

PUBLIC OPEN EVENINGS AT THE INSTITUTE OF ASTRONOMY

WEDNESDAY 26TH NOVEMBER 2008

Institute of Astronomy

<http://www.ast.cam.ac.uk>

Cambridge Astronomical Association

<http://www.caa-cya.org/home/index.php>

All comments, enquiries or suggestions please to **Carolin Crawford** (csc@ast.cam.ac.uk)

Welcome to our winter season of Wednesday public open evenings, which will now run till mid-March. Tonight's 30 minute talk starts at 7.15pm and is followed by an opportunity to observe with both modern and historical telescopes *if* the weather is clear. The talk schedule for the remainder of the term can be found at :

http://www.ast.cam.ac.uk/public/public_observing/0809/timetable.html

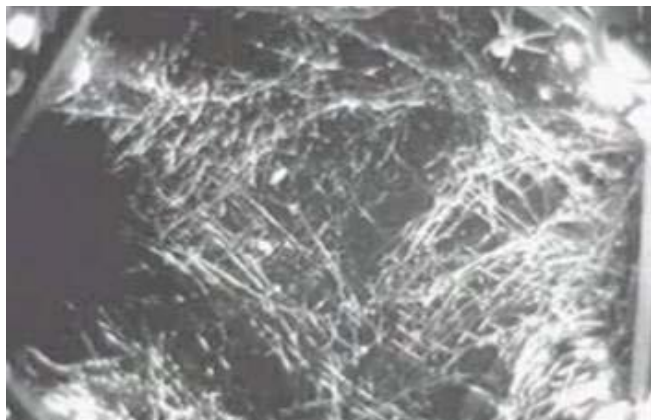
This week's talk : Luke Barnes will help you with **Getting your brain around the Universe**

Next week : Kim Bayliss will be tackling **Black Holes for beginners**

This week NASA have confirmed that the next mission to study Jupiter will be **Juno**. It will orbit the largest planet in our Solar System and study it from only about 3,000km above the top of the clouds. Of particular interest will be a close look at the storms in the colourful atmosphere, such as the Great Red Spot, but the instruments will also investigate Jupiter's magnetic field, auroras and the properties of any rocky core. So I for one am certainly excited at the prospect of the fantastic images it will return. The only snag is that it's not due to launch till 2011, and even then won't reach its destination until 2016; so I shall just have to be patient...

Watch out for a really neat **sighting of Jupiter and the Moon passing by Venus** next **Monday 1 December** low in the West in the late afternoon. Details overleaf...

Have you ever thought about how **spiders in space** would weave their webs? Well, that's just one of the



experiments being carried out by astronauts (and two spiders) on the current Shuttle mission to the International Space Station. At first the spiders were (not entirely surprisingly...) disorientated, constructing a very chaotic, messy web (see left). But it only took them a few days to adjust to the reduced-gravity conditions, and now they're back to weaving normal, symmetric and flat webs. Watch the space spiders in action on YouTube:

<http://www.youtube.com/watch?v=kisbPIL2JMK>

There are also fruit flies on board (well, it's only fair that the spiders have something to catch in their webs as a reward for their hard work...) and butterflies – the astronauts are observing how they also deal with micro-gravity right through the entire life-cycle from egg to caterpillar to butterfly.

And did you realize that you can actually see the **International Space Station** in the early evening at the moment? (see left-hand table overleaf) for viewing times from Cambridge; the brightest viewings are in italics). No special equipment required – just your eyes. It'll appear as a bright 'star' low down in the south-west, usually crossing the sky in about 4 minutes; it flies round the world every 90 minutes. When first visible it's over the Atlantic Ocean west of Ireland; when you last see it it's passing over the Alps. And remember there are people in that speck of light over 200 miles above your head. There's also an abundance of early evening **Iridium flares** visible during the next week, worth watching out for (right-hand table overleaf). These are flashes of reflected sunlight off communication satellites in orbit above the Earth. Look in the general direction given at the time listed in the table to the left; watch out for a moving 'star' that quickly grows to a peak brightness and then fades away. The three in italics should be particularly bright. *Note that the times for both the Iridium flares and the Space Station are specific to Cambridge: if you live more than a few km away, go to <http://www.heavens-above.com/> to get more appropriate timings for your viewing site.*

Many thanks to those of you who've filled out the **questionnaire** given out tonight - this is to help Vickie Curtis, a student from the Open University, with her Masters degree in Science and Society. She's doing a research project on the IoA Open Evenings, and will be around this evening – so please chat to her if you want to know more about what she's doing and why.

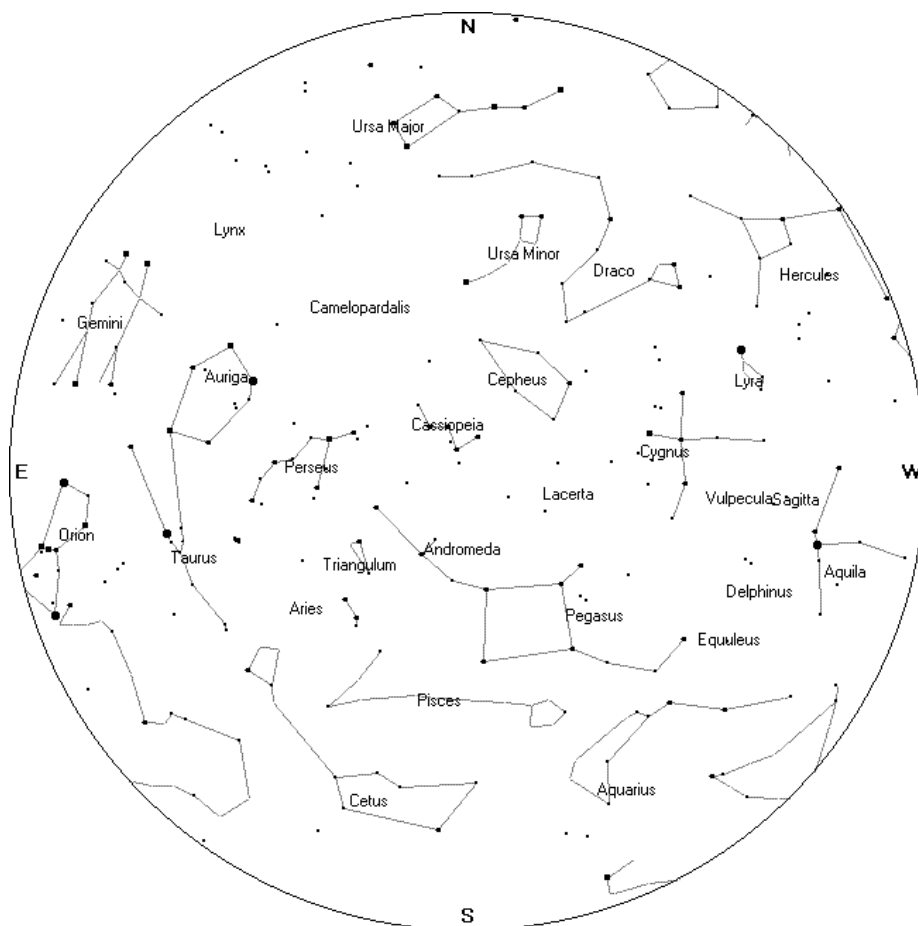
International Space Station sightings from Cambridge

Date	Starts			Max. altitude			Ends		
	Time	Altitude.	Direction	Time	Alt.	Dir.	Time	Alt.	Dir.
27 Nov	17:04:26	10	SW	17:07:15	46	SSE	17:09:14	17	E
27 Nov	18:39:36	10	W	18:40:52	23	W	18:40:52	23	W
28 Nov	17:31:37	10	WSW	17:34:33	73	S	17:35:30	38	E
29 Nov	16:23:48	10	WSW	16:26:40	50	SSE	16:29:32	10	E
29 Nov	17:59:02	10	W	18:01:51	78	SW	18:01:51	78	SW
30 Nov	16:51:11	10	WSW	16:54:08	76	S	16:56:39	13	E
30 Nov	18:26:33	10	W	18:28:19	32	W	18:28:19	32	W
1 Dec	17:18:46	10	W	17:21:43	81	S	17:23:13	26	E
2 Dec	16:11:05	10	W	16:14:00	78	S	16:16:57	10	E
2 Dec	17:46:27	10	W	17:49:22	62	SSW	17:49:55	49	SE
3 Dec	16:38:50	10	W	16:41:46	80	S	16:44:43	10	E
3 Dec	18:14:17	10	W	18:16:47	34	SW	18:16:47	34	SW
4 Dec	17:06:40	10	W	17:09:34	57	SSW	17:12:09	12	ESE

Iridium flare sightings from Cambridge

Date	Local Time	Altitude	Direction
27 Nov	16:27:54	26°	WNW
27 Nov	17:30:18	32°	S
28 Nov	16:21:51	26°	W
28 Nov	17:24:17	32°	S
29 Nov	16:06:46	31°	W
30 Nov	16:00:44	31°	W
01 Dec	17:15:28	28°	S
01 Dec	17:14:40	30°	S
02 Dec	17:09:23	28°	S

THE NIGHT SKY AT 8PM ON 26TH NOVEMBER 2008



To use the map, hold it above your head to match the sky...

- The **Moon** isn't visible tonight
- **Saturn** is also only visible after about 2am.
- **Jupiter** and **Venus** are visible in the early evening sky – both are obvious low down on the South-Western horizon between about 4.30 – 5.30pm, with Venus appearing the brighter. They move closer to each other over the next few days, starting with Jupiter being the one more to the South, and setting slightly later. They 'cross over' around 4-5pm next Monday 1 December, with the Moon and Jupiter very close to Venus low in the Western horizon. This '**conjunction**' of planets will be well worth looking out for. After that, Venus is the South of Jupiter and sets slightly later.

Sky map courtesy of <http://www.heavens-above.com/>

SITE SAFETY

Please be aware that we have a major construction site in our midst over the winter, while the exciting new Kavli Institute of Cosmology is added to the IoA grounds. The building work is safely fenced off, but still please don't tempt fate by exploring too far in the dark unless you know where you're going! There is also now digging in the observatory lawn which limits the space available to us outside tonight. If you need orientation, the red rope light marks out a safe path between the observing and Madingley Rise, but please ask any of the staff if you need further directions or assistance.