

# Six Exoplanets Found Orbiting Around HD 110067

**Source: TH** 

## Why in News?

A recent study published in **Nature** has unveiled the discovery of **six** <u>exoplanets</u> orbiting a nearby **bright star**, **HD 110067**, located in the **Coma Berenices constellation**.

These planets referred to as 'sub-Neptunes', were detected and characterized by using data from two space telescopes: <u>National Aeronautics and Space Administration's (NASA) Transiting</u> <u>Exoplanet Survey Satellite (TESS)</u> and <u>European Space Agency's (ESA) CHaracterising</u> <u>ExOPlanet Satellite (CHEOPS).</u>

#### Note

CHEOPS is ESA's first space mission dedicated to studying bright, nearby stars that are already known to host exoplanets, in order to make high-precision observations of the planet's size as it passes in front of its host star.

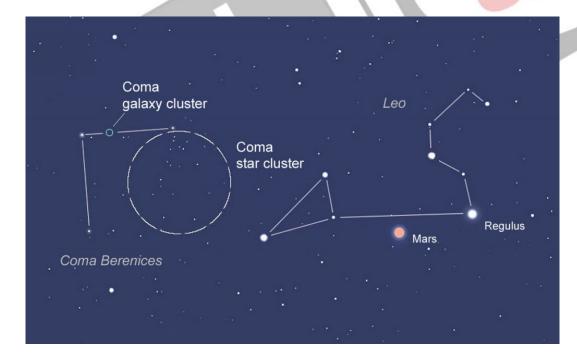
## What are the Key Facts about Sub-Neptunes?

- The six exoplanets in the HD 110067 system are classified as 'sub-Neptunes.'
  - Planets with radii between that of the Earth and Neptune are referred to as 'sub-Neptunes'.
  - Calculations of their masses and densities indicate the presence of relatively low-density atmospheres, potentially rich in <u>hydrogen</u>.
- All six planets are in resonant orbits, in which the planets exert regular forces on each other as they orbit.
  - This feature suggests that the system remains practically unchanged since its birth, at least four billion years ago.
- The planets are named **HD 110067 b, c, d, e, f, and g,** in order of increasing distance from the star.



#### HD 110067

- The star is called HD 110067, and it is located about 100 light-years away from Earth, located in the Coma Berenices constellation.
- It is visible from the Northern Hemisphere, and it is the brightest star found to host more than four transiting exoplanets to date.
  - The Coma Berenices constellation, also known as Berenice's Hair, is a medium-sized
    constellation in the northern celestial hemisphere. It's visible in both hemispheres, but
    is most easily seen in the northern hemisphere during spring and summer.



## What is an Exoplanet?

Exoplanets are planets that orbit other stars and are beyond our solar system.

- The first confirmation of detection of exoplanets occurred in 1992.
- According to NASA, to date, more than 5,000 exoplanets have been discovered.

## **UPSC Civil Services Examination, Previous Year Question (PYQ)**

### Prelims

#### Q. The term 'Goldilocks Zone' is often seen in the news in the context of (2015)

- (a) the limits of habitable zone above the surface of the Earth
- (b) regions inside the Earth where shale gas is available
- (c) search for the Earth-like planets in outer space
- (d) search for meteorites containing precious metals

Ans: (c)

#### Exp:

- The 'Goldilocks Zone' refers to the habitable zone around a star where the temperature is just right
   not too hot and not too cold for liquid water to exist on a planet.
- Since liquid water is essential for life as it has potential to accommodate biotic organism, thereby, it is called 'habitable zone'.
- Therefore, option (c) is the correct answer.

PDF Refernece URL: https://www.drishtiias.com/printpdf/six-exoplanets-found-orbiting-around-hd-110067