2. Physical characteristics of radio sources

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So far this Technical Note has discussed issues primarily related to the creation of the ICRS, in particular the selection of radio sources and the positions of sources in the ICRF. In this section, information on the known physical characteristics of the radio sources is presented. This information includes, where known, the object type, redshift, 6 cm flux, 15 cm or 11 cm flux, spectral index, V magnitude and a classification of spectrum for each source.

As opposed to the positional information presented in this Technical Note, which has been generated from first principles, the material in this section is entirely compiled information, obtained from other sources.

The primary sources for the information included here are:

• The "VLBI survey", 1985, Preston R.A., Morabito D.D., Williams J.G., Faulkner J., Jauncey D.L., Nicolson G.D., *Astron. J.*, **90**, p. 1559 (hereafter PM85). The survey was conducted by performing 2.29 GHz VLBI observations over the full sky. The result is a catalogue of 1398 objects with the following information: redshift, total flux, spectral index, optical identification, visual magnitude and references.

• The "Quasars and Active Galactic Nuclei (7th edition, 1996)" list of M. P. Veron-Cetty and P. Veron (hereafter VCV96). This was published as an ESO Scientific Report in 1996. This list includes 8609 quasars (defined as brighter than absolute B magnitude -23), 2833 AGNs (defined as fainter than absolute B magnitude -23), 220 BL Lac objects from 1662 references, and a list of 52 objects which at one time were considered quasars but have since been rejected as such objects. This catalogue is available from either the NASA/GSFC Astronomical Data Center (ADC) (http://adc.gsfc.nasa.gov/) or the Centre de Données astronomiques de Strasbourg (CDS) (http://cdsweb.u-strasbg.fr/CDS.html), as catalogue 7188 (or VII-188).

• "A Revised and Updated Catalog of Quasi-stellar Objects.", 1993, Hewitt, A. and Burbridge, G., *Astrophys. J. Suppl. Ser.*, **87**, p. 451 (hereafter HB93). This list is a catalogue of all known quasi-stellar objects (QSO's) with measured emission redshifts and BL Lac objects, complete to 1992 December 31. The catalogue contains 7312 objects, nearly all QSOs including about 90 BL Lac objects. The catalogue and references contain extensive information on names, positions, magnitudes, color, emission-line redshifts, absorption, variability, polarization, and X-ray, radio, and infrared data. This catalogue is available from the ADC or the CDS, as catalogue 7158 or VII-158, respectively.

• A listing "Master Source List" by T. Marshall Eubanks (private communication, January 14, 1997), giving for 691 radio sources a positional style (B1950.0) name, the "blokq.dat" name (as used by NASA/GSFC and USNO for observing and data reduction), J2000.0 coordinates, object type, redshift, and V magnitude.

Essentially, the table of radio source physical characteristics, sorted by J2000.0 right ascension, given below has been derived by sequentially obtaining data using these four references.

In practice, the PM85 VLBI survey was used as initial information for the object type, redshift, spectral index, 15 cm flux and visual magnitude.

Secondly, a comparison was made with all of the files of the VCV96 catalogue. Matches were done here by name, as well as by coordinates. Objects within 5 arc minutes were considered to match, although all eventual matches found were at better than the 13 arc second level. Again, some special handling was done for the cases of very close sources. The V magnitude of M 81=NGC 3031 was corrected, using a value from the RC3 (Gérard de Vaucouleurs *et al.* (1991), "Third Reference Catalogue of Bright Galaxies", Springer-Verlag, New York, NY). In this comparison, a great deal of significant information was brought in, including the 6 cm flux, classification of spectrum and 11 cm flux when no 15 cm value was available from the PM85. In addition the VCV96 type of object, redshift and V magnitude data replaced the PM85 ones.

Thirdly, the HB93 data were merged in a similar fashion. Here again some special handling was done for cases of close sources. Also, at least 10 sources had J2000.0 positions that were off by from 10 to 147 arc seconds. These cases were carefully investigated to make sure a correct match was made. In addition, at least two sources had alias names that appear to be incorrect in the HB93 catalogue (0951+699 is not NGC 3034 = M 82, and 1602+178 is not CL 4), and special handling was done for matching involving these names.

As a fourth step, a comparison was made with the Eubanks data. This provided a check on the object type, redshift, and V magnitude data, and provided such data for a few objects that did not match with any in the previous catalogues.

At each of these steps, comparison printouts were generated to show the differences between the database as it existed so far and the new data being read. As just noted, this provided for checks that the right objects were being matched and that the data were reasonable.

A number of fairly minor discrepancies were found between the VCV96, HB93, and Eubanks listings, but most of these were on the ~0.1 V magnitude level or 0.1 redshift level and were ignored. Larger discrepancies of redshift and discrepancies in object type were investigated and resolved, sometimes via the use of the NED database (telnet to hepburn.ipac.caltech.edu, user "NED", or http://nedwww.ipac.caltech.edu). The single exception for which the VCV96 redshift value was found not to be correct was the value for ICRF J144815.0-162024 (1445-161). The VCV96 compilation gives a redshift of 1.776, while Eubanks cited a value of 2.41. Checking into this showed that the original reference (Chu Y., Zhu X., Butcher H. 1986, *Chin. Astron. Astrophys.* **10**, p. 196) did indeed list a redshift of 1.776, but also an alternate redshift of 2.42 since the spectral line identification was uncertain. Later compilations (PKSCAT90, NED, and M. Drinkwater, *et al.* (1997), "The Parkes Half-Jansky Flat-Spectrum Sample", *Monthly Notes Roy. Astron. Soc.*, **284**, p. 85) give the redshift as 2.417. That value has been entered in the table for this source.

It is planned to continue to improve this database file, with new information as it becomes available, and via searches through the NED, Simbad, and other databases. Future versions of this information will be posted to the web sites described in this Technical Note page v.

This research has made use of the NASA/IPAC Extragalactic Database (NED) which is operated by the Jet Propulsion Laboratory, Caltech, under contract with the National Aeronautics and Space Administration. This research has also made use of the Simbad database, operated at CDS, Strasbourg, France.

Table III-2. Physical characteristics of radio sources (See notes page III-24).

ICRF Designation	IERS Des.	Tp (1)	Redsh. (2)	Flux (Jy) 6cm	Flux (Jy) 15cm (3)	SP (4)	mv	cl. sp (5)
ICRF J000435.6-473619	0002-478	Q				-.2	19.0	
ICRF J000557.1+382015	0003+380	G	.229	.50	.60	-.3	19.4	
ICRF J000613.8-062335	0003-066	L	.347	1.58	1.69		18.5	
ICRF J001031.0+105829	0007+106	G	.090	.42	.23*		15.4	S1
ICRF J001033.9+172418	0007+171	Q	1.601	1.19	.91*	.4	18.0	
ICRF J001052.5-415310	0008-421	G			3.10	-1.3	22.0	
ICRF J001101.2-261233	0008-264	Q	1.093	.81	.58	.3	19.0	
ICRF J001331.1+405137	0010+405	G	.256	1.05	1.18*	-.3	17.9	S1
ICRF J001611.0-001512	0013-005	Q	1.574	.79	.82*	-.4	19.8	
ICRF J001708.4+813508	0014+813	Q	3.387	.55	1.00	-.2	16.5	
ICRF J001945.7+732730	0016+731	Q	1.781	1.65	1.50	.2	19.0	
ICRF J002232.4+060804	0019+058	L		.54	.48*	.2	19.5	
ICRF J002442.9-420203	0022-423	G	.937			-.8		
ICRF J002914.2+345632	0026+346	G	.517		1.80	-.3	20.2	
ICRF J003824.8+413706	0035+413	Q	1.353	.64	.40*		19.9	

Table III-2. (cont.) Physical characteristics of radio sources

ICRF Designation	IERS Des.	Tp (1)	Redsh. (2)	Flux (Jy) 6cm	Flux (Jy) 15cm (3)	SP (4)	mv	cl. sp (5)
ICRF J004204.5+232001	0039+230							
ICRF J004959.4-573827	0047-579	Q	1.797	2.19	1.96*	.4	18.5	
ICRF J005041.3-092905	0048-097	L		1.92	1.30	.5	17.4	HP
ICRF J005846.5-565911	0056-572	Q	.018			.5	18.0	
ICRF J005905.5+000651	0056-001	Q	.717	1.41	2.20	-.4	17.3	
ICRF J010245.7+582411	0059+581							
ICRF J010645.1-403419	0104-408	Q	.584	.85	.57*	.6	19.0	
ICRF J010838.7+013500	0106+013	Q	2.107	3.67	3.90	.5	18.4	HP
ICRF J011137.3+390628	0108+388	G	.669			.5		
ICRF J011205.8+224438	0109+224	L		.78	.38*		15.7	HP
ICRF J011327.0+494824	0110+495	Q	.395	.56	.53*		18.4	
ICRF J011343.1+022217	0111+021	A	.047			.2	16.3	
ICRF J011517.0-012704	0112-017	Q	1.365	1.16	1.38*	.2	17.7	
ICRF J011612.5-113615	0113-118	Q	.672	1.88	1.78*	.1	18.5	
ICRF J011935.0+321050	0116+319	G	.059		2.20	-.5	16.0	
ICRF J012031.6-270124	0118-272	L	> .557	.78	1.00	.3	15.6	HP
ICRF J012141.5+114950	0119+115	Q	.570	1.00	1.80	.3	19.0	HP
ICRF J012156.8+042224	0119+041	Q	.637	1.67	.90	.2	19.5	HP
ICRF J012642.7+255901	0123+257	Q	2.353	.97	.90	.9	17.5	
ICRF J013305.7-520003	0131-522	Q	.020			.1	20.0	
ICRF J013658.5+475129	0133+476	Q	.859	3.26	2.10	.5	19.0	HP
ICRF J013738.3-243053	0135-247	Q	.831	1.65	1.49	.3	17.3	
ICRF J013741.2+330935	0134+329	G	.367	5.37	8.97*	-.9	16.2	S1
ICRF J014125.8-092843	0138-097	L	> .501	1.19	.90	.9	16.6	HP
ICRF J014922.3+055553	0146+056	Q	2.345	1.17	.73*		20.0	
ICRF J015002.6-072548	0147-076	G	.017	.30			15.6	S2
ICRF J015127.1+274441	0148+274	G	1.260		.70		20.0	
ICRF J015218.0+220707	0149+218	Q	1.320	1.08	1.40	-.2	18.0	
ICRF J015310.1-331025	0150-334	Q	.610	.86	1.00	-.1	18.6	
ICRF J015456.2+474326	0151+474	Q	1.026	.51				
ICRF J015537.0-404842	0153-410	G	.226			-.4	18.5	
ICRF J015734.9+744243	0153+744	Q	2.338	1.51	2.10	-.3	16.0	
ICRF J020213.6-762003	0202-765	Q	.389	.81	1.40*	-.9	16.9	
ICRF J020333.3+723253	0159+723	L		.33	.32*	.2	19.2	
ICRF J020346.6+113445	0201+113	Q	3.560	1.20	1.30		19.5	
ICRF J020450.4+151411	0202+149	Q	.833		3.20	-.5	21.9	
ICRF J020457.6-170119	0202-172	Q	1.740	1.60	1.20		18.0	HP
ICRF J020504.9+321230	0202+319	Q	1.466	1.02	1.60	.6	18.0	
ICRF J021046.2-510101	0208-512	Q	1.003	3.21	3.56*	-.2	16.9	HP
ICRF J021730.8+734932	0212+735	Q	2.367	2.20	2.30	-.1	20.0	HP
ICRF J021748.9+014449	0215+015	Q	1.715	.36	.36*		18.8	HP
ICRF J022239.6+430207	0219+428	L	.444	1.04	1.14*		15.2	HP
ICRF J022256.4-344128	0220-349	Q	1.490				22.0	
ICRF J022428.4+065923	0221+067	Q	.511	.77	1.40		19.0	HP
ICRF J022850.0+672103	0224+671	Q			1.20	.3	19.5	
ICRF J022934.9-784745	0230-790	Q	1.070	.77	.57*	.5	18.9	
ICRF J023145.8+132254	0229+131	Q	2.065	1.01	2.00	-.5	17.7	
ICRF J023752.4+284808	0234+285	Q	1.207	1.45	1.24*		18.5	HP
ICRF J023838.9+163659	0235+164	L	.940	2.79	2.00	.6	15.5	HP
ICRF J023945.4-023440	0237-027	Q	1.116	.58	.43*	.5	21.0	

Table III-2. (cont.) Physical characteristics of radio sources

ICRF Designation	IERS Des.	Tp (1)	Redsh. (2)	Flux (Jy) 6cm	15cm (3)	SP (4)	mv	cl. sp (5)
ICRF J023951.2+041621	0237+040	Q	.978	.75	.80	.1	18.5	
ICRF J024008.1-230915	0237-233	Q	2.225	3.16	5.34*	-.7	16.6	
ICRF J024104.7-081520	0238-084	G	.005	.88	.58*	1.5	12.3	S3
ICRF J024229.1+110100	0239+108	Q			1.80	-.3	20.0	
ICRF J024457.6+622806	0241+622	G	.044	.20	.24*		12.2	S1
ICRF J025134.5+431515	0248+430	Q	1.310	1.21	.96*	.4	17.6	
ICRF J025246.1-710435	0252-712	G	.563					
ICRF J025329.1-544151	0252-549	Q	.537	.80	.76*	.1	18.0	
ICRF J025334.8+180542	0250+178	Q				-.5	18.5	
ICRF J025927.0+074739	0256+075	Q	.893	.98	.70	.6	18.0	HP
ICRF J030230.5+121856	0259+121							
ICRF J030335.2+471616	0300+470	L		2.22	1.81*		17.0	
ICRF J030350.6-621125	0302-623	Q				.5	18.0	
ICRF J030642.6+624302	0302+625							
ICRF J030903.6+102916	0306+102	Q	.863	.70	1.30	.4	18.4	
ICRF J030956.0-605839	0308-611	Q				.7	18.5	
ICRF J031155.2-765150	0312-770	G	.223	.56	.60*	.3	16.1	S1
ICRF J031301.9+412001	0309+411	G	.136	.46	.60	.1	18.0	S1
ICRF J031948.1+413042	0316+413	L	.017	18.72	24.80	1.0	12.5	
ICRF J031951.2+190131	0317+188	G				-.1	19.0	
ICRF J032153.1+122113	0319+121	Q	2.670	1.05	1.40	-.5	19.0	
ICRF J032957.6+275615	0326+277	Q	1.533	.64	.84*		17.5	
ICRF J033413.6-400825	0332-403	Q	1.445	2.60	1.93*	.5	18.5	HP
ICRF J033553.9-543025	0334-546	Q				.2	20.0	
ICRF J033630.1+321829	0333+321	Q	1.259	2.50	2.30		17.5	
ICRF J033717.1+013722	0334+014							
ICRF J033930.9-014635	0336-019	Q	.852	2.59	2.70	-.4	18.4	HP
ICRF J034035.6-211931	0338-214	L	.048	.93	.82*	.2	17.5	
ICRF J034423.1+155943	0341+158							
ICRF J034506.4+145349	0342+147							
ICRF J035721.9-481215	0355-483	Q	1.016	.57	.60*	-.1	16.4	
ICRF J035929.7+505750	0355+508				6.80			
ICRF J040221.2-314725	0400-319	Q	1.288		1.15	-.1		
ICRF J040305.5+260001	0400+258	Q	2.109	1.79	1.40		18.0	
ICRF J040353.7-360501	0402-362	Q	1.417	1.39	1.04*	.5	17.2	
ICRF J040534.0-130813	0403-132	Q	.571	2.93	4.00	.1	17.1	HP
ICRF J040659.0-382628	0405-385	Q	1.285	1.06	1.03	.1	18.0	
ICRF J040748.4-121136	0405-123	G	.574	1.99	2.70	-.4	14.9	S1
ICRF J040820.3+303230	0405+304							
ICRF J040820.3-654509	0407-658							
ICRF J040905.7-123848	0406-127	Q	1.563	.52	.59*	.1	19.0	
ICRF J040922.0+121739	0406+121	L	1.020	1.62	1.16*	.5	20.2	HP
ICRF J041636.5-185108	0414-189	Q	1.536	.77	1.00	.2	18.5	
ICRF J042315.8-012033	0420-014	Q	.915	1.58	1.00	.3	17.0	HP
ICRF J042356.0+415002	0420+417	Q			1.70			
ICRF J042442.2-375620	0422-380	Q	.782	.81	.49*		18.1	
ICRF J042446.8+003606	0422+004	L		1.60	.80	.4	17.0	HP
ICRF J042636.6+051819	0423+051	Q	1.333			.2	19.5	
ICRF J042747.5+045708	0425+048	A				-1.3	20.0	
ICRF J042840.4-375619	0426-380	L	>1.030	1.13	1.44	.2	19.0	

Table III-2. (cont.) Physical characteristics of radio sources

ICRF Designation	IERS Des.	Tp (1)	Redsh. (2)	Flux (Jy) 6cm	15cm (3)	SP (4)	mv	cl. sp (5)
ICRF J043221.1-510925	0431-512	Q	.557	.59	.68*	-.3	18.0	
ICRF J043311.0+052115	0430+052	G	.033	5.09	6.40	1.8	15.1	S1
ICRF J043701.4-184448	0434-188	Q	2.702	1.09	1.30	.3	19.0	
ICRF J043900.8-452222	0437-454	Q				.2	20.6	
ICRF J044017.1-433308	0438-436	Q	2.852	7.58	6.17*		19.5	HP
ICRF J044238.6-001743	0440-003	Q	.844	2.39	3.53*	-.2	19.2	HP
ICRF J044331.6+344106	0440+345							
ICRF J044907.6+112128	0446+112	G			1.80		20.0	
ICRF J044923.3+633209	0444+634	Q	.781	.51	.52*		19.7	
ICRF J045005.4-810102	0454-810	G	.444	1.36	1.17*	.2	19.2	S1
ICRF J045314.6-280737	0451-282	Q	2.560	2.17	2.30	.1	18.2	
ICRF J045550.7-461558	0454-463	Q	.858	2.88	2.36*	-.2	17.4	
ICRF J045703.1-232452	0454-234	Q	1.003	1.86	1.76*		18.5	HP
ICRF J045952.0+022931	0457+024	Q	2.384	1.21	1.30	-.2	18.5	
ICRF J050112.8-015914	0458-020	Q	2.286	1.65	2.00	-.2	19.5	HP
ICRF J050145.2+135607	0458+138					.5		
ICRF J050215.4+060907	0459+060	A				-.5	19.5	
ICRF J050321.1+020304	0500+019	G	.583		2.00	-.5		
ICRF J050401.7-604952	0503-608	Q				.4	19.5	
ICRF J050523.1+045942	0502+049	Q	.954		.60	.5	19.0	
ICRF J050643.9-610940	0506-612	Q	1.093	2.05	1.89*	-.4	16.9	
ICRF J050842.3+843204	0454+844	L	.112	1.40	1.30	.3	16.5	HP
ICRF J050927.4+101144	0506+101	A			4.10	.2	19.5	
ICRF J051002.3+180041	0507+179				.70			
ICRF J051349.1-215916	0511-220	Q	1.296	.87	1.30	.1	19.5	
ICRF J051637.7-723707	0517-726							
ICRF J051644.9-620705	0516-621							
ICRF J052109.8+163822	0518+165	Q	.759	4.16	5.99*	-.7	18.8	
ICRF J052234.4-610757	0522-611	Q	1.400	.67	.71*	-.1	18.1	
ICRF J052257.9-362730	0521-365	L	.055	8.89	11.50	-.5	14.6	
ICRF J052531.4-455754	0524-460	Q	1.479	.94	.91*	.1	17.3	
ICRF J052930.0-724528	0530-727							
ICRF J053007.9-250329	0528-250	Q	2.765	.85	1.32*	-.2	17.3	
ICRF J053056.4+133155	0528+134	Q	2.070	4.37	2.69*	.5	20.0	
ICRF J053238.9+073243	0529+075	A			1.10		19.0	
ICRF J053850.3-440508	0537-441	L	.896	3.96	3.84*	.1	16.5	HP
ICRF J053932.0-155030	0537-158	Q	.947	.44	.63*	-.1	18.0	
ICRF J053942.3+143345	0536+145							
ICRF J053954.2-283955	0537-286	Q	3.104	1.23	1.00	.5	20.0	
ICRF J054138.0-054149	0539-057	Q	.839	1.51	1.28*	1.4	20.4	
ICRF J054236.1+495107	0538+498	Q	.545	8.18	12.98*	-.8	17.8	
ICRF J054734.1+272156	0544+273							
ICRF J055530.8+394849	0552+398	Q	2.365	5.43	3.40		18.0	
ICRF J055932.0+235353	0556+238							
ICRF J060309.1+174216	0600+177							
ICRF J060752.6+672055	0602+673	Q				.4	20.6	
ICRF J060759.6-083449	0605-085	Q	.872	2.73	3.05*	.2	18.5	HP
ICRF J060940.9-154240	0607-157	Q	.324	3.13	1.00	-.4	18.0	
ICRF J061357.6+130645	0611+131							
ICRF J061423.8+604621	0609+607	Q	2.690	1.10			19.1	

Table III-2. (cont.) Physical characteristics of radio sources

ICRF Designation	IERS Des.	Tp (1)	Redsh. (2)	Flux (Jy) 6cm	15cm (3)	SP (4)	mv	cl. sp (5)
ICRF J061635.9-345616	0614-349	A				-.6	18.0	
ICRF J061732.3-363414	0615-365							
ICRF J062331.7-441302	0622-441	Q	.688	.89	.77*	.2	16.9	
ICRF J062419.0+385648	0620+389	Q	3.469	.87	1.80		20.0	
ICRF J062603.0+820225	0615+820	Q	.710	1.00	1.30		17.5	
ICRF J063111.9-415426	0629-418	Q	1.416	.74	.53*	.5	19.3	
ICRF J063546.5-751616	0637-752	G	.654	6.19	4.51*	-.1	15.8	S1
ICRF J063920.9-334600	0637-337					.4		
ICRF J064204.2+675835	0636+680	Q	3.177	.54	.32*	.8	16.6	
ICRF J064524.0+212151	0642+214	G	.245		1.80	-.7	19.5	
ICRF J064632.0+445116	0642+449	Q	3.408	.78	1.20	-.1	18.5	
ICRF J064814.0-304419	0646-306	Q	.455		.90	.2		
ICRF J064848.4-473427	0647-475							
ICRF J065024.5-163739	0648-165							
ICRF J065358.2+370540	0650+371	Q	1.982	.97	1.00	.4	18.0	
ICRF J070001.5+170921	0657+172							
ICRF J070134.5-463436	0700-465					.3		
ICRF J071046.1+473211	0707+476	Q	1.292	1.00	.80	-.3	18.2	
ICRF J071338.1+434917	0710+439	G	.518	1.66	2.00	-.2	19.7	
ICRF J071424.8+353439	0711+356	Q	1.626	1.51	1.90	-.3	19.0	
ICRF J072153.4+712036	0716+714	L		1.12	.70	.4	15.5	HP
ICRF J072516.8+142513	0722+145				5.30			
ICRF J072550.6-005456	0723-008	L	.127	2.25	2.10	-.4	18.0	
ICRF J072611.7+791131	0718+792				1.00			
ICRF J072905.4-363945	0727-365							
ICRF J073019.1-114112	0727-115	Q				.1		
ICRF J073545.8-173548	0733-174				3.10	-.5		
ICRF J073807.3+174218	0735+178	L	> .424	1.99	2.00	.1	16.2	HP
ICRF J073816.9-332212	0736-332							
ICRF J073856.4-673550	0738-674	Q	1.663	.56	.45*		19.8	
ICRF J073918.0+013704	0736+017	Q	.191	1.92	2.90	.1	16.5	HP
ICRF J074110.7+311200	0738+313	G	.630	2.48	1.90	.2	16.1	S1
ICRF J074202.7+490015	0738+491							
ICRF J074331.6-672625	0743-673	Q	1.510	1.96	2.74*	-1.0	16.4	
ICRF J074533.0+101112	0742+103				3.90	-.1		
ICRF J074554.0-004417	0743-006	Q	.996	1.31	1.01*	.4	17.1	
ICRF J074625.8+254902	0743+259				.60			
ICRF J074836.1+240024	0745+241	Q	.409	.84	.74*	.2	19.0	HP
ICRF J075052.0+123104	0748+126	Q	.889	2.22	2.00	.5	18.0	
ICRF J075301.3+535259	0749+540	L	.200	.56	.67*	-.3	18.5	
ICRF J075706.6+095634	0754+100	L	.660	1.48	1.04*	.2	15.0	HP
ICRF J080815.5-075109	0805-077	Q	1.837	1.01	1.10	-.1	18.4	
ICRF J080839.6+495036	0804+499	Q	1.433	2.07	1.30	.5	18.9	HP
ICRF J080856.6+405244	0805+410	Q	1.420	.77	.70	-.3	19.0	
ICRF J081108.8-492943	0809-493					-.3		
ICRF J081126.7+014652	0808+019	L		.67	.39	.4	17.2	
ICRF J081525.9+363515	0812+367	Q	1.025	1.01	1.20		20.0	
ICRF J081815.9+422245	0814+425	L	.258	1.68	1.60	.6	18.2	HP
ICRF J082057.4-125859	0818-128	L		.86	.90	-.1	15.0	
ICRF J082447.2+555242	0820+560	Q	1.417	.92	1.70	-.3	18.0	

Table III-2. (cont.) Physical characteristics of radio sources

ICRF Designation	IERS Des.	Tp (1)	Redsh. (2)	Flux (Jy) 6cm	15cm (3)	SP (4)	mv	cl. sp (5)
ICRF J082455.4+391641	0821+394	Q	1.216	.99	1.90	-.2	18.5	
ICRF J082526.8-501038	0823-500							
ICRF J082538.6+615728	0821+621	Q	.542	.62	.34*		17.6	
ICRF J082550.3+030924	0823+033	L	.506	1.43	1.42	.9	16.8	HP
ICRF J082601.5-223027	0823-223	L	> .910	.78	1.03*	.5	16.2	HP
ICRF J082804.7-373106	0826-373							
ICRF J083052.0+241059	0827+243	Q	.941	.94	1.30		17.3	
ICRF J083148.8+042939	0829+046	L	.180	.70	.70	.2	16.4	HP
ICRF J083223.2+491321	0828+493	L	.548	1.02	.50	-.3	18.8	HP
ICRF J083322.3-444138	0831-445							
ICRF J083454.9+553421	0831+557	G	.242			-.5	18.5	
ICRF J083520.6-451035	0833-450							
ICRF J083639.2-201659	0834-201	Q	2.752	3.42	3.30	-.3	19.4	
ICRF J083722.4+582501	0833+585	Q	2.101	1.11	.50*	1.3	18.0	
ICRF J084124.3+705342	0836+710	Q	2.172	2.57	4.40	-.3	16.5	
ICRF J084127.0-754027	0842-754	G	.524	1.38	2.15*	-.7	18.9	S1
ICRF J084205.0+183540	0839+187	Q	1.272	1.20	2.20	.2	16.4	
ICRF J085441.9+575729	0850+581	Q	1.322	1.41	1.60	.8	18.0	
ICRF J085448.8+200630	0851+202	L	.306	2.61	3.38*	-.4	15.4	HP
ICRF J090216.8-141530	0859-140	Q	1.339	2.25	2.90	-.4	16.6	
ICRF J090303.9+465104	0859+470	Q	1.462	1.78	2.20	-.1	18.7	
ICRF J090910.0+012135	0906+015	Q	1.018	1.01	.76	-.2	17.8	
ICRF J091437.9+024559	0912+029	Q	.427		.68	-.3	18.5	
ICRF J091552.4+293324	0912+297	L		.20	.24*		16.4	HP
ICRF J092058.4+444153	0917+449	Q	2.180	.80	.54*	.6	19.0	
ICRF J092129.3-261843	0919-260	Q	2.300	2.38	1.20	.2	18.4	
ICRF J092136.2+621552	0917+624	Q	1.446	1.24	1.60	.2	19.5	
ICRF J092246.4-395935	0920-397	Q	.591	1.51	2.10	-.2	18.8	
ICRF J092314.4+384939	0920+390							
ICRF J092703.0+390220	0923+392	Q	.698	7.57	4.20	1.0	17.9	
ICRF J092751.8-203451	0925-203	G	.348	.69	.81*	-.2	16.4	S1
ICRF J093032.5-853359	0936-853					.3		
ICRF J094855.3+403944	0945+408	Q	1.252	1.38	1.70		17.5	
ICRF J095456.8+174331	0952+179	Q	1.478	.74	1.00	-.3	17.2	
ICRF J095524.7+690113	0951+692	G						S
ICRF J095533.1+690355	0951+693	G	.000	.09	.50		6.9	S1
ICRF J095649.8+251516	0953+254	Q	.712	1.79	1.30	1.3	17.2	
ICRF J095819.6+472507	0955+476	Q	1.873	.74	1.10	.1	18.7	
ICRF J095820.9+322402	0955+326	Q	.530	.85	.70	-.3	15.8	
ICRF J095847.2+653354	0954+658	L	.367	1.46	.90	.4	16.7	HP
ICRF J100159.9-443800	0959-443	Q	.837	.83	.87*	-.1	17.0	
ICRF J100614.0-501813	1004-500							
ICRF J100741.4+135629	1004+141	Q	2.707	.74	.81	-.1	19.0	
ICRF J101353.4+244916	1011+250	Q	1.636	.61	.52*		16.6	
ICRF J101447.0+230116	1012+232	Q	.565	.81	.74*	-.3	17.5	
ICRF J101725.8+611627	1014+615		2.800				18.1	
ICRF J102232.7-103744	1020-103	Q	.197	.46	.57*	-.4	16.1	
ICRF J102311.5+394815	1020+400	Q	1.254	.87	1.20	-.3	17.5	
ICRF J102429.5-005255	1021-006	Q	2.552	.75	.92	-.4	18.5	
ICRF J102444.8+191220	1022+194	Q	.828	.60	1.04	.7	17.5	

Table III-2. (cont.) Physical characteristics of radio sources

ICRF Designation	IERS Des.	Tp (1)	Redsh. (2)	Flux (Jy) 6cm	15cm (3)	SP (4)	mv	cl. sp (5)
ICRF J103303.7+411606	1030+415	Q	1.120	1.13	.80	.3	18.2	HP
ICRF J103502.1-201134	1032-199	Q	2.198	1.02	1.10*	.1	19.0	
ICRF J103507.0+562846	1031+567	G	.459		1.80	-.3	20.3	
ICRF J103716.0-293402	1034-293	Q	.312	1.51	1.30	.2	16.5	HP
ICRF J104117.1+061016	1038+064	Q	1.265	1.32	1.64	-.4	16.7	
ICRF J104142.9-474006	1039-474							
ICRF J104146.7+523328	1038+528	Q	.677	.42	.43*	.2	17.6	
ICRF J104148.8+523355	1038+529	Q	2.296	.14	.15*		18.6	
ICRF J104244.6+120331	1040+123	Q	1.028	1.39	2.38	-.7	17.3	
ICRF J104423.0+805439	1039+811	Q	1.260	1.14	.90*	.4	16.5	
ICRF J104455.9+065538	1042+071	G	.698	.50	.50*		20.5	
ICRF J104806.6-190935	1045-188	Q	.595	1.11	.94*	.3	18.5	
ICRF J104827.6+714335	1044+719	Q	1.150	.71	1.00	.1	17.8	
ICRF J105104.7-313814	1048-313				.50	-.1		
ICRF J105148.7+211952	1049+215	Q	1.300	1.25	1.70	-.4	18.5	
ICRF J105653.6+701145	1053+704	Q	2.492	.71	.60	.3	18.5	
ICRF J105811.5+811432	1053+815	Q	.706	.77	.60	-.4	20.0	
ICRF J105829.6+013358	1055+018	Q	.888	3.38	2.87		18.3	HP
ICRF J105843.3-800354	1057-797	Q				.6	19.3	
ICRF J110331.5-325116	1101-325	G	.354	.73	.80	-.4	16.3	S1
ICRF J110352.2-535700	1101-536	Q					17.9	
ICRF J110427.3+381231	1101+384	L	.031	.70	1.00	-.1	12.9	HP
ICRF J110708.6-444907	1104-445	Q	1.598	2.03	1.84*	.1	18.2	
ICRF J110712.6-682050	1105-680	Q	.588	1.37	1.14*	.3	18.4	
ICRF J111358.6+144226	1111+149	Q	.869	.60	.55*	.4	18.0	
ICRF J111826.9-463415	1116-462	Q	.713	1.31	1.62*	-.4	17.0	
ICRF J111857.3+123441	1116+128	Q	2.118	1.48	1.74	-.3	19.3	
ICRF J112027.8+142054	1117+146	G	.362			-.7	20.0	
ICRF J112553.7+261019	1123+264	Q	2.341	.83	.70	.8	18.0	
ICRF J112704.3-185717	1124-186	A	1.050		.60	.5	18.5	
ICRF J112813.3+592514	1125+596						20.0	
ICRF J113007.0-144927	1127-145	Q	1.187	7.31	6.43*	-.1	16.9	
ICRF J113053.2+381518	1128+385	Q	1.733	.77	.90	-.2	16.0	
ICRF J113130.5-050019	1128-047	G	.266		.90	.3	20.0	
ICRF J113143.2-581853	1129-580							
ICRF J113320.0+004052	1130+009	Q			.33		19.0	
ICRF J114608.1-244732	1143-245	Q	1.950	1.49	1.10	-.2	18.0	
ICRF J114658.2+395834	1144+402	Q	1.089	1.03	.90	-.2	18.0	
ICRF J114701.3-381211	1144-379	L	1.048	2.22	1.07*	-.2	16.2	HP
ICRF J114751.5-072441	1145-071	Q	1.342	1.21	.97	.2	18.0	
ICRF J115019.2+241753	1147+245	L		1.00	.83		15.7	HP
ICRF J115043.8-002354	1148-001	Q	1.980	1.90	2.51	-.4	17.6	
ICRF J115113.4-672811	1148-671					.3		
ICRF J115312.4+805829	1150+812	Q	1.250	1.18	1.20	-.1	18.5	
ICRF J115324.4+493108	1150+497	Q	.334	1.12	1.60	-.2	17.1	HP
ICRF J115825.7+245017	1155+251	G			1.06	-.3	17.5	
ICRF J115912.7-094052	1156-094	A			.87	-.2	17.5	
ICRF J115931.8+291443	1156+295	Q	.729	.89	1.30		14.4	HP
ICRF J120935.2-401613	1206-399	Q	.966	.53	.59*	-.2	17.0	
ICRF J121546.7-173145	1213-172	G			1.20	-.1	21.4	

Table III-2. (cont.) Physical characteristics of radio sources

ICRF Designation	IERS Des.	Tp (1)	Redsh. (2)	Flux (Jy) 6cm	15cm (3)	SP (4)	mv	cl. sp (5)
ICRF J121555.6+344815	1213+350	Q	.857	1.01	1.20	-.3	20.0	
ICRF J121752.0+300700	1215+303	L	.237	.42	.53		15.6	HP
ICRF J121806.2-460029	1215-457	G	.529	1.99	2.90*	-.6	20.3	
ICRF J121906.4+482956	1216+487	Q	1.076	1.08	.70	.2	18.5	
ICRF J122131.6+281358	1219+285	L	.102	.72	1.47		16.1	
ICRF J122222.5+041315	1219+044	Q	.965	.93	.65	-1.2	18.0	
ICRF J122340.4+804004	1221+809	L		.52	.40*	-.3	19.0	
ICRF J122452.4+033050	1222+037	Q	.960	.86	.96	.1	18.8	
ICRF J122454.3-831310	1221-829					.3		
ICRF J122847.4+370612	1226+373		1.515					
ICRF J122906.6+020308	1226+023	G	.158	43.41	41.44*		12.9	S1
ICRF J123049.4+122328	1228+126	G	.004	71.90		-.6	12.9	S
ICRF J123715.2-504623	1234-504							
ICRF J123924.5+073017	1236+077	Q	.400	.67	.65	.2	18.5	
ICRF J123943.0-102328	1237-101	Q	.750	1.53	1.63	-.2	18.1	
ICRF J123946.6-684530	1236-684	Q				-.4	18.5	
ICRF J123959.4-113722	1237-113	G	.002	.14	.10*		9.3	S1
ICRF J124251.3+375100	1240+381	Q	1.316	.58	.28*	1.2	19.4	
ICRF J124604.2-073046	1243-072	Q	1.286	.90	.72	.6	19.0	
ICRF J124646.8-254749	1244-255	Q	.638	2.32	1.36	.2	17.4	HP
ICRF J125359.5-405930	1251-407	Q	4.460	.22	.25*		19.9	
ICRF J125438.2+114105	1252+119	Q	.870	1.00	1.80	-.2	16.6	
ICRF J125459.9-713818	1251-713	Q				.2	21.5	
ICRF J125611.1-054721	1253-055	Q	.538	15.34	11.80	.1	17.8	HP
ICRF J125614.2+565225	1254+571	G	.041	.42	.17*		13.8	S1
ICRF J125759.0-315516	1255-316	Q	1.924	1.68	1.58	.2	18.7	
ICRF J130020.9+141718	1257+145	A			2.90	-.3	18.0	
ICRF J130252.4+574837	1300+580	Q				-.5		
ICRF J130533.0-103319	1302-102	G	.286	.77	1.03	.1	15.2	S1
ICRF J130933.9+115424	1307+121	L		1.13	.58*		18.5	
ICRF J131028.6+322043	1308+326	Q	.997	1.59	1.57*		15.2	HP
ICRF J131607.9-333859	1313-333	Q	1.210	1.32	1.23	.5	20.0	
ICRF J131736.4+342515	1315+346	Q	1.050	.56	.54*	-.1	19.0	
ICRF J132304.2-445233	1320-446					-.9		
ICRF J132527.6-430108	1322-427	G	.001			-.4	12.8	
ICRF J132616.5+315409	1323+321	G	.369		3.60	-.6	19.0	
ICRF J132700.8+221050	1324+224		1.400					
ICRF J133108.2+303032	1328+307	Q	.846	7.48	10.26*	-.5	17.3	
ICRF J133237.5-664650	1329-665							
ICRF J133739.7-125724	1334-127	Q	.539	2.84	1.94	.2	18.5	HP
ICRF J133752.4-650924	1334-649							
ICRF J134022.9+375443	1338+381	Q	3.103	.31			17.9	
ICRF J134345.9+660225	1342+662	Q	.766	.54	.51*	.1	20.0	
ICRF J134408.6+660611	1342+663	Q	1.351	.82	.61*	.5	18.6	
ICRF J134733.3+121724	1345+125	G	.121	2.92	4.30	-.4	17.0	S2
ICRF J134934.6+534117	1347+539	Q	.976	.96	.90	-.1	17.5	
ICRF J135256.5-441240	1349-439	L	.053	.76	.54*	.6	16.4	HP
ICRF J135406.8-020603	1351-018	Q	3.707	.82	.84	-.1	19.3	
ICRF J135546.6-632642	1352-632							
ICRF J135704.4+191907	1354+195	Q	.719	1.46	1.80	-.1	16.0	

Table III-2. (cont.) Physical characteristics of radio sources

ICRF Designation	IERS Des.	Tp (1)	Redsh. (2)	Flux (Jy) 6cm	Flux (Jy) 15cm (3)	SP (4)	mv	cl. sp (5)
ICRF J135711.2-152728	1354-152	Q	1.890	.84	1.17	.1	18.5	
ICRF J135755.3+764321	1357+769	Q				.7	19.0	
ICRF J135900.1-415252	1355-416	G	.313	1.44	3.10	-.8	15.9	S1
ICRF J140445.8-013021	1402-012	Q	2.522	.81	.88	.2	18.2	
ICRF J140501.1+041535	1402+044	Q	3.211	.71	.65	.1	19.0	
ICRF J140700.3+282714	1404+286	G	.077	2.90	1.70	.9	15.4	S1
ICRF J140856.4-075226	1406-076	Q	1.493	.82	1.30	.2	20.0	
ICRF J141154.8+213423	1409+218							
ICRF J141558.8+132023	1413+135	L	.247	1.20	.90	-.1	20.5	
ICRF J141908.1+062834	1416+067	Q	1.439	1.46	3.41	-.9	16.8	
ICRF J141946.5+542314	1418+546	L	.152	1.09	1.00	.2	15.7	HP
ICRF J141946.6+382148	1417+385	Q	1.832	.87	.51*		19.3	
ICRF J141959.2+270625	1417+273							
ICRF J142230.3+322310	1420+326	Q	.685	.43	.45*		17.5	
ICRF J142700.3+234800	1424+240	L		.31	.35*		15.0	HP
ICRF J142756.2-420619	1424-418	Q	1.522	2.17	2.22	-.4	17.7	HP
ICRF J143257.6-180135	1430-178	Q	2.331	.85	1.19	-.1	19.5	
ICRF J143439.7+195200	1432+200							
ICRF J143535.4+301224	1433+304							
ICRF J143645.8+633637	1435+638	Q	2.062	1.24	1.60	-.2	16.6	
ICRF J143809.4-220454	1435-218	Q	1.194	.68	.56*		17.9	
ICRF J144516.4+095836	1442+101	Q	3.535	1.15	2.01	-.6	17.8	
ICRF J144553.3-162901	1443-162					-.3		
ICRF J144815.0-162024	1445-161	Q	2.417	.80	1.01	-.5	18.9	
ICRF J144828.7+760111	1448+762	G	.899	.68	1.00	.5	22.3	
ICRF J145427.4-374733	1451-375	Q	.314	1.84	1.40	.4	16.7	
ICRF J145432.9-401232	1451-400	Q	1.810	.61	.71*	-.2	18.5	
ICRF J145907.5+714019	1458+718	Q	.904	3.76	6.90	-.5	16.8	
ICRF J150048.6+475115	1459+480				.50		17.1	
ICRF J150424.9+102939	1502+106	Q	1.833	2.53	2.03	.3	18.6	HP
ICRF J150506.4+032630	1502+036	G	.413	.62	.29	.4	18.6	
ICRF J150609.5+373051	1504+377	G	.674	1.10	1.10	.2	21.2	S2
ICRF J150704.7-165230	1504-166	Q	.876	2.84	2.20	-.4	18.5	HP
ICRF J151002.9+570243	1508+572	Q	4.301	.28			18.9	
ICRF J151250.5-090559	1510-089	Q	.360	4.36	3.14	.3	16.5	HP
ICRF J151344.8-101200	1511-100	Q	1.513	1.22	.88	.4	18.5	
ICRF J151656.7+193212	1514+197	L		.50	.50		18.7	
ICRF J151741.8-242219	1514-241	L	.048	1.94	1.90	-.1	14.8	HP
ICRF J152237.6-273010	1519-273	L		1.84	.99	.2	17.7	HP
ICRF J153452.4+013104	1532+016	Q	1.435	.92	1.19	-.3	18.0	HP
ICRF J154049.4+144745	1538+149	L	.605	1.95	1.50		17.3	HP
ICRF J154917.4+503805	1547+507	Q	2.169	.74	.69*	.1	18.5	
ICRF J154929.4+023701	1546+027	Q	.412	1.41	.79	.2	17.8	HP
ICRF J155035.2+052710	1548+056	Q	1.422	2.18	2.28	.3	19.5	HP
ICRF J155059.1-825806	1540-828					.1		
ICRF J155658.8-791404	1549-790	G	.149	3.54		-.2	18.5	S2
ICRF J155751.4-000150	1555+001	Q	1.772	2.18	.58	.2	19.0	
ICRF J155821.9-140959	1555-140	G	.097	.65	.70	.2	16.5	S2
ICRF J155930.9+030448	1557+032	Q	3.900	.48			19.8	
ICRF J160140.4+431647	1600+432	Q	1.610	.04			20.0	

Table III-2. (cont.) Physical characteristics of radio sources

ICRF Designation	IERS Des.	Tp (1)	Redsh. (2)	Flux (Jy) 6cm	Flux (Jy) 15cm (3)	SP (4)	mv	cl. sp (5)
ICRF J160140.5+431646	1600+431	Q	1.610					
ICRF J160207.2+332653	1600+335				2.70		23.2	
ICRF J160431.0-444131	1600-445							
ICRF J160734.7-333108	1604-333	Q			.57	.6	20.5	
ICRF J160846.2+102907	1606+106	Q	1.226	1.05	1.00	.7	18.0	
ICRF J160913.3+264129	1607+268	Q	.473		3.10	-.9	19.0	
ICRF J161341.0+341247	1611+343	Q	1.401	2.67	2.38*	.1	17.5	
ICRF J161637.5+045932	1614+051	Q	3.217	.85	.63	.4	19.5	
ICRF J161749.2-771718	1610-771	Q	1.710	5.55	3.80*	.8	19.0	HP
ICRF J161903.6+061302	1616+063	Q	2.086	.89	1.10	-.1	19.0	
ICRF J162418.4-680912	1619-680	Q	1.354	1.81	1.79*		18.0	
ICRF J162546.8-252738	1622-253	Q	.786	2.20	2.27*	-.1	20.6	
ICRF J162557.6+413440	1624+416	Q	2.550	1.58	1.50	-.3	22.0	
ICRF J162606.0-295126	1622-297	Q	.815	1.86	2.20	.2	17.0	
ICRF J163515.4+380804	1633+382	Q	1.814	4.08	2.10	.8	18.0	
ICRF J163813.4+572023	1637+574	Q	.751	1.44	1.40	.6	17.0	
ICRF J164029.6+394646	1638+398	Q	1.666	1.16	1.10	.1	16.5	HP
ICRF J164207.8+685639	1642+690	G	.751	1.43	1.70	-.3	20.5	HP
ICRF J164258.8+394836	1641+399	Q	.594	5.65	7.60		16.0	HP
ICRF J165039.5-294346	1647-296				1.80	-.6		
ICRF J165352.2+394536	1652+398	L	.033	1.31	1.45*		13.8	HP
ICRF J165801.4+344328	1656+348	Q	1.936	.60	.60	-.2	18.5	
ICRF J165802.7+473749	1656+477	Q	1.622	.92	.80	.2	18.0	
ICRF J165809.0+074127	1655+077	Q	.621	1.60	1.63	.4	20.0	
ICRF J165833.4+051516	1656+053	Q	.887	2.10	1.61	.5	16.5	HP
ICRF J170053.1-261051	1657-261				1.10	-.2		
ICRF J170717.7+453610	1705+456	Q	.646	.47	.66*		17.4	
ICRF J170734.4+014845	1705+018	Q	2.576	.54	.53*	.1	18.8	
ICRF J170934.3-172853	1706-174	A					17.5	
ICRF J171913.0+174506	1717+178	L		.94	1.00	.6	19.1	HP
ICRF J172341.0-650036	1718-649	G	.014	3.70	4.00*	-.1	15.5	S3
ICRF J172727.6+453039	1726+455	Q	.714	.63	.72*	-.2	19.0	
ICRF J172818.6+501310	1727+502	L	.055	.17	.23		16.0	
ICRF J172824.9+042704	1725+044	G	.293	1.21	.84	.8	17.0	S1
ICRF J173302.7-130449	1730-130	Q	.902	4.22	4.90*	-.1	18.5	
ICRF J173315.1-372232	1729-373							
ICRF J173420.5+385751	1732+389	Q	.976	1.15	.67*	.8	19.0	HP
ICRF J173549.0+504911	1734+508					.3		
ICRF J173735.7-563403	1733-565	G	.098	3.32	4.40*	-.5	17.0	S2
ICRF J173927.3+495503	1738+499	Q	1.545	.61	.53*		19.0	
ICRF J173957.1+473758	1738+476	L	.316	.90	.92	.1	17.5	
ICRF J174036.9+521143	1739+522	Q	1.379	1.99	1.93*		18.5	HP
ICRF J174358.8-035004	1741-038	Q	1.057	2.30	5.60	.3	18.6	HP
ICRF J174425.4-514443	1740-517	G						
ICRF J174535.2+172001	1743+173	Q	1.702	.94	.90	.1	19.5	
ICRF J174614.0+622654	1745+624	Q	3.889	.57	.59*		18.8	
ICRF J174726.6+465850	1746+470						21.3	
ICRF J174832.8+700550	1749+701	L	.770	1.09	1.10	.3	17.0	HP
ICRF J175132.8+093900	1749+096	Q	.320	1.89	1.07	-.2	16.8	HP
ICRF J175151.2-252400	1748-253							

Table III-2. (cont.) Physical characteristics of radio sources

ICRF Designation	IERS Des.	Tp (1)	Redsh. (2)	Flux (Jy) 6cm	15cm (3)	SP (4)	mv	cl. sp (5)
ICRF J175322.6+440945	1751+441	Q	.871	1.04	.80	.9	19.5	
ICRF J175342.4+284804	1751+288	Q			1.10		20.0	
ICRF J180024.7+384830	1758+388	Q	2.092	.92	.60	1.2	18.0	
ICRF J180045.6+782804	1803+784	L	.684	2.63	2.60	.3	16.4	HP
ICRF J180132.3+440421	1800+440	Q	.663	1.02	.79	.4	16.8	
ICRF J180323.4-650736	1758-651	G				.1	15.4	
ICRF J180650.6+694928	1807+698	L	.051	1.74	3.10	-.3	14.2	HP
ICRF J180821.8+454220	1806+456	Q	.830	.70	.50	1.5	19.3	
ICRF J180957.8-455241	1806-458				1.80	-.5		
ICRF J181935.0-634548	1814-637	G	.065	4.34	7.40*		16.0	S2
ICRF J181945.3-552120	1815-553	Q				-.1	19.3	
ICRF J182057.8-252812	1817-254							
ICRF J182314.1+793849	1826+796		.224					
ICRF J182402.8+104423	1821+107	Q	1.364	1.05	.95*	.5	17.3	
ICRF J182407.0+565101	1823+568	L	.664	1.67	1.60	.2	18.4	HP
ICRF J183250.1+283335	1830+285	Q	.594	1.07	1.30		17.2	
ICRF J183537.2-714958	1829-718							
ICRF J183728.7-710843	1831-711	Q	1.356	1.15	1.32*	-.2	17.4	
ICRF J184208.9+794617	1845+797	G	.057	4.48	7.30	-.6	15.4	S1
ICRF J184233.6+680925	1842+681	Q	.475	.81	1.20	-.4	17.9	
ICRF J184916.0+670541	1849+670	Q	.657	.59	.95*		18.0	
ICRF J185457.2+735119	1856+737	G	.460	.41	.41*		17.5	S1
ICRF J190255.9+315941	1901+319	Q	.635	1.81	3.10		17.5	
ICRF J191109.6-200655	1908-201				2.30			
ICRF J191240.0-801005	1903-802	Q	1.758	1.79	1.54*	.2	19.0	
ICRF J192332.1-210433	1920-211							
ICRF J192451.0-291430	1921-293	L	.352	10.00	4.60*		18.2	HP
ICRF J192559.6+210626	1923+210							
ICRF J192748.4+735801	1928+738	G	.303	3.34	3.00		16.1	S1
ICRF J192840.8+084848	1926+087							
ICRF J193006.1-605609	1925-610	Q				-.1	21.5	
ICRF J193124.9+224331	1929+226							
ICRF J193435.0+104340	1932+106							
ICRF J193510.4+203154	1932+204							
ICRF J193716.2-395801	1933-400	Q	.966	1.44	1.20*	.1	18.0	
ICRF J193925.0-634245	1934-638	G	.183	6.01	11.10*		18.4	S2
ICRF J193926.6-152543	1936-155	Q	1.657	.80	1.30	.2	19.4	HP
ICRF J193957.2-100241	1937-101	Q	3.787	.75	.90	-.3	17.0	
ICRF J194025.5-690756	1935-692	Q	3.170	.76	1.23*	-.6	18.8	
ICRF J194121.7-621121	1936-623	Q				-.3	22.5	
ICRF J194606.2+230004	1943+228							
ICRF J195330.8+353759	1951+355							
ICRF J195510.7-611519	1950-613							
ICRF J195542.7+513148	1954+513	Q	1.230	1.61	1.40	-.1	18.5	
ICRF J195740.5+333827	1955+335							
ICRF J195759.8-384506	1954-388	Q	.630	2.02	1.00		17.1	HP
ICRF J200057.0-174857	1958-179	Q	.650	2.70	1.12	.1	18.2	HP
ICRF J200324.1-325145	2000-330	Q	3.783	1.03	1.10	.8	17.3	
ICRF J200530.9+775243	2007+777	L	.342	1.28	1.20	.5	16.7	HP
ICRF J200617.6+642445	2005+642							

Table III-2. (cont.) Physical characteristics of radio sources

ICRF Designation	IERS Des.	Tp (1)	Redsh. (2)	Flux (Jy) 6cm	15cm (3)	SP (4)	mv	cl. sp (5)
ICRF J200744.9+402948	2005+403	Q	1.736	3.70	4.90		19.0	
ICRF J200925.3-484953	2005-489	L	.071	1.19	1.06*	.2	13.4	
ICRF J201114.2-064403	2008-068				2.10	-.7		
ICRF J201115.7-154640	2008-159	Q	1.180	.95	.60	1.0	18.3	
ICRF J201713.0+744047	2017+745	Q	2.191	.37	.34*		18.1	
ICRF J202206.6+613658	2021+614	G	.227	2.29	2.26	.1	19.0	S2
ICRF J202319.0+315302	2021+317							
ICRF J202510.8+334300	2023+335							
ICRF J203147.9+545503	2030+547				1.40			
ICRF J203154.9+121941	2029+121	L	1.215	1.29	1.10	.7	20.3	
ICRF J203837.0+511912	2037+511	Q	1.687	3.79	5.00		21.0	
ICRF J204008.7-250746	2037-253	Q	1.574	.66	.90	.3	18.5	
ICRF J205051.1+312727	2048+312	Q	3.198	.70	.58*		20.0	
ICRF J205133.7+744140	2051+745	L		.53	.43*		20.4	
ICRF J205616.3-471447	2052-474	Q	1.489	2.45	3.00*	-.3	19.1	
ICRF J205741.6-373402	2054-377							
ICRF J210138.8+034131	2059+034	Q	1.015	.77	.57	.5	17.8	
ICRF J210159.1-421916	2058-425	Q	.221	.68	.98*	-.5	17.2	
ICRF J210217.0+470216	2100+468							
ICRF J210544.9-782534	2059-786							
ICRF J210933.1-411020	2106-413	Q	1.055	2.28	2.11*	.2	21.0	
ICRF J211529.4+293338	2113+293	Q	1.514	1.45	1.12		19.5	
ICRF J211630.8-805355	2109-811	G				.2	20.0	
ICRF J211810.5-301911	2115-305	Q	.980	.86	1.50*		16.5	
ICRF J212344.5+053522	2121+053	Q	1.941	3.16	2.47	1.1	20.4	HP
ICRF J212912.1-153841	2126-158	Q	3.266	1.19	.90	.1	17.0	
ICRF J213032.8+050217	2128+048	G	.990			-.5		
ICRF J213135.2-120704	2128-123	G	.501	1.99	1.69	.1	16.1	S1
ICRF J213410.3-015317	2131-021	L	.557	2.06	2.20		18.7	HP
ICRF J213638.5+004154	2134+004	Q	1.932	11.49	6.50	.8	16.8	
ICRF J213901.3+142335	2136+141	Q	2.427	1.11	1.19		18.9	
ICRF J214622.9-152543	2143-156	Q	.700	.51	1.00	-.5	17.3	
ICRF J214710.1+092946	2144+092	Q	1.113	1.01	.78	.2	18.5	
ICRF J214712.7-753613	2142-758	Q	1.139	1.28	1.38*	-.1	17.3	
ICRF J214805.4+065738	2145+067	Q	.999	4.41	3.10	.5	16.5	
ICRF J215137.8+055212	2149+056	G	.740	1.04	1.06	.3	19.5	S1
ICRF J215155.5-302753	2149-307	Q	2.345	1.15	1.35	-.2	17.9	
ICRF J215203.1-780706	2146-783					-.1		
ICRF J215224.8+173437	2150+173	L		1.02	1.10	-.1	17.9	HP
ICRF J215705.9-694123	2152-699	G	.028	13.40	16.10*		13.8	S1
ICRF J215806.2-150109	2155-152	Q	.672	1.72	1.80	-.1	19.4	HP
ICRF J215852.0-301332	2155-304	L	.116	.31	.35	-.2	13.1	HP
ICRF J220243.2+421639	2200+420	L	.069	2.96	4.20	-.5	14.7	HP
ICRF J220314.9+314538	2201+315	Q	.298	2.31	2.02	.2	15.6	
ICRF J220743.7-534633	2204-540	Q	1.206	2.82	2.70*	.7	18.0	
ICRF J221205.9+235540	2209+236	A			.70	.2	19.0	
ICRF J221302.4-252930	2210-257	Q	1.833	.82	.90	.1	19.0	
ICRF J221438.5-383545	2211-388							
ICRF J221620.0+351814	2214+350	Q	.510	.82	1.00	.2	18.5	
ICRF J221852.0-033536	2216-038	Q	.901	1.63	1.62	.7	16.4	

Table III-2. (cont.) Physical characteristics of radio sources

ICRF Designation	IERS Des.	Tp (1)	Redsh. (2)	Flux 6cm	(Jy) 15cm (3)	SP (4)	mv	cl. sp (5)
ICRF J222547.2-045701	2223-052	Q	1.404	4.07	5.20	-.1	18.4	HP
ICRF J222940.0-083254	2227-088	Q	1.562	1.41	1.30	-.1	17.5	HP
ICRF J223036.4+694628	2229+695	?L		.81	.62*	.4	19.6	
ICRF J223040.2-394252	2227-399	Q	.323	1.02	1.02*		17.9	
ICRF J223236.4+114350	2230+114	Q	1.037	3.65	4.93*	-.5	17.3	HP
ICRF J223513.2-483558	2232-488	Q	.510	.87	.81*	.1	17.2	
ICRF J223622.4+282857	2234+282	Q	.795	1.06	.91		19.0	HP
ICRF J223634.0-143322	2233-148	?L	.325	.60	.50*	.3	19.0	
ICRF J224618.2-120651	2243-123	Q	.630	2.66	2.74*	-.2	16.5	HP
ICRF J224838.6-323552	2245-328	Q	2.268	1.80	2.01*	-.2	18.6	
ICRF J225357.7+160853	2251+158	Q	.859	10.03	10.50	1.3	16.1	HP
ICRF J225504.2-084404	2252-090		.606			.1		
ICRF J225536.7+420252	2253+417	Q	1.476	.99	1.50	-.3	18.8	
ICRF J225717.3+074312	2254+074	L	.190	.48	.88	.9	16.4	HP
ICRF J225717.5+024317	2254+024	Q	2.089	.51	.46*	.2	18.0	
ICRF J225805.9-275821	2255-282	Q	.926	2.13	1.38*	.4	16.8	
ICRF J230223.8-371806	2259-375							
ICRF J230305.8-303011	2300-307	Q			.31	-.5	16.0	
ICRF J230343.5-680737	2300-683	Q	.512	.34	.43*		16.4	
ICRF J231409.3-445549	2311-452	Q	2.883	1.43	1.91*	-.5	19.0	
ICRF J231448.5-313839	2312-319	G	.284	.58	.71*	-.3	18.5	
ICRF J232044.8+051349	2318+049	Q	.623	1.13	1.23*	-.2	19.0	
ICRF J232159.8+273246	2319+272	Q	1.253	1.07	1.10		19.0	
ICRF J232225.9+505751	2320+506				.80			
ICRF J232331.9-031705	2320-035	Q	1.411	.39	.79	-.1	19.0	
ICRF J232747.9-144755	2325-150	Q	2.465	.91	1.10	.2	19.0	
ICRF J232917.7-473019	2326-477	Q	1.306	2.06	2.40*		16.8	
ICRF J233040.8+110018	2328+107	Q	1.489	.96	1.05	-.1	18.1	
ICRF J233138.6-155657	2329-162	Q	1.153	1.88	1.20	.1	20.0	
ICRF J233159.4-381147	2329-384	Q	1.195	.67	.78*	-.2	17.0	
ICRF J233355.2-234340	2331-240	G	.048	.91	.90		16.5	S2
ICRF J233612.1-523621	2333-528					-.1		
ICRF J233757.3-023057	2335-027	Q	1.072	.65	.65	.2	19.3	
ICRF J234029.0+264156	2337+264	A			1.00		20.0	
ICRF J234636.8+093045	2344+092	G	.673	1.38	1.90	-.2	16.0	S1
ICRF J234802.6-163112	2345-167	Q	.576	3.48	4.08*	-.3	18.4	HP
ICRF J235421.6+455304	2351+456	Q	1.992	1.48	1.41*	-.1	20.6	
ICRF J235430.1-151311	2351-154	Q	2.675	.97	1.08*	-.2	18.8	
ICRF J235509.4+495008	2352+495	G	.237		2.30	-.3	19.0	
ICRF J235600.6-682003	2353-686	Q	1.716	1.07	.94*		17.0	
ICRF J235753.2-531113	2355-534	Q	1.006	1.66	1.31*	.4	17.8	
ICRF J235810.8-102008	2355-106	Q	1.622	1.62	.47*	.5	18.5	
ICRF J235933.1+385042	2356+385	Q	2.704	.69	.50	.3	18.0	

Notes: (1) Type of Object: Q = quasar, G = galaxy, L = BL Lac, ?L = BL Lac candidate, A = other
(2) Asterisk indicates that the reported value is the flux at 11 cm.
(3) Redshift (unitless), ">" prefix means the value given is a lower limit.
(4) Spectral index from Preston *et al.*
(5) Classification of Spectrum: S = Seyfert spectrum, S1 = Seyfert 1 spectrum, S2 = Seyfert 2 spectrum, S3 = Seyfert 3 or liner, HP = high optical polarization (>3%)