

Hello Space Enthusiasts,

We are back again with the most amazing space stories this month. Continue reading to find out more about the new space missions, the mystery behind the stars at the edge of our galaxy, new information on the expansion of the universe, and the unveiling of the new space suit design.

We had some amazing projects presented to us by the schools participating in our Future Explorers Program and Partner School Science Program. We hope to have another awesome semester and enjoy the surprises schools are planning to share with us. Keep up the good work everyone!

SPACE NEWS IN A FLASH

- NASA Selects Two Missions to Explore the Early Solar System
- Gene Cernan, the last man to walk on the moon, dies at 82
- Stars At The Edge Of Our Galaxy May Have Been Stolen
- The moon is older than many scientists suspected
- The Universe Is Expanding Surprisingly Fast
- Observations indicate that Asteroids might be camouflaged
- China's Moon-Sampling Mission Targeted for November
- New Spacesuit Unveiled for Starliner Astronauts

I know nothing with any certainty but the sight of the stars makes me dream.

- Vincent Van Gogh

NASA Selects Two Missions to Explore the Early Solar System

NASA has selected two missions that have the potential to open new windows on one of the earliest eras in the history of our solar system - a time less than 10 million years after the birth of our sun. The missions, known as Lucy and Psyche, were chosen from five finalists and will proceed to mission formulation, with the goal of launching in 2021 and 2023, respectively.

Lucy, a robotic spacecraft, is scheduled to launch in October 2021. It's slated to arrive at its first destination, a main belt asteroid, in 2025. From 2027 to 2033, Lucy will explore six Jupiter Trojan asteroids.

(<http://www.spacedaily.com>)

Gene Cernan, the last man to walk on the moon, dies at 82

Gene Cernan, the last man to walk on the moon, passed away at the age of 82.

Cernan joined the NASA astronaut corps in 1963 and flew on Gemini 9 in 1966, becoming the second American to make a spacewalk.

He was the lunar module pilot on Apollo 10 in 1969, the "dress rehearsal" mission for the Apollo 11 landing, and commanded the last Apollo mission to the moon, Apollo 17, in 1972.

The cause of Cernan's death was not announced, but he had been in poor health in recent months.

(<http://www.spacenews.com>)



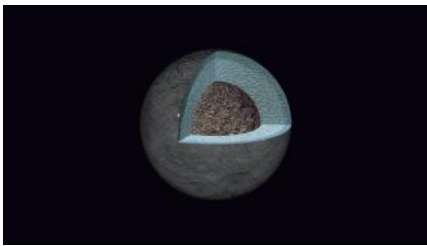
Stars At The Edge Of Our Galaxy May Have Been Stolen

Our Milky Way is a pretty vast and highly-populated space. Its stars number between 100 and 400 billion. But just where did all these stars come from? Well, as it turns out, the Milky Way may have stolen some of its stars from other galaxies.

Two astronomers from Harvard-Smithsonian Center for Astrophysics, claim that roughly half of the stars that orbit at the extreme outer edge of the Milky Way were actually stolen from the nearby Sagittarius dwarf galaxy.

At one time, the Sagittarius Dwarf Elliptical Galaxy was thought to be the closest galaxy to our own (a position now held by the Canis Major dwarf galaxy).

(<http://www.universetoday.com>)



Observations indicate that Asteroids might be camouflaged

The appearance of small bodies in the outer solar system could be deceiving. Asteroids and dwarf planets may be camouflaged with an outer layer of material that actually comes from somewhere else.

Using data primarily gathered by SOFIA, NASA's Stratospheric Observatory for Infrared Astronomy, a team of astronomers has detected the presence of substantial amounts of material on the surface of Ceres that appears to be fragments of other asteroids.

Ceres is considered to be both an asteroid and a dwarf planet, the only dwarf planet located in the inner solar system.

(<http://www.spacedaily.com>)

The moon is older than many scientists suspected

It turns out the moon is older than many scientists suspected: a ripe 4.51 billion years old. That's the newest estimate, thanks to rocks and soil collected by the Apollo 14 moonwalkers in 1971.

A research team reported Wednesday that the moon formed within 60 million years of the birth of the solar system. Previous estimates ranged within 100 million years, all the way out to 200 million years after the solar system's creation, not quite 4.6 billion years ago.

The moon was created from debris knocked off from Earth, which itself is thought to be roughly 4.54 billion years old.

(<https://phys.org>)

China's Moon-Sampling Mission Targeted for November

China is working to launch a sample-return mission to the moon before the end of 2017.

The mission, known as Chang'e 5, will be the first to bring lunar material to Earth since the Soviet Union's Luna 24 spacecraft did so in 1976.

The over-8-ton Chang'e 5 is comprised of four parts: an orbiter, a lander, an ascender and a "returner" (an Earth re-entry module).

The mission will be China's first automated moon surface sampling probe. After touching down, the lander will place lunar samples into a vessel in the ascender. Then the ascender will take off from the lunar surface to dock with the orbiter and the returner, which will be circling the moon together, and transfer the samples to the returner.

(<http://www.space.com>)



The Universe Is Expanding Surprisingly Fast

The universe really is expanding faster than scientists had thought, new research suggests.

Astronomers have pegged the universe's current expansion rate — a value known as the Hubble constant, after American astronomer Edwin Hubble — at about 71.9 kilometers per second per megaparsec.

This newly derived number is consistent with a calculation that was announced last year by a different research team, which was led by Nobel laureate Adam Riess. But it's considerably higher than the rate that was estimated by the European Space Agency's Planck satellite mission in 2015: about 66.9 km per second per megaparsec.

(<http://www.livescience.com>)

New Spacesuit Unveiled for Starliner Astronauts

Astronauts heading into orbit aboard Boeing's Starliner spacecraft will wear lighter and more comfortable spacesuits than earlier suits astronauts wore. The suit capitalizes on historical designs, meets NASA requirements for safety and functionality, and introduces cutting-edge innovations.



The full suit, which includes an integrated shoe, weighs about 20 pounds with all its accessories – about 10 pounds lighter than the launch-and-entry suits worn by space shuttle astronauts.

(<http://www.nasa.gov>)

SCHOOLS IN ACTION



Hisar School, Istanbul

What you are seeing is a screenshot from the beautiful "Saturn Vacation Add" produced by the Hisar School Students. I know where I'm going this summer, hah!



U ur Schools, Izmir

How about a poster advertisement for our Solar System Vacation Project? Lots of information supported with good images makes it really convincing. No questions left hanging in the air, kudos!



High School of Mathematics, Varna

Once again, Welcome to the Future Explorers Program! Everything was spot on. Some of the ideas within those mission patches will actually come to life. Mark my words! :)



Ismail Kaymak School, Çanakkale

The moment when the team members come together and start the brainstorming process to bring out their creativity and innovation. It makes you want to be there!



**ITK BTK, Izmir
Aylward Academy, London**

Both of our partner schools had put in great effort to create their Mission Patch Designs and they did very well explaining them to each other. Thumbs up!



Rota College, Izmir

Students chilling at Space Camp Turkey right before a lesson. Soon after this photo was taken, we were discussing Particle Accelerators :)

Astronomy Picture of the Day



The Cat's Eye Nebula from Hubble

Explanation: To some, it may look like a cat's eye. The alluring Cat's Eye nebula, however, lies three thousand light-years from Earth across interstellar space. A classic planetary nebula, the Cat's Eye (NGC 6543) represents a final, brief yet glorious phase in the life of a sun-like star. This nebula's dying central star may have produced the simple, outer pattern of dusty concentric shells by shrugging off outer layers in a series of regular convulsions. But the formation of the beautiful, more complex inner structures is not well understood. Seen so clearly in this digitally reprocessed Hubble Space Telescope image, the truly cosmic eye is over half a light-year across. Of course, gazing into this Cat's Eye, astronomers may well be seeing the fate of our sun, destined to enter its own planetary nebula phase of evolution ... in about 5 billion years.