

Answers to your Phases of the Moon Lab Questions

Question: *How do I measure angles in the sky?*

Answer: You can use your hand **held at arms length** to measure angles. Your index finger is roughly 1° wide. If you clinch your fist, it is about 10° wide. If you spread your fingers apart, from the tip of your little finger to the tip of your thumb is around 20°

Question: *What am I supposed to do?*

Answer: Each time that you find the moon, sketch the phase of the moon (how much of it you see) in the circles on the next page. Be sure to do this accurately, especially noting which side is visible. Also, measure the angle and direction of the moon from the Sun. **Be sure to record exactly what it is you measured!**

Question: *How often do I need to make these measurements?*

Answer: You should make observations every day that you have a clear sky until the Phases of The Moon Lab (September 15 or 17). You will use these observations to help you learn why the moon goes through phases in the Phases of The Moon lab.

Question: *When and where will I be able to find the moon?*

Answer: Beginning on the first week of class (starting Aug 31), look for it in the south to southeast in the evenings (Friday Sept 4th is the Full moon so it rises as the Sun sets). For the second week of class (starting Sept 7) the Moon is approaching Last Quarter so look for it in the southwest in the late evening. The following week (the week of the lab) the Moon is approaching New Moon so look for it in the early mornings in the East. Rise and set times are:

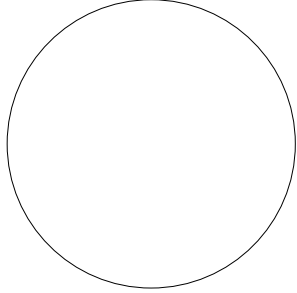
Date	Moon Rise	Moon Set
Aug 31	5:12 PM	2:25 AM
Sept 3	6:38 PM	5:22 AM
Sept 8	8:55 PM	10:26 AM
Sept 13	12:22 AM	3:37 PM
Sept 16	4:01 AM	5:34 PM

Sunrise, sunset, moonrise and moonset times are available on the astronomy website www.apsu.edu/astronomy.html (click on the Sunrise/Set link)

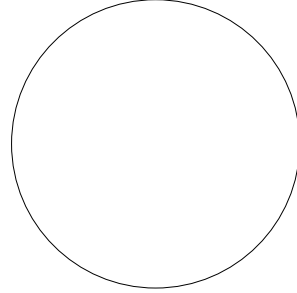
Question: *How do I measure the angle of the moon from the sun if the sun is down (maybe you're out after sunset)?*

Answer: If the sun has gone down, you will need to measure the angle from the moon to the **western** horizon then add 15° for every hour after sunset. Example: Suppose you find the moon is 20° above the eastern horizon at 10:47 pm. Then it is 160° from the western horizon (180° - 20°). If the Sun set at 7:17 PM then the angle of the moon is 160° + (3.5 hr x 15° per hour) = 212.5° east of the sun. You can do the calculations at a later time so what you need to measure is the angle of the moon **from the western horizon** and record the time.

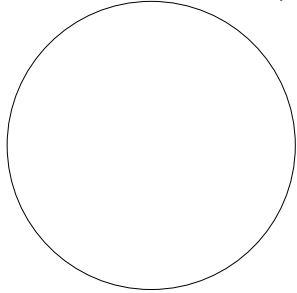
Date: _____ Time: _____
Angle of moon from sun: _____
Direction of moon from sun: (E or W)



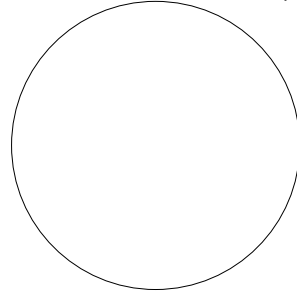
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Angle of moon from sun: _____
Direction of moon from sun: (E or W)



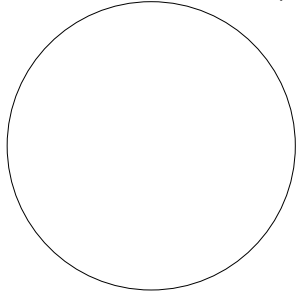
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Angle of moon from sun: _____
Direction of moon from sun: (E or W)



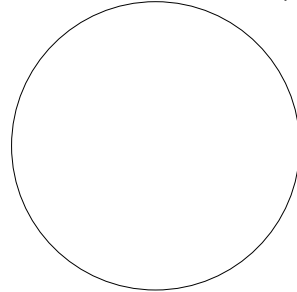
Date: _____ Time: _____
Angle of moon from sun: _____
Direction of moon from sun: (E or W)



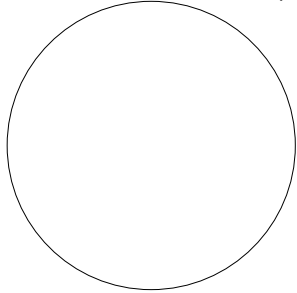
Date: _____ Time: _____
Angle of moon from sun: _____
Direction of moon from sun: (E or W)



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Angle of moon from sun: _____
Direction of moon from sun: (E or W)



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Angle of moon from sun: _____
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Direction of moon from sun: (E or W)

