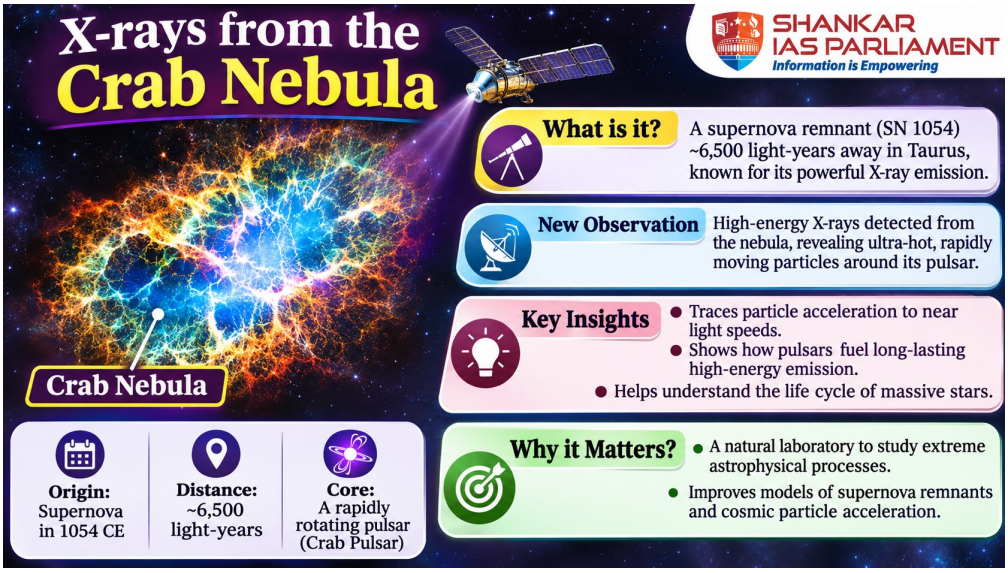
X-rays from the Crab Nebula

Prelims: *Current events of National and International Importance| Science and Technology*

Why in News?

The Mercury Imaging X-ray Spectrometer (MIXS) aboard the ESA–JAXA BepiColombo mission captured its first cosmic X-ray observations of the Crab Nebula after traveling roughly 10 billion kilometers over eight years.

- **Instrument & Mission –** MIXS is a UK-built X-ray spectrometer—the first imaging X-ray telescope deployed on a planetary science mission—flying on BepiColombo (launched in October 2018).
- **First Unobstructed View–** MIXS could not look directly into deep space until the Mercury Transfer Module (MTM) separated from the science orbiters in September 2026.
- **Calibration Target–** Scientists pointed MIXS at the **Crab Nebula** (about 6,500 light-years away) during 39 hours of observations from September 11–12, 2026. Its strong, predictable X-ray output serves as a standard calibration reference.
- **Performance–** Researchers at the University of Leicester reported in November 2026 that MIXS shows no detector radiation damage and is performing even better than in 2015 ground lab tests.
- **Next Step–** Following BepiColombo's orbit insertion around Mercury (slated for November 21, 2026), MIXS will study Mercury's surface chemistry and exosphere.



Reference

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