

# Current Affairs

## Space Mining and Colonization Compiled by Musafir



The United States started exploring space 60 years ago. It landed the first human on the lunar surface almost 50 years ago. Since then their robotic probes have orbited all the planets and gone beyond the solar system. Now America is aiming at more value added projects leaving day to day launchings to low cost operators like India and China. Like any other previous initiatives, the U.S government is transferring space exploration to private companies in the spirit of capitalism.

The United States is interested more in colonization of planets and space mining where the benefit lies. The work has already started. Space X just launched its Falcon rocket last week, the most powerful rocket in the world today. It plans to land a human on Mars by 2024. Five other US companies are almost ready to relieve NASA of low orbit missions including sending tourists on space excursions.

Planetary Resources, based in Bellevue, Washington, announced its plans last year to make asteroid-mining a reality. The company hopes to send spacecraft to extract water and precious metals from near-Earth asteroids. Asteroids hold the resources necessary to enable a sustainable, even indefinite

presence in space — for science, commerce and continued prosperity here on Earth. NASA has other projects underway to deal with space rocks. Earlier this year, the space agency announced its plans to capture an asteroid, drag it into orbit around the moon and send astronauts to investigate the space rock as early as 2021.

It sounds like something straight out of science fiction: mining for natural resources on an asteroid hurtling through space at tens of thousands of miles an hour. But in as little as five years, asteroid mining could become a reality. There is a reason why the US is working towards space mining. This is related to human history.

Humanity is a species in constant movement in quest of resources to sustain and improve life. Even as our needs have evolved, our basic drive to access and control crucial resources has

not dimmed. Wars have been fought over salt, spice, oil and rare minerals. As we are depleting earth's resources, the waging of wars for fresh water and other essential resources in the near future is a reality. The problem with natural resources is that they are limited and finite. Thus, nations have raced to stake claims to Antarctica and its resources including, but not limited to harvesting icebergs to provide freshwater supplies.

We have now started mining the deep seabed for valuable minerals and metals, such as nickel, copper and manganese and also rare minerals that are increasingly crucial for the high-end technologies required to build hybrid cars, wind turbines, and even the mobile phones. But ultimately the earth will run out of the resources needed to maintain the lifestyles we have grown accustomed to. We will inevitably strip this planet clean.

So the farsighted are looking beyond the confines of this blue planet. Imagine, a single 500-metre diameter asteroid can contain more platinum than has even been mined in the history of the earth and you can get an idea why so many are salivating at the prospect of tapping these resources. Then consider that there are over 2m asteroids in the asteroid belt, which has been valued by NASA at a staggering \$700 quintillion - that is \$100 billion for every person living on earth right now.

The end goal is still far away, as efficient resource extraction will eventually require the creation of deep-space mining colonies which will have to be relatively self-sufficient — using the resources found on asteroids to build new bases and even satellites and spaceships — and thus providing launching pads for the human colonization of the solar system. In time, we may even see a subspecies of humanity emerge, one better suited to life in the low gravity of space stations. One thing is clear though: our salvation lies in the stars.

(The article has been compiled using various sources: Air & Space Magazine-Smithsonian, Wall Street Journal, Machio Kaku, Physics of Impossible)