New US space mining law to spark interplanetary gold rush

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Illustration of a water-rich asteroid - a new US law legalizes the extraction of minerals and other materials, including water, from asteroids and the moon

Flashing some interplanetary gold bling and sipping "space water" might sound far-fetched, but both could soon be reality, thanks to a new US law that legalizes cosmic mining.

In a first, President Barack Obama signed legislation at the end of November that allows commercial extraction of minerals and other materials, including water, from asteroids and the moon.

That could kick off an extraterrestrial gold rush, backed by a private aeronautics industry that is growing quickly and cutting the price of commercial space flight.

The US Commercial Space Launch Competitiveness Act of 2015 says that any materials American individuals or companies find on an asteroid or the moon is theirs to keep and do with as they please.

While the Space Act breaks with the concept that space should be shared by everyone on Earth for scientific research and exploration, it establishes the rights of investors to profit from their efforts, at least under US law.

Christopher Johnson, a lawyer at the Secure World Foundation, which focuses on the long-term sustainable use of outer space, said the law sets the basis for the next century of activity in space.

"Now it is permissible to interact with space. Exploring and using space's resources has begun," he said.

The US move conjured visions of the great opening of the United States' Western frontier in the 19th century, which led to the California Gold Rush of 1849.

But for the moment, the costs of pioneering the economic exploitation of space remain exorbitant and the risks high.

Large companies are still studying their options, but smaller startups are impatient to get going, like Planetary Resources, launched in 2012 by

Google co-founder Larry Page.

Water particles have been detected on the surface of the Moon by three missions, including an Indian probe

"It has often been a question as to whether a commercial company will be able to go out and develop a resource," said Chris Lewicki, president of Planetary Resources, which bills itself as "The Asteroid Mining Company."

But now, the Space Act "allows us to give assurances to our customers and investors as we build a resource business in space," Lewicki told AFP.

"Since the passage of the law, we've been getting a lot of support messages and our current investors are very excited," he added.

Meagan Crawford, vice president at another ambitious asteroid miner, Deep Space Industries, said that with the law's passage investors are no longer fretting that they are wasting their money.

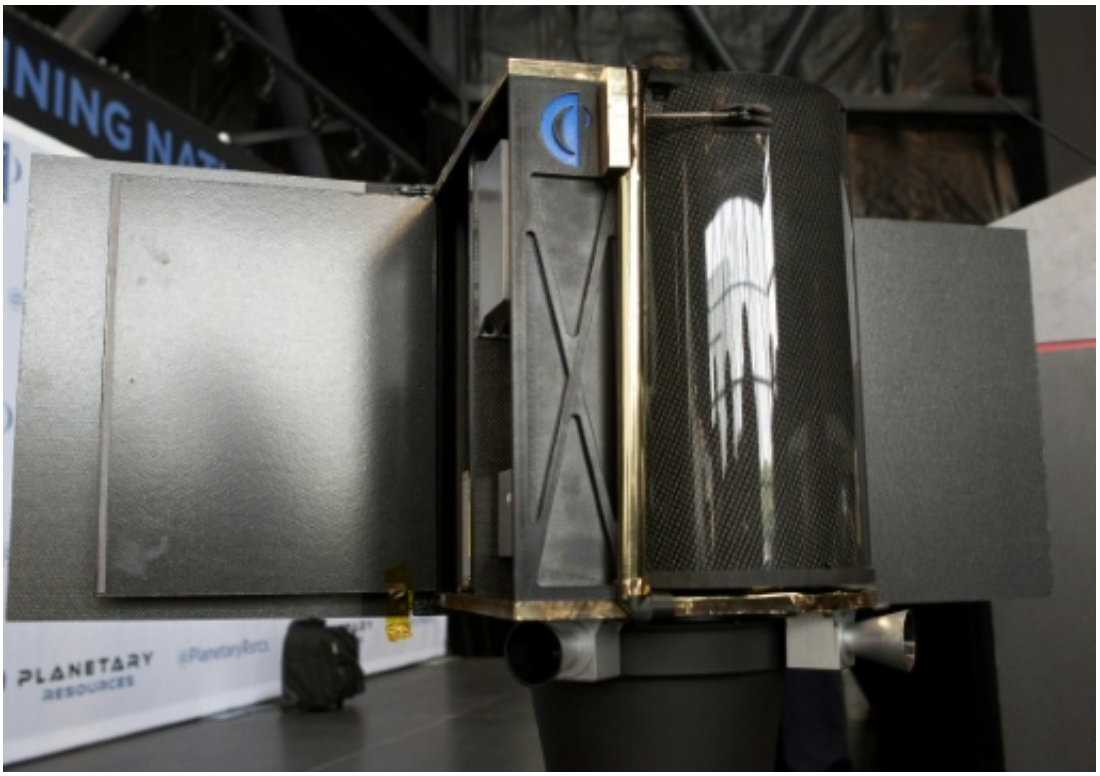
"This is absolutely a big win for us. We don't seem crazy any more. We don't have to work very hard to convince investors."

According to NASA research, of some 1,500 asteroids within easy reach from Earth, possibly 10 percent have valuable mineral resources.

Both companies see great possibilities in space: deposits of nickel, iron ore, gold and platinum that could support the space industry in the same way that the huge deposits of iron ore in the US upper midwest laid the foundations for the Detroit auto industry.

But their first target is water frozen in substantial deposits on relatively close asteroids.

The water's value, more than just to drink, is in providing hydrogen fuel for space vehicles. It could supply a refuelling station for the rockets, for instance, destined to explore Mars. And it could be used to refuel satellites in orbit.



The Arkyd Seris I satellite created by Planetary Resources, which was established in 2012 to mine asteroids

Lewicki says an in-space fueling station could save hundreds of millions of dollars in water transport costs.

"If we can store that water there, we can refuel rockets, satellites—it will be a huge opportunity.

"You can refuel your rocket in orbit; that makes it easier to get it there, and cheaper."

The first space prospecting missions could be launched from 2017, the companies say, and extracting minerals could begin as early as 2020.

Deep Space Industries is planning the deployment of 25-32 kilogram

(55-70 pound) mini-satellites to asteroids with good prospects to better assess their resources and bring back samples.

For its part Planetary Resources has already identified asteroids for exploitation using space telescopes place in orbit last year. It plans to launch a small exploration satellite early next year, Lewicki said.

The two companies estimate that the new space gold rush could need several billion dollars over the next 10-15 years.

For that, they need global support for their operations, and need to begin pressing other governments to adopt laws similar to the US Space Act that will recognize a company's rights to any space mineral riches it can harvest.