

MACE telescope to be set up in Ladakh

ECIL is manufacturing it for BARC

Y.Mallikarjun

HYDERABAD: To find out more about the secrets of universe, the world's largest telescope at the highest altitude is being established at Hanle, Ladakh with the city-based Electronics Corporation of India Limited (ECIL) executing the entire project.

Called MACE (Major Atmospheric Cerenkov Experiment) Telescope, the 21-meter instrument would enable the study of high energy cosmic gamma-ray sources in the hitherto unexplored energy range of 20 to 100 GeV (giga electron volt) and beyond five TeV (tera electron volt). ECIL is manufacturing the telescope for Bhabha Atomic Research Centre (BARC).

Talking to *The Hindu* here on Wednesday, Y.S. Mayya, Chairman and Managing Director, ECIL, said the entire telescope, expected to be operational next year, would be assembled at ECIL in modular form, dismantled and taken to Hanle for setting up. It would basically detect gamma-ray bursts from pulsars and stars. The indigenously-built telescope would be remotely operated and powered by solar energy.

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The telescope is coming up on the campus of Indian Astronomical Observatory (IAO) at Hanle. Close to the proposed MACE site, the Indian Institute of Astrophysics (IIA), Bangalore is operating Himalayan Chandra Optical telescope.

A seven element wavefront sampling gamma-ray telescope HAGAR (High Altitude Gamma Ray Telescope) was also jointly established by IIA and the Tata Institute of Fundamental Research (TIFR). The close proximity of the telescopes would help in co-ordinated multi-wavelength studies of the cosmos.

Galactic source

According to C.H. V.R.S. Gopalakrishna, Executive Director (Aerospace Systems Group) ECIL, a new galactic source could be detected by the telescope. The galactic sources would be emitting entire electromagnetic spectrum. When gamma ray bursts enter into atmosphere,

they get converted into light. That light would be detected by a high-imaging camera weighing 1.25 tonnes and placed at a focal point of the telescope.

The telescope would consist of a large area of light collector made up of 356 square mirror panels of 1m size. "Then depending on the intensity, one can estimate the energy level", he added. He said that elsewhere in the world, the energy threshold level of such telescopes was much higher and not that sensitive as the proposed MACE telescope. Its mirrors have an accuracy of 50 nanometers.

The telescope would be operational in August-September here.

After conducting some studies, it would be dismantled and installed at Hanle after May 2012. When fully operated with the proposed National Infrared telescope, it would be a unique facility in the world.

The Hindu

ECIL going to great heights to eye the sky

M. Somasekhar

Hyderabad, April 25

India's eye into the sky to observe celestial objects like stars and pulsars will gain more clarity soon. A large telescope is being set up at Hanle, a small town on the high altitude Ladakh area.

The Rs 50-crore, 21-m, gamma ray telescope is in the final stages of fabrication at the Electronics Corporation of India Ltd (ECIL), Hyderabad. "It will be ready in a modular structure by Au-

gust-September," said Mr Y.S. Mayya, Chairman and Managing Director of ECIL.

The MACE (Major Atmospheric Cerenkov Experiment) telescope, when ready will be the largest at the highest altitude in the world. The remotely operated, solar back-up telescope will detect bursts of gamma rays from these heavenly objects. The information and visual imagery is useful to astrophysicists to understand the birth, origin and processes of the

stars, pulsars and the universe.

The Bhabha Atomic Research Centre (BARC), Mumbai is setting up this unique facility. It will enable the study of high energy cosmic gamma ray sources in the unexplored range of 20 to 100 GeV and beyond. The telescope will supplement the worldwide efforts to open up this new window to the observable universe.

The telescope will be set up on the campus of Indian

Astronomical Observatory (IAO) at Hanle. The Indian Institute of Astrophysics (IIA), Bangalore is already operating the Himalayan Chandra Optical telescope (close to the proposed MACE site). A seven-element wavefront sampling gamma-ray telescope HAGAR (High Altitude Gamma Ray Telescope) has also been set up there jointly by IIA & TIFR.

The ECIL has already fabricated the structure, which

will contain 356 square mirror panels of one-metre size and also a camera, weighing more than 1.25 tonnes made by the BARC scientists, Mr Mayya told *Business Line* today.

It is proposed to operate the MACE and HAGAR telescopes in a coordinated manner to improve their sensitivity. The close proximity of the telescopes will help in coordinated multi-wavelength studies of the cosmos.

Business Line