WASP-127b

Why in News?

Recently, the astronomers have detected winds howling on large gaseous planet, WASP-127b.

- **Discovered in** – *2016*.
- **Located in** – Milky Way galaxy approximately 520 lightyears from the earth in a tight orbit around a star.
- **WASP-127b** – It is a ***gas giant exoplanet***, which means that it has no rocky or solid surface beneath its atmospheric layers.

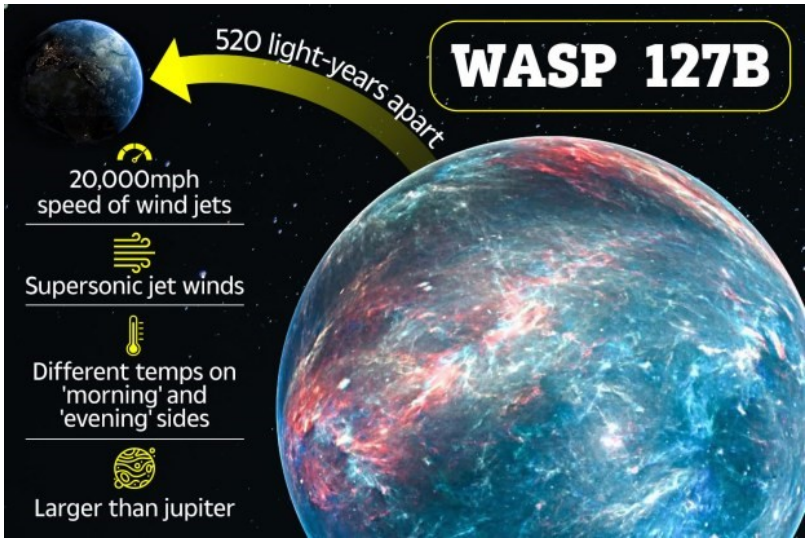
> *An **Exoplanet** is any planet beyond our solar system. Most of them orbit other stars, but some free-floating exoplanets, called Rogue Planets.*

- Instead, below the observed atmosphere lies gas that becomes denser and more pressurized the deeper one goes into the planet.
- **Type** – *Hot Jupiter*, that orbits very close to its host star.
- **Diameter** – About 30% larger than Jupiter.
- **Mass** – Only 16% (0.1647) of Jupiters, making it one of the puffiest planets ever observed.
- **Orbital Period** – It takes *4.2 days* to complete 1 orbit of its star.
- **Position** – One side of WASP-127b faces its star, the day side.
- The other side always faces away, the night side.
- **Temperature** – 2,060 degrees Fahrenheit, its polar regions less hot than the rest.
- **Composition** – Mainly of hydrogen and helium.

Research Findings

> *The supersonic jet-stream winds circling WASP-127b at about 33,000 km per hour.*

- **Speed** – The wind circling at its equator are the fastest of their kind on any known planet.



- Its atmosphere also contains traces of more complex molecules such as ***carbon monoxide and water***.
- The primary source of energy for these winds is the ***intense irradiation*** from the host star.
- Higher atmospheric wind speeds have been detected on 2 other exoplanets, in winds from their day side to night side.

References

1. The Hindu| Supersonic Jet-Stream Winds Circling WASP-127b
2. NASA| WASP-127 b