

ORWELL ASTRONOMICAL SOCIETY IPSWICH

Charity No 271313.

DECEMBER 1996



NIGHT SKY

All times GMT

SUN

Rises approximately at 07:50 to 08:06
Sets approximately at 15:53 to 15:56

MOON



3rd



10th



17th



24th

MERCURY Mercury will be at greatest eastern elongation on the 15th. It will however be difficult to see as this apparition is unfavourable.

VENUS Venus is still visible in the morning sky. Its brightness is slightly declining, this month it will be at Mag. -3.9. It will be rising at 05:40 in mid month.

MARS Mars will be rising before midnight this month, as it moves back into the evening sky. Mag. 0.6

JUPITER Jupiter will be very low down in the western sky at sunset this month. It will be setting about 1 hour after sunset.

SATURN Saturn will be visible before midnight this month. It will be setting at about 00:00 in midmonth. Mag. 0.9.

URANUS Uranus will be setting at about 18:30 in mid month. Mag. 5.8.

NEPTUNE Neptune will be setting at about 18:30 in mid month. Mag. 7.9

Roy Gooding

OCCULTATIONS DURING DECEMBER 1996

The table lists stellar occultation disappearance events which occur during the month under favourable circumstances. The data relates to Orwell Park Observatory, but will be similar at nearby locations.

Date	Time (UT)	Lunar Phase	Sun Alt (°)	Star Alt (°)	Min Dist (radii)	PA (°)	Star (D = double)	Mag
Mon 09 Dec	07:11:18	.03-	-6	8	.56N	71	Theta Lib	4.3
Thu 19 Dec	21:59:59	.76+	-54	40	.19S	82	Z283	6.5
Sun 22 Dec	19:24:30	.96+	-32	41	.91S	143	75 Tau	6.3
Mon 23 Dec	22:36:58	.99+	-58	55	.61N	49	115 Tau (D)	5.4
Thu 26 Dec	03:08:12	.98-	-44	46	.94S	172	Lambda Gem	3.6
Sun 29 Dec	00:24:52	.84-	-61	37	.46S	135	Omikron Leo	3.5

James Appleton

SOCIETY NEWS

Annual General Meeting

The AGM will be held on Saturday 11th January. The meeting will be in the room at the rear of the school's library, with a start at 20:00.

All members are invited to attend this meeting.

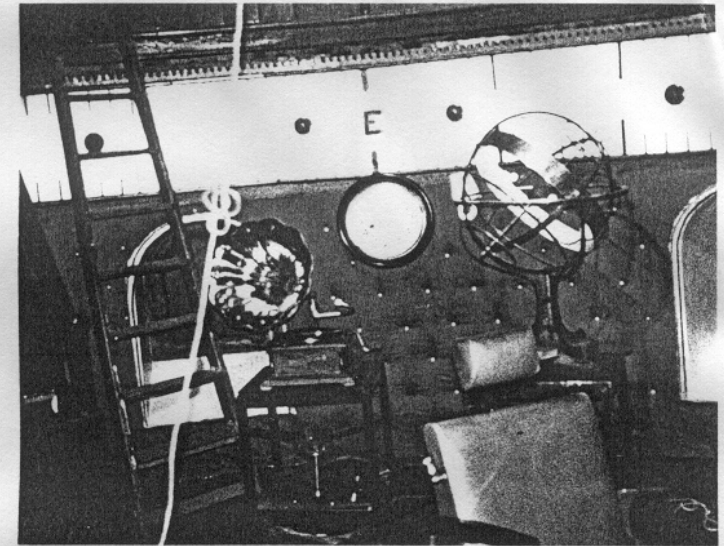
Committee Meeting News

The last committee meeting of the year was held at Saturday 16th November. The following items of interest were raised.

- i) Dave Payne has purchased a 6" reflector for the society. The telescope is in quite good condition, costing about £100 and can easily be refurbished.
- ii) The Open Weekend held in September raised about £236.44
- iii) It was decided not to raise the annual membership subscription for 1997.
- iv) Pete Richards has arranged a series of lectures for the new year. As an experiment the meetings will be held on a Thursday evening at the Friends meeting house. Full details will appear in January's newsletter.
- v) The film company that used the observatory for filming, in September, has given the society a donation of about £200.

NEWS FROM THE DOME

Pete Richards



Above: The Orwell Park Observatory transformed by TV set designers

The observatory became a film set at the beginning of the Month with a TV film crew using the dome as a setting for a drama programme. The interior was transformed into the set designers' vision of an antique astronomical observatory. The telescope had been covered in painted cardboard to give the appearance of brass and the walls covered in mock silk quilted paneling. A number of props were brought in including an Orrery (mechanical model solar system) and heavy wooden antique furniture. As a finishing touch the place was covered with dust and draped with cobwebs. Will we recognise the observatory when appears on TV?

Virtually all the scenery has now been removed, but we've kept the blackouts in the windows which have proved useful in preventing stray light entering the dome during observing sessions. The film company have offered to buy

NEW LIBRARY BOOK

The OASI library has recently acquired the following book:

Hubble Vision, Astronomy With The Hubble Space Telescope, by C C Peterson and J C Brandt, Cambridge University Press, 1995.

This book describes the design and launch of the Hubble Space Telescope, and the amazing science which it has performed since deployment in April 1990. The text is thoroughly readable, and the accompanying pictures are truly lavish. Highly recommended!

Please contact me with requests for purchase of other books for the library.

James Appleton

Choosing telescopes and binoculars: a beginners guide

All the information used in this article is taken from a leaflet published by

National Astronomy Week. Continued from last month.

Binoculars- a good first choice

There are many beautiful sights, such as the star fields of the Milky Way, star clusters such as the Pleiades and Hyades, and ghostly comets, which can only be truly appreciated in low -power, wide-field binoculars. These compact simple devices are the ultimate in portable, easy-to-- use equipment, and many observers use them to complement their telescopic observations.

Binoculars are usually marked with figures such as 8 x 40, 7 x 50, or 10 x 50. The first figure is the magnification, and the second is the aperture of the front lenses in millimetres. For general observing, 7 x 50 or 10 x 50 binoculars are equally useful. If you find the weight of 50-mm binoculars a problem, go for 40-mm or even 30-mm models.

Avoid binoculars with magnifications greater than 12, which will be difficult to hold steady, unless you have a particular need for a specialist pair. Zoom binoculars should be avoided, too as they generally have narrow fields of view and poor optics. Good binoculars will have coloured coatings on the optics, similar to non-reflective coatings on spectacles, which improve the image brightness by increasing transmission of light.

us a new piece of equipment and we now have to decide what would be the most useful to us.

We've had a number of beautifully clear nights during the past few months and the observing is in full swing. On a recent Wednesday evening we took the opportunity to take a last look for the year at the Autumn objects and see the Winter objects coming into view. Amongst the former objects, M13 in Hercules looked particularly spectacular. This object is the best globular cluster in the Northern Sky, comprising around a million stars and 100 light years across (in its central part).

Saturn has been well placed in the evening sky. The rings are opening up and, with careful observation, Cassini's division was visible. Something that was immediately noticeable was that more detail was visible on the disk of the planet than is usual, but we didn't see the recently discovered white spot. For the first time I saw all the 6 moons visible I hope to see with the 10 inch refractor - at least we think we saw 6 satellites. One of the fainter moons, Iapetus, was a long way out from Saturn and we couldn't be absolutely sure if what we were looking at was Iapetus or a star that happened to be in the about right place.

Iapetus varies significantly in brightness and was close to its maximum. The variation in brightness is due to its reflecting more sunlight on side than it does on the other and its rotation is synchronised with its orbit and consequently it's brighter when it's on one side of Saturn than it is on the other. The discoverer of Iapetus (Cassini in 1671) couldn't see it when it was at its faintest.

We observed Comet Hale-Bopp on numerous occasions. It's getting noticeably brighter and more active. In October we also took a look also at one of the newly discovered comets - Tabur - which was close to its maximum brightness at magnitude 5. In 1996 a great deal of attention has been focused on comets at the Orwell Park Observatory just as it was when John Issac Plummer was the resident astronomer more than a century ago. Will comets be grabbing our attention again in 1997?

Some cheap mail-order binoculars economise by using prisms that are too small, which severely limit the field of view. Look into the front lens - you should see

a small circle of light through them. If the circle is cut off or square, you are losing light. Also be aware that very cheap models may have spurious bulges in the barrels to give the impression that they contain prisms when they do not. Such instruments are simply opera glasses with a straight-through optical system, having a very restricted magnification and field of view.

Magnification

The magnification of a telescope depends on the eye-piece used. Telescopes usually come with a selection of eye pieces that offer low, medium and high powers. Do not get carried away by advertisements for small telescopes that claim magnifications of many hundreds of times. Too high a magnification will show less rather than more, since an over magnified image will be faint and indistinct.

A good rule of thumb is a magnification of twice the aperture in millimetres (or 50 times for each inch of aperture - see table below). Of course, if the telescopes aperture is stopped down, the maximum usable magnification is correspondingly reduced.

The atmosphere itself places a limit on the highest magnification you can use, because air currents make the images of stars and planets unsteady, an effect known as seeing. No matter how large a telescope you own, from a normal ground-level site the maximum usable magnification will be about 300. Beyond This, an eyepiece just magnifies the distorting effect of the atmosphere, creating a useless "boiling" image.

Telescopes, like cameras, have f-numbers. The focal length of a telescope is the length of the light path from the main lens or mirror to the eyepiece. The focal ratio (or/ratio) of a telescope is its focal length divided by its aperture. For example, a telescope of 100 mm aperture with an 800 mm focal length is an f/8 instrument.

Focal length is not a critical consideration, but it dose determine what objects an instrument is best suited for observing. For example, f/4 to f/6 telescopes are preferred by people who like to observe deep sky objects such as nebulae and galaxies. How ever, others who like to view the Moon and planets opt for f/7 and above.

Aperture		Telescope performance	
(inches)	(mm)	Faintest star (magnitude)	Highest usable power
2.4	60	11.6	120
3.1	80	12.2	160
4.0	100	12.7	200
6.0	150	13.6	300

PROGRAMME FOR DECEMBER

Mondays from 7.30pm No Directors available for this night	GENERAL OBSERVATION SECTION
Tuesdays from 7.30pm Mr D Barnard	GENERAL OBSERVATION SECTION daytime only
Wednesdays from 7.45pm Mr M Cook	NEBULA & FAINT OBJECTS SECTION Mr D Payne
Thursdays from 7.30pm Mr P Richards	OBSERVATORY VISITS FROM OUTSIDE GROUPS
Fridays from 7.30pm 6th - 22nd Mr J Hood	DOUBLE STARS Mr M Barritt

All members are welcome on any night, but on nights other than Wednesday please check with the director of the night that the observatory will be open.

Lectures and other events: **A. G. M.**

The Annual General Meeting is provisionally booked for Saturday January 11th and is usually held in the school library, all members are invited to attend but please check in the next journal or with one of the committee members to confirm.

CHRISTMAS MEAL -----On Wednesday 11th December at the Shepherd & Dog.

e-mail enquires to oasieng@btbcs.bt.co.uk
WWW url <http://www.ast.cam.ac.uk:80/~ipswich/>

1996 COMMITTEE

		Home Phone	Work Phone
CHAIRMAN	D Payne		
SECRETARY	R Gooding		
TREASURER	M Nicholls		
MAINTENANCE CO-ORD	M Cook		
JOURNAL CO-ORDINATOR	E Sims		
PUBLICITY & VISIT CO-ORD	P Richards		
EQUIPMENT CURATOR	M Harlow		
SPECIAL EVENTS CO-ORD	A Smith		
LIBRARIAN & COMP SOFTWARE	J Appleton		
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