



India

THE CENTRE OF IT ALL

- The star of our solar system is a huge ball of hot, glowing gases. At about 333,000 times the mass of Earth, the Sun contains about 99.8 per cent of all the mass in the solar system.
- Heat and light from this average-size star travel a mean distance of 92.96 million miles (149.6 million kilometres) to reach Earth and support all life on our planet.

STATISTICS	
DISTANCE FROM EARTH	
92,955,820	MILES
(149,597,891)	KILOMETRES
LENGTH OF DAY	
609	HOURS, 7 MINUTES
SURFACE TEMPERATURE	
10,000° F	(5,538° C)
GRAVITY	
28	TIMES EARTH'S

to build world's largest solar telescope

The solar telescope will help study the microscopic structure of the Sun and derive specific observations that are speculative in nature

India is inching closer towards building the world's largest solar telescope in Ladakh on the foothills of the Himalayas that aims to study the sun's microscopic structure.

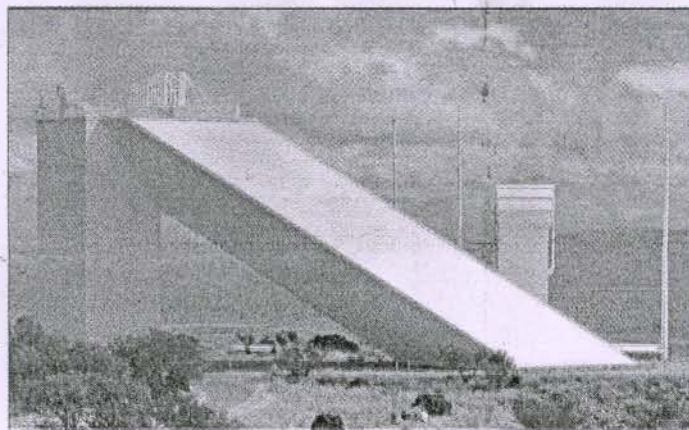
The National Large Solar Telescope (NLST) project has gathered momentum with a global tender floated for technical and financial bidding by the Bengaluru-based Indian Institute of Astrophysics (IIA).

The tender that was floated last week calls for expression of interest (EoI) to design, manufacture and install the two-metre class solar telescope at a cost of Rs 150 crore (around \$31 million).

"The solar telescope will help study the microscopic structure of the sun and derive specific observations that are speculative in nature," IIA director Siraj Hasan said here.

Solar telescopes are special-purpose scientific instruments used to study the sun.

They are among the biggest fixed telescopes and are equipped with an optical flat mirror system to track the sun rays and direct them on to the telescope.



A file picture of the world's largest solar telescope McMath-Pierce Solar Telescope.

The sun is the star at the centre of the solar system. Three quarters of the sun's mass consists of hydrogen and the rest is helium. Less than two per cent consists of heavier elements, including oxygen, carbon, neon and iron.

The unique project involves other scientific organisations such as the state-run Indian Space Research Or-

ganisation (ISRO), Aryabhata Research Institute of Observational-Sciences, Tata Institute of Fundamental Research and Inter-University Centre. The IIA will be the nodal agency.

"The pre-technical discussion meeting will be held in October," Hasan said. Though the 10-metre optical telescope at Mauna Kea in Hawaii is the

largest, the Indian instrument will be the largest among solar telescopes.

Currently, the world's largest solar telescope is the McMath-Pierce Solar Telescope, with a diameter of 1.6 metres in Kitt Peak National Observatory at Arizona in the US.

"The larger the diameter and larger the surface available to absorb sunlight, the more rays can be collected per second, enabling researchers to collect data with greater clarity and obtain accurate results," Hasan noted.

The solar telescope can study particles, which are spread across 50 km on the sun. "A suitable site has been identified at Merak village near Pangong Lake," Hasan pointed out. The village is situated in the Ladakh region of Jammu and Kashmir.

Initially, three sites - at Hanle and Leh in the Ladakh region and Devasthal near Nainital, Uttarakhand - were explored to set up the telescope.

The proposed telescope, which will be used to observe the sun during the day, will need a location with long hours of clear sunshine and clean visible conditions. IANS