

Mountaineer Skies

From the Editor's Desk

I have started including apparent planetary magnitude (brightness) with the other visible planet data. As you can see from the table at the bottom of the next column, the Sun has a magnitude of **-26.7** and everything else has a larger number. This seems puzzling at first.

The Greek astronomer Hipparchus compiled the first written catalog of stars. Among other data, he gave each star a brightness number from 1 to 6, 1 being the brightest and 6 the dimmest. Later, when stars brighter than 1 were discovered, they had an obvious problem. So they called a star brighter than 1 a zero (0), and then a brighter star yet -1, one brighter than -1 would be -2 and so on.

Apparent brightness which is different from absolute brightness, is how bright a body appears to us on earth.

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In The Sky This Month

The **Delta Aquarid meteor shower** occurs between July 15 and August 20 with an estimated maximum of **20 per hour** on the morning of July 28.

The **Perseid meteor shower** occurs between July 23 and August 20 with an estimated maximum of **75 per hour** in the early evening of August 12. It is associated with the comet Swift-Tuttle.

Visible Planets in the Night Sky

Beginning of July

	Const	Rise	Transit	Set	Mag
Sun		5:56	13:24	20:51	- 26.7
Venus	Leo	9:10	16:12	23:15	- 4.0
Mars	Gem	6:50	14:19	21:46	1.8
Jupiter	Gem	6:55	14:21	21:44	- 1.8

Middle of July

	Const	Rise	Transit	Set	Mag
Sun		6:05	13:26	20:47	- 26.7
Venus	Leo	9:36	16:17	22:59	- 4.1
Mars	Cnc	6:40	14:02	21:22	1.8
Jupiter	Gem	6:15	13:39	21:00	- 1.8

End of July

	Const	Rise	Transit	Set	Mag
Sun		6:18	13:26	20:34	- 26.7
Mercury	Leo	7:15	14:14	21:18	- 0.9
Venus	Leo	10:03	16:18	22:33	- 4.2
Mars	Cnc	6:29	13:41	20:51	1.7

Leo = Leo, The Lion
Gem = Gemini, The Twins
Cnc = Cancer, the Crab

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About: **Aphelion**

With the hot days of July now upon us, you might think we're about as close to the Sun as we can get. Actually, nothing could be further from the truth. On July 5 the earth reaches its most distant point from the Sun for the whole year – a point astronomers call “aphelion.”

On the average, our planet resides about 93 million miles away from the Sun. But since the Earth doesn't orbit the Sun in a perfect circle, its distance from the Sun varies throughout the year. Sometimes we're as close as 91 and 1/2 million miles; and at other times, we're as far away as 94 and 1/2 million.

Keep in mind, however, that it's NOT the Earth's distance from the Sun that determines the seasons, but the tilt of the Earth's axis. Our Northern Hemisphere tilts toward the Sun in summer, and away from the Sun in winter.

Although aphelion comes when it's summer in our Northern Hemisphere, it hasn't always and won't continue to do so in the distant future. One thousand years ago, aphelion occurred at springtime, but five thousand years from now, it'll take place in autumn.

Earth's varying distance from the Sun -- though not responsible for the seasons -- does affect seasonal length. At aphelion the Earth travels most slowly in its orbit, causing the season in which it resides to elongate. At the present day, this makes summer the longest season in our Northern Hemisphere, and winter the longest in the hemisphere down under.

Bruce McClure

(Continued from page 1, column1)

The dimmest star you can see with the naked eye is around + 6, with a six inch telescope about + 13, with a 200 inch telescope almost +20, and finally with the Hubble space telescope +30.

Apparent Magnitude*

Celestial Body	Constellation	Apparent Magnitude
Sun		- 26.7
01. Sirius	Canis Major	- 1.46
02. Canopus	Carina	- 0.72
03. Rigel Kentaurus	Centaurus	- 0.01
04. Arcturus	Boötes	- 0.04
05. Vega	Lyra	0.03
06. Capella	Auriga	0.08
07. Rigel	Orion	0.12
08. Procyon	Canis Minor	0.38
09. Achernar	Eridanus	0.46
10. Betelgeuse	Orion	0.50
11. Hadar	Centaurus	0.61
12. Altair	Aquila	0.77
13. Aldebaran	Taurus	0.85
14. Spica	Virgo	0.98
15. Antares	Scorpius	0.96
16. Pollux	Gemini	1.14
17. Fomalhaut	Piscis Austrinus	1.16
18. Deneb	Cygnus	1.25
19. Mimosa	Crux	1.25
20. Regulus	Leo	1.35
21. Adhara	Canis Major	1.50
22. Acrux	Crux	1.58
23. Castor	Gemini	1.58
24. Gacrux	Crux	1.63
25. Shaula	Scorpius	1.63
Polaris (North Star)	Ursa Minor	2.5

* Data from *Bright Star Catalog, Rev 4.*

Remember that a planet's brightness comes from reflected sunlight. Because of this the apparent magnitude of a planet changes as its distance from the Earth grows larger or smaller and is, thus, not constant.

2002 Planetarium Shows

Coming in Late August



Narrated by Patrick Stewart

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

Coming in Early November



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

July, 2002 Closed	MarsQuest August 23, 2002	MarsQuest September 13 and 27, 2002
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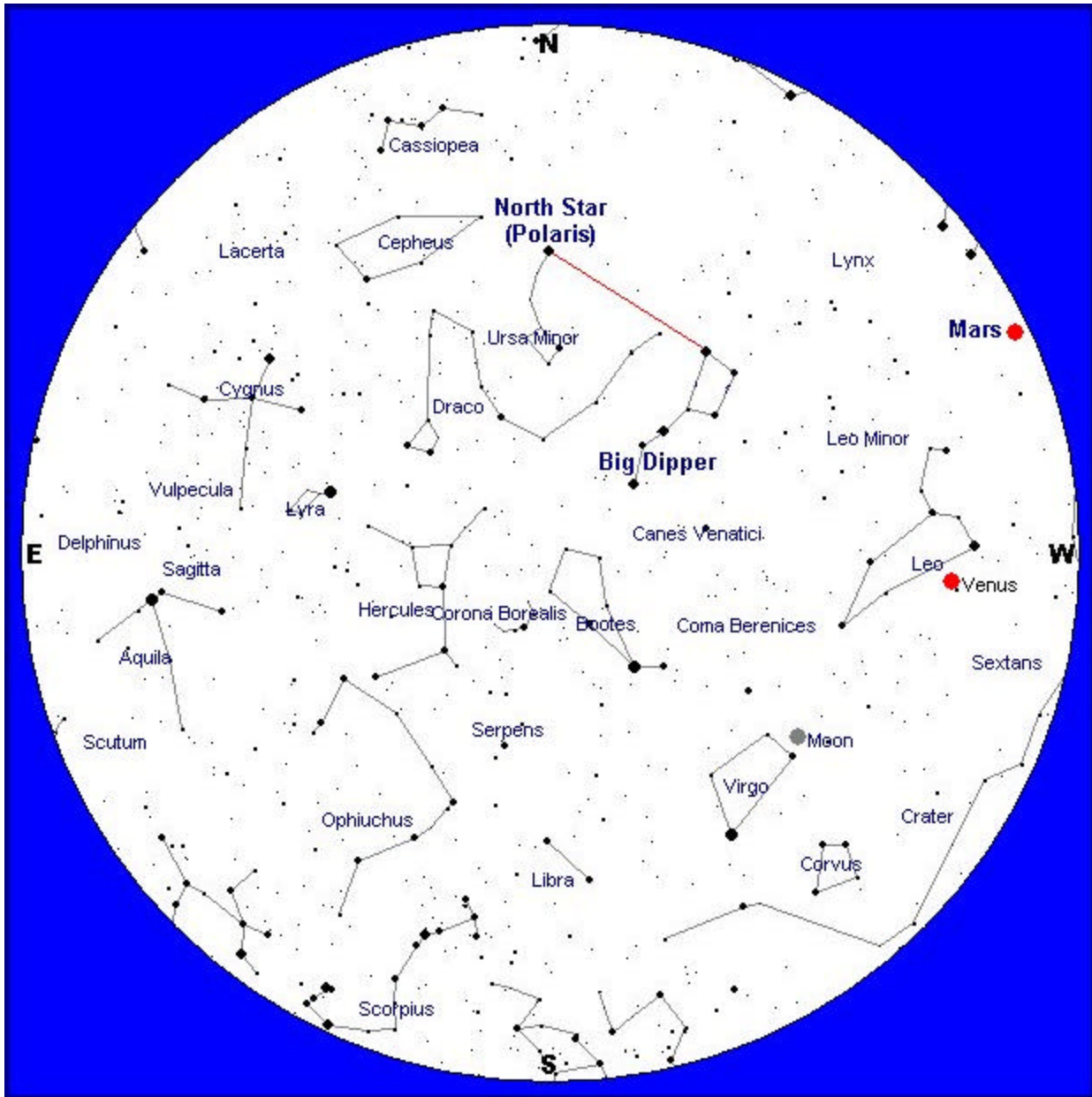
For those who are interested in bringing a group, such as schools or scouts, during the day, please call for more information. These shows are usually given on Tuesday or Thursday mornings.

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
July 2	5:55 A.M.	8:51 P.M.	1:14 A.M.	1:23 P.M.	Last Quarter
July 10	6:00 A.M.	8:49 P.M.	5:56 A.M.	9:28 P.M.	New Moon
July 16	6:04 A.M.	8:46 P.M.	1:03 P.M.	12:29 A.M.	First Quarter
July 24	6:11 A.M.	8:40 P.M.	9:22 P.M.	6:08 A.M.	Full (Buck) Moon

July 2002 Sky Chart* for:
 10:00 P.M at the beginning of the month
 9:00 P.M in the middle of the month
 9:00 P.M at the end of the month



* Sky Chart used with the kind permission of [Heavens-Above](http://www.heavens-above.com/) 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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