



THE WALL STREET JOURNAL.

OVER 80% off

PLUS 2 WEEKS FREE!

CLICK HERE TO START YOUR FREE TRIAL NOW

- News
- Articles
- Videos
- Images
- Books
- Search

- Health & Medicine
- Mind & Brain
- Plants & Animals
- Earth & Climate
- Space & Time
- Matter & Energy
- Computers & Math
- Fossils & Ruins

Science News

Share Blog Cite

Print Email Bookmark

A Space Station View On Giant Lightning

ScienceDaily (Oct. 4, 2005) —

Do giant flashes of lightning striking upwards from thunder clouds merely pose an extraordinarily spectacular view? Or do they actually alter the chemical composition of the atmosphere, playing a role in ozone depletion and the climate on Earth? This is the key question that may be answered by specially designed cameras, which ESA proposes to place on board the International Space Station.

See also:

Earth & Climate

- Storms
- Severe Weather
- Environmental Issues
- Ozone Holes
- Environmental Policy
- Atmosphere

Reference

- Thunderstorm
- Cloud
- Dew point
- Precipitation (meteorology)

The International Space Station (ISS) is the ideal setting for studies of spectacular natural phenomena well hidden from us on Earth - so-called red sprites, blue jets and elves: vast flashes of lightning striking not from clouds to the ground, but from clouds towards space.

Normally the word lightning makes us think of sharp zigzag lines striking from the clouds to the ground. Above the clouds however a quite different type of lightning can be seen. There lightning is colourful - mainly red and blue - and covers large areas of the upper atmosphere. Sometimes it can even reach the border between the atmosphere and space.

Over the last few years scientists from the Danish National Space Centre have studied these flashes with cameras placed on mountain tops. Every so often the cameras would catch a flash of lightning striking up from a thunder cloud at a lower altitude.

Placing cameras and other instruments on the Space Station would, however, dramatically improve the chances of seeing the giant flashes and study their effect on the atmosphere. The Danish National Space Centre is currently studying a package of instruments for just that purpose, known as the Atmosphere-Space Interactions Monitor (ASIM). ESA has now selected ASIM for a feasibility study (known as Phase A).

"The question is how are these giant flashes of lightning created and how often do they take place", says senior scientist Torben Neubert, head of the project at Danish National Space Centre.

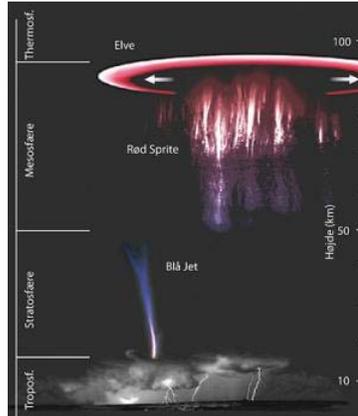
It may well be that the large electrical bursts remove ozone from the atmosphere, and in so doing influence the climate. "We need to understand the natural processes which influence the atmosphere and this can help us decide which changes in the climate are man-made", Torben Neubert states.

It is still too early to say when the cameras will actually enter into service in space.

Adapted from materials provided by European Space Agency.

Need to cite this story in your essay, paper, or report? Use one of the following formats:

- APA European Space Agency (2005, October 4). A Space Station View On Giant Lightning. *ScienceDaily*. Retrieved August 24, 2008, from <http://www.sciencedaily.com/releases/2005/10/051004085350.htm>
- MLA



Altitude separates blue jets (lowest altitude) from red sprites (middle) and elves (highest). (Credit: Danish National Space Center)

Ads by Google

Advertise here

1 Rule of a Flat Stomach:

Cut down 30 lbs of stomach fat in 3 months by keeping this 1 rule. Wu-YiSource.com

lightning protection

lightning protection lightning protection allstateslightningprotection.com

James & the Giant Peach

"James & the Giant Peach" lessons from 150,000 reviewed lesson plans. LessonPlanet.com

Lightning Screensaver

Free Lightning Screensaver Start Free Download Now! ScreensaversAndWallpapersFree.com

Giant Squid News

Giant Squid is Filmed Alive! See Pics with the Free News Toolbar. News.alotoolbars.com

Related Stories

NASA/Marshall Lightning Imaging Sensor On Japan's Tropical Rainfall Measuring Mission Satellite To Illuminate Link To Weather And Climate (Dec. 2, 1997) — Folklore has it that rain follows lightning. Scientists think there might be more than a little truth to that saying. Soon, a new spaceborne instrument - the Lightning Imaging Sensor (LIS) - will ... > [read more](#)

Satellites See Lightning Strikes In Ozone's Origins (July 16, 2003) — During summertime ozone near the Earth's surface forms in most major U.S. cities when sunlight and heat mix with car exhaust and other pollution, causing health officials to issue "ozone ... > [read more](#)

International Space Station Astronauts Set New Standard For Earth Photography (May 6, 2002) — Astronaut photography of the Earth from the International Space Station has achieved spatial resolutions of less than six meters, an analysis of more than 13,000 images has shown. This means ... > [read more](#)

Surprise! Lightning Has Big Effect On Atmospheric Chemistry (Mar. 20, 2003) —

Just In: 'Cutting By Color': More Precise Cancer Surgery

Science Video News

Mysteries of Thunderstorms
Satellite imaging is now helping atmospheric scientists link the amount of charged ice in clouds to lightning activity. Ice particles in. ... > [full story](#)

Physicists, Engineers Capture Lightning with Tethered Rockets

Acoustic Waves Could Help Put Out Flames in Zero-Gravity Environments

Astronomers Spy Earth-like Planet Forming Around Distant Star

[more science videos](#)

Lightning Ringtones

Download to your mobile phone instantly.



www.itunes.net

Ads by Goocoooolle

Breaking News

... from NewsDaily.com

Fay weakens to depression after drenching Florida

Tropical storm forms off Mexico's Baja California

Typhoon Nuri weakens after hitting Chinese coast

NY nuclear plant likely a quake risk: study

Face transplants can work, studies show

[more science news](#)



THE WALL STREET JOURNAL. WITH CONSTANT BUSINESS NEWS UPDATES... 4:37 p.m.

In Other News ...

Rice to try to bridge Israeli-Palestinian gaps

NATO-chartered helicopter crashes in Afghanistan

Baghdad bombs kill 4, wound 15, Iraqi police say

Thousands protest land seizure for India's Nano car

Pakistan forces target militant positions, kill 50

View of economy somber from Fed mountain retreat

U.S. forces free AP cameraman in Iraq

Swiss flight diverted due to bomb hoax

[more top news](#)

Search ScienceDaily

Number of stories in archives: 44,032

Free Subscriptions

Get the latest science news with our free email newsletters, updated daily and weekly. Or view hourly updated newsfeeds in your RSS reader:

- [Email Newsletters](#)
- [RSS Newsfeeds](#)

Find with keyword(s):

Search

Enter a keyword or phrase to search ScienceDaily's archives for related news topics, the latest news stories, reference articles, science videos, images, and books.

Ads by Google

[Advertise here](#)

Feedback

... we want to hear from you!

Lightning Protection

Industrial, Military and Commercial Rods, ESE, Dissipation, Grounding
www.nolightning.com

Hugh Downs Reports

Little known heart attack symptom many people tragically ignore.
www.bottomlinesecrets.com

Glass Lightning Rod Balls

Lightning Rod Parts and Glass Balls On Line Prices Finials Weathervane
www.LightningRodParts.com

Tell us what you think of the new ScienceDaily -- we welcome both positive and negative comments. Have any problems using the site? Questions?

Your Name:

Your Email:

Comments:

Click button to submit feedback:

Send It

[About This Site](#) | [Editorial Staff](#) | [Awards & Reviews](#) | [Contribute News](#) | [Advertise With Us](#) | [Privacy Policy](#) | [Terms of Use](#)
Copyright © 1995-2008 ScienceDaily LLC — All rights reserved — Contact: editor@sciencedaily.com