

Indian Astronomers Reported Flares from Black Hole

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In news : Recently the Indian Astronomers detected huge optical flare from super massive black hole

Key findings

- Indian astronomers have reported one of the strongest flares from a feeding super massive black hole or blazar called BL Lacertae, analysis of which can help trace the mass of the black hole and the source of this emission
- Such analysis can provide a lead to probe mysteries and trace events at different stages of evolution of the Universe
- Blazars or feeding super massive black holes in the heart of distant galaxies receive a lot of attention from the astronomical community because of their complicated emission mechanism.
- They emit jets of charged particles travelling nearly at the speed of light and are one of the most luminous and energetic objects in the Universe.
- BL Lacertae blazar is 10 million light-years away and is among the 50 most prominent blazars that can be observed with the help of a relatively small telescope.
- It was among the 3 to 4 blazars that was predicted to be experiencing flares by the Whole Earth Blazar Telescope (WEBT), an international consortium of astronomers
- A team of astronomers from Aryabhata Research Institute of Observational Sciences, who have been following the blazar since October 2020 as part of an international observational campaign detected the exceptionally high flare on January 16 with the help of Sampurnanand Telescope and 1.3m Devasthal Fast Optical Telescopes located in Nainital.

significance of the recent findings

The data collected from the flare observed will help calculation of the black hole mass, size of emission region, and mechanism of the emission from one of the oldest astronomical objects known, hence opening a door to the origin and evolution of the Universe

Whole Earth Blazar Telescope

It is an international consortium of astronomers created in 1997, with the aim to study a particular category of Active Galactic Nuclei (AGN) called blazars, which are characterized by strong and fast brightness variability, on time scales down to hours or less.

Aryabhata Research Institute of Observational Sciences (ARIES)

- It is an autonomous body under the Department of Science & Technology
- It is a leading research institute in Nainital, Uttarakhand which specializes in Astronomy, Astrophysics and Atmospheric Sciences.
- The institute was started on 20 April 1954 under the supervision of Dr. A. N. Singh as Uttar Pradesh State Observatory (UPS0) in the premises of the Government Sanskrit College, presently known as Sampurnanand Sanskrit Vishwavidyalaya, Varanasi, Uttar Pradesh.

Black holes

A black hole is a place in space where gravity pull is 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. Because no light can get out, people can't see black holes.

Black holes can be big or small. Scientists think the smallest

black holes are as small as just one atom.

The largest black holes are called "supermassive." These black holes have masses that are more than 1 million suns together. Scientists have found proof that every large galaxy contains a supermassive black hole at its center.

The supermassive black hole at the center of the Milky Way galaxy is called Sagittarius A. It has a mass equal to about 4 million suns and would fit inside a very large ball that could hold a few million Earths.