

# HIGH RESOLUTION VLA OBSERVATIONS OF CORE-DOMINATED QUASARS

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## 1. THE OBSERVATIONS

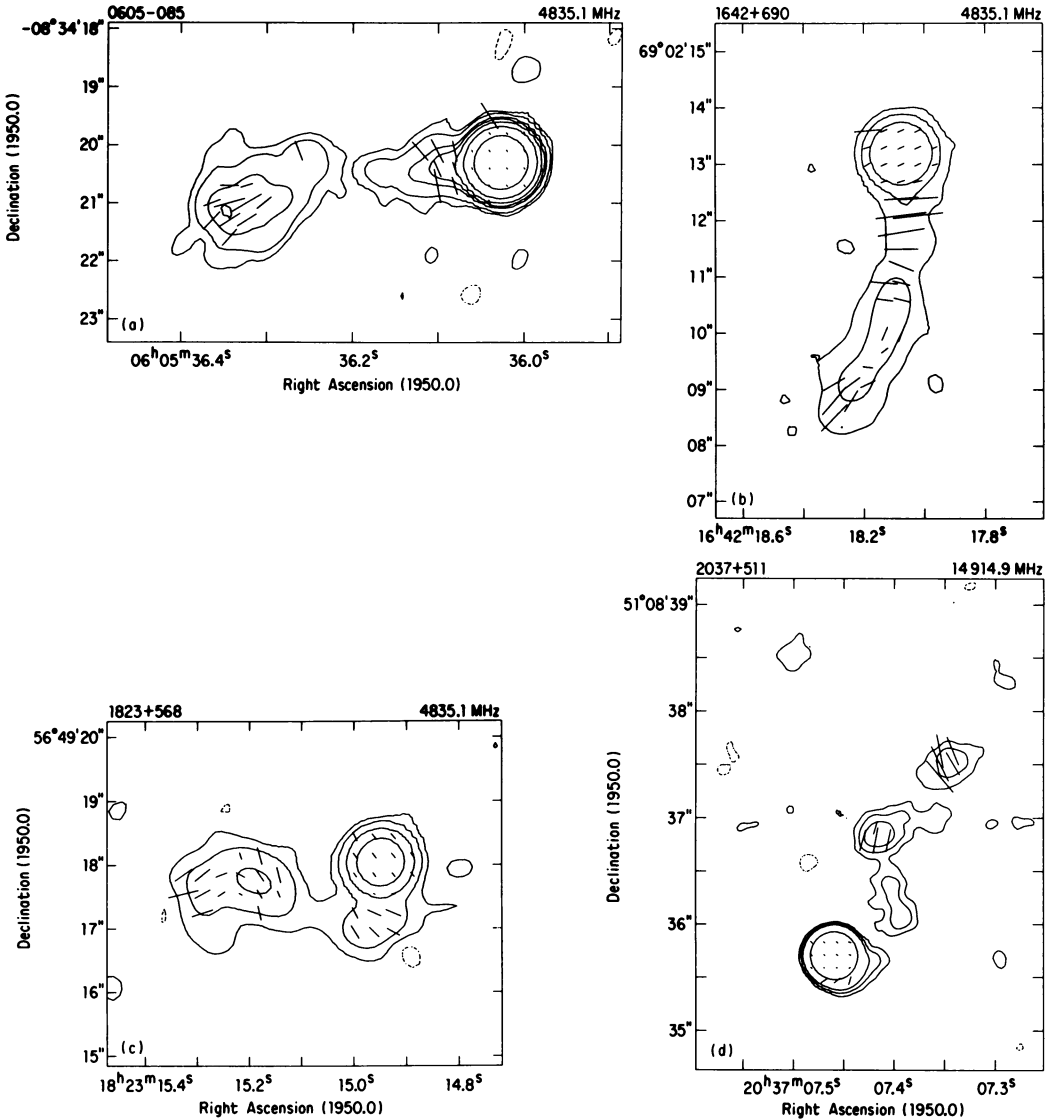
We selected 16 core-dominated sources based on two criteria. (1) They have a core-jet VLBI morphology. (2) Previous observations at lower resolution indicated that there was extended structure on scales of  $\geq 1''$ . The sources were observed in the A configuration of the VLA at 6 and 2 cm with typical resolutions of  $\sim 0''.45$  and  $\sim 0''.15$  respectively. Contour plots of total intensity with E vectors superposed (length proportional to fractional polarization) of four sources with jets are shown in Figure 1.

## 2. RESULTS

At high resolution two of the sources show no extended structure and seven show only a secondary component. We have discovered one-sided jets in 0605-085, 0735+178, and 1823+568. We confirm the existence of one-sided jets previously reported in 1510-089, 1642+690, 1807+698, and 2037+511. Although there are counter examples, the general trends are as follows. The jets terminate at or near brightness enhancements (hot spots or knots); i.e., they have a morphology which is more consistent with Fanaroff and Riley class II than class I. Note, however, that sensitivity limitations may prevent us from detecting the entire length of the jet. In the jets where we have adequate polarization data the magnetic field tends to be initially parallel to the jet axis. In 0605-085, 1510-089, 1642+690, and 1823+568 the magnetic field flips to become perpendicular to the jet axis at the terminal hot spot.

## 3. DISCUSSION

The powers of both the core and extended emission in the core-dominated sources studied here are sufficiently large that nearly all of the sources are expected to have one-sided jets, FR II morphologies, and projected magnetic fields which are parallel to the jet axis for roughly the entire length of the jet (Bridle 1984, A.J., 89, 979). The observations reported here confirm these expectations. We find that the properties of the extended emission in these core-dominated sources are comparable to those seen in powerful lobe-dominated sources.



**Figure 1.** Contour plots of total intensity with E vectors superposed (with length proportional to fractional polarization). Contour levels in multiples of 1.0 mJy per beam and the FWHM of the circular CLEAN beams are as follows. 0605 – 085:  $-0.5, 0.5, 1.0, 3.0, 5.0, 10.0, 30.0,$  and  $200.0, 0''.50$ ; 1642 + 690:  $-1.0, 1.0, 7.0, 50.0, 0''.50$ ; 1823 + 568:  $-1.0, 1.0, 5.0, 30.0,$  and  $200.0, 0''.45$ ; 2037 + 511:  $-2.5, 2.5, 5.0, 10.0, 100.0, 0''.2$ .