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## Dome News

News of Astronomy, Space, Science, & Technology

Feeds: [RSS](#) [XML](#) [Atom](#) [XML](#)

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## Astronomy Picture of the Day [TOP](#)

### *Image: Scorpius Looking Good*

*The image shows magnificent detail in the area of the sky known as the constellation Scorpius*

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seen; scientists are getting closer to understanding the vivid display  
[www.Newser.com/Science](http://www.Newser.com/Science)

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## A Scorpio Sky Spectacular

Astronomy Picture of the Day Sep 11 2007

- Enter the Planetarium
- The Sky Tonight
- The Sky This Week

### User login

Username:

Password:

Log in

- Create new account
- Request new password

### Webster's Dictionary:

Look it up!

### Moon Calendar

Sun/Moon -  
Rising/Setting (from  
USNO)

### Equinoxes and Solstices For Selected Year

17 ▾ 0 ▾ 7 ▾

Submit

### Software Credits

History of the Dome Logo



If Scorpius looked this good to the unaided eye, humans might remember it better.

Scorpius more typically appears as a few bright stars in a well known but rarely pointed out zodiacal constellation. To get a spectacular image like this, though, one needs a good camera, color filters, and a digital image processor.

To bring out detail, the above image not only involved long duration exposures taken in several colors, but one exposure in a very specific red color emitted by hydrogen that brings out great detail. The resulting image shows many breathtaking features.

Vertically across the image left is part of the plane of our Milky Way Galaxy. Visible there are vast clouds of bright stars and long filaments of dark dust.

Cutting out diagonally from the Milky Way in the image center are dark dust bands known as the Dark River. This river connects to several bright stars on the right that are part of Scorpius' head and claws, and include the bright star Antares. Above and right of Antares is an even brighter planet Jupiter.

Numerous red emission nebulas and blue reflection nebulas are visible throughout the image. Scorpius appears prominently in southern skies after sunset during the middle of the year.

See *Astronomy Picture of the Day* for links to further info.

## NASA Image of the Day

TOP  
↑

*The First Image From the Surface of Mars*  
The image is the first returned by the *Viking I* lander, the first spacecraft to touch down on Mars

### First Image of Mars

NASA Image of the Day Sep 11 2007

### Dome News Archive

September 2007

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

Aug Oct

### Today's Moon



Oct 17, 2007  
Age: 5.7 days

3rd Quarter: Oct 3

New: Oct 11

1st Quarter: Oct 19

Full: Oct 26

### Today's Sun



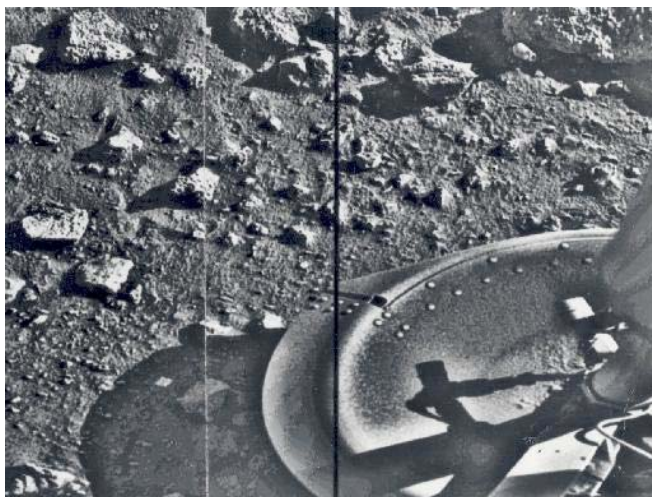
NOAA Sunspot Number:

45

Sunspot Prediction

Solar and Geomagnetic  
Forecast

Solar Image furnished  
by the



Taken by the Viking 1 lander shortly after it touched down on Mars, this image is the first photograph ever taken from the surface of Mars. It was taken on July 20, 1976. The primary objectives of the Viking mission, which was composed of two spacecraft, were to obtain high-resolution images of the Martian surface, characterize the structure and composition of the atmosphere and surface and search for evidence of life on Mars.

[SOHO spacecraft](#)

**2007 Seasons**  
**Spring Equinox**  
**Mar 21 at 0:70 UT**  
**Summer Solstice**  
**Jun 21 at 18:50 UT**  
**Fall Equinox**  
**Sep 23 at 9:50 UT**  
**Winter Solstice**  
**Dec 22 at 6:70 UT**

## The Space Shuttle

[TOP](#)  
↑

*Nasa's space shuttle site - For the latest information see [NASA human spaceflight page](#)*

*For info on the Columbia investigation see the [STS-107 Investigation Reference page](#).*

*The space shuttle in the [Wikipedia](#)*

**Clear Skies Tonight?**  
**Find the Weather for any City, State or Zipcode:**

**Next Shuttle Mission to Test Heat-Shield Repair**  
*Shuttle managers have added a spacewalk to STS-120 in order to test a new tool that might prove useful should it ever be necessary to repair the shuttle's heat-shield*

**NASA planning spacewalk to practice shuttle repairs**  
Spaceflight Now Sep 10 2007

NASA managers are expected to add a fifth spacewalk to the shuttle Discovery's upcoming space station assembly mission, officials say. The additional EVA will be devoted to testing a heat-shield repair tool that could prove useful in the event of damage like the tile gouge experienced during the last shuttle mission.

**Upcoming Total/Annular Eclipses**  
**Solar**  
**Annular: Feb 7, 2008**  
**Lunar**  
**Total: Feb 21, 2008**

## The Global Environment

[TOP](#)  
↑

*Global climate change, the ozone layer, and other world environmental issues*

**Solar System Images**  
**Calvin Hamilton**  
**Views of the Solar**

*Global warming in the Wikipedia**A NASA reference article on global warming**Global Warming FAQs:*

[US National Climate Data Center](#)  
[Natural Resources Defense Council](#)  
[Union of Concerned Scientists](#)  
[Skepticism About Global Warming from Brian Carnell's Skepticism.net](#)  
[See Wikipedia for both sides of the debate](#)

*Information on abrupt climate change (Could something like the "Day After Tomorrow" scenario happen?)*

[Science @ NASA](#)  
[The Weather Underground](#)  
[Abrupt Climate Change FAQ from the Union of Concerned Scientists](#)  
[The Wikipedia on abrupt climate change](#)  
[Abrupt Climate Change: Inevitable Surprises — free online book from the National Academies Press](#)

*Ozone Layer FAQs:*

[Ozone Hole FAQ from The Weather Underground](#)  
[Ozone Depletion FAQs from faqs.org](#)

***Dealing With Climate Change: How About a Cost-Benefit Analysis Instead of Scary Hype?***  
*Global warming is real, but treaties like the Kyoto Protocol may be too little and too late*

**Findings: 'Feel Good' vs. 'Do Good' on Climate**

NYT &gt; Science Download time: Sep 11 2007 7:27 AM ET

After looking at one too many projections of global-warming disasters — computer graphics of coasts swamped by rising seas, mounting death tolls from heat waves — I was ready for a reality check. Instead of imagining a warmer planet, I traveled to a place that has already felt the heat, accompanied by Bjorn Lomborg, the Danish political scientist and scourge of environmentalist orthodoxy....

***Arctic Summer Sea Ice Rapidly Disappearing***  
*Scientists predict 2007 will break record for lowest amount of sea ice*

**Florida-Size Arctic Ice Melts in Week**

ABC News: Technology & Science Download time: Sep 11 2007 7:26 AM ET

An area of Arctic sea ice the size of Florida has melted away in

**Views of the Solar System**

**JPL**

**Welcome to the Planets**

**Bill Arnett**

**The Nine Planets**

**Space.Com**

**Summary Info & Pics**

**Meteors**

**October Showers**

**Data compiled by Gary W. Kronk**

just the last six days as melting at the top of the planet continues at a record rate.

2007 has already broken the record for the lowest amount of sea ice ever recorded, say scientists, smashing the old record set in 2005.

Currently, there are about 1.63 million square miles of Arctic ice, according to the National Snow and Ice Data Center in Boulder, Colo. That is well below the record of 2.05 million square miles set two summers ago and could drop even lower before the final numbers are in.

## Planet Earth

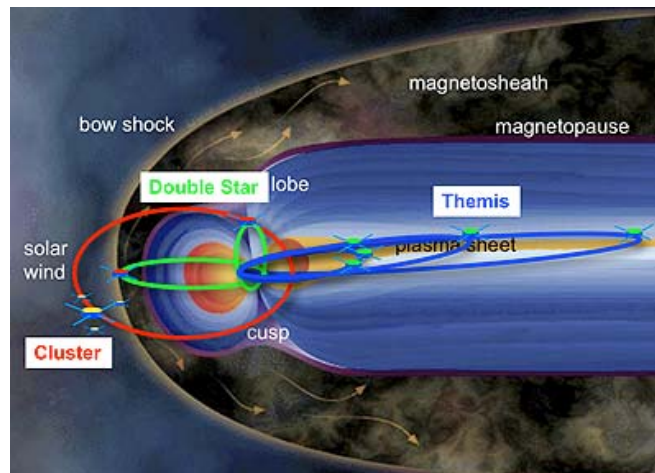
TOP  
↑

### *How the Aurora Works*

*ESA spacecraft have given new insight into the magnetic phenomena that create the aurora*

### **Cluster and Double Star uncover more on bright aurorae**

Space Science Download time: Sep 11 2007 7:26 AM ET



Cluster data has helped provide scientists with a new view of magnetospheric processes, challenging existing theories about magnetic substorms that cause aurorae and perturbations in GPS signals.

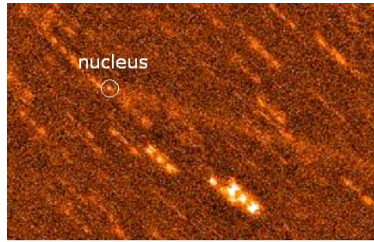
## Comets

TOP  
↑

*Background information on comets*

### *Looking at Rosetta's Target*

*Using observations and theoretical studies, scientists are building a portrait of Comet 67P/Churyumov-Gerasimenko; ESA's Rosetta spacecraft will rendezvous with the comet in 2014 in order to study the comet's*

*composition in detail***Lumpy, Bumpy, Fluffy and Layered**

Astrobiology Magazine Sep  
11 2007

Observational and theoretical studies of Comet 67P/Churyumov-Gerasimenko, the target of ESA's Rosetta mission, are building a detailed portrait

of the comet's nucleus as it travels around the Sun.

Observations of the comet using the 8.2 m-ESO Very Large Telescope (VLT) show an irregularly-shaped object that is about 4.6 kilometres in diameter with a rotational period of 12 hours 49 minutes. Cecilia Tubiana presented results at the second European Planetary Science Congress (EPSC) in Potsdam on Tuesday 21st August, and said, "These observations were taken when the comet was approaching the furthest point from the Sun in its orbit. Rosetta will rendezvous with the comet in 2014 at a distance of about 600 million kilometres from the Sun. While a quite detailed portrait of the comet at small heliocentric distance has been drawn, a profound description of Rosetta's target comet at large heliocentric distance is missing." ...

**Saturn**

TOP  
↑

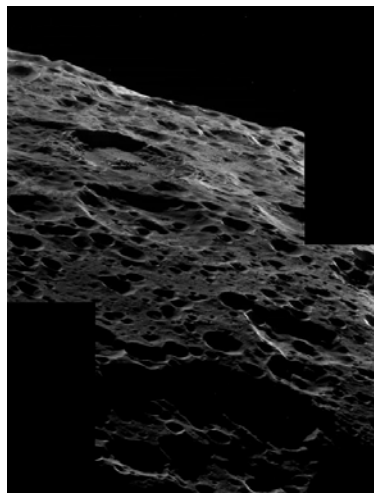
*Saturn and its moons*

*Background information about Saturn*

*The Cassini mission to Saturn*

***Image: The Surface of Iapetus***

*The image is a mosaic of photographs taken by Cassini as it flew by the moon yesterday*

**Iapetus, saturated with craters**

Planetary Society Weblog

Download time: Sep 11 2007  
7:27 AM ET

Eight more images came down from the spacecraft this afternoon as part of a brief downlink opportunity not long after Cassini's closest approach to Iapetus. A lot more data than these eight images was planned to have been returned, but most of that was the RADAR team's synthetic aperture radar (SAR) swath

████████████████████ on Iapetus. Radar isn't like camera data; it's no easy task to convert radar data into SAR images. So I have no idea if that swath was successful or when we'll see the first pictures from it; but I'm dying to see them!...

## Biology: Earth & Astro-

TOP  
↑

*The origin and development of life on earth*

*The search for extraterrestrial life*

*Interesting stories on biological science*

### **DNA Component Can Form in Space**

*Study suggests some DNA ingredients may have sprinkled down to young Earth*

### **Life's Ingredients May Have 'Sprinkled' on Earth**

SPACE.com Download time: Sep 11 2007 7:25 AM ET

Some crucial ingredients for life on Earth may have formed in interstellar space, rather than on the planet's surface.

A new computer model indicates clouds of adenine molecules, a basic component of DNA, can form and survive the harsh conditions of space, and possibly sprinkle onto planets as the stars they orbit travel through a galaxy.

"There may be only a few molecules of adenine per square foot of space, but over millions of years, enough could have accumulated to help make way for life," said study co-author Rainer Glaser, a molecular chemist at the University of Missouri-Columbia....

See [SPACE.com](#) for links to further info.

## Energy

TOP  
↑

*Policy, technology, and resources*

### **Water as Fuel?**

*Bombarding salt water with radio-frequencies causes the release of hydrogen which can be burned for power*

### **Radio Frequencies Help Burn Salt Water**

PhysOrg.com - latest science and technology news Download time: Sep 11 2007 7:27 AM ET

(AP) -- An Erie cancer researcher has found a way to burn salt water, a novel invention that is being touted by one chemist as the "most remarkable" water science discovery in a century.

## Nanotech

TOP  
↑

*Nanotechnology*

*The development of techniques and devices on the atomic or molecular scale*

*Nanotechnology in the Wikipedia*

### ***Nano-Printing to Assist in Nano-Device Fabrication?***

*IBM researchers in collaboration with scientists from the ETH Zurich have demonstrated a new, efficient and precise technique to "print" at the nanoscale*

### **Nano-Sun: From Traditional Printing to High Resolution Nano-Printing**



PhysOrg.com - latest science and technology news

Download time: Sep 11 2007 7:27 AM ET

IBM researchers in collaboration with scientists from the ETH Zurich have demonstrated a new, efficient and precise technique to "print" at the nanoscale.

The method, which allows the scientists to place individual particles precisely where they want them, could advance the development of nanoscale biosensors, ultra-tiny lenses that can bend light inside future optical chips, and the fabrication of nanowires that might be the basis of tomorrow's computer chips.

Though still a few years from being used widely, the new technique shows promise for real world applications outside of the lab without major profound new inventions, and could lead to high-volume manufacturing techniques for nanostructures inside chips and other devices that are more efficient and cost less than today's methods. ...

### **Miniature golden artwork unveiled**

BBC News | Technology | UK Edition Download time: Sep 11 2007 7:26 AM ET

Scientists create a tiny image of the Sun using a technique which could be used to make future silicon chips.

## Military Tech

TOP  
↑



***Foreign Governments Attempt Cyber-warfare***  
*The Pentagon has detected Chinese attempts to hack into military networks; an attack on Estonia's information network seems to have come from Russia*

**Cyber attacks: a new weapon in the state arsenal**

PhysOrg.com - latest science and technology news Download time:

Sep 11 2007 7:27 AM ET

Cyber-attacks against government networks in recent months illustrate how states like China are discovering the power of a new weapon that is less expensive and more discreet than battalions of tanks or spies.

**Insurgents Fight Iraq War in Cyberspace**

ABC News: Technology & Science Download time: Sep 11 2007

7:26 AM ET

Experts say the war is playing out on more than one battlefield.

## Technology

TOP  
↑

***Dramatically Increasing Computer Memory Capacity***

*If an idea being kicked around in an I.B.M. lab is correct, electronic devices could potentially hold 10 to 100 times more data in the same amount of space*

**Reshaping the Architecture of Memory**



NYT > Technology

Download time: Sep 11 2007

7:26 AM ET

...[I]f an idea that Stuart S. P. Parkin is kicking around in an I.B.M. lab here is on the money, electronic devices could hold 10 to 100 times the data in the same amount of space. That means the iPod that today can hold up to 200 hours of video could store every single TV program broadcast during a week on 120 channels.

The tech world, obsessed with data density, is taking notice because Mr. Parkin has done it before....

## Out of Left Field

TOP  
↑

*News interesting to the editor that doesn't fit into other categories*

*Weird stuff also goes here*

### ***Carbon Dating Confirms Relics of St. Francis***

*A tunic that is supposed to have been worn by the saint has been dated to St. Francis' lifetime*

### **Physics Reveals The Secrets Of Saint Francis**

ScienceDaily Headlines Download time: Sep 11 2007 7:27 AM ET

The tunic believed to have been worn by Saint Francis of Assisi preserved in the Church of Saint Francis in Cortona (Province of Arezzo) dates back to the period in which the saint lived, whereas the tunic preserved in the Church of Santa Croce in Florence was made after his death. Carbon 14 measurements, which allow a relic to be dated, show that the tunic in Santa Croce dates back to some time between the late 13th century and late 14th century and thus could not have belonged to the "Poor Man of Assisi", who died in 1226. These and other discoveries were made possible through the analysis of the relics with a tandem particle accelerator, which was performed by the Laboratory of Nuclear Techniques for Cultural Heritage of the INFN of Florence.

### ***Podcast: Astronomy in Science Fiction***

*This Universe Today podcast offers a discussion of science fiction authors employ physics and astronomy in their creations*

### **Podcast: Astronomy in Science Fiction**

Universe Today Download time: Sep 11 2007 7:27 AM ET

This is a very different episode of Astronomy Cast. As we mentioned last week, Pamela recently attended the Dragon\*Con science fiction convention in Atlanta, Georgia. While she was there, she participated in a special live edition of Astronomy Cast with special guest Dr. Kevin Frazier. Kevin is a NASA scientist, and the science consultant for the TV shows Battlestar Galactica and Eureka. He and Pamela work through physics and astronomy in popular science fiction. What they get right, and what they get wrong... oh so very wrong.

### ***Argentina Museum Displays Frozen Incan Girl***

*The Museum of High Altitude Archaeology in Salta, Argentina has on display the frozen mummy of an Incan girl who died in a religious ritual*

### **In Argentina, a Museum Unveils a Long-Frozen Maiden**



NYT > Science Download time: Sep 11 2007 7:27 AM ET

The Museum of High Altitude Archaeology is

displaying Los Niños, three of the best preserved mummies ever found. By DENISE GRADY.

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Dept. of Physics, Astronomy, and Engineering Science,  
St. Cloud State University, St. Cloud, MN 56301-4498**

**Feedback to: [editor@domeofthesky.com](mailto:editor@domeofthesky.com)**