

MeerKAT Telescope

October 5, 2025 • vajiramandravi.com



About MeerKAT Radio Telescope:

- MeerKAT is a **connected array of radio telescopes** located in the **Northern Cape province of South Africa**.
- It was **originally known as the Karoo Array Telescope (KAT)**, that would consist of 20 receptors. When the South African government increased the budget to allow the building of 64 receptors, the team renamed it “MeerKAT”, – i.e., “more of KAT”.
- It is **part of South Africa’s contribution to the global Square Kilometre Array (SKA) project**, which **aims to build the largest and most sensitive radio telescope** in the world.
- It is a precursor instrument to the mid-frequency component of the Square Kilometre Array (SKA).
- It uses radio signals from space to **study the evolution of the universe** and everything it contains.
- It **comprises 64 dishes**, each 13.5 metres in diameter, with maximum separations of 8 km.
- The received signals travel to a subterranean processor building that combines them and allows the telescopes to work together as a single instrument.
- It is **currently the most powerful radio interferometer at centimeter wavelengths**.

Q1: What are radio galaxies?

A radio galaxy is a galaxy that dominates the sky over Earth in radiowaves. These intense radio emissions originate from vast lobes of gas that extend well beyond the galaxy's visible structure, often spanning millions of light-years. Typically appearing in pairs, these radio lobes form when the galaxy's core contains an active galactic nucleus (AGN). This extremely luminous region is powered by a supermassive black hole, superheating and feeding on the surrounding material, causing the galaxy to radiate brightly.

News: New giant radio galaxy discovered with MeerKAT

Source: <https://vajiramandravi.com/current-affairs/meerkat-telescope/>

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