

Night Highlights – Dec.2014 through Dec.2015 by Dr. Bob Doyle, Frostburg State Planetarium

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MOON – Earth's companion both orbits Earth and rotates in **27.32** E. days so one side of moon always faces Earth (while other side is turned away from us). Moon's cycle of lighted shapes (phases) lasts **29.53** E. days, as the phases also depend on direction of sun (appears to move 30 degrees eastward each month along zodiac).

The moon is seen about **13** days growing in the evening from a slender crescent () to **Full**, followed by an equal time shrinking (mainly seen in the a.m. sky) and then 3 days hidden in sun's glare.

Key Moon Phases (**D**) moon ½ full in evening (best for crater & mountain viewing) & (**O**) full moon (see all lava plains) (Dec. '14, 6 -**O**, 28 - **D**) // (Jan. '15, 4 - **O**, 26 - **D**), // (Feb. '15, 3 - **O**, 25 - **D**) // (Mar. 5 - **O**, 27 - **D**) (Apr. 4 - **O**, 25 - **D**), // (May 3 - **O**, 25 - **D**) // (Jun., 2- **O**, 27 - **D**) // (Jul., 1 - **O**, 24 -**D**, 31 -**O** (Blue Moon)) (Aug., 22 - **D**, 29 - **O**) // (Sep., 20 - **D**, 27 - **O** (Harvest Moon)) // (Oct. 20 - **D**, 27 - **O** (Hunters' Moon)) // (Nov., 19 - **D**, 25 - **O**) // (Dec., 18 - **D**, 25 - **O** (Long Night Moon)) (**D** = ½ full, **O** = full)

THE 5 BRIGHT PLANETS (Mercury, Venus, Mars, Jupiter & Saturn): Uranus, Neptune are much dimmer. When high above horizon, planets appear as points of light that shine steadily. Venus & Jupiter outshine all night stars, Saturn lesser brightness, Mars' is modest in 2015 and Mercury's light flickers.

Below planet visibility descriptions for period from December '14 to December '15 (change each year)

Mercury – low in SW dusk in early Jan.'15 // near Venus Jan. 7-12 SW dusk // low in SE dawn in late Feb. // low in WNW dusk 4/23-5/7 // low in E dawn sky Oct. 8 – 27

(Mercury seen for about 2 weeks at a time due to its rapid motion about sun, taking only 88 days to orbit sun.)

Venus – brilliant point of light low in winter '15 Southwestern dusk, is highest in April and May after sunset Lower but brighter in June, more difficult to see in July, lost in W twilight in August, a blazing sight in E dawn in September, lower but still bright for the rest of the year

Mars – starts year low in Western dusk, appears near moon on Jan.22, seen near brilliant Venus & crescent moon at dusk on Feb.19-21,lost in March sunset glare, reappears in August E dawn, near * Spica of Virgo in predawn sky at year's end

Jupiter – seen in E dusk in winter '15, closest and brightest on Feb.6, when it rises in East at sunset and seen all through the night, remains an evening planet through early summer, appearing near brilliant Venus & the moon on June 19 & 20, lost in sun's glare at end of July, reappears in October in the predawn Eastern sky,

Saturn – begins 2015 in Libra, rising before dawn, in March, Saturn rises about midnight, rises as darkness falls in mid-May, Saturn's rings well seen this year, adding to its brightness, Saturn is closest & brightest on May 22, appears as an evening planet through August, in mid October lost at dusk, lining up with the sun in late November and out of view

Best Evening Stars & Groups this Winter: **ORION** has 3 star belt with * **Betelgeuse** above and * **Rigel** below, Orion's belt points left to ***Sirius**, belt points right to ***Aldebaran**, golden * **Capella** high in sky. (* = star)

Best Evening Stars & Groups in Spring: **BIG DIPPER** upside down high in North, Dipper's handle arcs to golden ***Arcturus**, golden * **Capella** high in NW, **LEO's** sickle high in South with * **Regulus** for Leo's heart

Best Evening Stars & Groups in Summer: **BIG DIPPER** in NW with handle on top, golden * **Arcturus** in West, white-blue * **Vega** in East, **SCORPIUS** forms starry "J" in South with pink * **Antares** on top

Best Evening Stars & Groups in Fall: **CASSIOPEIA** zig-zag in NE, **GREAT SQUARE** in SE, * **Fomalhaut** low in South, **SUMMER TRIANGLE** in West with * **Vega** lower right, * **Capella** low in the NE

Frostburg State Planetarium Shows, CCIT Building, Room 186 : 4 & 7 p.m. Sundays, change monthly

Dec. '14: 7, 14, & 21: "Heavenly Connection", **Feb.'15: 1, 8, 15, & 22:** "Starflight: The Ultimate Quest"

Mar.'15: 1, 8, 15, 22 & 29 "Words Upon Sky", **Apr.'15: 12, 19 & 26** "Music of the Spheres"

May '15: 3, 10 & 17 "Our Sun & Other Stars" **NO PUBLIC PROGRAMS IN JUN., JUL. & AUG..**

Sep.'15: 6, 13, 20 & 27 "Portals of Space/Time" **Oct. '15: 4, 11, 18, 25** "Planets about Other Stars"

Nov.'15: 1, 8, 15, 22 & 29 "Tour of Universe" **Dec.'15: 6, 13 & 20:** "Wonders of the Winter Skies"

Sky Watch heard most weekdays on **WFWM, FSU's Public Supported Radio Station at 91.9 FM**

Sun Events for Bedford, Cumberland, Hancock, Keyser, Meyersdale, Oakland, Romney every 10 days

Starts 12/1 – Daylight time starts 2nd Sunday in March*, Standard time begins 1st Sunday in November**

(Unlike moon events, the times of sunrise and sunset at given towns change little from year to year)

	<u>Bedford</u>	<u>Cumberland</u>	<u>Hancock</u>	<u>Keyser</u>	<u>Meyersdale</u>	<u>Oakland</u>	<u>Romney</u>	
Date	Rise Set	Rise Set	Rise Set	Rise Set	Rise Set	Rise Set	Rise Set	Date
12/01	7:17 4:49 /	7:17 4:51 /	7:15 4:49 /	7:17 4:53 /	7:18 4:52 /	7:19 4:55 /	7:14 4:50	12/01
12/11	7:26 4:49 /	7:26 4:51 /	7:24 4:48 /	7:27 4:52 /	7:27 4:52 /	7:28 4:54 /	7:23 4:50	12/11
12/21	7:32 4:52 /	7:32 4:54 /	7:30 4:52 /	7:34 4:55 /	7:34 4:55 /	7:34 4:57 /	7:29 4:53	12/21
01/01	7:36 4:59 /	7:36 5:01 /	7:34 4:59 /	7:36 5:03 /	7:38 5:02 /	7:38 5:05 /	7:33 5:00	1/01
01/11	7:35 5:09 /	7:35 5:11 /	7:33 5:08 /	7:36 5:12 /	7:37 5:11 /	7:37 5:14 /	7:33 5:10	1/11
01/21	7:31 5:20 /	7:31 5:22 /	7:29 5:19 /	7:32 5:23 /	7:33 5:22 /	7:33 5:25 /	7:29 5:20	1/21
02/01	7:23 5:33 /	7:23 5:35 /	7:21 5:32 /	7:23 5:36 /	7:25 5:35 /	7:25 5:38 /	7:20 5:33	2/01
02/11	7:12 5:45 /	7:13 5:47 /	7:10 5:44 /	7:13 5:48 /	7:14 5:47 /	7:15 5:49 /	7:10 5:45	2/11
02/21	6:59 5:57 /	7:00 5:58 /	6:58 5:56 /	7:01 5:59 /	7:01 5:59 /	7:02 6:01 /	6:58 5:56	2/21
03/01	6:48 6:06 /	6:49 6:07 /	6:46 6:05 /	6:49 6:08 /	6:50 6:08 /	6:51 6:10 /	6:46 6:05	3/01
03/11 *	7:32 7:16 /	7:33 7:18 /	7:31 7:15 /	7:34 7:18 /	7:34 7:19 /	7:36 7:20 /	7:34 7:18 *	3/11
03/21	7:17 7:25 /	7:18 7:28 /	7:18 7:26 /	7:19 7:29 /	7:19 7:29 /	7:21 7:30 /	7:16 7:26	3/21
04/01	6:59 7:38 /	7:00 7:39 /	6:57 7:37 /	7:01 7:40 /	7:01 7:40 /	7:02 7:41 /	6:58 7:37	4/01
04/11	6:43 7:48 /	6:44 7:49 /	6:42 7:47 /	6:45 7:49 /	6:45 7:50 /	6:47 7:51 /	6:42 7:46	4/11
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06/21	5:45 8:46 /	5:47 8:46 /	5:45 8:44 /	5:44 8:46 /	5:48 8:48 /	5:51 8:48 /	5:46 8:43	6/21
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09/01	6:41 7:46 /	6:43 7:47 /	6:41 7:44 /	6:44 7:47 /	6:44 7:48 /	6:46 7:49 /	6:41 7:44	9/01
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