GLOBAL FRIENDSHIP
THROUGH SPACE EDUCATION

# ASTRO NEWSLETTER

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Hello Curious Human,

We had a busy month with lots of space news as usual. But the biggest news is that Seven Earth-size alien planets were found in a solar system not that far away. NASA announced this week that seven Earth-size planets have been discovered around a nearby star called TRAPPIST-1. Three of these planets lie in the star's "habitable zone," where liquid water and thus life as we know it might exist. But all seven could potentially be habitable with the right atmospheric conditions. Exciting indeed. Could 2017 be the year we FINALLY find Alien life? We shall see...

All the schools are back in action after the semester break and some awesome projects are already heading our way. Check out the school photos and see for yourself!

## SPACE NEWS IN A FLASH

- Seven Earth-Like Planets Discovered Around Single Star

- NASA Releases First Results From 'Year In Space' Twin Study

- Challenger Soccer Ball Finally Gets To Orbit

- Spaceflight Changes The Shape Of Astronauts' Brains

- NASA Is Thinking About Putting Astronauts On The First Flight Of SLS

- India Launches 104 Satellites On A Single Rocket

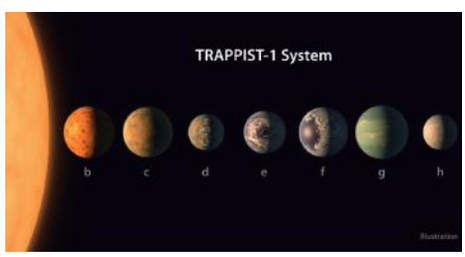
- A New Website Lets Public Search For New Nearby Worlds

*The sky is the ultimate art gallery just above us.*
*- Ralph Waldo Emerson*

## Seven Earth-Like Planets Discovered Around Single Star

Researchers announced Wednesday the stunning discovery of seven Earth-like planets orbiting a small star in our galaxy, opening up the most promising hunting ground so far for life beyond the Solar System.

All seven roughly match the size and mass of our own planet and are almost certainly rocky, and three are perfectly perched to harbour life-nurturing oceans of water, they reported in the journal Nature.




Most critically, their proximity to Earth and the dimness of their red dwarf star, called Trappist-1, will allow astronomers to parse each one's atmosphere in search of chemical signatures of biological activity.

The Trappist-1 system, a mere 39 light years distant, has the largest number of Earth-sized planets known to orbit a single star.

It also has the most within the so-called "temperate zone" -- not so hot that water evaporates, nor so cold that it freezes rock-solid.

The discovery adds to growing evidence that our home galaxy, the Milky Way, may be populated with tens of billions of worlds not unlike our own -- far more than previously suspected.

The dwarf star and its seven satellites -- with orbits ranging from 1.5 to 12 days -- would all fit comfortably in the distance between the Sun and its closest planet, Mercury.

(http://www.spacedaily.com)

## NASA Releases First Results From ‘Year In Space’ Twin Study

The first results from NASA’s Year in Space brothers are in, and show glimpses of how stressful a trip to Mars could be for the human body.

The data show that the Kelly twins had noticeable differences in gene expression signatures. Gene expression is how information from a gene is copied and used to support cell functions, like producing insulin.

Other results showed that DNA methylation decreased in Scott and increased in Mark. Think of DNA methylation like putting a spoiler on a fast car: it’s still a car, but it drives a little differently. Methylation can influence bodily processes such as neural development, aging and carcinogenesis.

(http://www.pbs.org)

## India Launches 104 Satellites On A Single Rocket

India set a record with the launch of 104 satellites on a single rocket.

The Polar Satellite Launch Vehicle lifted off on schedule from the Satish Dhawan Space Center with its payload of 104 satellites, all but three of which were cubesats.

All the satellites were successfully deployed into sun-synchronous orbit.

The rocket’s primary payload was an Indian remote sensing satellite, Cartosat-2D. Among the rest, 88 were cubesats for Planet and eight were cubesats for Spire.

(http://www.spacenews.com)

## Spaceflight Changes The Shape Of Astronauts' Brains

It appears that spaceflight really goes to astronauts' heads.

Doctors and scientists have long known that exposure to a weightless environment causes muscles to atrophy, bones to weaken and vision to deteriorate, among other effects. Now, a new study has determined that spaceflight also causes some parts of the brain to expand and others to contract.

Study principal investigator Rachael Seidler and her team studied magnetic resonance imaging (MRI) scans of 26 astronauts — 12 who flew on two-week-long space shuttle missions, and 14 others who lived aboard the International Space Station (ISS) for five to six months.

(http://www.space.com)

## Challenger Soccer Ball Finally Gets To Orbit

Ellison Onizuka was one of the Challenger seven who perished on January 28, 1986, when the shuttle exploded 73 seconds into its flight. His daughter gave Ellison a soccer ball to take into space with him. Almost unbelievably, the soccer ball was recovered among the wreckage after the crash.

With the help of NASA astronaut Shane Kimbrough, the soccer ball got a second chance to make it into space. This tribute is touching for its simplicity, and is somehow more powerful than other tributes made with fanfare and speeches.

(https://www.universetoday.com)

## NASA Is Thinking About Putting Astronauts On The First Flight Of SLS

NASA is mulling over the idea of putting astronauts on the first flight of the Space Launch System (SLS) — the giant heavy-lift rocket the space agency is building to take people to Mars someday. Currently, NASA is hoping to fly the SLS for the first time in fall of 2018, and the original plan was for that mission to be uncrewed. But a new memo sent out to NASA employees shows that the agency will start investigating the possibility of making the debut flight of SLS, called EM-1, a crewed mission instead.

The current plan for EM-1 is to launch the SLS from Kennedy Space Center on September 30th, 2018. The vehicle is supposed to carry NASA’s Orion crew capsule —without a crew — into an orbit around the Moon. Orion will spend a total of three weeks in space before coming back and landing on Earth with the aid of parachutes.

(http://www.theverge.com)

## A New Website Lets Public Search For New Nearby Worlds

NASA is inviting the public to help search for possible undiscovered worlds in the outer reaches of our solar system and in neighboring interstellar space. A new website, called **Backyard Worlds: Planet 9**, lets everyone participate in the search by viewing brief movies made from images captured by NASA's Wide-field Infrared Survey Explorer (WISE) mission. The movies highlight objects that have gradually moved across the sky.

The new website uses the data to search for unknown objects in and beyond our own solar system. In 2016, astronomers at Caltech in Pasadena, California, showed that several distant solar system objects possessed orbital features indicating they were affected by the gravity of an as-yet-undetected planet, which the researchers nicknamed "Planet Nine." If Planet Nine exists and is as bright as some predictions, it could show up in WISE data.

(http://phys.org)

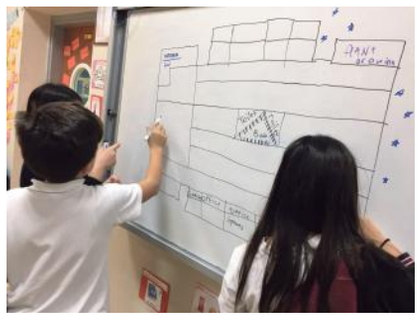
# SCHOOLS IN ACTION


**ITK Büyükçiğli, Izmir**

We still have a long way to go until summer, but in the meanwhile we got to check out the "hot" vacation project organized by these wonderful students. Spa centers, museums, and much more included. It was a bit expensive so I had to bargain :)

**TED College, Malatya**

After the "Galaxy Tour" project presentation, we were convinced this was a solid plan that was laid out very well. Also, the joy and happiness at the end was well worth seeing!



**Hisar School, Istanbul**

Ever wondered how the future International Space Station might look like? Well, thanks to these students I was lucky enough to see a design that was so flawless. The brainstorming process paid off very well.

**FMV Işık School, Istanbul**

Always a pleasure to see my favourite planet and its rings involved in some different activities. The concept and the entertainment ideas were great. We all know vacation equals fun, so thanks again for focusing on that part :)

**Ataşehir Doğa College, Istanbul**

These lovely students were in a race to answer all the questions during the presentation. May their energy be everlasting. I'm sure we will all see some great mission patch designs posted here, in our next issue.

**School4Child, Łódź**

**Kemerburgaz Doğa College, Istanbul**

Our long time partner schools are once again active and sharing their projects with each other. May this lead to long-lasting friendships. Lets not forget about the exciting mission patch designs they got to show us.

## Astronomy Picture of the Day

A White Oval Cloud on Jupiter from Juno

**Explanation:** This storm cloud on Jupiter is almost as large as the Earth. Known as a white oval, the swirling cloud is a high pressure system equivalent to an Earthly anticyclone. The cloud is one of a "string of pearls" ovals south of Jupiter's famous Great Red Spot. Possibly, the Great Red Spot is just a really large white oval than turned red. Surrounding clouds show interesting turbulence as they flow around and past the oval. The featured image was captured on February 2 as NASA's robotic spacecraft Juno made a new pass just above the cloud tops of the Jovian world. Over the next few years, Juno will continue to orbit and probe Jupiter, determine atmospheric water abundance, and attempt to determine if Jupiter has a solid surface beneath its thick clouds.