

AS101 - The Solar System (Section A1) - Spring 2013

Your Name:

Date:

Introduction to SkyGazer

Orbits in the solar system

Login as AS102, password "gravity"

Open the SkyGazer program (Macintosh HD, Applications, SkyGazer 4, SkyGazer 4)

Next use the Explore Menu to select The Solar System

Adjust the sliding bars so that you're looking down on the solar system from above the North Pole of the Sun and adjust the date to today. Experiment with the controls in the right-hand window (time, scale, items shown). Note that the speed at which time advances is controlled by the scale set in the view location.

When does the next Mars opposition occur? _____

How long is the time interval between two Mars oppositions? _____

When does the next Venus inferior conjunction occur? _____

When does the next Venus superior conjunction occur? _____

Remember to reset the clock to today before answering each question

Using the purple gridlines as a guide, approximately when does Mercury next reach its perihelion (closest distance to the Sun)?

When does Mercury next reach its aphelion (furthest distance from the Sun)?

How were the positions of Saturn, Uranus and Neptune related on 1 March 1989?

Which planet is on almost exactly the opposite side of the Sun from Uranus on 1 March 1989?

How long does Pluto take to orbit the Sun? _____

Several planets, including Pluto, have orbits that are not close to circular. Adjust the sliding bars so that you're not looking down on the solar system from above the North Pole of the Sun. What else is unusual about Pluto's orbit?

Planets in the night sky

Close the "Exploring the solar system" window.
If the Display, Time, and Location Panels are not open, use the Window menu to open them.

Use the Location Panel to change the longitude to 71 deg West and the latitude to 42 deg North (Boston). Experiment with the controls in the Time Panel and the sliding bars on the main window. Spend some time working out exactly what is displayed on the screen, which way up is, and which way north is. Use the zoom control and the sliding bars to view the entire sky.

What planets will be visible through a telescope in the night sky tonight? _____

Which planet is closest to the Sun in the sky? _____

What time does (or did) the Moon rise at TODAY? _____

Look north. Describe the motion of the stars through 1 night _____

Imagine you are a professor teaching AS101. Write your own question for students to answer using this sky chart and provide the answer.

QUESTION: _____

ANSWER: _____

Other possible activities (NOT GRADED)

Explore some of the other capabilities of the SkyGazer program.

What did you look at? _____

Why did you choose to look at it? _____

Describe what you saw _____

What did you like about the SkyGazer program? _____

What didn't you like about the SkyGazer program? _____
