

18 CM HIGH RESOLUTION OBSERVATIONS OF 15 EXTRAGALACTIC RADIO SOURCES

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On 8-12 October 1981 a 5-station MkII VLBI experiment at 1660 MHz was performed using antennas at Westford, Maryland Point, Green Bank, Fort Davis, and Owens Valley. Fifteen extragalactic sources (Table 1) were observed with an average synthesized beam of roughly 10 mas. The data were processed using the NRAO correlator, globally fringe-fit, and mapped with the AIPS package. In addition to the usual self-calibration techniques, corrections were made to eliminate baseline-dependent calibration errors. Some of the sources, for example 1641+399 (3C345), display extended components not before observed at the dynamic range of the maps, which on the average is roughly 200:1.

The contour levels in the maps are normally at +/- 0.5, 1, 2, 5, 10, 20, 30, 50, 70, and 90% of the peak flux. The actual lowest contour level and other map parameters for each source are given in Table 1. One negative contour is drawn for each source at the level corresponding to the lowest positive contour for that source.

TABLE 1: MAP PARAMETERS

SOURCE	RESTORING BEAM (mas)	LOWEST CONTOUR (%)	PEAK BRIGHTNESS (mJy/beam)	RMS NOISE LEVEL (mJy/beam)	REMARKS
0428+000	16.4x5.8 @ -11.7 ^o	2	1751	6.4	Component 35 mas to NW, P.A. -25 ^o
0500+019	27.6x5.6 @ -6.8 ^o	2	2284	12.1	Roughly unresolved
0711+356	28.4x6.1 @ -18.8 ^o	-	1986	9.3	Roughly unresolved
0742+103	22.0x6.5 @ -16.0 ^o	-	3729	7.1	Poor beam shape; extension to NW?
0828+493	10.9x5.5 @ -5.7 ^o	2	1299	6.0	Roughly unresolved
0831+557	10.9x5.5 @ -5.7 ^o	1	3431	13.6	*
0859+470	11.6x5.6 @ 0.0 ^o	2	1535	9.1	Nearly unresolved
1311+678	11.2x5.1 @ -40.3 ^o	-	638	8.5	**
1358+624	10.4x5.1 @ -41.0 ^o	-	1110	13.3	***
1611+343	13.2x5.5 @ -1.0 ^o	0.5	3157	7.5	Unresolved
1641+399	11.4x5.6 @ 0.0 ^o	0.5	5234	6.1	Emission 15, 32, 55 mas from core
1803+784	8.7x5.5 @ -29.8 ^o	2	1485	7.1	Extended core; comp. at P.A. -100 ^o
1823+568	9.7x5.5 @ -18.4 ^o	2	771	4.7	Slightly resolved, roughly N-S
2021+614	9.7x5.6 @ -37.6 ^o	-	1287	9.5	****
2200+420	10.5x5.8 @ -31.4 ^o	0.5	4470	7.3	Slightly resolved along P.A. -160 ^o

NOTES TO TABLE 1:

- * : Very extended along P.A. -35^o ; apparently core-jet to approximately 100 mas; may be larger scale structure not on map due to lack of short baselines.
- ** : Complex structure out to approximately 40 mas; insufficient UV coverage to map reliably.
- *** : Extended along P.A. -55^o ; size >50 mas; too complex to map by our data.
- ****: Limited UV data; resolved on a 15 mas scale along P.A. 35^o.

1 660 MHz MAPS OF
EXTRAGALACTIC RADIO SOURCES
AT EPOCH 1981.9

