Claim / Data Point Supported	Citation	Link
Aditya-L1 is ISRO's first space-based solar mission, launched September 2, 2023, by PSLV-C57	Wikipedia: Aditya-L1	https://en.wikipedia.org/wiki/Aditya-L1
Aditya-L1 was inserted into a halo orbit around Sun-Earth L1 (1.5 million km from Earth) on January 6, 2024	ISRO: Aditya-L1 Mission Details	https://www.isro.gov.in/Aditya_L1-MissionDetails.html
L1 is a Lagrange point where gravitational forces between Sun and Earth balance, allowing uninterrupted solar observation	NDTV	https://www.ndtv.com/india-news/aditya-l1-mission-what-is-lagrange-point-1-the-location-from-where-isro-will-study-the-sun-4346372
L1's advantage: continuous, eclipse-free view of the Sun for real-time solar activity and space weather monitoring	Max Planck Society	https://www.mps.mpg.de/8328458/aditya-l1
Aditya-L1's journey: 16 days in Earth-bound orbits, 5 maneuvers, 110-day cruise to L1, then halo orbit insertion	Vajiram & Ravi	https://vajiramandravi.com/upsc-exam/aditya-l1/
Mission duration planned for 5 years, with possible extension or reduction	IndiaTV News	https://www.indiatvnews.com/science/aditya-l1-mission-all-you-need-to-know-about-isro-s-solar-study-probe-2023-12-27-909192
Aditya-L1 has 7 payloads: 4 remote sensing (Sun-facing), 3 in-situ (local plasma, particles, magnetic field at L1)	ISRO: Aditya-L1	https://www.isro.gov.in/Aditya_L1.html
All Aditya-L1 payloads and spacecraft components were indigenously developed in India	ISRO: Aditya-L1 Mission Details	https://www.isro.gov.in/Aditya_L1-MissionDetails.html
Payloads and their objectives: VELC (corona imaging), SUIT (UV imaging of photosphere/chromosphere), SoLEXS (soft X-ray), HEL1OS (hard X-ray), ASPEX (solar wind/ions), PAPA (plasma analyzer), MAG (magnetometer)	Wikipedia: Aditya-L1	https://en.wikipedia.org/wiki/Aditya-L1
SUIT is the first instrument to image the full solar disk in the near UV (200–400 nm), covering photosphere/chromosphere, using 11 filters	Max Planck Society	https://www.mps.mpg.de/8328458/aditya-l1
SUIT's first images taken December 6, 2023; regular science ops from October 2024	ISRO: SUIT	https://www.isro.gov.in/SUIT_onboard_Aditya-L1_Mission.html
Major science objectives: study coronal heating, coronal mass ejection (CME), pre-flare/flare activity, solar wind, space weather dynamics	ISRO: Aditya-L1	https://www.isro.gov.in/Aditya_L1.html
Aditya-L1's data will help understand solar wind, magnetic field, and CME impacts on Earth, and aid early warning for geomagnetic storms	Vajiram & Ravi	https://vajiramandravi.com/upsc-exam/aditya-l1/
The Sun's structure: core (~15 million °C), radiative and convective zones, photosphere (~5,500 °C), chromosphere (3,700–7,700 °C), corona (1–3 million °C)	Wikipedia: Sun	https://en.wikipedia.org/wiki/Sun
Sun's diameter is ~109x Earth's; mass is ~333,000x Earth's; can fit 1.3 million Earths inside	Wikipedia: Sun	https://en.wikipedia.org/wiki/Sun
Sun-Earth distance is ~150 million km	Wikipedia: Sun	https://en.wikipedia.org/wiki/Sun
Solar wind: constant flow of charged particles from the Sun, interacts with Earth's magnetic field and causes auroras	Max Planck Society	https://www.mps.mpg.de/8328458/aditya-l1
Coronal Mass Ejection (CME): explosive solar events that can affect Earth's magnetosphere and cause geomagnetic storms	ISRO: Aditya-L1	https://www.isro.gov.in/Aditya_L1.html
Lagrange points: five positions where gravitational forces and orbital motion balance; L1 and L2 are used for solar and deep-space observatories	NDTV	https://www.ndtv.com/india-news/aditya-l1-mission-what-is-lagrange-point-1-the-location-from-where-isro-will-study-the-sun-4346372
NASA's James Webb Space Telescope is at L2; L1 is ideal for solar observatories like Aditya-L1	Wikipedia: James Webb Space Telescope	https://en.wikipedia.org/wiki/James_Webb_Space_Telescope
Aditya-L1's data is shared with the global scientific community; first anniversary marked by public data release Jan 2025	ISRO: SUIT	https://www.isro.gov.in/SUIT_onboard_Aditya-L1_Mission.html
Aditya-L1's success demonstrates ISRO's complex maneuvering and interplanetary mission capabilities	Vajiram & Ravi	https://vajiramandravi.com/upsc-exam/aditya-l1/