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News: ‘India’s first mission to study the sun to begin by June –July’.

- The Indian Space Research Organisation (ISRO) is planning to launch the Aditya L–1 mission by June or July this year.
- Aditya L–1 is the first Indian space mission to observe the Sun and the solar corona.

Aditya L–1

- Aditya L–1 is the **first solar mission of ISRO**.
- It is a **5 year programme having a payload of 1500kg**.
- Aditya-L1 will be inserted into a **halo orbit around Lagrangian Point 1** (where gravitational pull of Sun neutralizes the gravitational pull of earth) (1.5 million km from earth) using **PSLV XL**.
- Aditya L–1 **has seven payloads in total, of which the primary payload is the Visible Emission Line Coronagraph (VELC), designed and fabricated by the Indian Institute of Astrophysics, Bengaluru**.
- Visible Emission Line Coronagraph (VELC) **can image the solar corona as close as 1.05 times the solar radius**. It can also do **imaging, spectroscopy, and**

polarimetry at the same time, and can take observations at a very high resolution, or level of detail, and many times a second.

- Aditya will observe Sun's Photosphere (Soft & hard X-rays), Chromosphere (Ultra violet) & Corona (Visible & near infrared rays).

Other missions to Sun

- NASA's Parker Solar Probe to trace how energy & heat move through Corona & to study the source of solar wind's acceleration part of Living with a Star programme of NASA.
- Helios 2, a joint venture of NASA & space agency of West Germany went within 43 million km of sun's surface in 1976.