

SIGN OF THE FUTURE: THE HINDU EDITORIAL ON ISRO'S PSLV C58 MISSION

Relevant for: Science & Technology | Topic: Achievements of Indians in science & technology

To enjoy additional benefits

CONNECT WITH US

January 02, 2024 12:30 am | Updated 09:03 am IST

COMMENTS

SHARE

READ LATER

Two missions the Indian Space Research Organisation (ISRO) has launched in the five months since its success with Chandrayaan-3 have both been scientific in nature: the [Aditya L-1 space probe to study the sun](#) and the X-ray Polarimeter Satellite (XPoSat) to study polarised X-rays emitted in astrophysical phenomena. [ISRO launched the XPoSat, in a two-part mission, onboard a Polar Satellite Launch Vehicle \(PSLV\) on its C58 flight on January 1](#). The relative timing of these launches may be a coincidence but it is heartening because the ratio of scientific to technological missions ISRO has launched is skewed in favour of the latter, at the expense of research in the sense of discovery. Those science-oriented missions have all been exceptional in their own right. For example, XPoSat is only the second space-based experiment to study X-ray polarisation, and at higher x-ray energies than the other, NASA's Imaging X-ray Polarimetry Explorer. Its POLIX payload, realised by the Raman Research Institute, will track X-rays in the 8-30 kilo-electron-volt (keV) energy range and observe emissions from around 50 sources in five years. The XSPECT payload, by ISRO's U.R. Rao Satellite Centre, will study X-rays of energy 0.8-15 keV and changes in continuous X-ray emissions. Together, they are expected to shed light on intense X-ray sources such as pulsars and black holes.

Then again, the science-technology skew is a reminder that ISRO among the world's spacefaring organisations has unique needs and priorities. This is exemplified by the second part of the C58 mission. After launching XPoSat in a 650-km circular orbit around the earth, the fourth stage of the rocket lowered itself into a 350-km-high orbit and unfurled solar panels, becoming a rudimentary satellite and orbital testbed for the 10 payloads it carried. These are a radio payload by the K.J. Somaiya Institute of Technology and a device to measure ultraviolet radiation from [L.B.S. Institute of Technology for Women](#); a 'green' cubesat propulsion unit, a 'green' monopropellant thruster, a tantalum-based radiation shield, a heater-less hollow cathode, and a nanosatellite platform, all from private entities; and an interplanetary dust counter, a fuel-cell power system, and a high-energy cell from ISRO centres. This is only the third time ISRO has operated the PSLV fourth stage in this way. As such, the C58 mission represents a union of the aspirations of professional scientists, aspiring students of science, and India's private spaceflight sector. This again is a vignette of the demands of ISRO itself as it navigates an era in which a permanent lunar station seems inevitable, drawing as much on technological capabilities as — based on scientific missions — humankind's knowledge of the universe.

COMMENTS

SHARE

[ISRO](#) / [space programme](#) / [science \(general\)](#) / [science and technology](#) / [engineering colleges](#)

BACK TO TOP

[Terms & conditions](#) | [Institutional Subscriber](#)

Comments have to be in English, and in full sentences. They cannot be abusive or personal. Please abide by our [community guidelines](#) for posting your comments.

We have migrated to a new commenting platform. If you are already a registered user of The Hindu and logged in, you may continue to engage with our articles. If you do not have an account please register and login to post comments. Users can access their older comments by logging into their accounts on Vuukle.

END

Downloaded from **crackIAS.com**

© **Zuccess App** by crackIAS.com

CrackIAS