ASTRONOMY

Another giant radio galaxy

An international group of astronomers using radio telescopes in two countries has discovered a new giant radio galaxy with an unusual Z shape and mapped it at several frequencies. The observers are A. H. Bridle of Queen's University in Kingston, Ont., Canada; M. M. Davis and A. D. Meloy of the Arecibo Observatory in Puerto Rico; E. B. Fomalont of the National Radio Astronomy Observatory in Green Bank, W. Va., R. G. Strom of the Radio Observatory at Dwingeloo in the Netherlands and A. G. Willis of the Leiden Observatory. They used telescopes at Arecibo and at Westerbork in the Netherlands.

These giant radio galaxies are the largest objects known to astronomy. In the July 15 NATURE the observers report that this one, which extends for 1.7 megaparsecs, is the second largest of the four that have been studied so far. The usual configuration of these things is two elongated lobes of radio-emitting matter stretching away on opposite sides of a visible galaxy. The visible galaxy in this case is NGC 315.

Astrophysicists tend to believe that the external lobes are matter streaming out of the visible galaxy. These observers attribute the bending of the lobes into the unusual Z shape as evidence of the lobes' encountering a higher density of intergalactic matter far from the galaxy. Furthermore, they allege that the orientation of the lobes tells against one of the theories of how the matter is pushed out of the central galaxy, the so-called gravitational slingshot model, which regards the pushout as due to a combination of gravitational forces and the galaxy's rotation. They favor a theory that holds magnetic forces responsible.