

Chapter 18 Activity

Distance from Earth to the Sun

The Sun is our closest star. It provides energy for the Earth. It influences our seasons. It heats our atmosphere. Because of its importance, scientists have been studying its behavior and its relationship to the Earth. One of the things they have learned is what you will find below by completing this activity.



Materials

Spreadsheet program or graph paper, pencil, ruler

What you will do

Use the table to the right to construct a graph of the month of the year versus the distance of Earth to the Sun using your spreadsheet program. If one is unavailable, then use graph paper, a pencil, and a ruler. The units are in AU or astronomical units. One AU is the average distance of the Earth from the Sun, approximately 150,000,000 km. These values are from the 1996 US Ephemeris (<http://image.gsfc.nasa.gov>). An ephemeris is a table of astrological data showing positions of celestial bodies over periods of time.

Month	Distance (AU)
January	0.9840
February	0.988
March	0.9962
April	1.0050
May	1.0122
June	1.0163
July	1.0161
August	1.0116
September	1.0039
October	0.9954
November	0.9878
December	0.9837

Applying your knowledge

- During what season of the year is the Sun furthest from the Earth?
- During what season of the year is the Sun closest to the Earth?
- Were your answers to number 3 and 4 your expectation? Why or why not?
- What does this mean about the reason for the seasons?
- What does this data show about the relative size of the Sun as seen from Earth over the year?