

# Mountaineer Skies

Volume 1, Issue 4

<http://www.as.wvu.edu/~planet/index.html>

December 2001

## From The Editor

The **Winter Solstice**, the day with the shortest period of daylight, begins on Friday, December 21. This is the day when the sun is lowest in the southern sky at noon. After the solstice, the sun will daily get higher and higher in the sky and the period of daylight will increase until the **Summer Solstice**, the day with the longest period of daylight, which will occur on June 21, 2002. On this day the sun will be highest in the sky at noon. Then the sun will slowly get lower and lower in the sky until the next **Winter Solstice**.

**HAPPY HOLIDAYS**  
from  
Tomchin Planetarium

## Link:

**Eclipses During 2002** – a calendar of eclipses for the coming year.

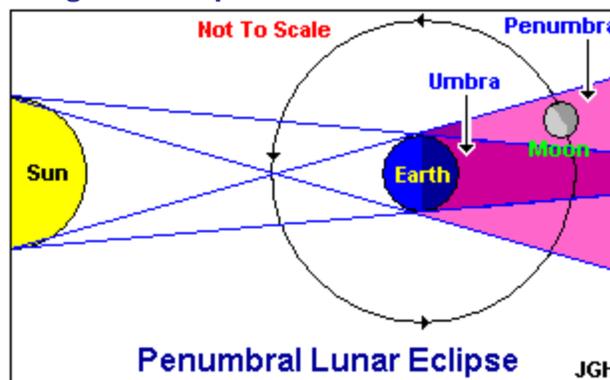
<http://sunearth.gsfc.nasa.gov/eclipse/OH/OH2002.html>

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## In The Sky This Month

Although we are not well positioned to see the solar eclipse of December 14, our location is perfect for the **penumbral lunar eclipse on December 30<sup>th</sup>**. Unfortunately, this will be a very subtle event. The best we can hope for is some shading on the southern portions of the moon. First contact is at 3:25 A.M., the time of greatest eclipse is at 5:29 A.M. and the last contact occurs at 7:33 A.M. A penumbral eclipse happens when the moon passes only through Earth's penumbral shadow.



## Visible Planets in the Night Sky

**Jupiter** is in Gemini, The Twins. **Saturn** in Taurus, The Bull, rises at sunset and is visible all night long. **Mars**, setting before midnight, is visible in the southwest after sunset. It has moved from Capricornus, The Goat, to Aquarius, The Water-bearer. (See the sky chart on page 4.)

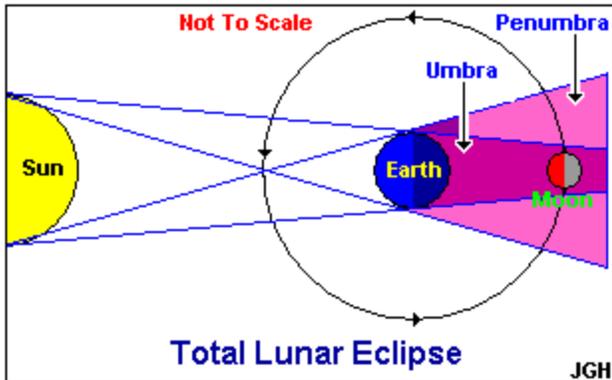
## Meteor Showers

The **Geminids** appear to radiate within the constellation Gemini, The Twins. They can be seen from December 6 through 19, with a predicted maximum on December 13 at 6:10 P.M. (See sky chart on page 4.)

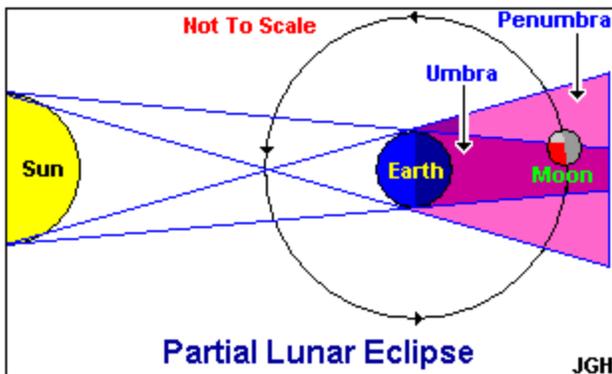
## About: Lunar Eclipses

There are three different types of Lunar Eclipses.

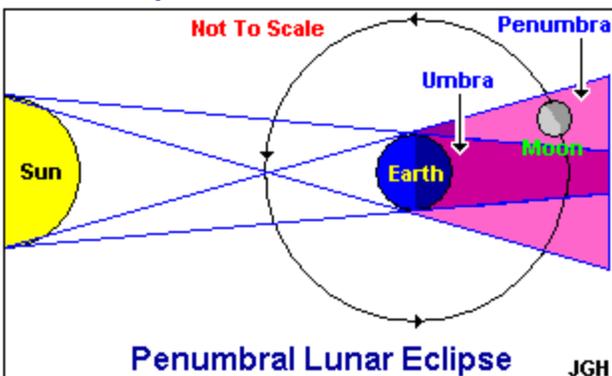
The **total lunar eclipse** happens when the entire moon passes through Earth's umbral shadow.



A **partial lunar eclipse** happens when only a portion of the moon passes through Earth's umbral shadow.

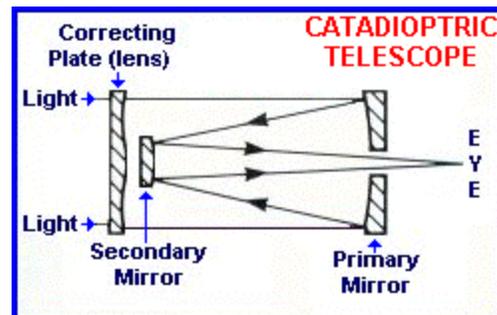


Of the three types of lunar eclipses, the most difficult to view is the **penumbral eclipse**. This happens when the moon passes through Earth's thin penumbral shadow.



## Telescopes Part 3, The Catadioptric Telescope

Though more expensive than other telescopes, this type combines the optical advantages of both lenses and mirrors while canceling their disadvantages. Although more complex, it is considered the best all-around, all-purpose telescope design.



It is an excellent choice for terrestrial, lunar, planetary, and deep space viewing. This is also the best choice for astrophotography.

Catadioptric telescopes are simple to use and very compact and portable because of the folded focal length design. They produce very sharp images over a wide field.



Additionally, with its closed tube, it is very durable and requires very little maintenance.

## 2001 – 2002 Planetarium Shows

<p><b><i>Magellan: Report from Venus</i></b> – The Magellan radar-mapping mission to Venus was extraordinarily successful; the spacecraft returned more data than all NASA's previous planetary missions combined. During this half-hour planetarium show, we follow Magellan's progress, from its launch through the most significant discoveries. Included are spectacular images of volcanoes, impact craters and landslides. Important planetary science topics of volcanism, tectonism, and impact cratering are covered, and radar imaging is discussed.</p>	<p><b><i>'Tis The Season</i></b> – The program is shown annually in November and December and recounts the historical, religious, and cultural rituals practiced during the time of winter solstice -- not only Christian and Jewish, but also Nordic, Roman, Egyptian, and Hopi. It also takes a look at some of our more light-hearted seasonal traditions, from gift giving and kissing under the mistletoe to the custom of decking the halls with greenery and candles. St. Nicholas, Sinterklaas, Kris Kringle, Father Christmas, and Santa Claus all drop by as well. <i>This is our most popular show.</i></p>
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December 14 & 21, 2001 <i>'TIS THE SEASON</i>	January 11 & 25, 2002 <i>Magellan from Venus</i>	February 8 & 22, 2002 <i>Magellan from Venus</i>
March 8 & 22, 2002 <i>Magellan from Venus</i>	April 12 & 26, 2002 <i>Magellan from Venus</i>	May 10 & 24, 2002 <i>Magellan from Venus</i>
June 14, 2002 <i>Magellan from Venus</i>	July, 2002 Closed	

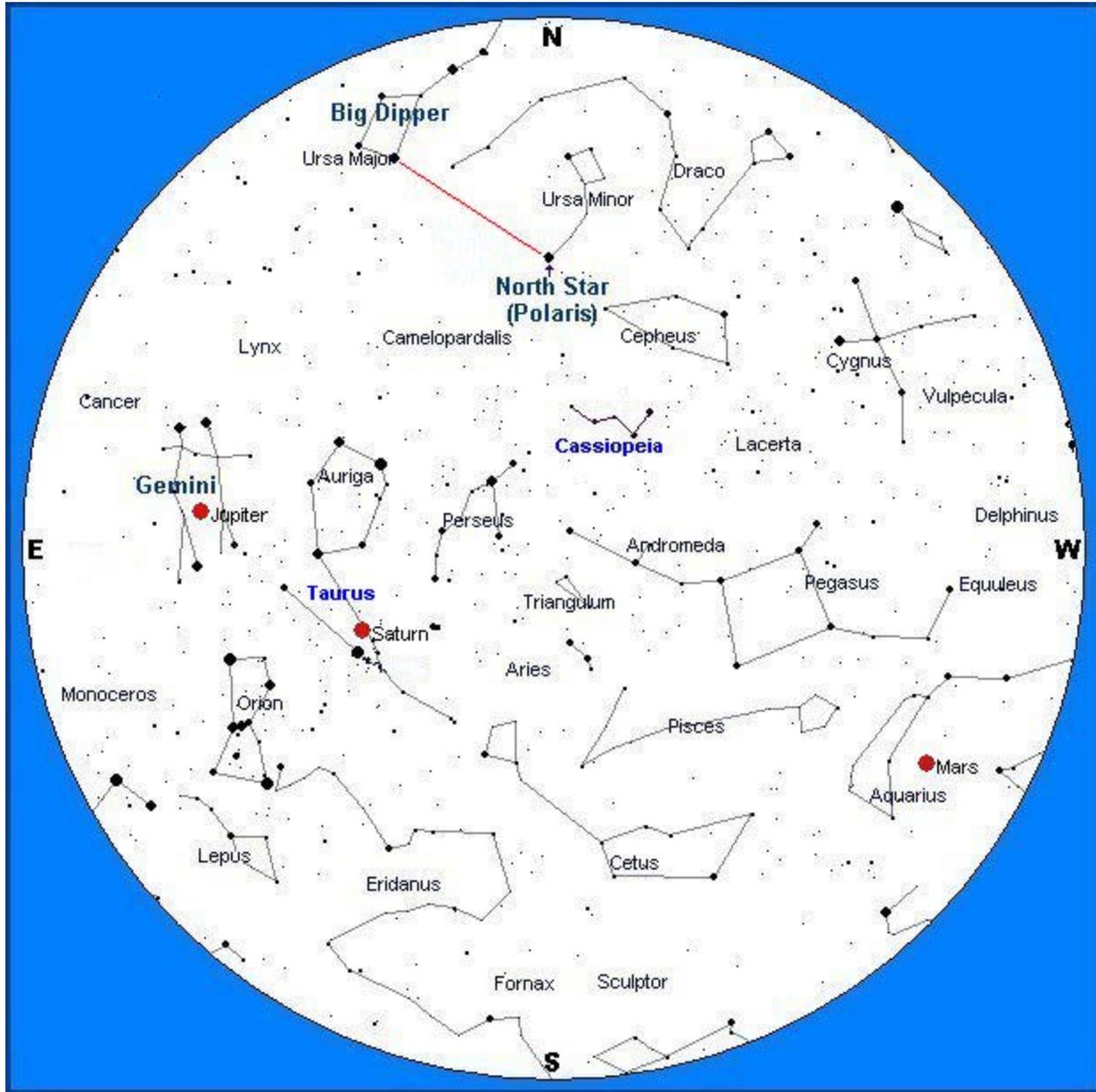
For those who are interested in bringing a group, such as schools or scouts, during the day, please call for more information. These shows are usually given on Tuesday or Thursday mornings.

For further information or reservations, please call John Hopkins at (304)296-1211, extension 1443 or by email at: [jhopkins@mail.wvu.edu](mailto:jhopkins@mail.wvu.edu)

### Selected Sunrise/Sunset and Moon Rise/Moon Set Times

Date	Sunrise	Sunset	Moon Rise	Moon Set	Moon Phase
Dec 7	7:27 A.M.	4:55 P.M.	None	1:01 P.M.	Last Quarter
Dec 14	7:33 A.M.	4:56 P.M.	7:15 A.M.	4:54 P.M.	New Moon
Dec 22	7:38 A.M.	5:00 P.M.	12:38 P.M.	None	First Quarter
Dec 30	7:40 A.M.	5:05 P.M.	5:25 P.M.	7:54 A.M.	Full (Cold) Moon

December 2001 Sky Chart\* for:  
**8:00 P.M at the beginning of the month**  
**9:00 P.M in the middle of the month**  
**10:00 P.M at the end of the month**



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\* Sky Chart used with the kind permission of Heavens-Above at <http://www.heavens-above.com/>

The Tomchin Planetarium is named in honor of the late Harold Tomchin, of Bluefield, W.Va., who made a generous donation to ensure its continuing operation, and whose family continues to support the planetarium for the educational benefit of WVU students, staff, and faculty members, as well as the local community. Contributions can be made in support of the planetarium through the WVU Foundation Inc.



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