

Norfolk Astronomical Society



<http://norfolkastronomical.org>

December 2014

Monthly Sky Calendar
Prepared Specifically For
The Hampton Roads Area

Upcoming Regular Meetings

DATE	Thursday, December 11, 2014
TIME	6 - 8 PM EST
WHERE	Lockside Bar & Grill (http://www.LocksideBarandGrill.com)
TOPIC	Annual Dinner Meeting

DATE	Monday, January 5, 2015
TIME	6 - 8 PM EST
WHERE	Chesapeake Public Library, Major Hillard branch Conf. Room
TOPIC	Focusing Tools and Methods for Astrophotography

Partial Solar Eclipse of October 23, 2014

Photo By Kent Blackwell



Kent photographed the partial solar eclipse of October 23, 2014. He used a Leica 180mm telephoto attached to his Canon 20Da DSLR camera, set to ISO 100 and an exposure time of 1/8000 second. The photo was taken from the causeway between Coinjock and Waterlily, NC.

NAS Proposed Regular Meetings 2015

WKDAY	DATE	2015 PROPOSED MEETING DATES & TOPICS
MON	5-Jan	NAS Regular Meeting, 6 PM at Ches. Public Lib., Major Hillard branch. Topic: Focusing Methods
MON	2-Feb	NAS Regular Meeting, 6 PM at Ches. Public Lib., Major Hillard branch. Topic: George Ellery Hale
MON	2-Mar	NAS Regular Meeting, 6 PM at Ches. Public Lib., Major Hillard branch. Topic: The Planet Jupiter
MON	6-Apr	NAS Regular Meeting, 6 PM at Ches. Public Lib., Major Hillard branch. Topic: Aurora Borealis
MON	4-May	NAS Regular Meeting, 6 PM at Ches. Public Lib., Major Hillard branch. Topic: Image Processing
MON	8-Jun	NAS Regular Meeting, 6 PM at Ches. Public Lib., Major Hillard branch. Topic: History of the Telescope
MON	27-Jul	NAS Regular Meeting, 6 PM at Ches. Public Lib., Major Hillard branch. Topic: Apollo 17 Moon Landing
MON	24-Aug	NAS Regular Meeting, 6 PM at Ches. Public Lib., Major Hillard branch. Topic: The Planet Saturn
MON	28-Sep	NAS Regular Meeting, 6 PM at Ches. Public Lib., Major Hillard branch. Topic: Total Lunar Eclipses
MON	26-Oct	NAS Regular Meeting, 6 PM at Ches. Public Lib., Major Hillard branch. Topic: Meteor Showers
MON	23-Nov	NAS Regular Meeting, 6 PM at Ches. Public Lib., Major Hillard branch. Topic: Astronomical Software
MON	14-Dec	NAS Anniversary Dinner Meeting, 6:00 PM, at a restaurant to be arranged.

The above dates are proposed as our regular meeting dates. Dates are chosen to be on a Monday close to Full Moon, with some variances to avoid holidays. Dates are subject to change.

Norfolk Astronomical Society Astronomical Calendar

November 2014							December 2014							January 2015						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
						1	1	2	3	4	5	6	4	5	6	7	8	9	10	
2	3	4	5	6	7	8	7	8	9	10	11	12	13	11	12	13	14	15	16	17
9	10	11	12	13	14	15	14	15	16	17	18	19	20	18	19	20	21	22	23	24
16	17	18	19	20	21	22	21	22	23	24	25	26	27	25	26	27	28	29	30	31
23	24	25	26	27	28	29	28	29	30	31										
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Calendar

	Start	End	Category	Description
1 Dec 2014	12:07 AM	12:07 AM	Jup Sats	I.Ec.D
	1:01 AM	1:01 AM	Jup GRS	GRS Transit (CML=229)
	1:43 AM	1:43 AM	Moon	Moonset
	3:39 AM	3:39 AM	Jup Sats	I.Oc.R
	5:29 AM	5:29 AM	Twilight	Astronomical Twilight begins
	7:00 AM	7:00 AM	Sun	Sunrise
	10:57 AM	10:57 AM	Jup GRS	GRS Transit (CML=229)
	11:54 AM	11:54 AM	Jupiter	Jupiter sets
	1:48 PM	1:48 PM	Moon	Moonrise
	2:24 PM	2:24 PM	Algol Minima	Algol at mag. +3.4 minimum (+/-5 hours)
	4:52 PM	4:52 PM	Sun	Sunset
	6:23 PM	6:23 PM	Twilight	Astronomical Twilight ends
	6:23 PM	6:23 PM	Iridium Flare	CHES:Iridium 8 Flares at mag.-1.2 (Azm 039 Alt 47)
	6:26 PM	6:26 PM	Iridium Flare	CHES:Iridium 4 Flares at mag. 1.1 (Azm 034 Alt 52)
	6:58 PM	6:58 PM	Lunar Occult	Moon occults 5.8 mag. star X54001(D)
	6:59 PM	6:59 PM	Lunar Occult	Moon occults 5.7 mag. star 104(D)
	7:00 PM	7:00 PM	Diary	Uranus 1.1S of Moon Occn
	8:52 PM	8:52 PM	Jup GRS	GRS Transit (CML=229)
	10:17 PM	10:17 PM	Jupiter	Jupiter rises
10:37 PM	10:37 PM	Jup Sats	I.Tr.I	
11:16 PM	11:16 PM	Jup Sats	II.Tr.E	
11:43 PM	11:43 PM	Jup Sats	I.Sh.E	
2 Dec 2014	12:53 AM	12:53 AM	Jup Sats	I.Tr.E
	2:48 AM	2:48 AM	Moon	Moonset
	5:30 AM	5:30 AM	Twilight	Astronomical Twilight begins
	5:52 AM	5:52 AM	Iridium Flare	CHES:Iridium 35 Flares at mag.-5.8 (Azm 153 Alt 18)
	6:48 AM	6:48 AM	Jup GRS	GRS Transit (CML=229)
	7:01 AM	7:01 AM	Sun	Sunrise
	7:43 AM	7:43 AM	Iridium Flare	CHES:Iridium 84 Flares at mag.-6.9 (Azm 088 Alt 38)
	11:50 AM	11:50 AM	Jupiter	Jupiter sets
	2:26 PM	2:26 PM	Moon	Moonrise
	4:43 PM	4:43 PM	Jup GRS	GRS Transit (CML=229)
	4:52 PM	4:52 PM	Sun	Sunset
	5:23 PM	5:23 PM	Lunar Occult	Moon occults 6.3 mag. star 247(d)
	6:17 PM	6:17 PM	Iridium Flare	CHES:Iridium 61 Flares at mag. 1.4 (Azm 041 Alt 47)
	6:23 PM	6:23 PM	Twilight	Astronomical Twilight ends
10:13 PM	10:13 PM	Jupiter	Jupiter rises	
3 Dec 2014	2:39 AM	2:39 AM	Jup GRS	GRS Transit (CML=229)
	3:52 AM	3:52 AM	Moon	Moonset
	5:31 AM	5:31 AM	Twilight	Astronomical Twilight begins

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November 2014							December 2014							January 2015						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
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9	10	11	12	13	14	15	14	15	16	17	18	19	20	11	12	13	14	15	16	17
16	17	18	19	20	21	22	21	22	23	24	25	26	27	18	19	20	21	22	23	24
23	24	25	26	27	28	29	28	29	30	31				25	26	27	28	29	30	31
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Calendar

	Start	End	Category	Description
3 Dec 2014	5:46 AM	5:46 AM	Iridium Flare	CHES:Iridium 6 Flares at mag.-0.4 (Azm 153 Alt 17)
	5:47 AM	5:47 AM	Iridium Flare	CHES:Iridium 51 Flares at mag.-0.3 (Azm 153 Alt 17)
	6:25 AM	6:25 AM	Jup Sats	III.Ec.D
	7:02 AM	7:02 AM	Sun	Sunrise
	11:46 AM	11:46 AM	Jupiter	Jupiter sets
	12:35 PM	12:35 PM	Jup GRS	GRS Transit (CML=229)
	3:06 PM	3:06 PM	Moon	Moonrise
	4:52 PM	4:52 PM	Sun	Sunset
	6:17 PM	6:17 PM	Lunar Occult	Moon occults 5.6 mag. double star 384(D)
	6:23 PM	6:23 PM	Twilight	Astronomical Twilight ends
10:09 PM	10:09 PM	Jupiter	Jupiter rises	
10:30 PM	10:30 PM	Jup GRS	GRS Transit (CML=229)	
4 Dec 2014	4:56 AM	4:56 AM	Moon	Moonset
	5:31 AM	5:31 AM	Twilight	Astronomical Twilight begins
	5:41 AM	5:41 AM	Iridium Flare	CHES:Iridium 96 Flares at mag. 1.8 (Azm 154 Alt 15)
	5:49 AM	5:49 AM	Iridium Flare	CHES:Iridium 37 Flares at mag. 1.8 (Azm 159 Alt 21)
	6:00 AM	6:00 AM	Diary	Mercury 3.9N of Antares
	7:03 AM	7:03 AM	Sun	Sunrise
	8:26 AM	8:26 AM	Jup GRS	GRS Transit (CML=229)
	11:13 AM	11:13 AM	Algol Minima	Algol at mag. +3.4 minimum (+/-5 hours)
	11:42 AM	11:42 AM	Jupiter	Jupiter sets
	3:49 PM	3:49 PM	Moon	Moonrise
4:52 PM	4:52 PM	Sun	Sunset	
6:22 PM	6:22 PM	Jup GRS	GRS Transit (CML=229)	
6:23 PM	6:23 PM	Twilight	Astronomical Twilight ends	
7:15 PM	7:15 PM	Sat Pass (ISS)	CHES:ISS Passes SW to NE (Azm 209.7 Alt 9)	
10:05 PM	10:05 PM	Jupiter	Jupiter rises	
5 Dec 2014	3:18 AM	3:18 AM	Jup Sats	IV.Tr.I
	4:17 AM	4:17 AM	Jup GRS	GRS Transit (CML=229)
	5:32 AM	5:32 AM	Twilight	Astronomical Twilight begins
	5:43 AM	5:43 AM	Iridium Flare	CHES:Iridium 34 Flares at mag.-0.4 (Azm 160 Alt 20)
	5:57 AM	5:57 AM	Moon	Moonset
	7:04 AM	7:04 AM	Sun	Sunrise
	11:38 AM	11:38 AM	Jupiter	Jupiter sets
	2:13 PM	2:13 PM	Jup GRS	GRS Transit (CML=229)
	4:35 PM	4:35 PM	Moon	Moonrise
	4:52 PM	4:52 PM	Sun	Sunset
6:05 PM	6:05 PM	Iridium Flare	CHES:Iridium 36 Flares at mag. 0.9 (Azm 038 Alt 58)	
6:07 PM	6:07 PM	Iridium Flare	CHES:Iridium 37 Flares at mag. 1.7 (Azm 037 Alt 59)	
6:23 PM	6:23 PM	Twilight	Astronomical Twilight ends	

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9	10	11	12	13	14	15	14	15	16	17	18	19	20	11	12	13	14	15	16	17
16	17	18	19	20	21	22	21	22	23	24	25	26	27	18	19	20	21	22	23	24
23	24	25	26	27	28	29	28	29	30	31				25	26	27	28	29	30	31
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Calendar

	Start	End	Category	Description
5 Dec 2014	6:28 PM	6:28 PM	Sat Pass (ISS)	CHES:ISS Passes S to NE (Azm 158.0 Alt 20)
	10:01 PM	10:01 PM	Jupiter	Jupiter rises
6 Dec 2014	12:00 AM	12:00 AM	Diary	Aldebaran 1.5S of Moon
	12:09 AM	12:09 AM	Jup GRS	GRS Transit (CML=229)
	5:33 AM	5:33 AM	Twilight	Astronomical Twilight begins
	5:37 AM	5:37 AM	Iridium Flare	CHES:Iridium 5 Flares at mag.-5.8 (Azm 160 Alt 18)
	6:55 AM	6:55 AM	Moon	Moonset
	7:05 AM	7:05 AM	Sun	Sunrise
	8:00 AM	8:00 AM	Diary	FULL MOON
	9:52 AM	9:52 AM	Meteor Shower	Phoenicids meteor peak (zhr= 6)
	10:04 AM	10:04 AM	Jup GRS	GRS Transit (CML=229)
	11:34 AM	11:34 AM	Jupiter	Jupiter sets
	4:52 PM	4:52 PM	Sun	Sunset
	5:25 PM	5:25 PM	Moon	Moonrise
	6:01 PM	6:01 PM	Iridium Flare	CHES:Iridium 34 Flares at mag. 0.7 (Azm 039 Alt 59)
	6:23 PM	6:23 PM	Twilight	Astronomical Twilight ends
	7:13 PM	7:13 PM	Sat Pass (ISS)	CHES:ISS Passes SW to NE (Azm 246.9 Alt 19)
8:00 PM	8:00 PM	Jup GRS	GRS Transit (CML=229)	
9:57 PM	9:57 PM	Jupiter	Jupiter rises	
11:26 PM	11:26 PM	Lunar Occult	Moon occults 6.7 mag. double star 823(r)	
7 Dec 2014	12:02 AM	12:02 AM	Jup Sats	III.Sh.E
	12:56 AM	12:56 AM	Lunar Occult	Moon occults 4.3 mag. star 832(R)
	1:05 AM	1:05 AM	Jup Sats	III.Tr.I
	2:02 AM	2:02 AM	Lunar Occult	Moon occults 5.7 mag. star 836(R)
	2:05 AM	2:05 AM	Jup Sats	II.Ec.D
	4:42 AM	4:42 AM	Jup Sats	III.Tr.E
	4:51 AM	4:51 AM	Jup Sats	I.Sh.I
	5:31 AM	5:31 AM	Iridium Flare	CHES:Iridium 4 Flares at mag.-1.7 (Azm 162 Alt 17)
	5:31 AM	5:31 AM	Iridium Flare	CHES:Iridium 8 Flares at mag.-0.7 (Azm 161 Alt 17)
	5:34 AM	5:34 AM	Twilight	Astronomical Twilight begins
	5:55 AM	5:55 AM	Jup GRS	GRS Transit (CML=229)
	5:59 AM	5:59 AM	Jup Sats	I.Tr.I
	7:06 AM	7:06 AM	Sun	Sunrise
	7:49 AM	7:49 AM	Moon	Moonset
	8:00 AM	8:00 AM	Algol Minima	Algol at mag. +3.4 minimum (+/-5 hours)
11:30 AM	11:30 AM	Jupiter	Jupiter sets	
3:51 PM	3:51 PM	Jup GRS	GRS Transit (CML=229)	
4:52 PM	4:52 PM	Sun	Sunset	
5:55 PM	5:55 PM	Iridium Flare	CHES:Iridium 5 Flares at mag.-4.5 (Azm 043 Alt 59)	
6:17 PM	6:17 PM	Moon	Moonrise	

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November 2014							December 2014							January 2015						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
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2	3	4	5	6	7	8	7	8	9	10	11	12	13	4	5	6	7	8	9	10
9	10	11	12	13	14	15	14	15	16	17	18	19	20	11	12	13	14	15	16	17
16	17	18	19	20	21	22	21	22	23	24	25	26	27	18	19	20	21	22	23	24
23	24	25	26	27	28	29	28	29	30	31				25	26	27	28	29	30	31
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Calendar

	Start	End	Category	Description
7 Dec 2014	6:24 PM	6:24 PM	Twilight	Astronomical Twilight ends
	6:25 PM	6:25 PM	Sat Pass (ISS)	CHES:ISS Passes SW to NE (Azm 138.6 Alt 71)
	9:53 PM	9:53 PM	Jupiter	Jupiter rises
8 Dec 2014	1:47 AM	1:47 AM	Jup GRS	GRS Transit (CML=229)
	2:01 AM	2:01 AM	Jup Sats	I.Ec.D
	5:00 AM	5:00 AM	Diary	Mercury superior conjunction
	5:09 AM	5:09 AM	Lunar Occult	Moon occults 6.3 mag. double star ZC1003(r)
	5:26 AM	5:26 AM	Iridium Flare	CHES:Iridium 61 Flares at mag. 1.9 (Azm 161 Alt 15)
	5:29 AM	5:29 AM	Jup Sats	I.Oc.R
	5:34 AM	5:34 AM	Twilight	Astronomical Twilight begins
	6:57 AM	6:57 AM	Iridium Flare	CHES:Iridium 86 Flares at mag.-6.0 (Azm 077 Alt 30)
	7:06 AM	7:06 AM	Sun	Sunrise
	8:38 AM	8:38 AM	Moon	Moonset
	11:26 AM	11:26 AM	Jupiter	Jupiter sets
	11:42 AM	11:42 AM	Jup GRS	GRS Transit (CML=229)
	4:52 PM	4:52 PM	Sun	Sunset
	5:35 PM	5:35 PM	Sat Pass (ISS)	CHES:ISS Passes SW to NE (Azm 133.1 Alt 34)
	5:48 PM	5:48 PM	Iridium Flare	CHES:Iridium 4 Flares at mag.-4.1 (Azm 045 Alt 61)
	5:49 PM	5:49 PM	Iridium Flare	CHES:Iridium 8 Flares at mag.-4.5 (Azm 044 Alt 61)
	6:24 PM	6:24 PM	Twilight	Astronomical Twilight ends
	7:10 PM	7:10 PM	Sat Pass (ISS)	CHES:ISS Passes W to NE (Azm 293.9 Alt 18)
	7:11 PM	7:11 PM	Moon	Moonrise
9:38 PM	9:38 PM	Jup GRS	GRS Transit (CML=229)	
9:49 PM	9:49 PM	Jupiter	Jupiter rises	
10:51 PM	10:51 PM	Jup Sats	II.Tr.I	
11:19 PM	11:19 PM	Jup Sats	I.Sh.I	
11:25 PM	11:25 PM	Jup Sats	II.Sh.E	
9 Dec 2014	12:26 AM	12:26 AM	Jup Sats	I.Tr.I
	1:36 AM	1:36 AM	Jup Sats	I.Sh.E
	1:45 AM	1:45 AM	Jup Sats	II.Tr.E
	2:00 AM	2:00 AM	Diary	Jupiter stationary
	2:43 AM	2:43 AM	Jup Sats	I.Tr.E
	5:28 AM	5:28 AM	Iridium Flare	CHES:Iridium 97 Flares at mag.-0.4 (Azm 167 Alt 20)
	5:35 AM	5:35 AM	Twilight	Astronomical Twilight begins
	7:07 AM	7:07 AM	Sun	Sunrise
	7:34 AM	7:34 AM	Jup GRS	GRS Transit (CML=229)
	9:21 AM	9:21 AM	Moon	Moonset
	11:22 AM	11:22 AM	Jupiter	Jupiter sets
	4:52 PM	4:52 PM	Sun	Sunset
	5:29 PM	5:29 PM	Jup GRS	GRS Transit (CML=229)

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November 2014							December 2014							January 2015						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
						1	7	8	9	10	11	12	13	4	5	6	7	8	9	10
2	3	4	5	6	7	8	14	15	16	17	18	19	20	11	12	13	14	15	16	17
9	10	11	12	13	14	15	21	22	23	24	25	26	27	18	19	20	21	22	23	24
16	17	18	19	20	21	22	28	29	30	31				25	26	27	28	29	30	31
23	24	25	26	27	28	29														
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Calendar

	Start	End	Category	Description
9 Dec 2014	5:43 PM	5:43 PM	Iridium Flare	CHES:Iridium 61 Flares at mag.-1.6 (AzM 048 Alt 61)
	6:21 PM	6:21 PM	Sat Pass (ISS)	CHES:ISS Passes SW to NE (AzM 324.3 Alt 39)
	6:24 PM	6:24 PM	Twilight	Astronomical Twilight ends
	8:06 PM	8:06 PM	Moon	Moonrise
	9:45 PM	9:45 PM	Jupiter	Jupiter rises
	11:57 PM	11:57 PM	Jup Sats	I.Oc.R
10 Dec 2014	1:57 AM	1:57 AM	Lunar Occult	Moon occults 6.2 mag. double star ZC1234(r)
	3:25 AM	3:25 AM	Jup GRS	GRS Transit (CML=229)
	4:51 AM	4:51 AM	Algol Minima	Algol at mag. +3.4 minimum (+/-5 hours)
	5:22 AM	5:22 AM	Iridium Flare	CHES:Iridium 7 Flares at mag.-6.3 (AzM 167 Alt 18)
	5:36 AM	5:36 AM	Twilight	Astronomical Twilight begins
	7:08 AM	7:08 AM	Sun	Sunrise
	10:01 AM	10:01 AM	Moon	Moonset
	11:19 AM	11:19 AM	Jupiter	Jupiter sets
	1:20 PM	1:20 PM	Jup GRS	GRS Transit (CML=229)
	3:41 PM	3:41 PM	Iridium Flare	CHES:Iridium 95 Flares at mag.-5.1 (AzM 158 Alt 75)
	4:52 PM	4:52 PM	Sun	Sunset
	5:31 PM	5:31 PM	Sat Pass (ISS)	CHES:ISS Passes SW to NE (AzM 319.9 Alt 75)
	5:37 PM	5:37 PM	Iridium Flare	CHES:Iridium 35 Flares at mag.-0.2 (AzM 051 Alt 61)
	6:24 PM	6:24 PM	Twilight	Astronomical Twilight ends
	7:26 PM	7:26 PM	Sat Pass (HST)	CHES:HST Passes SW to E (AzM 200.5 Alt 10)
	9:00 PM	9:00 PM	Moon	Moonrise
	9:41 PM	9:41 PM	Jupiter	Jupiter rises
	11:16 PM	11:16 PM	Jup GRS	GRS Transit (CML=229)
11 Dec 2014	5:17 AM	5:17 AM	Iridium Flare	CHES:Iridium 37 Flares at mag.-0.4 (AzM 168 Alt 16)
	5:37 AM	5:37 AM	Twilight	Astronomical Twilight begins
	6:30 AM	6:30 AM	Iridium Flare	CHES:Iridium 12 Flares at mag. 0.8 (AzM 070 Alt 23)
	7:09 AM	7:09 AM	Sun	Sunrise
	9:12 AM	9:12 AM	Jup GRS	GRS Transit (CML=229)
	10:37 AM	10:37 AM	Moon	Moonset
	11:15 AM	11:15 AM	Jupiter	Jupiter sets
	3:35 PM	3:35 PM	Iridium Flare	CHES:Iridium 30 Flares at mag.-8.1 (AzM 165 Alt 74)
	4:52 PM	4:52 PM	Sun	Sunset
	6:00 PM	6:00 PM	Meetings	NAS Dinner Meeting at Lockside Bar and Grill (RSVP)
	6:17 PM	6:17 PM	Sat Pass (ISS)	CHES:ISS Passes W to NE (AzM 332.1 Alt 18)
	6:24 PM	6:24 PM	Twilight	Astronomical Twilight ends
	7:07 PM	7:07 PM	Jup GRS	GRS Transit (CML=229)
	7:19 PM	7:19 PM	Sat Pass (HST)	CHES:HST Passes SW to E (AzM 197.9 Alt 14)
	8:00 PM	8:00 PM	Diary	Jupiter 4.9N of Moon
	9:37 PM	9:37 PM	Jupiter	Jupiter rises

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November 2014							December 2014							January 2015						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
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16	17	18	19	20	21	22	21	22	23	24	25	26	27	18	19	20	21	22	23	24
23	24	25	26	27	28	29	28	29	30	31				25	26	27	28	29	30	31
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Calendar

	Start	End	Category	Description
11 Dec 2014	9:55 PM	9:55 PM	Moon	Moonrise
12 Dec 2014	5:03 AM	5:03 AM	Jup GRS	GRS Transit (CML=229)
	5:11 AM	5:11 AM	Iridium Flare	CHES:Iridium 34 Flares at mag. 1.6 (Azm 168 Alt 14)
	5:37 AM	5:37 AM	Twilight	Astronomical Twilight begins
	6:23 AM	6:23 AM	Iridium Flare	CHES:Iridium 86 Flares at mag.-6.3 (Azm 069 Alt 23)
	6:33 AM	6:33 AM	Iridium Flare	CHES:Iridium 50 Flares at mag. 1.5 (Azm 071 Alt 27)
	7:09 AM	7:09 AM	Sun	Sunrise
	11:00 AM	11:00 AM	Diary	Regulus 4.2N of Moon
	11:10 AM	11:10 AM	Moon	Moonset
	11:10 AM	11:10 AM	Iridium Flare	CHES:Iridium 72 Flares at mag.-4.1 (Azm 170 Alt 33)
	11:11 AM	11:11 AM	Jupiter	Jupiter sets
	1:33 PM	1:33 PM	Iridium Flare	CHES:Iridium 46 Flares at mag.-5.8 (Azm 194 Alt 39)
	2:59 PM	2:59 PM	Jup GRS	GRS Transit (CML=229)
	4:52 PM	4:52 PM	Sun	Sunset
	5:24 PM	5:24 PM	Iridium Flare	CHES:Iridium 36 Flares at mag. 1.6 (Azm 056 Alt 63)
	5:27 PM	5:27 PM	Sat Pass (ISS)	CHES:ISS Passes W to NE (Azm 327.0 Alt 28)
	6:25 PM	6:25 PM	Twilight	Astronomical Twilight ends
	7:00 PM	7:00 PM	Diary	Moon at apogee
	7:12 PM	7:12 PM	Sat Pass (HST)	CHES:HST Passes SW to E (Azm 193.7 Alt 18)
	9:33 PM	9:33 PM	Jupiter	Jupiter rises
	10:49 PM	10:49 PM	Moon	Moonrise
	11:42 PM	11:42 PM	Jup Sats	IV.Ec.D
13 Dec 2014	12:54 AM	12:54 AM	Jup GRS	GRS Transit (CML=229)
	1:40 AM	1:40 AM	Algol Minima	Algol at mag. +3.4 minimum (+/-5 hours)
	4:37 AM	4:37 AM	Jup Sats	IV.Ec.R
	5:13 AM	5:13 AM	Iridium Flare	CHES:Iridium 6 Flares at mag. 0.2 (Azm 174 Alt 18)
	5:13 AM	5:13 AM	Iridium Flare	CHES:Iridium 51 Flares at mag. 0.1 (Azm 174 Alt 18)
	5:38 AM	5:38 AM	Twilight	Astronomical Twilight begins
	6:17 AM	6:17 AM	Iridium Flare	CHES:Iridium 52 Flares at mag.-6.3 (Azm 068 Alt 21)
	7:10 AM	7:10 AM	Sun	Sunrise
	10:50 AM	10:50 AM	Jup GRS	GRS Transit (CML=229)
	11:07 AM	11:07 AM	Jupiter	Jupiter sets
	11:41 AM	11:41 AM	Moon	Moonset
	4:53 PM	4:53 PM	Sun	Sunset
	6:25 PM	6:25 PM	Twilight	Astronomical Twilight ends
	7:05 PM	7:05 PM	Sat Pass (HST)	CHES:HST Passes SW to E (Azm 187.0 Alt 22)
	8:46 PM	8:46 PM	Jup GRS	GRS Transit (CML=229)
	9:29 PM	9:29 PM	Jupiter	Jupiter rises
	11:43 PM	11:43 PM	Moon	Moonrise

Norfolk Astronomical Society Astronomical Calendar

November 2014							December 2014							January 2015									
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S			
						1															1	2	3
2	3	4	5	6	7	8	7	8	9	10	11	12	13	4	5	6	7	8	9	10			
9	10	11	12	13	14	15	14	15	16	17	18	19	20	11	12	13	14	15	16	17			
16	17	18	19	20	21	22	21	22	23	24	25	26	27	18	19	20	21	22	23	24			
23	24	25	26	27	28	29	28	29	30	31				25	26	27	28	29	30	31			
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Calendar

	Start	End	Category	Description
14 Dec 2014	12:23 AM	12:23 AM	Jup Sats	III.Sh.I
	12:23 AM	12:23 AM	Lunar Occult	Moon grazes 5.2 mag. double star ZC1635(Gr)
	12:33 AM	12:33 AM	Lunar Occult	Moon occults 5.2 mag. double star ZC1635(r)
	2:06 AM	2:06 AM	Lunar Occult	Moon occults 5.9 mag. star ZC1637(R)
	4:27 AM	4:27 AM	Meteor Shower	Geminids (Phaethon) meteor peak (zhr=90)
	4:38 AM	4:38 AM	Jup Sats	II.Ec.D
	4:45 AM	4:45 AM	Jup Sats	III.Tr.I
	5:06 AM	5:06 AM	Iridium Flare	CHES:Iridium 36 Flares at mag.-6.4 (Azm 175 Alt 16)
	5:08 AM	5:08 AM	Iridium Flare	CHES:Iridium 96 Flares at mag.-6.2 (Azm 174 Alt 16)
	5:39 AM	5:39 AM	Twilight	Astronomical Twilight begins
	6:02 AM	6:02 AM	Iridium Flare	CHES:Iridium 84 Flares at mag.-1.9 (Azm 064 Alt 18)
	6:11 AM	6:11 AM	Iridium Flare	CHES:Iridium 10 Flares at mag. 0.6 (Azm 066 Alt 22)
	6:25 AM	6:25 AM	Iridium Flare	CHES:Iridium 54 Flares at mag. 2.0 (Azm 136 Alt 11)
	6:41 AM	6:41 AM	Jup GRS	GRS Transit (CML=229)
	6:44 AM	6:44 AM	Jup Sats	I.Sh.I
	7:11 AM	7:11 AM	Sun	Sunrise
	8:00 AM	8:00 AM	Diary	LAST QUARTER
	11:03 AM	11:03 AM	Jupiter	Jupiter sets
	12:12 PM	12:12 PM	Moon	Moonsset
	4:37 PM	4:37 PM	Jup GRS	GRS Transit (CML=229)
	4:53 PM	4:53 PM	Sun	Sunset
	6:25 PM	6:25 PM	Twilight	Astronomical Twilight ends
	6:57 PM	6:57 PM	Sat Pass (HST)	CHES:HST Passes SW to E (Azm 178.0 Alt 24)
	9:25 PM	9:25 PM	Jupiter	Jupiter rises
15 Dec 2014	12:38 AM	12:38 AM	Moon	Moonrise
	2:32 AM	2:32 AM	Jup GRS	GRS Transit (CML=229)
	3:55 AM	3:55 AM	Jup Sats	I.Ec.D
	5:02 AM	5:02 AM	Iridium Flare	CHES:Iridium 19 Flares at mag.-2.1 (Azm 175 Alt 14)
	5:39 AM	5:39 AM	Twilight	Astronomical Twilight begins
	5:46 AM	5:46 AM	Iridium Flare	CHES:Iridium 54 Flares at mag. 1.1 (Azm 060 Alt 13)
	5:55 AM	5:55 AM	Iridium Flare	CHES:Iridium 12 Flares at mag.-3.9 (Azm 063 Alt 17)
	6:06 AM	6:06 AM	Iridium Flare	CHES:Iridium 16 Flares at mag. 1.0 (Azm 065 Alt 21)
	6:19 AM	6:19 AM	Iridium Flare	CHES:Iridium 83 Flares at mag.-0.9 (Azm 137 Alt 10)
	7:12 AM	7:12 AM	Sun	Sunrise
	10:59 AM	10:59 AM	Jupiter	Jupiter sets
	12:28 PM	12:28 PM	Jup GRS	GRS Transit (CML=229)
	12:43 PM	12:43 PM	Moon	Moonsset
	4:53 PM	4:53 PM	Sun	Sunset
	5:09 PM	5:09 PM	Sat Pass (HST)	CHES:HST Passes SW to E (Azm 164.5 Alt 17)
	6:25 PM	6:25 PM	Twilight	Astronomical Twilight ends
	6:50 PM	6:50 PM	Sat Pass (HST)	CHES:HST Passes SW to E (Azm 177.4 Alt 25)

Norfolk Astronomical Society Astronomical Calendar

November 2014							December 2014							January 2015						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
						1	7	8	9	10	11	12	13	4	5	6	7	8	9	10
2	3	4	5	6	7	8	14	15	16	17	18	19	20	11	12	13	14	15	16	17
9	10	11	12	13	14	15	21	22	23	24	25	26	27	18	19	20	21	22	23	24
16	17	18	19	20	21	22	28	29	30	31				25	26	27	28	29	30	31
23	24	25	26	27	28	29														
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Calendar

	Start	End	Category	Description
15 Dec 2014	9:21 PM	9:21 PM	Jupiter	Jupiter rises
	10:24 PM	10:24 PM	Jup GRS	GRS Transit (CML=229)
	10:29 PM	10:29 PM	Algol Minima	Algol at mag. +3.4 minimum (+/-5 hours)
	11:08 PM	11:08 PM	Jup Sats	II.Sh.I
16 Dec 2014	1:12 AM	1:12 AM	Jup Sats	I.Sh.I
	1:17 AM	1:17 AM	Jup Sats	II.Tr.I
	1:33 AM	1:33 AM	Moon	Moonrise
	2:01 AM	2:01 AM	Jup Sats	II.Sh.E
	2:15 AM	2:15 AM	Jup Sats	I.Tr.I
	3:29 AM	3:29 AM	Jup Sats	I.Sh.E
	4:11 AM	4:11 AM	Jup Sats	II.Tr.E
	4:31 AM	4:31 AM	Jup Sats	I.Tr.E
	4:56 AM	4:56 AM	Iridium Flare	CHES:Iridium 97 Flares at mag. 1.2 (Azm 174 Alt 10)
	5:30 AM	5:30 AM	Iridium Flare	CHES:Iridium 13 Flares at mag.-0.3 (Azm 057 Alt 10)
	5:40 AM	5:40 AM	Twilight	Astronomical Twilight begins
	5:40 AM	5:40 AM	Iridium Flare	CHES:Iridium 83 Flares at mag.-5.8 (Azm 059 Alt 13)
	5:49 AM	5:49 AM	Iridium Flare	CHES:Iridium 86 Flares at mag. 1.5 (Azm 062 Alt 17)
	6:22 AM	6:22 AM	Iridium Flare	CHES:Iridium 52 Flares at mag. 1.7 (Azm 141 Alt 13)
	7:12 AM	7:12 AM	Sun	Sunrise
	8:19 AM	8:19 AM	Jup GRS	GRS Transit (CML=229)
	10:55 AM	10:55 AM	Jupiter	Jupiter sets
	1:15 PM	1:15 PM	Moon	Moonset
	4:53 PM	4:53 PM	Sun	Sunset
	5:01 PM	5:01 PM	Sat Pass (HST)	CHES:HST Passes SW to E (Azm 167.3 Alt 19)
6:15 PM	6:15 PM	Jup GRS	GRS Transit (CML=229)	
6:26 PM	6:26 PM	Twilight	Astronomical Twilight ends	
6:42 PM	6:42 PM	Sat Pass (HST)	CHES:HST Passes W to E (Azm 180.0 Alt 26)	
9:17 PM	9:17 PM	Jupiter	Jupiter rises	
10:23 PM	10:23 PM	Jup Sats	I.Ec.D	
11:00 PM	11:00 PM	Diary	Spica 2.7S of Moon	
17 Dec 2014	1:46 AM	1:46 AM	Jup Sats	I.Oc.R
	2:30 AM	2:30 AM	Moon	Moonrise
	4:10 AM	4:10 AM	Jup GRS	GRS Transit (CML=229)
	4:53 AM	4:53 AM	Iridium Flare	CHES:Iridium 4 Flares at mag.-1.9 (Azm 178 Alt 12)
	4:58 AM	4:58 AM	Iridium Flare	CHES:Iridium 8 Flares at mag. 1.4 (Azm 182 Alt 16)
	5:24 AM	5:24 AM	Iridium Flare	CHES:Iridium 50 Flares at mag. 1.2 (Azm 057 Alt 10)
	5:34 AM	5:34 AM	Iridium Flare	CHES:Iridium 56 Flares at mag.-0.7 (Azm 058 Alt 13)
	5:40 AM	5:40 AM	Twilight	Astronomical Twilight begins
	6:16 AM	6:16 AM	Iridium Flare	CHES:Iridium 10 Flares at mag.-0.7 (Azm 142 Alt 13)
	7:13 AM	7:13 AM	Sun	Sunrise

Norfolk Astronomical Society Astronomical Calendar

November 2014							December 2014							January 2015								
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S		
						1														1	2	3
2	3	4	5	6	7	8	7	8	9	10	11	12	13	4	5	6	7	8	9	10		
9	10	11	12	13	14	15	14	15	16	17	18	19	20	11	12	13	14	15	16	17		
16	17	18	19	20	21	22	21	22	23	24	25	26	27	18	19	20	21	22	23	24		
23	24	25	26	27	28	29	28	29	30	31				25	26	27	28	29	30	31		
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Calendar

	Start	End	Category	Description
17 Dec 2014	10:51 AM	10:51 AM	Jupiter	Jupiter sets
	1:50 PM	1:50 PM	Moon	Moonset
	2:06 PM	2:06 PM	Jup GRS	GRS Transit (CML=-229)
	4:53 PM	4:53 PM	Sat Pass (HST)	CHES:HST Passes SW to E (Azm 170.0 Alt 21)
	4:54 PM	4:54 PM	Sun	Sunset
	6:26 PM	6:26 PM	Twilight	Astronomical Twilight ends
	6:34 PM	6:34 PM	Sat Pass (HST)	CHES:HST Passes W to SE (Azm 182.7 Alt 25)
	8:11 PM	8:11 PM	Sat Pass (HST)	CHES:HST Passes W to SE (Azm 244.8 Alt 6)
	9:13 PM	9:13 PM	Jupiter	Jupiter rises
	9:57 PM	9:57 PM	Jup Sats	I.Sh.E
	10:17 PM	10:17 PM	Jup Sats	III.Oc.R
	10:50 PM	10:50 PM	Jup Sats	II.Oc.R
	10:58 PM	10:58 PM	Jup Sats	I.Tr.E
18 Dec 2014	12:02 AM	12:02 AM	Jup GRS	GRS Transit (CML=-229)
	3:29 AM	3:29 AM	Moon	Moonrise
	4:53 AM	4:53 AM	Iridium Flare	CHES:Iridium 61 Flares at mag.-2.9 (Azm 181 Alt 13)
	5:41 AM	5:41 AM	Twilight	Astronomical Twilight begins
	6:10 AM	6:10 AM	Iridium Flare	CHES:Iridium 13 Flares at mag.-5.0 (Azm 142 Alt 11)
	7:13 AM	7:13 AM	Sun	Sunrise
	9:57 AM	9:57 AM	Jup GRS	GRS Transit (CML=-229)
	10:47 AM	10:47 AM	Jupiter	Jupiter sets
	2:29 PM	2:29 PM	Moon	Moonset
	4:54 PM	4:54 PM	Sun	Sunset
	6:26 PM	6:26 PM	Sat Pass (HST)	CHES:HST Passes W to SE (Azm 185.7 Alt 24)
6:27 PM	6:27 PM	Twilight	Astronomical Twilight ends	
7:18 PM	7:18 PM	Algol Minima	Algol at mag. +3.4 minimum (+/-5 hours)	
7:53 PM	7:53 PM	Jup GRS	GRS Transit (CML=-229)	
9:09 PM	9:09 PM	Jupiter	Jupiter rises	
19 Dec 2014	4:30 AM	4:30 AM	Moon	Moonrise
	4:47 AM	4:47 AM	Iridium Flare	CHES:Iridium 35 Flares at mag.-5.7 (Azm 181 Alt 10)
	5:42 AM	5:42 AM	Twilight	Astronomical Twilight begins
	5:48 AM	5:48 AM	Jup GRS	GRS Transit (CML=-229)
	6:04 AM	6:04 AM	Iridium Flare	CHES:Iridium 50 Flares at mag. 0.8 (Azm 143 Alt 10)
	6:13 AM	6:13 AM	Iridium Flare	CHES:Iridium 56 Flares at mag. 0.2 (Azm 146 Alt 15)
	6:18 AM	6:18 AM	Lunar Occult	Moon occults 5.8 mag. star ZC2213(R)
	7:14 AM	7:14 AM	Sun	Sunrise
	10:43 AM	10:43 AM	Jupiter	Jupiter sets
	3:12 PM	3:12 PM	Moon	Moonset
3:44 PM	3:44 PM	Jup GRS	GRS Transit (CML=-229)	
4:55 PM	4:55 PM	Sun	Sunset	

Norfolk Astronomical Society Astronomical Calendar

November 2014							December 2014							January 2015						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
						1	1	2	3	4	5	6	7	8	9	10	11	12	13	
2	3	4	5	6	7	8	7	8	9	10	11	12	13	4	5	6	7	8	9	10
9	10	11	12	13	14	15	14	15	16	17	18	19	20	11	12	13	14	15	16	17
16	17	18	19	20	21	22	21	22	23	24	25	26	27	18	19	20	21	22	23	24
23	24	25	26	27	28	29	28	29	30	31				25	26	27	28	29	30	31
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Calendar

	Start	End	Category	Description
19 Dec 2014	5:00 PM	5:00 PM	Diary	Saturn 1.6S of Moon
	6:18 PM	6:18 PM	Sat Pass (HST)	CHES:HST Passes W to SE (Azm 188.5 Alt 23)
	6:27 PM	6:27 PM	Twilight	Astronomical Twilight ends
	6:46 PM	6:46 PM	Iridium Flare	CHES:Iridium 86 Flares at mag.-0.9 (Azm 037 Alt 45)
	7:00 PM	7:00 PM	Meetings	NAS Observing Session (Gates Co., NC)
	9:05 PM	9:05 PM	Jupiter	Jupiter rises
20 Dec 2014	1:40 AM	1:40 AM	Jup GRS	GRS Transit (CML=229)
	5:31 AM	5:31 AM	Moon	Moonrise
	5:42 AM	5:42 AM	Twilight	Astronomical Twilight begins
	6:06 AM	6:06 AM	Iridium Flare	CHES:Iridium 90 Flares at mag.-1.0 (Azm 147 Alt 13)
	6:07 AM	6:07 AM	Iridium Flare	CHES:Iridium 84 Flares at mag.-4.3 (Azm 147 Alt 14)
	6:14 AM	6:14 AM	Lunar Occult	Moon occults 4.2 mag. star ZC2361(R)
	7:15 AM	7:15 AM	Sun	Sunrise
	10:39 AM	10:39 AM	Jupiter	Jupiter sets
	11:35 AM	11:35 AM	Jup GRS	GRS Transit (CML=229)
	4:02 PM	4:02 PM	Moon	Moonsset
	4:55 PM	4:55 PM	Sun	Sunset
	5:00 PM	5:00 PM	Diary	Venus 3.2S of Pluto
	6:10 PM	6:10 PM	Sat Pass (HST)	CHES:HST Passes W to SE (Azm 191.3 Alt 21)
	6:28 PM	6:28 PM	Twilight	Astronomical Twilight ends
6:40 PM	6:40 PM	Iridium Flare	CHES:Iridium 52 Flares at mag.-0.9 (Azm 040 Alt 44)	
9:01 PM	9:01 PM	Jupiter	Jupiter rises	
9:31 PM	9:31 PM	Jup GRS	GRS Transit (CML=229)	
21 Dec 2014	4:20 AM	4:20 AM	Jup Sats	III.Sh.I
	5:43 AM	5:43 AM	Twilight	Astronomical Twilight begins
	5:59 AM	5:59 AM	Iridium Flare	CHES:Iridium 16 Flares at mag. 1.7 (Azm 146 Alt 11)
	6:01 AM	6:01 AM	Iridium Flare	CHES:Iridium 12 Flares at mag.-1.0 (Azm 148 Alt 13)
	6:31 AM	6:31 AM	Moon	Moonrise
	7:15 AM	7:15 AM	Sun	Sunrise
	7:26 AM	7:26 AM	Jup GRS	GRS Transit (CML=229)
	10:35 AM	10:35 AM	Jupiter	Jupiter sets
	4:00 PM	4:00 PM	Algol Minima	Algol at mag. +3.4 minimum (+/-5 hours)
	4:56 PM	4:56 PM	Sun	Sunset
	4:58 PM	4:58 PM	Moon	Moonsset
	5:22 PM	5:22 PM	Jup GRS	GRS Transit (CML=229)
	6:00 PM	6:00 PM	Diary	Solstice
	6:03 PM	6:03 PM	Sat Pass (HST)	CHES:HST Passes W to SE (Azm 193.8 Alt 18)
6:28 PM	6:28 PM	Twilight	Astronomical Twilight ends	
6:34 PM	6:34 PM	Iridium Flare	CHES:Iridium 10 Flares at mag.-0.4 (Azm 041 Alt 45)	
8:57 PM	8:57 PM	Jupiter	Jupiter rises	

Norfolk Astronomical Society Astronomical Calendar

November 2014							December 2014							January 2015						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
						1	1	2	3	4	5	6	1	2	3					
2	3	4	5	6	7	8	7	8	9	10	11	12	13	4	5	6	7	8	9	10
9	10	11	12	13	14	15	14	15	16	17	18	19	20	11	12	13	14	15	16	17
16	17	18	19	20	21	22	21	22	23	24	25	26	27	18	19	20	21	22	23	24
23	24	25	26	27	28	29	28	29	30	31				25	26	27	28	29	30	31
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Calendar

	Start	End	Category	Description
21 Dec 2014	9:00 PM	9:00 PM	Diary	NEW MOON
22 Dec 2014	12:13 AM	12:13 AM	Jup Sats	IV.Tr.E
	2:00 AM	2:00 AM	Diary	Uranus stationary
	3:18 AM	3:18 AM	Jup GRS	GRS Transit (CML=229)
	5:43 AM	5:43 AM	Twilight	Astronomical Twilight begins
	5:49 AM	5:49 AM	Jup Sats	I.Ec.D
	5:55 AM	5:55 AM	Iridium Flare	CHES:Iridium 86 Flares at mag. 1.5 (Azm 149 Alt 12)
	6:04 AM	6:04 AM	Iridium Flare	CHES:Iridium 50 Flares at mag.-0.5 (Azm 152 Alt 16)
	7:16 AM	7:16 AM	Sun	Sunrise
	7:29 AM	7:29 AM	Moon	Moonrise
	10:31 AM	10:31 AM	Jupiter	Jupiter sets
	1:13 PM	1:13 PM	Jup GRS	GRS Transit (CML=229)
	4:56 PM	4:56 PM	Sun	Sunset
	5:55 PM	5:55 PM	Sat Pass (HST)	CHES:HST Passes W to SE (Azm 196.4 Alt 16)
	6:00 PM	6:00 PM	Moon	Moonset
	6:00 PM	6:00 PM	Diary	Pluto 2.8S of Moon
	6:28 PM	6:28 PM	Iridium Flare	CHES:Iridium 13 Flares at mag. 1.9 (Azm 043 Alt 45)
	6:29 PM	6:29 PM	Twilight	Astronomical Twilight ends
	6:43 PM	6:43 PM	Sat Pass (ISS)	CHES:ISS Passes NW to E (Azm 342.5 Alt 13)
	8:53 PM	8:53 PM	Jupiter	Jupiter rises
	11:09 PM	11:09 PM	Jup GRS	GRS Transit (CML=229)
23 Dec 2014	1:44 AM	1:44 AM	Jup Sats	II.Sh.I
	3:05 AM	3:05 AM	Jup Sats	I.Sh.I
	3:42 AM	3:42 AM	Jup Sats	II.Tr.I
	4:02 AM	4:02 AM	Jup Sats	I.Tr.I
	4:38 AM	4:38 AM	Jup Sats	II.Sh.E
	5:22 AM	5:22 AM	Jup Sats	I.Sh.E
	5:23 AM	5:23 AM	Meteor Shower	Ursids meteor peak (zhr=20)
	5:44 AM	5:44 AM	Twilight	Astronomical Twilight begins
	5:58 AM	5:58 AM	Iridium Flare	CHES:Iridium 53 Flares at mag.-5.9 (Azm 152 Alt 15)
	6:19 AM	6:19 AM	Jup Sats	I.Tr.E
	6:36 AM	6:36 AM	Jup Sats	II.Tr.E
	7:16 AM	7:16 AM	Sun	Sunrise
	8:22 AM	8:22 AM	Moon	Moonrise
	9:04 AM	9:04 AM	Jup GRS	GRS Transit (CML=229)
	10:27 AM	10:27 AM	Jupiter	Jupiter sets
	4:57 PM	4:57 PM	Sun	Sunset
	5:54 PM	5:54 PM	Sat Pass (ISS)	CHES:ISS Passes NW to E (Azm 25.6 Alt 15)
	6:26 PM	6:26 PM	Iridium Flare	CHES:Iridium 90 Flares at mag.-8.0 (Azm 041 Alt 51)
	6:29 PM	6:29 PM	Twilight	Astronomical Twilight ends

Norfolk Astronomical Society Astronomical Calendar

November 2014							December 2014							January 2015							
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	
						1				1	2	3	4	5	6				1	2	3
2	3	4	5	6	7	8	7	8	9	10	11	12	13	4	5	6	7	8	9	10	
9	10	11	12	13	14	15	14	15	16	17	18	19	20	11	12	13	14	15	16	17	
16	17	18	19	20	21	22	21	22	23	24	25	26	27	18	19	20	21	22	23	24	
23	24	25	26	27	28	29	28	29	30	31				25	26	27	28	29	30	31	
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Calendar

	Start	End	Category	Description
23 Dec 2014	7:00 PM	7:00 PM	Jup GRS	GRS Transit (CML=229)
	7:06 PM	7:06 PM	Moon	Moonset
	7:27 PM	7:27 PM	Sat Pass (ISS)	CHES:ISS Passes NW to SE (AzM 307.6 Alt 8)
	8:48 PM	8:48 PM	Jupiter	Jupiter rises
24 Dec 2014	12:17 AM	12:17 AM	Jup Sats	I.Ec.D
	3:34 AM	3:34 AM	Jup Sats	I.Oc.R
	4:56 AM	4:56 AM	Jup GRS	GRS Transit (CML=229)
	5:44 AM	5:44 AM	Twilight	Astronomical Twilight begins
	5:52 AM	5:52 AM	Iridium Flare	CHES:Iridium 54 Flares at mag. -0.1 (AzM 153 Alt 14)
	5:53 AM	5:53 AM	Iridium Flare	CHES:Iridium 16 Flares at mag. 0.2 (AzM 153 Alt 14)
	7:17 AM	7:17 AM	Sun	Sunrise
	9:11 AM	9:11 AM	Moon	Moonrise
	10:23 AM	10:23 AM	Jupiter	Jupiter sets
	12:56 PM	12:56 PM	Algol Minima	Algol at mag. +3.4 minimum (+/-5 hours)
	1:00 PM	1:00 PM	Diary	Moon at perigee
	2:51 PM	2:51 PM	Jup GRS	GRS Transit (CML=229)
	4:57 PM	4:57 PM	Sun	Sunset
	6:30 PM	6:30 PM	Twilight	Astronomical Twilight ends
	6:38 PM	6:38 PM	Lunar Occult	Moon occults 6.8 mag. star ZC3051(D)
	6:39 PM	6:39 PM	Sat Pass (ISS)	CHES:ISS Passes NW to SE (AzM 344.2 Alt 39)
	8:14 PM	8:14 PM	Moon	Moonset
8:44 PM	8:44 PM	Jupiter	Jupiter rises	
9:33 PM	9:33 PM	Jup Sats	I.Sh.I	
10:00 PM	10:00 PM	Jup Sats	III.Ec.R	
10:11 PM	10:11 PM	Jup Sats	III.Oc.D	
10:29 PM	10:29 PM	Jup Sats	I.Tr.I	
11:50 PM	11:50 PM	Jup Sats	I.Sh.E	
25 Dec 2014	12:00 AM	12:00 AM	Public Holiday	Christmas Day holiday
	12:00 AM	12:00 AM	Diary	Mars 5.6S of Moon
	12:46 AM	12:46 AM	Jup Sats	I.Tr.E
	12:47 AM	12:47 AM	Jup GRS	GRS Transit (CML=229)
	1:11 AM	1:11 AM	Jup Sats	II.Oc.R
	1:51 AM	1:51 AM	Jup Sats	III.Oc.R
	2:00 AM	2:00 AM	Diary	Mercury 4.3S of Pluto
	5:44 AM	5:44 AM	Twilight	Astronomical Twilight begins
	5:46 AM	5:46 AM	Iridium Flare	CHES:Iridium 83 Flares at mag. 1.9 (AzM 155 Alt 13)
	5:54 AM	5:54 AM	Iridium Flare	CHES:Iridium 86 Flares at mag. 1.2 (AzM 159 Alt 19)
	5:55 AM	5:55 AM	Iridium Flare	CHES:Iridium 90 Flares at mag. 0.3 (AzM 159 Alt 19)
	7:17 AM	7:17 AM	Sun	Sunrise
9:55 AM	9:55 AM	Moon	Moonrise	

Norfolk Astronomical Society Astronomical Calendar

November 2014							December 2014							January 2015						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
						1														
2	3	4	5	6	7	8	7	8	9	10	11	12	13	4	5	6	7	8	9	10
9	10	11	12	13	14	15	14	15	16	17	18	19	20	11	12	13	14	15	16	17
16	17	18	19	20	21	22	21	22	23	24	25	26	27	18	19	20	21	22	23	24
23	24	25	26	27	28	29	28	29	30	31				25	26	27	28	29	30	31
30																				

Calendar

	Start	End	Category	Description
25 Dec 2014	10:19 AM	10:19 AM	Jupiter	Jupiter sets
	10:43 AM	10:43 AM	Jup GRS	GRS Transit (CML=229)
	4:58 PM	4:58 PM	Sun	Sunset
	5:49 PM	5:49 PM	Sat Pass (ISS)	CHES:ISS Passes NW to E (Azm 33.5 Alt 30)
	6:18 PM	6:18 PM	Iridium Flare	CHES:Iridium 12 Flares at mag. 0.7 (Azm 040 Alt 57)
	6:30 PM	6:30 PM	Twilight	Astronomical Twilight ends
	7:24 PM	7:24 PM	Sat Pass (ISS)	CHES:ISS Passes NW to S (Azm 268.2 Alt 17)
	7:34 PM	7:34 PM	Lunar Occult	Moon occults 7.2 mag. star SAO145718(d)
	8:38 PM	8:38 PM	Jup GRS	GRS Transit (CML=229)
	8:40 PM	8:40 PM	Jupiter	Jupiter rises
9:22 PM	9:22 PM	Moon	Moonset	
10:00 PM	10:00 PM	Jup Sats	I.Oc.R	
26 Dec 2014	5:45 AM	5:45 AM	Twilight	Astronomical Twilight begins
	5:48 AM	5:48 AM	Iridium Flare	CHES:Iridium 52 Flares at mag.-6.1 (Azm 158 Alt 17)
	6:34 AM	6:34 AM	Jup GRS	GRS Transit (CML=229)
	7:17 AM	7:17 AM	Sun	Sunrise
	9:00 AM	9:00 AM	Diary	Neptune 4.0S of Moon
	10:00 AM	10:00 AM	Iridium Flare	CHES:Iridium 74 Flares at mag.-7.0 (Azm 176 Alt 58)
	10:14 AM	10:14 AM	Jupiter	Jupiter sets
	10:35 AM	10:35 AM	Moon	Moonrise
	4:29 PM	4:29 PM	Jup GRS	GRS Transit (CML=229)
	4:58 PM	4:58 PM	Sun	Sunset
	4:58 PM	4:58 PM	Sat Pass (ISS)	CHES:ISS Passes NW to E (Azm 28.4 Alt 19)
	6:12 PM	6:12 PM	Iridium Flare	CHES:Iridium 86 Flares at mag.-0.3 (Azm 041 Alt 58)
	6:31 PM	6:31 PM	Twilight	Astronomical Twilight ends
6:35 PM	6:35 PM	Sat Pass (ISS)	CHES:ISS Passes NW to SE (Azm 225.1 Alt 48)	
8:36 PM	8:36 PM	Jupiter	Jupiter rises	
10:30 PM	10:30 PM	Moon	Moonset	
27 Dec 2014	2:25 AM	2:25 AM	Jup GRS	GRS Transit (CML=229)
	5:43 AM	5:43 AM	Iridium Flare	CHES:Iridium 10 Flares at mag.-1.6 (Azm 160 Alt 16)
	5:45 AM	5:45 AM	Twilight	Astronomical Twilight begins
	5:46 AM	5:46 AM	Iridium Flare	CHES:Iridium 16 Flares at mag.-6.1 (Azm 160 Alt 17)
	7:18 AM	7:18 AM	Sun	Sunrise
	7:20 AM	7:20 AM	Iridium Flare	CHES:Iridium 17 Flares at mag.-5.0 (Azm 079 Alt 33)
	7:24 AM	7:24 AM	Iridium Flare	CHES:Iridium 77 Flares at mag.-5.0 (Azm 079 Alt 34)
	9:45 AM	9:45 AM	Algol Minima	Algol at mag. +3.4 minimum (+/-5 hours)
	10:10 AM	10:10 AM	Jupiter	Jupiter sets
	11:14 AM	11:14 AM	Moon	Moonrise
	12:21 PM	12:21 PM	Jup GRS	GRS Transit (CML=229)
4:59 PM	4:59 PM	Sun	Sunset	

Norfolk Astronomical Society Astronomical Calendar

November 2014							December 2014							January 2015						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
						1		1	2	3	4	5	6				1	2	3	
2	3	4	5	6	7	8	7	8	9	10	11	12	13	4	5	6	7	8	9	10
9	10	11	12	13	14	15	14	15	16	17	18	19	20	11	12	13	14	15	16	17
16	17	18	19	20	21	22	21	22	23	24	25	26	27	18	19	20	21	22	23	24
23	24	25	26	27	28	29	28	29	30	31				25	26	27	28	29	30	31
30																				

Calendar

	Start	End	Category	Description
27 Dec 2014	5:44 PM	5:44 PM	Sat Pass (ISS)	CHES:ISS Passes NW to SE (Az _m 39.0 Alt 80)
	6:06 PM	6:06 PM	Iridium Flare	CHES:Iridium 52 Flares at mag.-1.0 (Az _m 046 Alt 56)
	6:31 PM	6:31 PM	Twilight	Astronomical Twilight ends
	8:32 PM	8:32 PM	Jupiter	Jupiter rises
	10:16 PM	10:16 PM	Jup GRS	GRS Transit (CML=229)
	11:36 PM	11:36 PM	Moon	Moonset
28 Dec 2014	5:37 AM	5:37 AM	Iridium Flare	CHES:Iridium 13 Flares at mag. 1.7 (Az _m 160 Alt 14)
	5:46 AM	5:46 AM	Twilight	Astronomical Twilight begins
	7:17 AM	7:17 AM	Iridium Flare	CHES:Iridium 82 Flares at mag.-6.7 (Az _m 078 Alt 32)
	7:18 AM	7:18 AM	Sun	Sunrise
	8:12 AM	8:12 AM	Jup GRS	GRS Transit (CML=229)
	10:06 AM	10:06 AM	Jupiter	Jupiter sets
	11:51 AM	11:51 AM	Moon	Moonrise
	2:00 PM	2:00 PM	Diary	FIRST QUARTER
	4:05 PM	4:05 PM	Iridium Flare	CHES:Iridium 97 Flares at mag.-4.3 (Az _m 141 Alt 78)
	5:00 PM	5:00 PM	Sun	Sunset
	6:00 PM	6:00 PM	Iridium Flare	CHES:Iridium 10 Flares at mag.-1.3 (Az _m 047 Alt 58)
	6:01 PM	6:01 PM	Iridium Flare	CHES:Iridium 16 Flares at mag. 1.2 (Az _m 048 Alt 56)
	6:07 PM	6:07 PM	Jup GRS	GRS Transit (CML=229)
6:30 PM	6:30 PM	Sat Pass (ISS)	CHES:ISS Passes NW to S (Az _m 230.6 Alt 17)	
6:32 PM	6:32 PM	Twilight	Astronomical Twilight ends	
8:27 PM	8:27 PM	Jupiter	Jupiter rises	
29 Dec 2014	12:00 AM	12:00 AM	Diary	Uranus 0.9S of Moon Occn
	12:41 AM	12:41 AM	Moon	Moonset
	4:03 AM	4:03 AM	Jup GRS	GRS Transit (CML=229)
	5:40 AM	5:40 AM	Iridium Flare	CHES:Iridium 56 Flares at mag.-1.4 (Az _m 165 Alt 18)
	5:46 AM	5:46 AM	Twilight	Astronomical Twilight begins
	7:18 AM	7:18 AM	Sun	Sunrise
	10:02 AM	10:02 AM	Jupiter	Jupiter sets
	12:28 PM	12:28 PM	Moon	Moonrise
	1:59 PM	1:59 PM	Jup GRS	GRS Transit (CML=229)
	5:00 PM	5:00 PM	Sun	Sunset
	5:39 PM	5:39 PM	Sat Pass (ISS)	CHES:ISS Passes NW to SE (Az _m 226.5 Alt 33)
	5:54 PM	5:54 PM	Iridium Flare	CHES:Iridium 13 Flares at mag. 1.6 (Az _m 050 Alt 57)
	6:09 PM	6:09 PM	Lunar Occult	Moon occults 6.2 mag. double star 214(d)
	6:33 PM	6:33 PM	Twilight	Astronomical Twilight ends
8:23 PM	8:23 PM	Jupiter	Jupiter rises	
10:37 PM	10:37 PM	Jup Sats	IV.Ec.R	
11:54 PM	11:54 PM	Jup GRS	GRS Transit (CML=229)	

Norfolk Astronomical Society Astronomical Calendar

November 2014							December 2014							January 2015						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
						1														
2	3	4	5	6	7	8	7	8	9	10	11	12	13	4	5	6	7	8	9	10
9	10	11	12	13	14	15	14	15	16	17	18	19	20	11	12	13	14	15	16	17
16	17	18	19	20	21	22	21	22	23	24	25	26	27	18	19	20	21	22	23	24
23	24	25	26	27	28	29	28	29	30	31				25	26	27	28	29	30	31
30																				

Calendar

	Start	End	Category	Description
30 Dec 2014	1:45 AM	1:45 AM	Moon	Moonset
	2:00 AM	2:00 AM	Jup Sats	IV.Oc.D
	4:20 AM	4:20 AM	Jup Sats	II.Sh.I
	4:58 AM	4:58 AM	Jup Sats	I.Sh.I
	5:33 AM	5:33 AM	Iridium Flare	CHES:Iridium 84 Flares at mag.-6.3 (Azm 166 Alt 17)
	5:46 AM	5:46 AM	Twilight	Astronomical Twilight begins
	5:49 AM	5:49 AM	Jup Sats	I.Tr.I
	6:04 AM	6:04 AM	Jup Sats	II.Tr.I
	6:34 AM	6:34 AM	Algol Minima	Algol at mag. +3.4 minimum (+/-5 hours)
	6:46 AM	6:46 AM	Jup Sats	IV.Oc.R
	7:19 AM	7:19 AM	Sun	Sunrise
	9:50 AM	9:50 AM	Jup GRS	GRS Transit (CML=229)
	9:58 AM	9:58 AM	Jupiter	Jupiter sets
	1:07 PM	1:07 PM	Moon	Moonrise
	1:56 PM	1:56 PM	Iridium Flare	CHES:Iridium 58 Flares at mag.-6.4 (Azm 192 Alt 44)
	5:01 PM	5:01 PM	Sun	Sunset
	6:33 PM	6:33 PM	Twilight	Astronomical Twilight ends
	7:45 PM	7:45 PM	Jup GRS	GRS Transit (CML=229)
	8:19 PM	8:19 PM	Jupiter	Jupiter rises
31 Dec 2014	2:11 AM	2:11 AM	Jup Sats	IEc.D
	2:47 AM	2:47 AM	Moon	Moonset
	5:20 AM	5:20 AM	Jup Sats	I.Oc.R
	5:28 AM	5:28 AM	Iridium Flare	CHES:Iridium 12 Flares at mag. 0.5 (Azm 166 Alt 15)
	5:41 AM	5:41 AM	Jup GRS	GRS Transit (CML=229)
	5:47 AM	5:47 AM	Twilight	Astronomical Twilight begins
	6:41 AM	6:41 AM	Iridium Flare	CHES:Iridium 17 Flares at mag. 1.1 (Azm 071 Alt 23)
	6:50 AM	6:50 AM	Iridium Flare	CHES:Iridium 77 Flares at mag.-4.9 (Azm 072 Alt 26)
	7:19 AM	7:19 AM	Sun	Sunrise
	9:54 AM	9:54 AM	Jupiter	Jupiter sets
	1:47 PM	1:47 PM	Moon	Moonrise
	3:36 PM	3:36 PM	Jup GRS	GRS Transit (CML=229)
	5:02 PM	5:02 PM	Sun	Sunset
	6:34 PM	6:34 PM	Twilight	Astronomical Twilight ends