

# Mountaineer Skies

Volume 17, Issue 3

planetarium.wvu.edu

July – August – September 2017

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## Save the Date

All are invited to the Eclipse 2017 pre-event on Saturday, August 19th from 9am-12pm at the WVU Department of Physics and Astronomy (White Hall) where participants will receive “passports” that take them on a self-guided learning adventure full of mini-lectures, hands-on activities, planetarium shows, and rooftop observing. Our friends from the [Spark! Imagination and Discovery Center](#) will be helping us with an eclipse solar corona art project!



*Photograph of the solar corona (Credit: Eric Blackhurst, OTP)*

## In The Sky this Quarter

### July 1<sup>st</sup>, 2017

	Const.	Rise	Transit	Set	Mag
Sun	Gem	05:56	13:24	20:51	-26.8
Mercury	Gem	06:48	14:15	21:40	-1.0
Venus	Tau	03:21	10:18	17:16	-4.0
Mars	Gem	06:33	13:57	21:20	1.7
Jupiter	Vir	19:31	13:46	01:20	-1.9
Saturn	Oph	19:27	00:13	11:10	1.2

### August 1<sup>st</sup>, 2017

	Const.	Rise	Transit	Set	Mag
Sun	Cnc	06:19	13:26	20:32	-26.8
Mercury	Leo	08:43	15:07	21:32	0.6
Venus	Gem	03:24	10:42	18:00	-3.9
Mars	Cnc	06:11	13:19	20:27	1.7
Jupiter	Vir	12:00	17:41	23:22	-1.7
Saturn	Oph	17:18	21:59	02:45	0.3

### September 1<sup>st</sup>, 2017

	Const.	Rise	Transit	Set	Mag
Sun	Leo	06:48	13:20	19:50	-26.8
Mercury	Ari	05:00	11:54	18:49	-0.3
Venus	Psc	03:50	10:16	16:42	-4.2
Mars	Tau	07:01	14:29	21:56	1.9
Jupiter	Vir	15:41	21:27	03:18	-2.1
Saturn	Oph	21:34	02:20	07:01	1.0

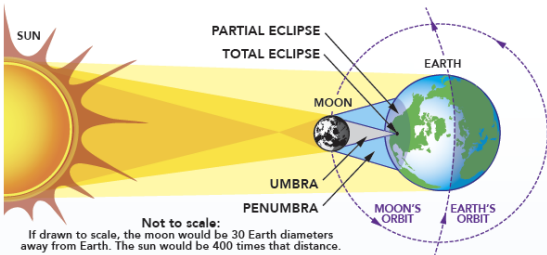
- Ari - Aries the Ram
- Tau - Taurus the Bull
- Gem - Gemini the Twins
- Cnc - Cancer the Crab
- Leo - Leo the Lion
- Vir - Virgo the Maiden
- Lib - Libra the Scales
- Sco - Scorpio the Scorpion
- Oph - Ophiuchus the Serpent Holder
- Sag - Sagittarius the Archer
- Cpr - Capricorn the Sea-Goat
- Aqr - Aquarius the Water-Bearer
- Psc - Pisces the Fish

## Eclipse 2017

Coming on August 21, 2017 is the first solar eclipse visible from the contiguous United States in the current century, as well as the greatest solar coverage (with up to 90% of the Sun's surface covered by the Moon) we've had in West Virginia since the annular eclipse on May 10, 1994.

**TOTAL SOLAR ECLIPSE: Monday • August 21, 2017**

This will be the first total solar eclipse visible in the continental United States in 38 years.



*Eclipse shadows on the globe (Credit: NASA)*

### What is a solar eclipse?

In the sky, the Moon and the Sun appear to be about the same size. When our moon passes directly between the Sun and the Earth, the Moon's shadow passes over Earth. Since the Earth is much larger than the Moon, only a very small part of Earth's surface is totally within the Moon's shadow, while the rest is only partially covered if at all. The tilt of the Moon's orbit prevents this from happening every time the Moon is in the new moon phase. This is also affected by the distance between Earth and the Moon—at its furthest distance from Earth, the moon appears smaller than the sun and cannot completely block out its light, instead leaving a glowing ring around the moon. This is called an annular eclipse, in contrast to a total eclipse with complete coverage.

### Where and when can you see it?

On August 21, you can see this eclipse from the comfort of your own backyard! If you want to see the complete total solar eclipse for the best possible viewing experience you'll have to relocate to a city in the path of totality like Nashville, TN or Clayton, GA, but if you're not up for the trip here in West Virginia we'll be able to see up to about 90% coverage! The timing varies by location, but here

in Morgantown the moon will begin transit at 1:11pm, reach maximum coverage at 2:36pm, and finish at 3:56pm. Groups of high school and college students as well as community teams from across the country will also be collaborating to launch a network of high-altitude balloons to livestream the eclipse along the path of totality from the edge of space online at <http://eclipse.stream.live/>.



*Eclipse path and coverage. (Credit: NASA)*

### Eclipse Safety

It's always extremely damaging to your eyes to look directly at the sun, and that doesn't change even when the moon partially covers the sun! In order to view most of the eclipse directly, you'll need special eclipse glasses like the ones we fundraised for back in May and will be handing out at planetarium shows this summer. If you're in an area of total coverage, you can observe the eclipse directly without a filter during the brief period of totality, just make sure to protect yourself again before totality ends! You can also view the eclipse indirectly by creating a projection of it, for example by using a colander to make several images of the Sun, or using a Sunspotter, a small solar telescope.

### For more information

The eclipse simulated, as seen from Morgantown: <https://www.timeanddate.com/eclipse/in/usa/morgantown?iso=20170821>

NASA's Eclipse hub: <https://eclipse2017.nasa.gov/>

The eclipse page on our website!

<http://planetarium.wvu.edu/eclipse>

All our public planetarium shows leading up to the eclipse will also feature some eclipse knowledge, like our new film Earth, Moon, & Sun.

# Planetarium Shows

All public WVU Planetarium shows are free admission



## Regularly Scheduled Shows

<b>July 14<sup>th</sup>, 28<sup>th</sup></b> 8:00 P.M. <i>Earth, Moon, Sun</i> 9:00 P.M. <i>Oasis In Space</i>	<b>August 11<sup>th</sup>, 25<sup>th</sup></b> 8:00 P.M. <i>Earth, Moon, Sun</i> 9:00 P.M. <i>Oasis In Space</i>	<b>September 8<sup>th</sup>, 22<sup>nd</sup></b> 8:00 P.M. <i>TBD</i> 9:00 P.M. <i>TBD</i>
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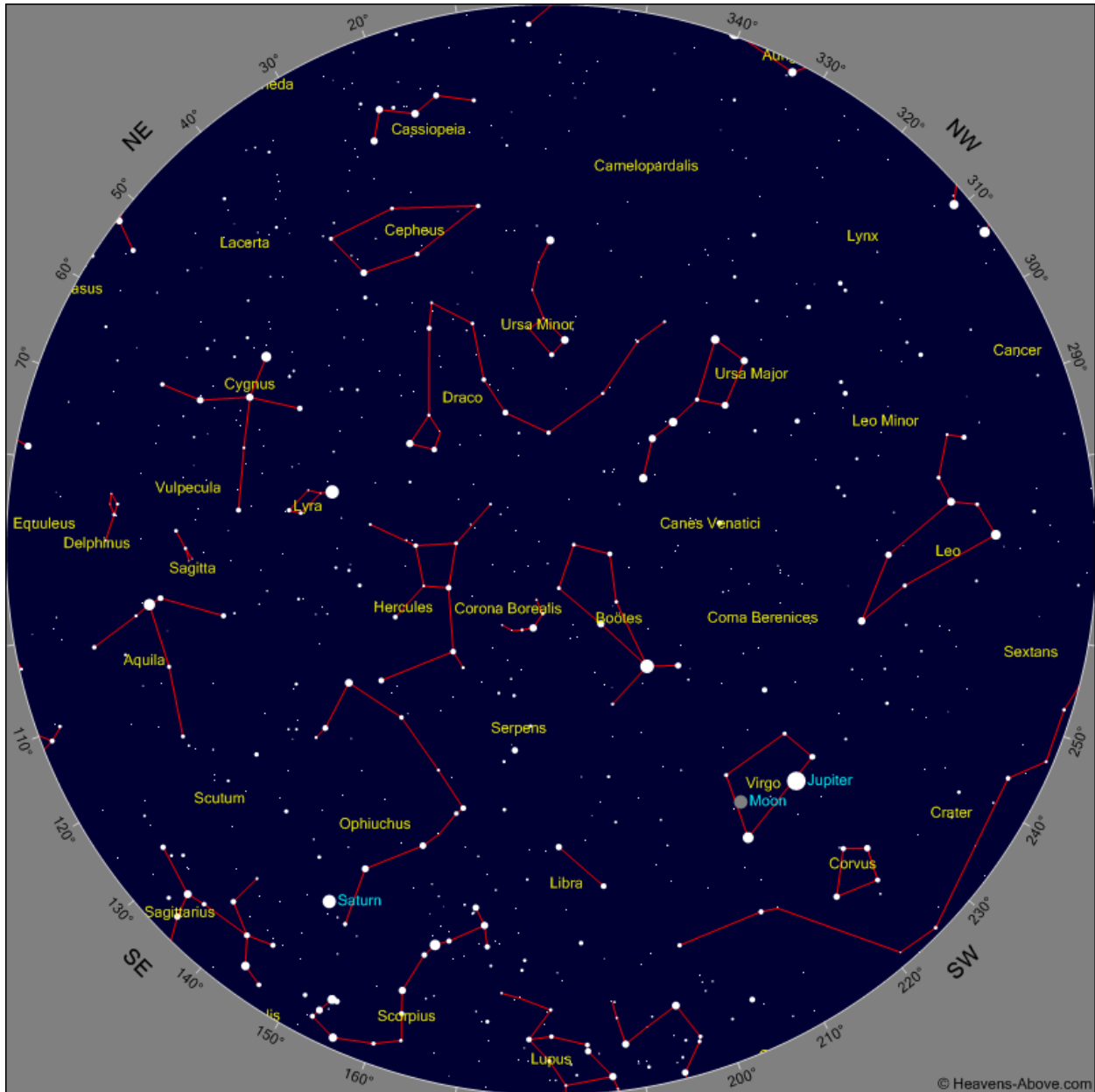
For regularly-scheduled evening shows, be sure to send in a reservation from the Public Shows page of our website so we can get a head count: <http://planetarium.wvu.edu/shows>

For those who are interested in bringing a group such as schools or scouts, please visit our Field Trips page on the website and send us an email: <http://planetarium.wvu.edu/fieldtrips>

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

Date	Sunrise	Sunset	Moon Rise	Moon Set	Moon Phase
<b>July 14</b>	6:04 AM	8:46 PM	-----	11:21 AM	Third Quarter
<b>July 28</b>	6:15 AM	8:36 PM	11:53 AM	11:57 PM	First Quarter
<b>August 11</b>	6:28 AM	8:20 PM	10:43 PM	11:22 AM	Third Quarter
<b>August 25</b>	6:41 AM	8:01 PM	10:39 AM	10:27 PM	First Quarter
<b>September 8</b>	6:54 AM	7:39 PM	9:18 PM	10:19 AM	Full
<b>September 22</b>	7:07 AM	7:16 PM	9:24 AM	8:56 PM	New

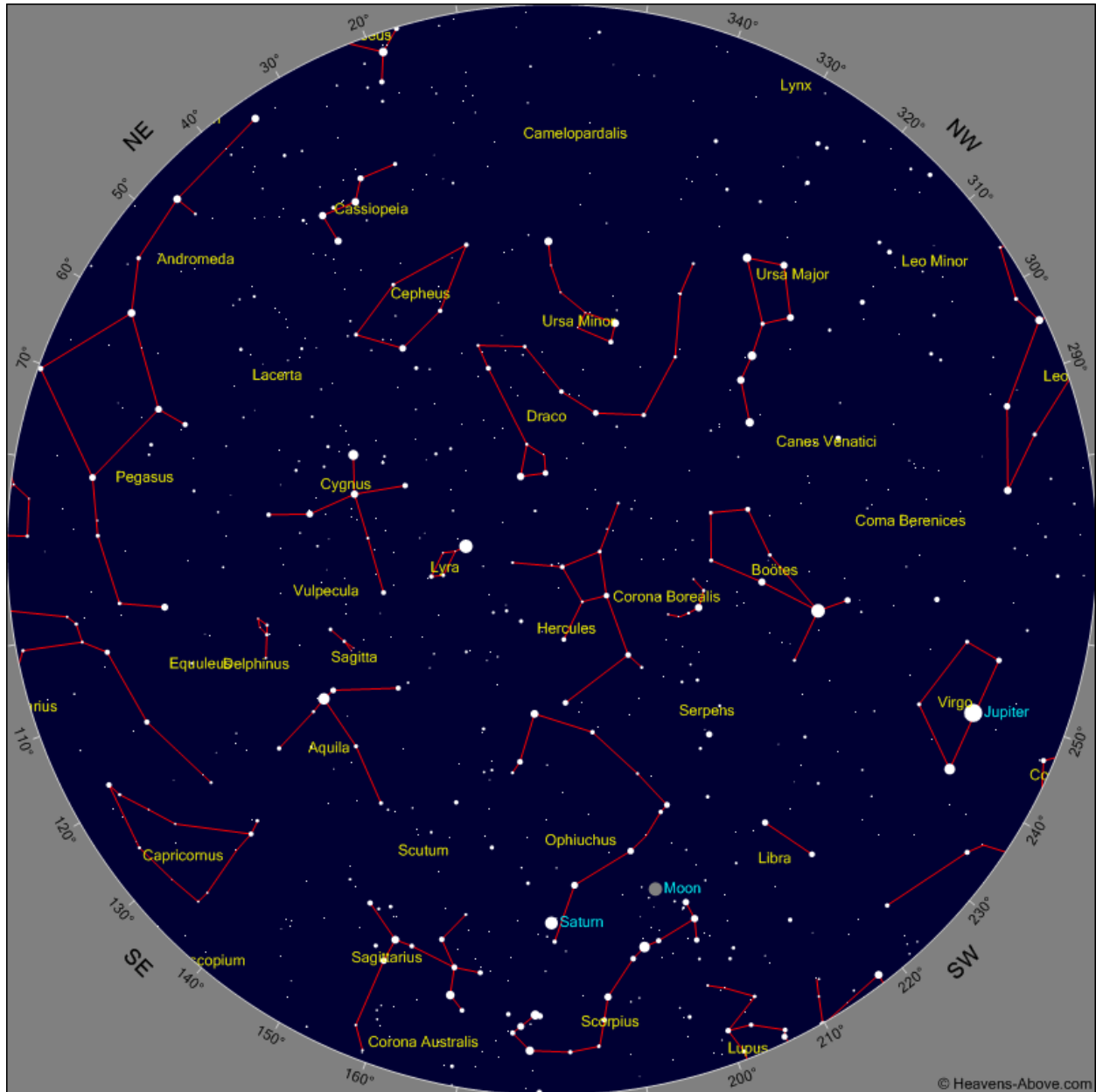
July 2017 Sky Chart\* for:  
10:00 P.M. at the beginning of the month  
9:00 P.M. in the middle of the month  
8:00 P.M. at the end of the month



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

The WVU Planetarium is for the educational benefit of WVU students, staff, and faculty members, as well as the local community. Should you wish to make a contribution to the planetarium, it can be made through the WVU Planetarium Project at the WVU Foundation, Inc., through methods available on our website at <http://planetarium.wvu.edu/give>. Thank You.

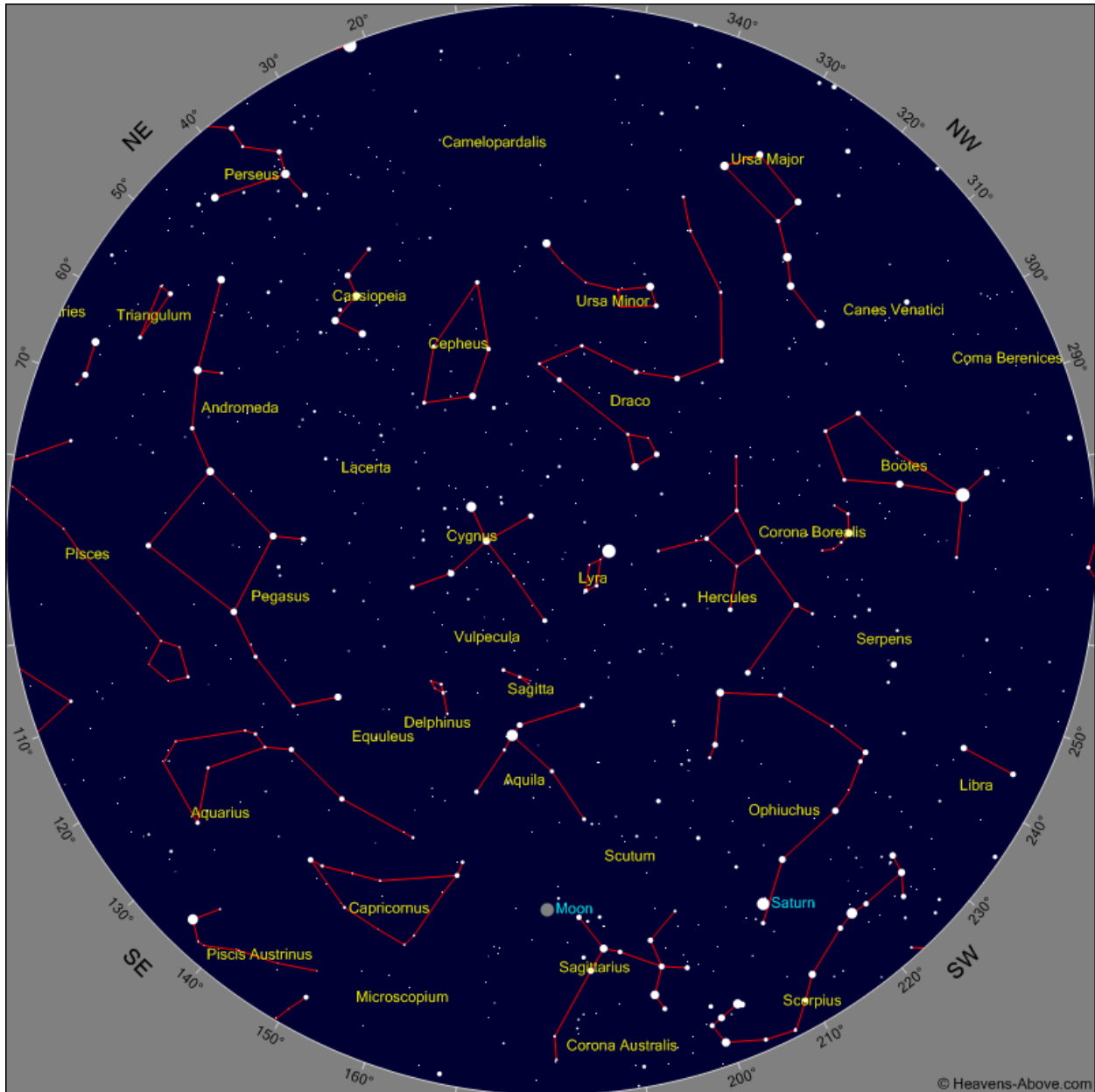
August 2017 Sky Chart\* for:  
10:00 P.M. at the beginning of the month  
9:00 P.M. in the middle of the month  
8:00 P.M. at the end of the month



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September 2017 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



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