



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

Map from www.fourmilab.ch

Earth: The Summer solstice occurs on June 21st at 04:23 UT. The sky does not reach full darkness this month at our latitude.

Lunar Phases: New: Jun. 24th at 02:30; 1st Qtr: 1st at 12:42; Full: 9th at 13:09; Last Qtr: 17th at 11:32.

Apsides: Perigee (closest), Jun. 23rd at 10:51, 357937 km, (33' 23"); Apogee (furthest), Jun. 18th at 22:20, 406401, (29' 24").

Mercury (☿): is not visible this month being in Superior Conjunction on the 21st (thence becoming an evening star)

Venus (♀): continues to lie low in the bright morning twilight. Moon is near on the 21st.

Jupiter (♃): is pulling round to the western sky and sets at 01:00 mid month. Moon near on the 3rd and 30th. See later for the GRS.

Saturn (♄): is at opposition on the 15th so will be visible all night. The rings are still reasonably open. Moon is near on the 10th.

Uranus (♅): rises at 01:20, mid month and may be glimpsed an hour or so before onset of am twilight. Moon is near on the 20th.

Neptune (♆): rises at 00:15 mid month and should be visible, mag. 5.8. Moon is close on the 16th /17th.

Meteors There are no major showers in June save the June Lyrids peaking on the 15th, with up to 8 - 10 meteors per hour, (when discovered!) Its limits are 10th to 21st. It was discovered in 1966 by an S. Dvorak, who was camping in the San Bernardino mountains, when he spotted a bright blue meteor coming from Lyra, and others followed from the same point in the sky.

<u>Sunrise - set: times</u>			Transit			Times in UTC			Transit		
Jun. 01	Rise: 03:59:58	12:05:52	Set:20:12:23	Jun. 16	Rise: 03:54:00	12:08:44	Set: 20:23:37	Jul. 01	Rise: 03:58:59		
Jun. 06	Rise: 03:56:46	12:06:43	Set:20:17:08	Jun. 21	Rise: 03:54:29	12:09:49	Set: 20:25:09		Transit: 12:11:55		
Jun. 11	Rise: 03:54:46	12:07:41	Set:20:20:55	Jun. 26	Rise: 03:56:10	12:10:54	Set: 20:25:28		Set: 20:24:31		

<u>Moonrise - set times</u>			Transit			Times in UTC			Transit		
Jun. 01	Rise: 11:35:27	18:30:57	Set: 00:47:24	Jun. 16	Rise: ---:--:--	05:17:31	Set: 10:47:13	Jul. 01	Rise: 12:45:20		
Jun. 06	Rise: 17:02:39	22:12:39	Set: 02:49:10	Jun. 21	Rise: 02:14:59	09:31:38	Set: 17:01:08		Transit: 18:43:10		
Jun. 11	Rise: 21:39:43	01:18:28	Set: 05:43:55	Jun. 26	Rise: 06:50:13	14:36:37	Set: 22:12:41		Set: 00:07:39		

(--:--:-- means Moon rises at 23:56:52 on the 15th)

B Persei (Algol) (mag 2.1 to 3.4) - there are no opportunities for observation this month. The star is just above the northern horizon, during darkness. (The duration of the event is 9.6 hours and the period between events is 2.866 days.)

RZ Cassiopeiae (mag 6.2 - 7.7) - the 2 possible sightings are: 1st at 00:04 and 6th at 23:30. (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 3.37 - 3.91) - there are no minima visible from Britain this month, they either occur during daylight hours, or the star is below the horizon. (The duration is 14.2 hours - info only)

For observations of the **ISS** during the month, log-in to <http://www.heavens-above.com>. Timings for late evening passes follow on page 3.

Public observation events are suspended till August due to the light summer evenings. More information on this will follow later, as appropriate.

Solar news: The sun is now inactive, spot wise, but is given to outburst from coronal holes, so keep watching <http://www.spaceweather.com> however, you never know what might happen still. Check the auroral oval for Europe. Aurora list members, again, please keep your list handy.

Timings for the **Great Red Spot (GRS)** - The spot is in Jovian System II longitude 269° for the month. Here are the possible dates to see it. I've filtered the results for events where Jupiter is a reasonable altitude above the horizon.

3rd at 00:11 & 20:03; 5th at 21:41; 7th at 23:20; 10th at 00:39 & 21:51; 12th at 22:29; 15th at 00:08 & 20:00; 17th at 21:39; 19th at 23:18; 22nd at 20:48; 24th at 22:27; 27th at 00:06 & 19:58 and 1st July at 23:16;

A tip for observing, start looking an hour or so earlier, especially with the very low ones, as the times given are for meridian, (centre of the disk), passes, and the GRS may be picked up just after passing onto the planet's disk, with Jupiter that bit higher in the sky!

Meteor activity: Keep your eye on the composite page including the Norman Lockyer Observatory scan at www.merriott-astro.co.uk/scan3d.htm for several folk receiving pings. 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. There is always some activity even when no showers are about. Watch and listen out for the June Lyrids!

Update on solar activity:

The sun has been quiet of late with no auroral activity of any note. The Magnetic Field Index (Kp) has also been low with values of 4 (unsettled) occurring during the last month. Keep your eye on Spaceweather.com for any outbursts.

As many of you know, one of your scribe's passions is watching and identifying earth satellites. There are some apps available to help in this endeavour, one being Satellite AR which gives various classes of satellite and runs in real time, showing satellite paths, against the starry background, enabling one to immediately track named satellites. June is a good time of year to observe as the Earth's shadow is at its lowest, though some of the fainter satellites might not be seen. 10 x 50 binoculars or similar are ideal for this. Passes for the ISS follow on the next page. See also my notes on the SpaceX Falcon 9 rocket and payload 'Dragon'.

ISS - Visible Passes for June - and Comet Johnson

Date	Brightness (mag)	Start			Highest point			End		Pass type	
		Time	Alt.	Az.	Time	Alt.	Az.	Time	Alt.	Az.	
04 Jun	-3.7	22:33:47	10°	WNW	22:37:03	61°	SSW	22:39:52	13°	ESE	visible
05 Jun	-1.7	00:10:57	10°	W	00:12:30	15°	SW	00:12:30	15°	SW	visible
05 Jun	-2.4	23:18:23	10°	W	23:21:09	24°	SW	23:22:06	21°	S	visible
06 Jun	-3.0	22:26:03	10°	W	22:29:09	37°	SSW	22:31:44	13°	SE	visible
07 Jun	-1.6	23:11:17	10°	WSW	23:13:01	14°	SW	23:14:02	12°	SSW	visible
08 Jun	-2.0	22:18:31	10°	W	22:21:05	21°	SW	22:23:38	10°	SSE	visible
10 Jun	-1.3	22:11:43	10°	WSW	22:12:50	11°	SW	22:13:57	10°	SSW	visible

The next passes start on July 8th

Comet Johnson continues to be visible as it descends down the eastern flank of Bootes. It reaches perihelion on the 12th and is given a magnitude of 6.9 to 8.5 depending on the literature you read - my observation would suggest the latter! It is about 5 degrees east of Arcturus on the 4th.and will enter Virgo on the 20th. so still reasonably high but for the next few days will be washed out by the Moon as it passes through full on the 9th.I picked it up on the night of the 28th May in 20 x 80 bins. but it was very difficult, just a light fuzzy patch. Also the sky keeps Astronomical Twilight all night until mid July at our latitude, so never gets pitch black which does not help with observation. It won't be out of reach for you imagers though!

SpaceX and Falcon 9 / Dragon.

I had a call from Ian Galpin on Saturday evening to say he'd seen a tweet re. the possible launch of the re-useable craft at 22:07 our time. It duly passed overhead Poole 20 minutes later being at approx mag. 1 flanked on either side by a fainter component, (mag. 2 - 2.5). I caught the ISS an hour later, so calculated that the Dragon was 37 minutes behind the ISS.

Sunday night I kept a watching brief for a predicted pass of the ISS and 1 minute later saw the Dragon probe following up. So it had really caught up with the space station over the intervening 24 hours. Tonight it may well have docked but in case it hasn't keep a look out at 23:19 as the ISS will be fairly low in the west and will go into eclipse soon after that. As the above table shows there are only a few more occasions to see the ISS now until July 8th.

So we are back with the situation of being able to see launches from Florida, as in the old days with the shuttle. Those were always spectacular with the discarded fuel tank following the shuttle into our western skies.

The suggestion is - keep your eye on Twitter, the possibility of seeing Falcon 9 over Britain was not mentioned in any literature that I was party to. It was probably too early after the launch . It wasn't in Heavens above. I'll keep you informed in future.

Rob.