

The Northern Lights

It's a dark night, full of bright stars, and you're driving with your parents along a dark country road in Northern Maine. Suddenly, out of nowhere, you see a bright, yellow gold curtain of light wavering above the trees. You've just witnessed the Northern Lights, or "Aurora Borealis" — a ghost-like phenomenon seen in the polar (northern or southern) regions of the world. These free fireworks are caused when the Solar Wind is pulled into the Earth's magnetic fields near the North or South Poles. These lights are as old as the atmosphere — even the dinosaurs marveled at the Northern Lights! Ready to learn more?

1. A dumb question. Are the Northern lights ever visible in the south?

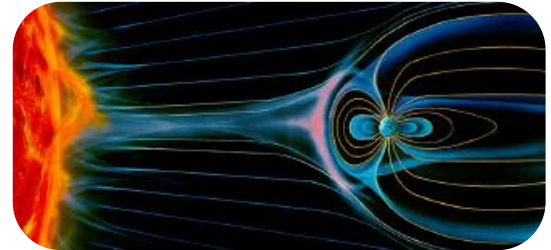
Visit: <http://news.bbc.co.uk/1/hi/sci/tech/2004525.stm>

The answer is yes. If you visit the BBC news site you can see some pictures of the Aurora Australis, the Southern Lights, taken at the Amundsen-Scott South Pole Station.

2. What causes them?

Visit: <http://www.ngdc.noaa.gov/seg/geomag/icons/solarexp.jpg>

According to the National Geophysical Data Center, the lights are caused when the solar wind particles collide with the Earth's upper atmosphere. The particles from the Sun are electrically charged and are drawn towards the Earth's magnetic poles. The beautiful illustration at the right, from the NOAA site, shows how the Earth acts like a giant magnet, shaping the tiny particles that shoot out from the Sun.



3) What colors can you see?

Visit: <http://www.alaskascience.com/aurorafacts.htm>

This link takes you to scientist Neil Brown, who tells us that the most common color is a brilliant yellow-green. It is produced by oxygen atoms that are about 60 miles high. High-altitude oxygen atoms (about 200 miles) produce rare, all-red aurora, and ionized nitrogen molecules produce blue light.

4) I don't live in the North. Can I see the Northern Lights?

Visit: <http://www.schurstrophotography.com/auroramain.html>

and you'll learn that once in a while, a big solar storm can send a burst of particles toward the earth. When that happens, it may be possible to see the Northern Lights as far south as Arizona. But, this is very rare.

5) Do Auroras happen on other planets?

Visit: <http://odin.gi.alaska.edu/FAQ/#planets>


Yes. Just like the northern and southern lights on earth, auroras also occur on other planets that have an atmosphere and a magnetic field, such as Jupiter and Saturn.

6) Show me more!

Visit: <http://dhutchinson.mystarband.net/digital.html>

Learn how to take photos of the Northern Lights (if you ever get a chance to see them) by photographer Dick Hutchinson.

Better yet, just visit YouTube and type Aurora or Northern Lights as keywords and you'll see some amazing video. More photos are at <http://www.spaceweather.com/aurora/gallery.html>

HAVE A LOOK YOURSELF 

Here are two of the better videos of the Northern Lights.
<http://www.youtube.com/watch?v=qIXs6Sh0DKs>
<http://www.youtube.com/watch?v=taLRQrNbipQ>

Aurora (Northern Lights)

