

AS101 - The Solar System

Last name:

First name:

Date:

Skygazer Lab

Orbits in the solar system:

Log in to the lab computer, AD domain (default), with your BU Kerberos username and password. Navigate to **JSOrrery** web app: <https://mgvez.github.io/jsorrery>

Look down on the solar system from above the North Pole of the Sun and make sure the date is set to today. Experiment with the controls on the left side of the screen, such as animation speed and point of view. You can reload the page to get back to the default configuration. Zoom in and out with your mouse scroll wheel, and you can left-click and drag to change your angle of view.

Remember to reset the clock to today before answering each question

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? _____

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. Click and drag on the screen to change viewing angle, 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:

Open “**Stellarium**” desktop app.

Point the mouse to the bottom left corner to reveal pop-up toolbars. Check that the Location is set to Boston (71 deg West and the latitude to 42 deg North.) Click on the “Date and Time” option on the left toolbar to enable the time control panel. Experiment with the controls in the Time Panel to see how objects in the sky move. Spend some time working out exactly what is displayed on the screen, which way up is, and which way north is. You can click and drag to change your direction, zoom in and out using mouse scroll wheel

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 JSOrtery or Stellarium programs.

What did you look at? _____

Why did you choose to look at it? _____

Describe what you saw _____

What did you like about the Stellarium or JSOrtery program? _____

What didn't you like about the Stellarium or JSOrtery program? _____

