327 MHZ OBSERVATIONS OF 3C 84, 3C 120 AND 1148-001

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We have made VLBI observations of a mixed sample of bright galaxies and quasars at 327 MHz using the Ooty Radio Telescope in India and the telescopes at Jodrell Bank, Westerbork, Torun, and Crimea in December 1983 and March 1986. MK II recording was used and the data were processed at MPI, Bonn.The preliminary results of the 1983 analysis (Ananthakrishnan and Kulkarni 1986) showed most of the nearby galaxies to be resolved over the longest baselines of 8 million wavelengths. The only seyfert galaxies for which good S/N ratio was available at the longest baselines were 3C84 and 3C120. Although UV coverage was poor we attempted to make maps of these objects. The radio source 1148-001 was used for gain calibration of the telescopes. These three sources are described below.

1148-001: This high redshift (z=1.982) flat spectrum quasar is known to be compact at low frequencies (Clarke et al., 1969, Galt et al., 1977 and Venugopal et al., 1985). Therefore it was used to calibrate the gains of the telescopes. The fringe amplitude and closure phase data for the source are consistent with a single component of size $\leq$12 mas. However, it is not clear whether the angular size observed is the intrinsic size of the source or could be due to the effect of interstellar scattering, which at 327 MHz is expected to be ~8 mas.

3C84: A self calibrated map of the source was made (Fig. 1) at the National Image Processing Facility at Ooty using the AIPS Package. A point source was used as a starting model and standard procedure was followed. The map was convolved with a restoring beam of 60x15 mas in PA 32^{o}. A deconvolution of the map gives parameters shown in Table 1. Since the beam was elongated in approximately the same position angle as the source, model fitting was also done to ensure reliability (Table 1). The angular size value is consistent with the observations of Wilkinson et al. (1979) and the component may be the same as Comp. B of the map of Pauliny-Toth et al. (1976), but the flux density is slightly higher, suggesting a flattening of the spectrum. Whether this could be due to free free absorption rather than synchrotron self absorption needs to be investigated further.

3C120: UV coverage of the source was poor, the source being at a low declination and attempts to make a map did not succeed. The model fit gives two

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components (Table 1). The model resembles those of MERLIN maps made at 408 MHz (Browne et al. 1982), but on a much smaller scale.

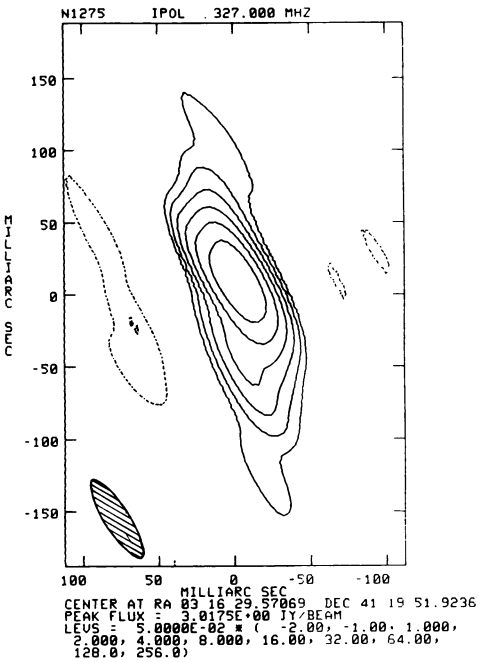

Fig. 1: Map of 3C 84

Table 1: Parameters for 3C84 and 3C120.

Source Name	Flux den.(Jy)	Rad. mas	Theta deg.	Maj. mas	Min. mas	PA deg.
3C84(map fit)	6.9	0	0	31	20	18
(mod.fit)	6.9	0	0	36	20	18
3C120(mod.fit)						
Comp. A	0.74	0	0	15	10	0
B	2.65	184	305	95	2*	119

* value uncertain

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