Asteroid 2024 YR4

Why in News?

National Aeronautics and Space Administration (NASA) officials said that 2024 YR4 has slightly more than 1% chance of crashing into Earth in 2032.

- It is a ***near-Earth asteroid*** recently discovered by a telescope in Chile.
- **Size** – Measuring 40 to 100 metres across, as big as a football field.
- Size measurement is based on estimates from its reflected light.
- Asteroids do not emit a light of their own, they only reflect sunlight. It brightness depends on how reflective the asteroid's surface.
- Currently, it is moving away from the planet at 13.26 kilometres (8.24 miles) per second.
- It passing within roughly 800,000 kilometres of Earth, about twice the distance of the moon.
- It will eventually fade from view over the next few months, and will not be visible again until it passes Earth's way again in 2028.
- **Destruction potential** – **Categorized by** - Torino Scale.
- The NASA JPL Center for Near-Earth Object Studies (CNEOS) has currently rated the 2024 YR4 a 3 on a scale from 0 to 10.
- **Rating –** Scale 3 - When the object is larger than 20 metres (65 feet) and has an impact probability of 1% or higher.

  Apophis asteroid, which was discovered in 2004, was initially rated 4 on the scale but was later downgraded as observations showed that it posed no threat for at least 100 years.

- It is expected to release 8 to 10 megatons of energy in case of a crash.
- The European Space Agency (ESA) has stated that the asteroid will safely pass through Earth with a 99% chance of no collision.

Torino Scale

- Torino scale is a rating system that helps astronomers and the public understand the risk of a near-Earth object (NEO) colliding with Earth.
- The scale is named after Turin, Italy, where it was first presented at an international conference in 1999.
- The scale is used to categorize the likelihood and consequences of a potential impact.
- The scale uses a number from 0 to 10, with higher numbers indicating a greater risk.



- The scale is based on the probability of a collision and the estimated kinetic energy of the impact.
- The scale is color-coded to help convey the level of risk.
- The scale is used to communicate the seriousness of collision predictions.
- The scale is used to help the public understand the potential impact of a NEO.
- The scale is used to help determine the level of public concern that is warranted.

References

1. The Indian Express | Asteroid 2024 YR4
2. Economic Times | Asteroid 2024 YR4

SHANKAR IAS PARLIAMENT
Information is Empowering