THE LINEAR POLARIZATION OF RADIO SOURCES AT 6 CM WAVELENGTH

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Summary

Linear polarization measurements at 6 cm wavelength with the Parkes 210 ft telescope are given for 706 sources. Comparison of polarization parameters and flux densities with other published data is made. For the variable sources it is found that changes in polarized flux and position angle can accompany changes in intensity.

I. Introduction

An extensive observing programme is being carried out with the Parkes 210 ft telescope to investigate the linear polarization of radio sources. The programme contains a total of about 1000 sources south of declination $+27°$ with 11 cm flux densities exceeding about $0\cdot5$ f.u.† The results for 366 sources at wavelengths between 20 and 11 cm have already been published (Gardner, Morris, and Whiteoak 1969). In this paper data are provided for 706 of the sources at 6 cm. Of these, 54 are in common with previous surveys of 60 sources by Sastry, Pauliny-Toth, and Kellermann (1967) or of 45 sources by Morris and Whiteoak (1968).

This paper is mainly the tabulation of results. However, it includes a comparison with the previously published data and a brief discussion of the polarization results for sources thought to vary at this wavelength.

II. Observational Details

The observations were carried out during two periods in 1968—June 20 to July 4 and July 18 to August 1—with a cryogenically cooled receiver on loan from the National Radio Astronomy Observatory, Green Bank, U.S.A. A total of 978 polarization determinations were made of 706 sources at a centre frequency of 5000 MHz with 150 MHz bandwidth. The additional 272 determinations comprised: 41 of Jupiter (Whiteoak, Gardner, and Morris 1969); about 60 of small-diameter HII regions and "unpolarized" sources, observed over a large range of hour angles in order to obtain the instrumental effects; 20 of 3C 161 (PKS 0624−05), to provide a polarization standard; and approximately 150 repeats to check internal reliability and to provide additional points in time for the variable sources. In addition, observations were made of extended sources, usually by scanning with the polarizer set at a number of discrete angles. These observations will be published later.

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† 1 flux unit = 10^{-26} W m^{-2} Hz^{-1}.

The basic system of feed rotations "on-source" and "off-source" and their reduction has been covered by Gardner, Morris, and Whiteoak (1969) and the application of the system at 6 cm by Whiteoak, Gardner, and Morris (1969). The instrumental polarization with the "hybrid-mode" feed system generally employed was found to depend on zenith angle and to average about 1·5%. For any zenith angle it was considered to be known to an accuracy of approximately 0·3%. For about 100 of the early observations a different feed, similar in design to that used at 11 cm by Gardner, Morris, and Whiteoak (1969), was tried. Although this feed reduced the instrumental polarization considerably, it increased the beamwidth from 4′·0 to 4′·5 arc, reduced the aperture efficiency by 25%, and increased the off-source variation with rotation; it was therefore not used subsequently.

The zero of the position angle scale was set with respect to the Jovian equator in the manner described by Whiteoak, Gardner, and Morris (1969). This required an adjustment to the zeros set by radiating a polarized signal from the centre of the paraboloid of 0°·5 for the first observing period and 0°·7 for the second. The average ionospheric Faraday rotation for Jupiter, which transited in mid afternoon was estimated at −0°·6. Since this was included in the calibration, the position angles for the other sources are in error by from −0°·2 to −0°·6. Because the errors are small, corrections have not been applied.

The flux density scale was based on the assumption that Hydra A was a point source of intensity 13·0 f.u. Since the receiver was used in a polarization-switching mode, the flux densities were measured from the total-power records which are sensitive to changes in sky radiation and receiver drifts.

During periods of changing weather the off-source variation of polarized intensity with rotation was considerably affected, causing errors in the polarization determined. A possible explanation for this is either variation in ground reflectivity with precipitation or cloud radiation polarized by ground reflection. The observations were repeated in practically all cases where such errors occurred. Errors sometimes occurred with observations made in directions near the Sun, whose mean positions for the two periods were $\alpha = 06^h 24^m$, $\delta = +23°·3$ and $\alpha = 08^h 17^m$, $\delta = +19°·7$.

III. Results

The polarization results are given in Table 1. Column 1 contains the catalogue numbers as they appear in the Parkes catalogue of radio sources (Division of Radiophysics, CSIRO 1969). Additional sources are from Davis (1967), Hőglund (1967), Shimmins and Day (1968), Thompson, Kraus, and Andrew (1968), Kesteven (personal communication), and Wall (personal communication). The listing is in order of increasing right ascension, except for individual components of a single source, which are grouped together. Column 2 gives the peak flux density S in flux units. Columns 3 and 4 give the percentage polarization P and its probable error *P.E.*, which includes uncertainties in the instrumental correction. Columns 5 and 6 give the position angle of the electric vector measured east of north *P.A.* and its probable error *P.E.* As noted previously, the angles were not corrected for ionospheric Faraday rotation. Columns 7 and 8 give those source characteristics that may be related to polarization, namely the identification and the redshift z. The symbols used for identifications in column 7 are self-explanatory. References for many of the identifications and redshifts were given previously (Gardner, Morris, and Whiteoak 1969). Additional information is from Bolton, Kinman, and Wall (1968), Bolton (personal communication), Merkelijn (1968, 1969), Searle and Bolton (1968), and Westerlund and Wall (1968). Column 9 gives the classification as scintillator (SC) and non-scintillator (N) from Whiteoak (unpublished data) and Cohen, Gundermann, and Harris (1967).

IV. Comparison with Other Observations

(a) *Total Intensities*

The peak flux densities in Table 1 have been compared with those of Shimmins, Manchester, and Harris (1969), which were also obtained with the Parkes telescope. The ratios of the flux densities of Table 1 (S_{GWM}) to those of Shimmins, Manchester, and Harris (1969) (S_{SMH}) are shown in Figure 1. The median ratio is 1·035 with a width between quartiles of 0·105. For the 13 sources which are in common with Sastry, Pauliny-Toth, and Kellermann (1967), and which are neither extended nor variable, the median flux values of Table 1 are higher by 1·07 with a quartile width of 0·12.

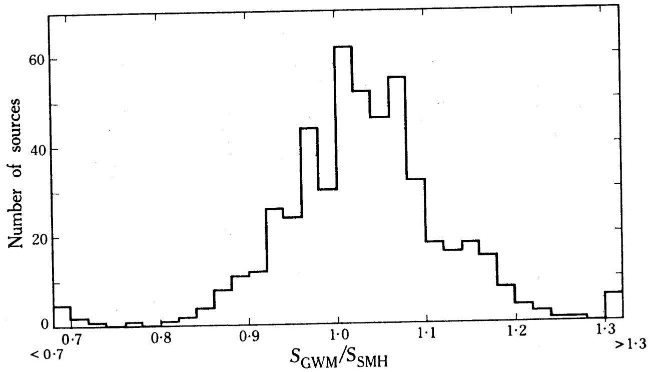

Fig. 1.—Histogram of the ratios of peak flux densities from Table 1 (S_{GWM}) to those from Shimmins, Manchester, and Harris (1969) (S_{SMH}).

(b) *Polarization Comparison*

A comparison between the present results (GWM) and the preliminary survey of Morris and Whiteoak (1968) (MW), based on 25 sources thought to be nonvariable, small in extent, and with polarized flux density exceeding 0·1 f.u., gives

$$P_{\mathrm{GWM}}-P_{\mathrm{MW}} = 0\cdot0\%\pm1\cdot4\% \text{ (r.m.s.)},$$

$$(P.A.)_{\mathrm{GWM}}-(P.A.)_{\mathrm{MW}} = 0^\circ\cdot1\pm10^\circ\cdot3 \text{ (r.m.s.)}.$$

For the 14 sources in common with the survey of Sastry, Pauliny-Toth, and Kellermann (1967) (SPK), selected in the same way, a similar comparison gives

$$P_{\mathrm{GWM}}-P_{\mathrm{SPK}} = 0\cdot0\%\pm0\cdot6\% \text{ (r.m.s.)},$$

$$(P.A.)_{\mathrm{GWM}}-(P.A.)_{\mathrm{SPK}} = 2^\circ\cdot3\pm3^\circ\cdot9 \text{ (r.m.s.)}.$$

TABLE 1

6 CM POLARIZATION OF RADIO SOURCES

(1) PKS	(2) *S*	(3) *P*	(4) *P.E.*	(5) *P.A.*	(6) *P.E.*	(7) Ident.	(8) *z*	(9) Scint.
0000-17	.87	2.6	.6	1	8	16.8N		
0002+12	.41	11.5	1.2	174	3	19.5G		
0003-56	.66	4.2	.8	68	6			
0003-00	1.47	3.0	.4	110	2	19.4QSO	1.037	SC
0004-83	.82	5.1	.6	13	3			
0007+12	.63	7.7	.8	102	2	17.7E		
0008-42	1.23	.2	.4	95				N
0010+005	.52	9.0	1.0	118	4			
0013-00	.78	.7	.6	65	40			
0016-12	.69	3.4	.7	139	4			
0017+15	.46	17.6	1.1	31	2	18.2QSO	2.012	N
0019-00	1.21	.1	.4	31				SC
0020-25	.72	6.2	.7	51	2	G		
0021-29	.87	4.3	.6	109	3	17.9QSO		N
0023-26	3.66	.3	.2	47	20			SC
0030+19	.88	1.0	.6	135	11	19.0D		
0032-20	.44	1.1	1.3	120	40			
0033+18	.58	5.6	.8	79	5			
0034-01	1.63	5.8	.3	45	2	18.0E	.0733	N
0035+13	.54	8.4	1.5	114	3			
0035-02	2.75	.7	.3	166	10	19.0E	.2201	N
0036+03	.70	12.7	.7	88	2	13.0E	.0145	
0038-020	.87	4.0	.6	50	2	18.5QSO	1.117	
0038+09	1.78	2.0	.4	75	3	18.5G		N
0039-44	.99	5.3	.5	74	3			N
0042-35	.91	6.8	.6	78	2			N
0043-42	2.75	12.8	.3	137	1	18.0E		N
0045-25	2.04	.8	.3	137	5	7.0S	.0011	N
0048-09	2.24	6.7	.3	108	1	18.5G		
0049-43	.88	8.6	.6	171	2			N
0051-03	.59	1.2	.8	38	12	19.0E	.2106	
0053-01W	.37	1.0	1.2	102	25			
0053-01E	.38	6.8	1.2	105	4			
0055-01	2.13	13.3	.3	159	1	15.6E	.0450	
0055+26	.58	8.9	.8	99	2	14.5E		
0056-00	1.38	7.5	.4	86	1	17.3QSO	.72	
0056-17	.36	2.4	1.2	173	16			
0101-12	.75	7.0	.6	146	2			
0103-45	.55	17.5	3.0	142	1			
0105-16	.95	10.6	.5	23	1			N
0106+01	2.97	2.0	.2	122	3	18.3QSO	2.107	
0106+13	3.59	9.5	.2	93	1	15.6D	.0600	N
0110-69	.50	13.1	1.0	66	2			
0112-01	1.62	6.5	.4	112	2			
0114-47	.35	13.5	1.2	121	3	16.5E		
0114-21	1.35	1.2	.4	16	16	19.0DB		SC
0115+02	.62	6.1	.8	11	4	17.5QSO	.67	
0116+08	1.31	1.2	.4	17	6			
0117-15	1.53	6.4	.4	110	2			N
0119-04	.77	.4	.6	41	20	17.0QSO	1.955	
0122-00	1.24	4.8	.4	23	3	16.7QSO	1.070	
0123-01W	.93	2.0	1.0	44	9	11.9DB	.0177	N
0123-01E	.93	.4	.6	42		11.9DB	.0177	N
0124+18	.62	18.7	.8	8	2	15.5E		
0124+09	.73	8.7	.7	61	2	19.0G		

TABLE 1 (*Continued*)

(1) PKS	(2) *S*	(3) *P*	(4) *P.E.*	(5) *P.A.*	(6) *P.E.*	(7) Ident.	(8) *z*	(9) Scint.
0125-14	.79	2.7	.6	15	5	G		N
0127+23	1.20	3.4	.6	168	4	19.0QSO		
0127+25	.66	7.9	.7	1	2			
0128+03	.41	1.4	1.2	33	14			
0130-17	.95	4.2	.5	164	6	18.4QSO		
0131-44	.70	5.7	.7	56	3			
0131-36W	.81	5.0	.6	166	3	13.2SO	.0297	N
0131-36E	1.42	20.5	1.0	106	1	13.2SO	.0297	N
0132+07	.79	3.0	.6	88	5			
0133+20	1.18	4.8	.4	32	3	18.1QSO	.425	N
0138+13	.90	.3	.6	77				SC
0148-29	.78	3.6	.6	104	4			N
0149+21	1.16	2.4	.4	75	4			
0153+05	.24	1.0	2.0	120		12.6E	.0188	
0155-10	.75	2.2	.6	157	5	17.1QSO	.6161	
0157-31	1.30	6.4	.4	78	2	19.0QSO		N
0159-11	1.24	2.1	.4	21	4	17.5QSO	.669	N
0201-44	1.05	9.6	.5	127	2			SC
0202-76	.83	4.9	.6	145	2	16.8QSO		
0202+14	2.43	.5	1.0	156				SC
0202-17	1.16	4.0	.4	115	2	18.5QSO	1.74	
0204+06	.73	3.9	1.1	65	6			
0213-132	1.68	7.9	.3	83	1	18.5E		N
0214-48	.75	14.3	.6	77	1			
0218-02	.83	7.5	.6	41	2	19.5E		N
0219+08	.72	7.2	.7	31	2	19.5G		N
0220-42	.30	3.4	1.7	98	15	19.0DB		
0222-23	.89	3.0	.6	10	8			
0226-038	.48	1.7	1.0	130	10	17.0QSO	.695	
0229+13	1.05	3.0	.5	148	10	18.4QSO	2.065	
0234+09	.47	.7	1.0	63				
0235-19	1.30	5.5	.3	177	2			N
0237-23	3.28	5.4	.3	152	1	16.7QSO	2.223	
0238-08	.98	.8	.5	50	15	11.9E		
0240-00	1.93	.8	.3	93	10	9.0SEY	.00363	N
0241-51W	.73	1.2	.7	104	8			N
0241-51E	.65	7.2	.7	76	2			N
0245-55	.50	9.8	1.0	25	2			
0252-71	1.66	.6	.3	19	8			
0255+05	1.57	.4	1.0	91		13.2DB	.0241	N
0300+16	1.08	15.5	1.2	109	1	14.8E	.0326	N
0305+03	3.49	2.2	.3	86	3	12.9SO	.0289	N
0307+16	1.24	8.6	.5	22	1	18.6N	.2561	N
0310-15	.85	1.7	.6	22	7			
0312+10	.60	4.0	.8	171	3	19.5G		
0316+16	3.04	.2	.3	38				SC
0319+12	1.13	6.2	.5	72	2			
0319-29	.82	1.8	.6	98	9			
0319-45	.78	5.9	.6	55	3			N
0320+05	.83	.7	.6	146		20.0G		SC
0325+02	1.58	3.5	.4	87	3	15.0D	.0302	N
0331-01	.67	7.0	.7	168	2	18.5D		N
0332-05	.57	2.3	.8	6	4			
0333+12	.68	1.7	.7	60	8			
0336-35	.72	9.2	.7	123	2			
0336-01	2.25	.7	.3	11	10	18.4QSO	.852	
0340-37	.81	7.5	.6	41	2			

TABLE 1 (*Continued*)

(1) PKS	(2) *S*	(3) *P*	(4) *P.E.*	(5) *P.A.*	(6) *P.E.*	(7) Ident.	(8) *z*	(9) Scint.
0340+04	.98	7.7	.5	138	2	18.1QSO		N
0344-34	.63	3.7	.8	164	5	17.4E		N
0346-27	.82	4.1	.6	50	4	19.0E		
0347+05	1.31	3.6	.6	74	3			SC
0349-14	.66	1.3	.7	156	11	16.2QSO	.614	N
0349-27	1.34	.7	.4	161	25	16.8E		N
0350-07	.73	11.6	.7	11	1	16.5QSO	.962	SC
0356+10	2.98	7.2	.3	62	2	15.0E	.0306	N
0357-16	.68	3.2	.7	35	3			
0358+00	.52	3.9	1.0	116	4	18.0G		
0403-13	2.31	2.6	.3	177	3	17.2QSO	.571	SC
0404+03	1.90	5.0	.3	35	2			N
0405-12	1.90	.7	.3	84	13	14.8QSO	.574	N
0406-18	.89	.5	.6	103				
0408-65	3.31	.4	.3	107	15	QSO		SC
0408+07	.49	4.6	1.6	162	4			
0409+22	.75	2.4	.6	68	7			
0410-75	4.39	1.1	.2	51	10			SC
0410+11	1.57	4.4	.4	59	4	17.8N	.3056	N
0411+14	.89	6.8	.6	10	4			N
0411-56	.78	1.1	.6	175	11			
0411+05	.64	.3	.8	119				
0413-21	1.30	3.0	.4	44	2			
0420-62	.91	.9	.6	158	11			SC
0420-01	2.26	.8	.3	169	10	18.0QSO	.915	
0421+00	.61	8.1	.8	167	2			
0421+019	.74	1.8	.7	105	8	17.0QSO	.689	
0422+00	1.78	4.3	.3	18	2			
0427-36	.37	7.6	1.2	104	3			
0427-53	1.61	5.4	.4	120	2	13.2DB	.0392	
0428+20	2.23	.7	.3	41	10			
0428+011	.47	3.5	1.0	17	4			
0430+05	9.25	1.0	.2	167	5	15.0SEY	.0333	SC
0431-02	.62	2.0	.8	96	8			
0438-43	7.97	1.2	.2	25	4			
0440-00	3.45	3.1	.2	9	2	19.2QSO		
0442-28	1.95	2.2	.3	84	4	18.2E		
0445-22	.51	.7	1.0	108	15	20.0G		
0451-28	1.82	4.6	.3	100	2	19.0QSO		
0453-20	1.73	3.5	.3	143	2	14.0E	.0151	N
0453-30	1.10	6.4	.5	82	3	19.0E		N
0453+22	1.21	8.1	1.0	10	1	19.0G		N
0454-22	.96	1.6	.5	20	4			
0454-46	1.77	2.8	.3	14	2			N
0456-30	.82	6.7	.6	123	2	17.6E		N
0457+024	1.34	.5	.4	161	15			
0458-02	2.06	4.1	.3	27	2			
0459+25	2.17	3.8	.3	138	3			
0500+019	1.89	.4	.3	55	20			
0502-10	.47	2.5	0	62		15.4DB		
0506-61	1.50	2.2	.4	168	5			N
0511-48	.76	10.8	.6	163	2	17.0E		
0511+00	1.05	3.4	.5	94	3	18.0E	.1270	N
0511-30W	.38	10.2	5.0	160	3	17.0E		
0511-30E	.29	24.0	3.0	130	2	17.0E		
0512+24	.64	16.0	3.0	73	3	17.0D		
0513-13	.49	1.5	.8	132	12			

TABLE 1 (*Continued*)

(1) PKS	(2) S	(3) P	(4) P.E.	(5) P.A.	(6) P.E.	(7) Ident.	(8) z	(9) Scint.
0518+16	3.85	10.9	.5	174	3	18.8QSO	.754	SC
0518-45W	11.00	8.7	1.0	131	1	15.8D	.0342	N
0518-45E	9.45	4.3	.2	60	2	15.8D	.0342	N
0519-20	.42	.1	1.2	160				
0521-36	9.99	2.9	.2	75	2	14.5N	.061	N
0523-32	.30	7.0	1.7	44	6	16.6E		
0528+06	.96	5.4	.5	60	5			N
0530+04	.80	5.0	.6	172	4	19.0D		
0531+19	2.45	.3	.3	44	14	17.7E		SC
0533-12	.71	2.0	.7	169	11	17.0N		
0535-66	.73	.6	.7	135	24			
0535-49	.55	8.9	.8	149	2			
0540+18	.61	5.1	.8	102	4			
0547-40	.87	13.3	.6	121	2			N
0550+03	.92	.1	.6	75				
0600+219	1.37	.7	.4	138	16			
0602-31	1.22	1.5	.4	51	4			N
0604-20	1.02	2.7	.5	16	5	19.5G		N
0605-06	6.89	.7	.3	38	10	HII		N
0605-08	3.37	1.0	.2	11	7			
0607-15	1.87	.8	.3	0	10			
0610+26	2.24	3.8	.3	16	2			
0614-34	1.41	.9	.4	130	8	19.0DB		N
0616-48	.42	22.0	1.2	141	3			
0618-37	1.19	11.7	.4	75	2	16.6DB		
0620-52	1.29	4.2	.4	46	4			N
0624-05	6.75	4.6	.1	122	1			SC
0625-53	1.83	5.4	.3	95	2			
0625-35	2.16	2.8	.3	170	3	17.6DB		
0625-54	.91	3.0	.6	65	4			
0634-20W	.90	14.5	.6	95	1	17.6N		N
0634-20E	1.22	19.0	.4	116	1	17.6N		N
0637-75	5.13	2.6	.2	24	3			N
0640+23	.76	9.4	.6	79	2			
0642+21	1.01	3.4	.8	81	6	19.0G		
0642-43	.50	.8	2.0	53		17.0E		
0646-39	.88	6.2	.6	69	3			
0648-16	1.01	.5	.5	172	18			
0654-14	.92	3.4	.6	79	4			
0656-24	.58	18.0	.8	57	3			N
0704-23	1.52	5.0	.4	16	2			
0709-20	.51	6.0	1.0	65	6			
0710+11	.65	10.0	3.0	148		16.6QSO	.768	N
0711+14	.55	10.2	.8	160	6	18.0QSO		
0715-25	1.45	2.6	.4	42	4			N
0715-36	.62	7.5	.9	12	2	17.8E		
0718-34	.95	11.9	.6	91	1	16.5E		
0719-11	.77	6.3	.6	112	3	18.0E		
0719-55	.66	3.4	.7	42	5			
0723-00	2.81	5.5	.3	78	1			
0724-01	.91	1.1	.6	159	11			
0725+14	.69	3.0	2.0	69		18.9QSO	1.382	SC
0727-36	1.12	5.4	.5	52	3			
0727-11	2.28	1.0	.3	88	8			
0733-17	2.58	.5	.3	7	12			
0735+17	1.91	3.5	.3	28	3			SC
0736+01	1.92	5.7	.3	76	2	18.0QSO	.191	

TABLE 1 (*Continued*)

(1) PKS	(2) *S*	(3) *P*	(4) *P.E.*	(5) *P.A.*	(6) *P.E.*	(7) Ident.	(8) *z*	(9) Scint.
0741-06	2.77	.7	.2	152	15			SC
0742+10	3.66	.4	.2	152				
0743-006	1.95	.2	.3	22	20			
0744-67	1.91	1.4	.3	25	5			
0745-18	.27	6.5	1.7	138	5			
0745-19	.44	1.6	1.2	44	12	18.0D		
0748-45	.56	3.3	.8	76	9			
0748-44	.62	6.2	.8	102	3			
0758+14	.89	.4	.4	168		17.5QSO		SC
0800-09W	.42	7.5	1.2	102	5	18.5E		
0800-09E	.32	6.1	1.7	4	5	18.5E		
0802+10	.44	8.9	1.9	119	10	18.4QSO	1.946	SC
0802+24	1.67	3.7	.3	75	3	15.4E	.0599	
0805-07	1.10	4.0	.5	37	2			
0806-10	1.54	1.9	.4	109	6	18.8E	.107	N
0807-38	.66	6.7	.7	31	4			
0808+019	1.11	4.4	3.0	69				
0812+02	.82	3.0	.6	26	5	18.5QSO	.402	
0812-02	.49	2.8	2.0	154		18.5D		
0819-30	.63	1.0	.9	109	14	18.2E		N
0822-42W	2.42	1.2	.4	136	6	SNR		
0822-42E	2.01	4.3	.4	45	2	SNR		
0823+033	1.13	3.8	.8	120	9			
0825-20	1.17	2.6	.6	118	4	18.0QSO		N
0834-20	3.68	.3	.2	2	18	19.0QSO		SC
0834-19	1.45	.5	.4	5	13			N
0837+035	.53	4.3	1.0	51	8			
0837-12	.62	1.7	.8	169	14	15.8QSO	.200	
0838+13	1.26	3.4	.4	27	3	18.2QSO	.684	N
0842-75	1.47	2.5	.4	161	4			
0843-33	.99	20.4	.5	169	1	12.3E		N
0850+14	.56	7.8	.9	157	4	17.4QSO	1.110	SC
0850-20	.48	8.3	2.5	104	3			
0851-14	.62	1.0	.8	168	13			SC
0855-19	.80	1.7	.6	71	7			SC
0855+14	.89	3.3	.6	82	5	20.5N		SC
0857-43	17.10	< .2				HII		
0859-25	1.66	8.0	.3	44	5			SC
0859-14	2.29	1.5	.2	77	3	17.8QSO	1.327	N
0903-57	1.15	8.1	.4	99	1			
0906+01	1.10	5.5	.5	132	3			
0909-56	.57	2.5	1.5	84	8			
0915-11	13.00	.5	.2	22	4	13.6DB	.0522	N
0916-54	1.23	2.8	.4	91	4			
0918-53	2.28	2.4	.3	58	4			
0919-14	.65	4.2	.8	155	6			
0920-39	2.02	4.5	.3	94	4			
0931-49	.42	4.0	1.2	26	5			
0935-28	.42	5.8	1.2	178	4			
0939+14W	.38	3.2	1.2	134	9			SC
0939+14E	.96	2.4	.5	107	5			SC
0941-08	1.08	.7	.5	56	15	19.0D		
0941+10	.56	9.4	2.5	62	3			
0943-76	.77	.2	.6	108				
0945+07	1.95	4.9	.3	157	2	17.0N	.0855	N
0947+14	1.14	7.4	.5	111	2	18.0QSO		N
0947-24	.37	11.4	1.2	125	3			

TABLE 1 (*Continued*)

(1) PKS	(2) *S*	(3) *P*	(4) *P.E.*	(5) *P.A.*	(6) *P.E.*	(7) Ident.	(8) *z*	(9) Scint.
0949+24	.71	6.5	.7	155	4	18.0DB		
0949+00	.74	6.7	.7	63	3	18.5N		SC
0954+25	1.09	3.3	.5	158	4			
1005+07	1.94	2.5	.3	32	10	19.5G		SC
1008+06	.70	2.2	.7	79	6			SC
1008-017	.53	2.7	1.0	123	8	18.5G		
1010-64	.70	6.4	.7	143	2			
1011-31	.50	6.7	1.0	10	7			
1015-31	1.45	.5	.4	139	15			SC
1017-421	.38	11.2	1.2	155	2			
1017-426	1.26	3.8	.4	107	3			
1021-006	.78	1.2	.6	125	12	18.5QSO		
1030-59	2.18	3.8	.3	15	2			
1031-11	.75	3.2	2.0	165	12			
1036-69	.68	3.0	1.1	0	8			
1039+02	1.08	1.6	.5	82	6	19.0G		N
1040+12	1.48	10.9	.4	33	2	17.3QSO	1.029	SC
1049+20	.79	1.4	.6	162	5			
1049-09	.75	3.5	.6	51	4	16.8QSO	.344	SC
1049+21	1.25	.4	.4	80				
1055+20	1.10	4.3	.5	119	3	17.1QSO	1.11	
1055+01	3.03	6.2	.2	116	1	18.3QSO		SC
1059-01	.70	6.1	.9	34	3			SC
1103-20	.66	11.0	.7	168	2			SC
1006+023	.55	6.8	1.0	153	3	N		
1116-46	1.27	4.5	.4	172	3	15.3E		
1116+12	1.66	1.4	.3	105	5	19.3QSO	2.118	SC
1117+14	1.08	1.1	.5	45	10			SC
1119+18	.83	.7	.6	72	18			
1123-35	.83	4.5	.6	138	4	13.8E		N
1127-14	7.15	2.7	.2	125	3	16.9QSO	1.20	SC
1136-67	.98	11.0	.5	115	1			
1136-13	1.98	2.4	.3	42	3	17.8QSO	.544	SC
1136-32	.63	4.9	.8	71	7			
1137+12	.51	9.9	1.0	3	3	16.5E		
1138+01	.98	2.6	.5	88	4			N
1139-28	.84	10.2	.6	91	3			
1140+22	.74	7.9	.7	83	2			SC
1142+19	1.93	9.4	.3	134	2	13.1E	.0206	
1143-48	1.37	1.0	.4	172	8			
1143-31	.35	6.8	1.5	163	4			
1147+13	.67	3.9	.8	151	5			SC
1148-00	1.26	4.2	.4	160	3	17.6QSO	1.982	SC
1151-34	2.91	.3	.4	-0				SC
1159-10	.59	2.6	1.2	92	12	18.5E		
1201-04	.90	9.9	.6	139	2	18.0DB		
1203-26	1.14	.7	.5	93				
1209-52W	.35	16.3	2.2	82	2	SNR		
1209-52E	.46	27.1	1.1	124	2	SNR		
1211-41	.45	16.2	1.1	0	2	19.0E		
1213-17	1.46	.5	.4	61	13			
1215-45	2.28	1.7	.3	95	4			
1215+03	.49	4.7	1.0	117	4	17.5D		
1216-10	.83	6.3	.6	109	3			N
1216+06W	3.81	8.7	.2	112	1	10.8E	.00697	N
1216+06E	3.62	10.6	.2	95	1	10.8E	.00697	N
1221-42	1.11	2.4	.5	6	8	18.0G		

TABLE 1 (*Continued*)

(1) PKS	(2) S	(3) P	(4) P.E.	(5) P.A.	(6) P.E.	(7) Ident.	(8) z	(9) Scint.
1221-66	.82	2.9	.6	63	6			
1222+037	.82	1.6	.6	100	8	19.0QSO		
1222+21	.64	3.2	.8	125	5	18.0QSO	.433	
1222+13	2.73	7.1	.2	147	1	9.7E	.00293	N
1226-21	.46	9.9	1.1	156	2	20.0G		
1226+02	37.80	2.7	.2	150	1	12.8QSO	.158	SC
1228+12	64.00	1.3	.3	20	5	9.5E	.00397	N
1229-02	1.18	3.3	.4	3	3	16.8QSO	.388	SC
1232-41	.49	1.1	1.0	63	15			SC
1232-24	.64	7.4	.8	70	2	17.2QSO	.355	
1232+21	.65	16.9	.8	165	1			N
1233+16	.49	13.6	1.0	18	2	18.0DB		
1237-10	1.62	4.4	.4	41	3	18.2QSO		SC
1239-04	1.05	1.9	.5	92	6			SC
1240-20	.53	8.6	1.0	18	2			
1241+16	1.04	2.6	.5	126	5	19.0QSO	.557	N
1245-41	1.49	.7	.4	169	10	11.5E	.00857	N
1245-19	2.47	.1	.3	38				SC
1249+09	.53	8.9	1.0	148	2	19.0E		
1250+029	.52	3.9	1.0	73	5			
1252-12	2.42	6.9	.3	14	1	11.2DB	.0143	N
1252+11	1.26	1.8	.4	17	15	16.6QSO	.870	
1253-05	16.70	2.7	.2	135	2	17.8QSO	.538	SC
1302-49	2.54	.5	.2	145	12	9.2S		
1306-09	2.16	1.2	.3	29	7	18.5D		SC
1309-22	1.22	1.4	.4	153	6	20.0G		SC
1313+07	.73	7.2	.7	65	3	15.5D		
1317-00	.76	12.4	.7	131	1	17.3QSO	.890	SC
1317+17	.63	8.9	.8	177	2			
1318+11	.81	5.7	.6	85	3	19.5QSO		SC
1321-56	.85	3.0	.6	35	5			
1322-42W	40.50	3.4	.2	118	1	6.1SO	.0019	N
1322-42E	62.40	14.2	.2	136	1	6.1SO	.0019	N
1323-61	3.26	6.8	.2	48	1			
1327-21	.90	2.3	.6	19	5	16.6QSO	.528	
1328+254	3.34	4.7	.2	157	1	17.7QSO	1.055	SC
1328-257	.36	1.2	1.5	120				
1329-66	.90	2.5	1.3	169				
1330+02	1.18	2.9	.4	148	4	19.0N	.2156	N
1332-33	1.18	7.0	1.4	112	2	11.1E	.0114	
1333-33	1.60	26.3	1.0	119	1	11.1E	.0114	
1334-29	.44	1.1	1.5	106		8.0S	.00112	N
1334-33	.60	36.4	.8	119	1	11.1E	.0114	
1334-17	.46	1.8	1.1	109	13	19.5G		SC
1335-06	1.00	3.8	.5	7	3	17.7QSO	.625	N
1340+05	.86	7.2	1.8	50	5	17.8N		
1343-60W	5.37	7.9	.3	80		SNR		
1343-60E	7.86	4.6	.2	44	1	SNR		
1344-07	.54	2.1	1.0	105	15			
1345+12	3.06	.2	.2	11		17.0SO		SC
1349+027	.49	1.3	1.0	45	14			
1351-018	1.01	1.0	.5	69	11			
1354-17	1.07	4.4	.5	20	3			
1354+01	.74	.5	.7	57	24			SC
1354+19	1.50	6.2	.4	72	1	16.0QSO	.720	N
1355+01	.55	5.4	1.5	34	4			
1355-41	1.23	5.6	.4	72	3			N

TABLE 1 (*Continued*)

(1) PKS	(2) *S*	(3) *P*	(4) *P.E.*	(5) *P.A.*	(6) *P.E.*	(7) Ident.	(8) *z*	(9) Scint.
1358-11	.27	8.5	1.9	137	8	15.0E		
1402-012	.85	1.0	.6	94	10			
1411-65	.47	2.2	1.1	45	9			
1413-36	.71	7.1	.7	153	3	18.5D		
1414+11	.99	14.4	.5	37	4	12.1E	.0237	N
1414-03	.66	1.0	.8	86				SC
1416-15	.91	1.1	.6	93	11	20.0G		
1416+06	1.70	1.4	.5	146	6	16.8QSO	1.436	SC
1416-49	.79	2.0	.6	39	8	16.2E		SC
1417-19	.84	2.6	.6	57	5	16.5N		
1418-55	1.34	7.7	.4	119	1			
1420+19	1.13	1.3	.5	96	11	18.8E		N
1420-27	.79	4.1	.6	33	4	17.8QSO		SC
1421-38	.68	2.2	.9	75	9			
1422+20	.67	3.9	.7	111	5	17.1QSO	.872	
1422-29	.82	5.7	.9	54	3	16.8QSO		SC
1423+24	.54	4.1	1.0	106	5			
1424-41	3.36	.8	.2	46	9			SC
1425-01	1.05	5.3	.5	131	3	16.9N		SC
1427+07	.54	9.2	1.0	8	2	19.0E		
1434+03	1.42	2.6	.4	20	4			SC
1436-16	.61	1.8	2.0	113		19.0D		
1437-62	1.21	4.3	.6	9	3	SNR		
1445-46	.52	12.9	1.0	158	2			
1445-16	.94	.1	.6	23				
1446+00	.63	3.0	.9	39	6	19.2E		
1449-13	.30	12.9	1.7	160	4	18.0E		
1451-36	.66	9.4	.8	62	3			N
1452+16	.40	4.0	1.2	160	6	14.9E		
1452-04	.61	10.7	.8	90	9	19.5G		
1453-10	1.55	1.4	.4	36	6	17.4QSO	.938	SC
1454-06	.70	5.3	.7	152	4	18.0QSO	1.249	
1455-58	1.15	2.5	.4	90	4			
1502+26	.94	4.2	.5	40	3	14.0DB	.0543	N
1504-167	2.00	.6	.3	108	11	18.5G		N
1505+01	.30	9.1	1.7	140	4			
1508-05	2.58	2.9	.2	70	3			N
1508+08	1.00	1.5	.5	2	7			N
1509+01	.69	2.1	.7	111	8			
1510-08	3.35	2.8	.2	72	2	16.5QSO	.361	SC
1511+23	.89	2.0	.6	26	6			
1511+26	1.23	6.5	.4	117	3	17.5DB	.1086	N
1514+00	1.17	4.2	.4	161	5	19.0QSO		
1514+07	.98	.6	.5	166	16	16.0E	.0351	N
1514-24	1.90	3.9	.3	42	2	15.2N		
1516-58	.86	7.8	.6	156	2			
1517+20	.77	4.8	.6	47	4	19.5G		
1518+047	1.12	.9	.5	19	11	18.2G		
1523+03	.74	.6	.7	117	20	19.5E		SC
1524-13	1.26	3.3	.3	75	5	20.5		
1526-42	1.28	2.2	.4	56	5			
1528-29	.54	5.0	1.0	162	4			
1529+24	.92	10.1	.6	4	1			
1532+01	.97	.5	.5	60	18			
1535+004	.88	.1	.6	168				
1539-09	.74	2.0	.7	119	8			
1542+02	.34	4.8	1.5	102	6	19.5E		

TABLE 1 (*Continued*)

(1) PKS	(2) *S*	(3) *P*	(4) *P.E.*	(5) *P.A.*	(6) *P.E.*	(7) Ident.	(8) *z*	(9) Scint.
1543+00	.90	1.4	.6	63	7			
1545-12	.75	2.4	1.9	78	7			
1545+21	.77	5.4	.6	129	4	16.7QSO	.264	
1546+027	1.43	1.0	.4	127	8			
1547+21	.62	5.5	.8	174	5			N
1547-79	1.54	7.3	1.0	132	1			
1548+05	2.85	1.9	.2	66	2			
1549-79	3.57	1.0	.3	41	10			
1549-56	8.66	10.1	.2	154	1	SNR		
1550+20	.46	8.1	1.1	16	3	18.5G		
1553+20	.81	2.7	.6	166	8			N
1555+00	2.55	.7	.2	104	10			
1556-46	2.82	8.5	.6	125	1			
1556-21	.39	9.5	1.2	131	10	18.0D		
1559+02	2.05	8.7	.3	165	1	17.0D	.1041	N
1602-28	.62	4.6	.8	43	4			
1602+01	1.09	1.5	.5	45	7			
1602-63W	.56	2.0	.9	108	9	17.5DB		N
1602-63E	.49	14.7	1.0	128	3	17.5DB		N
1602-09	.78	11.6	.8	28	2			
1603+001	1.00	4.8	.5	100	5	18.0QSO		
1603+005	.35	8.2	1.5	136	4			
1606+10	1.15	4.2	.4	58	3			
1607+26	1.67	.6	.3	10				N
1610-608	6.42	5.8	1.2	163	4	12.8E		N
1610-605	1.21	2.2	.4	33	6			N
1610-77	3.33	6.9	.2	107	1			
1613-50	3.64	2.7	.5	106	2	SNR		
1614+26	.51	2.6	1.4	69	10			
1614+21	.56	4.9	1.0	75	4			
1615+02	.79	1.6	.5	173	7			
1615+21	.70	3.8	.8	54	4	G		
1618+17	.60	5.9	.8	53	3	16.4QSO	.555	
1621-11	.77	.2	.6	51				
1622+23	.81	6.9	.6	141	2	17.5QSO	.927	N
1622-31	.71	2.4	.7	105	6			
1622-29	1.85	4.8	.3	0	2			SC
1624-39	.42	2.4	1.2	142	9			
1627+23	.76	10.8	.6	4	2			
1633-41	1.34	2.5	.4	53	4			
1634+26	.47	4.6	1.5	144	6	17.7QSO	.560	
1635-14	.73	3.2	.7	153	5			
1636-03	.19	5.4	2.5	161	8			SC
1637-77	1.91	1.6	.3	135	6	16.0D		
1638-02	.56	.3	.9	0				
1641+17	1.57	.8	.4	3	10	17.5E		SC
1643-22	.51	10.6	1.5	106	2			
1644-10	.82	.6	.6	145				N
1645+17	.89	1.3	.6	71	8			
1648+05	10.88	8.9	.2	24	1	19.0D	.157	N
1648-06	.72	5.9	.7	154	10			
1655-77	1.11	1.5	.5	57	7			
1708+00	.61	3.4	.8	105	8	20.0DB		
1710-38	5.26	1.5	.2	61	7	SNR		
1711-38	6.54	1.6	.2	28	4	SNR		
1714-37	9.04	.4	.2	55	14	HII		
1716-80	.77	7.9	.9	115	2			

TABLE 1 (*Continued*)

(1) PKS	(2) *S*	(3) *P*	(4) *P.E.*	(5) *P.A.*	(6) *P.E.*	(7) Ident.	(8) *z*	(9) Scint.
1716-38	27.80	< .2				HII		
1716+00	.79	6.7	1.0	57	2			
1717+22	.92	.9	.6	53	12			
1717-35	37.40	.4	.2	134	14	HII		
1717-00	16.35	5.0	.2	87	1	16.8D	.0307	N
1722-02	.84	4.2	.6	98	6			
1727-21	5.72	1.3	.2	75	5	SNR		
1730-13	3.99	3.4	.2	48	2			SC
1732-09	1.03	9.8	.5	2	1			SC
1733-56	2.39	1.5	.8	30	12			N
1735+24	.50	1.8	1.0	138	14			
1737-30	8.93	2.1	.2	30	3			
1737-60	1.08	6.2	.2	68	4			N
1739+17	.53	12.3	1.0	128	2	15.0D		
1741-03	3.74	.9	.2	100	7			
1744-19	1.34	4.7	.4	137	6			
1754-59	.69	6.7	.7	155	3			
1755-16	1.33	9.1	.4	133	1			
1756+13	.76	3.7	.6	133	4			
1759+13	.35	.1	1.5	-0				N
1800-28	2.51	3.9	.2	1	2			
1800-02	.49	8.5	1.0	146	2			
1801+01	.71	1.7	.7	97	8			
1814-51	.68	.1	.7	0				
1814-63	4.67	.8	.2	138	8			SC
1814-24	.37	10.7	1.4	176	4	SNR		
1817-64	.75	9.7	.7	171	2			
1819-67	1.11	7.4	.5	41	2			N
1820+17	.69	7.0	.7	104	5			
1821-12W	1.93	.9	.5	2	10			
1821-12E	1.81	2.4	.5	119	4			
1827-36	1.35	.4	.4	142				SC
1830-21	8.36	.4	.2	129				
1834-43	.50	12.8	1.0	166	3			
1834+19	.45	3.6	1.1	39	7	13.5E		
1836+17	2.08	1.0	.3	23	8	16.0D	.0033	N
1839-48	1.19	1.5	.4	16	6			N
1840-40	.82	2.6	.6	20	6			
1843+09	2.46	2.2	.2	70	4			
1846-00	6.26	.4	.2	152	14			N
1850+01	13.20	.7	.2	5	8	SNR		
1852+01	2.61	2.2	.2	124	4	SNR		
1853+01	3.74	3.2	.2	35	2	SNR		
1855+010	1.30	.8	.4	21	12			
1858+01	1.32	.7	1.0	174				
1859-23	.97	3.7	.5	24	4			SC
1859+01	14.78	.3	1.0	60	9			
1901+05	4.55	.6	.2	69	11			
1904-80	1.54	2.4	.4	162	4			
1905+07	5.29	.3	.2	93	16	SNR		
1908+09W	42.40	.3	.2	14	25	HII		
1908+09E	12.08	.8	.2	147	8	SNR		
1915-12	.48	4.8	1.0	157	5	18.0DB		
1920-07	.59	5.6	.8	144	3			
1922-62	.59	10.3	.8	138	5			N
1929-19	.37	2.9	1.3	60	8			
1930-08	.62	4.5	.8	136	3			

TABLE 1 (*Continued*)

(1) PKS	(2) S	(3) P	(4) P.E.	(5) P.A.	(6) P.E.	(7) Ident.	(8) z	(9) Scint.
1932-46	3.44	.9	.2	102	8			N
1933-58	1.01	3.0	.8	43	4			SC
1934-63	6.03	.1	.1	126	15	18.4G		
1937+21	.90	1.4	.8	126	9			
1938-15	2.31	5.5	.2	26	2			SC
1947+07	1.36	.5	.4	125	16			
1949+02	1.96	6.1	.3	40	2	16.5SO		N
1950+25	.74	5.8	.9	94	3			
1953-07	.53	3.5	1.0	35	5			SC
1953-42	.80	.4	.6	162				SC
1954-55	2.27	17.0	.3	109	1	16.5E		N
1955-35	.69	4.1	.7	54	4			SC
1958+25	.56	8.4	1.6	88	3			
2002-50	.57	1.0	1.1	6				
2003-025	.99	3.3	.8	44	3			
2009-52	.55	3.4	.9	62	4			
2012+23	3.46	1.6	.2	87	5			N
2012-017	.66	1.3	.8	81	12			
2018+23	1.25	1.8	.4	29	6			
2019+09	.92	6.6	.6	150	3			N
2020-57	.94	5.5	.6	121	4			N
2023-07	.89	1.9	.6	38	7			
2025-15	.40	6.3	1.2	139	4			
2030-23	.88	7.9	.6	148	2	20.0D		N
2030+21	.79	2.5	.6	140	6			
2030+25	.61	17.1	.8	67	2			
2031+21	.89	.9	.6	138	15	18.5D		
2032-35	1.82	5.3	.5	95	2			SC
2040-26	.69	7.8	.7	153	5	13.5E		N
2041-60	.37	5.5	1.6	20	6			SC
2044-02	1.03	1.0	.5	153	11			SC
2045+06	.69	5.3	.7	54	3	18.4E		
2048-57	.47	2.5	1.1	45	8			
2048-14	.69	4.4	.7	74	4	19.5D		
2052-47	2.18	5.1	.3	176	2			
2053-20	1.00	.6	.5	139	17	17.8E		
2058-28	1.39	2.7	.4	68	4	14.7E		N
2059+034	.85	.9	.6	110	12			
2103+12	.69	1.9	.7	94	7	17.3SO		
2104-25	2.44	2.6	.4	4	2	16.8E		N
2105-48	.66	3.4	2.6	63	6			
2111-25	.85	.7	.6	92	25	19.1QSO		
2113-21	.68	12.3	2.0	71	3			N
2115-30	.84	6.1	.6	93	3	16.4QSO	.98	SC
2121+24	4.04	6.9	.5	151	1	17.0D	.1025	N
2126+07	.59	5.2	.8	163	4	19.5QSO		N
2127+04	2.19	.3	.2	20	17			SC
2128-20	.59	2.6	.8	112	8			SC
2128-12	2.03	.7	.3	144	10	16.0QSO	.501	
2130-53W	2.70	1.5	.5	70	5			
2130-53E	.27	2.0	1.9	57	13			
2131-021	2.10	5.7	.3	128	2			
2134+00	12.47	1.9	.2	34	3	16.0QSO	1.94	SC
2135-14	.87	11.2	.9	5	2	15.8QSO	.20	N
2135-18	.42	3.3	1.2	58	6	19.5D		
2136+14	1.19	1.3	.4	122	9			
2140-43	.82	8.0	.9	84	3			N

TABLE 1 (*Continued*)

(1) PKS	(2) *S*	(3) *P*	(4) *P.E.*	(5) *P.A.*	(6) *P.E.*	(7) Ident.	(8) *z*	(9) Scint.
2141-81	.78	8.1	.6	76	2			
2141-75	1.15	1.1	.5	64	10			
2142+042	.50	3.4	1.0	69	10			
2144+15	.93	2.6	.6	39	5			N
2144+09	1.12	.6	.5	177				
2145+06	4.93	.7	.2	27	10	16.5QSO	.367	SC
2146-13	.55	3.4	.9	88	6	19.5QSO	1.800	
2147+14	.76	.5	.7	163				
2148+14	.76	2.0	.7	145	8			
2149+17	.96	1.2	.5	33	11			
2149-20	.76	4.0	.7	69	7			SC
2149-28	1.16	3.4	.5	133	4			N
2150-52	1.16	1.3	.5	87	8			N
2152-69	10.96	3.2	.2	29	2	13.8D	.0266	
2154-016	.41	7.0	1.2	104	4			
2154-184	.52	7.2	1.0	57	3			N
2154-183	.56	.9	.9	175				
2159+04	.64	4.9	.8	145	4	19.5G		
2201-55	.47	.6	1.1	50				
2203-18	4.32	2.9	.2	20	2	19.0QSO		SC
2204-54	2.92	1.1	.2	144	7	17.0SO		
2209+08	1.17	4.8	.5	90	3	18.5QSO	.486	
2210+01	1.10	.2	.5	52				
2211-17	2.09	1.4	.3	176	5	19.0D		N
2212+13	.32	9.8	1.6	137	4	13.0DB	.0270	N
2213-45	.62	2.7	.8	98	5			
2216-03	1.38	.7	.4	92	12	16.4QSO	.901	
2216-28	.45	.9	1.1	169	15	18.0E		
2218-50	.31	1.6	1.7	106				
2221-02	.89	7.8	.6	100	2	15.8N	.0568	N
2223-05	4.34	5.2	.2	177	1	18.0QSO	1.406	SC
2223-52	.70	1.9	.7	28	11			N
2226-41	1.08	3.8	.5	71	5			N
2227-08	1.99	2.6	.3	134	3			
2230+11	3.66	6.9	.2	46	1	17.3QSO	1.037	SC
2236-17	.58	2.1	.9	87	12			
2247+11	.88	9.5	.6	53	6	12.7E	.0268	N
2247+14	1.04	2.1	.5	112	6			N
2248+06	.73	3.0	.7	99	5	18.5E		
2249+18	.79	10.5	.6	87	2	18.4QSO	1.757	SC
2250-41	1.20	3.6	.4	69	3			N
2251+15	22.50	2.8	.2	179	2	16.1QSO	.859	SC
2251+11	.65	.6	.8	111		15.8QSO	.323	
2251+24	.91	2.5	.9	144	7			
2252+12	.67	2.0	.7	162	8	14.0E	.0334	SC
2252-53	.95	4.4	.5	43	3			N
2253-52	.68	5.4	.7	120	5			N
2259-37	.60	1.8	.9	93	9			N
2300-18	.81	5.0	.6	136	8	17.8N		
2308+07	.51	1.3	1.0	131	18	13.6E		
2309+18	.45	2.0	1.6	168	18			
2309+09	.77	2.0	.7	53	6	19.5E	.2337	SC
2310+05	.77	3.5	.6	31	4	G		N
2313+03	1.35	3.3	.4	12	3	17.6N	.2205	SC
2313-18	.54	3.0	.9	102	6	19.5G		
2317-27	.81	16.7	.6	92	2	18.0N		N
2318-16	.62	3.4	.8	89	5			SC

TABLE 1 (*Continued*)

(1) PKS	(2) S	(3) P	(4) P.E.	(5) P.A.	(6) P.E.	(7) Ident.	(8) z	(9) Scint.
2318+23	.44	1.9	1.1	95	11			
2319+07	.45	4.8	1.1	144	6			
2319-55	.43	8.8	1.2	150	3			
2322-12	.39	2.2	1.3	60	11	17.2E		
2323-40	1.04	18.1	1.5	139	3			N
2324-02	1.04	3.6	.4	41	4	18.3E		N
2325-15	.80	1.0	.6	110	13			
2328+10	.93	5.5	.5	2	3			
2329-16	.98	1.3	.5	0	8			
2331-41	1.36	3.3	.4	162	2			N
2332-66	.73	7.8	.7	93	2			
2335+03	.65	3.2	.8	130	6			
2335+26	1.63	6.0	.4	48	2	15.0G	.0301	
2337+22	.77	.5	.7	23				
2338+04	.48	5.4	1.0	150	4			SC
2338-58	.96	3.0	.5	89	5			N
2338-16	.36	2.0	1.4	37	10			N
2344+09	1.53	1.2	.4	147	7	15.9QSO	.677	
2345-16	3.62	1.1	.2	143	7	18.5QSO	.6	
2345+18	.49	6.4	1.0	102	4	19.5E		
2353-68	.99	.8	.5	27	13			
2354-11	1.50	1.9	.4	83	6	19.0QSO		
2356-61	3.94	7.7	.2	26	2	16.0D		N
SATURN	.72	.4	.8	130				

The larger r.m.s. values of the first comparison may be due to the presence of unidentified variable sources or to the lower average polarized flux density of the sample. The systematic difference between the position angle scales of Parkes and Green Bank observations, mentioned previously by Morris and Whiteoak (1968), is still in evidence in the present results, though smaller in magnitude.

V. Variable Sources

Six of the polarized sources known to be variable in intensity were measured on four occasions spaced through the two periods of observations, that is, at approximately fortnightly intervals. Over this short span it was not possible to discern any change in polarized flux or angle which exceeded possible error limits.

The average result for each source is shown in Table 2, together with published data for other epochs from Morris and Whiteoak (1968) and Sastry, Pauliny-Toth, and Kellermann (1967). For the latter data the angles have been increased by $2^{\circ}{\cdot}3$, the mean difference mentioned in the previous section. The data indicate that changes in percentage polarization P usually accompany changes in total intensity S. However, except in the case of PKS 2251+15, the polarized flux $(0{\cdot}01 \times S \times P)$ remains constant within the error limits and is probably associated with the non-variable radiation component which predominates at low frequencies. The position angle $P.A.$ for every source except PKS 1253−05 and 1055+01 is also constant within the error limits (ignoring the error limits less than 3° given by Sastry, Pauliny-Toth, and Kellermann 1967). Thus for some sources changes in polarized flux and position angle can occur at 6 cm, although such changes are usually small and considerably lower than those found at shorter wavelengths (Aller and Haddock 1967). More regularly spaced observations are required to show the pattern of the variations.

TABLE 2

6 CM POLARIZATION OF VARIABLE SOURCES

Source (PKS)	Epoch	*S*	0·01×*S*×*P*	*P.E.*	*P*	*P.E.*	*P.A.*	*P.E.*
0430+05	February 1966*	3·1	10·8	3	3·5	1·1	176	9
	December 1966	7·0	9·1	3	1·3	0·5	13	15
	July 1968	9·3	9·3	2	1·0	0·2	167	5
1055+01	February 1966*	3·8	21	5	5·5	1·4	93	8
	December 1966	3·1	13	5	4·2	1·5	101	5
	April 1967	3·4	15	5	4·5	1·5	88	10
	July 1968	3·0	19	1	6·2	0·2	116	1
1226+02	August 1965				(2·5)	(1)	(137)	(10)
	February 1966*	35	112	10	3·2	0·2	143	1
	June 1966				(2·3)	(0·5)	(145)	(4)
	December 1966	42	84	12	2·0	0·3	152	5
	March 1967	44	83	20	1·9	0·5	146	5
	July 1968	38	102	8	2·7	0·2	150	1
1253−05	February 1966*	12	4·5	0·5	3·8	0·1	104	1
	June 1966				(3·5)	(0·2)	(112)	(2)
	December 1966	14·8	5·7	0·6	4·6	0·5	111	3
	March 1967	14·3	5·4	0·9	3·8	0·5	108	5
	July 1968	16·7	4·5	0·6	2·7	0·2	135	2
2223−05	December 1966	3·8	17	4	4·5	1·0	178	10
	March 1967	4·0	18	4	4·4	1·0	12	15
	July 1968	4·3	22	1	5·2	0·2	177	1
2251+15	February 1966*	11	40	4	3·6	0·3	9	2
	June 1966				(3·8)	(0·6)	(13)	(4)
	December 1966	17·5	31	6	1·8	0·4	5	7
	July 1968	22·5	63	5	2·8	0·2	179	2

* Sastry, Pauliny-Toth, and Kellermann (1967).

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