



Mountain Skies
Thursday August 17, 2017

MONDAY'S GREAT AMERICAN ECLIPSE!

The stars and the sun: There is really only one star to write about this month. That is, of course, the sun which this coming Monday will disappear from our daytime sky for up to 2 minutes 40.2 seconds depending on where we are located to observe it. I am, of course, talking about the Great American Solar Eclipse a.k.a. the Eclipse of a Lifetime. Most of Transylvania County will be within the path of totality. Circumstances for various locations as determined by the US Naval Observatory website at <http://aa.usno.navy.mil/data/docs/Eclipse2017.php#index> are in the table below. For other Locations, use NASA's interactive map at https://eclipse2017.nasa.gov/sites/default/files/interactive_map/index.html.

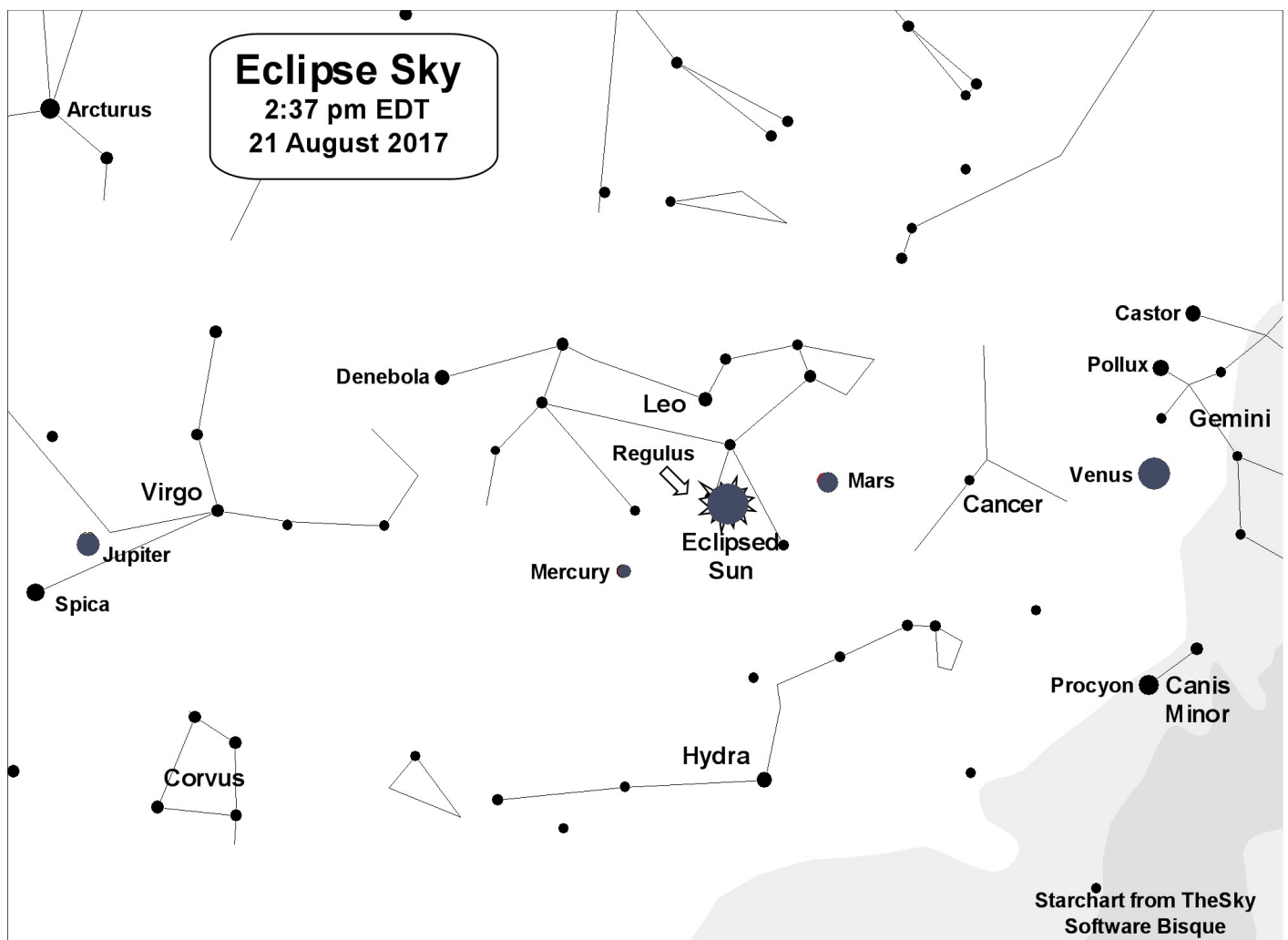
Circumstances of the Eclipse in Western North Carolina and South Carolina

	PARI Rosman NC	Brevard NC	Asheville NC	Waynesville NC	Greenville SC	Charleston SC
Eclipse begins (EDT)	1:07:49.5	1:08:06.8	1:08:12.0	1:07:16.8	1:09:14.4	1:16:52.1
Totality begins (EDT)	2:36:44.0	2:37:14.8	Na	Na	2:38:00.7	2:46:12.0
Maximum eclipse (EDT)	2:37:36.7	2:37:50.7	2:37:39.9	2:36:52.7	2:39:06.3	2:47:02.4
Totality ends (EDT)	2:38:31.0	2:38:28.4	Na	Na	2:40:13.5	2:47:54.5
Duration of totality	1m 47.0s	1m 13.6s	0m 0s	0m 0s	2m 12.7s	1m 42.5s
Eclipse ends (EDT)	4:01:35.0	4:01:43.7	4:00:19.8	4:00:47.9	4:02:54.2	4:09:52.9
Duration of eclipse	2h 53m 45.5s	2h 53m 36.8s	2h 53m 07.8s	2h 53m 31.1s	2h 53m 39.8s	2h 53m 00.8s
Obscuration	100.0%	100.0%	93.3%	98.8%	100.0%	100.0%

Please note that for all times before and after totality, viewers must use caution to protect their eyes from the intense light of the unfiltered sun. Eclipse glasses have been readily available throughout the county for months now. If you do not have yours, please be sure to obtain them prior to this momentous event. Waynesville and Asheville are outside the path of totality. Therefore eclipse glasses must be worn the entire time!

The stars and planets during the eclipse: Our sky map with this column is a bit unusual since it illustrates, not our evening sky, but what we might see during the totality phase of Monday’s solar eclipse. First of all, while the sight of the totally eclipsed sun will be spectacular, the sky will not be totally dark. The corona of the sun will display some light and around the horizon will be a 360° band of light similar to a continuous sunset or sunrise. Obviously, the weather conditions, i.e., haze, high cirrus or complete overcast (bah!), will play a part. But let’s assume ideal circumstances

On either side of the sun the two brightest planets will be visible. To the west will be the brilliant planet Venus and Jupiter will be to the east. I’ll stick my neck out and say we should have no problems spotting these two planets. Closer in to the eclipsed sun is Mars to the west and Mercury to the east. I’m hoping we will be able to spot them too but they are nowhere near as bright as Venus and Jupiter.



Of the brighter stars, Pollux and Castor, the Gemini twins, will lie above Venus. Use Venus as a guide to try to spot these two. Similarly, use Jupiter to see if you can find Spica in Virgo below and to the giant planet’s left. Next, things get a bit tricky; Procyon, known as “the pup” may be spotted below Venus while Arcturus in Boötes will be above Jupiter. Finally, if we’ve been successful so far, let’s see if we can find Leo the lion. First, we’ve got a problem; Regulus the heart of the lion and the brightest star in that constellation is a mere

1° to the left of the eclipsed sun. I would be very surprised to see this star embedded in the glow of the sun's corona but I'll certainly look for it there. However, we might spot Denebola, the tail of the lion, off to the east. There you have it. I will be at PARI searching for these planets and stars for our entire 1 minute 47 seconds of totality. Here's hoping you don't miss the eclipse of a lifetime; play it safe and wear those eclipse glasses at all times except during totality!.

Celestial Calendar:

August 21, 2:30 p.m. EDT - New Moon TOTAL SOLAR ECLIPSE!

August 29, 4:13 a.m. EDT – First Quarter Moon

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PARI is a public not-for-profit public organization established in 1998. Located in the Pisgah National Forest southwest of Asheville, NC, PARI offers STEM educational programs at all levels, from K-12 through post-graduate research. For more information about PARI and its programs, visit www.pari.edu.

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