

Astronomers discover unimaginably large diamond in space

Chris Wickham, Reuters

(Reuters) - Astronomers have discovered a planet twice the size of Earth made largely out of diamond which is orbiting a star that is visible with the naked eye.

The rocky planet, called '55 Cancri e', orbits a sun-like star 40 light years away in the constellation of Cancer and is moving so fast that a year there lasts a mere 18 hours.

Discovered by a U.S.-Franco research team, its radius is half that of Earth's but it is much more dense with a mass eight times greater. It is also incredibly hot, with temperatures on its surface reaching 3,900 degrees Fahrenheit (1,648 Celsius).

"The surface of this planet is likely covered in graphite and diamond rather than water and granite," said Nikku Madhusudhan, the Yale researcher whose findings are due to be published in the journal *Astrophysical Journal Letters*.

The study - with Olivier Mousis at the Institut de Recherche en Astrophysique et Planetologie in Toulouse, [France](#) [1] - estimates that at least a third of the planet's mass, the equivalent of about three Earth masses, could be diamond.

Diamond planets have been spotted before but this is the first time one has been seen orbiting a sun-like star and studied in such detail.

"This is our first glimpse of a rocky world with a fundamentally different chemistry from Earth," Madhusudhan said, adding that the discovery of the carbon-rich planet meant distant rocky planets could no longer be assumed to have chemical constituents, interiors, atmospheres, or biologies similar to Earth.

David Spergel, an astronomer at Princeton University, said it was relatively simple to work out the basic structure and history of a star once you know its mass and age.

"Planets are much more complex. This 'diamond-rich super-Earth' is likely just one example of the rich sets of discoveries that await us as we begin to explore planets around nearby stars."

(Editing by Andrew Osborn)

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