International Year of Astronomy 2009 “You are Galileo!” Project

Let’s Observe Jupiter and the stars around it!

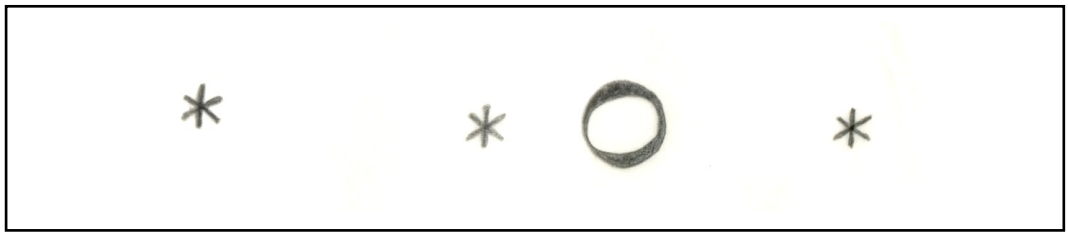
Observation & Sketch

Name

Address

Age

Galileo Galilei was an Italian scientist. He was the first person who observed Jupiter using his small hand-made telescope in 1610 and made a great discovery. What did he found?
Let's experience his surprise by recreating his observations by yourself.



↑A hand written copy of a sketch of Jupiter made by Galileo Galilei on January 7, 1610.

First observation
weather:

Date _____ Aperture of telescope _____ cm

Site _____ Magnification _____ x

*The magnification of a telescope can be calculated as follows. “Focal length of telescope ÷ focal length of eye piece”

Second observation
weather:

Date _____ Aperture of telescope _____ cm

Site _____ Magnification _____ x

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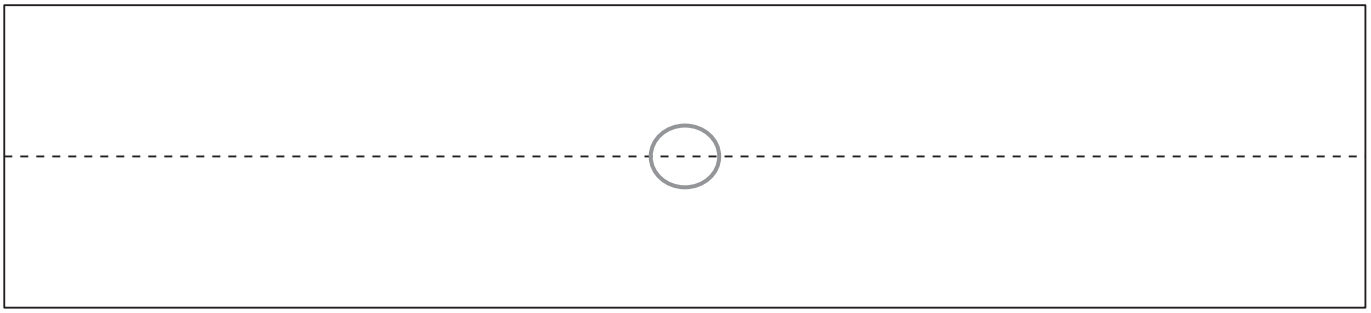
Third observation

weather:

Date _____ Aperture of telescope _____ cm

Site _____ Magnification _____ x

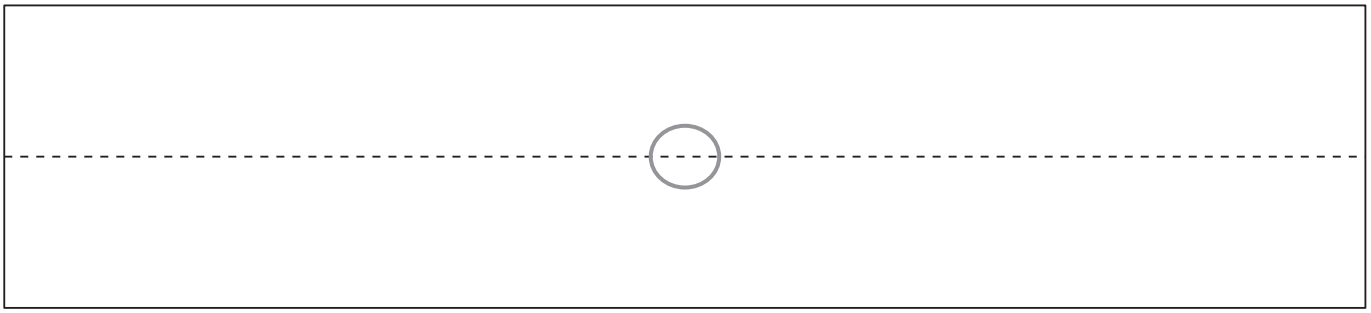


Fourth observation

weather:

Date _____ Aperture of telescope _____ cm

Site _____ Magnification _____ x



■ Describe your observations of Jupiter and note anything peculiar you found.

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Post Observation Worksheet

Name _____

■ What are those bright stars around Jupiter? Make your guess.
A hint: pay attention to the positions of the four stars at the various observations.

Observations with 2 hour intervals

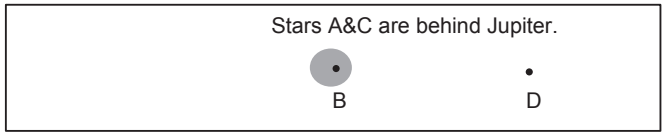
2 hours later

4 hours later

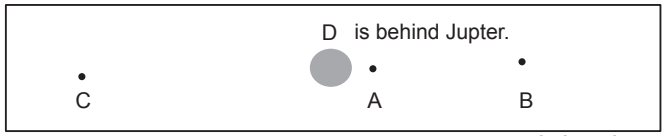
6 hours later

8 hours later

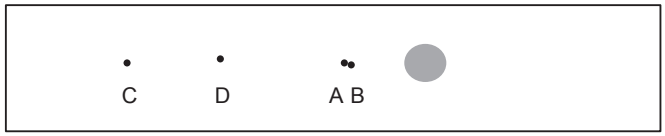
Observations with 1 day intervals



1 day later



2 days later



3 days later

4 days later

Post observation worksheet

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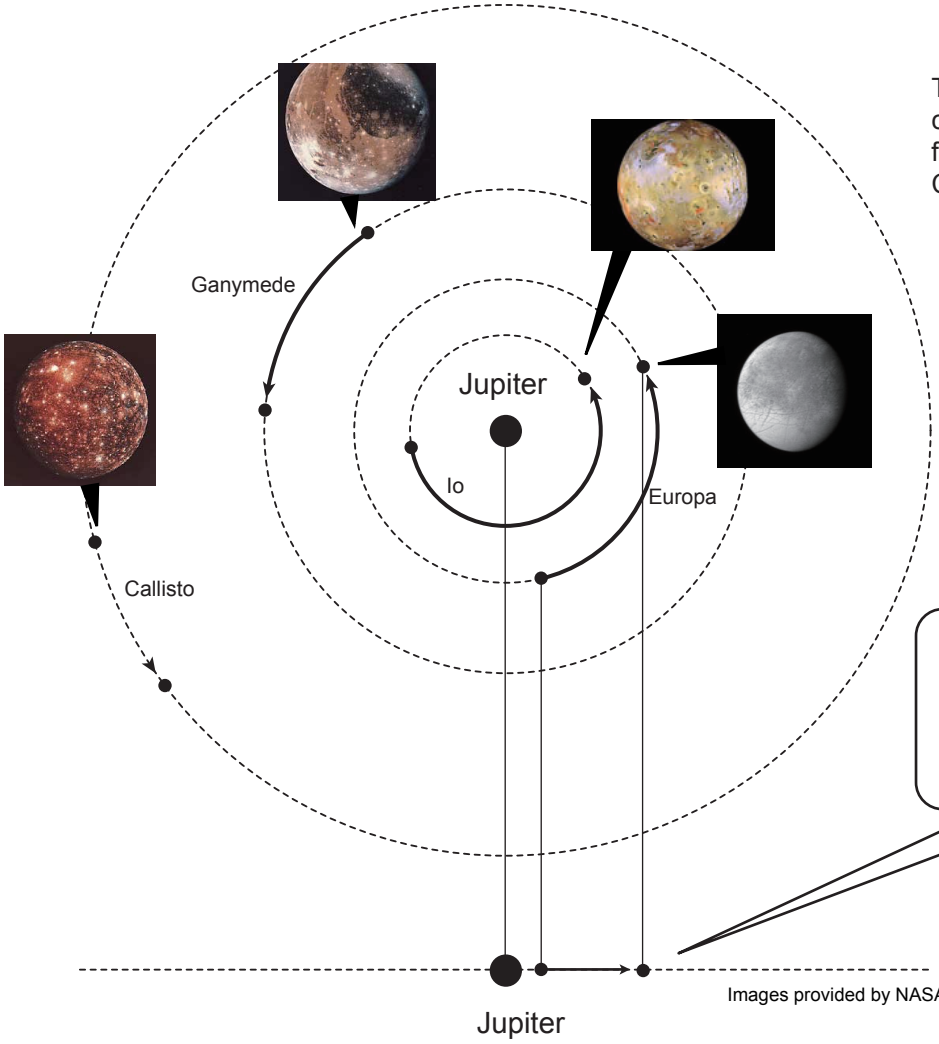
■ Celestial objects that orbit planets are called “satellites”. For example, the Moon is the satellite of Earth. Below is a schematic view of the motions of the satellites observed from the north pole-on direction of Jupiter. We see Jupiter and the orbiting satellites from the side-way when we are on Earth.



The four satellite which Galileo discovered are called "Galilean satellites", and they are named, from inside out, Io, Europa, Ganymede, and Callisto.

← The motions of the satellites observed from the north pole-on direction of Jupiter.

Draw each satellite motion observed from Earth like this motion of Europa.

Images provided by NASA

← The motions of satellites looked from the side-way. (i.e. from Earth)

■ Summarize what you found out, what you want to know more, and what you want to examine in the future.

Did you find what Galileo did? You are the little Galileo!