

EXOPLANETS

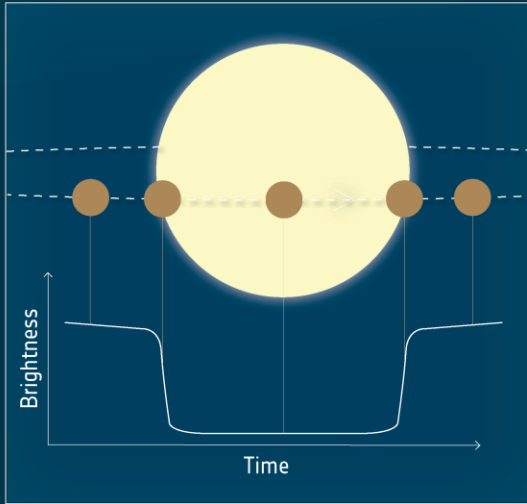
The image features a large, detailed Earth planet on the left side, showing blue oceans and brown/green landmasses. To its right, a curved sequence of various exoplanets is shown, ranging in size and color (including blue, green, yellow, and grey). The background is a dark space filled with numerous small white stars.

Nino Greco

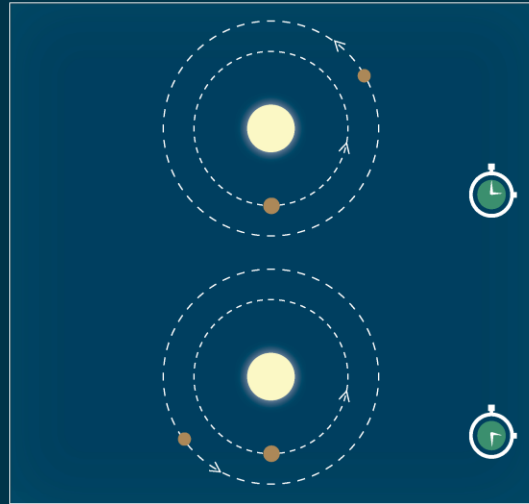
Physics – III year

→ EXOPLANET DETECTION METHODS

Transit photometry



Transit-timing variation



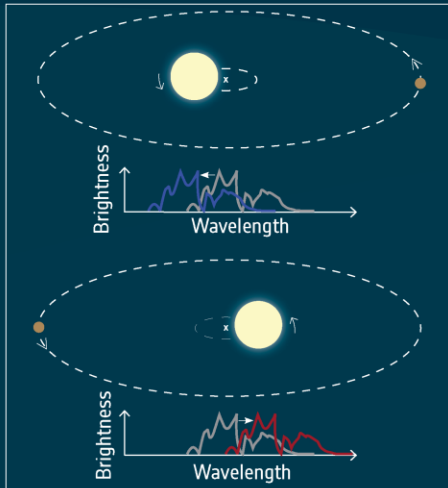
Transit photometry is one of the main techniques used to **discover** exoplanets. Cheops will use this technique to **measure the sizes** of known exoplanets and to start to **characterise** them.



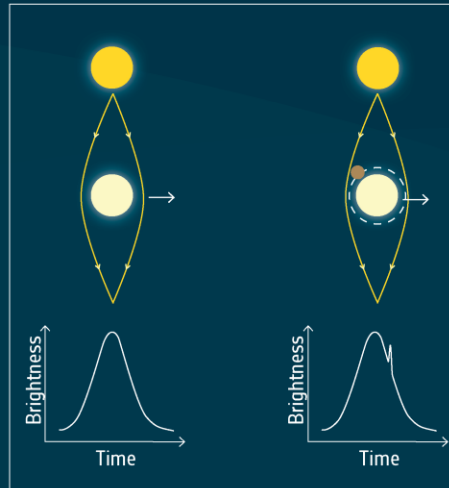
By using the **transit-timing variation** technique, Cheops will be able to **discover** additional, previously unknown planets around some stars, and also determine the planet **masses**.

Other techniques used to discover new exoplanets (not employed by Cheops) are: radial velocity, microlensing, astrometry and direct imaging.

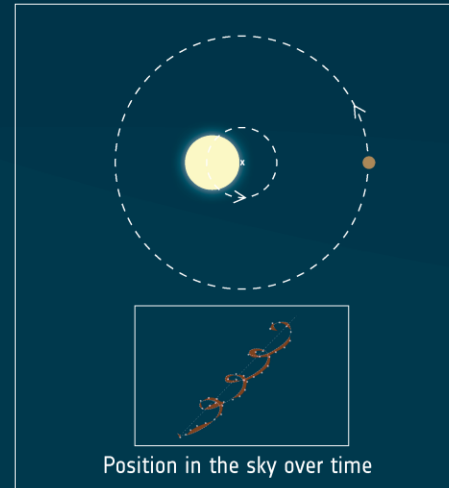
Radial velocity



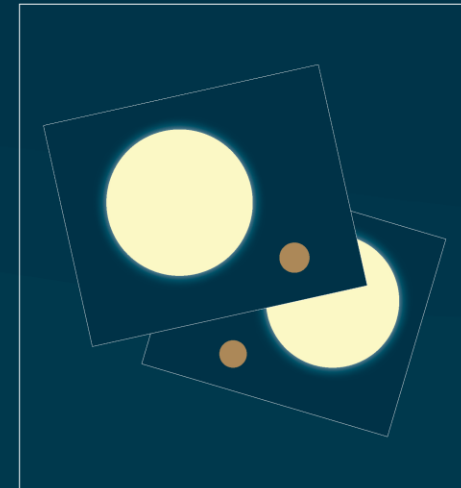
Microlensing

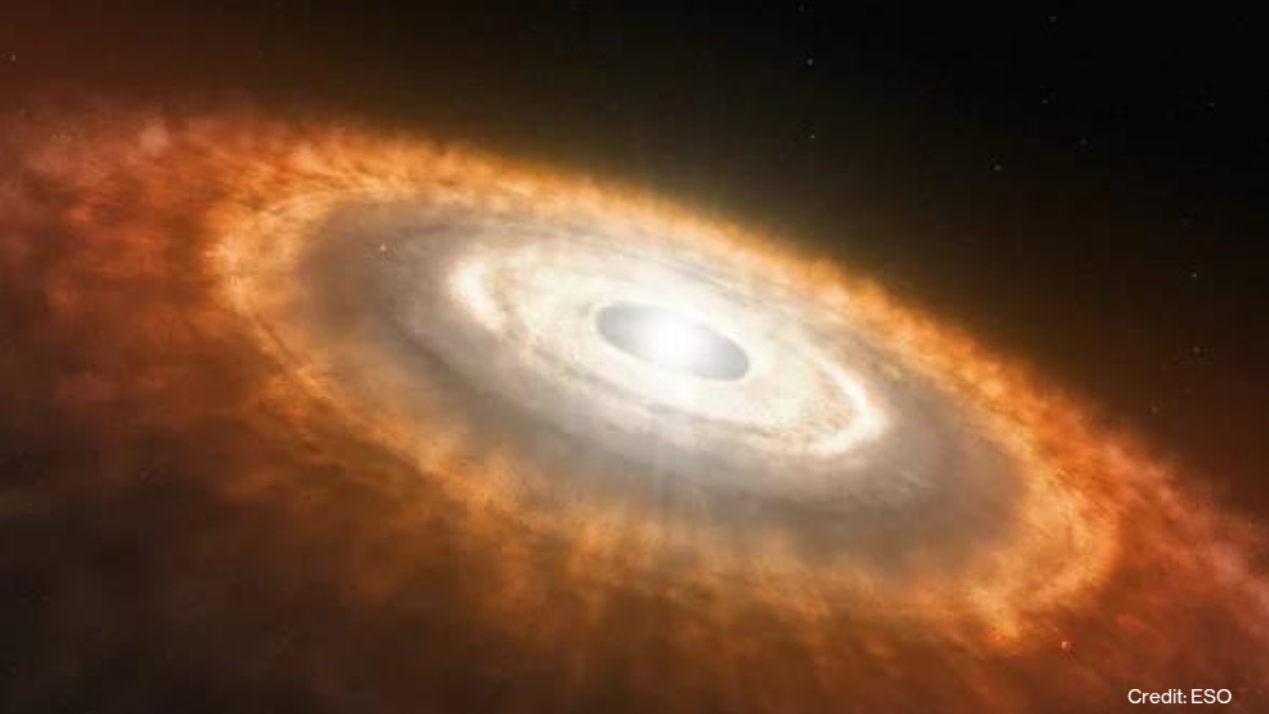


Astrometry

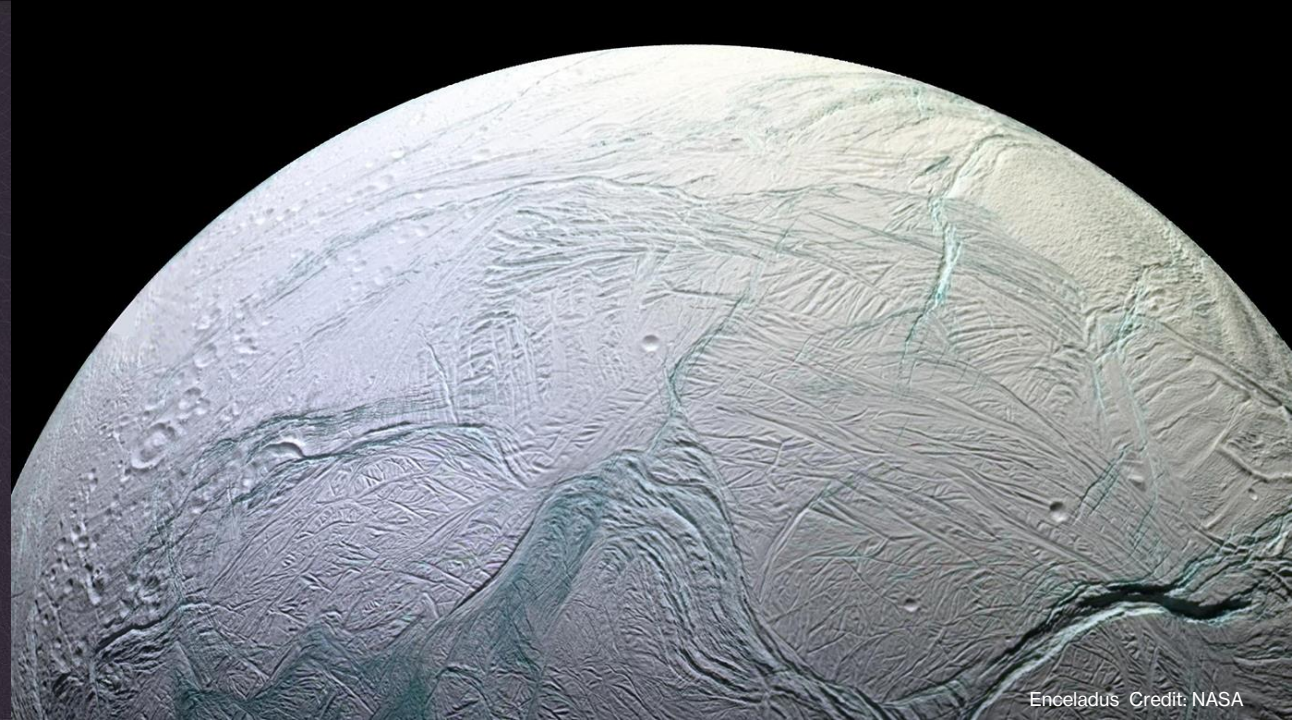
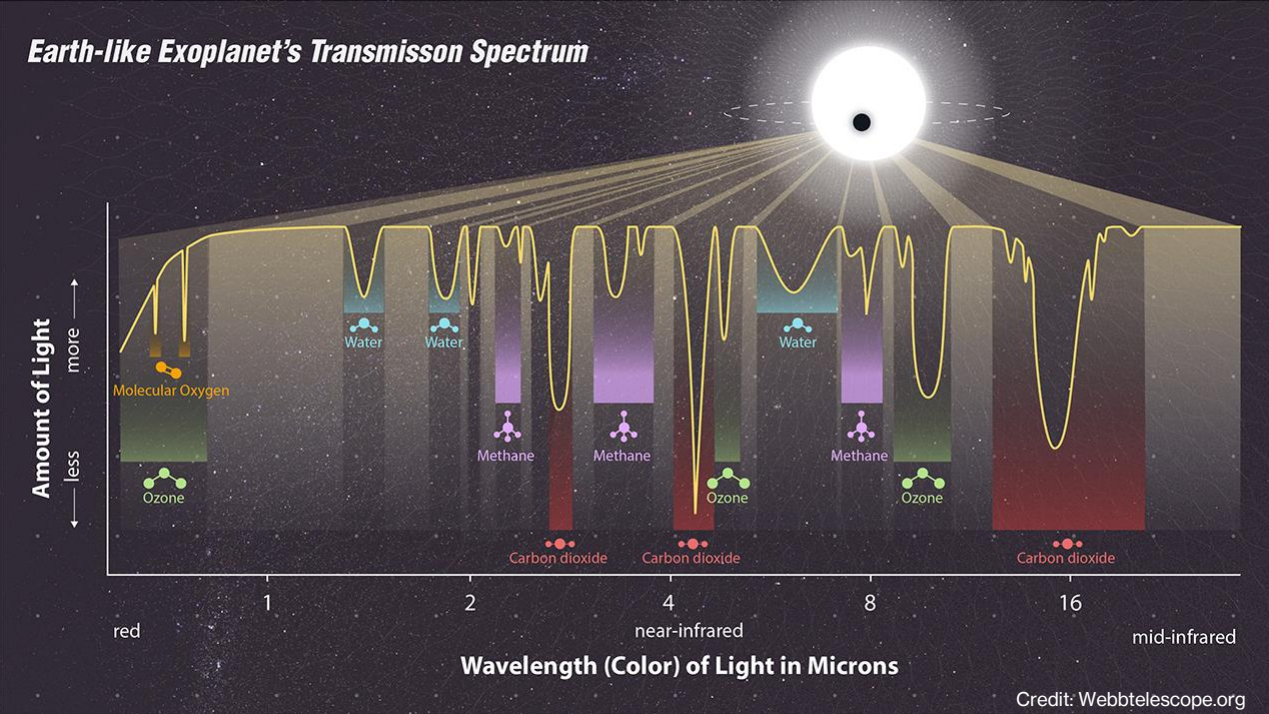


Direct imaging





- Architecture of planetary systems
- Planetary formation and evolution
- Interiors and atmospheres
- Habitability and the search for extraterrestrial life



Enceladus Credit: NASA