ISS Activity #2

What you need for this activity:

- Access to the internet
- Scratch paper

Topic: Iridium Flares

There are satellites orbiting the Earth called Iridiums. They are communications satellites and when their solar panels catch the sunlight at just the right angle they "flare" up and become really bright for just a few seconds. The photo shows an Iridium flare with the Milky Way in the background.

PHOTOGRAPH BY BABAK TAFRESHI FOR NATIONAL GEOGRAPHIC

Activity:

If you want to find out when you might next see one, go to

www.heavens-above.com/IridiumFlares.aspx

In the top right-hand corner is a box for your location (it usually says **Unspecified**). Click and enter the city nearest your location. The page will calculate your latitude and longitude.

Note your longitude and latitude on your scratch paper.

At the bottom, click the **Update** button. The table will now show when and how bright a flare will be in your sky. Look for the highest and second highest negative number (e.g. -3.8 is brighter than -2.4).

From the example below, which might be easier to see?

Time	Brightness	Altitude	Azimuth	Satellite
Nov 18, 18:20:59	-2.4	32°	166° (SSE)	Iridium 68
Nov 21, 04:46:35	-3.8	22°	176° (S)	Iridium 98
Nov 22, 18:05:50	-0.3	33°	178° (S)	Iridium 72
Nov 23, 17:59:47	-3.7	33°	177° (S)	Iridium 62
Nov 24, 17:53:44	1.0	33°	177° (S)	Iridium 65

If you live in a built-up area, it might be easier to spot the one on Nov 23rd as it's higher in the sky and it's in the early evening. The one on Nov 21st is slightly brighter but it's at 4:46am!

> Note your chosen iridium flare on your scratch paper. Write down the Day and Time, Altitude and Azimuth.
>
> Draw a circle and mark the compass positions for N, S, E and W. On your circle mark which way to look for the appearance of the flare. Draw a line from the center of your circle and mark roughly where you will look in the sky (in the example above, Nov 23 is about 1/3 the way between the horizon (your circle) and the straight up position (the center of the circle), so your mark would be about 1/3 of the way from the circle edge to the center.

If you click on the day/time you will see a sky map of where the flare will appear.

On the day

Make sure you know which way is North from your home. If you don't know, how would you work that out without a compass?

To see the flare, you'll have to look in the right direction in the sky (Azimuth). Use your circle diagram with your N pointing towards North. You need to look in the direction of your line and up at the Altitude angle.

About 2 minutes before the flare, take your family outside and have them look in the right direction. Tell them that they'll see something very special. It only lasts a few seconds, so keep them focused!

Wow, there's the flare. Now you can tell them what it is and what causes it.