

IIA hands over crucial payload to ISRO for India's 1st solar mission

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IN a major boost to India's first mission to the Sun, the Indian Institute of Astrophysics (IIA) on Thursday handed over the Visible Line Emission Coronagraph (VELC) payload to the Indian Space Research Organisation for India's first space mission, Aditya L1, to observe the Sun and the solar corona to be launched in June-July 2023.

The VELC is the primary payload on board Aditya-L1, designed as an internally occulted reflective coronagraph and has



been assembled, tested, and calibrated at the Centre for Research and Education in Science and Technology (CREST) Campus

of the IIA.

One of the main puzzles in solar astrophysics is that the atmosphere of the Sun (called the Corona) is at a temperature of about a million degrees Celsius, whereas the surface of the Sun is only a little below 6,000 degrees Celsius. Answering this puzzle needs continuous observations of the Corona, right from its lowermost boundary upwards. However, it is very difficult to discard the extremely bright light from the surface of the Sun (the Sun's disk) and observe the lower Corona. The VELC has an 'internal occulter'

which separates out the light from the disk and discards it. The remaining light which is from the Corona, from 1.05 R_{\odot} to 3 R_{\odot} (where R_{\odot} is the radius of the Sun) is sent for further processing. VELC weighs 90kg and is 0.7m X 1.1m X 700mm in dimension.

VELC is the largest and one of the most technically challenging of the seven payloads/telescopes that will fly on Aditya-L1. ISRO will now conduct further testing of VELC and its eventual integration with the Aditya-L1 spacecraft. The IIA successfully finished assembling, testing and

calibrating the VELC at its CREST campus in Hoskote, Bengaluru.

Accepting a 3D-printed model of the VELC payload from IIA, ISRO Chairman, S Somnath, said, "ISRO aims to play an important role in future science experiments in space and an ecosystem needs to be created for this, including a roadmap for the next few decades."

M Sankaran, Director of UR Rao Space Centre, ISRO, said an Aditya-L1 helpdesk is being planned which will help scientists and students understand and use Aditya-L1 data.