Astronomical Highlights 2017

Total Solar Eclipse

On Monday, August 21 there is a total solar eclipse. The 140km wide path of totality crosses the U.S. from Oregon (starting at 17:15 UT/10:15 PDT) to South Carolina (ending at 18:48 UT/14:48 EDT). Maximum duration of totality of 2 minutes 40 seconds occurs near Hopkinsville, KY. An interactive path map can be found at

http://xjubier.free.fr/en/site_pages/solar_eclipses/TSE_2017_GoogleMapFull.html

Lunar Occultations and Grazes

There are no less than 10 lunar occultations of the bright stars Aldebaran, Regulus, and Porrima this year visible from Hampton Roads. Aldebaran daytime occultations occur on April 28, June 22, and September 12, while night-time occultations occur on March 4, November 4, and December 30. For Regulus, all night events occur on July 25 and October 15. Porrima night events occur on January 18 and June 30.

There are 7 lunar grazes of stars brighter than +8 magnitude that occur within 100 km of our area. These occur on January 22, February 22 and 28, March 4 and 5, July 16, and September 12. Of these, 3 grazes are of naked-eye stars. Graze path maps can be found at

http://www.iota.timerson.net/

Meteor Showers

Of the major meteor showers, there are 4 where the moon's phase is favorable for viewing this year. The April 22 Lyrids and November 17 Leonids are favored by a waning thin crescent moon. The October 21 Orionids are favored by a waxing thin crescent moon. The best shower, the December 14 Geminids, should be good prior to 3:38 AM rise of the waning thick crescent moon.

Planets

The best time to view the outer planets are the months close to opposition. Oppositions occur on April 7 for Jupiter, June 15 for Saturn, July 10 for Pluto, September 5 for Neptune, and October 19 for Uranus. The inner planet Venus will be at its closest, brightest, and showing phases between February and June.

ASTRONOMICAL HIGHLIGHTS FOR 2017

DATE	START	END	ZONE	EVENT
Wed 01/18/2017	0:07	1:16	EST	Moon occults +2.8 mag Porrima (gamma VIR) d/R
Sun 01/22/2017	6:29		EST	Moon grazes +6.5 mag ZC2280
Fri 02/17/2017	2:00		EST	Venus reaches greatest brilliancy in evening sky at -4.8 mag [39.2 arcsec]
Wed 02/22/2017	5:45		EST	Moon grazes +7.2 mag SAO162079
Tue 02/28/2017	18:58		EST	Moon grazes +7.8 mag SAO109383
Sat 03/04/2017	23:03	23:45	EST	Moon occults +0.9 mag Aldebaran (alpha TAU/ZC692) D/R
Sat 03/04/2017	19:38		EST	Moon grazes +3.4 mag theta-2 TAU (ZC671)
Sun 03/05/2017	22:46		EDT	Moon grazes +6.8 mag ZC829
Fri 04/07/2017				Jupiter reaches opposition in Virgo at -2.5 mag [44 arcsec]
Sat 04/22/2017	8:00		EDT	Lyrid meteor peak (zhr=20) [NM-1]
Fri 04/28/2017	12:21	13:32	EDT	Moon occults +0.9 mag Aldebaran (alpha TAU/ZC692) D/R [day]
Sun 04/30/2017				Venus reaches greatest brilliancy in morning sky at -4.7 mag [38.8 arcsec]
Mon 05/22/2017	5:27		EDT	Venus 3.5N of Moon in morning sky (photo opportunity)
Sat 06/03/2017	5:22		EDT	Uranus 1.8N of Venus
Thu 06/15/2017				Saturn reaches opposition in Scorpius at +0.0 mag [18.4 arcsec]
Thu 06/22/2017	9:40	10:47	EDT	Moon occults +0.9 mag Aldebaran (alpha TAU/ZC692) D/R [day]
Fri 06/30/2017	22:58	0:00	EDT	Moon occults +2.8 mag Porrima (gamma VIR) D/r
Mon 07/10/2017				Pluto reaches opposition in Sagittarius at +14.2 mag.
Sun 07/16/2017	2:23		EDT	Moon grazes +6.0 mag 33 CET (ZC170)
Thu 07/20/2017	5:26		EDT	Venus 3.3N of Moon in morning sky (photo opportunity)
Tue 07/25/2017	20:53		EDT	Moon 0.9 S of Mercury and Regulus in evening sky (low altitude)
Mon 08/21/2017			EDT	Total Solar Eclipse (OR to SC)
Tue 09/05/2017				Neptune reaches opposition in Aquarius at +7.8 mag
Tue 09/12/2017	9:02	10:06	EDT	Moon occults +0.9 mag Aldebaran (alpha TAU/ZC692) D/R [day]
Tue 09/12/2017	5:00		EDT	Moon grazes +3.8 mag theta-1 TAU (ZC669)
Sat 09/16/2017	6:32		EDT	Mars 0.1 S of Mercury in morning sky (low altitude)
Thu 10/05/2017	6:37		EDT	Venus 16.7'N of Mars (photo opportunity)
Sun 10/15/2017	5:35	6:43	EDT	Moon occults +1.4 mag Regulus (alpha LEO/ZC1487) D/R
Thu 10/19/2017				Uranus reaches opposition in Pisces at +5.8 mag
Sat 10/21/2017	8:00		EDT	Orionid meteor peak (zhr=20) [NM+2]
Sun 11/05/2017	19:56	20:49	EST	Moon occults +0.9 mag Aldebaran (alpha TAU/ZC692) D/R
Mon 11/13/2017	6:14		EST	Venus 16.6'N of Jupiter (photo opportunity/low altitude)
Fri 11/17/2017	13:00		EST	Leonid meteor peak (zhr=20) [NM-1]
Thu 12/14/2017	2:00		EST	Geminid meteor peak (zhr=120) [LQ+4]
Sat 12/30/2017	18:20	19:03	EST	Moon occults +0.9 mag Aldebaran (alpha TAU/ZC692) D/R