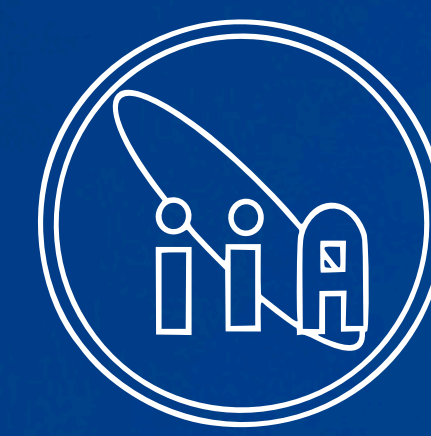


NLST National Large Solar Telescope



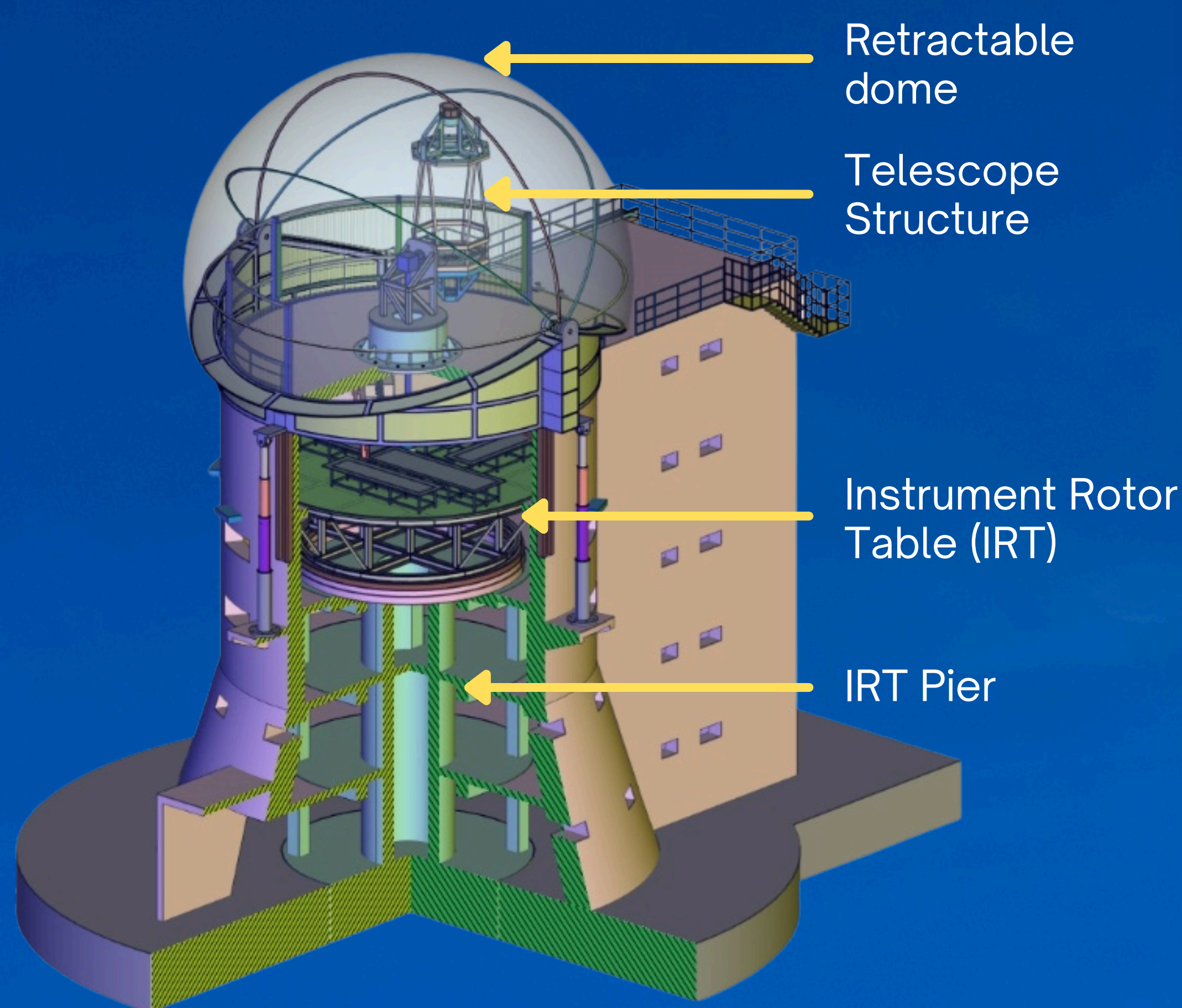
विज्ञान एवं प्रौद्योगिकी मंत्रालय
MINISTRY OF SCIENCE AND TECHNOLOGY
सत्यमेव जयते

India's Next Generation 2-meter Solar Telescope

Need for a Large Aperture Telescope

Understanding the origin of solar activity requires observations of magnetic fields and plasma motions at their fundamental spatial and temporal scales. Weak magnetic field measurements demand high polarimetric sensitivity and therefore a large photon-collecting area, while rapidly evolving solar structures require high-resolution, high-cadence observations. NLST is designed to probe these processes in unprecedented detail.

Conceptual Design for NLST



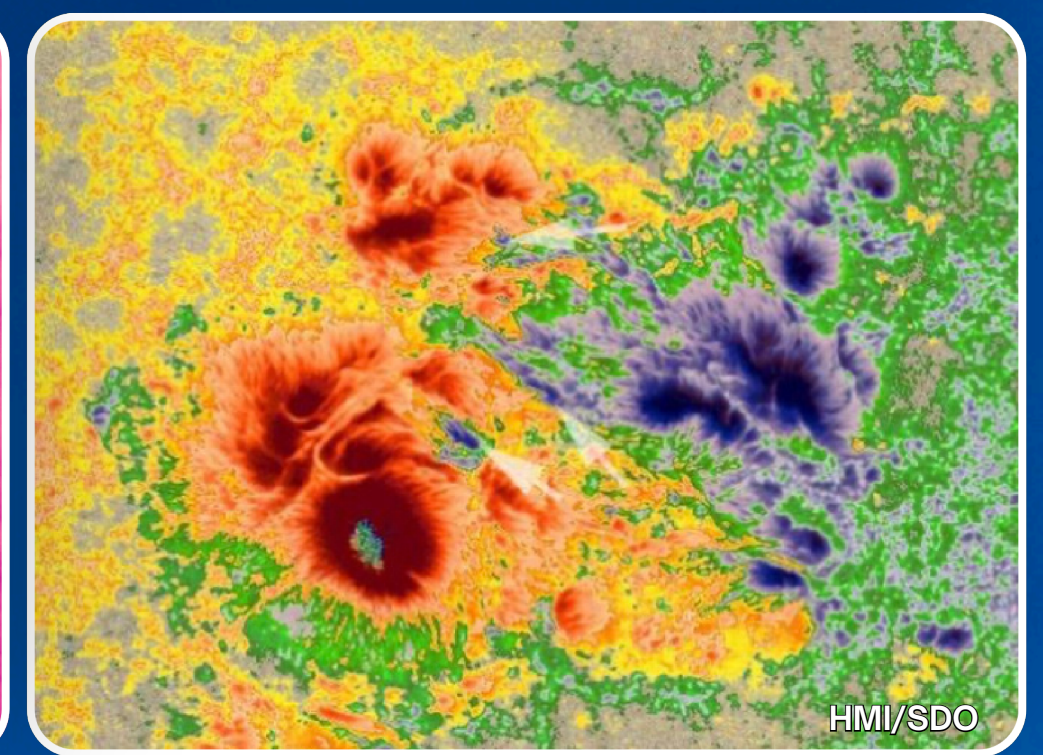
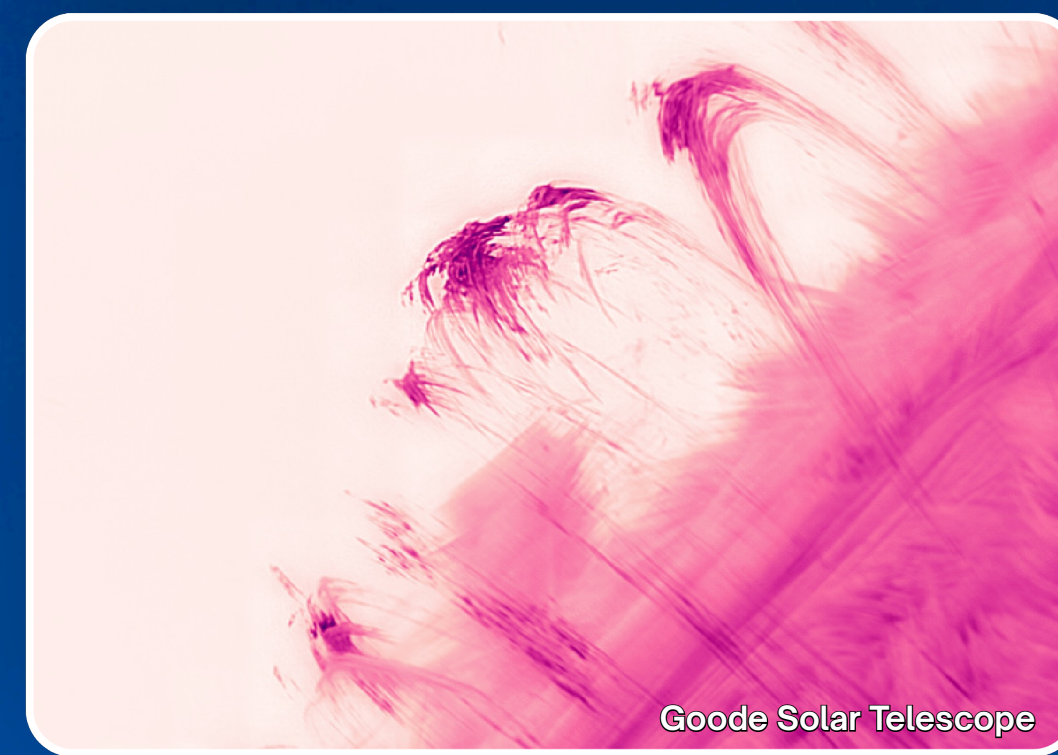
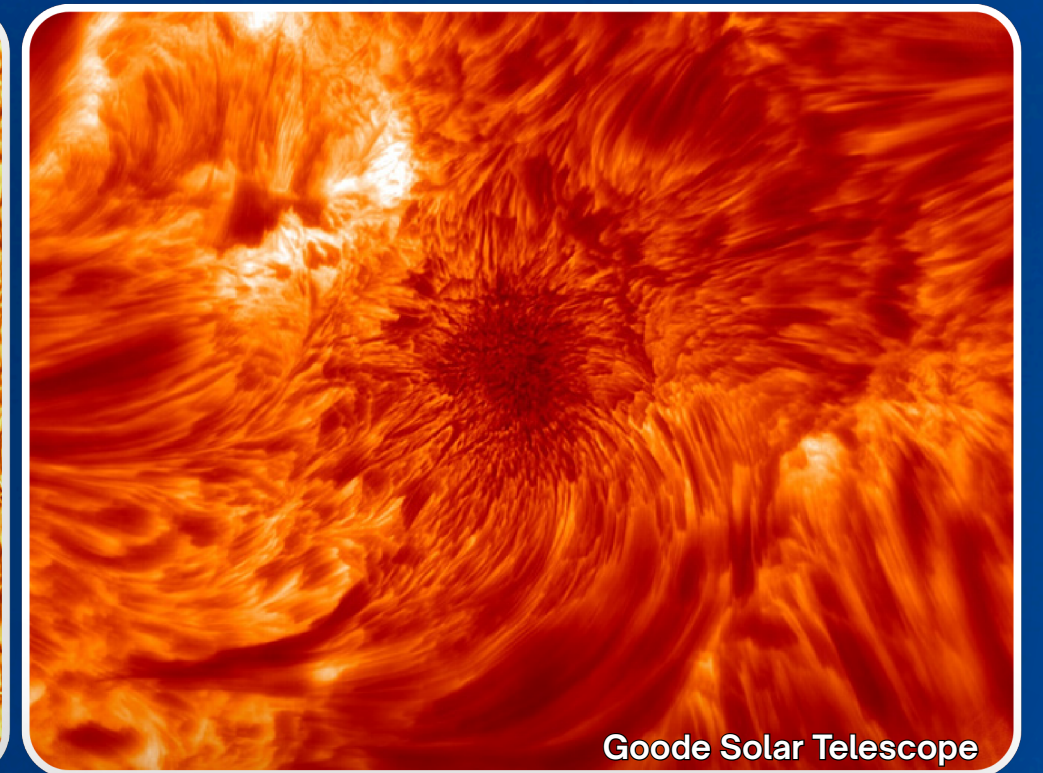
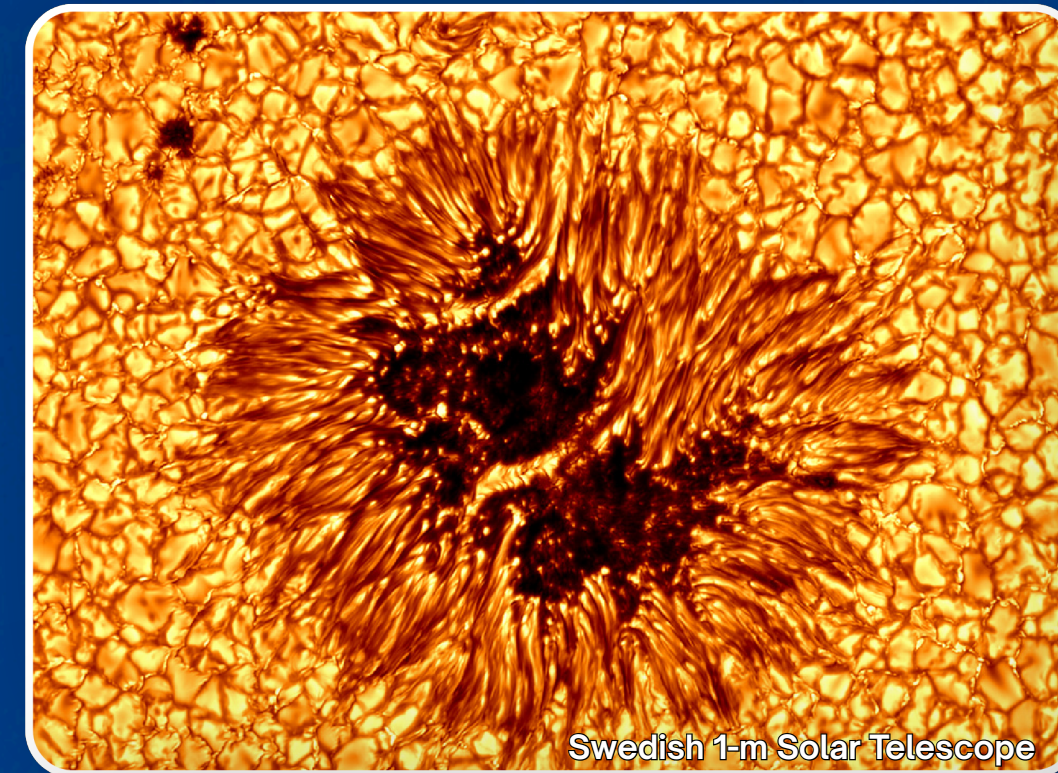
Site: Merak, Pangong TSO

Situated on a peninsula in Pangong Tso, near Merak in Ladakh, the NLST site benefits from the lake's thermal stability, which minimizes local atmospheric turbulence and delivers world-class daytime seeing conditions. Long-term site characterization over more than a decade confirms its exceptional sky transparency, atmospheric stability, and large number of clear observing days.

Altitude: 4,350 metres 33.80° N
78.59° E



Science Drivers



- Small-Scale Solar Magnetism
- Sunspot Structure and Dynamics
- Chromospheric Heating and Energy Transport
- Magnetic Reconnection in the Solar Atmosphere
- Coronal Heating and Mass Supply
- Formation and Evolution of Solar Filaments
- Solar Eruptions and Space Weather Drivers
- High-Resolution Spectropolarimetry

Technical Specifications

- 2-m On-axis Gregorian Telescope
- Spatial Resolution: 0.06 arcsec @ 500 nm
- Field-of-View: ~3 arcmin
- Wavelength range: 300-1600 nm
- Optimized Optical Path
- Thermal Control of Primary Mirror (M1)
- Heat Rejection at Primary Focus
- Higher-order Adaptive Optics (AO)
- Open-Dome Configuration
- Multi-Height Polarimetry

