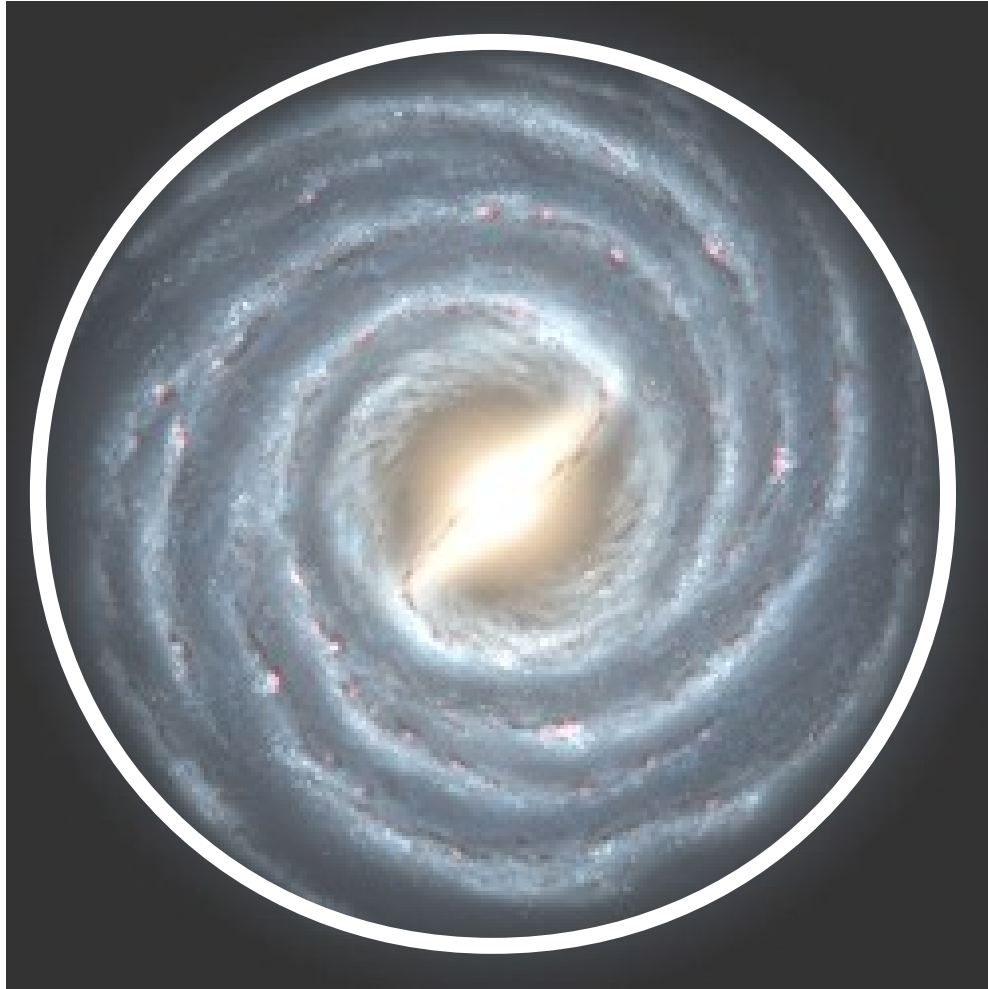


Navigating the galaxy with a CD Galaxy – by David O'Dell

- 1) On your printed Milky Way galaxy, your teacher will show you where the Sun is located as a reference point for the rest of the activity. You can also look up online where the sun is located in the Milky way.
- 2) Using Stellarium software, on the left hand option menu click on “Sky and Viewing Options” or press F4
- 3) Select the “Markings” tab
- 4) Check the following boxes ON: Cardinal points, Ecliptic, Galactic plane, show art, show lines, show labels
- 5) Click on the “Landscapes” tab
- 6) Uncheck the following boxes so they are OFF: Show ground, show fog
- 7) Using the “L” key, press a couple of times to fast forward through time to a dark evening. If it goes too fast press the “K” key to stop.
- 8) Using mouse or arrows navigate to the intersection of Sagittarius and the Galactic plane. This is very close to Zero degrees in galactic coordinates, looking into the center of the galaxy.
- 9) On your printed Milky Way, observers near the Sun (us Earthlings) must look through the center of the galaxy to see zero degrees. So, draw a line from the Sun through the center of the galaxy to the outermost part. Mark this on the outside of the circle as “0” degrees.
- 10) Obviously, an observer near our sun can look 180 degrees away from the center of the galaxy and see stars. Draw a line from the Sun and AWAY from the center of the galaxy. Mark on the outside of the circle as “180” degrees.
- 11) Using Stellarium, navigate to the intersection of the galactic plane and 180 degrees away from the galactic center. Which constellations are closest to this intersection of the Ecliptic and the galactic plane that is opposite the galactic center? Write these constellations on your printed Milky way.
- 12) From 0 degrees, moving counter clockwise, place a marker 90 degrees which is in between 0 and 180. Then in between 180 and 0 degrees moving counter clockwise place a marker that is at 270 degrees.
- 13) Using Stellarium, and knowing the intersections of the Ecliptic and Galactic planes are 180 and 0, try to determine which constellation is closest to 90 degrees, and then which constellation is closest to 270 degrees.
- 14) Now with a coordinate system, and help from Stellarium, you need search for and mark the following objects on your printed Milky way. To Search for objects, move the mouse to the left hand of the screen and click on the Search window icon or press F3:
 - a. M57 – the ring nebula
 - b. M1 – crab nebula
 - c. M42 – Orion nebula
 - d. M45 – Pleiades
 - e. M31 – Andromeda galaxy, does not lay within our galaxy, but please note the general direction with an arrow. This is the galaxy we are supposed to collide with eventually.

STUDENT BLANK CD GALAXY CUT-OUT SHEET

MARK YOUR OBJECTS INSIDE THE WHITE BORDER, THEN, CUT IT OUT, PASTE IT TO THE CD

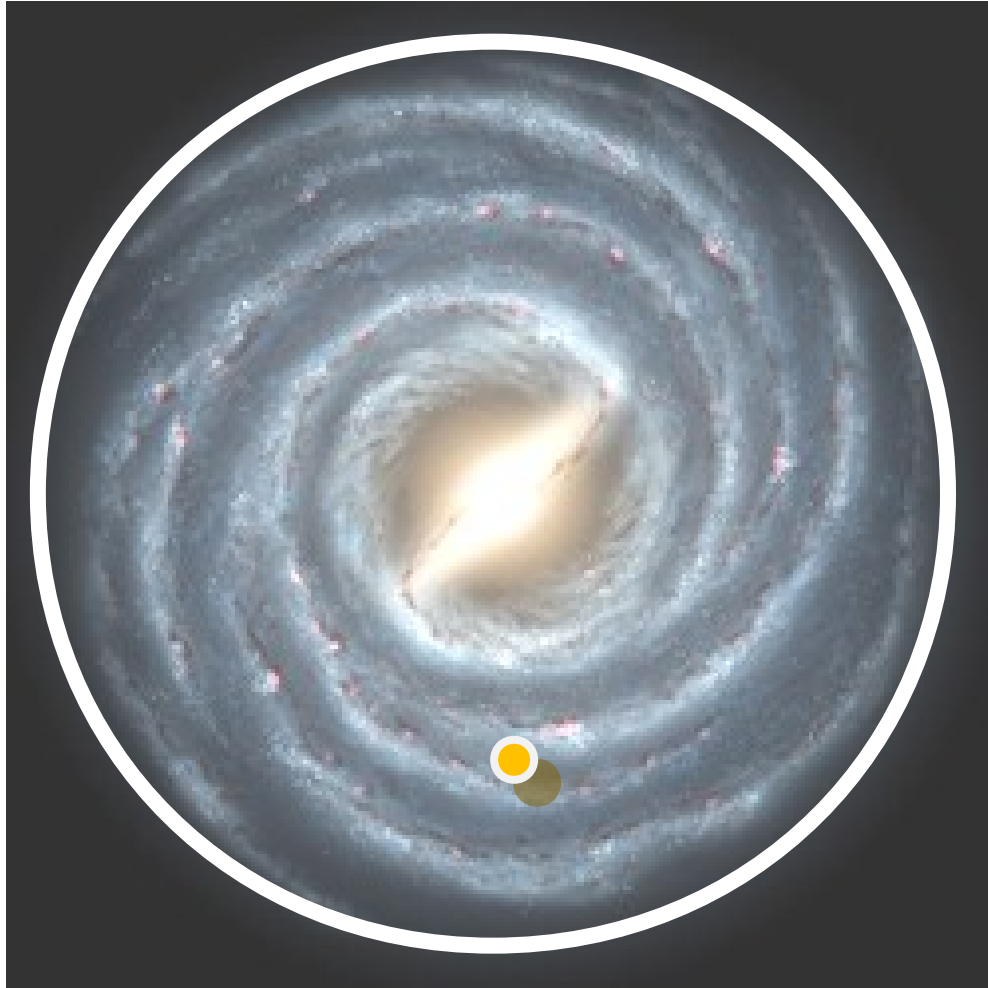


HOW TO COLOR THE GALAXY:

- 1) YOUNG BLUE 'O' AND WHITE 'B' STARS ARE LOCATED IN THE BRIGHT SWIRL DUST LANES WHERE THE WAVES OF GAS ARE MOST COMPRESSED
- 2) ONCE THE WAVE PASSES, OLDER, COOLER YELLOW 'G' AND RED 'M' STARS ARE FORMED IN THE DARKER AREAS BETWEEN THE DUST LANES
- 3) USING BLUE, SILVER, YELLOW AND RED MAP PENCILS OR GLUE AND GLITTER, DECORATE THE GALAXY WITH THE APPROPRIATE STAR DISTRIBUTION.

TEACHER NOTES:

THE SUN LOCATION FOR INITIAL REFERENCE POINT:



ANSWER KEY:

