

Trappist planets have water, may be habitable: researchers

This handout image obtained from the European Southern Observatory (ESO) shows an artists impression shows an imagined view from close to one of the three planets orbiting an ultracool dwarf star just 40 light-years from Earth that were discovered using the TRAPPIST telescope at ESOs La Silla Observatory. | Photo Credit: [AFP](#)

Seven planets recently spotted orbiting a dim star in our Milky Way galaxy are rocky, seem to have water, and are potentially "habitable", researchers studying the distant system said Monday.

Though much remains unknown about the planets' surfaces and atmospheres, the new measurements have not ruled out the possibility that they may harbour even rudimentary life, the scientists reported.

"So far, no sign allows us to say that they are not habitable," said University of Birmingham astronomer Amaury Triaud, the co-author of a study on the subject.

"All the traffic lights we have passed so far are green."

Research teams gleaned more information about the dwarf star at the centre of the Trappist-1 system, as well as improved measurements of the size and mass of each planet, and the composition of their atmospheres.

All seven are mostly made of rock, with up to 5% of their mass in water — though it may be in the form of gas or ice, or trapped deep inside the rocky orbs, researchers said.

On Earth, the oceans account for about 0.02% of our planet's mass.

A year ago, researchers announced the discovery of the seven Earth-like planets orbiting Trappist-1, an "ultracool" red dwarf star some 39 light years from our home.

As for the odds of the planets hosting organic life forms, "we cannot say at this stage, as they are vastly different from the only planet we know to harbour life (Earth)," Mr. Triaud told *AFP*.

"But they have suitable characteristics and are to date the best place beyond the edge of our (Solar) system to search."

The presence of liquid water is considered essential for life to exist anywhere.

Astronomers used the Hubble Space Telescope to learn more about the Trappist system by studying the planets' atmospheres as they passed in front of their star, appearing as a dark, travelling dot from the observer's point of view.

Findings were published on Monday in two papers in the journals *Nature Astronomy*, and *Astronomy and Astrophysics*.

Cooler than the Sun

All seven planets were considered potential candidates for harbouring water, but the chances to find it in liquid form are highest in the temperate "Goldilocks" zone — not too far from the star for it to be frozen, nor too close to evaporate.

The Trappist-1 system is considered the current best hope for finding evidence of alien life.

"When we combine our new masses with our improved radii measurements, and our improved knowledge of the star, we obtain precise densities for each of the seven worlds, and reach information on their internal composition," said Mr. Triaud.

"All seven planets remarkably resemble Mercury, Venus, our Earth, it's Moon, and Mars."

According to study co-author Simon Grimm from the University of Bern, the third and fourth planets from the star are "the most likely" to host some form of life.

"The more we learn about these planets, the more habitable they seem to be," Grimm told AFP by email.

Compared to our Solar System, the Trappist-1 family is very tightly-knit. With orbits ranging from 1.5 to 12 days, the planets would have fit comfortably in the distance between the Sun and its closest planet, Mercury.

Trappist-1 has a mass less than 10% the mass of our Sun and is much cooler, which explains why its planets can orbit so nearby.

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