

Interesting Sites for Science

Astrophysics

The trip of your life

What would it be like to fly through the universe? Possibly the best simulated video of this yet has been composed from recently-released galaxy data from the Sloan Digital Sky Survey. Every spot in the video is a galaxy containing billions of stars.

<http://apod.nasa.gov/apod/ap120813.html>

Magnificent CME Erupts on the Sun

On August 31, 2012 a long filament of solar material that had been hovering in the sun's atmosphere, the corona, erupted out into space at 4:36 p.m. EDT. The coronal mass ejection, or CME, traveled at over 900 miles per second. The CME did not travel directly toward Earth, but did connect with Earth's magnetic environment, or magnetosphere, causing aurora to appear on the night of Monday, September 3.

<http://www.flickr.com/photos/gsfsc/7936905134/in/photostream>

We're NASA and We Know It

Science and rap. But the kids do like it.

<http://www.youtube.com/watch?v=QFvNhsWMU0c>

The Known Universe

What would it look like to travel across the known universe? To help humanity visualize this, the American Museum of Natural History has produced a modern movie featuring many visual highlights of such a trip. The video starts in Earth's Himalayan Mountains and then dramatically zooms out, showing the orbits of Earth's satellites, the Sun, the Solar System, the extent of humanities first radio signals, the Milky Way Galaxy, galaxies nearby, distant galaxies, and quasars. As the distant surface of the microwave background is finally reached, radiation is depicted that was emitted billions of light years away and less than one million years after the Big Bang. Frequently using the Digital Universe Atlas, every object in the video has been rendered to scale given the best scientific research in 2009, when the video was produced.

<http://apod.nasa.gov/apod/ap100120.html>

Curiosity's first look at Mars

On 5 August NASA successfully landed its rover, Curiosity, on Mars. Since landing, the rover has captured some striking images of the red planet. In this video, NASA scientists John Grotzinger and Joy Crisp talk about what we've seen so far, and what we might encounter when Curiosity drives towards Mount Sharp -- where we hope to find signs of water.

http://www.youtube.com/watch?v=3iKrn_CNZpo&feature=relmfu

Nocturnal: Scenes from the Southern Night

Have you ever seen the night sky change? It does -- sometimes in beautiful and unexpected ways. To see it, though, usually requires patience. The above award winning video shows several of the possible changes in dramatic fashion with a time lapse video. Visible are sunset-illuminated clouds moving, stars of vivid colors rising, the long tail of a Comet Lovejoy rising, bright satellites crossing, a meteor exploding, a distant lightning storm approaching, skylscapes including the Magellanic Clouds rotating, and a fisheye sky rotating while the foreground becomes illuminated by moonlight. Frequently featuring an artistic human sculpture in the foreground and the southern sky in the background, the video closes with a time lapse clip of a total lunar eclipse.

<http://apod.nasa.gov/apod/ap120806.html>

Some Comets Like It Hot

Astronomers are still scratching their heads over Comet Lovejoy, which plunged through the atmosphere of the sun in December and, against all odds, survived.

<http://www.youtube.com/watch?v=w75lBn1QIaI>

NASA's Voyager Prepped For Data Transmitting Through 2025

In order to reduce power consumption, mission managers have turned off a heater on part of NASA's Voyager 1 spacecraft.

http://www.nasa.gov/mission_pages/voyager/voyager20120117.html

Friendship 7: Celebrating 50 Years of American Spaceflight

<http://www.nasa.gov/externalflash/glenn50/>

Discovery and Atlantis Permanently Powered Down

Space shuttle Discovery was powered up hundreds of times during prelaunch processing over the course of 26 years of spaceflight. But Dec. 16, 2011 was different. That morning, technicians inside NASA Kennedy Space Center's orbiter processing facility powered the ship up -- and then down -- for the final time. Less than a week later, on Dec. 22, Atlantis followed.

http://www.nasa.gov/mission_pages/shuttle/flyout/powerdown.html

NASA video depicting global warming

http://www.climatecentral.org/videos/web_features/nasa-finds-2011-ninth-warmest-year-on-record

Last mission for the space shuttle Discovery

Here is a fantastic view of Discovery on the launch pad. Follow the instructions under the picture – watch Full-screen and move your mouse over the photo. Amazing!!

http://www.usatoday.com/tech/science/space/2010-11-03-space-shuttle_N.htm

Science (and more) to Music

This site offers many songs related to math, social studies, and science concepts. Science concepts include water & pollution, scientific inquiry, changes in matter, and much more. Math concepts range from order of operations to quadratic and exponential functions. After choosing a topic, you can listen to the song online, download the mp3, view lyrics, and possibly view an accompanying video.

<http://www.iamlodge.com/beans/>

Scale of the Universe II

If you have not seen this you will love it. Use the slider for "larger" and "smaller" and click the objects for a description of each.

<http://htwins.net/scale2/>

Milky Way Time Lapse Video

Some great time lapse videos of the night sky and the Milky Way

<http://dakotalapse.com/2011/02/sub-zero-winter-night-timelapse/>

<http://dakotalapse.com/2011/06/plains-milky-way/>

<http://dakotalapse.com/2012/02/temporal-distortion-2/>

<http://dakotalapse.com/2011/08/tempest-milky-way-2/>

Volcano from space

A very cool picture of the Sarychev Peak volcano eruption pictured from the International Space Station.

http://www.nasa.gov/images/content/626963main_volcano_XL.jpg

The most astounding fact in the Universe

The universe is in us according to Neil deGrasse Tyson.

<http://www.wimp.com/astoundingfact/>

The story behind the science

Thirty stories spanning five disciplines help students explore the development of key science concepts through the eyes of the scientists who were involved. Supplemental resources are provided for teachers to help achieve the greatest impact from the stories.

<http://www.storybehindthescience.org/>

Most Comprehensive Collection of NASA Images

NASAIMages.org is the most comprehensive compilation of NASA's new and historic imagery: photographs, film and video. Imagery can be explored, downloaded and embedded with new material being added on a regular basis.

<http://www.nasaimages.org>

We stopped dreaming

Neil deGrasse Tyson on the decline in science and NASA

<http://www.wimp.com/stoppeddreaming/>

'Lens' zooms in on distant galaxy

A natural "zoom lens" in space offers a uniquely close-up look at the brightest gravitationally magnified galaxy yet discovered.

<http://www.futurity.org/science-technology/lens-zooms-in-on-brightest-distant-galaxy/>

Voyager: Humanity's Farthest Journey

A 3 minute video on the Voyager spacecrafts and their achievements

<http://www.jpl.nasa.gov/video/index.cfm?id=980>

We Are the Explorers

Why do we explore? Simply put, it is part of who we are, and it is something we have done throughout our history. In NASA's new video, "We Are the Explorers," we take a look at that tradition of reaching for things just beyond our grasp and how it is helping us lay the foundation for our greatest journeys ahead.

http://www.nasa.gov/multimedia/videogallery/index.html?media_id=134209771

Reach for the Stars

Reach for the Stars ~ National Rocket Competition

Launches Collegiate Challenge

As an exciting addition to our 6th year, the Reach for the Stars ~ National Rocket Competition has added a new dimension - the Collegiate Challenge. Thanks to a generous grant from the Florida Space

Grant Consortium, nine Florida colleges and universities will be joining the competition and battling against each other for the first ever-college level only-win.

Funding is still available. Go to <http://www.TheRocketman.net> for detailed rules, regulations and application.

The collegiate level challenges competitors to redesign their rocket for maximum accuracy using computer simulation programs (like NASA's Rocket Modeler or Rock-Sim). Rocket length, diameter, fin shape, weight and parachute design are all variables in the challenge. The goal – land your rocket by parachute as close as possible to an on-field target.

Both the Florida state and the national winner will celebrate at the Kennedy Space Center Visitor Complex and the Astronaut Hall of Fame where they will receive trophies and launch their rockets.

A Sun Pillar

Sun pillars result from the reflection of sunlight off the bottom surfaces (or less frequently, the top surfaces) of plate-shaped ice crystals composing cirrus clouds. These crystals must be similarly oriented and slightly tipped with respect to the viewer in order for a pillar to be observed. The crimson shaft piercing the purple sky made this sunset unforgettable.

<http://epod.usra.edu/blog/2012/05/brilliant-sun-pillar-over-jenison-michigan.html>

Rubber Chicken Flies into Solar Storm

In a unusual twist on space science, students in California have launched a rubber chicken to the edge of space to study a solar storm.

http://science.nasa.gov/science-news/science-at-nasa/2012/19apr_camilla/

NASA's Voyager Prepped For Data Transmitting Through 2025

In order to reduce power consumption, mission managers have turned off a heater on part of NASA's Voyager 1 spacecraft.

http://www.nasa.gov/mission_pages/voyager/voyager20120117.html

Symphony of Science - The Greatest Show on Earth! - The Greatest Show on Earth!

A new Symphony of Science video featuring David Attenborough, Bill Nye, and Richard Dawkins.

<http://symphonyofscience.com/videos.html>

You can download all the audio tracks to the Symphony of Science videos for free at

<http://melodysheep.bandcamp.com/album/symphony-of-science-bundle-v11> . Just click the "Buy Now" button and enter 0.00 in the name your price box then click "checkout now". On the new page click "Download" and save the zip file to your computer.

The Unveiling

On its 100,000th orbit of planet Earth, the Hubble Space Telescope peered into a small portion of the Tarantula Nebula near the star cluster NGC 2074, unveiling its stellar nursery

http://www.nasa.gov/multimedia/imagegallery/image_feature_1149.html

Some Comets like it Hot

Comets are icy and fragile. They spend most of their time orbiting through the dark outskirts of the solar system safe from destructive rays of intense sunlight. The deepest cold is their natural habitat.

Last November amateur astronomer Terry Lovejoy discovered a different kind of comet. The icy fuzzball he spotted in the sky over his backyard observatory in Australia was heading almost directly for the sun. On Dec. 16th, less than three weeks after he found it, Comet Lovejoy would swoop through the sun's atmosphere only 120,000 km above the stellar surface.

http://science.nasa.gov/science-news/science-at-nasa/2012/12jan_cometlovejoy/

Moon Libration

The Moon generally has one hemisphere facing the Earth, due to tidal locking. Therefore, humans' first view of the far side of the Moon resulted from lunar exploration in the 1960s. However, this simple picture is only approximately true: over time, slightly more than half (about 59%) of the Moon's surface is seen from Earth due to libration.

Two time lapse movies show this:

<http://apod.nasa.gov/apod/ap051113.html>

<http://en.wikipedia.org/wiki/Libration>

International Space Station flies by the Moon

The remarkable images were taken in Houston on Wednesday evening as the station orbited 243 miles above the planet. The science complex is the brightest man-made object in the night sky.

<http://spaceflightnow.com/station/exp30/120105issmoon/>

Water Drops in Space

It is vital to life, and in space it is beautiful. Released from the rule of gravity on Earth, water lets its surface tension hang out. As the water molecules spread in a droplet they take up the maximum volume for a minimum of surface area, and form spheres. You can then prod and poke these beautiful, symmetric shapes and watch how they change: wonderful!.

<http://www.our-space.org/materials/states-of-matter/water-in-space>

Time-lapse of a whole night

Time-lapse of a whole night at the ALMA Array Operations Site (AOS), located at 5000 metres altitude on the Chajnantor plateau, in the II Region of Chile.

<http://www.eso.org/public/videos/alma4anttimelapse1/>

Astronomy Videos

Astronomy Videos ESO, the European Southern Observatory

<http://www.eso.org/public/videos/>

Discovery's flight deck 360 Deg panorama

Here is something worth the couple of minutes to view: a 360 panorama of the Discovery crew cabin flight deck. This is pretty cool---and maybe the last time we get to see it before it's stuffed and mounted at the Smithsonian! (George F. Gabrielle)

http://360vr.com/2011/06/22-discovery-flight-deck-opf_6236/index.html

The History of the Space Shuttle

There are 61 photos on this link and it takes a while for them to load. Well worth the wait.

<http://www.theatlantic.com/infocus/2011/07/the-history-of-the-space-shuttle/100097/>

First Planet in Habitable Zone of Sun-like Star

NASA's Kepler mission has confirmed its first planet in the "habitable zone," the region where liquid water could exist on a planet's surface. Kepler also has discovered more than 1,000 new planet candidates, nearly doubling its previously known count. Ten of these candidates are near-Earth-size and orbit in the habitable zone of their host star.

http://www.nasa.gov/mission_pages/kepler/news/kepicon-briefing.html

Apollo 17 Extravehicular Activity - 39 Years Ago Today

39 years ago, today, scientist-astronaut Harrison H. Schmitt is photographed standing next to a huge, split lunar boulder during the third Apollo 17 extravehicular activity (EVA) at the Taurus-Littrow landing site. The Lunar Roving Vehicle (LRV), which transported Schmitt and Eugene A. Cernan to this extravehicular station from their Lunar Module (LM), is seen in the background.

http://www.nasa.gov/multimedia/imagegallery/image_feature_2129.html

Planetary View

how the planets would look if they were the same distance as the moon

<http://www.dump.com/2011/12/05/planets-viewed-from-earth-as-if-they-were-at-the-distance-of-our-moon-video/>

Build Your Own Star

Use our star simulator to build your own star! You determine the fate of your star by setting initial characteristics. Then watch as its life story unfolds before your eyes. Here's your guide to the Build Your Own Star controls and displays. But first, a little background...

<http://www.planetseed.com/node/20127>

Earth | Time Lapse View from Space, Fly Over | NASA, ISS

Flyover of the Aurora Borealis

<http://vimeo.com/32001208>

The Gateway to Astronaut Photography of Earth

Besides hi-res photos, they also have HD videos

Main page: <http://eol.jsc.nasa.gov/>

The Earth's atmosphere layer is spectacular to view in the first video on the page(not to mention the thunderstorms).

Videos: <http://eol.jsc.nasa.gov/Videos/CrewEarthObservationsVideos/>

Curiosity

A great animation about the new Curiosity Mars rover.

<http://www.wimp.com/curiosityrover/>

Polaris

Here is a nice little flash interactive I found that helps students understand why Polaris doesn't move. It is made by U. of Chicago.

http://ecuip.lib.uchicago.edu/diglib/science/cultural_astronomy/interactives/polaris/polaris.swf

Mission: Science

Mission: Science is a NASA website that gives teens access to current NASA spacecraft data, allows them to conduct real experiments with NASA scientists, and helps them locate space-related summer internships. Mission: Science features social-networking tools; information about college research programs; and an array of NASA images, animation, videos, and podcasts.

<http://missionscience.nasa.gov/>

Baby Star Found on Earth's Doorstep

To see how our solar system arose, astronomers point their telescopes at young stars. But these stars are usually so far away, the view is murky. Now a stellar newborn has turned up on Earth's doorstep. Named AP Columbae, the star is so young it has yet to spark its main nuclear flame, and it's so nearby—a mere

27 light-years from Earth—that scientists might be able to glimpse the glow of orbiting planets still cooling off from their formation.

<http://news.sciencemag.org/sciencenow/2011/09/baby-star-found-on-earths-doorst.html?rss=1>

Science360 News

News from wherever science is happening, including directly from scientists, college and university press offices, popular and peer-reviewed journals, dozens of National Science Foundation science and engineering centers, and funding sources that include government agencies, not-for-profit organizations and private industry.

You can subscribe to a daily email blast for a one-stop shop source of science news.

<http://news.science360.gov/files/>

The Scale of the Universe

A visual graphic which uses a scroll bar to progress in scale from quantum foam up to universe expansion. It helps a person understand the true size of the universe while showing where things as large as galaxies and as small as wavelengths belong in relation to size.

<http://www.newgrounds.com/portal/view/525347>

The Life Cycle of a Star

Stars are a fascinating component of our universe. They may seem like permanent objects in the sky, but technology has allowed us to photograph the heavens, and now we know more about stars than ever before. They are born, they live, and then they die. How does this happen?

http://sunshine.chpc.utah.edu/labs/star_life/starlife_main.html

Free Science Videos

Over 600 Free Science Videos (Biology, Chemistry, Physics) from Brightstorm Science. Science help with teachers explaining concepts and sample problems.

<http://www.brightstorm.com/science/>

Finding Your Science

Finding Your Science is a National Science Foundation video series that's all about science passion, perspective, and inspiration.

<http://science360.gov/series/Finding+Your+Science/721b999b-1b3f-485a-aa29-4640e66f3fe0>

The Aurora Borealis

An excellent 4.5 minute video that explains what causes the aurora.

<http://vimeo.com/25811412>

Atlantis

Awe inspiring video from the final Atlantis mission. Great slow motion. If you capture the video (like I did with realplayer) it is a large mp4 file which used to make a DVD to play on my large screen television.

<http://wimp.com/atlantismission/>

Aurora video from ISS

A video shot from the International Space station of the aurora borealis.

<http://spaceweather.com/swpod2011/22sep11/media.mp4?PHPSESSID=v1htcg60fm1tbnrh3jre117rt5>

What does it feel like to fly over planet Earth?

A time-lapse taken from the front of the International Space Station as it orbits our planet at night. This movie begins over the Pacific Ocean and continues over North and South America before entering daylight near Antarctica. Visible cities, countries and landmarks include (in order) Vancouver Island, Victoria, Vancouver, Seattle, Portland, San Francisco, Los Angeles. Phoenix. Multiple cities in Texas, New Mexico and Mexico. Mexico City, the Gulf of Mexico, the Yucatan Peninsula, El Salvador, Lightning in the Pacific Ocean, Guatemala, Panama, Columbia, Ecuador, Peru, Chile, Lake Titicaca, and the Amazon.

http://www.youtube.com/watch?v=74mhQyuyELQ&feature=player_embedded

The Swan Glowing in Flight

Best known as a swan winging its way across the night, the constellation Cygnus is easily seen in the northern hemisphere's summertime sky. This new view of the Cygnus-X star-forming region by the Herschel Telescope highlights chaotic networks of dust and gas that point to sites of massive star formation.

http://www.nasa.gov/multimedia/imagegallery/image_feature_2248.html
