

# Serendipitous Discovery of 100 kpc Twin Jets in a Peculiar S-Shaped Radio Galaxy

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We report the disclosure of an S-shape morphology of a giant radio galaxy (GRG) revealed in dedicated low-frequency observations from uGMRT and LOFAR. This GRG is powered by a billion solar mass black hole from which the vicinity of well-collimated, slender twin radio jets span  $\sim 100$  kpc. These jets can be considered as “naked jets” due to the absence of detectable diffuse radio cocoons, and remain conspicuous even at lower radio frequencies. In contrast, the outer radio configuration exhibits hotspots and diffuse lobes oriented almost perpendicular to the jet axis. The entire radio structure, likely due to systematic jet precession, is less than 50 Myr old, has a power of  $\sim 6E24$  W/Hz at 1.4 GHz, and morphologically is neither pure FR I nor FR II type. The combination of FR-II type morphology with the twin naked jets is unusual and, together with the overall S-shaped structure of this source, provides an excellent opportunity to address the intriguing problem of S-shaped RGs in general and characterize in great detail the twin kpc scale jets in GRGs.

## keywords

galaxies: active galaxies: jets - galaxies: radio galaxies - galaxies: radio-jet

## In-person or online?

in-person

## Career level

Student

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