

Mountaineer Skies

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

December 2002

From the Editor's Desk

Here is an early Christmas present from the sky. The annual **Geminide meteor shower** can be seen from December 6 through the December 19. You can expect the maximum of 75 per hour to occur on Saturday morning December 14 at 5:00 A.M. (sunrise is at 7:33 A.M.).



At this time of gift giving, I would especially like to remember, acknowledge, and thank Harold Tomchin and his family for their generosity to the planetarium which bears his name. Without this support, none of the shows that you enjoy today would be possible.

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In The Sky This Month

The first day of winter, also known as the **Winter Solstice**, occurs on December 21 this year. In the northern hemisphere, this is the day when we have the shortest period of daylight (only about 9.5 hours).

Visible Planets in the Night Sky

Beginning of December

	Const	Rise	Transit	Set	Mag
Sun		7:19	12:09	17:00	- 26.8
Mercury	Oph	8:16	12:50	17:28	- 0.7
Venus	Vir	4:09	9:38	15:09	- 4.7
Mars	Vir	4:01	9:30	15:02	1.7
Jupiter	Leo	21:58	4:58	11:59	- 2.3
Saturn	Tau	17:58	1:22	8:47	1.9

Middle of December

	Const	Rise	Transit	Set	Mag
Sun		7:30	12:15	17:00	- 26.8
Mercury	Sgr	8:55	13:29	18:05	- 0.6
Venus	Lib	3:51	9:16	14:42	- 4.6
Mars	Lib	3:51	9:10	14:30	1.6
Jupiter	Leo	21:02	4:03	11:04	- 2.4
Saturn	Tau	16:58	00:23	7:47	1.9

End of December

	Const	Rise	Transit	Set	Mag
Sun		7:37	12:23	17:09	- 26.8
Mercury	Sgr	8:44	13:41	18:34	0.1
Venus	Lib	3:54	9:08	14:22	- 4.5
Mars	Lib	3:40	8:47	13:57	1.5
Jupiter	Cnc	19:54	2:56	9:58	- 2.5
Saturn	Tau	15:50	23:14	6:38	1.9

Oph	Ophiuchus, The Serpent Holder
Lib	Libra, The Scales
Sgr	Sagittarius, The Archer
Tau	Taurus, The Bull
Leo	Leo, The Lion
Cnc	Cancer, The Crab
Vir	Virgo, The Maiden

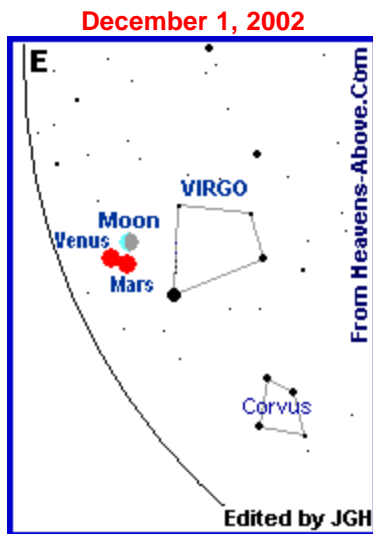
About – Seeing Venus and Mars

by Bruce McClure

If you arise before the Sun -- which is pretty easy to do at this time of year -- look for a pair of planets to grace the dawn and predawn sky. All month long, Venus and Mars rise in tandem a good three hours before sunrise, shining close to the southeast horizon at the crack of dawn.

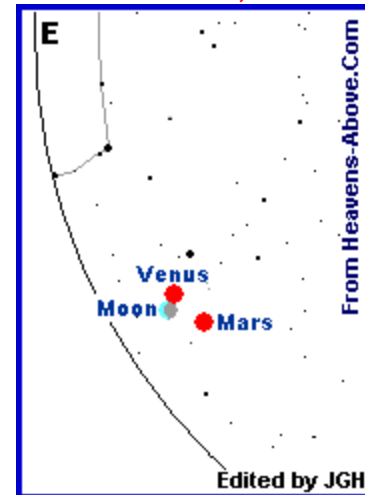
You can't miss Venus -- the brightest heavenly body to illuminate the sky, next to the Sun and Moon. Whereas Mars pales in comparison to Venus, it's still respectably bright but fades in the late morning twilight. If eluding naked-eye detection, simply aim your binoculars at Venus, and likely, you'll see the ruddy planet glowering nearby.

As an added extra, the month begins with the waning crescent moon, Venus and Mars forming a closely-knit threesome; then, toward the month's end, the Moon rendezvous with these planets once again. The month's double feature takes place on **December 1** and **December 30**.



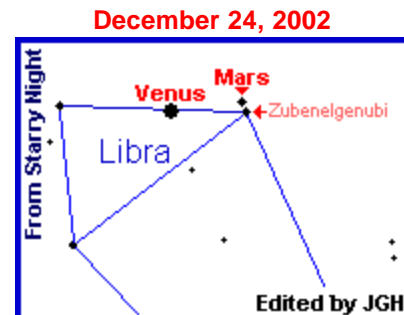
Dawn

December 30, 2002



Dawn

You can give yourself an early Christmas gift on **December 24** -- that is, if you're up one to two hours before the Sun. Venus and Mars slide by the famous double star Zubenelgenubi of the constellation Libra, the drama readily fitting into a single binocular field of view. Look for orange-red Mars to the right of Venus, then for Zubenelgenubi beneath Mars.



Binoculars reveal that it's a double star, with the dimmer one shining above its brighter companion. Zubenelgenubi is thought to be a true binary -- or two stars revolving around a common center of gravity. Incidentally, Mars passes to the left of Zubenelgenubi on Christmas Day.

An unlikely couple, perhaps, Venus, the goddess of love and beauty, and Mars, the god of war, waltz around together for a month, lighting up the ballroom of a December dawn.

2002 – 2003 Planetarium Shows



Narrated by Patrick Stewart

http://www.as.wvu.edu/~planet/mars_quest.htm



http://www.as.wvu.edu/~planet/tis_the_season.htm
THIS IS OUR MOST POPULAR SHOW

December 13 & 20, 2002 <i>'TIS THE SEASON</i>	January 10 & 24, 2003 <i>MarsQuest</i>	February 14 & 28, 2003 <i>MarsQuest</i>
March 14 & 28, 2003 <i>MarsQuest</i>	April 11 & 25, 2003 <i>MarsQuest</i>	May 9 & 23, 2003 <i>MarsQuest</i>
June 13, 2003 <i>MarsQuest</i>	July, 2003 Closed	

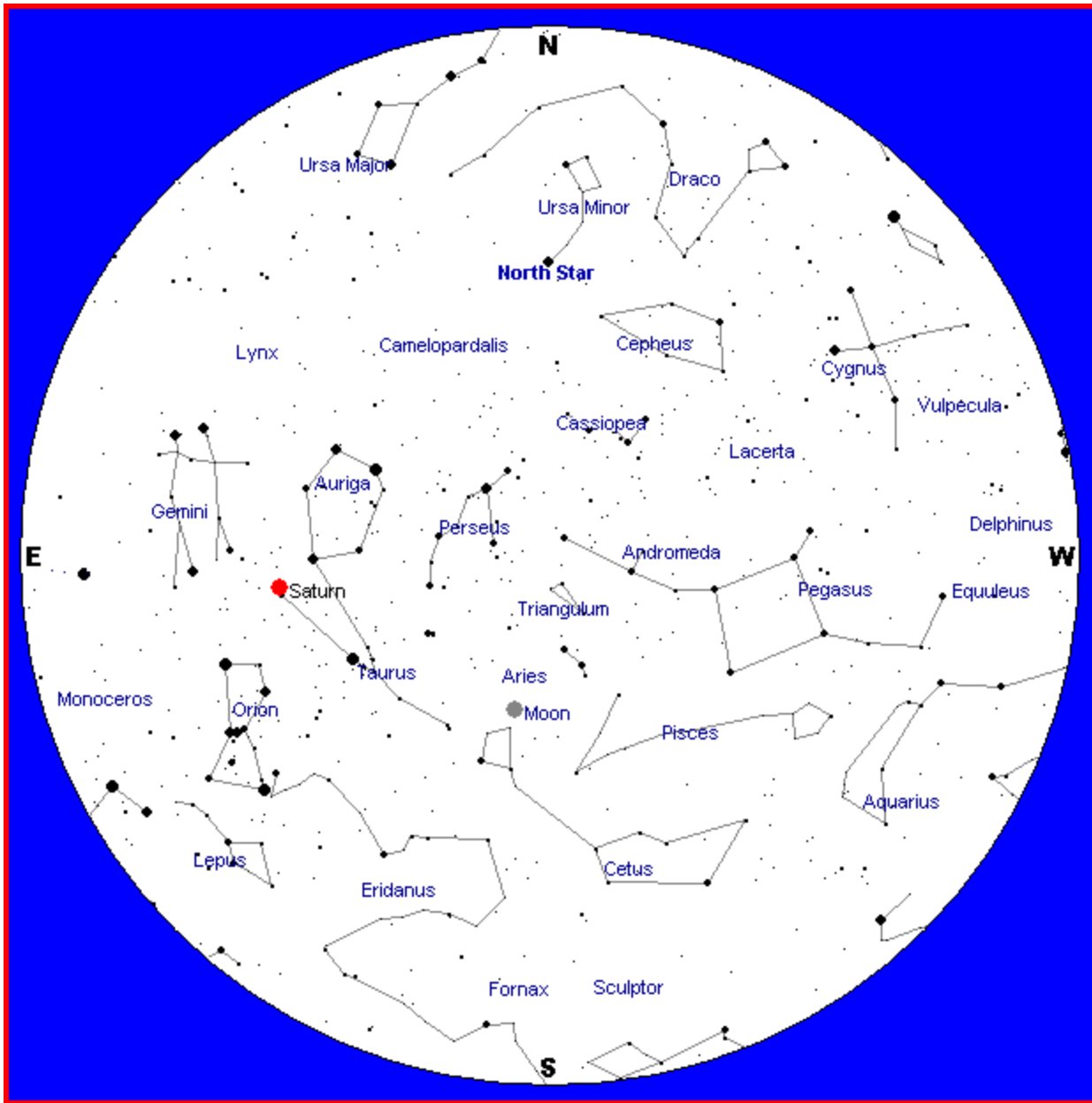
For those who are interested in bringing a group, such as schools or scouts, during the day, please call for more information. These shows are usually given on Tuesday or Thursday mornings.

For further information or reservations, please call John Hopkins at (304)293-3422, extension 1443 or by email at: jhopkins@mail.wvu.edu

Selected Sunrise/Sunset and Moon Rise/Moon Set Times

Date	Sunrise	Sunset	Moon Rise	Moon Set	Moon Phase
Dec 4	7:23 A.M.	4:55 P.M.	7:46 A.M.	5:16 P.M.	New Moon
Dec 11	7:29 A.M.	4:55 P.M.	1:01 P.M.	NA	First Qtr
Dec 19	7:35 A.M.	4:57 P.M.	4:51 P.M.	7:31 A.M.	Full Moon
Dec 26	7:38 A.M.	5:01 P.M.	NA	12:23 P.M.	Last Qtr

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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