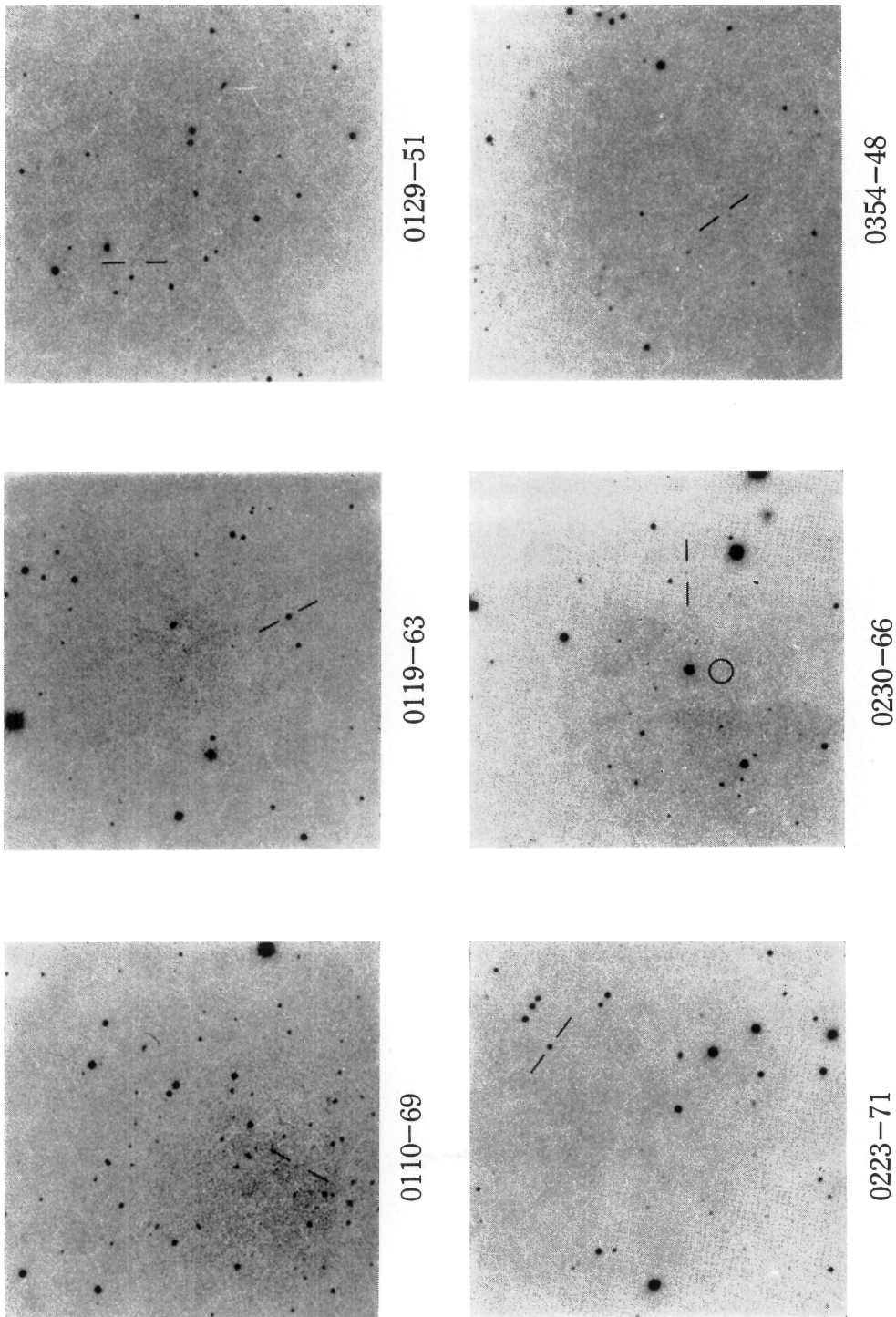
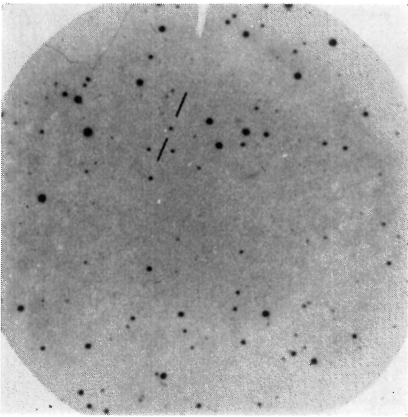
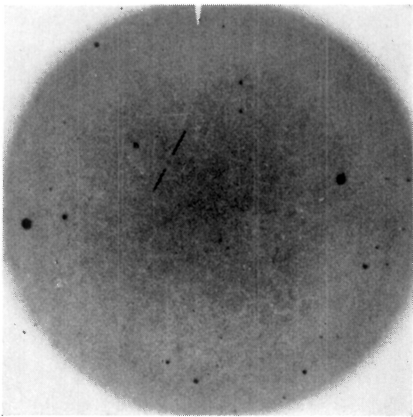


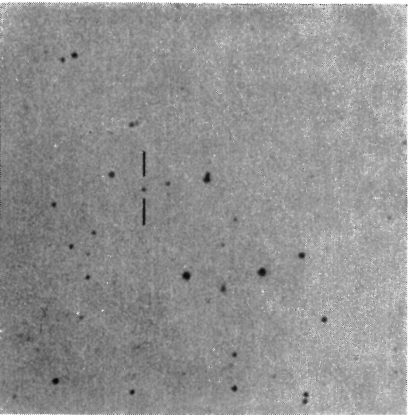
Fig. 1



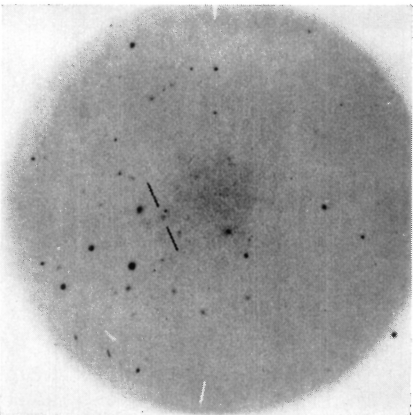
0842-75



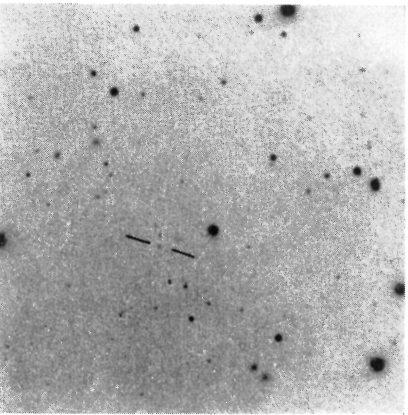
2252-53



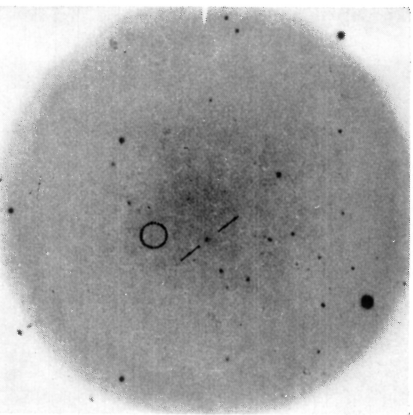
0443-59



2213-45



0420-62



2207-45

Fig. 2