

Mountaineer Skies

From the Editor's Desk –

Daylight saving time will end on the last Sunday in October, October 30. Clocks are set back one hour. This is a good time to replace the batteries in your smoke detector.

Starting in 2007, as part of the new energy bill, **daylight saving time** will run from the second Sunday in March until the first Sunday in November. This extends daylight saving time by four weeks.

The Geminids meteor shower will be manifest between December 6th through the 19th with its maximum on December 13th at 9:24 P.M. The shower will appear to be coming from the head of Castor in Gemini, the Twins.

The Winter solstice or the beginning of winter begins on the 21st of December. In 2006, the Vernal equinox or the first day of spring will occur on March 20 followed, in three months and a day, by the summer solstice, the first day of summer, on June 21.

Rise and Set Times

Beginning of October, 2005

	Const	Rise	Transit	Set	Mag
Sun		7:17	13:09	19:02	-26.8
Mercury	Vir	8:12	13:48	19:27	-0.7
Venus	Lib	11:08	15:58	20:48	-4.2
Mars	Tau	21:03	4:01	11:00	-1.7
Jupiter	Vir	8:34	14:11	19:44	-1.7
Saturn	Cnc	2:15	9:21	16:30	2.0

Beginning of November, 2005

	Const	Rise	Transit	Set	Mag
Sun		6:50	12:03	17:18	-26.8
Mercury	Sco	8:57	13:35	18:15	-0.2
Venus	Sgr	10:56	15:19	19:43	-4.4
Mars	Ari	17:35	00:32	7:29	-2.3
Jupiter	Vir	6:06	11:31	16:59	-1.7
Saturn	Cnc	23:22	6:27	13:35	1.9

Beginning of December, 2005

	Const	Rise	Transit	Set	Mag
Sun		7:23	12:09	16:56	-26.8
Mercury	Lib	6:01	11:06	16:16	0.9
Venus	Sgr	10:40	15:17	19:53	-4.6
Mars	Ari	15:06	22:00	4:53	-1.6
Jupiter	Lib	4:40	9:57	15:18	-1.7
Saturn	Cnc	21:26	4:30	11:34	1.7

Ari	Aries, The Ram
Cnc	Cancer, The Crab
Lib	Libra, The Scales
Sco	Scorpius, The Scorpion
Sgr	Sagittarius, The Archer
Tau	Taurus, The Bull
Vir	Virgo, The Maiden

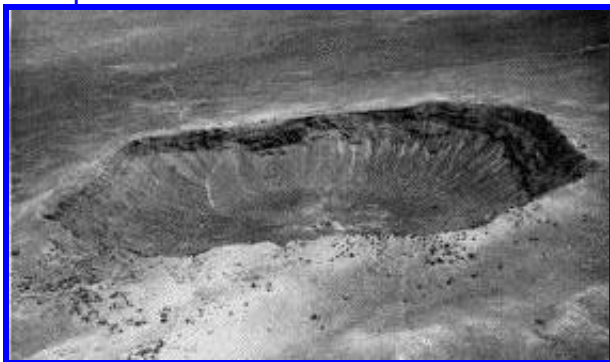
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About: Asteroid 2004 MN4, the Doomsday Rock?

In 1998 a science fiction movie called *Armageddon* told the story of a Texas sized asteroid headed for Earth and how a group of hard rock drillers saved us from it. Another science fiction film of the same time, this one called *Deep Impact*, spoke of how we dealt with a large comet that was about to hit the Earth. Fortunately we survived these fantastic encounters. Does this sort of thing happen only in fiction? Hardly.

For example, pictures of the Moon show lots of craters, most caused by space rocks that impacted the surface. We can see craters on Mercury (which looks very much like the Moon) as well as on Mars. Most of the moons of our solar system have craters caused by violent impact from rocky debris from space. What about Earth? We are certainly not immune to these disasters. The reason that they are not so evident on Earth comes from our very energetic weathering processes that tend to round and then smooth away these blemishes. Not all of these impact craters have been weathered over. About 50,000 years ago, a meteor slammed into the Earth near what is now Flagstaff, Arizona. The crater it left (about one mile across and nearly 600 feet deep) is called the Barringer Meteor Crater or simply Meteor Crater. This photograph is from the Smithsonian Scientific Series (1938) which is in the public domain.



More recently, in the early evening twilight of June 19, 2004, astronomers Roy Tucker, David J. Tholen, and Fabrizio Bernardi discovered an asteroid, about 1300 feet in length, which was eventually called **Asteroid 2004 MN4**. They were able to take pictures for only two nights before bad weather and the bright moon prevented any more observations. Then about six months later it was again seen, this time from Australia. Over the period of five days around Christmas, 2004, astronomers calculated that there was a real chance that the asteroid would hit the Earth causing world wide devastation. You may not have heard about it because of the terrible tsunami disaster in southern Asia which dominated the news for several weeks in the early part of 2005. Also the estimated date of impact would not be until Friday, April 13, 2029, a few years away. After more research and calculations the impact was changed from a probable hit to a near miss. How near? Somewhere between 15,000 and 25,000 miles, well within the orbit of the Moon. Recall that the distance between the Earth and the Moon is about 240,000 miles. In fact, the asteroid will probably be close enough to hit some of our geostationary satellites which are located just over 22,300 miles above the Earth. So, although **Asteroid 2004 MN4** will come very close to us, it will not be a "Doomsday" rock. Are there other rocks out there? You bet.

The problem, which, of course, is a world wide one, is being taken very seriously by the Earth's major governments. We currently can predict this type of event, but we are not yet able to effectively combat it. Hopefully, by the time a collision becomes reality, our technology will enable us to effectively deal with a "Doomsday" sized rock.

If that were to happen, that would be the first time in the history of the Earth that we would be able to preempt a cataclysmic natural event.

2005 Planetarium Shows



October 14 & 28	November 11 & 18	December 2, 9, & 16
<i>Hubble Vision 2</i>	<i>Hubble Vision 2</i>	<i>'tis The Season</i>

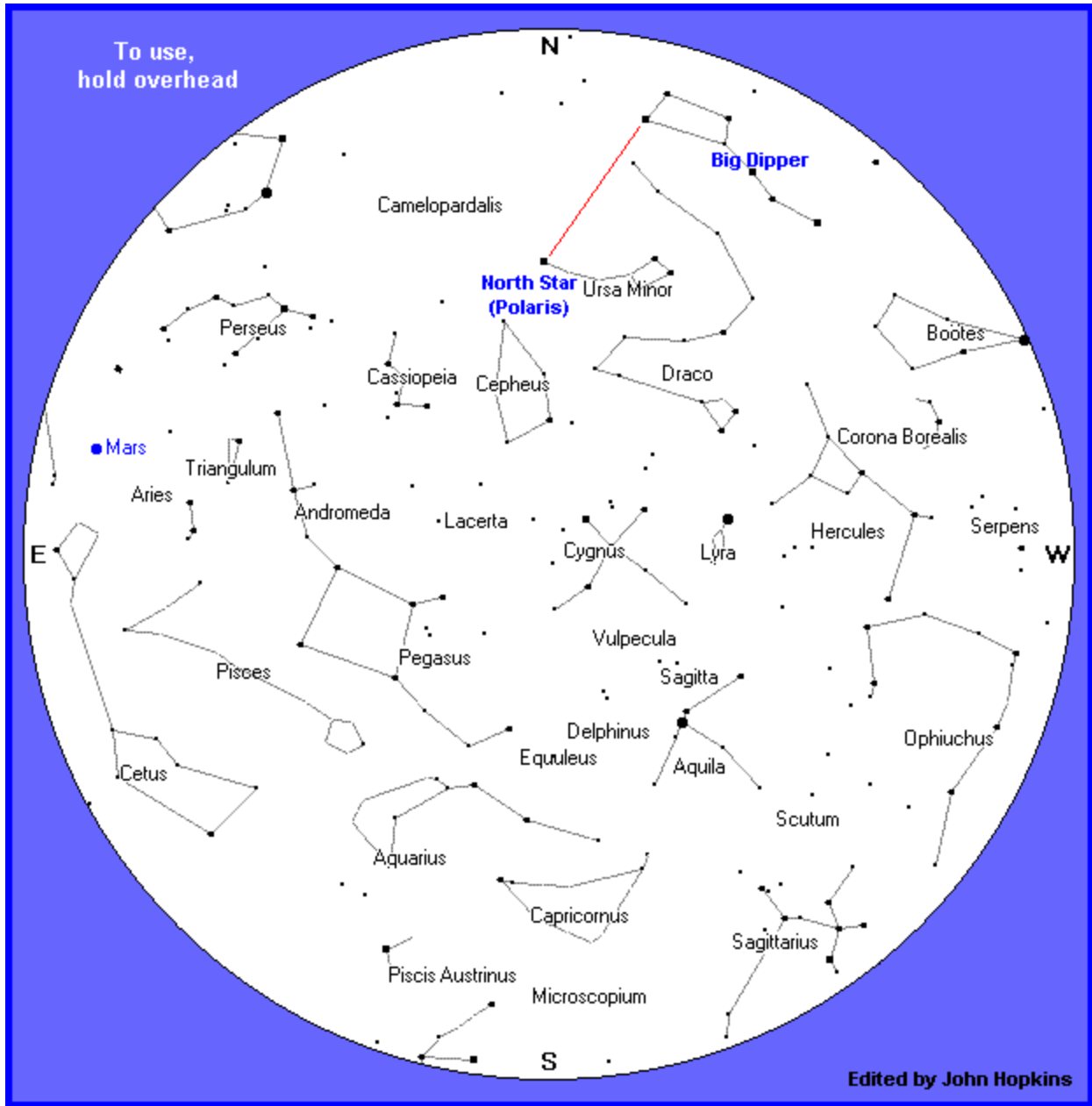
For those who are interested in bringing a group, such as schools or scouts, during the day, please call for more information. These shows are usually given on Tuesday or Thursday mornings.

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 (2005)

Date	Sunrise	Sunset	Moon Rise	Moon Set	Moon Phase
Oct 3	7:17 A.M.	7:00 P.M.	7:24 A.M.	7:07 P.M.	New Moon
Oct 10	7:24 A.M.	6:49 P.M.	3:04 P.M.	NA	First Qtr
Oct 17	7:31 A.M.	6:38 P.M.	6:41 P.M.	7:34 A.M.	Full Moon
Oct 24	7:38 A.M.	6:28 P.M.	NA	2:46 P.M.	Last Qtr
Nov 1	6:47 A.M.	5:18 P.M.	6:20 A.M.	4:57 P.M.	New Moon
Nov 8	6:55 A.M.	5:11 P.M.	1:29 P.M.	11:25 P.M.	First Qtr
Nov 15	7:03 A.M.	5:04 P.M.	4:39 P.M.	6:40 A.M.	Full Moon
Nov 23	7:12 A.M.	4:59 P.M.	11:57 P.M.	1:11 P.M.	Last Qtr
Dec 1	7:20 A.M.	4:56 P.M.	7:35 A.M.	4:42 P.M.	New Moon
Dec 8	7:27 A.M.	4:55 P.M.	12:58 P.M.	NA	First Qtr
Dec 15	7:32 A.M.	4:56 P.M.	4:41 P.M.	7:50 A.M.	Full Moon
Dec 23	7:37 A.M.	4:59 P.M.	NA	12:15 P.M.	Last Qtr
Dec 30	7:39 A.M.	5:03 P.M.	7:33 A.M.	4:22 P.M.	New Moon

October 2005 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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