



Let's Observe Jupiter and the Stars around It!

Observation & Sketch

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 find? Let's experience his surprise by recreating his observations by yourself.

Name _____

Address _____

Age _____

At first, use the eyepiece of 25x for observing Jupiter and its moons together. Then use the eyepiece of 50x for detail observation of Jupiter.



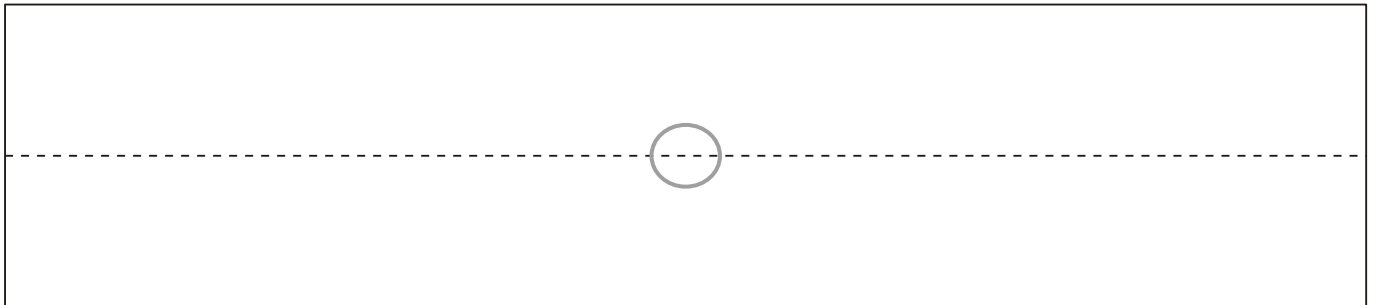
↑A hand written copy of a sketch of Jupiter made by Galileo Galilei on January 7, 1610.

First observation
weather:

Date _____ Aperture of telescope _____ cm

Site _____ Magnification _____ x

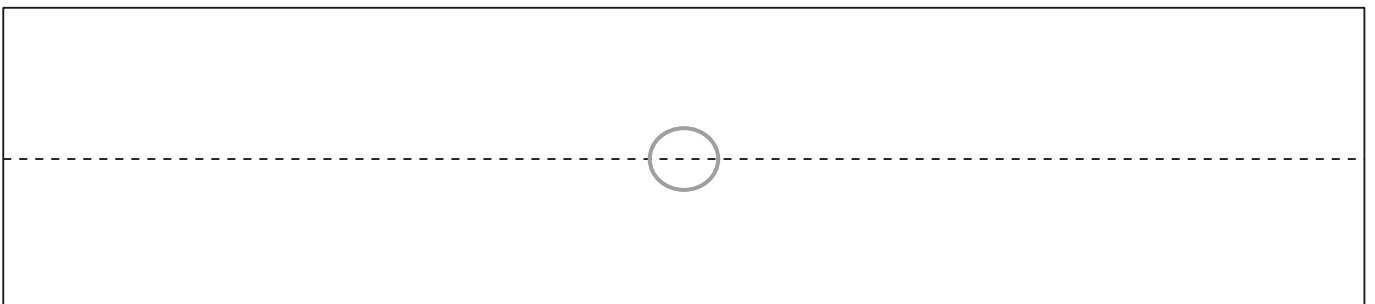
*The magnification of a telescope can be calculated as follows. "Focal length of telescope ÷ focal length of eye piece"



Second observation
weather:

Date _____ Aperture of telescope _____ cm

Site _____ Magnification _____ x

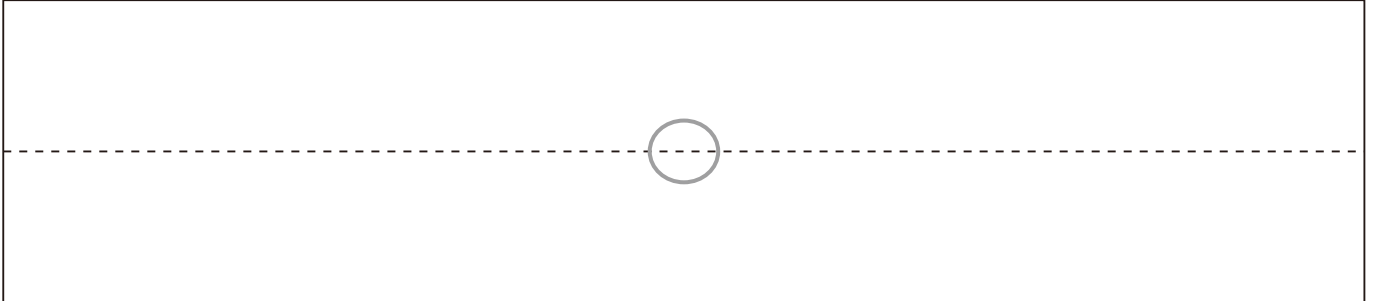


Observation & Sketch

"You are Galileo!" Project
Let's Observe Jupiter and the Stars around It!

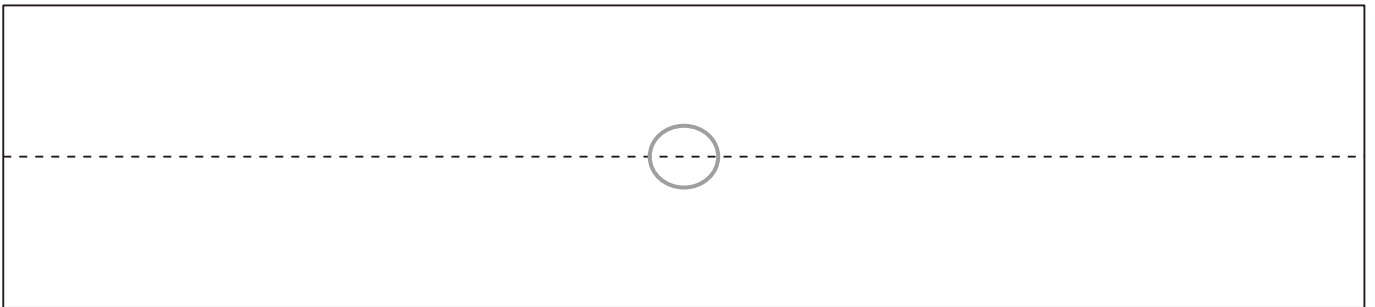
Third observation
weather:

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.



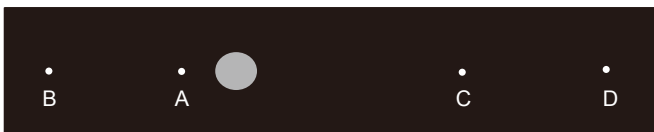
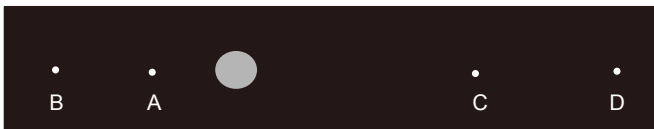
Let's Observe Jupiter and the Stars around It!

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



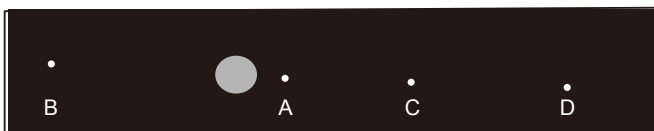
2 hours later



4 hours later

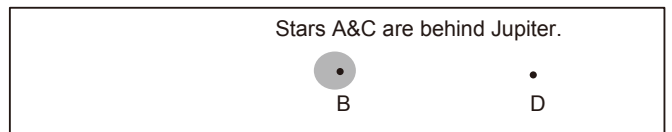


6 hours later



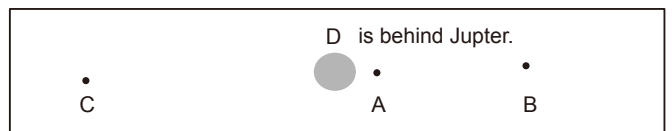
8 hours later

Observations with 1 day intervals



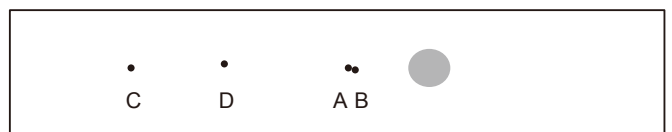
Stars A&C are behind Jupiter.

1 day later



D is behind Jupiter.

2 days later



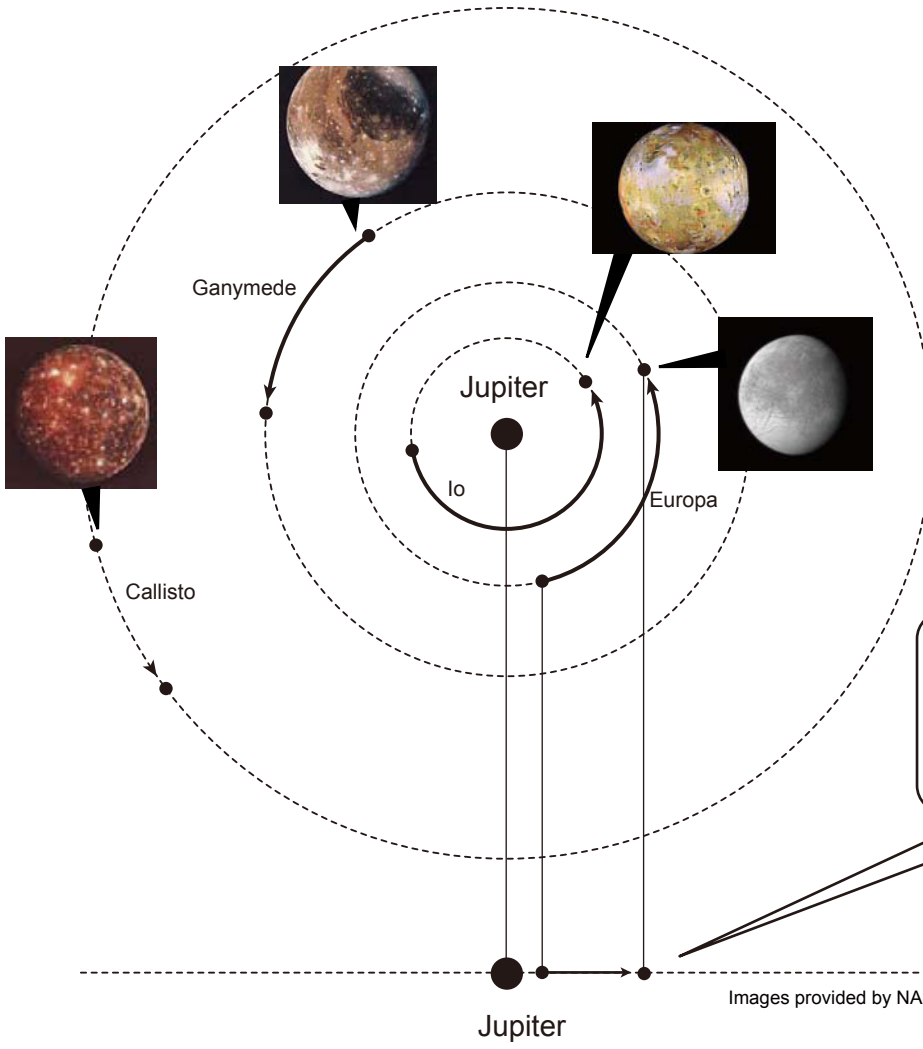
3 days later



4 days later

Post observation worksheet

- 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.

← 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!

★Post Observation Study—Memo—

About 400 years ago, the telescope which Galileo Galilei made and used to his observations had a very narrow field of view. That situation can be experienced with this assembly telescope. By comparing the field of views of the 25x, 50x eyepieces with that of the Galileo's eyepiece, you notice that the field of view of the Galileo's telescope was really narrow. And you will notice that the image becomes erect from the inverted image. In this respect, the Galileo's telescope is suitable for observations of ground scenery. It would be nice to compare the scenery through the 25x, 50x eyepieces with that of the Galileo's eyepiece in a daytime. Although you may easily imagine difficulties of Galileo Galilei who continued observing celestial objects through the narrow field of view, the telescope could be a miracle tool for observations of celestial objects, compared with naked eye.