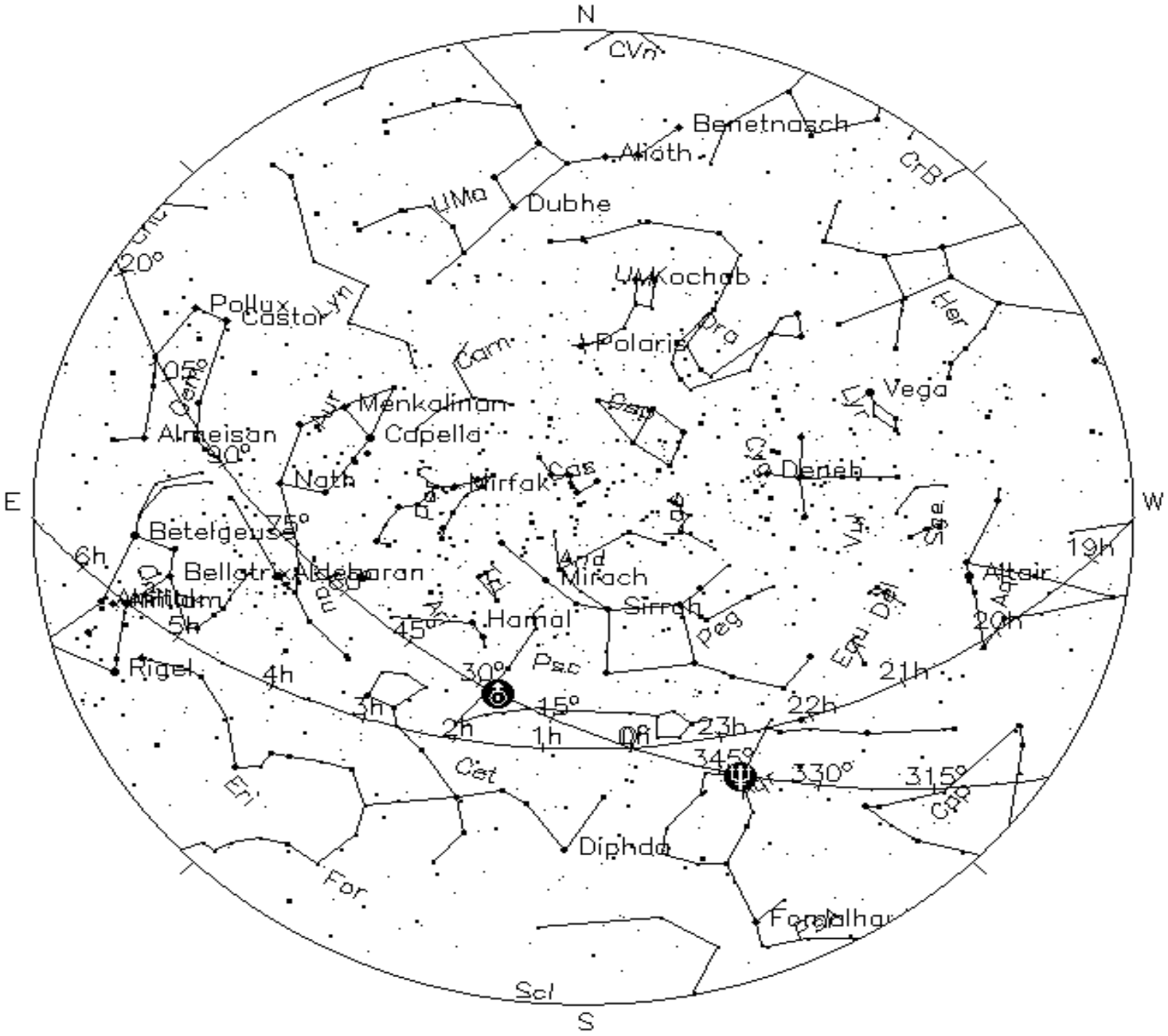
Wessex Sky Notes - 2017 November 15 at 2100 UTC VOL 10 No 11



Aspect of the sky from 50 45 N : 2º 00' W at 21:00 UTC

Map from www.fourmilab.ch

Lunar Phases Full: Nov. 4th at 05:23; Last Qtr: Nov 10th at 20:36.; New: Nov. 18th, at 11:42.; 1st Qtr: Nov. 26th at 17:03

Apsides: Perigee (closest), Nov. 6th at 00:09, 361438 km, (33' 03"); Apogee (furthest), Nov 21st at 18:52, 406132 km, (29' 25")

Mercury (☿)**:** is back in the evening sky, hugging the SW horizon at sunset. It is at greatest Eastern elongation on the 14th. It will lie south of Saturn on the 27th. but only 3 degrees above the SW horizon (mag.-0.2) at end of civil twilight! * so not easy!

Venus (♀)**:** is dropping in toward the Sun now. It will be close to Jupiter on the 13th, as that planet slides out into the bright morning twilight. Moon near on the 17th , both planets within 8 degrees of the horizon at start of civil twilight,* so will be difficult to observe.

Mars (♂)**:** will be 20 degrees above the ESE horizon by start of civil twilight * at month's beginning . Moon near on the 15th.

Jupiter (♃)**:** begins to enter the morning twilight (Civil *) rising at 06:00 by mid month. Moon is close on the 16th.

Saturn (♄)**:** is still visible in the SW sky and will be close to Mercury on the 27th but observation will be extremely difficult needing a good horizon at azimuth 225°. A telescope is almost certainly required. Moon near on 20th and 21st .

Uranus (♅)**:** will be well on view and will culminate on the meridian at 22:00 mid month. Moon near on the 2nd. and 30th.

Neptune (♆)*:* sets at 00:45 by mid month, in Aquarius, observable as a small, bluish disk, 2.5 arc-sec.mag 7.9. Moon near on 26th.

Meteors The ***Leonids*** peak on the 17th/18th, now a fairly week affair but keep watching anyway. The Moon is New then so the shower will be favourable from that point of view.

The **Taurids** peak on the 12th and are fairly favourable re the moon, just past last quarter. * means see notes in The 3 Twilights.

Sunrise - set times	Transit	Times in UTC			Transit		
Nov. 01 Rise: 06:59:53	11:51:36	Set: 16:42:36	Nov. 16 Rise: 07:25:22	11:52:49	Set: 16:19:43	Dec. 01 Rise: 07:48:19	
Nov. 06 Rise 07:08:27	11:51:39	Set: 16:34:11	Nov. 21 Rise: 07:33:29	11:53:56	Set: 16:13:53	Transit: 11:57:07	
Nov. 11 Rise 07:16:59	11:52:03	Set: 16:26:31	Nov. 26 Rise: 07:41:12	11:55:22	Set: 16:09:08	Set: 16:05:34	

Moonrise - set times	Transit	Times in UTC			Transit		
Nov. 01 Rise: 15:54:56	22:00:40	Set: 03:04:20	Nov. 16 Rise: 04:50:18	10:27:52	Set: 15:55:59	Dec. 01 Rise: 15:16:01	
Nov. 06 Rise: 18:44:38	01:40:25	Set: 09:31:47	Nov. 21 Rise: 09:56:27	14:19:44	Set: 18:42:01	Transit: 22:22:56	
Nov. 11 Rise --:--:--	06:32:32	Set: 13:51:15	Nov. 26 Rise: 13:05:19	18:15:09	Set: 23:33:31	Set: 04:24:16	

(Transit time is the time when the object crosses the sky meridian, i.e. the N - S line)

B Persei, ***(Algol)*** (mag 2.1 to 3.4) - the visible minima are; 8th at 03:56; 11th at 00:45; 13th at 21:34 16th at 18:23 and 28th at 05:39. The duration of the event is 9.6 hours and the period between events is 2.867335 days.

RZ Cassiopeiae (mag 6.2 - 7.7) - Visible minima are; 2nd at 04:04; 5th at 18:07; 6th at 22:48; 11th at 17:33; 12th at 22:14; 14th at 02:55; 20th at 02:21; 24th at 21:05; 26th at 01:46 and 30th at 20:31. The duration of minima events is 4.8 hours and the period between them is 1.19525 days. RZ Cass. is an Algol type eclipsing binary, and is circumpolar at our latitude.

Lambda Tauri (mag 3.4 - 3.9) - there are 4 opportunities to observe minima this month, 18th at 04:50; 22nd at 03:42; 26th at 02:35 and 30th at 01:27. For info. the period between events is 3.953 days.

For observations of the ***ISS*** during the month, log-in to http://www.heavens-above.com The morning passes for November, starting on the 1st through to the 17th, then evening passes from 28th till Dec 2nd follow on page 3.

The next ***Durston event*** will be on Friday 17th of November, at 19:30 (7.30 pm.) when the Leonids, (late), star-clusters, nebulae, galaxies and Autumn/Winter constellations will be on view, hopefully. Bob Mizon will give the usual talk, if available.
The event on Oct.27th was attended by nearly 50 folks who enjoyed Bob M's talks until the sky cleared mid evening, by account from Alan J.
The Oct 7th event had a doubtful forecast, but again, according to Alan's report , a few hardy souls turned up and, with the sky clearing by 8pm, enjoyed views of Saturn, M31, M57, Albireo and other delights. Once again I was unable to be at either meeting due to family commitments. However, I hope to be at the November 7th normal meeting, all being well.

Solar news: Due to some coronal hole actitvity during October, especially between the 11th to 15th the Kp index reached 4.5 or more (storm) on these dates. So, keep watching http://www.spaceweather.com Check the auroral oval for Europe.
There has also been some sunspots during this period. Keep your eyes peeled for any auroral activity, less likely in the south at the moment. I am considering renewing the aurora list as I'm sure its well out of date now!.

Timings for the ***Great Red Spot (GRS)*** - : Jupiter is not well placed to make GRS sightings worthwhile just now.

Meteor activity: Keep your eye on the Norman Lockyer Observatory web-page at www.merriot-astro.co.uk/spam3d.htm for the meteor ping graphics on their monitoring site especially around the night of the 17th/18th, the peak of the Leonids. Look out also on the 12th for the Taurids. Also try http://www.topaz-streamguys.tv/~spaceweather/ (note the tilde character!) for live sound streaming from a Texas facility similar to the French one near Dijon. Note: The NLO is running live streaming from two dark sky cameras, at their site. Take a look at these also. They are linked to from the S.P.A.M. page. Both these showers are weak.

The Moon will occult the star Aldebaran on the 6th, (02:38 disappearance - 03:19 reappearance), and other stars - start looking at 22:30 or so on the 5th, for these. The moon is just past full so the reappearances will happen from the (only just) dark limb.

* ***Notes on onset of the 3 'twilights'***:

Civil twilight: Sun 0 - 6 degrees below horizon
Nautical twilight: Sun 6 - 12 degrees below horizon
Astronomical twilight: Sun 12 -18 degrees below horizon, thereafter a completely dark sky - light pollution permitting!

So to make it clear, in the morning the sky brightness goes from dark to beginning of Astronomical twilight (sun 18° below horizon.) then end of Astronomical twilight and start of Nautical at 12° below, then end of Nautical and start of Civil twilight at 6° below, to end of Civil twilight at Sunrise- effectively full daylight.
In the evening the reverse happens with start of Civil twilight at sunset, end of Civil - start of Nautical at 6° below horizon, end of Nautical - start of Astronomical at 12° below horizon, and end of Astronomical twilight when the Sun reaches 18° below the horizon, thence the sky is deemed as dark as it will get. - Hope you were all able to follow that!

Good Observing. Robert Hatch 2017 November 1

Passes for the ISS in November

All early morning passes till the 17th then evening passes from the 28th.

Date	Brightness	Start			Highest point			End			Pass type
	(mag)	Time	Alt.	Az.	Time	Alt.	Az.	Time	Alt.	Az.	
29 Oct	-0.4	05:48:17	10°	SE	05:48:47	10°	SE	05:49:17	10°	SE	visible
31 Oct	-1.2	05:37:41	10°	S	05:40:06	19°	SE	05:42:31	10°	E	visible
01 Nov	-0.9	04:46:32	10°	SSE	04:47:55	12°	SE	04:49:20	10°	ESE	visible
01 Nov	-3.0	06:20:38	10°	SW	06:23:48	50°	SSE	06:26:59	10°	E	visible
02 Nov	-2.4	05:28:55	13°	SSW	05:31:28	34°	SSE	05:34:28	10°	E	visible
03 Nov	-1.8	04:39:01	22°	SSE	04:39:11	22°	SE	04:41:48	10°	E	visible
03 Nov	-3.7	06:12:04	10°	WSW	06:15:19	78°	SSE	06:18:35	10°	ENE	visible
04 Nov	-3.4	05:21:39	32°	SW	05:22:54	57°	SSE	05:26:06	10°	ENE	visible
05 Nov	-2.0	04:31:30	30°	ESE	04:31:30	30°	ESE	04:33:34	10°	E	visible
05 Nov	-3.9	06:04:10	14°	W	06:06:51	81°	N	06:10:07	10°	E	visible
06 Nov	-3.9	05:13:56	65°	WSW	05:14:21	84°	S	05:17:37	10°	ENE	visible
07 Nov	-1.5	04:23:38	24°	E	04:23:38	24°	E	04:25:07	10°	ENE	visible
07 Nov	-3.8	05:56:17	20°	W	05:58:22	73°	N	06:01:38	10°	E	visible
08 Nov	-3.8	05:05:56	75°	NNE	05:05:56	75°	NNE	05:09:05	10°	E	visible
09 Nov	-1.0	04:15:33	18°	ENE	04:15:33	18°	ENE	04:16:33	10°	ENE	visible
09 Nov	-3.9	05:48:12	27°	WNW	05:49:49	78°	N	05:53:05	10°	E	visible
10 Nov	-3.3	04:57:48	56°	ENE	04:57:48	56°	ENE	05:00:31	10°	E	visible
10 Nov	-3.6	06:30:30	10°	WNW	06:33:44	62°	SSW	06:36:56	10°	ESE	visible
11 Nov	-0.5	04:07:24	14°	E	04:07:24	14°	E	04:07:56	10°	E	visible
11 Nov	-3.9	05:40:02	37°	W	05:41:12	83°	SSW	05:44:28	10°	ESE	visible
12 Nov	-2.6	04:49:38	41°	E	04:49:38	41°	E	04:51:54	10°	E	visible
12 Nov	-2.9	06:22:17	12°	W	06:24:58	37°	SSW	06:28:00	10°	SE	visible
13 Nov	-0.2	03:59:15	10°	E	03:59:15	10°	E	03:59:17	10°	E	visible
13 Nov	-3.6	05:31:54	46°	WSW	05:32:28	55°	SSW	05:35:40	10°	SE	visible
14 Nov	-1.8	04:41:33	27°	ESE	04:41:33	27°	ESE	04:43:11	10°	ESE	visible
14 Nov	-2.1	06:14:11	14°	WSW	06:16:02	21°	SW	06:18:36	10°	SSE	visible
15 Nov	-2.7	05:23:53	32°	SSW	05:23:53	32°	SSW	05:26:34	10°	SE	visible
16 Nov	-1.0	04:33:37	15°	SE	04:33:37	15°	SE	04:34:15	10°	SE	visible
16 Nov	-1.5	06:06:16	11°	SW	06:06:57	12°	SW	06:08:12	10°	SSW	visible
17 Nov	-1.4	05:16:04	14°	S	05:16:04	14°	S	05:16:56	10°	S	visible
28 Nov	-1.4	18:39:43	10°	SSW	18:40:45	17°	SSW	18:40:45	17°	SSW	visible
29 Nov	-2.0	17:47:39	10°	S	17:49:58	18°	SE	17:50:16	18°	SE	visible
29 Nov	-0.4	19:22:45	10°	WSW	19:22:54	11°	WSW	19:22:54	11°	WSW	visible
30 Nov	-1.4	16:56:20	10°	SSE	16:57:26	11°	SE	16:58:33	10°	ESE	visible
30 Nov	-2.5	18:30:06	10°	SW	18:32:20	35°	SSW	18:32:20	35°	SSW	visible
01 Dec	-2.7	17:37:37	10°	SSW	17:40:34	31°	SSE	17:41:42	24°	ESE	visible
01 Dec	-0.8	19:13:31	10°	WSW	19:14:19	16°	WSW	19:14:19	16°	WSW	visible
02 Dec	-2.0	16:45:23	10°	SSW	16:47:55	21°	SE	16:50:27	10°	E	visible
02 Dec	-3.5	18:20:43	10°	WSW	18:23:38	64°	SW	18:23:38	64°	SW	visible