

Hello Loyal Follower,

This past year we had some amazing space news to share via Astro and we hope that all the brief space news you received during the year, inspired you to start a journey within the universe and explore the unseen! New space missions are slowly coming to light and it is not hard to see it will be another amazing year for our Space History.

Let us celebrate this exciting, colorful, and magical New Year with a great big smile.

Wishing everyone a year full of happiness and prosperity.

-GFTSE Team



SPACE NEWS IN A FLASH

- 8th Alien Planet Found Around Distant Star
- Astronauts in Trouble Will Be Able To Press The "TAKE ME HOME" Button
- Oldest Monster Black Hole Ever Found Is 800 Million Times More Massive Than the Sun
- No Alien 'Signals' From Cigar-Shaped Asteroid
- Thirsty Rocks May Contain The Missing Water of Mars
- Meteors Explode From The Inside When They Reach The Atmosphere
- Discovery of Neutron Star Collision is 'Breakthrough' of 2017

*Nothing exists except atoms
and empty space; everything
else is opinion.*

- Democritus

8th Alien Planet Found Around Distant Star

Our solar system is not alone atop the planet-harboring heap anymore.

Scientists have discovered another world orbiting the star Kepler-90, bringing that system's tally of confirmed planets to eight — the same number as in Earth's solar system.

That's one more than the previous extrasolar record, which had been held jointly by Kepler-90 and the TRAPPIST-1 system.

The research team found the new planet, known as Kepler-90i — as well as another world in a different system — after analyzing archival data from NASA's Kepler mission using Google machine-learning techniques.



The Kepler space telescope launched in March 2009. During its four-year original mission, the spacecraft scanned 150,000 stars continuously, searching for the tiny brightness dips caused by planets crossing the stars' faces. In 2014, Kepler shifted to a second mission known as K2, during which it hunts for exoplanets on a more limited basis but also makes a variety of other observations.

This planet-hunting work has been incredibly successful. To date, Kepler has discovered more than 2,500 confirmed alien worlds — about two-thirds of all known planets beyond our solar system — as well as more than 2,000 "candidates" that await confirmation by follow-up observations or analysis.

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

Astronauts in Trouble Will Be Able To Press The “TAKE ME HOME” Button

A Massachusetts-based non-profit research and development company, is designing a new spacesuit with support from NASA. In addition to gyroscopes, autonomous systems and other cutting-edge technology, this next-generation spacesuit will feature a “Take Me Home” button that will remove a lot of the confusion and guesswork from spacewalks.

Such a system presents multiple challenges, not the least of which has to do with Global Positioning Systems (GPS), which are simply not available in space. The system also has to compute an optimal return trajectory that accounts for time, oxygen consumption, safety and clearance requirements.

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

Oldest Monster Black Hole Ever Found Is 800 Million Times More Massive Than the Sun

Astronomers have discovered the oldest supermassive black hole ever found — a behemoth that grew to 800 million times the mass of the sun when the universe was just 5 percent of its current age, a new study finds.

This newfound giant black hole, which formed just 690 million years after the Big Bang, could one day help shed light on a number of cosmic mysteries, such as how black holes could have reached gargantuan sizes quickly after the Big Bang and how the universe got cleared of the murky fog that once filled the entire cosmos, the researchers said in the new study.

Supermassive black holes are thought to lurk at the hearts of most, if not all, galaxies.

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

No Alien 'Signals' From Cigar-Shaped Asteroid

No alien signals have been detected from an interstellar, cigar-shaped space rock discovered travelling through our Solar System in October, researchers listening for evidence of extraterrestrial technology said.

The object, dubbed Oumuamua, was spotted by several Earthly telescopes two months ago.

Given its weird trajectory, surprised researchers immediately concluded it was from beyond our planetary system -- the first interstellar object ever identified in our midst.

The rock is thought to be about 400 metres (1,300 feet) long, and thin -- only about 40 m wide, a never-before-seen shape for an asteroid.

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

Thirsty Rocks May Contain The Missing Water of Mars

What happened to all the water that once sloshed in lakes and oceans on Mars? Much of it, researchers proposed, may be locked up in stone.

Previous studies had concluded that the water was swept into space by powerful solar winds when the planet's magnetic field collapsed, while some was captured in sub-surface ice.

But this did not account for all the missing water.

To try to track down the rest, an international team of researchers put scientific modelling to the test.

As on Earth, chemical weathering and hydrothermal reactions can change minerals in rock from dry to water-bearing. But Martian rock, because of a different composition, is much better at doing so.

On an infant Earth, water-bearing rocks formed in a similar way would have floated on the planet's super-hot surface until they melted, releasing water back to the surface as they did.

(<https://www.marsdaily.com>)



Meteors Explode From The Inside When They Reach The Atmosphere

In the past, researchers have understood that meteoroids often explode before reaching the surface, but they were at a loss when it came to explaining why. A study team at Purdue University used the Chelyabinsk meteoroid as a case study to determine exactly how meteoroids break up when they hit our atmosphere.

While the meteoroid itself weighed over 9000 metric tonnes, only about 1800 metric tonnes of debris was ever recovered.

The study team began considering how high-air pressure in front of a meteor would seep into its pores and cracks, pushing the body of the meteor apart and causing it to explode.

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



Discovery of Neutron Star Collision is 'Breakthrough' of 2017

The world's first-ever detection of two faraway neutron stars colliding, causing a massive blast that rippled through the fabric of space and time, was judged the scientific breakthrough of 2017, the journal Science said.

The smashup of the two ultra-dense stars observed on August 17 "confirmed several key astrophysical models, revealed a birthplace of many heavy elements, and tested the general theory of relativity as never before," said the report.

The blast, which occurred 130 million light-years away, is the kind of event that produces as much as half of the universe's gold, platinum, uranium and mercury, experts said.

(<http://phys.org>)

SCHOOLS IN ACTION

As the title suggests, schools were in action all month long and came up with some functional space toy ideas as well as Deep Space Station designs. Not only did the students have a clear understanding of their presentations but they also used models that they have built on their own to support their projects. Thank You!



Dö emealtı Bahçe ehir College, Antalya



STEK Bilge Ka an, stanbul



Fen Bilimleri Schools, Kırklareli



STEK Mavi ehir, zmir



FMV I ık Middle School, stanbul



Rota College, zmir



Maltepe Yönder College, stanbul



TK Büyükçi li Campus, zmir



Ekin College, zmir

Astronomy Picture of the Day



Unexpected X-Rays from Perseus Galaxy Cluster

Explanation: Why does the Perseus galaxy cluster shine so strangely in one specific color of X-rays? No one is sure, but a much-debated hypothesis holds that these X-rays are a clue to the long-sought identity of dark matter. At the center of this mystery is a 3.5 Kilo-electronvolt (KeV) X-ray color that appears to glow excessively only when regions well outside the cluster center are observed, whereas the area directly surrounding a likely central supermassive black hole is actually deficient in 3.5 KeV X-rays. One proposed resolution is that something never seen before might be present: florescent dark matter (FDM). This form of particle dark matter might be able to absorb 3.5 KeV X-radiation. If operating, FDM, after absorption, might later emit these X-rays from all over the cluster, creating an emission line. However, when seen superposed in front of the central region surrounding the black hole, FDM's absorption would be more prominent, creating an absorption line. Pictured, a composite image of the Perseus galaxy cluster shows visible and radio light in red, and X-ray light from the Earth-orbiting Chandra Observatory in blue.