In historic leap, Indian astronaut heads to ISS

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Context

• India's human space programme took off on Wednesday as Indian astronaut **ShubhanshShukla's Axiom-4 mission (Ax-4) to the International Space Station (ISS)** was launched from NASA's Kennedy Space Center in Florida, U.S., **after multiple delays.**

• **Captain Shukla** will be **the second Indian citizen to go to space after Rakesh Sharma and First Indian citizen to go to ISS.**

• "**This is not the start of my journey to the ISS but the start of India's human space programme**. I want my countrymen to become part of this journey, let us join together and start India's human space programme. Jai Hind Jai Bharat," Group Captain Shukla said in his first message from the mission.

• Group Captain Shukla, the pilot of the Ax-4 mission, **began a 28-hour journey** to the orbiting laboratory in space (ISS) along with Commander Peggy Whitson (U.S.), Mission Specialist S?awosz Uzna?ski-Wi?niewski (Poland), and Mission Specialist Tibor Kap(Hungary).

• The **SpaceX Dragon crew capsule** housing the **4 astronauts** is **targeting to dock at the ISS** at approximately 4.30 p.m. IST on Thursday.

• After docking, the crew members **will spend 14 days aboard the ISS** conducting science, outreach, and other commercial activities. The Ax-4 research complement includes nearly 60 scientific activities representing 31 countries

• Axiom Mission 4 (Ax-4) is a **private spaceflight organized by Axiom Space.**

• It aims to **transport a crew to the International Space Station (ISS) for a 14-day mission.**

• It uses **SpaceX Falcon9 Rocket**

• The **spacecraft for this mission is a SpaceX Crew Dragon,** known for its advanced technology and safety features

• Axiom missions are a **stepping stone to commercial Space Tourism**

ISS (International Space Station)

• The ISS is the **largest human-made structure in space**, launched in **1998** and continuously inhabited since 2011, **orbiting Earth** at an altitude of **~400 km.**

• International Collaboration: It is a joint project involving **NASA (USA), Roscosmos (Russia), ESA (Europe), JAXA (Japan), and CSA (Canada),** symbolizing global cooperation in space exploration.

• Scientific and Medical Research Hub: The ISS enables studies in **microgravity,** aiding advancements in **medicine** (e.g., Alzheimer's, cancer), **fluid physics, and human biology**, while also **testing 3D printing and space farming.**

• Future Plans and Global Space Ambitions: **While Russia plans to exit the ISS,** the US and Europe remain committed until 2030; **India, China, and UAE are developing their own stations,** with **India's Bhartiya Antriksh Station planned by 2035.**