



# NR111

## March 2026

The newsletter of the Richland Astronomical Society and Warren Rupp Observatory

### A Total Lunar Eclipse Viewing Guide- Tuesday, March 3, 2026

By Mitch Luman



Skywatchers should brace for a chilly early-morning total lunar eclipse on Tuesday, March 3. This eclipse occurs in the pre-dawn hours, so only dedicated early risers will likely catch show. It has been a year since our last lunar eclipse. We will have to wait until 2029 to witness another total one.

#### What Happens During a Total Lunar Eclipse?

A lunar eclipse happens when the full Moon passes through Earth's shadow. During totality, the Moon's surface darkens noticeably—often taking on striking coppery-red or rusty-brown hue. This all happens over the course of a few hours. For our area, the eclipse reaches totality about an hour before the Moon sets and the Sun rises.

#### Key Times for North Central Ohio (EST)

- **Partial phase begins** → 4:50 a.m.
- **Totality begins** → 6:04 a.m.
- **Totality midpoint** → 6:34 a.m.
- **Moon set and Sun Rise** → around 7:00 a.m.
- **Totality ends** with moon below the horizon → 7:03 a.m.

### How to Watch

No special equipment is needed—just look to the west a few hours before sunrise.

- Face the western horizon under clear skies.
- Dress warmly—it will be a cold March morning!
- Binoculars or a small telescope will enhance the view of the Moon's subtle color changes, but the naked eye works perfectly well.

This is one of nature's most serene celestial events. When they occur during twilight—as this one does—they can be memorable. So, set your alarm and bundle up if you want to witness an eclipsed Moon against the fading stars of the morning of March 3rd.

Clear skies to all who brave the early hour!

The 2026 Astronomical  
League Convention



**Join us August 12th - 15th, 2026 as  
ALCON returns to the Great Lakes Region  
for the first time in 27 years.**

For more information visit  
**ALCON2026.org**

**ALCON 2026 is being hosted by the Cincinnati Astronomical Society, one of the nation's oldest and largest amateur societies.**

**A wide variety of events are being planned, along with the annual Star-b-que, and many other fun and engaging activities.**

**The ALCON will be held in Covington Kentucky at the Marriott Rivercenter; a hotel that looks out across the Ohio river into downtown Cincinnati. Come visit for the entire week and join us for ALCON 2026!**




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SOCIETY



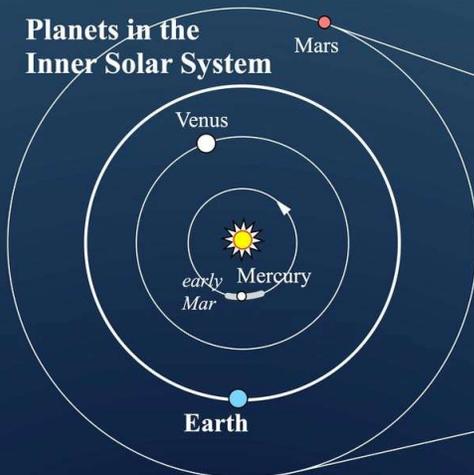
# Relative planet positions this March



The planets are in constant motion

What planet is closest to Earth in March?

## Planets in the Inner Solar System

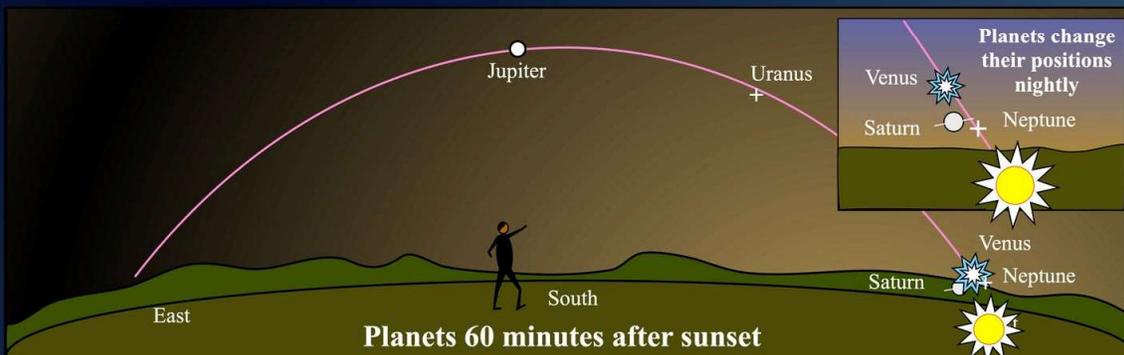


What planet is always farthest from Earth?



## Planets in the Outer Solar System

Mercury, Mars, Venus, Saturn, and Neptune are all clustered in the sun's direction, and follow the sun as it arcs across the sky.



Planets change their positions nightly

Venus ✨  
 Saturn ○  
 Neptune ✨



## Galileo Observing Program

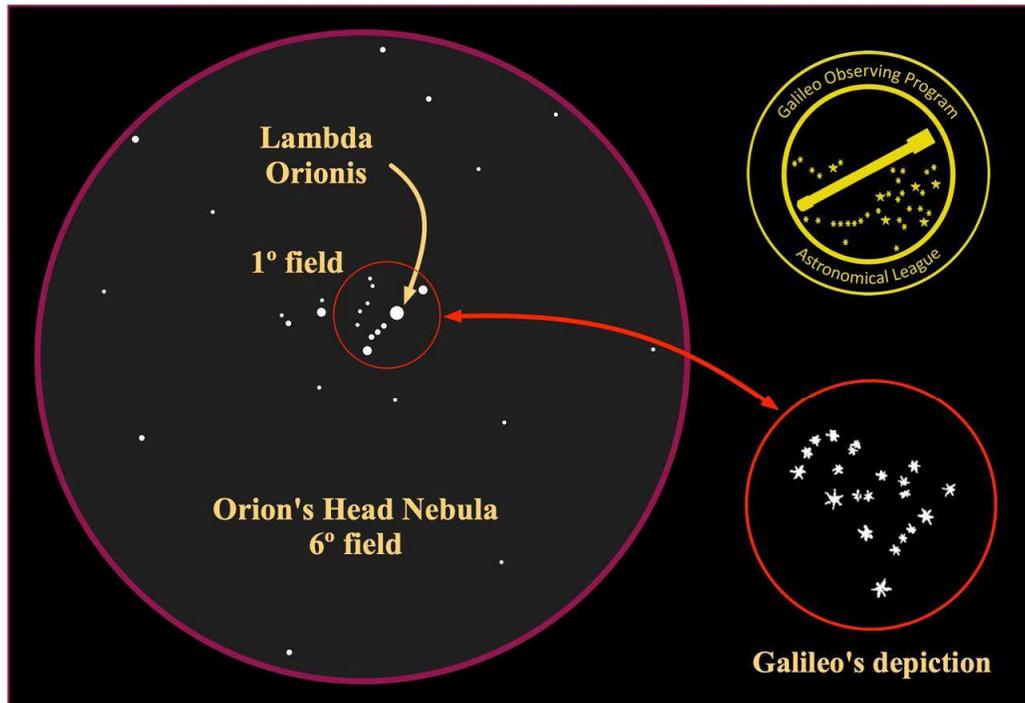
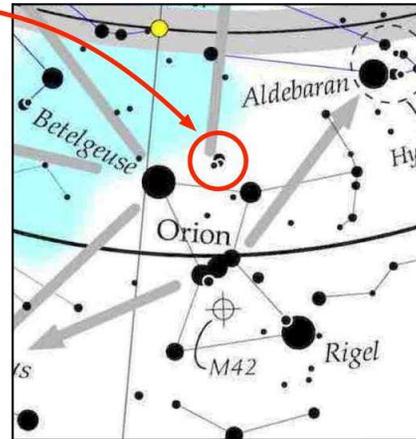
### Activity No. 5: Orion's Head Nebula



#### 1610 – Orion's Head Nebula

The objective is to show that there are more stars visible through binoculars or a small telescope than there are with the naked eye. Observe and sketch the region at the head of Orion (the star is called Lambda Orionis or Meissa). You will note that what looks like 1 star as seen with the unaided eye is actually 3 brighter stars and many lesser ones.

Sketch what you see. Galileo was able to see 20 in a region about 2 degrees across.





# ASTRONOMICAL LEAGUE

## Awards



For complete details: [www.astroleague.org/astronomical-league-awards/](http://www.astroleague.org/astronomical-league-awards/)

Award	Brief Description	Eligibility	Entry Deadline
<b>Mabel Sterns Newsletter Editor</b>	Recognizes the important work of a newsletter editor of an AL club.	Newsletter editor of an AL club.	March 31
<b>Webmaster</b>	Recognizes the important work of a webmaster of an AL club.	Webmaster of an AL club.	March 31
<b>GR Wright Service</b>	Honors volunteers for their service to the Astronomical League.	Any volunteer of the AL.	March 31
<b>Peltier</b>	Recognizes amateur astronomers who contribute work of lasting significance.	Any amateur astronomer.	March 31
<b>Williamina Fleming Imaging</b>	Encourage female imagers to pursue imaging and to display their finest work. Imaging sections: Deep field, wide-field, and solar system.	Female imagers, at least 19 years of age, who are members of the AL.	March 31
<b>Sketching</b>	Recognizes the remarkable work of sketchers depicting what appears in the eyepiece. 1st, 2nd, and 3rd places.	Any member of the AL.	March 31
<b>Astronomy Day</b>	Encourage AL clubs to actively engage the public on either one of the two Astronomy Days each year.	Any organized amateur astronomical society.	March 31
<b>National Young Astronomer</b>	Young astronomers, who have conducted either exemplary astronomy research, observing, or academic scholarship, or who have developed innovations in equipment design, are recognized.	US citizen 14-19 years of age and not enrolled in more than 1 college course.	March 31
<b>Horkheimer/Smith Youth Service</b>	A young person is recognized for his or her astronomy related service to the club and community.	19 years of age or younger who are AL members.	March 31
<b>Horkheimer/D'Auria Youth Service</b>	A young person is recognized for his or her astronomy related service to the club and community.	19 years of age or younger who are AL members.	March 31
<b>Horkheimer/Parker Youth Imaging</b>	Young people are recognized for their remarkable astronomical images. 1st, 2nd, and 3rd places.	19 years of age or younger who are AL members.	March 31
<b>Horkheimer/O'Meara Youth Journalism</b>	Young people are recognized for their writing skills by submitting a well-composed essay on a science related topic. 1st, 2nd, and 3rd places.	Anyone 8-14 years of age.	March 31



Open Cluster Season: July through April

## Open Clusters, heavenly jewels sprinkled on black velvet



**Open clusters** can be beautiful and inspiring. Viewing them can be challenging but memorable.

Some clusters only need a small telescope to give a satisfying view, but many others require an instrument larger than 8 inches in diameter.

In this program, you will observe that clusters vary:

- greatly in the magnitude range of their individual stars,
- in the number of stars they contain,
- and in their stellar concentrations.

That is why participants are asked to use the Trumpler system to estimate a cluster's overall physical appearance – it will give observers a better appreciation of cluster characteristics.

### Trumpler Classification System

- Degree of concentration: Dispersed vs. compact
- Range of stellar brightness: Many stars of nearly equal magnitude vs. stars of many magnitudes
- Number of cluster stars: A dozen or less up to more than 100
- Nebulosity present: Most clusters have none, but a few have some

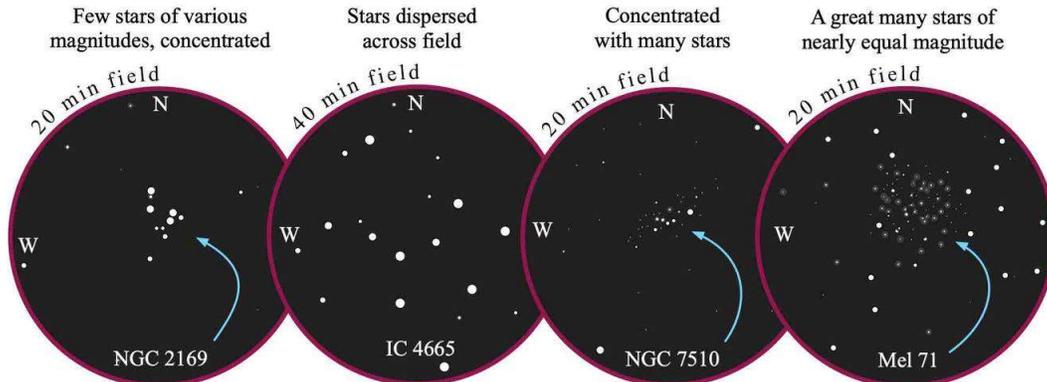
**Don't let these three perceived obstacles stop you from attempting this very worthy program!**

- A reluctance to sketch what is seen,
- a reluctance to make an evaluation for assigning a suitable Trumpler designation, and
- a fear that your telescope will not be up to the task of resolving the cluster well enough to give a meaningful view.

### Some basics of the Open Cluster Observing Program:

- Must observe 125 open clusters from the list provided.
- Catalogues encountered: Messier, NGC, IC, Stock, Collinder, Melotte, Trumpler, Berkeley, Biurakan, Harvard, King, Dolidze, Dolidze Dzimseljsvili, Ruprecht, Stephenson, Tombaugh, and French.
- Must do 50 or more Sketches.

For complete program details: <https://www.astroleague.org/open-cluster-observing-program/>





## Observing Caldwell Galaxies

By the late 1700s, Charles Messier had catalogued many – but not all – of the finest deep sky objects. The Caldwell list, developed by Sir Patrick Caldwell-Moore in 1995, gathered another 109 candidates worthy of scrutiny by amateur observers.



### Caldwell 05, IC 342 a nearby spiral galaxy

*It is large and bright, but has a low surface brightness making the galaxy difficult to discern.*

#### How to locate Caldwell 5 (IC 342)

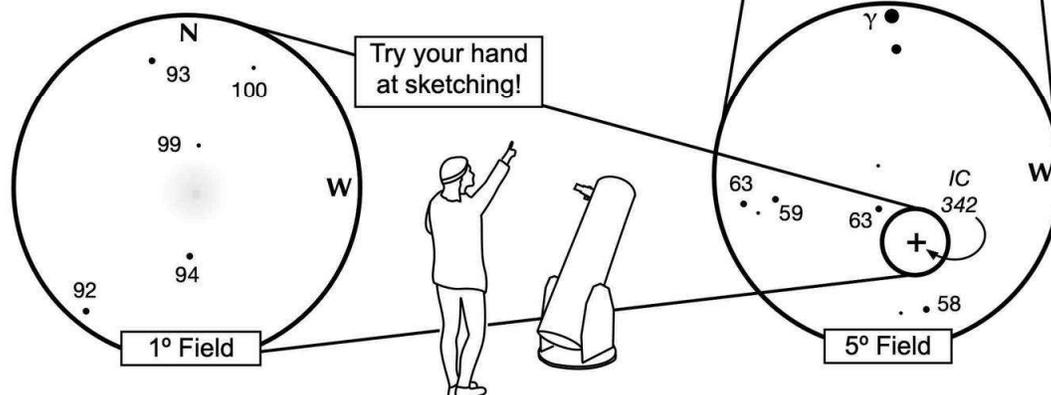
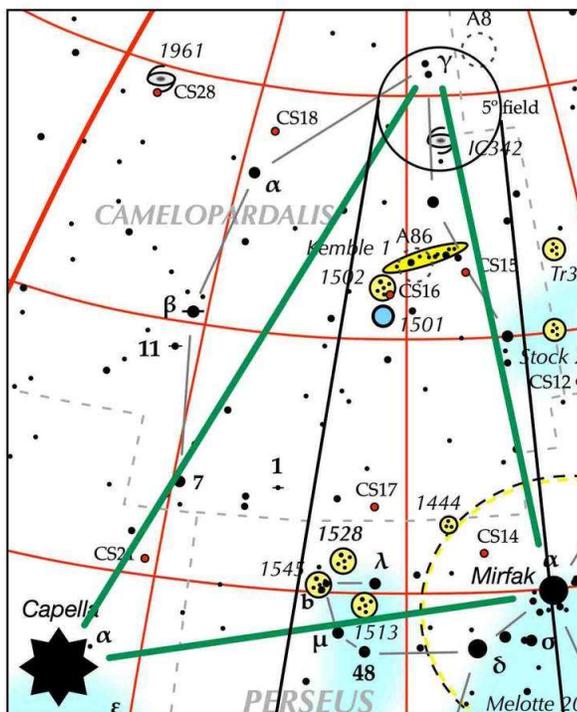
- Triangulate with Capella and Mirfak.
- Identify Gamma Cam, which might be difficult to find. It is given away by its double nature, a 4.6 magnitude star and a 5.4 magnitude star separated by 28 minutes.
- Place Gamma near the north edge of a 5° field and IC342 will lie near the center of the lower half.
- IC342 has diameter of about 20 minutes with a somewhat brighter core.

#### Published Characteristics for IC 342:

Integrated magnitude: 8.4  
 Size: 22 min x 22 min  
 Surface brightness: 15 mag./min<sup>2</sup>  
 Position Angle: round  
 Distance: 11 million light-years

#### Recommended Aperture:

Not less than 8 inches.  
 The larger, the better.



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[www.astroleague.org/outreach](http://www.astroleague.org/outreach)

Caldwell 05

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# Camelopardalis Partiodalis



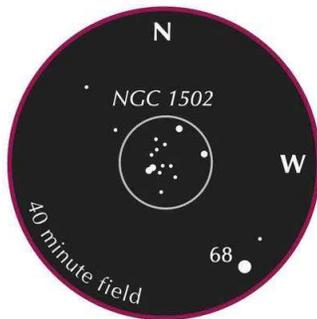
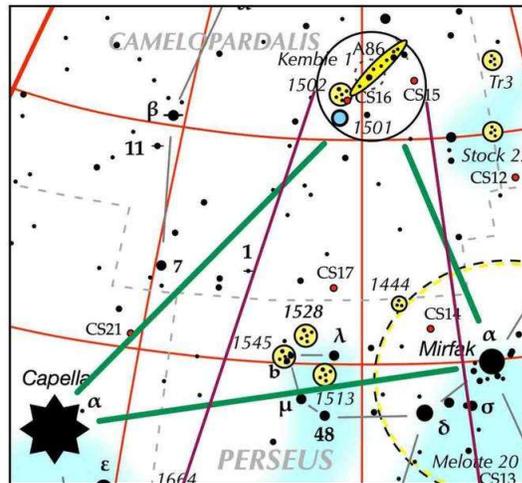
*This area of the sky is not known for its attractions, but think again. 10° to 15° north of Mirfak, five celestial wonders gather in a 5° field.*

**Recommended Aperture:** Not less than 8 inches.

**How to locate**

**Camelopardalis Partipolis**

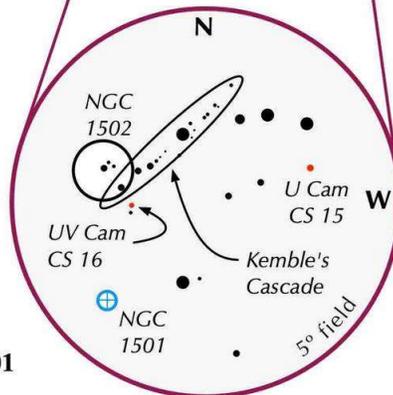
- Triangulate with Capella and Mirfak.
- Identify the area 13° north-northeast of Mirfak. (Remember, that is the angular distance of your fist on your extended arm.)
- Identify the unusual binocular feature, Kemble's Cascade (Kemble 1). It contains more than a dozen 6th-9th magnitude stars in a row.
- At the Cascade's southeastern point, lies the open cluster NGC 1502.



**Open Cluster NGC 1502**

About two dozen stars of 7th-10th magnitude in a 10 minute field.

**Carbon Star UV Cam**  
 Magnitude: 7.5-8.1  
 Period: about 294 days



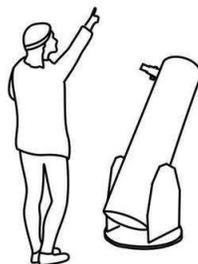
**Planetary Nebula NGC 1501**

Magnitude: 11.5  
 Diameter: 1 minute  
 Appearance: >200x, small bluish ball.

**Carbon Star U Cam**  
 Magnitude: 6.9-7.6  
 Period: 400 days



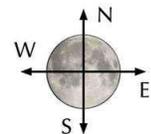
Try your hand at sketching!



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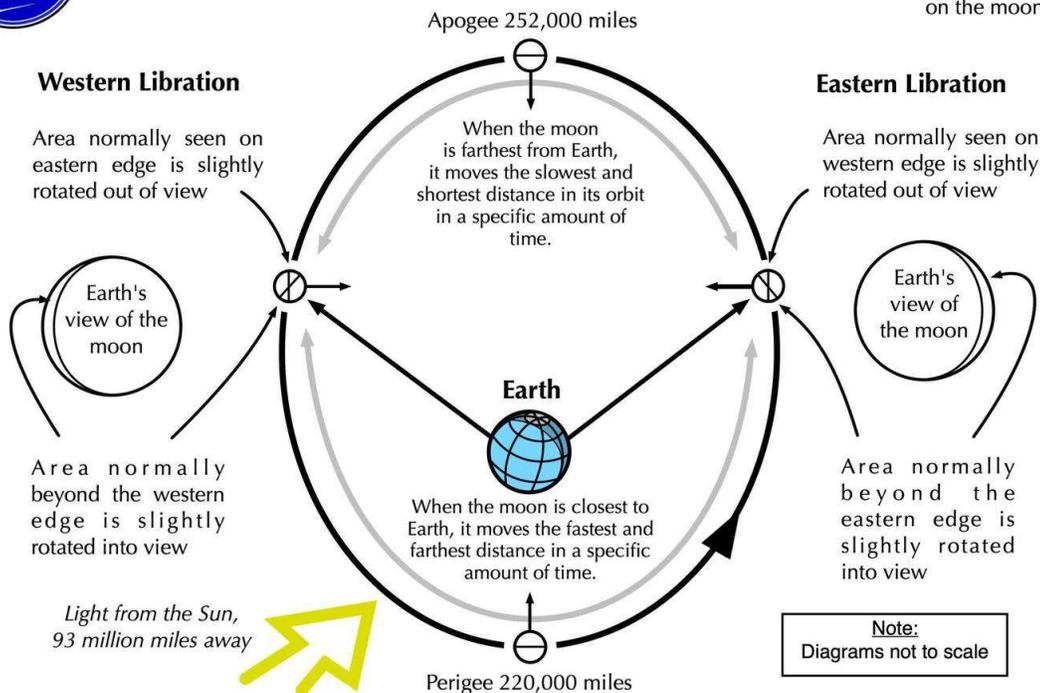


The moon always keeps its same side facing Earth. However, it rotates the same amount each Earth day, while it moves a different distance along its orbital path in that same time. This leads to the unusual effect of ...

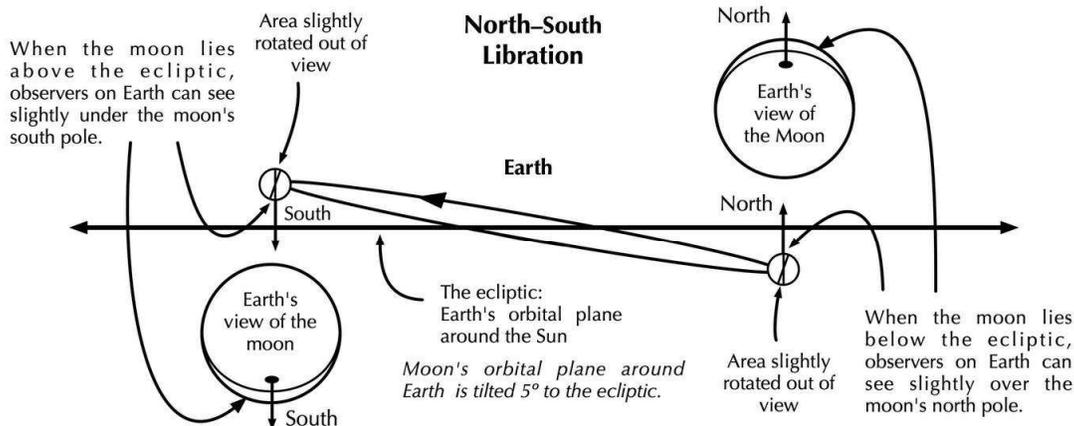


Cardinal directions on the moon

# Lunar Libration



Ellipticity of the moon's orbit is greatly exaggerated for illustrative purposes.



**As a result of libration, and the minor effect of the moon's 1° axial tilt up to 59% of the moon's surface can be seen over a few months.**

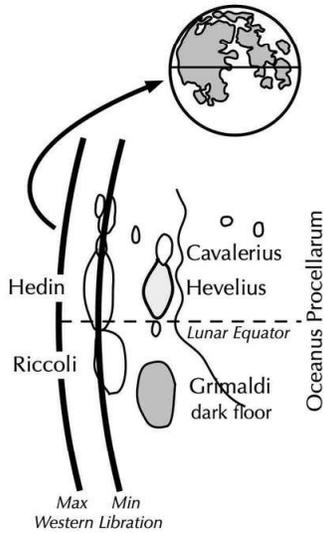


# Lunar Libration Activities

The Moon always presents its same side to Earth. However, because of the phenomenon of libration, earthbound observers can see up to 59% of the lunar surface over a span of a few months. Here are observing activities that demonstrate this effect.



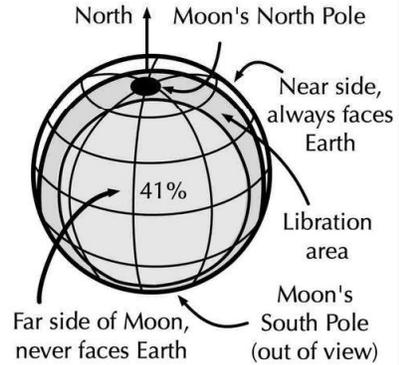
## Western Libration



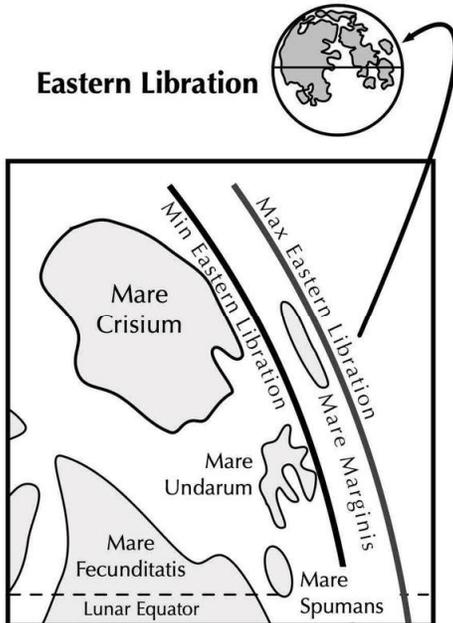
**With a small telescope, examine these four regions of the Moon.**

Sketch how far the designated features lie from the lunar limb. Repeat during different phases and throughout succeeding months to fully capture the swinging and rocking effects of the moon as it orbits Earth. Note the distance from the limb of:

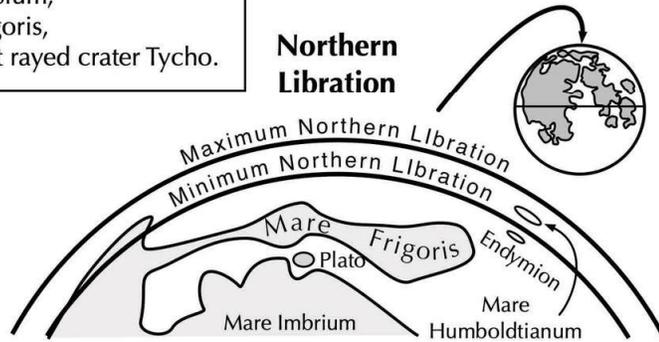
- the dark crater Grimaldi,
- Mare Crisium,
- Mare Frigoris,
- the bright rayed crater Tycho.



## Eastern Libration



## Northern Libration



## Southern Libration

