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# Topic Wise Content



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## NASA's IXPE Mission

Notes for civil services preparation



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## NASA's IXPE Mission

Recently, **National Aeronautics and Space Administration (NASA)** launched a new mission named **Imaging X-ray Polarimetry Explorer (IXPE)**.

### Key Points

- **About:**
  - **IXPE observatory is a joint effort of NASA and the Italian Space Agency.**
  - It will study “**the most extreme and mysterious objects in the universe – supernova remnants, supermassive black holes, and dozens of other high-energy objects.**”
  - Its primary length is **two years and the observatory will be at 600 kilometers altitude**, orbiting around Earth's equator.
  - It is expected to **study about 40 celestial objects** in its first year in space.
  - It will complement other X-ray telescopes such as the Chandra X-ray Observatory and the European Space Agency's X-ray observatory, XMM-Newton.
- **Significance:**
  - It will help observe **polarized X-rays from neutron stars and supermassive black holes**. By measuring the polarization of these X-rays, we can study where the light came from and understand the geometry and inner workings of the light source.
  - It will help scientists understand how black holes spin and their location in the past.
  - It will help unravel how **pulsars** shine so brightly in X-rays.
  - It will help learn what powers the jets of energetic particles that are ejected from the region around the supermassive black holes at the centers of galaxies.
- **NASA's Other Recent Missions:**
  - **Double Asteroid Redirection Test (DART).**
  - **Mission Lucy** (Jupiter Trojan Asteroids).
  - **Near-Earth Asteroid Scout**