

SOME EVENTS FOR THE NIGHT OF MONDAY/ TUESDAY • 2014 APRIL 14/15

A TOTAL LUNAR ECLIPSE AND MORE

Four Naked Eye Planets Put On a Show

(All times Eastern Daylight Time)

JUPITER, GREAT RED SPOT AND SATELLITES ALL PERFORM

King of planets shines brilliantly in **western sky** all evening.

Sets 1:51 a.m., Tuesday, April 15

Brightest sky object in *evening sky* (except for Moon)

Magnitude	-2.1 (nearly 2x brightness of Sirius)
Equatorial Diameter	36.8 arc sec
Earth Distance	5.35 AU (44.5 light-min.)

GREAT RED SPOT

This famous “elusive” feature **appears about 11:00 p.m.**
at planet’s eastern limb

Transits planet’s central meridian 12:34 a.m.

Never seen this famous feature? Tonight’s the night!

JUPITER’S SATELLITES



Fig. 1. Jupiter and Satellites. 9:45 p.m. 2014
April 14. Io, Europa, Ganymede, Callisto
(North up, East on left). Cred. Sky & Tel.

EUROPA’S SHADOW

On disk till 9:47 p.m.

Then shadow leaves Jupiter’s western limb

IO (INNERMOST GALILEAN SATELLITE)

Disappears 10:05 p.m. at Jupiter’s western limb
Watch this neat disappearance!

Reappears 20 arc seconds east of Jupiter at 1:37 a.m.
but Jupiter’s altitude only 2.3°

MARS CLOSEST TO EARTH

Up All Night — **Highest 1:00 a.m.**

Orangey Mars shines only 6 to 10 degrees west of Moon (depending on time)

Yes, Mars was at opposition on April 8 but planet's high orbital eccentricity (nearly 10%) makes "red planet" closest to Earth morning of April 14

Magnitude	-1.4 (same as Sirius & 9 times brighter than <i>Spica</i>)
Disk	15.2 arc sec
Earth Distance	0.62 AU (5.1 light-min.)

TWO WELL-KNOWN FEATURES FACE EARTH AT 1:00 A.M.

(Central Meridian Longitude or **CML** = 91°)

SOLUS LACUS

Darkish albedo feature in southern hemisphere
Very variable in size and shape
due to dust storms
"Capital of Mars" according to Percival Lowell!

THARSIS

Lighter albedo feature in northern hemisphere
A vast volcanic plain
Home to planet's largest Solar System volcanoes



**Fig. 2. Mars. at 1:00 a.m. 2014
Apr. 15. CML = 91°, Direct View
(North Up, East on Left). Cred.
CalSky.**

MARTIAN NORTHERN POLAR CAP

Northern Hemisphere tilts toward Earth
but now well into summer (mid-February to mid-August)
So polar cap small, hard to see. But clouds and icy fogs may show

This is not a *favorable opposition* of Mars
but separation from Earth now smallest in last six years.

Next *favorable opposition* occurs July 2018 when
earth distance will be 0.39 AU with a 24 arc second disk

SATURN APPROACHING OPPOSITION

Rises 9:52 p.m. April 14

Transits 3:17 a.m. April 15

Saturn closest to Earth and at opposition May 10

Moon will pass within about one degree of Saturn on night of April 16/17

Magnitude	+0.2 (about same as <i>Spica</i>)
Equatorial Diameter	18.4 arc sec
Earth Distance	9.0 AU (74.8 light-min.)



Fig. 3. Saturn. 2014 April 15 3:17 a.m. (N. up, E. left). Cred. Sky&Tel.

RINGS

41.7 arc sec wide with ring's north side tilted 22° toward Earth

A spectacular view

Look for *Cassini Division* in rings

(Fig. 3 show Titan, Rhea, Dione, Thethys, Enceladus)

VENUS, JEWEL OF MORNING SKY

Rises about 5:00 a.m. so don't go to bed yet

Beautiful in southeast during morning twilight. (Sunrise 7:03 a.m.)

Magnitude	-4.2; most brilliant sky object (except for Moon) Shines five times brighter than Jupiter
Disk	19.3 arc sec
Earth Distance	0.86 AU (7.2 light-min.)
Phase	61% so now a slightly waxing <i>gibbous shape</i>
Elongation from Sun	45°

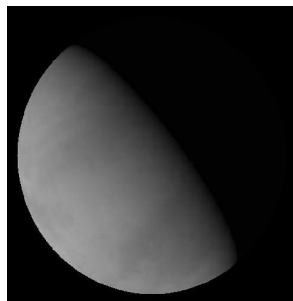


Fig. 4. Venus. 2014 April.

TOTAL LUNAR ECLIPSE



Fig. 5. Lunar Eclipse
2010 Dec. 21. Will 2014
eclipse look like this?

Penumbral Eclipse Starts	12:54 a.m.
Partial Eclipse Begins	1:58 a.m.
Total Eclipse Begins	3:07 a.m.
MID-TOTALITY	3:46 a.m.
Total Eclipse Ends	4:25 a.m.
Partial Eclipse Ends	5:33 a.m.
Penumbral Eclipse End	6:38 a.m.
Sunrise	7:03 a.m.

Detailed times of eclipse with diagrams at <http://tiny.cc/ljascx>
(See full image of Fig. 5 in Virgo star field at <http://tiny.cc/puw5dx>)

BLUE-WHITE SPICA (ALPHA VIRGINIS)

Spica will be near eclipsed Moon

A pair of close hot, bluish stars about 250 light-years from Earth
Though 15th brightest in night sky, among the hottest of all first magnitude stars

Separation from Moon on Eclipse Morning

Spica (magnitude +1.0) about **1.5 degrees** from Moon at mid-eclipse
Mars (magnitude -1.4) about 9 degrees from Moon during night

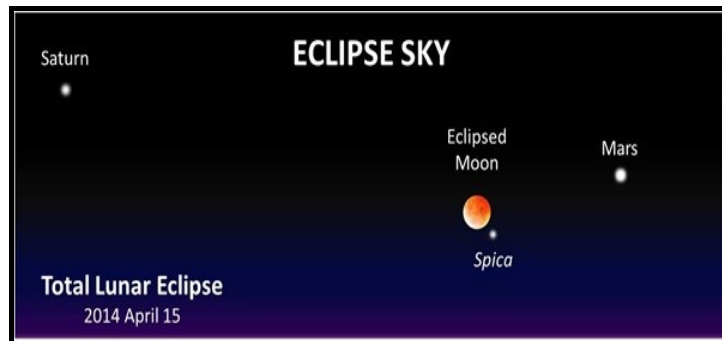


Fig. 6. Total Lunar Eclipse Sky 2014 April 15. Contrast bluish color
of Spica with orangey Mars. (Larger image at <http://tiny.cc/fnw5dx>)

Moon's Apparent Motion on Sky

*Good opportunity this night to see Moon's apparent eastward motion
on sky relative to stars due to its nearness to Spica.*

**Note Moon's position relative to Spica early in evening
and again before morning twilight**
