

# Norfolk Astronomical Society



*<http://norfolkastronomical.org>*

March 2013

Monthly Sky Calendar  
Prepared Specifically For  
The Hampton Roads Area

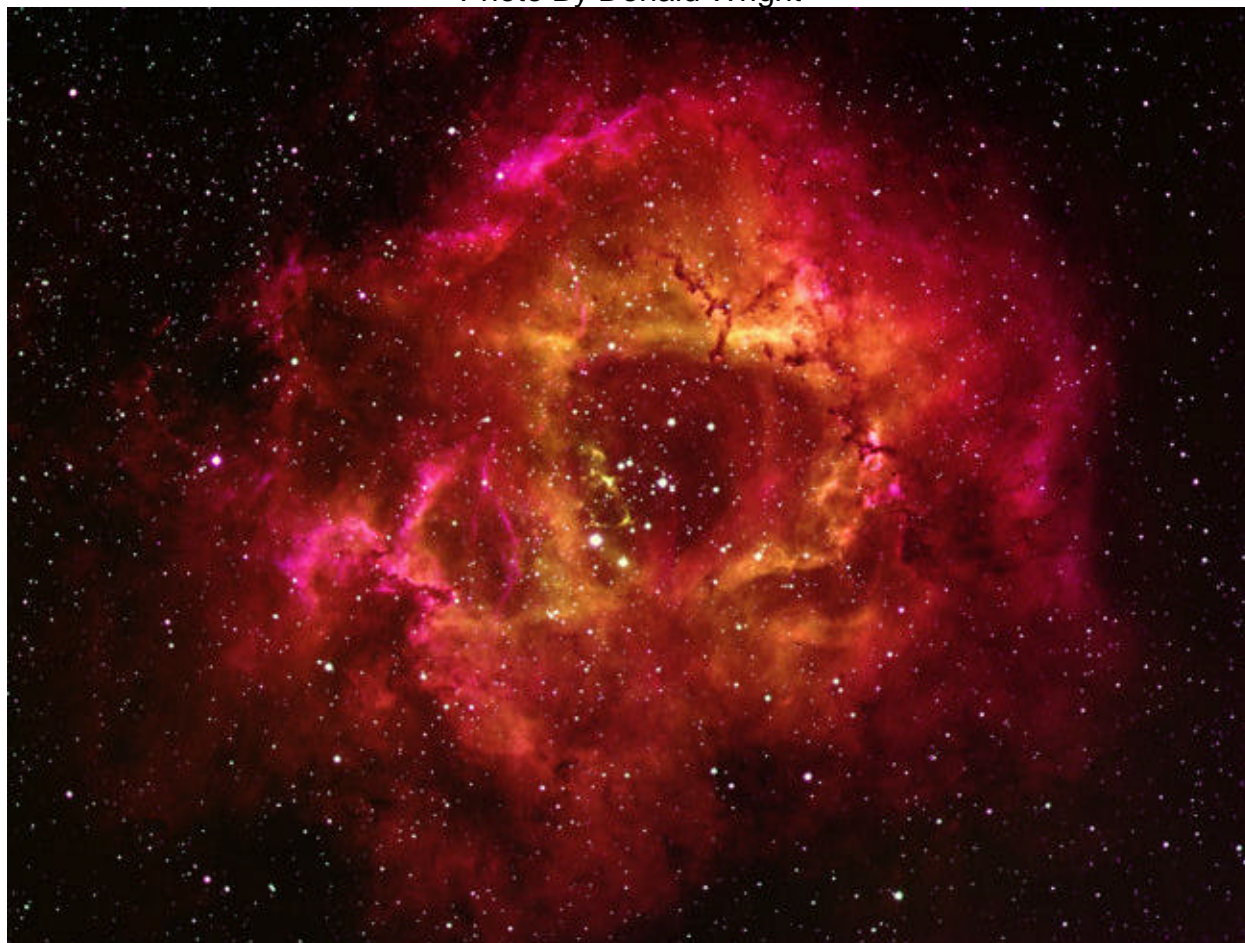
## Upcoming Regular Meetings

<b>DATE</b>	Monday, March 25, 2013
<b>TIME</b>	6 - 8 PM EST
<b>WHERE</b>	Chesapeake Public Library, Major Hillard branch Conf. Room
<b>TOPIC</b>	Messier Marathon Month

<b>DATE</b>	Monday, April 22, 2013
<b>TIME</b>	6 - 8 PM EST
<b>WHERE</b>	Chesapeake Public Library, Major Hillard branch Conf. Room
<b>TOPIC</b>	Astronomical Software demonstrations

### NGC2237: The Rosette Nebula in Monoceros

Photo By Donald Wright



The above image was captured by Don Wright on January 1, 2012 from his home in Virginia Beach. Seven 15-min exposures through Astrodon 5nm Ha filter, fourteen 15-minute OIII filter, and eight 15-min SII filter, were stacked in MaximDL and processed in Photoshop (Ha=Red, OIII=Green, SII=Blue). Images were acquired through a Televue NP-101 (4-inch f/5.4 APO refractor) tracking on a Losmandy G11 German Equatorial mount. Look for more of Don's work on his web site <http://ww4rf.net>



Glendon L. Howell  
Norfolk Astronomical Society  
<http://norfolkastronomical.org>

# Comet C/2011 L4 Pan-STARRS



# Observational Timetable

DATE	TIMETABLE OF EVENTS	M1	m1	MOON	VIS
Tue 03/05/2013	Comet closest to Earth at 1.10 AU	1.0	-0.5	LQ+1	
Fri 03/08/2013	Comet makes its evening debut for northern hemisphere	0.6	-0.9	NM-3	E
Sun 03/10/2013	Comet reaches perihelion at 0.30 AU	0.5	-1.0	NM-1	E
Sun 03/10/2013	Greatest brilliancy of mag. -1 (suggested by observations)	0.5	-1.0	NM-1	E
Tue 03/12/2013	Comet and thin crescent moon in evening sky (also 3/13)	0.7	-0.8	NM+1	E
Sun 03/24/2013	Comet makes its morning debut for northern hemisphere	3.0	1.5	FM-3	ME
Thu 04/04/2013	Comet passes very near M31	4.8	3.3	LQ+1	ME
Sun 04/14/2013	Comet at naked-eye threshold (CBAT predictions)	6.0	4.5	NM+4	ME
Tue 04/16/2013	Comet becomes circumpolar (above +53 DEC)	6.2	4.7	FQ-2	CIR
Sun 04/21/2013	Comet passes over galaxy IC10	6.7	5.2	FQ+3	CIR
Tue 05/07/2013	Comet at naked-eye threshold (suggested by observations)	8.0	6.5	NM-2	CIR
Mon 05/27/2013	Comet near Polaris	9.2	7.7	FM+3	CIR
Wed 06/19/2013	Comet near Kochab	10.4	8.9	FQ+3	CIR
Thu 07/25/2013	Comet passes near M101	11.9	10.4	FM+3	CIR
Sun 07/28/2013	Comet no longer circumpolar	12.0	10.5	LQ-1	CIR

# Elements and Ephemeris

C/2011 L4 (PANSTARRS)

Epoch 2013 Mar. 9.0 TT = JDT 2456360.5

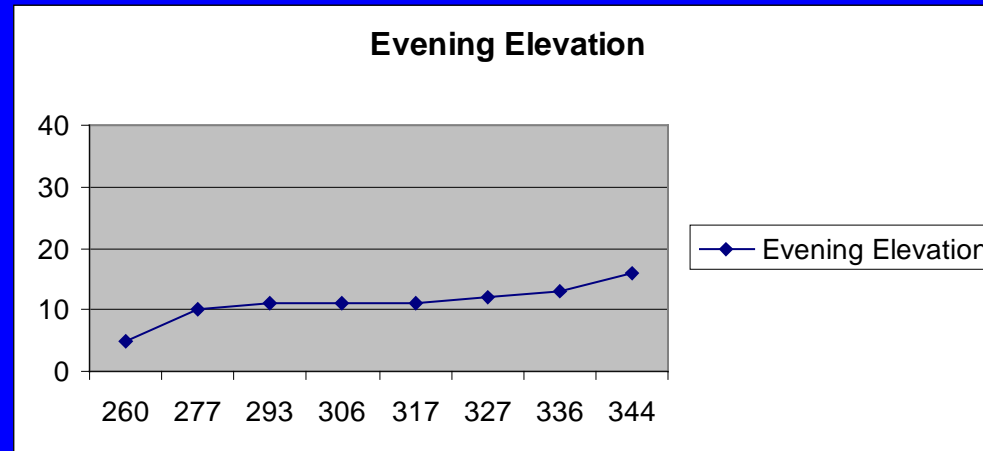
T 2013 Mar. 10.1685 TT

			P	MPC	Q
q	0.301543	(2000.0)			
z	-0.000042	Peri.	333.6516	+0.4100682	+0.1004686
	+/-0.000001	Node	65.6658	+0.9078303	+0.0505900
e	1.000013	Incl.	84.2069	-0.0876827	+0.9936532

From 1209 observations 2011 May 21-2012 Sept. 16, mean residual 0".4.

Date	TT	R. A. (2000)	Decl.	Delta	r	Elong.	Phase	m1
2013 03 09		00 18 00.2	-08 11 09	1.1047	0.3038	15.5	60.9	0.5
2013 03 16		00 34 03.3	+09 29 09	1.1476	0.3512	17.0	56.0	1.3
2013 03 23		00 34 52.6	+23 16 17	1.2017	0.4861	23.2	54.0	2.8
2013 03 30		00 32 10.8	+33 54 08	1.2589	0.6401	30.2	51.8	4.1
2013 04 06		00 28 59.2	+42 40 13	1.3169	0.7931	36.9	49.3	5.1
2013 04 13		00 25 38.9	+50 19 11	1.3750	0.9407	43.2	46.8	5.9
2013 04 20		00 21 40.7	+57 15 22	1.4334	1.0826	48.9	44.4	6.6
2013 04 27		00 16 01.2	+63 41 58	1.4931	1.2189	54.2	42.1	7.2
2013 05 04		00 06 34.8	+69 45 36	1.5553	1.3504	59.1	39.8	7.8
2013 05 11		23 48 23.0	+75 27 32	1.6210	1.4774	63.4	37.7	8.2
2013 05 18		23 06 32.1	+80 39 34	1.6912	1.6005	67.3	35.7	8.7
2013 05 25		21 06 34.7	+84 35 46	1.7669	1.7200	70.6	33.7	9.1
2013 06 01		17 20 24.0	+84 31 17	1.8487	1.8364	73.4	31.9	9.5
2013 06 08		15 30 37.1	+80 54 48	1.9372	1.9499	75.6	30.3	9.8
2013 06 15		14 53 02.5	+76 35 37	2.0323	2.0607	77.2	28.7	10.2
2013 06 22		14 38 01.0	+72 16 19	2.1342	2.1691	78.3	27.3	10.5
2013 06 29		14 32 00.4	+68 06 38	2.2426	2.2753	78.8	26.0	10.8

# Evening Apparition



DATE	SS	+30min	MAG	AZ	EL	MOON	CR	CT	CS
Sat 03/09/2013	19:09	19:39	0.5	260	5	NM-2	8:35	14:17	20:04
Sat 03/16/2013	19:16	19:46	1.5	277	10	FQ-3	7:30	14:03	20:41
Sat 03/23/2013	19:22	19:52	3.0	293	11	FM-4	6:17	13:36	20:59
Sat 03/30/2013	19:28	19:58	4.2	306	11	FM+3	5:01	13:06	21:14
Sat 04/06/2013	19:34	20:04	5.2	317	11	LQ+3	3:37	12:35	21:40
Sat 04/13/2013	19:40	20:10	6.0	327	12	NM+3	1:40	12:04	22:47
Sat 04/20/2013	19:46	20:16	6.7	336	13	FQ+2		11:32	
Sat 04/27/2013	19:52	20:22	7.3	344	16	FM+2		10:59	

# March Evening Apparition

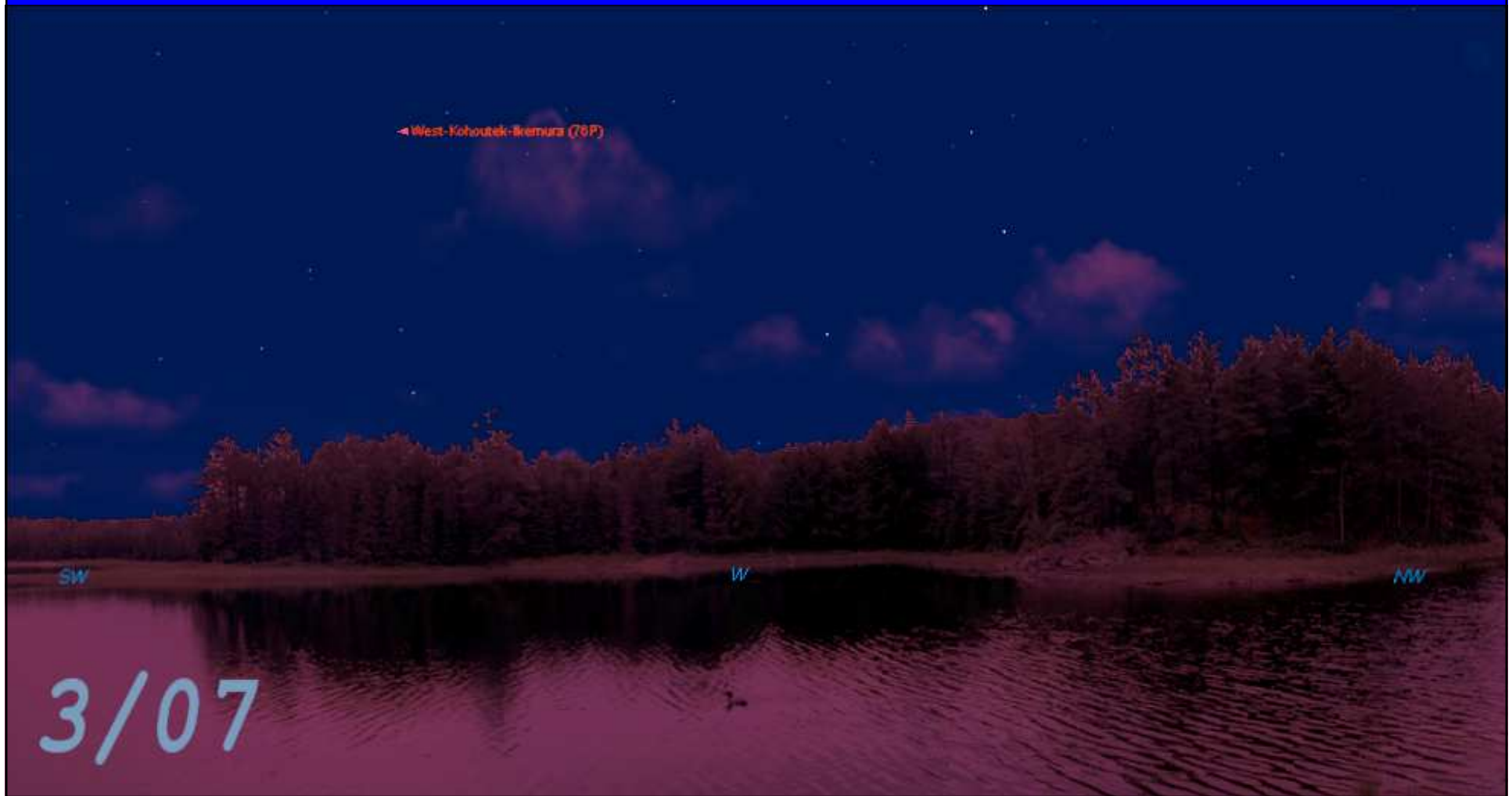
← West-Kohoutek-Ikemura (76P)

SW

W

NW

3/07



# March Evening Apparition





# March Evening Apparition



→ West-Kohoutek-Ikemura (70P)

SW

W

NW

3/11

# March Evening Apparition



# March Evening Apparition



# March Evening Apparition



# March Evening Apparition



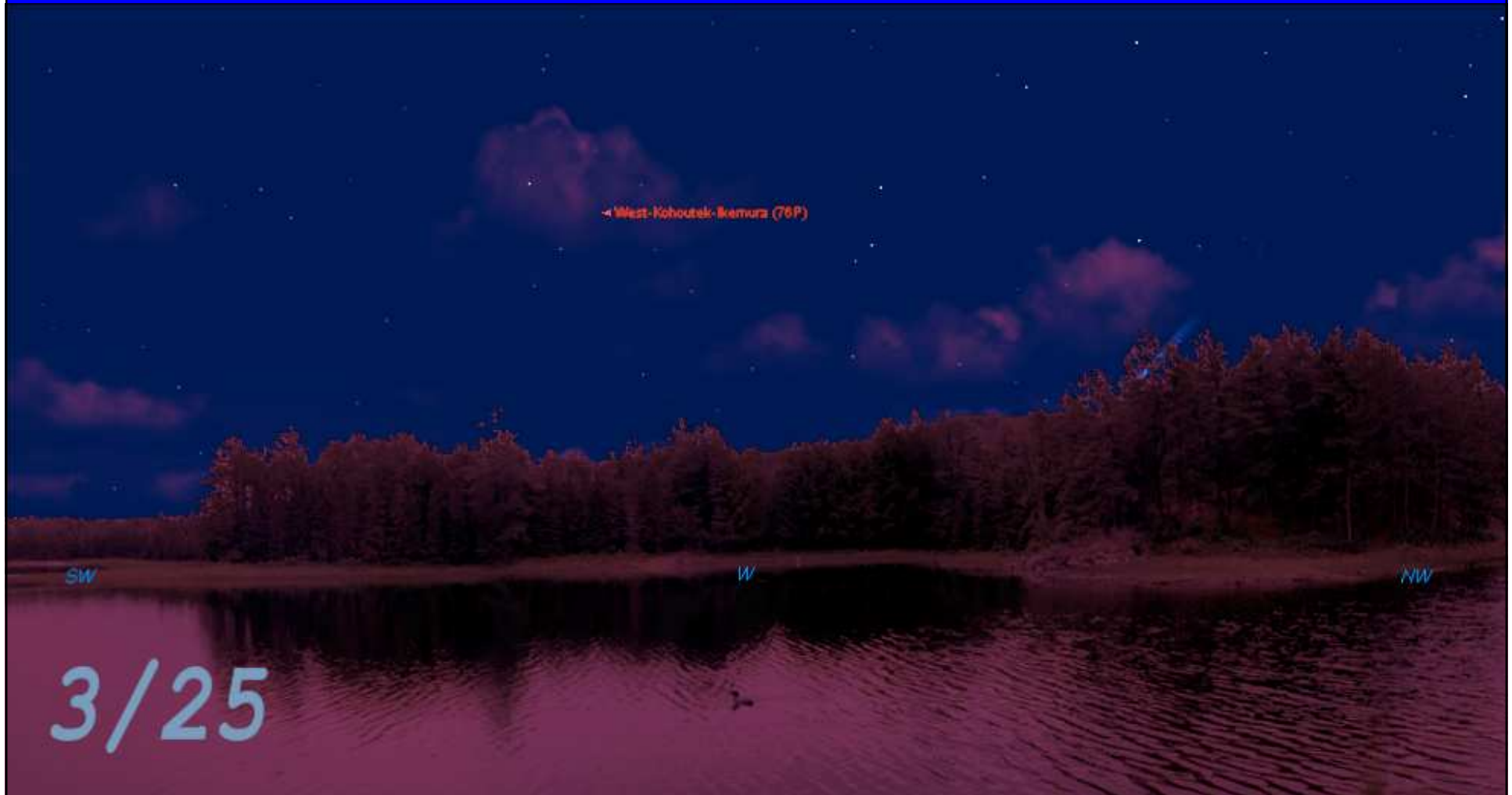
# March Evening Apparition



# March Evening Apparition



# March Evening Apparition





# March Evening Apparition



→ Weši-Kohoutek-Ikemura (76P)

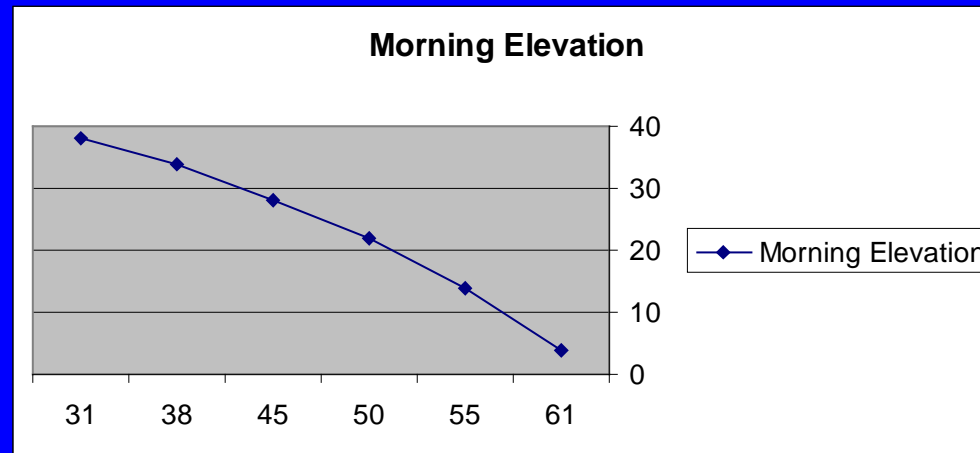
SW

W

NW

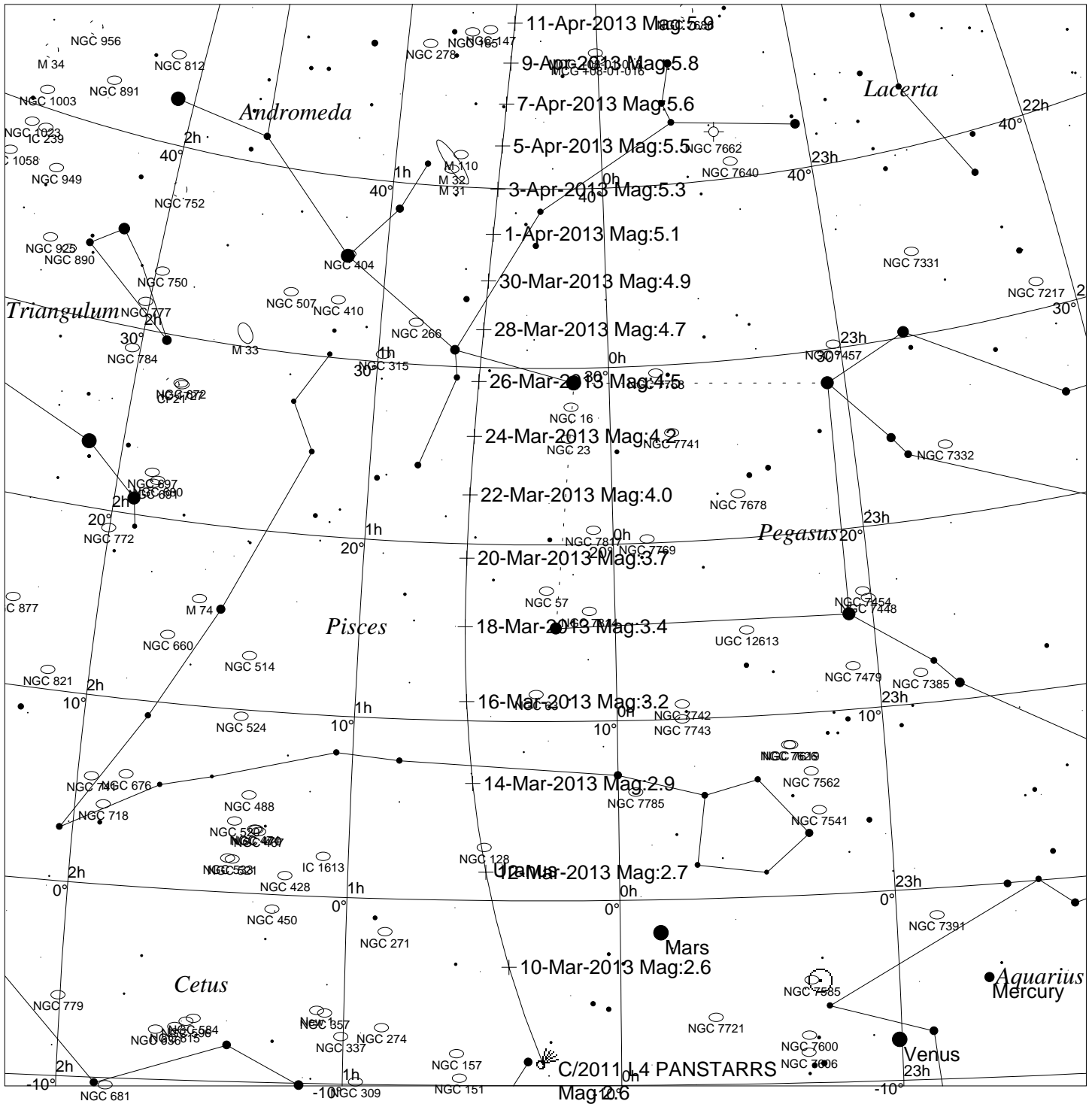
3/27

# Morning Apparition



DATE	SR	-30min	MAG	AZ	EL	MOON	CR	CT	CS
Sun 03/24/2013	7:05	6:35	3.1	61	4	FM-3	6:07	13:32	21:01
Sun 03/31/2013	6:54	6:24	4.3	55	14	FM+4	4:50	13:01	21:17
Sun 04/07/2013	6:44	6:14	5.3	50	22	LQ+4	3:23	12:30	21:45
Sun 04/14/2013	6:35	6:05	6.1	45	28	NM+4	1:14	12:00	23:15
Sun 04/21/2013	6:25	5:55	6.8	38	34	FQ+3		11:28	
Sun 04/28/2013	6:17	5:47	7.3	31	38	FM+3		10:54	

# Comet C/2011 L4 PanSTARRS in March-April



<p><b>STARS</b></p> <ul style="list-style-type: none"> <li>● &lt;2</li> <li>● 2.5</li> <li>● 3</li> <li>● 3.5</li> <li>● 4</li> <li>● 4.5</li> <li>● 5</li> <li>● 5.5</li> <li>● &gt;6</li> </ul>	<p><b>SYMBOLS</b></p> <ul style="list-style-type: none"> <li>☄ Comet</li> <li>♁ Asteroid</li> <li>☉ Galaxy</li> <li>☾ Open Cluster</li> <li>☐ Bright Nebula</li> <li>⊕ Globular Cluster</li> <li>☉ Planetary Nebula</li> <li>☉ Quasar</li> <li>○ Other Object</li> </ul>	<p><i>The comet begins its evening debut around March 8. Reaching its brightest on March 10, it will stay low on the western horizon. Begin watching 30 minutes after sunset. The crescent moon joins in March 12 and 13.</i></p>
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Local Time: 12:00:00 8-Mar-2013      UTC: 17:00:00 8-Mar-2013      Sidereal Time: 23:01:07  
 Location: 36° 49' 48" N 76° 16' 48" W RA: 0h16m25s Dec: +20° 00' Field: 60.0°      Julian Day: 2456360.2083

# Norfolk Astronomical Society Astronomical Calendar

February 2013							March 2013							April 2013						
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	9	1	2	3	4	5	6	7
3	4	5	6	7	8	9	10	11	12	13	14	15	16	7	8	9	10	11	12	13
10	11	12	13	14	15	16	17	18	19	20	21	22	23	14	15	16	17	18	19	20
17	18	19	20	21	22	23	24	25	26	27	28	29	30	21	22	23	24	25	26	27
24	25	26	27	28			31							28	29	30				

## Calendar

	Start	End	Category	Description
<b>1</b> Mar 2013	1:04 AM	1:04 AM	Jupiter	Jupiter sets
	3:00 AM	3:00 AM	Diary	Spica 0.1N of Moon Occn
	4:31 AM	4:31 AM	Iridium Flare	CHES:Iridium 29 Flares at mag.-3.6 (Azm 004 Alt 14)
	5:12 AM	5:12 AM	Twilight	Astronomical Twilight begins
	6:37 AM	6:37 AM	Sun	Sunrise
	8:31 AM	8:31 AM	Moon	Moonset
	9:17 AM	9:17 AM	Jup GRS	GRS Transit (CML=190)
	10:44 AM	10:44 AM	Jupiter	Jupiter rises
	4:41 PM	4:41 PM	Iridium Flare	CHES:Iridium 29 Flares at mag.-5.9 (Azm 232 Alt 31)
	6:02 PM	6:02 PM	Sun	Sunset
	6:13 PM	6:13 PM	Sat Pass (ISS)	CHES:ISS Passes NW to SE (Azm 225.2 Alt 41)
	6:43 PM	6:43 PM	Jup Sats	III.Tr.E
	7:12 PM	7:12 PM	Jup GRS	GRS Transit (CML=190)
	7:27 PM	7:27 PM	Twilight	Astronomical Twilight ends
	9:41 PM	9:41 PM	Jup Sats	III.Sh.I
	10:03 PM	10:03 PM	Jup Sats	II.Tr.I
	10:24 PM	10:24 PM	Moon	Moonrise
<b>2</b> Mar 2013	12:04 AM	12:04 AM	Jup Sats	III.Sh.E
	12:28 AM	12:28 AM	Jup Sats	II.Tr.E
	12:38 AM	12:38 AM	Jup Sats	II.Sh.I
	1:01 AM	1:01 AM	Jupiter	Jupiter sets
	4:16 AM	4:16 AM	Algol Minima	Algol at mag. +3.4 minimum (+/-5 hours)
	4:25 AM	4:25 AM	Iridium Flare	CHES:Iridium 32 Flares at mag.-2.6 (Azm 004 Alt 12)
	4:39 AM	4:39 AM	Lunar Occult	Moon occults 6.7 mag. star ZC2063(r)
	5:08 AM	5:08 AM	Jup GRS	GRS Transit (CML=190)
	5:11 AM	5:11 AM	Twilight	Astronomical Twilight begins
	6:36 AM	6:36 AM	Sun	Sunrise
	9:00 AM	9:00 AM	Diary	Saturn 3.3N of Moon
	9:13 AM	9:13 AM	Moon	Moonset
	10:40 AM	10:40 AM	Jupiter	Jupiter rises
	3:04 PM	3:04 PM	Jup GRS	GRS Transit (CML=190)
	6:03 PM	6:03 PM	Sun	Sunset
	7:28 PM	7:28 PM	Twilight	Astronomical Twilight ends
	10:03 PM	10:03 PM	Jup Sats	I.Tr.I
	11:22 PM	11:22 PM	Jup Sats	I.Sh.I
	11:29 PM	11:29 PM	Moon	Moonrise
<b>3</b> Mar 2013	12:15 AM	12:15 AM	Jup Sats	I.Tr.E
	12:57 AM	12:57 AM	Jupiter	Jupiter sets
	1:00 AM	1:00 AM	Jup GRS	GRS Transit (CML=190)

# Norfolk Astronomical Society Astronomical Calendar

February 2013							March 2013							April 2013						
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	9	7	8	9	10	11	12	13
3	4	5	6	7	8	9	10	11	12	13	14	15	16	14	15	16	17	18	19	20
10	11	12	13	14	15	16	17	18	19	20	21	22	23	21	22	23	24	25	26	27
17	18	19	20	21	22	23	24	25	26	27	28	29	30	28	29	30				
24	25	26	27	28			31													

## Calendar

	Start	End	Category	Description
<b>3</b> Mar 2013	5:09 AM	5:09 AM	Twilight	Astronomical Twilight begins
	6:35 AM	6:35 AM	Sun	Sunrise
	8:22 AM	8:22 AM	Iridium Flare	CHES:Iridium 52 Flares at mag.-7.9 (Azm 092 Alt 74)
	9:59 AM	9:59 AM	Moon	Moonset
	10:37 AM	10:37 AM	Jupiter	Jupiter rises
	10:55 AM	10:55 AM	Jup GRS	GRS Transit (CML=190)
	6:04 PM	6:04 PM	Sun	Sunset
	6:55 PM	6:55 PM	Jup Sats	II.Oc.R
	7:10 PM	7:10 PM	Jup Sats	II.Ec.D
	7:20 PM	7:20 PM	Jup Sats	I.Oc.D
	7:29 PM	7:29 PM	Twilight	Astronomical Twilight ends
	7:50 PM	7:50 PM	Iridium Flare	CHES:Iridium 13 Flares at mag. 1.7 (Azm 139 Alt 47)
	8:51 PM	8:51 PM	Jup GRS	GRS Transit (CML=190)
	9:38 PM	9:38 PM	Jup Sats	II.Ec.R
	10:50 PM	10:50 PM	Jup Sats	I.Ec.R
<b>4</b> Mar 2013	12:34 AM	12:34 AM	Moon	Moonrise
	12:54 AM	12:54 AM	Jupiter	Jupiter sets
	5:08 AM	5:08 AM	Twilight	Astronomical Twilight begins
	6:33 AM	6:33 AM	Sun	Sunrise
	6:47 AM	6:47 AM	Jup GRS	GRS Transit (CML=190)
	8:00 AM	8:00 AM	Diary	Mercury inferior conjunction
	10:33 AM	10:33 AM	Jupiter	Jupiter rises
	10:52 AM	10:52 AM	Moon	Moonset
	4:43 PM	4:43 PM	Jup GRS	GRS Transit (CML=190)
	6:00 PM	6:00 PM	Diary	LAST QUARTER
	6:05 PM	6:05 PM	Sun	Sunset
	6:44 PM	6:44 PM	Jup Sats	I.Tr.E
	7:29 PM	7:29 PM	Twilight	Astronomical Twilight ends
	7:44 PM	7:44 PM	Iridium Flare	CHES:Iridium 50 Flares at mag.-1.9 (Azm 138 Alt 46)
	8:03 PM	8:03 PM	Jup Sats	I.Sh.E
<b>5</b> Mar 2013	12:00 AM	12:00 AM	C/2011L4	Comet Pan-STARRS closest to Earth at 1.10 AU.
	12:50 AM	12:50 AM	Jupiter	Jupiter sets
	1:00 AM	1:00 AM	Algol Minima	Algol at mag. +3.4 minimum (+/-5 hours)
	1:35 AM	1:35 AM	Moon	Moonrise
	2:39 AM	2:39 AM	Jup GRS	GRS Transit (CML=190)
	3:31 AM	3:31 AM	Lunar Occult	Moon occults 4.4 mag. star ZC2498(R) Xi Oph
	5:06 AM	5:06 AM	Twilight	Astronomical Twilight begins
	5:24 AM	5:24 AM	Lunar Occult	Moon occults 5.8 mag. double star ZC2509(R)
	6:32 AM	6:32 AM	Sun	Sunrise

# Norfolk Astronomical Society Astronomical Calendar

February 2013							March 2013							April 2013						
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	9	10	11	12	13	14	15	16
3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31						
24	25	26	27	28			31							28	29	30				

## Calendar

	Start	End	Category	Description
<b>5</b> Mar 2013	10:29 AM	10:29 AM	Jupiter	Jupiter rises
	11:50 AM	11:50 AM	Moon	Moonset
	12:34 PM	12:34 PM	Jup GRS	GRS Transit (CML=190)
	6:06 PM	6:06 PM	Sun	Sunset
	7:30 PM	7:30 PM	Twilight	Astronomical Twilight ends
	7:38 PM	7:38 PM	Iridium Flare	CHES:Iridium 53 Flares at mag.-3.4 (Azm 138 Alt 46)
	9:00 PM	9:00 PM	Diary	Moon at perigee
	10:30 PM	10:30 PM	Jup GRS	GRS Transit (CML=190)
<b>6</b> Mar 2013	12:47 AM	12:47 AM	Jupiter	Jupiter sets
	2:31 AM	2:31 AM	Moon	Moonrise
	5:05 AM	5:05 AM	Twilight	Astronomical Twilight begins
	5:17 AM	5:17 AM	Lunar Occult	Moon occults 4.9 mag. double star ZC2666(R) 21 Sgr
	6:31 AM	6:31 AM	Sun	Sunrise
	8:26 AM	8:26 AM	Jup GRS	GRS Transit (CML=190)
	10:26 AM	10:26 AM	Jupiter	Jupiter rises
	12:53 PM	12:53 PM	Moon	Moonset
	3:00 PM	3:00 PM	Diary	Pluto 0.7S of Moon Occn
	6:07 PM	6:07 PM	Sun	Sunset
<b>7</b> Mar 2013	6:22 PM	6:22 PM	Jup GRS	GRS Transit (CML=190)
	7:31 PM	7:31 PM	Twilight	Astronomical Twilight ends
	7:32 PM	7:32 PM	Iridium Flare	CHES:Iridium 54 Flares at mag. 1.0 (Azm 137 Alt 45)
	12:44 AM	12:44 AM	Jupiter	Jupiter sets
	1:00 AM	1:00 AM	Diary	Mercury 4.8N of Venus
	3:21 AM	3:21 AM	Moon	Moonrise
	3:45 AM	3:45 AM	Lunar Occult	Moon occults 5.8 mag. star ZC2828(r) 45 Sgr
	4:18 AM	4:18 AM	Jup GRS	GRS Transit (CML=190)
	4:57 AM	4:57 AM	Lunar Occult	Moon occults 7.0 mag. star ZC2833(r)
	5:04 AM	5:04 AM	Twilight	Astronomical Twilight begins
<b>8</b> Mar 2013	6:29 AM	6:29 AM	Sun	Sunrise
	10:22 AM	10:22 AM	Jupiter	Jupiter rises
	1:58 PM	1:58 PM	Moon	Moonset
	2:13 PM	2:13 PM	Jup GRS	GRS Transit (CML=190)
	4:21 PM	4:21 PM	Iridium Flare	CHES:Iridium 28 Flares at mag.-4.2 (Azm 243 Alt 24)
	6:08 PM	6:08 PM	Sun	Sunset
	7:32 PM	7:32 PM	Twilight	Astronomical Twilight ends
	9:54 PM	9:54 PM	Algol Minima	Algol at mag. +3.4 minimum (+/-5 hours)
	12:09 AM	12:09 AM	Jup GRS	GRS Transit (CML=190)
	12:40 AM	12:40 AM	Jupiter	Jupiter sets
4:06 AM	4:06 AM	Moon	Moonrise	

# Norfolk Astronomical Society Astronomical Calendar

February 2013							March 2013							April 2013						
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	9	7	8	9	10	11	12	13
3	4	5	6	7	8	9	10	11	12	13	14	15	16	14	15	16	17	18	19	20
17	18	19	20	21	22	23	24	25	26	27	28	29	30	21	22	23	24	25	26	27
24	25	26	27	28			31							28	29	30				

## Calendar

	Start	End	Category	Description
<b>8</b> Mar 2013	5:02 AM	5:02 AM	Twilight	Astronomical Twilight begins
	6:28 AM	6:28 AM	Sun	Sunrise
	10:05 AM	10:05 AM	Jup GRS	GRS Transit (CML=190)
	10:19 AM	10:19 AM	Jupiter	Jupiter rises
	3:05 PM	3:05 PM	Moon	Moonset
	5:44 PM	5:44 PM	Iridium Flare	CHES:Iridium 34 Flares at mag.-7.6 (Azm 204 Alt 50)
	6:08 PM	6:08 PM	Sun	Sunset
	6:38 PM	6:38 PM	C/2011L4	Comet Pan-STARRS makes its evening debut.
	7:00 PM	7:00 PM	Meetings	NAS Observing Session (Gates Co., NC)
	7:28 PM	7:28 PM	Iridium Flare	CHES:Iridium 90 Flares at mag. 1.6 (Azm 150 Alt 53)
	7:33 PM	7:33 PM	Twilight	Astronomical Twilight ends
	8:01 PM	8:01 PM	Jup GRS	GRS Transit (CML=190)
	8:26 PM	8:26 PM	Jup Sats	III.Tr.I
	10:49 PM	10:49 PM	Jup Sats	III.Tr.E
<b>9</b> Mar 2013	12:37 AM	12:37 AM	Jupiter	Jupiter sets
	4:46 AM	4:46 AM	Moon	Moonrise
	5:01 AM	5:01 AM	Twilight	Astronomical Twilight begins
	5:49 AM	5:49 AM	Iridium Flare	CHES:Iridium 4 Flares at mag. 1.5 (Azm 005 Alt 45)
	5:57 AM	5:57 AM	Jup GRS	GRS Transit (CML=190)
	6:26 AM	6:26 AM	Sun	Sunrise
	10:15 AM	10:15 AM	Jupiter	Jupiter rises
	3:53 PM	3:53 PM	Jup GRS	GRS Transit (CML=190)
	4:11 PM	4:11 PM	Moon	Moonset
	6:09 PM	6:09 PM	Sun	Sunset
	7:23 PM	7:23 PM	Iridium Flare	CHES:Iridium 10 Flares at mag. 1.1 (Azm 151 Alt 53)
	7:34 PM	7:34 PM	Twilight	Astronomical Twilight ends
	11:48 PM	11:48 PM	C/2011L4	Comet Pan-STARRS reaches perihelion at 0.30 AU.
<b>10</b> Mar 2013	12:00 AM	12:00 AM	Jup Sats	I.Tr.I
	12:33 AM	12:33 AM	Jupiter	Jupiter sets
	1:49 AM	1:49 AM	Jup GRS	GRS Transit (CML=190)
	2:00 AM	2:00 AM		Spring forward to EDT
	4:59 AM	4:59 AM	Twilight	Astronomical Twilight begins
	5:23 AM	5:23 AM	Moon	Moonrise
	6:25 AM	6:25 AM	Sun	Sunrise
	8:00 AM	8:00 AM	Diary	Neptune 5.5S of Moon
	9:42 AM	9:42 AM	Iridium Flare	CHES:Iridium 39 Flares at mag.-6.2 (Azm 134 Alt 55)
	10:12 AM	10:12 AM	Jupiter	Jupiter rises
	11:44 AM	11:44 AM	Jup GRS	GRS Transit (CML=190)
	4:00 PM	4:00 PM	Diary	Mercury 2.0S of Moon

## DAYLIGHT SAVING TIME

Year	DST Begins 2 a.m. (Second Sunday in March)	DST Ends 2 a.m. (First Sunday in November)
2007	Sun 11 March 2007	Sun 04 November 2007
2008	Sun 09 March 2008	Sun 02 November 2008
2009	Sun 08 March 2009	Sun 01 November 2009
2010	Sun 14 March 2010	Sun 07 November 2010
2011	Sun 13 March 2011	Sun 06 November 2011
2012	Sun 11 March 2012	Sun 04 November 2012
2013	Sun 10 March 2013	Sun 03 November 2013
2014	Sun 09 March 2014	Sun 02 November 2014
2015	Sun 08 March 2015	Sun 01 November 2015
2016	Sun 13 March 2016	Sun 06 November 2016
2017	Sun 12 March 2017	Sun 05 November 2017
2018	Sun 11 March 2018	Sun 04 November 2018
2019	Sun 10 March 2019	Sun 03 November 2019
2020	Sun 08 March 2020	Sun 01 November 2020
2021	Sun 14 March 2021	Sun 07 November 2021
2022	Sun 13 March 2022	Sun 06 November 2022
2023	Sun 12 March 2023	Sun 05 November 2023
2024	Sun 10 March 2024	Sun 03 November 2024
2025	Sun 09 March 2025	Sun 02 November 2025

*By the rules enacted in Energy Policy Act of 2005, beginning in 2007, DST begins on the second Sunday in March and ends on the first Sunday in November. Time changes at 2 AM local time.  
<http://www.greenwichmeantime.com/time-zone/rules/usa/>*



## Norfolk Astronomical Society Astronomical Calendar

February 2013							March 2013							April 2013						
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	9	1	2	3	4	5	6	
3	4	5	6	7	8	9	10	11	12	13	14	15	16	7	8	9	10	11	12	13
10	11	12	13	14	15	16	17	18	19	20	21	22	23	14	15	16	17	18	19	20
17	18	19	20	21	22	23	24	25	26	27	28	29	30	21	22	23	24	25	26	27
24	25	26	27	28			31							28	29	30				

## Calendar

	Start	End	Category	Description
<b>10</b> Mar 2013	12:03 AM	12:03 AM	C/2011L4	Comet Pan-STARRS reaches perihelion at 0.30 AU.
	1:00 AM	1:00 AM	Jup Sats	I.Tr.I
	1:33 AM	1:33 AM	Jupiter	Jupiter sets
	2:00 AM	2:00 AM		Spring forward to EDT
	2:50 AM	2:50 AM	Jup GRS	GRS Transit (CML=191)
	5:59 AM	5:59 AM	Twilight	Astronomical Twilight begins
	6:23 AM	6:23 AM	Moon	Moonrise
	7:25 AM	7:25 AM	Sun	Sunrise
	9:00 AM	9:00 AM	Diary	Neptune 5.5S of Moon
	10:42 AM	10:42 AM	Iridium Flare	CHES:Iridium 39 Flares at mag.-6.2 (AzM 134 Alt 55)
	11:12 AM	11:12 AM	Jupiter	Jupiter rises
	12:46 PM	12:46 PM	Jup GRS	GRS Transit (CML=191)
	5:00 PM	5:00 PM	Diary	Mercury 2.0S of Moon
	6:16 PM	6:16 PM	Moon	Moonset
	7:10 PM	7:10 PM	Sun	Sunset
	7:40 PM	7:40 PM	C/2011L4	Comet Pan-STARRS reaches greatest brilliancy of mag -1.
	7:43 PM	7:43 PM	Algol Minima	Algol at mag. +3.4 minimum (+/-5 hours)
	8:08 PM	8:08 PM	Jup Sats	II.Oc.D
	8:17 PM	8:17 PM	Iridium Flare	CHES:Iridium 13 Flares at mag.-4.6 (AzM 149 Alt 52)
	8:35 PM	8:35 PM	Twilight	Astronomical Twilight ends
	10:16 PM	10:16 PM	Jup Sats	I.Oc.D
	10:37 PM	10:37 PM	Jup Sats	II.Oc.R
	10:42 PM	10:42 PM	Jup GRS	GRS Transit (CML=191)
	10:48 PM	10:48 PM	Jup Sats	II.Ec.D
<b>11</b> Mar 2013	1:30 AM	1:30 AM	Jupiter	Jupiter sets
	5:58 AM	5:58 AM	Twilight	Astronomical Twilight begins
	6:57 AM	6:57 AM	Moon	Moonrise
	7:23 AM	7:23 AM	Sun	Sunrise
	8:00 AM	8:00 AM	Diary	Venus 5.9S of Moon
	8:38 AM	8:38 AM	Jup GRS	GRS Transit (CML=191)
	11:08 AM	11:08 AM	Jupiter	Jupiter rises
	4:00 PM	4:00 PM	Diary	NEW MOON
	6:33 PM	6:33 PM	Jup GRS	GRS Transit (CML=191)
	7:11 PM	7:11 PM	Sun	Sunset
	7:20 PM	7:20 PM	Moon	Moonset
	8:11 PM	8:11 PM	Iridium Flare	CHES:Iridium 50 Flares at mag.-0.3 (AzM 148 Alt 52)
	8:36 PM	8:36 PM	Twilight	Astronomical Twilight ends
	8:47 PM	8:47 PM	Jup Sats	I.Sh.I
	9:41 PM	9:41 PM	Jup Sats	I.Tr.E
	10:59 PM	10:59 PM	Jup Sats	I.Sh.E

# Norfolk Astronomical Society Astronomical Calendar

February 2013							March 2013							April 2013						
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	9	10	11	12	13	14	15	16
3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31						
24	25	26	27	28										28	29	30				

## Calendar

	Start	End	Category	Description
<b>12</b> Mar 2013	1:27 AM	1:27 AM	Jupiter	Jupiter sets
	4:29 AM	4:29 AM	Jup GRS	GRS Transit (CML=191)
	5:56 AM	5:56 AM	Twilight	Astronomical Twilight begins
	6:38 AM	6:38 AM	Sat Pass (ISS)	CHES:ISS Passes SW to NE (AzM 131.9 Alt 27)
	7:22 AM	7:22 AM	Sun	Sunrise
	7:31 AM	7:31 AM	Moon	Moonrise
	8:00 AM	8:00 AM	Diary	Mars 4.5S of Moon
	10:30 AM	10:30 AM	Iridium Flare	CHES:Iridium 41 Flares at mag.-6.6 (AzM 129 Alt 57)
	11:05 AM	11:05 AM	Jupiter	Jupiter rises
	2:25 PM	2:25 PM	Jup GRS	GRS Transit (CML=191)
	7:12 PM	7:12 PM	Sun	Sunset
	7:42 PM	7:42 PM	C/2011L4	Comet Pan-STARRS joined by thin crescent moon
	7:57 PM	7:57 PM	Jup Sats	II.Sh.E
	8:09 PM	8:09 PM	Iridium Flare	CHES:Iridium 16 Flares at mag.-8.0 (AzM 152 Alt 54)
	8:14 PM	8:14 PM	Jup Sats	I.Ec.R
	8:22 PM	8:22 PM	Moon	Moonset
	8:37 PM	8:37 PM	Twilight	Astronomical Twilight ends
	9:00 PM	9:00 PM	Diary	Uranus 4.0S of Moon
<b>13</b> Mar 2013	12:21 AM	12:21 AM	Jup GRS	GRS Transit (CML=191)
	1:23 AM	1:23 AM	Jupiter	Jupiter sets
	5:55 AM	5:55 AM	Twilight	Astronomical Twilight begins
	7:21 AM	7:21 AM	Sun	Sunrise
	8:04 AM	8:04 AM	Moon	Moonrise
	10:17 AM	10:17 AM	Jup GRS	GRS Transit (CML=191)
	11:01 AM	11:01 AM	Jupiter	Jupiter rises
	4:32 PM	4:32 PM	Algol Minima	Algol at mag. +3.4 minimum (+/-5 hours)
	7:13 PM	7:13 PM	Sun	Sunset
	7:43 PM	7:43 PM	C/2011L4	Crescent moon in tail of Comet Pan-STARRS
	8:12 PM	8:12 PM	Jup GRS	GRS Transit (CML=191)
	8:38 PM	8:38 PM	Twilight	Astronomical Twilight ends
	8:59 PM	8:59 PM	Lunar Occult	Moon occults 7.3 mag. star SAO109700(d)
	9:23 PM	9:23 PM	Moon	Moonset
<b>14</b> Mar 2013	1:20 AM	1:20 AM	Jupiter	Jupiter sets
	5:54 AM	5:54 AM	Twilight	Astronomical Twilight begins
	6:08 AM	6:08 AM	Jup GRS	GRS Transit (CML=191)
	6:32 AM	6:32 AM	Sat Pass (ISS)	CHES:ISS Passes SW to NE (AzM 142.3 Alt 84)
	7:19 AM	7:19 AM	Sun	Sunrise
	8:38 AM	8:38 AM	Moon	Moonrise
	10:58 AM	10:58 AM	Jupiter	Jupiter rises

## Norfolk Astronomical Society Astronomical Calendar

February 2013							March 2013							April 2013						
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	9	10	11	12	13	14	15	16
3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
17	18	19	20	21	22	23	24	25	26	27	28	29	30	24	25	26	27	28	29	30
24	25	26	27	28			31							28	29	30				

## Calendar

	Start	End	Category	Description
<b>14</b> Mar 2013	4:04 PM	4:04 PM	Jup GRS	GRS Transit (CML=191)
	6:16 PM	6:16 PM	Iridium Flare	CHES:Iridium 37 Flares at mag. -4.7 (AzM 218 Alt 48)
	7:14 PM	7:14 PM	Sun	Sunset
	8:39 PM	8:39 PM	Twilight	Astronomical Twilight ends
	10:22 PM	10:22 PM	Moon	Moonset
<b>15</b> Mar 2013	1:17 AM	1:17 AM	Jupiter	Jupiter sets
	2:00 AM	2:00 AM	Jup GRS	GRS Transit (CML=191)
	5:42 AM	5:42 AM	Sat Pass (ISS)	CHES:ISS Passes SW to NE (AzM 134.5 Alt 39)
	5:52 AM	5:52 AM	Twilight	Astronomical Twilight begins
	6:17 AM	6:17 AM	Iridium Flare	CHES:Iridium 97 Flares at mag. 1.7 (AzM 006 Alt 35)
	7:18 AM	7:18 AM	Sun	Sunrise
	9:15 AM	9:15 AM	Moon	Moonrise
	10:54 AM	10:54 AM	Jupiter	Jupiter rises
	11:56 AM	11:56 AM	Jup GRS	GRS Transit (CML=191)
	7:15 PM	7:15 PM	Sun	Sunset
	7:55 PM	7:55 PM	Iridium Flare	CHES:Iridium 52 Flares at mag. 0.0 (AzM 164 Alt 58)
	8:40 PM	8:40 PM	Twilight	Astronomical Twilight ends
	9:51 PM	9:51 PM	Jup GRS	GRS Transit (CML=191)
	11:19 PM	11:19 PM	Moon	Moonset
<b>16</b> Mar 2013	1:13 AM	1:13 AM	Jupiter	Jupiter sets
	4:52 AM	4:52 AM	Sat Pass (ISS)	CHES:ISS Passes S to NE (AzM 97.1 Alt 15)
	5:51 AM	5:51 AM	Twilight	Astronomical Twilight begins
	6:11 AM	6:11 AM	Iridium Flare	CHES:Iridium 51 Flares at mag. 1.2 (AzM 007 Alt 33)
	6:11 AM	6:11 AM	Iridium Flare	CHES:Iridium 7 Flares at mag. 1.8 (AzM 006 Alt 33)
	6:27 AM	6:27 AM	Sat Pass (ISS)	CHES:ISS Passes W to NE (AzM 325.3 Alt 35)
	7:16 AM	7:16 AM	Sun	Sunrise
	7:47 AM	7:47 AM	Jup GRS	GRS Transit (CML=191)
	9:53 AM	9:53 AM	Moon	Moonrise
	10:51 AM	10:51 AM	Jupiter	Jupiter rises
	1:21 PM	1:21 PM	Algol Minima	Algol at mag. +3.4 minimum (+/-5 hours)
	5:43 PM	5:43 PM	Jup GRS	GRS Transit (CML=191)
	7:16 PM	7:16 PM	Sun	Sunset
	7:49 PM	7:49 PM	Iridium Flare	CHES:Iridium 10 Flares at mag. -2.0 (AzM 166 Alt 58)
	8:00 PM	8:00 PM	Diary	Mercury stationary
	8:41 PM	8:41 PM	Twilight	Astronomical Twilight ends
<b>17</b> Mar 2013	12:14 AM	12:14 AM	Moon	Moonset
	1:10 AM	1:10 AM	Jupiter	Jupiter sets
	3:39 AM	3:39 AM	Jup GRS	GRS Transit (CML=191)
	5:36 AM	5:36 AM	Sat Pass (ISS)	CHES:ISS Passes SW to NE (AzM 337.6 Alt 66)

# Norfolk Astronomical Society Astronomical Calendar

February 2013							March 2013							April 2013						
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	9	7	8	9	10	11	12	13
3	4	5	6	7	8	9	10	11	12	13	14	15	16	14	15	16	17	18	19	20
17	18	19	20	21	22	23	17	18	19	20	21	22	23	21	22	23	24	25	26	27
24	25	26	27	28			24	25	26	27	28	29	30	28	29	30				
							31													

## Calendar

	Start	End	Category	Description
<b>17</b> Mar 2013	5:49 AM	5:49 AM	Twilight	Astronomical Twilight begins
	6:05 AM	6:05 AM	Iridium Flare	CHES:Iridium 37 Flares at mag. 1.9 (AzM 006 Alt 31)
	7:15 AM	7:15 AM	Sun	Sunrise
	10:35 AM	10:35 AM	Moon	Moonrise
	10:47 AM	10:47 AM	Jupiter	Jupiter rises
	1:35 PM	1:35 PM	Jup GRS	GRS Transit (CML=191)
	7:17 PM	7:17 PM	Sun	Sunset
	7:43 PM	7:43 PM	Iridium Flare	CHES:Iridium 13 Flares at mag.-1.3 (AzM 163 Alt 58)
	8:42 PM	8:42 PM	Twilight	Astronomical Twilight ends
	9:38 PM	9:38 PM	Lunar Occult	Moon occults 7.1 mag. star SAO93973(d)
	10:00 PM	10:00 PM	Diary	Jupiter 1.4N of Moon
	10:51 PM	10:51 PM	Jup Sats	I.Oc.D
	11:00 PM	11:00 PM	Diary	Aldebaran 3.6S of Moon
	11:30 PM	11:30 PM	Jup GRS	GRS Transit (CML=191)
<b>18</b> Mar 2013	12:13 AM	12:13 AM	Jup Sats	I.Oc.D
	1:06 AM	1:06 AM	Moon	Moonset
	1:07 AM	1:07 AM	Jupiter	Jupiter sets
	4:48 AM	4:48 AM	Sat Pass (ISS)	CHES:ISS Passes SW to NE (AzM 60.5 Alt 17)
	5:47 AM	5:47 AM	Twilight	Astronomical Twilight begins
	6:22 AM	6:22 AM	Sat Pass (ISS)	CHES:ISS Passes W to NE (AzM 332.9 Alt 17)
	7:13 AM	7:13 AM	Sun	Sunrise
	9:26 AM	9:26 AM	Jup GRS	GRS Transit (CML=191)
	10:44 AM	10:44 AM	Jupiter	Jupiter rises
	11:21 AM	11:21 AM	Moon	Moonrise
	7:17 PM	7:17 PM	Sun	Sunset
	7:22 PM	7:22 PM	Jup GRS	GRS Transit (CML=191)
	7:54 PM	7:54 PM	Lunar Occult	Moon occults 6.2 mag. double star 793(D)
	8:43 PM	8:43 PM	Twilight	Astronomical Twilight ends
	9:18 PM	9:18 PM	Lunar Occult	Moon occults 6.2 mag. double star 798(D)
	9:28 PM	9:28 PM	Jup Sats	I.Tr.I
	10:43 PM	10:43 PM	Jup Sats	I.Sh.I
	11:39 PM	11:39 PM	Jup Sats	I.Tr.E
<b>19</b> Mar 2013	12:00 AM	12:00 AM	Diary	Moon at apogee
	1:04 AM	1:04 AM	Jupiter	Jupiter sets
	1:55 AM	1:55 AM	Moon	Moonset
	5:18 AM	5:18 AM	Jup GRS	GRS Transit (CML=191)
	5:32 AM	5:32 AM	Sat Pass (ISS)	CHES:ISS Passes W to NE (AzM 343.8 Alt 25)
	5:46 AM	5:46 AM	Twilight	Astronomical Twilight begins
	5:53 AM	5:53 AM	Iridium Flare	CHES:Iridium 5 Flares at mag. 1.6 (AzM 007 Alt 28)

## Norfolk Astronomical Society Astronomical Calendar

February 2013							March 2013							April 2013								
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S		
					1	2						1	2				1	2	3	4	5	6
3	4	5	6	7	8	9	3	4	5	6	7	8	9	7	8	9	10	11	12	13		
10	11	12	13	14	15	16	10	11	12	13	14	15	16	14	15	16	17	18	19	20		
17	18	19	20	21	22	23	17	18	19	20	21	22	23	21	22	23	24	25	26	27		
24	25	26	27	28			24	25	26	27	28	29	30	28	29	30						
							31															

## Calendar

	Start	End	Category	Description
<b>19</b> Mar 2013	7:12 AM	7:12 AM	Sun	Sunrise
	10:10 AM	10:10 AM	Algol Minima	Algol at mag. +3.4 minimum (+/-5 hours)
	10:41 AM	10:41 AM	Jupiter	Jupiter rises
	12:10 PM	12:10 PM	Moon	Moonrise
	1:00 PM	1:00 PM	Diary	Jupiter 5.0N of Aldebaran
	2:00 PM	2:00 PM	Diary	FIRST QUARTER
	3:14 PM	3:14 PM	Jup GRS	GRS Transit (CML=191)
	5:55 PM	5:55 PM	Iridium Flare	CHES:Iridium 97 Flares at mag.-6.6 (Azm 229 Alt 44)
	7:18 PM	7:18 PM	Sun	Sunset
	8:05 PM	8:05 PM	Jup Sats	II.Tr.E
	8:07 PM	8:07 PM	Jup Sats	II.Sh.I
	8:37 PM	8:37 PM	Jup Sats	III.Ec.D
	8:44 PM	8:44 PM	Twilight	Astronomical Twilight ends
	10:09 PM	10:09 PM	Jup Sats	I.Ec.R
	10:32 PM	10:32 PM	Jup Sats	II.Sh.E
	11:05 PM	11:05 PM	Jup Sats	III.Ec.R
	11:11 PM	11:11 PM	Lunar Occult	Moon occults 5.2 mag. double star 947(D) 71 Ori
<b>20</b> Mar 2013	1:00 AM	1:00 AM	Jupiter	Jupiter sets
	1:10 AM	1:10 AM	Jup GRS	GRS Transit (CML=191)
	2:40 AM	2:40 AM	Moon	Moonset
	4:43 AM	4:43 AM	Sat Pass (ISS)	CHES:ISS Passes SW to NE (Azm 35.5 Alt 14)
	5:41 AM	5:41 AM	Iridium Flare	CHES:Iridium 36 Flares at mag. 0.1 (Azm 011 Alt 22)
	5:43 AM	5:43 AM	Iridium Flare	CHES:Iridium 4 Flares at mag.-1.4 (Azm 009 Alt 24)
	5:44 AM	5:44 AM	Twilight	Astronomical Twilight begins
	7:00 AM	7:00 AM	Diary	Equinox
	7:10 AM	7:10 AM	Sun	Sunrise
	10:37 AM	10:37 AM	Jupiter	Jupiter rises
	11:06 AM	11:06 AM	Jup GRS	GRS Transit (CML=191)
	1:02 PM	1:02 PM	Moon	Moonrise
	7:19 PM	7:19 PM	Sun	Sunset
	8:45 PM	8:45 PM	Twilight	Astronomical Twilight ends
	9:01 PM	9:01 PM	Jup GRS	GRS Transit (CML=191)
	9:29 PM	9:29 PM	Lunar Occult	Moon occults 6.0 mag. double star ZC1072(D) NP Gem
<b>21</b> Mar 2013	12:57 AM	12:57 AM	Jupiter	Jupiter sets
	3:21 AM	3:21 AM	Moon	Moonset
	5:43 AM	5:43 AM	Twilight	Astronomical Twilight begins
	6:57 AM	6:57 AM	Jup GRS	GRS Transit (CML=191)
	7:09 AM	7:09 AM	Sun	Sunrise
	9:36 AM	9:36 AM	Iridium Flare	CHES:Iridium 38 Flares at mag.-7.3 (Azm 103 Alt 64)

# Norfolk Astronomical Society Astronomical Calendar

February 2013							March 2013							April 2013						
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	9	1	2	3	4	5	6	
3	4	5	6	7	8	9	10	11	12	13	14	15	16	7	8	9	10	11	12	13
10	11	12	13	14	15	16	17	18	19	20	21	22	23	14	15	16	17	18	19	20
17	18	19	20	21	22	23	24	25	26	27	28	29	30	21	22	23	24	25	26	27
24	25	26	27	28			31							28	29	30				

## Calendar

	Start	End	Category	Description
<b>21</b> Mar 2013	10:34 AM	10:34 AM	Jupiter	Jupiter rises
	1:56 PM	1:56 PM	Moon	Moonrise
	4:53 PM	4:53 PM	Jup GRS	GRS Transit (CML=191)
	7:20 PM	7:20 PM	Sun	Sunset
	8:46 PM	8:46 PM	Twilight	Astronomical Twilight ends
<b>22</b> Mar 2013	12:54 AM	12:54 AM	Jupiter	Jupiter sets
	2:49 AM	2:49 AM	Jup GRS	GRS Transit (CML=191)
	4:00 AM	4:00 AM	Moon	Moonset
	4:37 AM	4:37 AM	Sat Pass (ISS)	CHES:ISS Passes W to NE (AzM 21.9 Alt 10)
	5:27 AM	5:27 AM	Iridium Flare	CHES:Iridium 34 Flares at mag. 0.4 (AzM 011 Alt 17)
	5:41 AM	5:41 AM	Twilight	Astronomical Twilight begins
	6:59 AM	6:59 AM	Algol Minima	Algol at mag. +3.4 minimum (+/-5 hours)
	7:08 AM	7:08 AM	Sun	Sunrise
	10:30 AM	10:30 AM	Jupiter	Jupiter rises
	12:45 PM	12:45 PM	Jup GRS	GRS Transit (CML=191)
	2:53 PM	2:53 PM	Moon	Moonrise
	3:00 PM	3:00 PM	Diary	Mars 0.0N of Uranus
	7:21 PM	7:21 PM	Sun	Sunset
8:46 PM	8:46 PM	Twilight	Astronomical Twilight ends	
9:32 PM	9:32 PM	Lunar Occult	Moon occults 5.6 mag. double star ZC1309(D) 45 Cnc	
10:40 PM	10:40 PM	Jup GRS	GRS Transit (CML=191)	
<b>23</b> Mar 2013	12:19 AM	12:19 AM	Lunar Occult	Moon occults 5.9 mag. star ZC1318(D) 50 Cnc
	12:51 AM	12:51 AM	Jupiter	Jupiter sets
	4:36 AM	4:36 AM	Moon	Moonset
	5:21 AM	5:21 AM	Iridium Flare	CHES:Iridium 5 Flares at mag.-1.0 (AzM 011 Alt 15)
	5:40 AM	5:40 AM	Twilight	Astronomical Twilight begins
	7:06 AM	7:06 AM	Sun	Sunrise
	8:36 AM	8:36 AM	Jup GRS	GRS Transit (CML=191)
	10:27 AM	10:27 AM	Jupiter	Jupiter rises
	3:52 PM	3:52 PM	Moon	Moonrise
	6:32 PM	6:32 PM	Jup GRS	GRS Transit (CML=191)
	7:16 PM	7:16 PM	Iridium Flare	CHES:Iridium 10 Flares at mag.-8.1 (AzM 185 Alt 61)
	7:22 PM	7:22 PM	Sun	Sunset
	8:47 PM	8:47 PM	Twilight	Astronomical Twilight ends
9:01 PM	9:01 PM	Iridium Flare	CHES:Iridium 77 Flares at mag. 0.5 (AzM 123 Alt 52)	
<b>24</b> Mar 2013	12:48 AM	12:48 AM	Jupiter	Jupiter sets
	4:28 AM	4:28 AM	Jup GRS	GRS Transit (CML=191)
	5:10 AM	5:10 AM	Moon	Moonset
	5:11 AM	5:11 AM	Iridium Flare	CHES:Iridium 4 Flares at mag.-4.0 (AzM 012 Alt 11)

## Norfolk Astronomical Society Astronomical Calendar

February 2013							March 2013							April 2013						
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	9	1	2	3	4	5	6	
3	4	5	6	7	8	9	10	11	12	13	14	15	16	7	8	9	10	11	12	13
10	11	12	13	14	15	16	17	18	19	20	21	22	23	14	15	16	17	18	19	20
17	18	19	20	21	22	23	24	25	26	27	28	29	30	21	22	23	24	25	26	27
24	25	26	27	28			31							28	29	30				

## Calendar

	Start	End	Category	Description
<b>24</b> Mar 2013	5:15 AM	5:15 AM	Iridium Flare	CHES:Iridium 8 Flares at mag.-1.0 (Azm 011 Alt 14)
	5:38 AM	5:38 AM	Twilight	Astronomical Twilight begins
	6:35 AM	6:35 AM	C/2011L4	Comet Pan-STARRS makes morning debut
	7:05 AM	7:05 AM	Sun	Sunrise
	10:24 AM	10:24 AM	Jupiter	Jupiter rises
	12:00 PM	12:00 PM	Diary	Regulus 5.4N of Moon
	2:24 PM	2:24 PM	Jup GRS	GRS Transit (CML=191)
	4:52 PM	4:52 PM	Moon	Moonrise
	7:23 PM	7:23 PM	Sun	Sunset
	8:48 PM	8:48 PM	Twilight	Astronomical Twilight ends
	8:55 PM	8:55 PM	Iridium Flare	CHES:Iridium 82 Flares at mag.-6.4 (Azm 121 Alt 50)
<b>25</b> Mar 2013	12:06 AM	12:06 AM	Lunar Occult	Moon occults 6.7 mag. double star ZC1528(d) RX Sex
	12:20 AM	12:20 AM	Jup GRS	GRS Transit (CML=191)
	12:44 AM	12:44 AM	Jupiter	Jupiter sets
	3:48 AM	3:48 AM	Algol Minima	Algol at mag. +3.4 minimum (+/-5 hours)
	5:09 AM	5:09 AM	Iridium Flare	CHES:Iridium 61 Flares at mag. 1.4 (Azm 011 Alt 13)
	5:36 AM	5:36 AM	Twilight	Astronomical Twilight begins
	5:43 AM	5:43 AM	Moon	Moonset
	7:03 AM	7:03 AM	Sun	Sunrise
	10:16 AM	10:16 AM	Jup GRS	GRS Transit (CML=191)
	10:20 AM	10:20 AM	Jupiter	Jupiter rises
	5:54 PM	5:54 PM	Moon	Moonrise
	6:00 PM	6:00 PM	Meetings	NAS Regular Meeting at Chesapeake Public Library Major Hillard branch
	7:23 PM	7:23 PM	Sun	Sunset
	8:11 PM	8:11 PM	Jup GRS	GRS Transit (CML=191)
	8:49 PM	8:49 PM	Twilight	Astronomical Twilight ends
	8:49 PM	8:49 PM	Iridium Flare	CHES:Iridium 18 Flares at mag. 0.2 (Azm 121 Alt 49)
	8:50 PM	8:50 PM	Iridium Flare	CHES:Iridium 98 Flares at mag. 1.7 (Azm 119 Alt 47)
	9:40 PM	9:40 PM	Lunar Occult	Moon occults 5.4 mag. star ZC1623(D) 69 Leo
	11:26 PM	11:26 PM	Jup Sats	I.Tr.I
<b>26</b> Mar 2013	12:41 AM	12:41 AM	Jupiter	Jupiter sets
	5:35 AM	5:35 AM	Twilight	Astronomical Twilight begins
	6:07 AM	6:07 AM	Jup GRS	GRS Transit (CML=191)
	6:16 AM	6:16 AM	Moon	Moonset
	7:02 AM	7:02 AM	Sun	Sunrise
	7:12 AM	7:12 AM	Iridium Flare	CHES:Iridium 54 Flares at mag.-6.1 (Azm 025 Alt 51)
	10:17 AM	10:17 AM	Jupiter	Jupiter rises
	4:03 PM	4:03 PM	Jup GRS	GRS Transit (CML=191)
	6:58 PM	6:58 PM	Moon	Moonrise

## Norfolk Astronomical Society Astronomical Calendar

February 2013							March 2013							April 2013						
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	9	7	8	9	10	11	12	13
3	4	5	6	7	8	9	10	11	12	13	14	15	16	14	15	16	17	18	19	20
17	18	19	20	21	22	23	17	18	19	20	21	22	23	21	22	23	24	25	26	27
24	25	26	27	28			24	25	26	27	28	29	30	28	29	30				
							31													

## Calendar

	Start	End	Category	Description
<b>26</b> Mar 2013	7:24 PM	7:24 PM	Sun	Sunset
	7:45 PM	7:45 PM	Jup Sats	III.Oc.D
	8:21 PM	8:21 PM	Jup Sats	II.Tr.I
	8:41 PM	8:41 PM	Jup Sats	I.Oc.D
	8:47 PM	8:47 PM	Iridium Flare	CHES:Iridium 17 Flares at mag. 1.2 (Azm 129 Alt 57)
	8:50 PM	8:50 PM	Twilight	Astronomical Twilight ends
	10:14 PM	10:14 PM	Jup Sats	III.Oc.R
	10:42 PM	10:42 PM	Jup Sats	II.Sh.I
	10:47 PM	10:47 PM	Jup Sats	II.Tr.E
<b>27</b> Mar 2013	12:05 AM	12:05 AM	Jup Sats	I.Ec.R
	12:38 AM	12:38 AM	Jupiter	Jupiter sets
	1:59 AM	1:59 AM	Jup GRS	GRS Transit (CML=191)
	5:33 AM	5:33 AM	Twilight	Astronomical Twilight begins
	6:00 AM	6:00 AM	Diary	FULL MOON
	6:51 AM	6:51 AM	Moon	Moonset
	7:00 AM	7:00 AM	Sun	Sunrise
	10:13 AM	10:13 AM	Jupiter	Jupiter rises
	11:55 AM	11:55 AM	Jup GRS	GRS Transit (CML=191)
	7:25 PM	7:25 PM	Sun	Sunset
	8:03 PM	8:03 PM	Moon	Moonrise
	8:08 PM	8:08 PM	Jup Sats	I.Tr.E
	8:51 PM	8:51 PM	Twilight	Astronomical Twilight ends
	9:19 PM	9:19 PM	Jup Sats	I.Sh.E
	9:50 PM	9:50 PM	Jup GRS	GRS Transit (CML=191)
<b>28</b> Mar 2013	12:35 AM	12:35 AM	Jupiter	Jupiter sets
	12:37 AM	12:37 AM	Algol Minima	Algol at mag. +3.4 minimum (+/-5 hours)
	4:40 AM	4:40 AM	Lunar Occult	Moon occults 5.2 mag. star ZC1884(R) 49 Vir
	5:32 AM	5:32 AM	Twilight	Astronomical Twilight begins
	6:59 AM	6:59 AM	Sun	Sunrise
	7:29 AM	7:29 AM	Moon	Moonset
	7:46 AM	7:46 AM	Jup GRS	GRS Transit (CML=191)
	9:02 AM	9:02 AM	Iridium Flare	CHES:Iridium 39 Flares at mag.-7.3 (Azm 082 Alt 64)
	10:10 AM	10:10 AM	Jupiter	Jupiter rises
	11:00 AM	11:00 AM	Diary	Spica 0.0N of Moon Occn
	2:00 PM	2:00 PM	Diary	Venus superior conjunction
	5:42 PM	5:42 PM	Jup GRS	GRS Transit (CML=191)
	7:26 PM	7:26 PM	Sun	Sunset
	7:53 PM	7:53 PM	Jup Sats	II.Ec.R
	8:00 PM	8:00 PM	Diary	Venus 0.7S of Uranus



## Norfolk Astronomical Society Astronomical Calendar

February 2013							March 2013							April 2013						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
					1	2						1	2		1	2	3	4	5	6
3	4	5	6	7	8	9	3	4	5	6	7	8	9	7	8	9	10	11	12	13
10	11	12	13	14	15	16	10	11	12	13	14	15	16	14	15	16	17	18	19	20
17	18	19	20	21	22	23	17	18	19	20	21	22	23	21	22	23	24	25	26	27
24	25	26	27	28			24	25	26	27	28	29	30	28	29	30				
							31													

## Calendar

	Start	End	Category	Description
<b>28</b> Mar 2013	8:40 PM	8:40 PM	Iridium Flare	CHES:Iridium 43 Flares at mag. 0.6 (Azm 131 Alt 58)
	8:52 PM	8:52 PM	Twilight	Astronomical Twilight ends
	9:00 PM	9:00 PM	Diary	Uranus at conjunction
	9:11 PM	9:11 PM	Moon	Moonrise
<b>29</b> Mar 2013	12:32 AM	12:32 AM	Jupiter	Jupiter sets
	3:38 AM	3:38 AM	Jup GRS	GRS Transit (CML=191)
	4:36 AM	4:36 AM	Lunar Occult	Moon occults 6.3 mag. star ZC2017(r)
	5:30 AM	5:30 AM	Twilight	Astronomical Twilight begins
	6:44 AM	6:44 AM	Sat Pass (ISS)	CHES:ISS Passes NW to E (Azm 30.4 Alt 22)
	6:57 AM	6:57 AM	Sun	Sunrise
	8:10 AM	8:10 AM	Moon	Moonsset
	10:07 AM	10:07 AM	Jupiter	Jupiter rises
	1:34 PM	1:34 PM	Jup GRS	GRS Transit (CML=191)
	3:00 PM	3:00 PM	Diary	Saturn 3.3N of Moon
	6:48 PM	6:48 PM	Iridium Flare	CHES:Iridium 52 Flares at mag.-6.3 (Azm 203 Alt 60)
	7:27 PM	7:27 PM	Sun	Sunset
	8:33 PM	8:33 PM	Iridium Flare	CHES:Iridium 40 Flares at mag.-2.1 (Azm 131 Alt 58)
	8:53 PM	8:53 PM	Twilight	Astronomical Twilight ends
	10:18 PM	10:18 PM	Moon	Moonrise
	11:29 PM	11:29 PM	Jup GRS	GRS Transit (CML=191)
<b>30</b> Mar 2013	12:28 AM	12:28 AM	Jupiter	Jupiter sets
	5:28 AM	5:28 AM	Twilight	Astronomical Twilight begins
	6:48 AM	6:48 AM	Iridium Flare	CHES:Iridium 12 Flares at mag.-5.2 (Azm 022 Alt 44)
	6:56 AM	6:56 AM	Sun	Sunrise
	8:50 AM	8:50 AM	Iridium Flare	CHES:Iridium 41 Flares at mag.-5.6 (Azm 075 Alt 64)
	8:56 AM	8:56 AM	Moon	Moonsset
	9:26 AM	9:26 AM	Jup GRS	GRS Transit (CML=191)
	10:03 AM	10:03 AM	Jupiter	Jupiter rises
	7:21 PM	7:21 PM	Jup GRS	GRS Transit (CML=191)
	7:28 PM	7:28 PM	Sun	Sunset
	8:27 PM	8:27 PM	Iridium Flare	CHES:Iridium 77 Flares at mag.-7.6 (Azm 132 Alt 58)
	8:54 PM	8:54 PM	Twilight	Astronomical Twilight ends
	9:26 PM	9:26 PM	Algol Minima	Algol at mag. +3.4 minimum (+/-5 hours)
	11:00 PM	11:00 PM	Diary	Moon at perigee
	11:25 PM	11:25 PM	Moon	Moonrise
<b>31</b> Mar 2013	12:00 AM	12:00 AM	Public Holiday	Easter
	12:25 AM	12:25 AM	Jupiter	Jupiter sets
	5:17 AM	5:17 AM	Jup GRS	GRS Transit (CML=191)
	5:27 AM	5:27 AM	Twilight	Astronomical Twilight begins

# Norfolk Astronomical Society Astronomical Calendar

February 2013							March 2013							April 2013						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
				1	2						1	2			1	2	3	4	5	6
3	4	5	6	7	8	9	3	4	5	6	7	8	9	7	8	9	10	11	12	13
10	11	12	13	14	15	16	10	11	12	13	14	15	16	14	15	16	17	18	19	20
17	18	19	20	21	22	23	17	18	19	20	21	22	23	21	22	23	24	25	26	27
24	25	26	27	28			24	25	26	27	28	29	30	28	29	30				
							31													

## Calendar

	Start	End	Category	Description
<b>31</b> Mar 2013	6:38 AM	6:38 AM	Sat Pass (ISS)	CHES:ISS Passes NW to SE (AzM 37.9 Alt 50)
	6:54 AM	6:54 AM	Sun	Sunrise
	9:48 AM	9:48 AM	Moon	Moonset
	10:00 AM	10:00 AM	Jupiter	Jupiter rises
	3:13 PM	3:13 PM	Jup GRS	GRS Transit (CML=191)
	7:29 PM	7:29 PM	Sun	Sunset
	8:00 PM	8:00 PM	Diary	Mercury greatest elong W(28)
	8:22 PM	8:22 PM	Iridium Flare	CHES:Iridium 82 Flares at mag. 1.3 (AzM 129 Alt 56)
	8:55 PM	8:55 PM	Twilight	Astronomical Twilight ends