GLOBAL FRIENDSHIP
THROUGH SPACE EDUCATION

ASTRO NEWSLETTER

Volume 10, Issue 6 APRIL 1, 2017

Hello Explorer,

Here we are with the brand new issue of Astro, full of fresh space news and school photos. New mission to the Sun, a wheel breaks on Mars, potatoes growing on Mars and much more awaits you. After a month full of videoconferences, we broke our monthly videoconference record!

We would like to take this opportunity to wish Lara Küçükyumuk from Hisar School a speedy recovery. She couldn't be with her classmates to present the "Humans to Mars" presentation but her friends did their best to deliver their ideas and the details of the project. Get well soon Lara!

SPACE NEWS IN A FLASH

Space travel for everyone is the next frontier in the human experience.

- Buzz Aldrin

Could A Spacecraft Fly To The Sun?

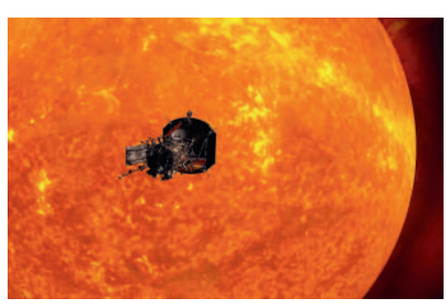
Humans have sent spacecraft to the Moon, Mars and even distant interstellar space, but could we send a spaceship to the scorching sun?

The answer is YES, and it's happening soon.

In 2018, NASA plans to launch the Solar Probe Plus mission to the sun. Earth is about 149 million kilometers from the sun, and Solar Probe Plus is slated to get within 6 million kilometers of the blazing star.

"This is going to be our first mission to fly to the sun," said Eric Christian, a NASA research scientist at Goddard Space Flight Center. "We can't get to the very surface of the sun," but the mission will get close enough to answer three important questions, he said.

First, the mission aims to reveal why the surface of the sun, called the photosphere, is not as hot as the sun's atmosphere, called the corona. The surface of the sun is only about 5,500 degrees Celsius. But the atmosphere above it is a sizzling 2 million C, according to NASA.



Second, scientists want to know how the solar wind gets its speed. The sun blows a stream of charged particles in all directions at a million miles an hour but we don't understand how that gets accelerated.

Third, the mission may ascertain why the sun occasionally emits high-energy particles that are a danger to unprotected astronauts and spacecraft.

(http://www.space.com)

Space Station To Host Coldest Spot In The Universe

The International Space Station (ISS) will soon host the coldest spot in the entire universe, if everything goes according to plan.

This August, NASA plans to launch to the ISS an experiment that will freeze atoms to only 1 billionth of a degree above absolute zero — more than 100 million times colder than the far reaches of deep space, agency officials said.

The instrument suite, which is about the size of an ice chest, is called the Cold Atom Laboratory (CAL). It consists of lasers, a vacuum chamber and an electromagnetic "knife" that together will slow down gas particles until they are almost motionless.

(http://www.livescience.com)

Indicators Show Potatoes Can Grow On Mars

The International Potato Center (CIP) launched a series of experiments to discover if potatoes can grow under Mars atmospheric conditions and thereby prove they are also able to grow in extreme climates on Earth.

The Potatoes on Mars project was conceived by CIP to both understand how potatoes might grow in Mars conditions and also see how they survive in the extreme conditions similar to what parts of the world already suffering from climate change and weather shocks are already experiencing.

From the initial experiment, CIP scientists concluded that future Mars missions will have to prepare soil with a loose structure and nutrients.

(http://phys.org)

Space Tourism And Business Looking Up

It was a surprising announcement: SpaceX, a private company, said it will fly two people to the moon next year. This has not been attempted since NASA's Apollo moon landings about 45 years ago. The news came from SpaceX founder and chief executive officer, Elon Musk. He is a billionaire who made his money from technology. In a news conference, he said two people have already paid SpaceX a "significant" amount of money to send them on a weeklong flight just beyond the moon and back.

(http://www.spacedaily.com)

Will Pluto Be Considered A Planet Again?

Johns Hopkins University scientist Kirby Runyon wants to make one thing clear: Regardless of what one prestigious scientific organization says to the contrary, Pluto is a planet. So is Europa, commonly known as a moon of Jupiter, and the Earth's moon, and more than 100 other celestial bodies in our solar system that are denied this status under a prevailing definition of "planet."

The definition approved by the International Astronomical Union in 2006 demoted Pluto to "non-planet," thus dropping the number of planets in our solar system from nine to eight. The change—a subject of much scientific debate—made no sense, says Runyon, lead author of a short paper making the pro-Pluto argument that will be presented next week at a scientific conference in Texas.

(https://phys.org)

Breaks Found In Curiosity Mars Rover's Wheel

NASA's Curiosity Mars rover is learning a hard lesson of Red Planet road trips: If you drive long enough, you'll wear out your wheels.

That seems to be what's happening to one of Curiosity's six battered aluminum wheels. A recent photo check of the rover's left middle wheel revealed two small breaks, NASA officials said Tuesday (March 21). But the rover can still drive on the Martian surface, they added.

The breaks were spotted in the wheel's raised treads on Sunday (March 19), after photos from Curiosity were compared to similar ones from a previous wheel check on Jan. 27. Wheel damage is nothing new for Curiosity. But the two broken treads are the first sign of deeper wear on the affected wheel.

(http://www.space.com)

NASA Taking First Steps Toward High-Speed Space 'Internet'

NASA is developing a trailblazing, long-term technology demonstration of what could become the high-speed internet of the sky.

The Laser Communications Relay Demonstration (LCRD) will help NASA understand the best ways to operate laser communications systems.

Laser communications, also known as optical communications, encodes data onto a beam of light, which is then transmitted between spacecraft and eventually to Earth terminals. This technology offers data rates that are 10 to 100 times better than current RF communications systems. Laser communication systems can be much smaller than radio systems, allowing the spacecraft communication systems to have lower size, weight and power requirements. Such capability will become critically important as humans embark on long journeys to the moon, Mars and beyond.

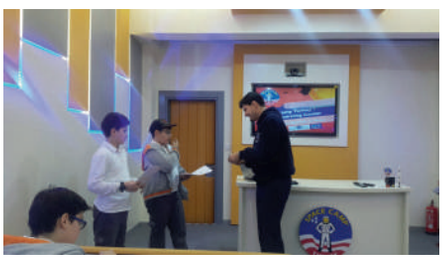
(http://phys.org)

SCHOOLS IN ACTION

Çekmeköy Final School, Istanbul

Hisar School, Istanbul

Final School, Malatya



Rota College, Izmir

İsmail Kaymak School, Çanakkale

Turk College, Izmir
Alyward Academy, London

Final School, Samsun

High School of Mathematics, Varna

Uğur School, Izmir

Astronomy Picture of the Day

Saturn in Infrared from Cassini

Explanation: Many details of Saturn appear clearly in infrared light. Bands of clouds show great structure, including long stretching storms. Also quite striking in infrared is the unusual hexagonal cloud pattern surrounding Saturn's North Pole. Each side of the dark hexagon spans roughly the width of our Earth. The hexagon's existence was not predicted, and its origin and likely stability remains a topic of research. Saturn's famous rings circle the planet and cast shadows below the equator. The featured image was taken by the robotic Cassini spacecraft in 2014 in several infrared colors -- but only processed recently. In September, Cassini's mission will be brought to a dramatic conclusion as the spacecraft will be directed to dive into ringed giant.