

HIGH RESOLUTION VLA OBSERVATIONS OF QUASARS WITH DISTORTED RADIO STRUCTURE

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ABSTRACT: Most quasars with extended radio structures have the classical linear double structure (Class II) which is also characteristic of the most luminous radio galaxies. A very small fraction of quasars do, however, show deviations from the classical double structure which are similar to the distortions observed in some low luminosity radio galaxies, e.g., bent double sources. Among radio galaxies, structural distortions seem to be associated with membership in a cluster of galaxies. Indeed, Scott and Hintzen, 1978, have suggested that such distortions might be indicators of cluster membership for quasars as well. To test this hypothesis and examine the physics of distorted quasars, we have mapped the quasars 3C 270.1 and 3C 275.1 in both I and P using the VLA A-Array at 20 cm and 6 cm. Our high resolution (0.1 arc sec at 6 cm) and high dynamic range (200:1) observations demonstrate that the displaced components reported previously for these sources are indeed connected with the quasars themselves and, therefore, the distortions are not simply projection effects. We also report the discovery of a very narrow northwesterly pointing jet in the quasar 3C 275.1.

REFERENCE

Scott, John S. and Hintzen, P. B., 1978, Ap. J. Lett., 224, L47.

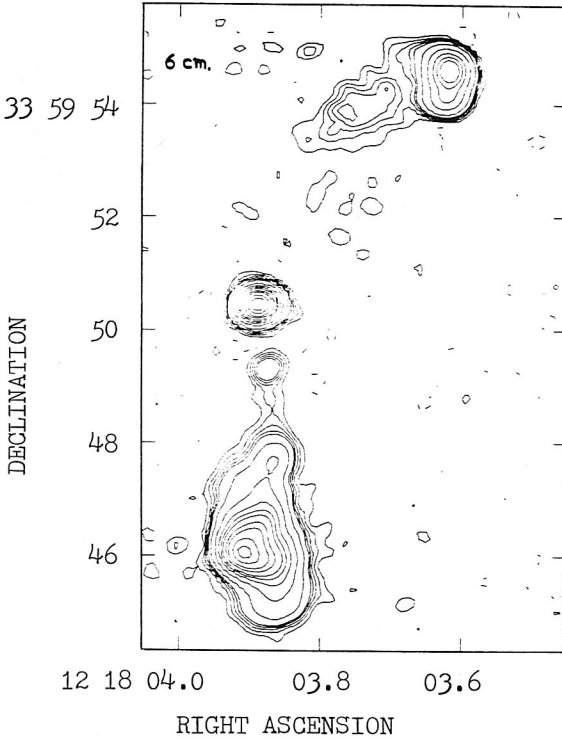


Table 1 Properties of 3C270.1 (See Figure 1)	
Flux Densities:	
North Hot Spot	115 mJy
North Lobe	129 mJy
Nucleus	192 mJy
Weak Hot Spot or Jet South of the Nucleus	4.4 mJy
South Lobe	605 mJy
South Hot Spot	494 mJy
Red Shift: $Z = 1.5$	
Bending Angle: 40°	

Figure 1. 6 cm I Map of 3C270.1

Table 2 Properties of 3C275.1 (See Figure 2)	
Flux Densities:	
North Hot Spot	193 mJy
North Lobe	431 mJy
Northwest Jet	8.2 mJy
Nucleus	135 mJy
South Lobe	332 mJy
South Hot Spot	232 mJy
Red Shift: $Z = 0.557$	
Bending Angle: 25°	

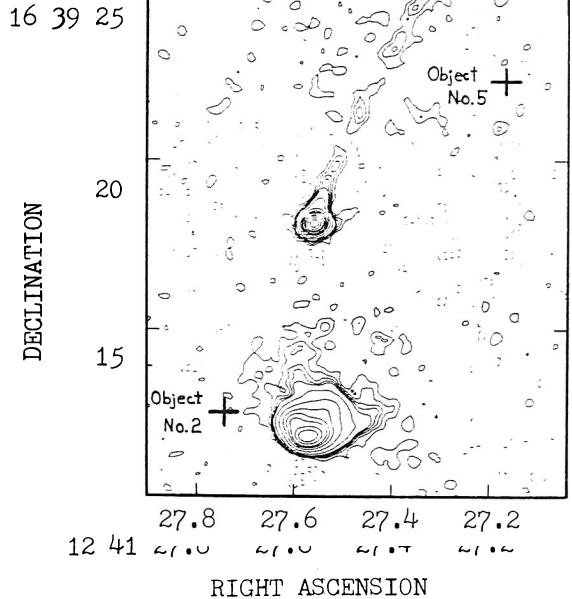


Figure 2. 6 cm I Map of 3C275.1