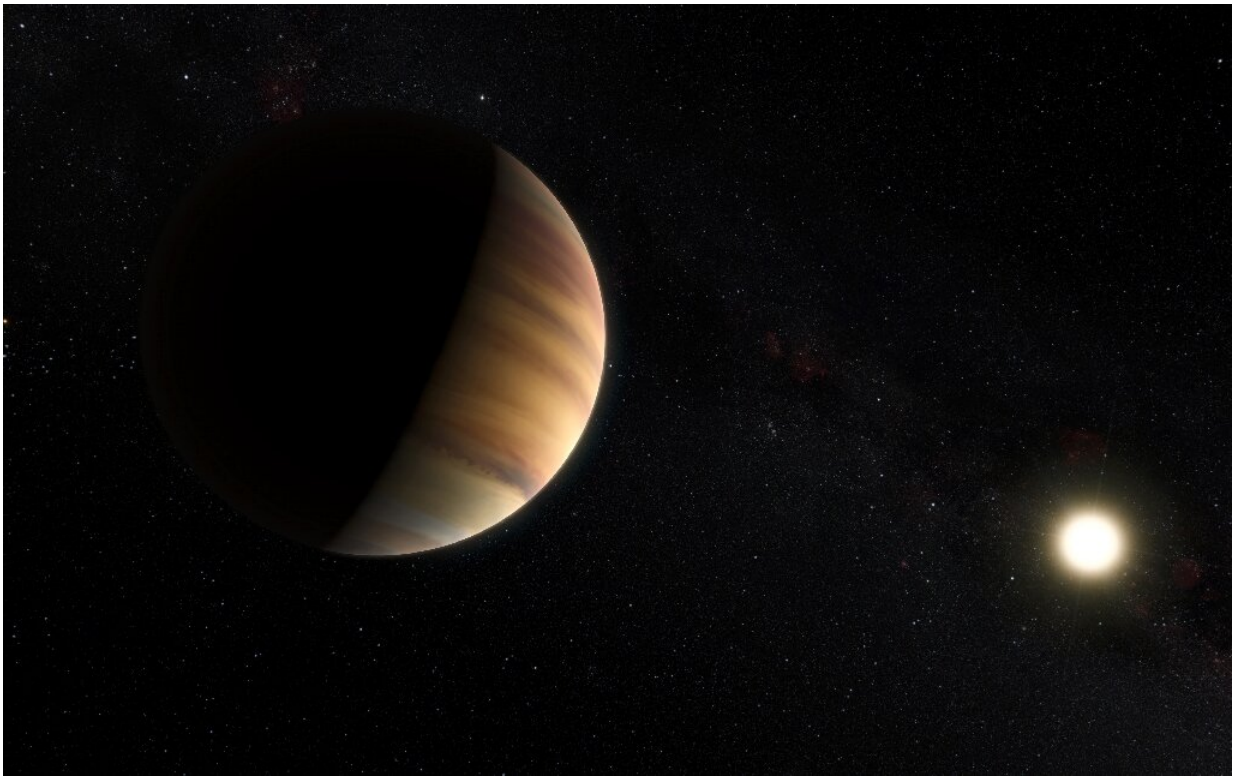
Europe's exoplanet hunter reaches orbit around Earth

December 18 2019, by Laurence Coustal



51 Pegasi b, seen here in an artist's impression, was the first exoplanet discovered 24 years ago

Europe's CHEOPS planet-hunting space telescope left Earth on Wednesday and moved into orbit, a day after its lift-off was delayed by a technical rocket glitch during the final countdown.

The telescope will measure the density, composition and size of planets beyond our Solar System—known as exoplanets.

According to the European Space Agency (ESA), CHEOPS will observe bright stars that are already known to be orbited by planets.

"Cheops is 710 kilometres (440 miles) away, exactly where we wanted it to be, it's absolutely perfect," Didier Queloz, 2019 Nobel Physics Prize winner, told AFP in French Guiana, where the launch took place.

"This is really an exceptional moment in European space history and in the history of the exoplanets."

Roughly 4,000 such exoplanets have been discovered since Queloz and his colleague Michel Mayor identified the first one, called "51 Pegasi b", 24 years ago.

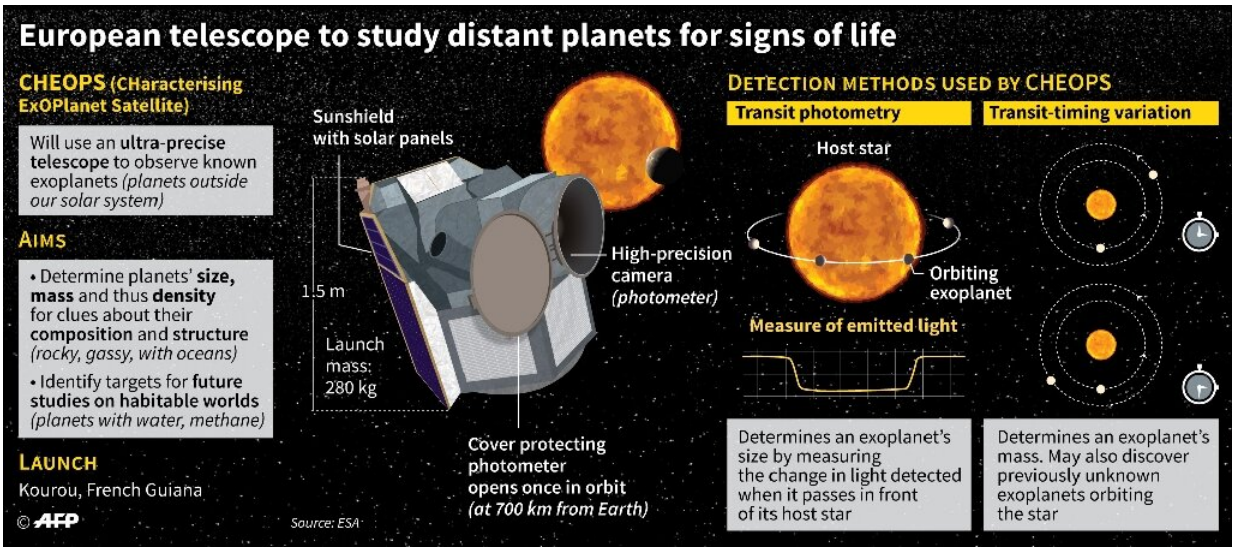
The satellite took off at 0854 GMT, according to live footage broadcast by launch company Arianespace.

It was the third launch this year for the Russian-built Soyuz rocket.

On Tuesday, the launcher's automated sequence was interrupted during the final countdown at 1 hour 25 minutes, because of what was described as "an anomaly" in the launch set-up.

'Magical moment'

Scientists today estimate that there are at least as many galaxies as there are stars—approximately 100 billion.



Presentation of the European Space Agency's CHEOPS (CHaracterising ExOPlanet Satellite) and its mission to study Earth-like planets in other solar systems

"We want to go beyond statistics and study them in detail," mission chief David Ehrenreich told AFP ahead of Wednesday's launch.

CHEOPS, an acronym for CHaracterising ExOPlanet Satellite, will seek to better understand what these planets are made of.

It is an important step in the long quest to unravel the conditions required for extraterrestrial life, but also to unlock the origins of our own home planet.

The satellite will orbit the Earth at a distance of 700 kilometres (435 miles), studying rocks orbiting stars several light years away.

The aim is to compose "a family photo of exoplanets", Guenther Hasinger, ESA's director of science, told AFP on Tuesday.

Queloz said CHEOPS was unlikely to solve the holy grail of astrophysics—is there life on other planets?

"However, in order to understand the origin of life, we need to understand the geophysics of these planets," he said.

"It's as if we're taking the first step on a big staircase."

He added that the mission would allow experts to measure the quantity of light reflected from the planets, which in turn could reveal new insights about their atmosphere or surface.

"The launch is an important moment, an emotional step, but the real magic moment for us will be when the first results arrive," Queloz said.

According to ESA, this should happen within months.

The launcher also carries a COSMO-SkyMed second-generation satellite for the Italian Space Agency, and three smaller payloads—a nanosatellite from Italian company Tyvak and two from France's space agency.

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