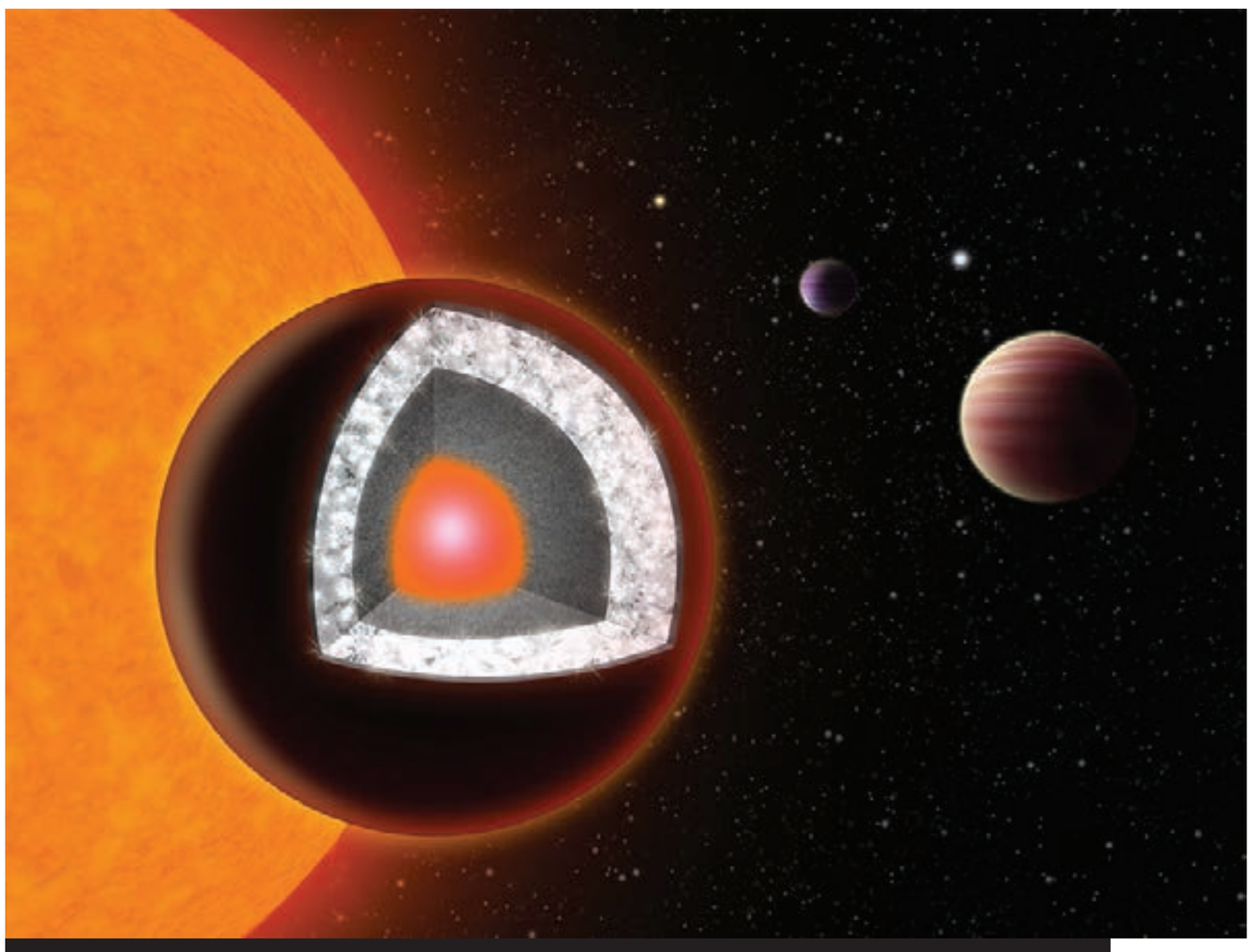
A Planet Made of Diamond, Twice the Size of Earth

Discovered by a US-Franco research team, the planet's radius is twice that of Earth's and its mass eight times greater. Temperatures on its surface reach 3,900 degrees Fahrenheit (1,648 Celsius).

By Clara MoskowitzPublished October 11, 2012

Arthur C. Clarke, the late science-fiction writer most famous for "2001: A Space Odyssey," let his mind wander all over the universe. In a sequel, "2010: Odyssey Two," one of his extraterrestrial characters discovered that "the core of Jupiter, forever beyond human reach, was a diamond as big as the Earth."



Life is out of the question on 55 Cancri e, with a surface temperature of around 3,900 degrees

Now, a team of researchers led by Nikku Madhusudhan of Yale University say they may have found the real thing – a so-called super-Earth, orbiting a star 40 light-years away in the constellation Cancer the crab. From its orbit and the size of its host star, they can calculate its size and mass – its diameter is double that of Earth – and have concluded that it is unusually dense.

How dense? To borrow a line from Clarke, "De Beers shareholders, please note."

"The surface of this planet is likely covered in graphite and diamond rather than water and granite," said Madhusudhan in a statement from Yale. "This is our first glimpse of a rocky world with a fundamentally different chemistry from Earth."

The planet is called 55 Cancri e, and you would not like it there. Madhusudhan and his colleagues said it whips around its host star in just 18 hours. The surface temperature is something like 3,900 degrees Fahrenheit. The researchers said there is probably little water to speak of. Life would be out of the question.

A lot of this is educated conjecture, of course, because the planet is so distant that the only sign it exists is that once every 18-hour-long "year," it passes between us and its host star, blocking an infinitesimal amount of its light. But astronomers say that stars are remarkably consistent in their size and composition, and they can calculate a planet's likely size and density even if they cannot see it.

The findings have been accepted for publication in the journal Astrophysical Journal Letters, said Yale. The authors estimated that up to a third of 55 Cancri e could be diamond.

So if you could get there you would be very rich. But you wouldn't want to stay.

NASA FACTOID

The term "aeronautics" originated in France, and was derived from the Greek words for "air" and "to sail."

NASA FACTOID

On March 16, 1926, Dr. Robert H. Goddard successfully launched the first liquid fueled rocket. The launch took place at Auburn, Massachusetts, and is regarded by flight historians to be as significant as the Wright Brothers flight at Kitty Hawk.