Aurora FAQ

NASA / Terry Zaperach

What is the aurora?

A luminous glow of the upper atmosphere caused by energetic particles that enter the atmosphere from above.

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What kind of energetic particles?	Electrons and protons.
Where do the energetic particles come from?	The sun (solar wind).

What is the solar wind?	The outermost layer of the sun, which is so hot that it boils off as a very thin gas which flows outward like wind.
What is the magnetosphere?	A volume of space surrounding the Earth, produced by its magnetic field.

Where do the energetic particles go?	They follow Earth's magnetic field lines into the upper atmosphere, where they bump into atoms and molecules and excite them.
What does "excite" mean?	The atoms or molecules jump up to a higher energy state, then give off light as they fall back down to their original state.

What causes the different colors of the aurora?	The kinds of gases in the atmosphere and their height. Oxygen higher in the atmosphere = **red** Oxygen in the middle of the atmosphere = **green** Nitrogen lower in the atmosphere = **purple**
What is the altitude of the aurora?	Lowest: 80 km/50 miles. Highest: 600 km/350 miles (about how high the space shuttle flies). Typically the bottom edge is at 100 km (60 miles).

Why does the aurora sometimes look like curtains?	It follows the curved shape of Earth's magnetic field lines.
How often does the aurora occur?	It is always happening somewhere on Earth, but we can't always see it. We need a dark, clear sky to see it.

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Does the aurora occur in the Southern Hemisphere?	Yes! It occurs in oval shapes around the north and south magnetic poles. In the north, it is called the *aurora borealis* (northern lights). In the south, it is called the *aurora australis* (southern lights).
Where is the best place to see the aurora? What time is best?	High northern latitudes in winter (Alaska, Canada, Scandinavia). The best time to watch is around midnight.