WESTERBORK OBSERVATIONS OF LOW LUMINOSITY RADIO SOURCES

P. Parma
Istituto di Radioastronomia, Bologna, Italy

The two radio galaxies 0326+39 and 1321+31 are both part of a complete sample of low luminosity radio galaxies which was obtained by identifying B2 radio sources with galaxies from the Zwicky Catalogue. Both sources have a very symmetrical double jet, like many other sources of the sample (Ekers et al. 1981a).
What makes 0326+39 and 1321+31 unusual is their morphology: in other sources (for example 3C 31 and 3C 449) the jet widens and changes into the extended components, but in 0326+39 and 1321+31 the jet is surrounded by an extended structure right from the core (Figs. 1-2).
The source 1321+31 has been studied in detail (Ekers et al. in prep.) and a tentative explanation for its unusual morphology is presented. It is assumed that the jet is supersonic and freely expanding. The depolarization data and the dependence of the brightness profile on the transverse dimension of the jet are both suggestive of a decreasing flow velocity of the jet. Considering that the opening angle is constant and taking account of the Bernoulli equation we are led to the conclusion that most of the energy is flowing out of the jet to form the extended structure.

References

1) Ekers, R.D., Fanti, R., Lari, C., Parma, P.: 1981a, Astron. Astrophys., in prep.
2) Ekers, R.D., Fanti, R., Lari, C., Parma, P.: in prep.

D. S. Heeschen and C. M. Wade (eds.), Extragalactic Radio Sources, 193–194.

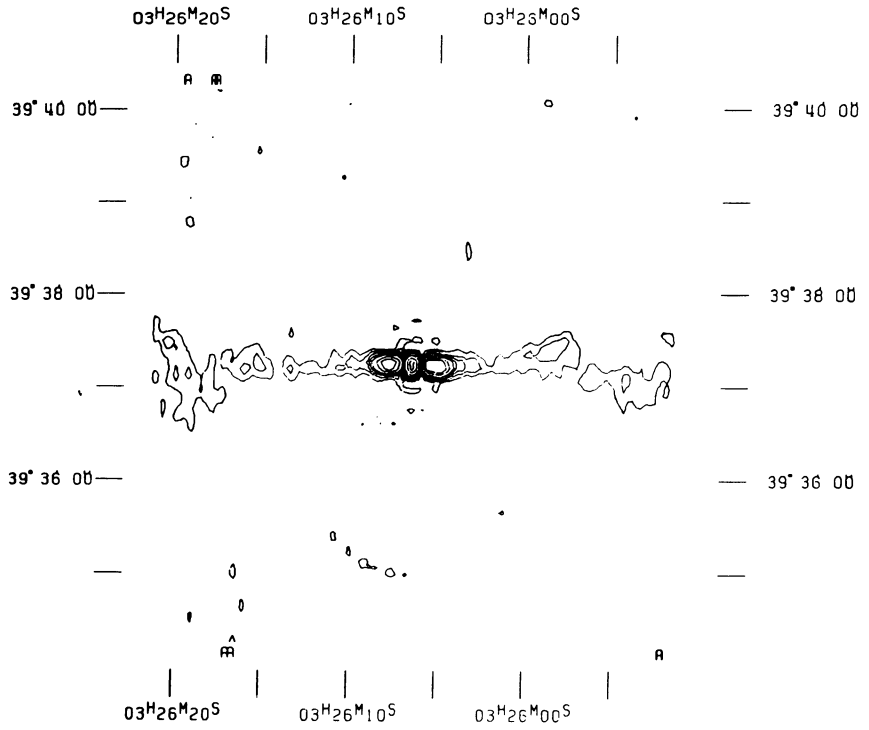

Fig. 1. Total intensity map at 5.0 GHz of 0326+39 (WSRT).

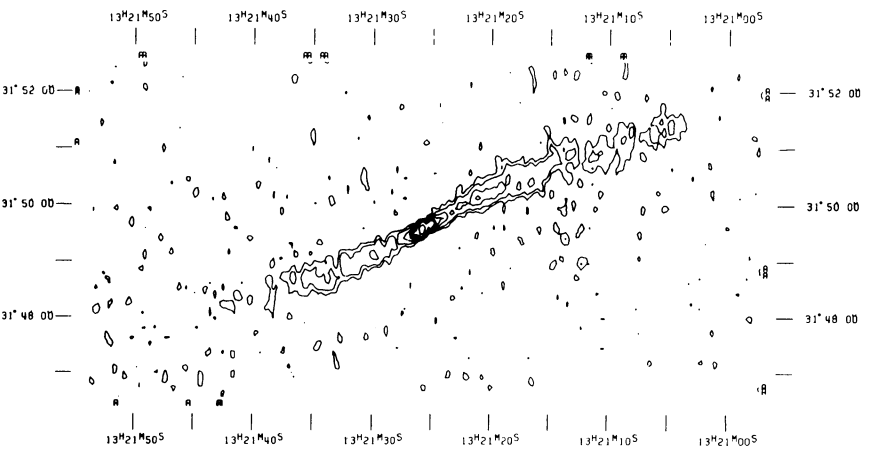

Fig. 2. Total intensity map at 5.0 GHz of 1321+321 (WSRT).

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