Science Information for Teachers [sift@CPET.ufl.edu]

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Science Information for Teachers 1~15~2012

Astronomy Videos

Astronomy Videos ESO, the European Southern Observatory

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

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/

Thunderstruck – Tornados set to Music by AC/DC

A video compilation of storm chasing in the central plains by students from the University of Oklahoma

http://www.youtube.com/watch?v=doAo55QVFEU&feature=results_video&playnext=1&list=PLD16FB9CD18EC4FF4

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

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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/

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

Neuroscience Gallery

This is a collection of neuroscience-related imagery found on the web. All of these images originate from publically accessible websites. Includes animations.

http://www.conncad.com/gallery/animated.html

Hybrid Silkworms Spin Stronger Spider Silk

Research was published this week showing that silk produced by transgenically-engineered silkworms exhibits the highly sought-after strength and elasticity of spider silk. This stronger silk could possibly be used to make sutures, artificial limbs and parachutes

http://newsinfo.nd.edu/news/28161-hybrid-silkworms-spin-stronger-spider-silk/

The not-so-naked ape

Human body hair, once thought to be an evolutionary relic, has a real job to do

http://www.economist.com/node/21541808

Evolution Is Written All Over Your Face

Biologists working as "evolutionary detectives" studied the faces of 129 adult male primates from Central and South America, and found that the faces they studied evolved over at least 24 million years.

http://newsroom.ucla.edu/portal/ucla/i-ve-just-seen-a-face-221465.aspx

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Insect GENEration Lab

Students build a model insect based upon genetic information provided to them in the lab directions. Gene forms (alleles) contributed by each parent are determined by tossing a coin with one side representing the dominant form of the gene and the other side representing the recessive form. Student teams record the genotype and phenotype for each trait and then construct the insect using inexpensive, readily available materials.

http://cibt.bio.cornell.edu/labs_and_activities/images/InsectGENEration.pdf

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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/

Building Blocks of Life Lab using Legos

The shape of a protein determines its function. In this lab, students will be given a hypothetical DNA sequence for part of an enzyme. Using the Universal Genetic Code, they will then determine the amino acid sequence coded for by the DNA. Students will examine a "substrate" and predict the shape of an enzyme that could interact with that substrate. Differently shaped Lego! blocks will represent different amino acids.

http://cibt.bio.cornell.edu/labs_and_activities/images/LegoLab.pdf

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