

Dark Galaxy

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In news— A team of researchers from Italy has been able to detect Black/Dark galaxy using Atacama Large Millimetre/Submillimeter Array (ALMA)

About Dark galaxy-

- A dark galaxy is a hypothesized galaxy with no, or very few, stars.
- They received their name because they have no visible stars, but may be detectable if they contain significant amounts of gas.
- The team revealed that it is **compact, and containing large quantities of interstellar dust**, it is a young galaxy, forming stars at about 1000 times the rate of the Milky Way.
- Astronomers have long theorized the existence of dark galaxies, but there are no confirmed examples to date.
- **Dark galaxies are distinct from intergalactic gas clouds caused by galactic tidal interactions**, since these gas clouds do not contain dark matter, so they do not technically qualify as galaxies.
- Distinguishing between intergalactic gas clouds and galaxies is difficult; most candidate dark galaxies turn out to be tidal gas clouds

What is Atacama Large Millimetre/Submillimeter Array(ALMA)?

- ALMA is **an astronomical interferometer of 66 radio telescopes in the Atacama Desert of northern Chile**, which **observe electromagnetic radiation at millimeter and submillimeter wavelengths**.
- The array has been constructed on the 5,000 m (16,000 ft) elevation Chajnantor plateau – near the Llano de Chajnantor Observatory and the Atacama Pathfinder Experiment.

- This location was chosen for its high elevation and low humidity, factors which are crucial to reduce noise and decrease signal attenuation due to Earth's atmosphere.
- ALMA **provides insight on star birth during the early Stelliferous era and detailed imaging of local star and planet formation.**
- **ALMA is an international partnership amongst Europe, the United States, Canada, Japan, South Korea, Taiwan, and Chile.**
- Costing about US\$1.4 billion, it is the **most expensive ground-based telescope in operation.**
- ALMA began scientific observations in the second half of 2011 and the first images were released to the press on 3 October 2011.
- The array has been fully operational since March 2013.