PLANETARIUM
THE UNIVERSITY OF TEXAS AT ARLINGTON

The Starry Messenger

June 2015

In This Issue

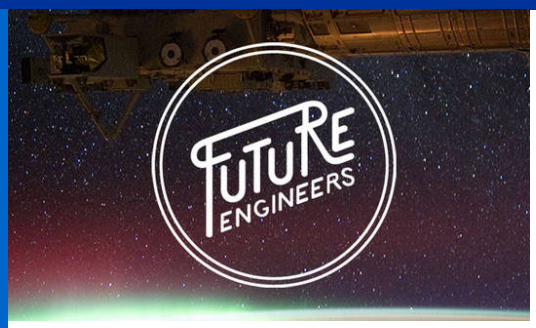
The Planetarium at UT Arlington

The Planetarium offers live stargazing and prerecorded programs to the public, school groups, and UT Arlington students all year round.

Using state-of-the-art technology and a 60-ft. dome screen, the Planetarium is an immersive space theater facility with endless capabilities.

Public show pricing

Adults	$6.00
Seniors	$4.00
Children	$4.00
Students	$4.00
UTA Students	$3.00
Children 0-2	Free



NASA Challenges Students to Design 3-D Space Containers

Calling all students! NASA needs your help to design containers that could be used in space. The 3-D Space Container Challenge is the second in series of Future Engineers Challenges where students in grades K-12 will create and submit a digital 3-D model of a container that they think astronauts could use in space.

On the International Space Station everything needs to be neatly stored or tied down, otherwise it will float away. That's why astronauts have containers for everything – spare parts, trash, food – containers for all! But that's just the start. Astronauts will need to collect all sorts of stuff on missions to an asteroid, Mars or other deep space destinations.

Students age 5-19 years old are invited to become the creators and innovators of tomorrow by using 3-D modeling software to submit their designs for containers that could be used by astronauts on future space missions. Students have the opportunity to win prizes ranging from 3-D printing gift cards, a 3-D printer for their school, a one-week scholarship to Space Camp or a tour of the space shuttle Endeavor with an astronaut in Los Angeles. The challenge closes on August 2, 2015 with winners announced on October 7, 2015.

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Source: http://www.nasa.gov/feature/nasa-challenges-students-to-design-3-d-space-containers

Slowing Earth Rotation Necessitates June Leap Second

Contact Us

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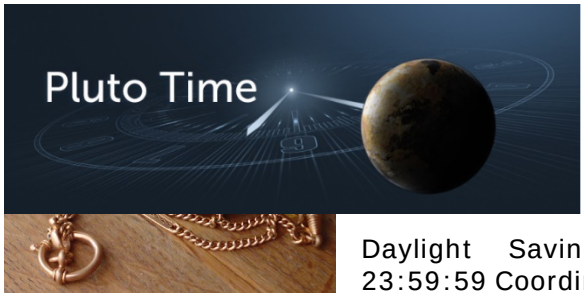
Featured Public Show

Texas Stargazing

Sit back and watch the night unwind in a live star talk. Discover the rings of Saturn, the Milkway galaxy and the constellations in the night sky in this fun tour of Arlington's skies. Have a favorite constellation? Let the educator know!

Plays for public:

Saturdays 2:00PM



In June, our clocks will slow down by a second, to match the slowing of the rotation rate of the Earth. At 7:59:59 p.m. Eastern Daylight Saving Time (EDT) / 23:59:59 Coordinated Universal Time (UTC) on Tuesday Evening, 2015 June 30, an additional second will be added to the civil time scale just before the month of July officially begins according to Coordinated Universal Time, the international time scale used by many scientists.

Known as a “Leap Second,” one second is added to the time scale, periodically, either at the very end of June or the very end of December. Since the first Leap Second was added in 1972, 25 Leap Seconds have been added, the last one in June of 2012.

Leap Seconds have been added, periodically, to respond to the continual slowing of the rotation rate of the Earth. Tidal forces from the Moon (and to a lesser extent, the Sun), in addition to the well-known ocean tides, also work to slow the Earth's rotation rate. Geologic conditions that change the distribution of the Earth's mass, such as the movement of the Earth's crust relative to its core, are a contributing factor to slowing of the rotation rate.

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Source: http://spacewatchtower.blogspot.com/2015/01/slowing-of-rotation-rate-necessitates.html

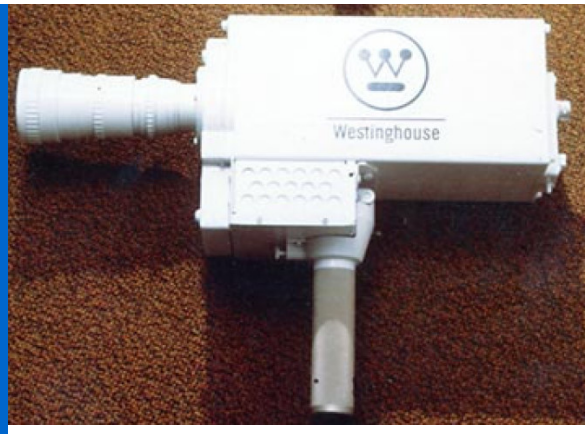
Share Your Pluto Time Photos

Pluto orbits on the fringes of our solar system, billions of miles away. Sunlight is much weaker there than it is here on Earth, yet it isn't completely dark. In fact, for just a moment near dawn and dusk each day, the illumination on Earth matches that of noon on Pluto.

We call this *Pluto Time*. If you go outside at this time on a clear day, the world around you will be as bright as the surface of Pluto at noon.

It's always Pluto Time somewhere, and NASA wants to see your view. Take a picture during your local Pluto Time, and share it to social media with the tag #PlutoTime. We'll highlight some of the most interesting shots from around the world.

NASA's New Horizons is en route to becoming the first spacecraft to make a close encounter with Pluto. After the historic flyby on 14 July 2015, we'll combine your photos into a mosaic image of Pluto and its moons.



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Source: http://solarsystem.nasa.gov/plutotime/

Apollo 12 Color TV Camera Developer Dies at 89

James W. H. Justice, who developed and designed the circuitry for the first *color* television camera used in space and on the Moon, passed away on May 13 of cancer at age 89.

Mr. Justice was the second Westinghouse Electric Company engineer, who developed television technology for NASA's Project Apollo, to die within the last three months. Physicist Ernest Sternglass, who was instrumental in development of the television camera (black-and-white camera) which showed the first astronauts walking on the Moon during the Apollo 11 mission, died at age 91 on February 12.

The color television camera developed by Mr. Justice was first used in the Command Module during the Apollo 10 mission, the Moon landing “dress rehearsal” when the astronauts did everything except land on the Moon. During this mission, the Lunar Excursion Module (LEM) separated from the Command Module, while in lunar orbit, and came within 8.4 nautical miles / 15.6 kilometers of the lunar surface.

Apollo 12 was the first mission when this Westinghouse color television camera was used on the lunar surface. The camera worked well until there was an accident. About 42 minutes into the first Extra Vehicular Activity (EVA) on the Moon's surface by astronauts Alan Bean and Pete Conrad, Alan Bean inadvertently pointed the camera at the Sun, while preparing to place the camera on a tripod. The extreme brightness of the Sun burned out the video pick-up tube, rendering the camera unusable. When the camera was returned to Westinghouse's research labs in Pittsburgh, scientists were able to get an image on the section of the tube that had not been damaged. NASA instituted revised procedures, including the addition of a lens cap, to ensure this incident would not be repeated.

The Westinghouse color television camera was successfully used on the Moon during the Apollo 14 mission, although the camera's automatic gain control (AGC) led to problems of proper exposure during high contrast light situations. For the remainder of Project Apollo, the Westinghouse camera was used only in the Command Module, while a newer RCA color television camera was used during moonwalks. The Westinghouse camera was also used throughout the 1970s during all three Skylab missions, as well as the Apollo—Soyuz Test Project.

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Source: http://spacewatchtower.blogspot.com/2015/05/apollo-12-color-tv-camera-developer.html