

Name: Key

Space - Topic 1 and 2 Review

Topic 1 Review

1. What is a Frame of Reference? A set of axes, that describes positions and motion of things

In what frame of reference does a building seem not to move? If I am inside a building

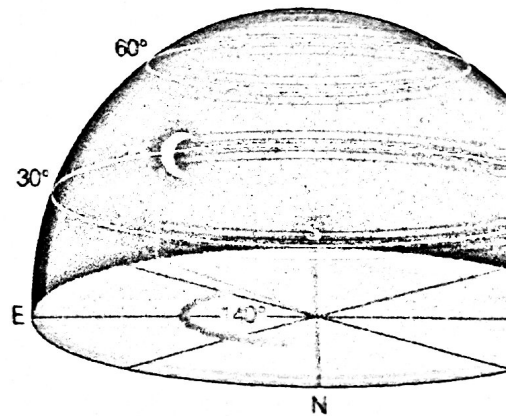
2. Why did the ancient peoples think that the Earth was at the center of the universe? From our frame of reference it seems as though we are not moving, but things like the stars are moving

3. What is an Astrolabe and what function does it perform? This measures the measure of the altitude of an object

4. You want to measure the coordinates of a celestial body. The first angle you measure is clockwise from north. What is the name of this angle? Azimuth
Next you measure the celestial object's angle above the horizon. What is this angle called? Altitude

5. Write the coordinates down of the Moon using the diagram to the right.. Make sure to identify what angle you are using (check question 4).

<u>150° Azimuth</u> <u>30° Altitude</u>
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6. Describe how the Heliocentric model differs from the Geocentric model. Be specific.

Heliocentric - Earth cent Sun centered

Geocentric - Earth centered

Topic 2 Review

7. Why did Galileo conclude that Jupiter had four moons travelling around it? _____

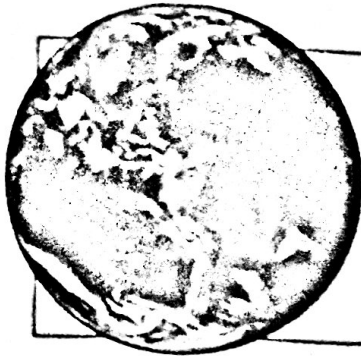
He saw four bodies around Jupiter

8. What observation led Galileo to the conclusion that the Sun rotates? What did he see?

He noticed the sun spots changing positions

9. What shape are the orbits of the planets? Ellipses

Draw out what this looks like.

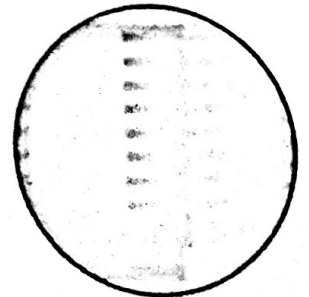


10. The magnification of an astronomical telescope can be found by dividing the Objective Focal Length by the Ocular Focal Length.

a. Suppose you have an objective lens with a 120 cm focal length and you want to make a telescope with a power of 60x. What focal length should the ocular lens have? Show your calculations.

$$\frac{\text{Obj.}}{\text{Ocu.}} = \text{Mag} \therefore \frac{\text{Obj.}}{\text{Mag}} = \text{Ocu.} \quad \frac{120\text{cm}}{60x} = 20\text{cm}$$

b. The two diagrams on the right show a building and its image through a telescope. If the objective lens of the telescope is 25 cm, then what is the focal length of the eye piece?



11. Describe how the planets stay in a stable orbit around the Sun.

The Sun has a strong gravitational pull and keeps all planets in orbit

frame of reference

celestial bodies

constellations

planets

azimuth

altitude

altitude-azimuth co-ordinates

astrolabe

compass

Earth-centred (or geocentric)

Sun-centred (or heliocentric)

telescope

objective lens

eyepiece (or ocular lens)

refracting telescope

refracting

reflecting

ellipse

universal gravitation

Using the words above, fill in the appropriate word for each of the following definitions:

A

- a star's angular height above the horizon
- a model with Earth as a non-moving frame of reference
- the true shape of the planets' orbits
- a device used to measure the altitude of an object
- a model with the Sun as a non-moving frame of reference
- used to measure an object's azimuth
- angles used to specify the co-ordinates of celestial bodies
- a set of axes used to describe the positions or motions of things
- a telescope with a lens for the objective

Altitude

Geocentric

Elliptical

Astrolabe

Heliocentric










Compass

Alt Az coords

Frame of Ref.

refracting

COOL SPACE FACTS

-  THE SUN MAKES UP 99.86% OF THE SOLAR SYSTEM'S MASS
-  MERCURY IS NAMED AFTER THE ROMAN MESSENGER TO THE GODS
-  VENUS SPINS IN THE OPPOSITE DIRECTION TO MOST PLANETS
-  THE EARTH IS 149,598,262 KM FROM THE SUN
-  MARS IS HOME TO OLYMPUS MONS, THE SOLAR SYSTEM'S TALLEST VOLCANO
-  JUPITER IS LARGE ENOUGH FOR THE EARTH TO FIT INSIDE 1,000 TIMES
-  SATURN HAS THE SECOND LARGEST RING IN THE SOLAR SYSTEM, TITAN
-  NEPTUNE IS COLDEST PLANET IN THE SOLAR SYSTEM
-  NEPTUNE SNORTS THE SUN BACK EVERY YEAR