Ms. Czerwinski Astronomy Grade 12 Research Project

Name _____ Section ____ Date _____

Exploring the Universe
Using Google Sky

Procedure/Questions

You can use Google Sky without having to download any files. Simply key in the following address: http://sky.google.com

(Note, you can go to the Google Earth site on your home computer and download the Google Earth program enabling you to get a more powerful version of Google Sky.)

1. **Determining Position**

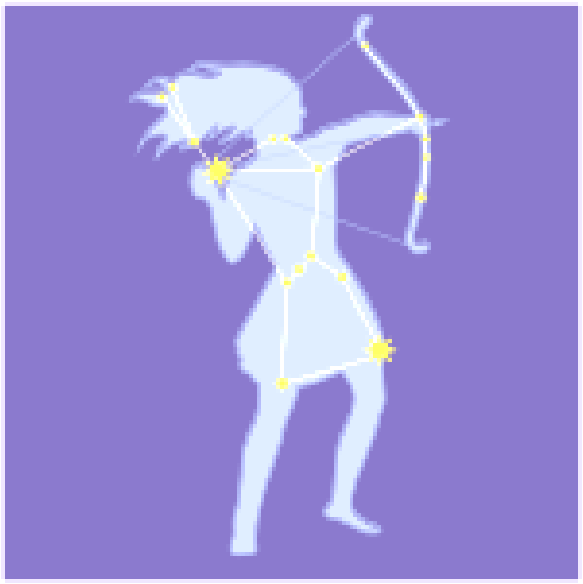
Position is depicted in the lower left corner of the Google Sky screen. These are the coordinates for your pointer at all times. The coordinates are based on the motion of the sky due to the rotation of the Earth. This is the system that astronomers use to pinpoint astronomical objects.

RA (Right Ascension) is similar to longitude. It is measured in Hours/Minutes/Seconds (0h00min00.00s) up to 24 hours. Right ascension is tied to the rotation of the Earth. In one hour, this much of the sky rotates past your perspective on Earth.

DEC (Declination) corresponds to latitude and is measured in much the same way as RA. It uses -90 degrees to +90 degrees. Declination is directly related to the latitude of your position on the Earth. In other words, the declination for the point right above your head (the zenith) is always equal to your latitude.

2. **Using the Search Box/Coordinates**
Locating Betelgeuse and Rigel in the constellation of Orion.

Key in "Betelgeuse" in the search box. When this star comes into view, zoom out using the (-) key so that you can see the major stars of Orion. Move the pointer so that you can obtain the coordintes for Betelgeuse. Label the star and show its coordinates on the constellation shown below. Do the same for Rigel.



3. **Backyard Astronomy Icon**

Move through the images until you find the following. Describe what you see. You can always zoom in to obtain a clear image.

Sombrero Galaxy

(1) What is its official catalog name? _____

(2) Describe this galaxy

_____

_____

4. **Solar System Icon**

Click "Home" located at the lower left corner of the screen. Click the Solar System Icon and determine the amount of time it takes light to reach the Earth from the following objects. Click on the letter shown with each object to obtain the popup information screen.

Celestial Object	**Time for Light to Reach the Earth**
Pluto	_____
Jupiter	_____
Mars	_____
Moon	_____
Sun	_____

5. **Hubble Showcase Icon**

Find the following objects and describe them. You will need to go to the reference information to find the answers to the questions below.

(a) **Antennae Galaxies**

(1) What is the official name? _____

(2) What is happening to the two galaxies shown?

_____

(3) In the process of this interaction, what is forming? _____

(4) What are the orange blobs to the right and left of the image center?

_____

(5) Describe the regions with the following colors:

Blue: _____

Brown: _____

Pink: _____

(6) Why were the Antennae galaxies given this name?

_____

_____

(b) **Eagle Nebula (Pillars of Creation)**

(1) What is the catalog name for the Eagle Nebula? _____

(2) What are the columns made of? _____

(3) What is being formed? How? _____

_____

6. **Chandra X-Ray Showcase Icon**

N49

What does N49 contain? _____

Where is N49 located? _____

What is the temperature of the gas in the center (blue)? _____

7. **Galex Ultraviolet Showcase Icon**

When the popup information screen comes up, go to the Caltech site to answer the questions below. Find the "Feature Story: Revisiting Classic Stellar "Real Estate" with Galex."

Southern Pinwheel Galaxy

What is its official catalog name? _____

In what constellation can it be seen? _____

How large is it? _____

How many light years away is it? _____