EDGE OF SPACE
Monthly Digital Newsletter
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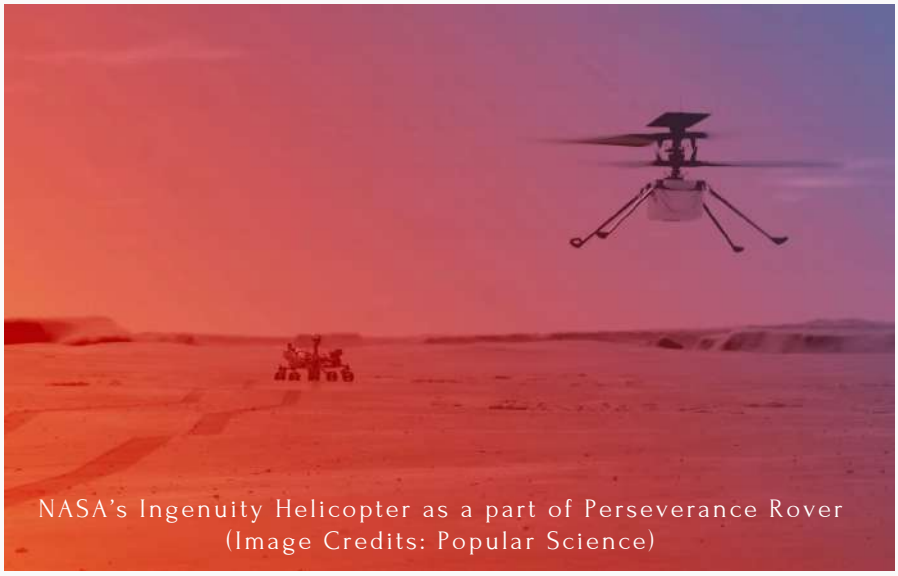
From the News

Ingenuity Helicopter: First-ever flight on another planet

BY RAFID HASAN ABDULLAH YAHYA DEJRAH

NASA has successfully launched a small drone on the surface of Mars on 19th April 2021. The drone, called Ingenuity Helicopter, flew in the air for less than a minute, and this is the first time NASA has succeeded in launching and flying a powered aircraft controlled by a crew from another planet.

Confirmation of the mission's success came via the satellite on Mars, which transmitted the helicopter's data to Earth. And the US space agency promises more adventurous flights the next day. The plane will be required to fly higher and farther as engineers strive to test the limits of this technology.



NASA's Ingenuity Helicopter as a part of Perseverance Rover
(Image Credits: Popular Science)

READ MORE AT: Ingenuity Helicopter: First-ever flight on another planet

This issue:

Blog of the Month

MOXIE Produced Oxygen on the Red Planet

BY KEERTHI G

NASA's Perseverance rover continues to create milestones by converting carbon dioxide present in the Martian atmosphere to oxygen with MOXIE. This is the first time oxygen has been created on another planet other than Earth. After the successful demonstration of the Ingenuity helicopter that amazed the whole world, Perseverance continues to achieve another milestone on the Red planet.

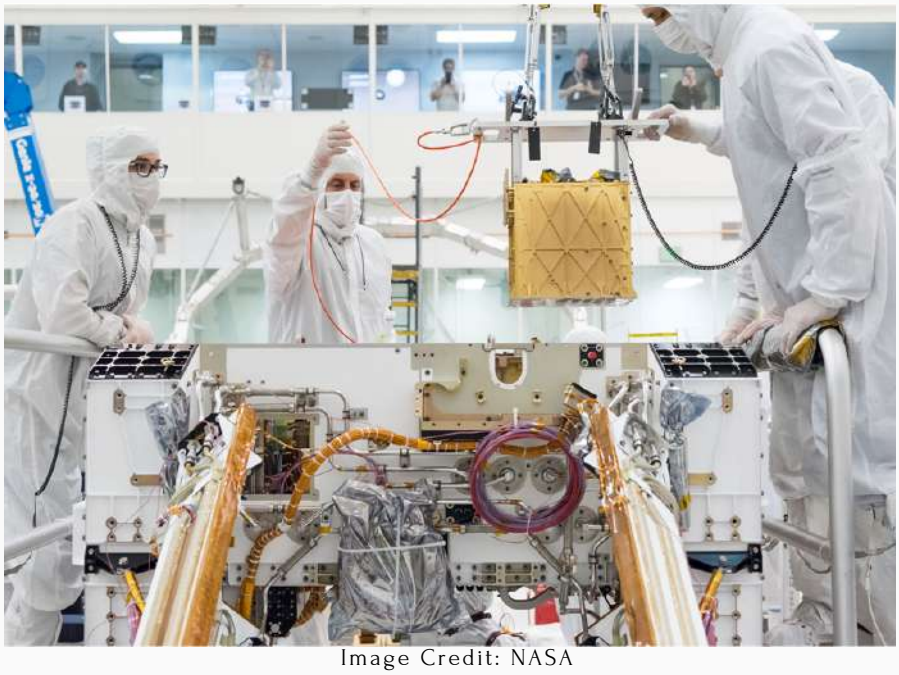


Image Credit: NASA

How did Perseverance achieve this incredible feat? This was possible using a tiny toaster-sized instrument called MOXIE, which is aboard the perseverance rover. MOXIE, the acronym for Mars Oxygen In-Situ Resource Utilization Experiment is a car battery-sized experimental setup whose main purpose is to produce oxygen from the carbon dioxide-rich atmosphere of Mars.

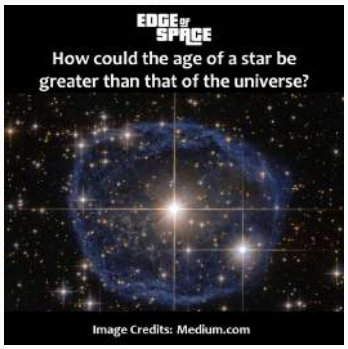
The Martian atmosphere is predominant with carbon dioxide that does not provide much help for us humans. Thus, it makes future manned missions to Mars difficult. Oxygen in Mars could not only support future manned missions to Mars but also could provide oxygen which could be used as fuel for rockets, i.e. liquid oxygen propellant.

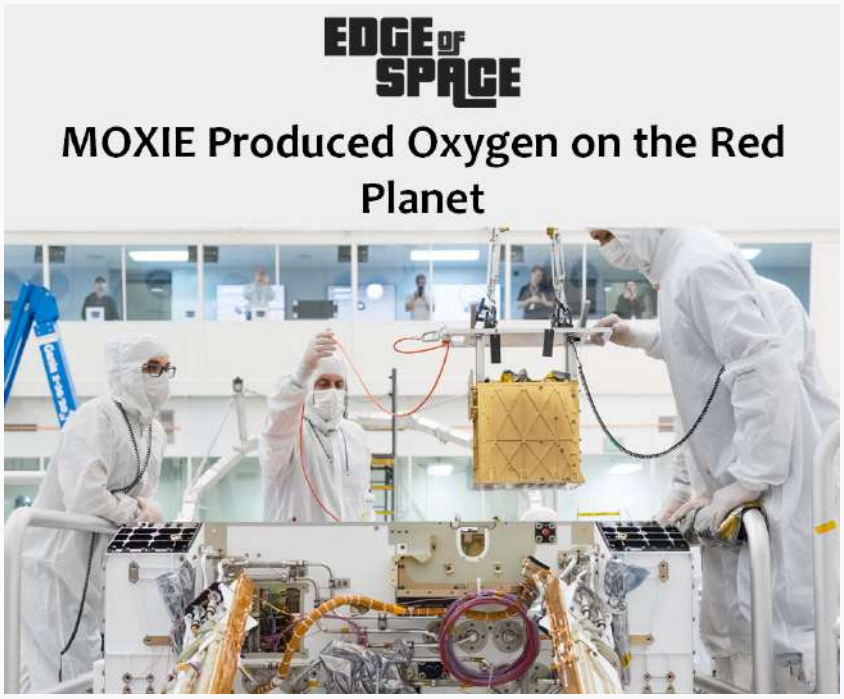
READ MORE AT: MOXIE Produced Oxygen on the Red Planet

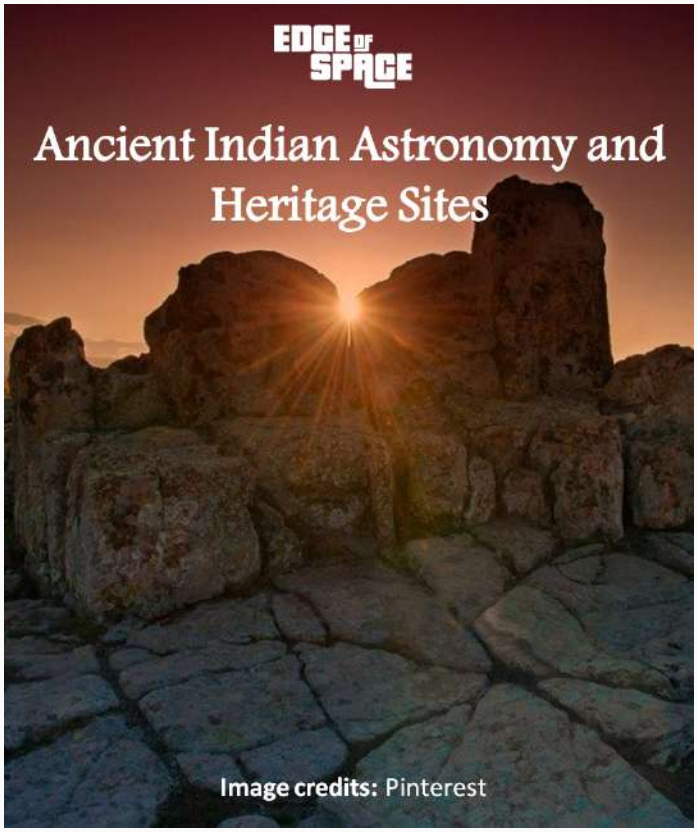
Mars can potentially host humans in the future of which oxygen on Mars plays a vital role. Hence, for human colonization on Mars, Perseverance is the key to success!

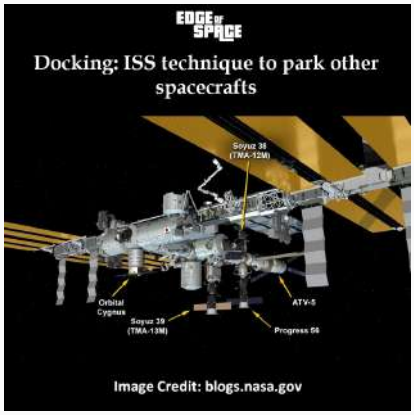
Image Credit: Popular Mechanics

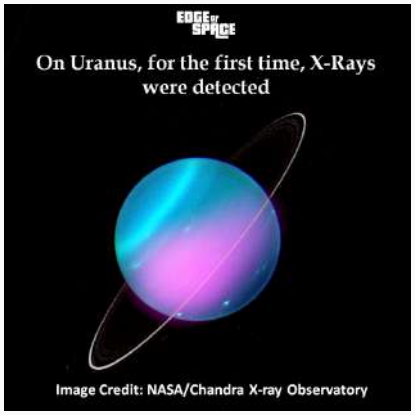
FEATURED BLOGS OF THE MONTH

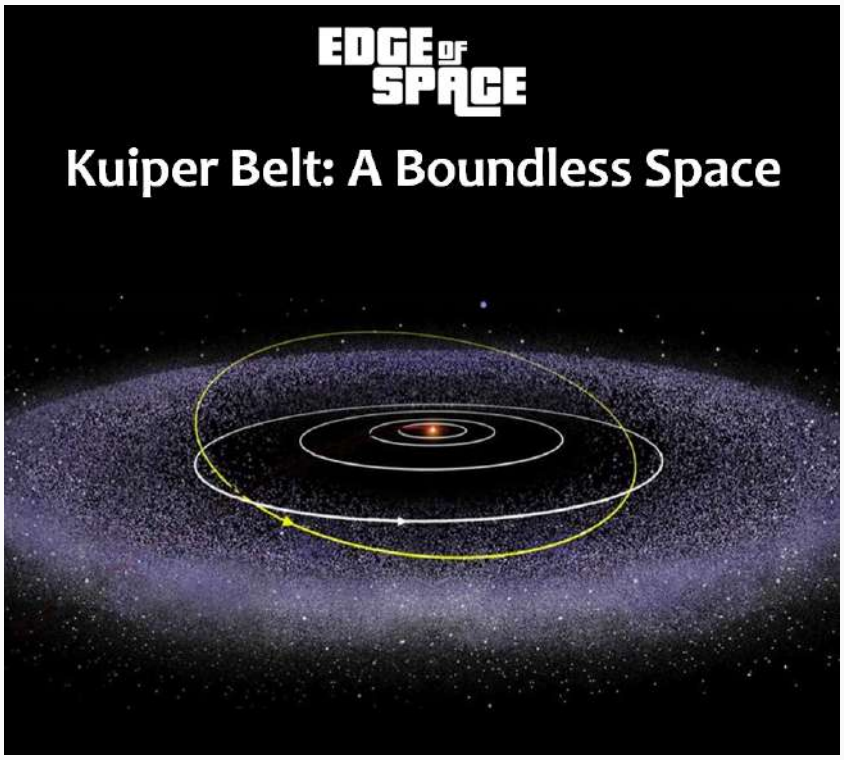












THE NEWS BULLETIN

1

EUROPE PLANS TO LAUNCH SPACE TELESCOPE TO MONITOR ORBITAL DEBRIS

ESA wants to launch an orbiting telescope to monitor pieces of small debris. Such tiny fragments are too small to get spotted, and if they hit a spacecraft, they can cause potential damage. There is no orbiting space telescope yet, and it could make space safe.

2

NASA DETECTED NEW ASTEROID 2021 AF8 MOVING TOWARDS EARTH AT SPEED OF 9 Km PER SECOND

According to scientists, the asteroid would have passed near the earth on May 4 with a speed of 9 Km/s. NASA estimated that this asteroid ranges in size from 260 – 580 m. US space agency said that it is much smaller than other asteroids that passed near the earth, but still, it is potentially hazardous.

3

ISRO PLANNED TO LAUNCH CHANDRAYAAN 3 IN MID-2022, WORKING ON ELECTRIC PROPULSION SATELLITES.

While addressing students of UPES academy, ISRO chairman Dr. K Sivan declared about the projects coming this year. Among the projects he mentioned, he highlighted Chandrayan -3.

NASA & SPACEX LAUNCHED FOUR ASTRONAUTS TO THE INTERNATIONAL SPACE STATION VIA US DRAGON CREWSHIP

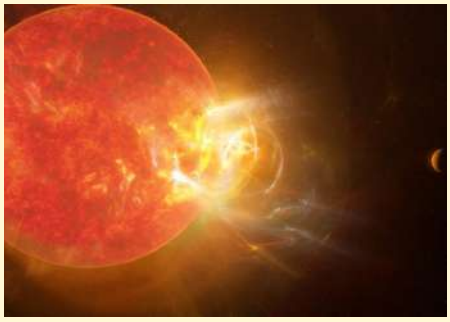
BY ANJALY THOMAS

On 23rd April, four astronauts, Americans Shane Kimbrough & Megan McArthur, Thomas Pesquet of France, and Japanese Akihiko Hoshide were launched to the ISS from Florida on SpaceX's reusable Falcon-9 rocket. Earlier, the launch was scheduled for 22nd April but got delayed for 24hrs due to unfavorable weather conditions.
Read the full article here.

4

ENORMOUS FLARE FROM SUN'S NEAREST NEIGHBOUR BREAKS RECORDS

Scientists have spotted the largest flare ever recorded from the star Proxima Centauri. This star is small but mighty. It ejected a flare or a burst of radiation that begins near the earth's surface that marks as one of the most violent seen anywhere in the galaxy.



5

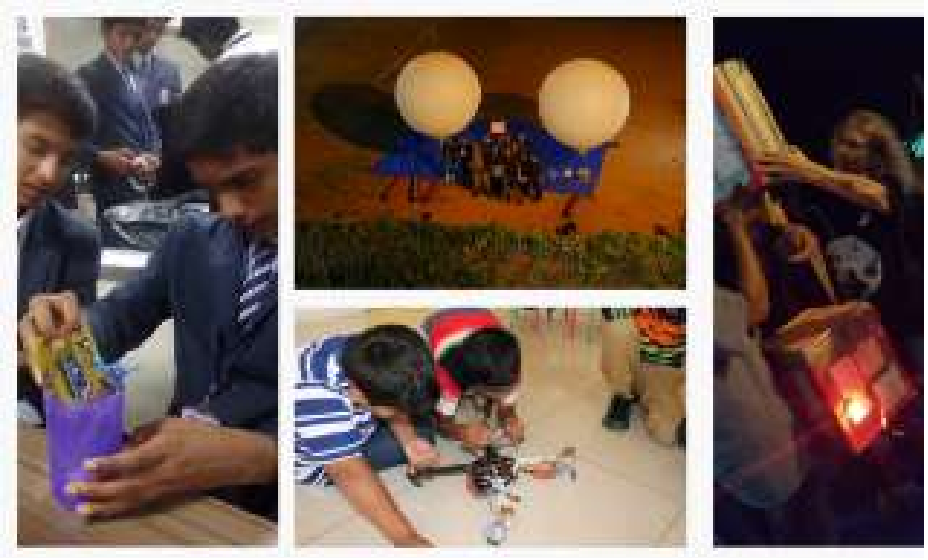
NASA'S INGENUITY HELICOPTER ACCOMPLISHES FIRST POWERED FLIGHT ON MARS

A small rotorcraft has made both aeronautic and astronautic history, becoming the primary vehicle to attain powered flight on a celestial body apart from Earth.
Read the full article here

6

NASA'S PERSEVERANCE ROVER PRODUCE OXYGEN ON MARS, FOR THE FIRST TIME EVER:

MOXIE, a toaster-like instrument onboard NASA's Perseverance meanderer, delivered 5.4 g oxygen in 60 minutes - enough for a space traveler to relax for 10 moments.
Read the full article here



SSERD is organising

JUNIOR SPACE SCIENTIST PROGRAM

Under Astro Space Camp

The pandemic might have limited us inside our homes, but not our curiosity and interest. To fuel that curiosity and put them to best use, SSERD has designed a Research program for High School students. The junior space scientist program under Astro space camp is a 30 days research program where students of 8th to 12th grade from schools across India and abroad come together virtually and work on a small space research project.

Astro space camp believes that with hands-on experience, students can truly bring out their creativity, knowledge, and have more understanding of the projects they work on. The program is designed in such a way that they receive a step-by-step guide, which helps the students understand the process of researching, working on a project, and also teamwork, which are vital skill sets for their future.

Each student is unique in their own way, and this program aims in bringing their individuality by providing one-to-one sessions with the mentors to help them develop their capability further. Since this program is a global event, students will have more exposure and will be able to develop their social skills, and interact with people from different backgrounds, as diverse minds bring about the best ideas.

The junior space scientist provides a wide range of research topics to choose from these include: - Space settlements, Astronomy, Aeronautics, Satellites, and Rockets. Students can take a topic that interests them, and for each of these topics, there will be mentors specialized in their fields who will be guiding the students on these topics.

RESEARCH TOPICS

SPACE SETTLEMENTS

ASTRONOMY

AERONAUTICS

SATELLITES

ROCKETS

BENEFITS

LEARNING TEAM WORK

DEVELOPING R&D SKILLS

GET MENTORED

DEVELOP SKILLS

GET NOTICED

FIND YOUR CAREER PATH

ONE-TO-ONE SESSIONS

GET CERTIFIED

Through this program, students can get more exposure to find the career paths that they wish to choose in the future and also the technical skills needed for the same.

These skill-sets include presenting the research project at a conference, training in virtual meeting etiquettes which have become a necessity in today's situation, develop their research & development skills at a young age. At the end of this program, the students will be felicitated with a certificate of completion, which will be helpful for their higher studies.

The 30-day program is completely online, hence students can work on their projects in the comfort of their homes. The requirements of the program include a laptop or phone with an internet connection, students must be available for 30 days that is from 4th June to 4th July, each student is expected to spend at least 2 hours every day on the project. Weekends are holidays.

For Students of	No Of days	Dates	Mode
Grades 8-12	30 Days	4th June to 4th July	Completely online

The program fee is Rs 5000 for students from India and US$ 90 for students from outside India. This fee includes training, mentorship, and online platform, one-to-one interaction with mentors, career guidance, exciting merchandise, and also certification. Students are encouraged to take part in this event and bring out the best version of themselves.

Students can also take a look at the previous projects that SSERD students have worked on. These project details are available on the Astro space camp website.

Nothing is more expensive than a missed opportunity, students are to take up this wonderful opportunity and experience the life of being a junior space scientist. Due to limited seats, the registrations are based on a first come first serve basis.

Make the best use of your inventiveness and secure your seat in the junior space scientist 2021 by registering for the program! The registration link is available on the official website of Astro space camp, https://astrospacecamp.com/junior-space-scientist-program/.

We also have Astro Space Camp whose details have been mentioned in the previous newsletter. You can also visit https://astrospacecamp.com/ and get yourself registered. Keep learning about space!

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INTERNSHIP AND PROJECT DIVISION - BATCH 10

The goal of this internship is to help students to work on space-related projects!
You will receive the best of training and guidance from SSERD as well as other pioneers in the field all to your home and completely online. You will also earn an e-certificate after the completion of the internship.

TOPICS:
1. Propulsion System
2. Astronomy and Astrophysics
3. Satellites
4. Space Settlement
5. Space Mission Design
6. Space Robotics
7. SSERD Operations

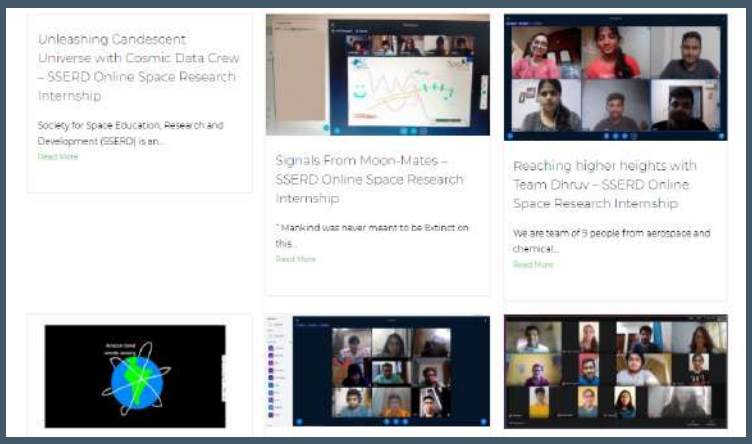
BENEFITS:
1. Training
2. SSERD official membership
3. Career guidance
4. Access to professionals
5. Scholarships will be provided for those who can't afford

TRAINING ON:
1. How to do the research
2. How to look for the correct information
3. How to make the best resume
4. Selection of universities
5. Project Specific Trainings

Application is open for any students pursuing undergraduate and postgraduate programs.

Application Process:
1. Fill the application form
2. Wait for interview notification
3. Issue of topics
4. Commencement of Internship

Batch Duration: 4 weeks
Timings: 4-8 PM IST, Monday to Saturday
Last Date to apply: 28th May 2021



Visit SSERD Internships to know more

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