

Hycean planets

September 7, 2021

In news- The Cambridge researchers have identified a new class of hot, habitable planets, covered in ocean with **hydrogen-rich atmospheres**, and have named them Hycean planets.

About Hycean planets-

- Hycean worlds are similar to other **exoplanets – those beyond our solar system**, such as “super-Earths” and “mini-Neptunes”, and can be **up to 2.6 times larger than Earth**.
- They have atmospheric temperatures up to nearly 200 degrees Celsius (392F).
- While some of these planets orbit close to their star and have “one scorching-hot day side and one eternally dark night side”, others orbiting further away receive “very little stellar radiation”.
- With a larger “habitable zone” than that of Earth, these planets **may host microbial life that can survive in extreme conditions**.
- The scientists believe these types of planets offer a better chance of finding several trace **biosignatures** (biomarkers) such as any naturally occurring substance, like a gene or molecule, that provides evidence of past or present life forms.
 - The planets **all orbit small red dwarf stars 35 to 150 light-years away**.
 - Several potential Hycean worlds identified **could be analyzed by the James Webb Space Telescope (JWST)** which is due to be launched later this year.
- The **most promising planet is known as “K2-18b,”** which lies about 110 light-years away.

- Observations are already being planned and could lead to the detection of one or more molecules that are signs of life like oxygen, ozone, methane, and nitrous oxide, which are all present on Earth.
- There are also a number of other biomarkers, such as methyl chloride and dimethyl sulfide, that are less abundant on Earth.