

INDIA'S FIRST ROBOTIC TELESCOPE

The project is named “GROWTH-India” which is a part of multi country collaboration known as ‘Global Relay of Observatories Watching Transients Happen’ (GROWTH).

The facility is located at Indian Astronomical Observatory (IAO) at Hanle which is 270 km from the nearest city Leh in Laddakh. The place is situated at 4,500 meters above sea level, is one of the world's highest observatory with some of the clearest views of the skies.

This is India's first robotic telescope that networks with 17 others of Northern Hemisphere to form an exclusive other-worldly club where there's always night. Let see it how it happens. Earth's rotation means that any observatory will experience downtime- daylight obliterates the view of the beyond. But GROWTH connects the telescopes, in the US, UK, Germany, Israel, India, Taiwan and Japan that let us watch the same patch of sky from another part of the world; one where the sun hasn't risen yet.

This fully robotic telescope is designed to observe the transient or dynamic events i.e. short lived cosmic occurrences that can last mere hours or days. When a survey telescope detects the start of something interesting, all GROWTH telescopes responds, says G C Anupama, an astrophysicist with the Indian Institute of Astrophysics (IIAp), who heads the project.

Transients often leaves signatures in various electromagnetic wavelength bands, which astronomers try to capture using telescopes that are sensitive to a variety of wavelengths- from gamma-rays to infra-red. Transient surveys involve scanning a part of the sky, moving on to other areas, returning to the first part repeatedly and comparing images to see changes such as increase or decrease in brightness of a source.

The global network aims to find electromagnetic counterparts to gravitational wave force- supporting proof of violent, energetic events in the universe. It could help understand how heavy elements combine to form a star and what happens when star die. It also hopes to detect young star burst and asteroids closer to Earth.

GROWTH-India has 70-cm lens. The project cost 3.5 crore INR, funded by the Science and Engineering Research Board of India's Department of Science and Technology. The American institute Caltech leads the network and in Indian Institute of Astrophysics and Indian Institute of Bombay run it.

Sources: Hindustan times/htthink!/july08, 2018

<https://www.thehindubusinessline.com/news/science/indias-first-robotic-telescope-opens-its-eyes-to-the-universe/article24209626.ece>