The James Webb Space Telescope has discovered its first new exoplanet

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In news– The NASA has recently announced that the James Webb Space Telescope has discovered its first new exoplanet(LHS 475 b) which is roughly the same size as Earth.

About the new exoplanet(LHS 475 b)-

- Located just 41 light-years away, the planet orbits very close to a red dwarf star and completes a full orbit in just two days.
- So far, most of the discovered exoplanets are similar to Jupiter as Earth-sized planets are much smaller in size and harder to discover with older telescopes.

What are exoplanets?

- Exoplanets are planets that **orbit other stars and are beyond our solar system.**
- According to NASA, **to date, more than 5,000 exoplanets have been discovered.** Scientists believe that there are more planets than stars as each star has at least one planet orbiting it.
- **Exoplanets come in a host of different sizes.** They **can be gas giants bigger than Jupiter or as small and rocky** as Earth. They are also known to **have different kinds of temperatures** – boiling hot to freezing cold.
- Studying exoplanets not only broadens our understanding of other solar systems but also helps us piece together information about our own planetary system and origin.
- In a bid to understand the characteristics of an exoplanet, researchers look for its mass and diameter along with determining if it is solid or gaseous or even

has water vapour in the atmosphere.

- Another important element of the study is finding out the distance between an exoplanet and its host star.
- This helps scientists determine if a discovered world is habitable or not. If an exoplanet is too close to the star, it might be too hot to sustain liquid water.
- If it's too far, it might only have frozen water. When a planet is at a distance that enables it to have liquid water, it is said to be in the "**Goldilocks zone".**

How are exoplanets discovered?

- Discovering exoplanets is quite tough as they are small and hard to spot around their bright host stars.
- **Scientists rely on indirect methods, such as the transit method,** which is measuring the dimming of a star that happens to have a planet pass in front of it.
- As mentioned before, the **newly discovered exoplanet orbits around a red dwarf star**. Such types of stars are the most common and smallest in the universe.
- As they don't radiate much light, it's very tough to detect them with the naked eye from Earth.
- However, as red dwarfs are dimmer than other stars, it is easier to find exoplanets that surround them. Therefore, red dwarfs are a popular target for planet hunting.

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