

Hello Readers,

Space News never stops, nor do we! The Cassini Mission and the newly found Exoplanets make the headline for our Newsletter this month. Make sure to check out the Astronomy Picture of the Day as well!

With the school year coming to an end, lots of schools have completed the first 5 topics within our programs. It is nice to see students getting busy with our "Planet Hunters" project and soon enough they will be working on our brand new project: "Mysterious Messengers"!

## SPACE NEWS IN A FLASH

- NASA's Cassini Mission Prepares for Grand Finale at Saturn
- Astronaut Peggy Whitson Sets New Record for Time in Space
- Atmosphere Spotted on Nearly Earth-Size Exoplanet
- Surprise! Jupiter Has a Great 'Cold' Spot, Too
- Astronomers Piece Together First Image of Black Hole
- Possible Life in the Enceladus Ocean
- Exoplanet LHS 1140b May Be Most Habitable Yet Found

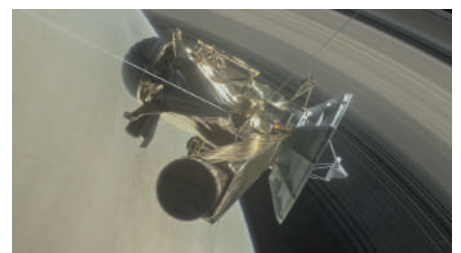
*Love is space and time  
measured by the heart.  
- Marcel Proust*

### NASA's Cassini Mission Prepares for Grand Finale at Saturn

NASA's Cassini spacecraft, in orbit around Saturn since 2004, has begun the final chapter of its remarkable story. On Wednesday, April 26, the spacecraft has made the first in a series of dives through the 1,500-mile-wide (2,400-kilometer) gap between Saturn and its rings as part of the mission's grand finale.

"No spacecraft has ever gone through the unique region that we'll attempt to boldly cross 22 times," said Thomas Zurbuchen, associate administrator for the Science Mission Directorate at NASA Headquarters in Washington.

During its time at Saturn, Cassini has made numerous dramatic discoveries, including a global ocean that showed indications of hydrothermal activity within the icy moon Enceladus, and liquid methane seas on its moon Titan.



Now 20 years since launching from Earth, and after 13 years orbiting the ringed planet, Cassini is running low on fuel. In 2010, NASA decided to end the mission with a purposeful plunge into Saturn this year in order to protect and preserve the planet's moons for future exploration -- especially the potentially habitable Enceladus.

(<https://saturn.jpl.nasa.gov>)

## Astronaut Peggy Whitson Sets New Record for Time in Space

534 days, 2 hours, 49 minutes and counting.

NASA astronaut Peggy Whitson flew through the standing record for cumulative time spent in space by a U.S. astronaut at 1:27 a.m. EDT on April 24, and with the recent extension of her stay at the International Space Station, she has five months to rack up a new one.

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



## Astronomers Piece Together First Image of Black Hole

After training a network of telescopes stretching from Hawaii to Antarctica to Spain at the heart of our galaxy for five nights running, astronomers said Wednesday they may have snapped the first-ever picture of a black hole.

It will take months to develop the image, but if scientists succeed the results may help peel back mysteries about what the universe is made of and how it came into being.

The targeted supermassive black hole is hidden in plain sight, lurking in the centre of the Milky Way in a region called the Sagittarius constellation, some 26,000 light years from Earth.

Theoretical astronomy tells us when a black hole absorbs matter—planets, debris, anything that comes too close—a brief flash of light is visible.

Black holes also have a boundary, called an event horizon.

(<https://phys.org>)

## Atmosphere Spotted on Nearly Earth-Size Exoplanet

For the first time, scientists have detected an atmosphere around a planet beyond our solar system that's just a little bit larger than Earth.

The exoplanet GJ 1132b, which orbits the dwarf star GJ 1132, is located about 39 light-years away from Earth. It has a radius about 1.4 times that of Earth and is 1.6 times Earth's mass, according to the new study. When the planet was first discovered, researchers called it a potential Venus twin because it's a rocky world with a very high surface temperature — and now, they've found that the planet and Venus might have a thick atmosphere in common, too (although it would have a different composition).

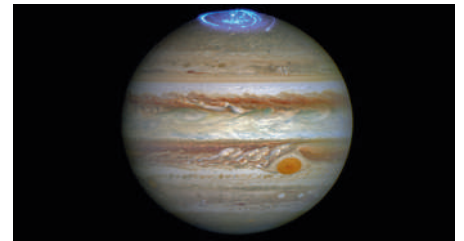
(<http://www.space.com>)

## Surprise! Jupiter Has a Great 'Cold' Spot, Too

Jupiter is famous for its Great Red Spot, a storm twice the diameter of Earth that rages on the gas giant's surface. Now, researchers have found that it has a second great spot, almost as large — this one, a Great Cold Spot caused by the planet's vibrant auroras.

The cool patch stretches up to 24,000 by 12,000 km across at its largest, and it's about 200 degrees Celsius cooler than the surrounding area in the planet's upper atmosphere.

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



## Possible Life in the Enceladus Ocean

An environment that some scientists believe led to life on Earth has been found on Saturn's ocean-bearing moon Enceladus, NASA scientists have said.

A discovery of molecular hydrogen was made in October 2015 - but has only now come to light - when NASA's Cassini spacecraft took samples as it passed 49 km above the moon's southern pole.

Hydrogen molecules were detected in vapour plumes emerging from cracks in Enceladus' surface.

Such conditions occur when hot rocks meet ocean water, and may have led to the beginning of microbial life on Earth more than four billion years ago.

They are said to make Enceladus the only place apart from Earth where a potential energy source for life has been found.

A vast ocean - believed to be the source of the geysers - is said to be buried between 19 and 25 miles (30-40 km) beneath Enceladus' icy shell.

(<http://www.skynews.com.au>)

## Exoplanet LHS 1140b May Be Most Habitable Yet Found

Until this week, if you asked an astrobiologist to nominate the likeliest targets for life beyond our solar system the most common answers would have been Proxima b or the recently discovered TRAPPIST-1 system.

Now, however, for at least some of the astrobiological gambling community, the odds have changed, perhaps dramatically, following the announcement of a newly discovered exoplanet orbiting a red dwarf star some 39 light years from Earth.

News of the planet, described as a “rocky super-earth” and dubbed LHS 1140b, is revealed in Nature, and is the result of research by a large team led by Jason Dittmann of the Harvard Smithsonian Centre for Astrophysics in Massachusetts, US.

(<https://cosmosmagazine.com>)



# SCHOOLS IN ACTION



Hisar School, Istanbul

KIKO, OPYRO...Oh what are these you ask? They are the names of the possible life-forms seen on different Exo-planets found by these lovely students. I have to admit they looked cute but I am still afraid of them :)



High School of Mathematics, Varna

Big round of applause goes to these students for creating awesome Solar System Vacation adds and actually using technology to convey their ideas.



Ataehir Do a College, Istanbul

It's not everyday that you get to see 20 Astronauts together in a single room. Of course I took a picture! By the way, the mission patches were enviably crafted. Now let's see if we are ready to modify some space toys!



FMV I ik School, Istanbul

A deep space mission which will last one full year is not an issue for these students as they are well prepared with their space station designs and details. Mission approved!

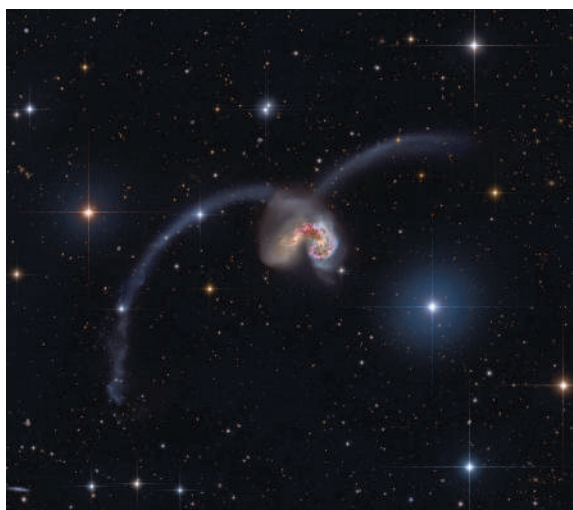


ODTÜ, Ankara

Yane Sandanski, Plovdiv

We got to check out some different Solar System Vacation projects before we continued with a presentation on Living and Working in Space. Both schools did a great job answering the questions regarding our new topic.

## Astronomy Picture of the Day



Exploring the Antennae

**Explanation:** Some 60 million light-years away in the southerly constellation Corvus, two large galaxies are colliding. Stars in the two galaxies, cataloged as NGC 4038 and NGC 4039, very rarely collide in the course of the ponderous cataclysm that lasts for hundreds of millions of years. But the galaxies' large clouds of molecular gas and dust often do, triggering furious episodes of star formation near the center of the cosmic wreckage. Spanning over 500 thousand light-years, this stunning view also reveals new star clusters and matter flung far from the scene of the accident by gravitational tidal forces. The remarkable mosaicked image was constructed using data from the ground-based Subaru telescope to bring out large-scale and faint tidal streams, and Hubble Space Telescope data of extreme detail in the bright cores. The suggestive visual appearance of the extended arcing structures gives the galaxy pair its popular name - The Antennae.