

# JOURNEY TO THE ASTEROIDS

**One company's plans to mine resources from outer space**

Imagine that a company with enough funding and brain power sends armies of spacecraft to observe thousands of asteroids and then mine them. Planetary Resources, Inc, unveiled its plans in April to mine near-earth asteroids (NEAs) for raw materials, ranging from water to precious metals. The resource-rich asteroids will soon be accessible by cost-effective exploration technologies developed by the company.

Words ALICE HLIDKOVA

### **Bringing the solar system into humanity's sphere of influence**

Two years ago, Planetary Resources became the brainchild of Peter H. Diamandis, engineer, physician, and entrepreneur, educated at M.I.T and Harvard Medical School. The Greek-American formed a company to establish a "new paradigm for resource discovery and utilization that will bring the solar system into humanity's sphere of influence." He partnered with Eric C. Anderson, aerospace engineer, educated at University of Virginia, to develop robotic space missions. Anderson, who is fond of space adventures such as suborbital spaceflights and flights to circumnavigate the moon, assembled a team of like-minded visionaries, industry pioneers, and rocket scientists to work on technical principles. They launched space telescopes in orbit to seek out asteroids and developed the first line in its family of deep-space prospecting spacecraft, the Arkyd-100 Series.

### **Exploring near-earth asteroids**

At a cost of \$1 million, each spacecraft brings commercial innovation to space exploration by studying and visiting near-earth asteroids in rapid succession. Chris Lewicki, president and chief engineer, said "Our mission is not only to expand the world's resource base, but we want to increase people's access to, and understanding of, our planet and solar system by developing capable and cost-efficient systems." Increasing scientific knowledge of asteroids will make possible economic development worth billions of dollars. Finding sources of scarce minerals

Each 500-meter platinum-rich asteroid contains the equivalent of all the platinum group metals that have been mined throughout history. Diamandis said: "Many of the scarce metals and minerals on Earth are in near-infinite quantities in space. As access to these materials increases, not only will the cost of everything from microelectronics to energy storage be reduced, but new applications for these abundant elements will result in important and novel applications." "In addition, water-rich-asteroids can provide space-sourced fuel and water to orbiting depots," added Anderson. "Accessing a water-rich asteroid will greatly enable the large-scale exploration of the solar system, and make space travel more economical, he pointed out.

### **Expanding mankind's resource base**

The start-up secured funding from a cadre of leaders committed to expanding the world's resource base. Google founder Eric E. Schmidt said: "The pursuit of resources drove the discovery of America and opened the West. The same drivers still hold true for opening the space frontier. Expanding the resource base for mankind is important for our future." He and co-founder Larry Page have invested millions in the project.

Planetary Resources is a stepping stone for a revolutionary movement in space exploration. With the spacecraft up and running in the next five years, tourism and recreation will develop the off-planet economy as scientific knowledge enhances man's prosperity.



# THE SPACE ECONOMY: A MODERN DAY GOLD RUSH

Asteroid Mining Will Create A Trillion-Dollar Industry

As our **population grows** we need to find a **sustainable supply of natural resources** to fuel exploration in space and prosperity on Earth.



## PLATINUM-RICH ASTEROID

Could contain more Platinum Group Metals than what's been mined on Earth in all of history

## MORE ASTEROIDS DISCOVERED NEAR EARTH EVERYDAY

- + 1,500 EASIER TO REACH THAN MOON
- + 5,800 DISCOVERED TO DATE
- + 2,000+ NEARLY 14+ FOUND EVERY YEAR

NEAR-INFINITE SUPPLY OF PRECIOUS RESOURCES

## WATER-RICH ASTEROID

One water-rich asteroid could produce enough fuel for every rocket launched in history

## USES OF WATER IN SPACE

- ROCKET FUEL
- BREATHABLE AIR
- DRINKABLE WATER

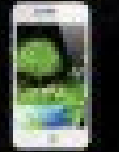
## ONE SINGLE 500M water-rich asteroid

**\$5 trillion** would produce over 35 trillion worth of water for use in space

It currently costs **\$85,000** to send a liter of water from Earth to Deep Space

## USES OF PLATINUM GROUP METALS ON EARTH

REDUCE COST OF ELECTRONICS



ELECTRIFY TRANSPORTATION



DRIVE INNOVATION, AND CREATE A GREENER EARTH



## ONE SINGLE 500M platinum-rich asteroid

At current market prices, one ounce of platinum is valued over **\$1,800**

Worth **\$2.9 Trillion**

**134 times** more than the yearly world output of platinum

More than the known world-reserves of PGMs

Asteroid mining will open a trillion-dollar industry and provide a **near-infinite supply** of Platinum Group Metals and water to **support our growth** both on this planet and off.



