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ISRO Plans 27 Missions for FY 2026–27 — Four Gaganyaan Flights Including First Crewed

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WHY IN NEWS

The **Indian Space Research Organisation (ISRO)** announced a record mission cadence of **27 space missions for FY 2026–27** — the most ambitious annual schedule in India’s space history. Four missions are dedicated to the **Gaganyaan** human spaceflight programme, with **Gaganyaan-1** (uncrewed, carrying the **Vyommitra** half-humanoid robot) scheduled for **H2 2026** and the **first crewed Indian spaceflight** planned for **Q1 2027**.

GAGANYAAN PROGRAMME — MISSION SEQUENCE

MISSION	TYPE	PLANNED	KEY DETAIL
Gaganyaan-1	Uncrewed (with Vyommitra)	H2 2026	Half-humanoid robot; validates life-support systems
Gaganyaan-2	Uncrewed	2026	Further systems validation
Gaganyaan-3	Uncrewed	2026–27	Final pre-crewed rehearsal
Gaganyaan-H1	Crewed	Q1 2027	India’s first human spaceflight

GAGANYAAN — TECHNICAL OVERVIEW

PARAMETER	DETAIL
Launch vehicle	LVM3 (Launch Vehicle Mark-3; formerly GSLV Mk III)
Crew module	Orbital crew module — pressurised, reusable
Service module	Propulsion + power module
Mission duration	3 days in Low Earth Orbit (~400 km)
Crew capacity	3 astronauts
Recovery	Arabian Sea (Indian Navy responsible for recovery)
Abort system	Crew Escape System (CES) — tested in test vehicle mission TV-D1 (Oct 2023)

SELECTED GAGANYAAN ASTRONAUTS

All four selected astronauts are **Indian Air Force (IAF) Test Pilots**:

ASTRONAUT	BACKGROUND
Group Capt. Prasanth Balakrishnan Nair	IAF test pilot; trained at Russian GCTC
Group Capt. Ajit Krishnan	IAF test pilot; GCTC, Moscow
Group Capt. Angad Pratap	IAF test pilot; GCTC, Moscow
Wing Cdr. Shubhanshu Shukla	IAF test pilot; also assigned to AXIOM-4 ISS mission (SpaceX)

Shubhanshu Shukla is additionally assigned to the **Axiom Mission 4 (Ax-4)** to the International Space Station — making him India’s first astronaut to visit the ISS under a private commercial mission.

VYOMMITRA — ISRO'S HALF-HUMANOID ROBOT

FEATURE	DETAIL
Name	Vyommitra (Sanskrit: Vyom = Space + Mitra = Friend)
Type	Half-humanoid (upper body only, no legs)
Developer	ISRO + Vikram Sarabhai Space Centre (VSSC)
Purpose	Monitor cabin parameters, simulate crew activities, interact with life-support panel
Capabilities	Recognise astronauts, respond to questions, perform switch panel operations, monitor environmental parameters (O ₂ , CO ₂ , temperature, humidity)
Mission	Gaganyaan-1 (first uncrewed orbital mission)

OTHER KEY ISRO MISSIONS FY 2026–27 (NON-GAGANYAAN)

MISSION	TYPE	SIGNIFICANCE
Chandrayaan-4	Lunar sample return	India's first lunar sample return mission; two-launch architecture
Venus Orbiter Mission (Shukrayaan-1)	Planetary	India's first Venus mission
NISAR (with NASA)	Earth observation	Dual-frequency SAR satellite; joint India-US mission
SPADEX follow-on	Space docking	Technology demonstration for future missions
Commercial launches	PSLV/LVM3 rideshare	Revenue-generating launches for global clients

INDIA'S HUMAN SPACEFLIGHT AMBITIONS — BROADER CONTEXT

MILESTONE	YEAR
Rakesh Sharma — First Indian in space (Soviet Salyut-7)	1984
Kalpana Chawla — Indian-origin NASA astronaut (Columbia, STS-87)	1997
Sunita Williams — Indian-origin NASA astronaut (multiple ISS missions)	2006–2024
Gaganyaan Programme announced	2018
HLVM3 (Human-rated LVM3) engine tests	2021–2024
Crew Escape System test (TV-D1)	October 2023
Shubhanshu Shukla / Axiom-4 ISS mission	2025
Gaganyaan-1 (uncrewed)	H2 2026
Gaganyaan crewed (first)	Q1 2027

After Gaganyaan, India plans to establish the **Bharatiya Antariksh Station (BAS)** by 2035 and attempt a **crewed lunar mission** by 2040.

UPSC RELEVANCE

PAPER	ANGLE
GS3 — Science & Technology	Human spaceflight, ISRO missions, space technology indigenisation
GS3 — Economy	Space economy, private sector in space, ISRO commercialisation
GS2 — Governance	IN-SPACE, NSIL, space policy framework, ISRO-NASA collaboration

Mains Keywords: Gaganyaan, ISRO 27 missions, Vyommitra, LVM3, Crew Escape System, Axiom-4, Shubhanshu Shukla, Bharatiya Antariksh Station, Chandrayaan-4, Venus Orbiter Mission, NISAR, IN-SPACE

Prelims Facts Corner

ITEM	FACT
ISRO missions FY27	27 total; 4 Gaganyaan missions
Gaganyaan-1	Uncrewed; Vyommitra; H2 2026
Gaganyaan crewed (H1)	Q1 2027; 3 astronauts; 3 days LEO
Launch vehicle	LVM3 (formerly GSLV Mk III)
Gaganyaan astronauts	4 IAF test pilots
Shubhanshu Shukla	Also assigned to Axiom-4 ISS mission
Vyommitra	ISRO half-humanoid; monitors life support; Gaganyaan-1
Recovery location	Arabian Sea (Indian Navy)
Crew Escape System test	TV-D1; October 2023
Post-Gaganyaan plan	Bharatiya Antariksh Station by 2035; crewed Moon by 2040

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