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Southern DAILY

Make Today Different

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Inside C2

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Biden awards $2.8 billion to boost U.S. minerals output for EV batteries

WASHINGTON, Oct 19 (Reuters) - The Biden administration said on Wednesday it is awarding $2.8 billion in grants to boost U.S. production of electric vehicle batteries and the minerals used to build them, part of a bid to wean the country off supplies from China.

Albemarle Corp (ALB.N) is among the 20 manufacturing and processing companies receiving U.S. Energy Department grants to domestically mine lithium, graphite and nickel, build the first large-scale U.S. lithium processing facility, construct facilities to build cathodes and other battery parts, and expand battery recycling.

The grants, which are going to projects across at least 12 states, mark the latest push by the Biden administration to help reduce the country's dependence on China and other nations for the building blocks of the green energy revolution.

"As the world transitions from a fossil fuel to a clean energy powered economy, we cannot trade dependence on oil from autocrats like (Russian President Vladimir) Putin to dependence on critical minerals from China," said a senior administration official briefing reporters on the program.

Latest Updates
U.S. senator to hold EV battery hearing if GOP takes control
Automakers need more time to meet U.S. minerals requirements for EVs -execs
BMW invests $1.7 bln to build electric vehicles in U.S.
Germany to spend 6.3 bln euros on push for electric car charging points
The funding recipients, first reported by Reuters, were chosen by a White House steering committee and coordinated by the Department of Energy with support from the Interior Department.

The funds are being doled out to a range of companies, some of which could self-fund projects and others that will see the grants as a financial lifeline to further expand their U.S. plans. The funding, though, does nothing to alleviate permitting challenges faced by some in the mining industry.

Albemarle is set to receive $149.7 million to build a facility in North Carolina to lightly process rock containing lithium from a mine it is trying to reopen. That facility would then feed a separate plant somewhere in the U.S. Southeast that the company said in June would produce as much lithium for EV batteries as the entire company produces today.

Albemarle, which also produces lithium in Australia and Chile, said the grant "increases the speed of lithium processing and reduces greenhouse gas emissions from long-distance transportation of raw minerals."

Piedmont Lithium Inc (PLL.O) is receiving $141.7 million to build its own lithium processing facility in Tennessee, where the company will initially process the metal sourced from Quebec and Ghana. Piedmont's plans to build a lithium mine in North Carolina have faced strong opposition.

Shares of Piedmont rose 7.5% after Reuters broke the news of its funding award earlier on Wednesday. Piedmont did not immediately respond to a request for comment.

Talon Metals Corp (TLO.TO) will receive $114.8 million to build a processing plant in North Dakota in a strategy shift for the company, which has a nickel supply deal with Tesla Inc (TSLA.O). Talon now aims to extract rock from its planned underground mine in Minnesota and ship it to a North Dakota processing facility that will be funded in part by the grant.

Talon said the grants are "a clear recognition that production of domestic nickel and other battery minerals is a national priority."

Other grants include $316.2 million to privately-held Ascend Elements to build a battery parts plant, $50 million to privately-held Lilac Solutions Inc for a demonstration plant for so-called direct lithium extraction technologies, $75 million to privately-held Cirba Solutions to expand an Ohio battery recycling plant, and $219.8 million to Syrah Technologies LLC, a subsidiary of Syrah Resources Ltd (SYR.AX), to expand a graphite processing plant in Louisiana.

WEA LEE'S GLOBAL NOTES

10/18/2022

Our Dialogue with Congresswoman Fletcher

On last Saturday lunchtime we gathered at the mansion of Mr and Mrs Rocky Lai's we had very frank and meaningful conversation with our Congresswoman Lizzie Fletcher to expressed our opinion and feeling to her.

The constituencies of Congresswoman Fletcher now including Houston's Chinatown and International District . She repeatedly expressed her concern for our comunity and the direction of future governance

In the meeting more than 80% pf us were born abroad and later naturalized as citizenWe have al contributed to the gilded age of our life to the prosperity and

develop–ment of our comunity. Our next generation also take root here we are proud of Being Asian American in this country.

We told congresswoman that our main concern are the racial hatred against Asian American specially to Chinese when the for,er president Trump insulted and discrimination against Chinese American. Which is the biggest reason.

Whenever the election came many candidates and politicians continue shuttle through all over our comunity they want the votes and money donation we wanted to urged our people must to consider very careful and seize the opportunity to express our demand and concern.

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Southern DAILY Make Today Different

Editor's Choice

A demonstrator destroys a bank window during clashes at a demonstration in Paris as part of a nationwide day of strike and protests for higher wages and against requisitions at refineries in France. REUTERS/Benoit Tessier

A demonstrator is sprayed by a water cannon during a rally on the third anniversary of the protests and riots that rocked the country in 2019, in Santiago, Chile. REUTERS/Ivan Alvarado

A boy jumps from a tank at an exhibition of destroyed Russian military vehicles and weapons, dedicated to the upcoming country's Independence Day in the center of Kyiv, Ukraine, August 21. REUTERS / Valentyn Ogirenko

Venezuelan migrants arrive to apply for a permit to cross through Mexico in an attempt to reach the U.S. border, in San Pedro Tapanatepec, Oaxaca state, Mexico. REUTERS/Jorge Luis Plata

A journalist walks past a fragment of a Russian Sukhoi Su-34 fighter jet that crashed in the city of Yeysk, Russia. REUTERS/Stringer

Residents remove mud and belongings from their house in the aftermath of devastating floods following heavy rain, in the neighborhood of El Castano, in Maracay, Aragua state, Venezuela. REUTERS/Gaby Oraa

Southern DAILY Make Today Different

BUSINESS

Four Astronauts Return To Earth After Nearly Six Months On The Space Station

SpaceX Capsule Splashes Down, Returning Four Astronauts From The Space Station

Compiled And Edited By John T. Robbins, Southern Daily Editor

The SpaceX Crew Dragon Freedom capsule splashes down Friday in the Atlantic Ocean off Florida in a return trip from the International Space Station. Bill Ingalls/NASA via AP

CAPE CANAVERAL, Fla. — Four astronauts returned to Earth in a SpaceX capsule Friday, ending their nearly six-month space station mission with a splashdown in the Atlantic off Florida.

Wet and windy weather across Florida delayed their homecoming. SpaceX and NASA finally gave the all-clear on Friday, and the three Americans and one Italian departed the International Space Station, their residence since April.

The capsule parachuted into the ocean, just off Jacksonville, Florida, about five hours after it left the space station. It carried NASA astronauts Kjell Lindgren, Bob Hines and Jessica Watkins, the first Black woman to complete a long-term spaceflight, and the European Space Agency's Samantha Cristoforetti. SpaceX delivered their replacements last week.

Astronauts Back Home Safe.

Before checking out, the astronauts said they couldn't wait to have a cold drink with ice, eat some pizza and ice cream, take a shower, revel in nature and, of course, reunite with their families. NASA planned to hustle them to Houston once they were off SpaceX's recovery ship and back on solid ground.

"Getting the first few hugs when we get back is really going to be awesome," Hines told reporters earlier in the week.

Remaining aboard the space station are three Americans, three Russians and one Japanese.

Nicole Mann Becomes First Native Woman To Go To Space With Latest SpaceX Mission

Nicole Mann (second from right) is the mission commander on the SpaceX Dragon spacecraft, which launched on Wednesday. (Nicole Mann/Twitter)

SpaceX launched its crewed space mission to the International Space Station on Wednesday. On board and heading the expedition as mission commander is Nicole Mann — the first Native American woman to go to space.

She's a Marine Corps pilot and NASA astronaut, as well as a member of the Wailacki tribe of the Round Valley Indian Tribes. Her milestone moment comes 20 years after John Herrington became the first Native American man to walk in space, in 2002.

Mann's Crew-5 mission aboard the SpaceX Dragon spacecraft launched from NASA's Kennedy Space Center. Also on board is Josh Cassada, Anna Kikina and Koichi Wakata.

Nicole Mann
Robert Markowitz/NASA

All four are traveling to the International Space Station for a six-month mission, during which they plan to conduct more than 200 experiments, which will include spacewalks and 3D-printing human tissue. Mann detailed some of the crew's plans to NPR's All Things Considered this past summer.

She said she hoped her trip to space can encourage younger generations.

"These young women, maybe Natives, maybe people from different backgrounds that realize that they have these opportunities and [that] potentially these barriers that used to be there are starting to be broken down," she said. "And so hopefully that will inspire that younger generation."

Related

The First Astronaut Was Actually A King From China

He was the first man in history to reach Earth's Stratosphere.

Depiction of Wan-Hu taking off into his rocket chair circa the 1500s (Source: Wikimedia Commons)

Most people think that the first human to reach outer space was Yuri Alekseyevich Gagarin in 1961, but what if I told you that there is someone else that may have reached outer space hundreds of years before Gagarin. Many of you would be pretty skeptical about this information as it is quite vague and not many historians have recorded this event but interestingly enough the event is even believed by NASA.

Mankind going for the stars

There is no official record as they are believed to have been lost throughout history or probably stuck in some forgotten Chinese library, but the event describes Wan-Hu, a noble from the Ming dynasty to have been the first astronaut.

During the 9th century, China invented gunpowder that not only aided the creation of many pre-modern weapons and firearms but also the creation of medieval rockets that were mainly used as fireworks. Many contemporary astrologists discussed through history the possibility of mankind reaching the stars in the far future.

Despite all this, Wan-Hu and others believed that the answer to reaching the stars was through the creation of a powerful force, and at the time the most powerful force they had was created by the explosion of gunpowder. Fireworks became very popular within China during the 14th century, they were always fired at festivals and even used in military tactics. Wan-Hu was a writer and spent a lot of his time reading and researching. His idea of flying to space came one night when writing a poem about fireworks. They were able to fly high in the sky, so just having enough would allow him to do the same.

Anything is possible

Wan-Hu ordered his servants to create a chair that would be fitted with lots of rockets at the bottom and fueled by gunpowder. It is imperative to mention that the Chinese Royal Army was using a sort of rockets that they would launch towards the enemy which would fly much faster than any firework.

So the servants strapped as many rockets as possible to a big wooden chair. The records of this "legend" (as some prefer to call it) say that on a day during the 16th century Wan-Hu took off with the chair. He dressed in the fanciest clothes he had and prepared to be looked upon by the rest of the world or die in a glorious explosion.

Many servants were awaiting his order to fire the rockets with long torches. Upon Wan-Hu's order, the rockets were lit up by the servants and a huge cloud of smoke followed. After that cloud of smoke, Wan-Hu disappeared in the sky only living a trail of black smoke behind. Most people believed that he had died in an explosion whilst some actually believed that he had reached the moon. What is certain based on the records is that he never returned from space.

Considering this piece of history, everyone can be their own judge as there aren't enough records to really justify what happened or how true this is. At the end of the day, it may be just a legend, but at the same time, this information is endorsed by NASA which should give it some level of credibility.

Related

Rockets As Weapons

13th Through 16th Centuries

Rockets were first used as actual weapons in the battle of Kai-fung-fu in 1232 A.D. The Chinese attempted to repel Mongol invaders with barrages of fire arrows and, possibly, gunpowder-launched grenades. The fire-arrows were a simple form of a solid-propellant rocket. A tube, capped at one end, contained gunpowder. The other end was left open and the tube was attached to a long stick. When the powder was ignited, the rapid burning of the powder produced fire, smoke, and gas that escaped through the open end and produced a thrust. The stick acted as a simple guidance system that kept the rocket headed in one general direction as it flew through the air. It is not clear how effective these arrows of flying fire were. But one source reported that one grenade could incinerate a 2,000 square foot area.

Chinese soldier launches fire-arrow

Following the battle of Kai-Keng, the Mongols produced rockets of their own. During the 13th to the 15th centuries, the Mongols used rockets in their attacks on Japan and Baghdad and may have been responsible for the spread of rockets to Europe. In England, a monk named Roger Bacon worked on improved forms of gunpowder that greatly increased the range of rockets. In France, Jean Froissart found that more accurate flights could be achieved by launching rockets through tubes. Froissart's idea was the forerunner of the modern bazooka. Joanes de Fontana of Italy designed a surface-running rocket-powered torpedo for setting enemy ships on fire.

Surface-Running Torpedo

By the 16th century rockets fell into a time of relative disuse as weapons of war, though they were still used extensively in fireworks displays. A German fireworks maker, Johann Schmidlap, invented the first "step rocket," a multi-staged vehicle for lifting fireworks to higher altitudes. A large rocket was ignited initially and carried one or more smaller rockets. When the large rocket burned out, the smaller rockets ignited and continued to a higher altitude before showering the sky with glowing cinders. Schmidlap's idea, known today as staging, is basic to all modern rocketry.

Nearly all uses of rockets up to this time were for warfare or fireworks; but there is an interesting old Chinese legend that reports the use of rockets as a means of transportation. With the help of many assistants, a Chinese official named Wan-Hu assembled a rocket-powered flying chair. The chair was mounted between two wooden stakes. Attached to the chair were two large kites, and fixed to the kites were forty-seven fire-arrow rockets.

Legendary Chinese official Wan Hu braces himself for "liftoff"

On the day of the flight, Wan-Hu sat in the chair and gave the command to light the rockets. Forty-seven assistants, each armed with torches, rushed forward to light the rockets. In a moment, there was a tremendous roar accompanied by billowing clouds of smoke. When the smoke cleared, Wan-Hu and his flying chair were gone. No one knows for sure what happened to Wan-Hu, but it is probable that the event really did take place. Fire-arrows are still as apt to explode as to fly!

Southern DAILY Make Today Different

COMMUNITY

The Five Industries That Will Be First To Do Business In Space

Compiled And Edited By John T. Robbins, Southern Daily Editor

Companies around the world - in transportation, exploration, energy, construction or hospitality - are all looking upwards for the next growth opportunity. Space is quickly becoming a place where the industries that power our global economy will conduct business. What do we call an economic area like this, that is not limited to a single planet, and no longer has physical boundaries? We can't call it an industry, when private industrial groups can generate revenue and profit not only from the Earth but from near-Earth asteroids (NEAs), the Moon and Mars and beyond. It is simply a medium in which humanity conducts commerce.

Following are the industry sectors that will be the first to take advantage of our expanded economic sphere, and some of the specific opportunities for growth.

Energy

Valued at over $8.4 trillion and growing at a 4.1% compound annual growth rate, energy is the largest industry on Earth. Humans are prolific energy consumers, and soon there will be more humans in space.

Jeff Bezos, Founder and CEO of Amazon, anticipates "millions of people living and working in space" in the coming decades. Bezos is so confident of this outcome that he is investing more than $1 billion per year into his space transportation firm, Blue Origin. An in-space population of this magnitude will require enormous amounts of energy to live, work, and transit.

This energy will come from solar power, which is more effective when gathered in space due to the lack of a filtering atmosphere; and chemical rockets, which will be the primary transportation mechanism for the foreseeable future.

The most efficient chemical rocket propellants are composed of cryogenic liquid oxygen combined with liquid hydrogen or methane. Initially, the propellant needed to fuel the space economy will be launched from Earth, as both the United Launch Alliance (a joint-venture of Lockheed Martin and Boeing) and SpaceX have proposed to do in the near future. However, there is a much more attractive way to source the propellants needed to support a sustained human presence in space: mining it.

Mining

The global mining industry has tumbled in recent years from a market value of more than $1.6 trillion in 2010, to $714 billion in 2016, but this may change quickly once the "global" definition of mining is transformed by the emerging space resource industry.

Space resources can be extracted from celestial bodies, most notably asteroids and the Moon. Goldman Sachs released a report earlier this year that declared asteroid mining is more realistic than perceived, with costs "comparable to traditional mines". The Goldman report also noted that "while the psychological barrier to mining asteroids is high, the actual financial and technological barriers are far lower."

The Government of Luxembourg believes so strongly in this emerging industry it recently created the $227 million Space Resoruces initiative to establish Luxembourg as a European hub for space resources.

Its aim is to contribute to the peaceful exploration and sustainable utilization of space resources for the benefit of humankind. Space mining activities will initially focus on water and water-derived propellants to enable in-space infrastructure. Once this propellant is readily available, companies will begin sourcing structural metals for construction projects and eventually precious metals needed for in-space manufacturing or possibly for return to Earth.

Transportation

The most important resource that will be mined in space is water.

Water is critical for all life-support functions in space: sustenance, hygiene, and food production. Water can serve as an effective shield from the dangerous radiation present in space. Water is also the single most important feedstock for in-space refineries, which will produce rocket propellants for sale to transportation providers.

Making propellants available beyond Earth's gravitational influence will lead to the creation of the first in-space superhighway – a series of fuel depots placed in strategic locations throughout the solar system. Imagine the growth potential of the energy, mining, and refining industries once they are freed from the constraints of an economy that is limited only to Earth. The in-space transportation and logistics firms who will consume these products are already well established and are headed by titans of industry:

Jeff Bezos (Blue Origin), Elon Musk (SpaceX), Richard Branson (Virgin Galactic), and Tory Bruno (United Launch Alliance). The door is now open to in-space mining firms like Planetary Resources (backed by industrial giant Bechtel and the Government of Luxembourg) to capture this increasingly important market by providing water and water-based propellants to the space transportation industry.

Construction

Today, the global construction industry competes with the energy industry for the title of the world's largest industry, and this rivalry will continue in space. The first orbital construction systems will be deployed before the end of the decade. These robotic spacecraft will be capable of assembling large structures in orbit and repairing or refueling existing satellites. When combined with zero-gravity additive manufacturing techniques, this enables construction systems which can "print" and assemble massive structures in the medium of space.

The future of construction in space will look nothing like it does on Earth, but it will be equally valuable because the techniques and service offerings will apply across the entire in-space value chain. A propellant refinery can be assembled on orbit. Asteroid mines can be repaired autonomously. Solar power plants can be massively scaled and upgraded to meet the requirements of almost any project.

Hospitality and real estate

Humans can only live, work and play in space if they have shelter from the harsh environment of space. Today, the International Space Station (ISS) has had a sustained human presence for over 10 years, but this too will soon change.

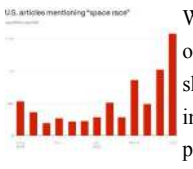
Numerous commercial space station companies, including one created by billionaire hotel-chain-founder Robert Bigelow, are competing for lucrative contracts that range from supporting sovereign astronauts and high-net-worth tourists, to leasing space-in-space for orbital manufacturing and research and development programs. This new industry is anticipated to generate $37 billion in the next decade alone.

Space habitats will be launched from Earth initially, but as the resource supply chain expands and metals from asteroids and the Moon become available, this sector will also come to rely on resources sourced from space.

Construction firms will combine high-quality metallic feedstocks with robotic orbital assembly fleets as we gain the ability to create orbital megastructures: hotels, factories, and permanent settlements that are no longer limited by size. The first cities in space will become possible as markets for real-estate on orbit emerge. Space will become affordable and profitable for developers.

Our global economy is limited by its very name. When we realize that Earth's economy is only the beginning, our concept of growth changes exponentially. For industrial firms who have the foresight to view space not as a stand-alone industry but as the next medium to conduct their business, the sky is not the limit. The only limitations are the ones we put on ourselves. (Courtesy https://www.weforum.org)

Space Coverage Gets Serious Attention



While public sentiment on whether billionaires should be leading the way in space may be mixed, public interest around the race between Branson and Bezos has exploded.

Why it matters: The billionaire space race is sparking widespread interest in spaceflight that could ultimately translate into future customers for their companies.

By the numbers: Not even halfway through July, mentions of the term "space race" in U.S. articles have ballooned, according to new data from Signal AI provided to Axios — more than tripling the amount of mentions last July.

•When it comes to name recognition, Bezos' Blue Origin has received a lot more attention this year than its rival — Branson's Virgin Galactic.

•Since July 2020, Virgin Galactic has received about a third of the number of total social media interactions (325,663) as Blue Origin (1,085,377), per NewsWhip.

•Elon Musk's SpaceX clobbers both, with nearly 3.5 million total social media interactions for the year.

The big picture: Space coverage has historically been mostly in a niche — something that typically only broke through to the mainstream with big launches, accidents or anniversaries.

But today, many news companies have hired designated space reporters, as private spaceflight takes off.

For space-specific news outlets, like Seeker, the space race has been a boon for traffic. A spokesperson tells the media that Seeker has seen twice the amount of views and minutes watched on its video content compared to the six months prior. (Courtesy axios.com)