

# Mountaineer Skies

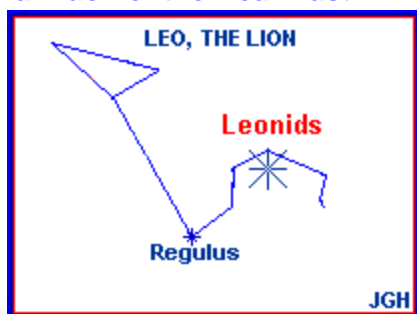
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November 2003

## From the Editor's Desk

Once again it is time for the most famous of all meteor showers, **The Leonids**, so called because they emanate from the constellation **Leo, the Lion**. Although not as spectacular as last year, it will still be worth looking for in the ENE sky after sunset. Although the shower extends from November 14 through 21, its maximum will be on November 17 at 9:30 P.M. when up to 100 per hour may be expected. However, where we live, the meteor shower will probably not be visible until after midnight. Look in the ENE for the head of **Leo, the Lion**. You can expect the Moon to obscure fainter meteors. Unfortunately for those of us in the U.S., the favored sites are in Europe, Africa and much of the Near East.



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## In The Sky This Month

### Visible Planets in the Night Sky

#### Beginning of November, 2003

	Const	Rise	Transit	Set	Mag
Sun		6:46	12:03	17:22	- 26.8
Mercury	Lib	7:13	12:21	17:33	- 1.0
Venus	Lib	8:28	13:22	18:19	- 3.9
Mars	Aqr	14:48	20:17	1:47	- 1.2
Jupiter	Leo	2:04	8:34	15:08	- 1.9
Saturn	Gem	21:08	4:32	11:56	2.1

#### Middle of November, 2003

	Const	Rise	Transit	Set	Mag
Sun		7:01	12:04	17:08	- 26.8
Mercury	Sco	8:12	12:54	17:40	- 0.5
Venus	Oph	9:00	13:41	18:24	- 3.9
Mars	Aqr	14:04	19:44	1:23	- 0.8
Jupiter	Leo	1:19	7:47	14:18	- 2.0
Saturn	Gem	20:11	3:35	11:00	2.1

#### End of November, 2003

	Const	Rise	Transit	Set	Mag
Sun		7:18	12:08	17:00	- 26.8
Mercury	Sgr	8:59	13:30	18:03	- 0.5
Venus	Sgr	9:27	14:03	18:41	- 3.9
Mars	Aqr	13:20	19:11	1:03	- 0.4
Jupiter	Leo	0:29	6:55	13:24	- 2.0
Saturn	Gem	19:08	2:33	9:58	2.0

Lib	Libra, The Scales
Aqr	Aquarius, The Water Bearer
Leo	Leo, The Lion
Gem	Gemini, The Twins
Sco	Scorpius, The Scorpion
Oph	Ophiuchus, The Serpent Holder
Sgr	Sagittarius, The Archer

## About: Total eclipse of the Moon, Saturday, November 8

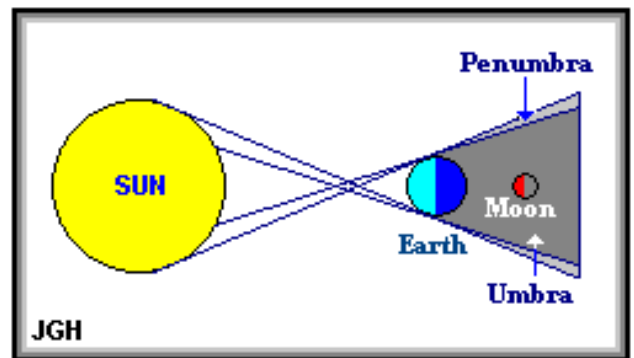
For those who missed the lunar eclipse on May 6, 2003 due to bad weather, here is an excellent second chance.

On Saturday, November 8, a total eclipse of the Moon will occur. Those of us who live in the eastern United States should, if the weather cooperates, be able to see the entire event, though it will appear to be about 12% smaller than we could have seen on May 6. At totality, which lasts just 24 minutes, from 20:06 to 20:30, expect to see a bright rim along the Moon's southern edge if atmospheric conditions are just right.

The color of the Moon at totality varies from orange to copper to blood red. It is hard to predict the color beforehand.

EVENT	DATE	TIME (EST)
Sunset	Nov 8	17:11
Moonrise	Nov 8	17:05
Moon enters penumbra	Nov 8	17:15
Moon enters umbra	Nov 8	18:32
Moon enters totality	Nov 8	20:06
Middle of eclipse	Nov 8	20:19
Moon leaves totality	Nov 8	20:31
Moon leaves umbra	Nov 8	22:05
Moon leaves penumbra	Nov 8	23:22
Moonset	Nov 9	07:27

**What is a lunar eclipse?** In case you forgot your high school science, a lunar eclipse occurs only when the moon is full and the earth is between it and the Sun.



In a lunar eclipse, since you are not looking directly at the sun, eye protection is not necessary. However, remember for solar eclipses, as you are directly viewing the sun, eye protection is essential to protect your eyes from serious damage. THIS IS NO JOKE.

Lunar (also solar) eclipses reoccur with regularity in cycles called saros cycles. The time between cycles is about 18 years, 11 days, and 8 hours.

This means that you should have a similar lunar eclipse every 18 years, 11 days, and 8 hours. And you do, sort of. From cycle to cycle the Earth-Moon distance is about the same and occurs at the same time of year. However, it does not return to the same geographical spot on Earth. This happens as the result of the 8 hours which adds an additional 120° to the Earth's rotation each cycle. Therefore, 24 hours is equal to 360° so 8 hours is equal to 120°. Hence, we get a similar eclipse every cycle, but due to geometry, you must wait for 3 cycles to get an exact duplication.

### Request for Articles and Photographs

If you have an article or photographs that you would like to submit for publication, please send them to:

John Hopkins

Subject: Submissions

256 Hodges Hall

West Virginia University

Morgantown, WV 26506

Or email to: [jhopkins@mail.wvu.edu](mailto:jhopkins@mail.wvu.edu) with

“Submission” on the Subject line.

## 2003 – 2004 Planetarium Shows



November 14 & 21, 2003 <b>Midnight's Canvas</b>	December 5, 12, & 19, 2003 <b>'tis The Season</b>	January 9 & 23, 2004 <b>Midnight's Canvas</b>
February 13 & 27, 2004 <b>Midnight's Canvas</b>	March 12 & 26, 2004 <b>Midnight's Canvas</b>	April 9 & 23, 2004 <b>Midnight's Canvas</b>
May 14 & 28, 2004 <b>Midnight's Canvas</b>	June 11, 2004 <b>Midnight's Canvas</b>	July, 2004 <b>Closed</b>

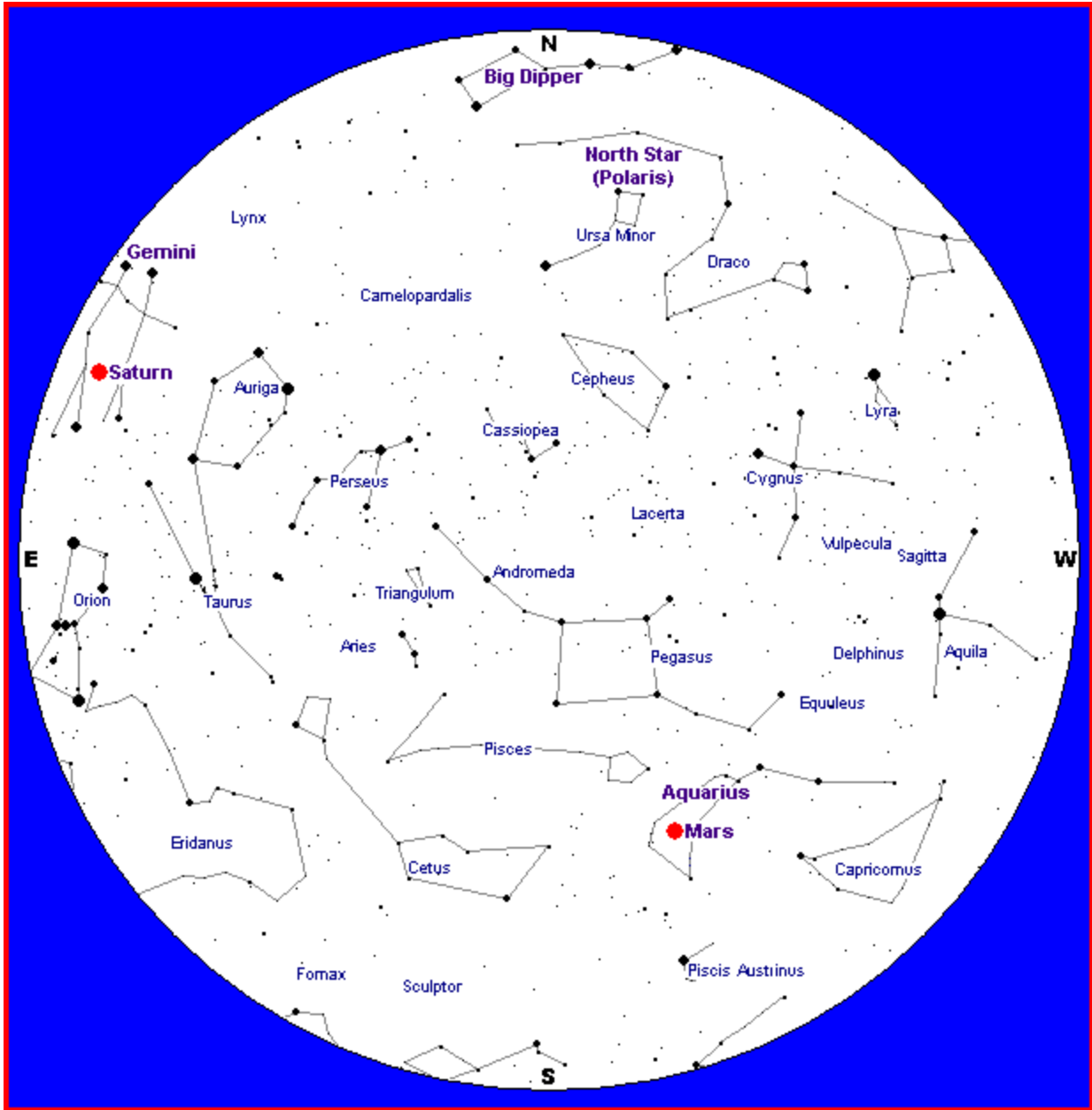
For those who are interested in bringing a group, such as schools or scouts, during the day, please call for more information. These shows are usually given on Tuesday or Thursday mornings.

For further information or reservations, please call John Hopkins at (304)293-3422, 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
Nov 8	6:54 A.M.	5:11 P.M.	5:05 P.M.	6:26 A.M.	Full Moon
Nov 16	7:04 A.M.	5:04 P.M.	11:27 P.M.	1:21 P.M.	Last Qtr
Nov 23	7:11 A.M.	4:59 P.M.	6:45 A.M.	4:46 P.M.	New Moon
Nov 30	7:19 A.M.	4:56 P.M.	1:17 P.M.	None	First Qtr

November 2003 Sky Chart\* for:  
 10:00 P.M at the beginning of the month  
 9:00 P.M in the middle of the month  
 8:00 P.M at the end of the month



\*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 Princeton, 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 Planetarium Project at the WVU Foundation, Inc., phone (304)284-4000. Thank You.



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