Number of Giant Radio Galaxies

Why in News

Indian Researchers working on **giant radio galaxies (GRG)** at Inter-University Centre for Astronomy and Astrophysics (IUCAA) Pune, India and Leiden University, Netherlands, have found nearly 400 new GRGs.

> GRGs are **large single structures** in the universe.

Key Points

- **Radio Galaxies:** The universe has **billions of galaxies** and **almost all have supermassive black holes** at the centre.
  - Some of these **black holes are active** and **produce jets** travelling almost at the speed of light.
    > **A black hole** is a place in space where gravity pulls so much that even light can not get out. The gravity is so strong because matter has been squeezed into a tiny space. This can happen when a star is dying.
  - These jets are **visible in radio light or at radio wavelengths** of the electromagnetic spectrum.
  - Such galaxies, which have active black holes shooting high-speed jets, are called **radio galaxies.**
  - A radio galaxy is a strong source of **electromagnetic radiation or radio waves.**
  - They are **extremely weak in radio luminosity** making it difficult for even a sensitive radio telescope to detect them.

- **Giant Radio Galaxies:** When some of these radio galaxies grow to enormous sizes, bigger than 33 lakh light years across, they are called giant radio galaxies (GRGs).
    - GRGs were discovered in **1974** and until 2016, only about 300 GRGs were known. The latest findings indicate that they are over 800.
    - It is not clearly understood how some objects grow to such large scales and what is the fuel of their respective black holes.
    - The **length of jets** indicates how powerful and active a black hole is as well as about the environment density of black holes.
- **Significance:** The study of GRGs gives important clues to unveiling how these massive black holes accrete mass and the efficiency with which they produce the magnificent jets.

Source: IE