Geminid Meteor Shower

December 7-17, peaks December 13/14 (2011)

The best viewing takes place between midnight and dawn, because that's when the Earth is heading into the comet's debris stream from an observer's viewpoint. Viewing a few hours before dawn on Dec 13 and Dec 14 should be best. "Best" could be several meteors per minute.

However, one can see meteors any time all night long. Start looking for Geminids as soon as the sun goes down. The first dark hours after sunset are when **Earthgrazers** appear. Earthgrazers are meteors that skim almost horizontally across the top of Earth's atmosphere, like a stone skipping across a pond. You might see a few between 5:00 p.m. and 7:00 p.m. local time when Gemini is first peeking over the eastern horizon (the perfect geometry for earthgrazing). Earthgrazers are bright, long and colorful. Even one can make your day.

The source of the shower is asteroid 3200 Phaethon. There's a cloud of dust trailing the asteroid and Earth plows through it every year in mid-December. Bits of dust traveling 80,000 mph hit our atmosphere and turn into glowing meteors.

Where should you look? Anywhere. Geminids streak all over the sky. Trace some backwards: they all lead to a radiant point in the constellation Gemini. Gemini will rise in the east in the evening, and set in the west in the morning.

For best viewing, find a spot as far away from city lights as possible and with a horizon (that means tree-tops as well) as low as possible. Dress for cold, definitely have a hat. A reclining position is most comfortable when viewing "up" all the time; a reclining deck chair or lawn chair is good. A thermos with a nice hot drink is fun.

If you can see the individual stars of the Little Dipper, then your eyes are "dark adapted" well enough to see any meteors.

The **moon** will be coming off Full. This will hamper your view (because it's so bright), but it's not a show-stopper. **Jupiter** will be the brightest "star" in the sky in the evening, and **Saturn** and **Mars** will be viewable as dawn approaches.

Geminid meteoroids hit the atmosphere travelling at about 35 km/s.

How-to videos:
http://www.nasa.gov/connect/chat/geminids2011.html
http://www.youtube.com/watch?v=ree9YnWZCUc

Total lunar eclipse the morning of December 10th:
http://www.skyandtelescope.com/observing/home/A-Dawn-Eclipse-of-the-Moon-134436603.html

Online, interactive Sky Chart:
http://www.heavens-above.com/

Good sky chart software (and free) for your computer, **Stellarium**:
http://www.stellarium.org/