

## ***Additional Information for "The Heavens Declare the Glory of God"***



Links from the unit study:

["Sky at a Glance"](#)

["Skymaps"](#)

["Your Sky"](#)

["Heavens Above"](#)

[Stellarium software](#)

["The Nine Planets"](#)

[NSSDC photo gallery](#) (sample image at left)

[On the Revolutions of Heavenly Spheres](#) by Nicolaus Copernicus (online text)

More questions about the unit study:

Q. Why is about 70x the limit for a backyard telescope? Why isn't more better?

A. A typical "back yard" telescope may be advertised to have a range of magnifications from about 10x-100x or more. However, please be aware that a higher magnification is not always better. Since the telescope has a relatively small objective lens (this is the lens on the larger end of the barrel) it can only gather so much light. With increasing magnification, you are trying to "stretch" that same amount of light into a bigger image. Rather like trying to zoom in too far into a picture on your computer, you will eventually reach a point where your image is too fuzzy to be helpful. With greater magnification, atmospheric disturbances are also magnified. It is better to have a smaller, clear image than a larger, fuzzy one. With a 60-70mm (~2.5") objective lens, which is typical for a back yard scope, the practical magnification limit is about 70x. Of course, with a larger objective, you can increase magnification much further.

Q. How do astronomers figure out how far away stars are?

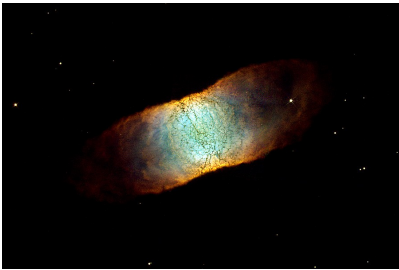
A. One way of measuring distance is to use the tiny changes in the apparent positions of the stars as measured from opposite sides of the Earth's orbit (6 months apart). Nearer objects will have more apparent motion than farther ones, just as we observe in everyday life; this is the parallax method. There are several other methods as well. For example, there are stars known as Cepheid variables, whose absolute luminosity (how bright they really are) depends on their period (how long it takes to go through a full cycle of brightness changes). By measuring their apparent luminosity (how bright they look from Earth), astronomers can then calculate their distance.

Q. Where can I go to find more answers to my astronomy questions?

A. Some of the sites I've found useful are:

Ask a NASA Astrophysicist. Please be aware that there are occasional questions on this site pertaining to religious matters, and they are sometimes handled poorly.

Bad Astronomy Interesting information about many common and some quirky misconceptions related to astronomy.



NASA's Science Mission Directorate also has a lot of resources, including fun and simple ones such as Image of the Day (see left for an example).

Astronomy page at love2learn.net

Articles addressing "The New Geocentrism" (first article of four, follow links to other parts)

Astronomy posts on the Unity of Truth blog