

Giant Metrewave Radio Telescope (GMRT)

June 9, 2023 • vajiramandravi.com



About Giant Metrewave Radio Telescope (GMRT):

- GMRT is a **low-frequency radio telescope** that **helps investigate various radio astrophysical problems** ranging from nearby solar systems to the edge of the observable universe.
- **Location:** It is located at **Khodad, 80 km north of Pune, Maharashtra**.
- It is a **project of the Department of Atomic Energy (DAE)**, operating **under the Tata Institute of Fundamental Research (TIFR)**.
- The telescope is **operated by the National Centre of Radio Astrophysics (NCRA)**. NCRA is a **part of the TIFR**, Mumbai.
- It **consists of 30 fully- steerable dish-type antennas of 45-meter diameter each, spread over a 25-km region**.
- GMRT is presently the **world's largest radio telescope operating at meter wavelength**.
- It was **recently upgraded with new receivers**, after which it is **also known as the upgraded Giant Metrewave Radio Telescope (uGMRT)**.

What are Pulsars?

- Pulsars are **rotating neutron stars** observed to **have pulses of radiation at very regular intervals** that typically range from milliseconds to seconds.
- Pulsars **have very strong magnetic fields** which **funnel jets of particles out** along the two magnetic poles.
- **These accelerated particles produce very powerful beams of light.**
- **Often, the magnetic field is not aligned with the spin axis**, so those beams of particles and **light are swept around as the star rotates.**
- Pulsars are among the **few celestial objects that emit circular polarised light.**

Q1) What is a Neutron Star?

Neutron stars are formed when a massive star runs out of fuel and collapses. The very central region of the star – the core – collapses, crushing together every proton and electron into a neutron. If the core of the collapsing star is between about 1 and 3 solar masses, these newly-created neutrons can stop the collapse, leaving behind a neutron star.

Source: [Pune astronomers detect two new millisecond pulsars](#)

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