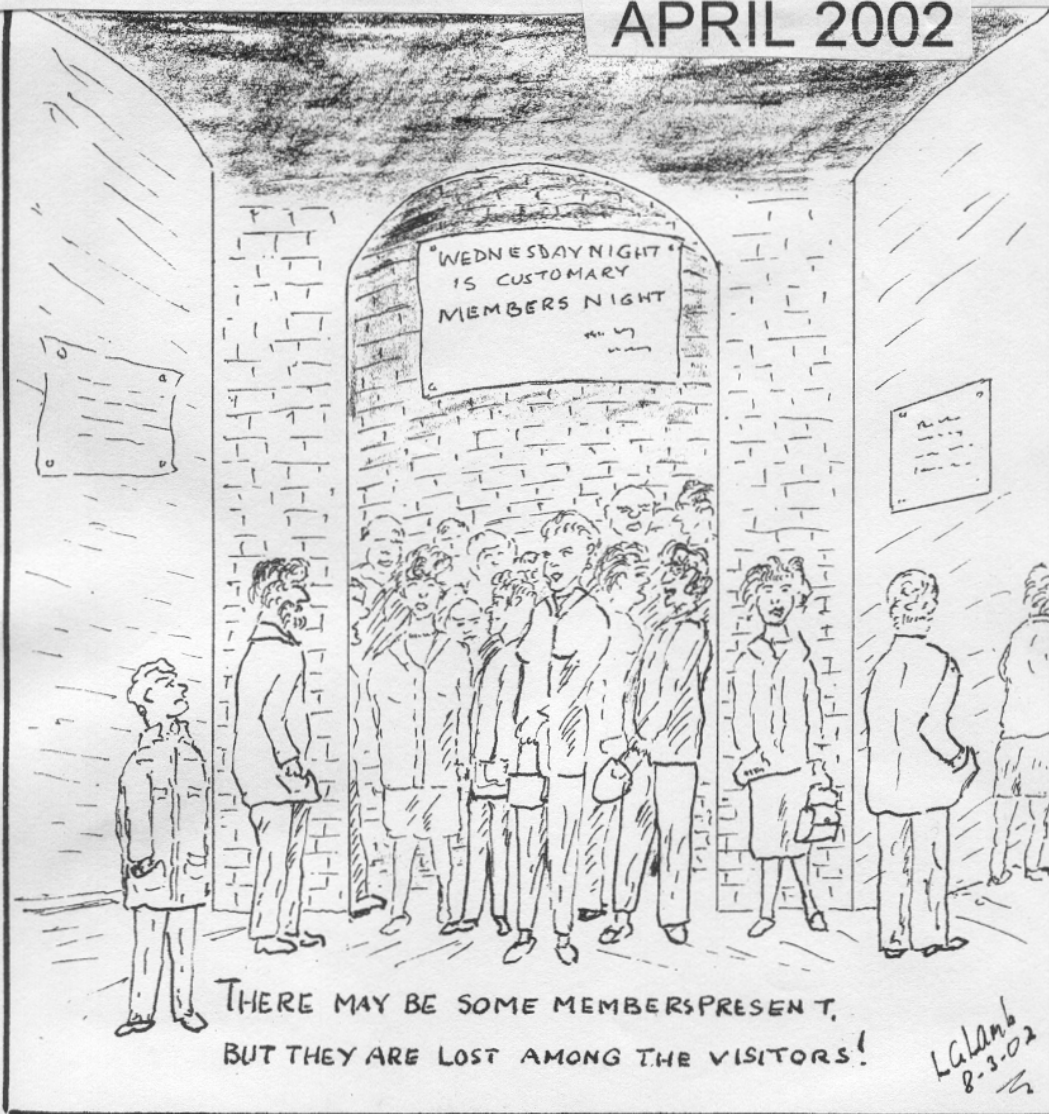


ORWELL ASTRONOMICAL

SOCIETY IPSWICH

Charity No 271313

APRIL 2002



Society News

1

Events for 2002

Event	Details	Date
Astronomy Workshop	School science room 19:45 to 21:00 Time Ted Sampson & others	Wednesday 3 rd April
BAA Winchester Weekend		6 th to 8 th April
Astronomy Workshop	School science room 19:45 to 21:00 Computer Packages Paddy O' Sullivan	Wednesday 1 st May
Summer Barbecue	Ken Goward's garden Tuddenham	Saturday 13 th July
BAA Exhibition Meeting	Cavendish Laboratory Cambridge	Saturday 21st September
Summer Excursion	Provisional destination is Oxford	Date to be fixed in September
FAS Convention	Venue: Rutherford Appleton Laboratory Oxfordshire	5 th October?
Open Weekend		Date to be fixed.
Equinox Star Party	Thetford Organiser; Loughton A.S	6 th to 13 th September
Christmas Meal	Provisional date	11 th December

This events list, is updated monthly, so watch this space.

2 Telescope Review Articles (Old and New)

Society members own a verity of telescopes, both old and new. I would like to request a series of review articles, from members on their telescopes.

The eventual aim would be to product a booklet on member's equipment that can be given to prospective new members, who ask for advice on telescopes.

The first of these articles was recently written by Neil Morley. Neil reviewed his short focal length 80mm refractor.

4 Attending Meetings at the Observatory

When you attend meetings at the observatory, please remember to bring along your membership card. Every membership card, this year, was issued with a holder.

Night Sky

All times GMT

Sun

The sun will be rising approximately between 05:40 to 04:40
 The sun will be setting approximately between 18:30 to 19:30

Moon

3 rd Quarter	New Moon	1 st Quarter	Full Moon
4 th	12 th	20 th	27 th

Mercury Mercury is at superior conjunction on the 7th. The planet then moves back into the evening sky, it will give the best evening apparition if the year. By the end of the month Mercury will be setting about 2 hours after the sun

Venus Venus becomes more prominent in the evening sky this month. Shining at magnitude -3.9. Venus will be setting at about 21:30 by the end of the month

Mars Mars is also visible in the evening sky. During the month it moves from Aries into Taurus. Magnitude 1.5

Jupiter Jupiter remains prominently visible in Gemini. The planet will be setting at about midnight by the end of the month. Magnitude -2.1

Saturn Saturn remains visible during the evening this month. It will be setting at about 22:00 by the end of the month. Magnitude 0.1

Uranus Uranus is visible in the morning sky this month. It will be rising at about 02:30 by the end of the month

Neptune Neptune will be rising at about 02:00 at the end of the month.

During the 2nd half of the month all of the classical planets will be visible in the sky at the same time. Starting in the western sky after sunset, Mercury, Venus, Mars, Saturn and Jupiter, will be forming a line along the ecliptic.

Meteor Showers

Shower	Limits	Maximum	ZHR
Lyrids	April 19 th to 25 th	April 22 nd	10
η Aquarids	April 24 th to May 20 th	May 4 th	40
α Scorpids	April 20 th to May 19 th	April 27 th & May 12 th	5

Meteor source is the BAA Handbook

Library Update

Mike Whybray.

At the AGM I was elected onto the Committee and agreed to take over responsibility for the OASI Library, publications etc. Many thanks to James Appleton who has done this so well for the last few years! The library is still housed in the glass cabinet in the 'not quite completed' library room next to the club room. To remind members – you are free to borrow these books and tapes by selecting them yourself; just make sure you sign them out, and back, in the loans book stored in a holder on the left wall of the club room.

(I must say, I was somewhat mystified as to where the 'club room' was on my early visits to the observatory. It turned out to be the poky alcove in the Belvedere Room below the dome!)

If anyone has recommendations for books you think would be of general interest to members, please send me your ideas – particularly if it is one you have read yourself and can provide a glowing review for! We won't be able to buy them all on a restricted budget however, so book donations, and any free ones from publishers etc. also welcome.

We have some recent acquisitions. I haven't read any of these myself yet but Ken has pointed me at the Amazon web site reviews, which I've edited down to give a flavour of the content. (We buy some of the books from Amazon so I'm sure they won't mind)....

Using the Meade ETX - Mike Weasner

In 1996 Meade, the world's largest astronomical telescope manufacturer, introduced the ETX, a low-cost and genuinely portable instrument capable of results close to the theoretical limits of optical performance. Since then several different models have been introduced, most of them controlled by on-board computers that automatically point the telescope at objects selected from a database of 12,000. Unfortunately not all these objects are visible when looking through the ETX! (They are included because they can be imaged with special equipment.) Mike Weasner is a world expert on the ETX range, and describes the "best" 100 objects to start with, and offers hints and tips about using and looking after the telescope to get the best possible results.

Light Pollution - Bob Mizon

Light-pollution is the modern scourge of optical astronomy. More and more observing sites are being lost as the glare of city lighting blots out the night sky. Professional astronomical observatories are located far from cities, but amateur astronomers often do not have this luxury. This book considers the two available strategies open to astronomers - get rid of the light pollution by lobbying authorities and standards organisations, and minimise its effects by using the correct instrumentation. The book contains an extensive detailed catalogue of deep-sky and other objects that - despite what one might believe - can be seen from variously light-polluted sites, for practical observers.

Gods in the Sky - Allan Chapman (Yes – our Honorary President!)

Gods in the Sky reveals that, despite the common presumption that astronomy started with Galileo, the ancient civilisations were acutely conscious of the night sky. By demystifying their mythologies, we see how their understanding of the heavens led to the development of complex calendars, sophisticated navigational techniques and the grasp of deep mathematical principles.

Central to the development of astronomy as an exploratory science was the emergence of the idea of one creator God who designed the universe and human intelligence in accordance with rational principles – an idea found in ancient Jewish thought as well as the Greek idea of the logos. And when these ideas came together in early Christianity around AD 200, and then in Islam four centuries later, they made possible a radical new understanding of nature as a rational whole that the human mind could comprehend.

Gods in the Sky traces this journey from Egypt and Babylon through Jewish thought and Greek science and philosophy. Allan Chapman describes the extraordinary rise of science first in medieval Islam and then in Christian Europe, which exploded with new intellectual energy after AD 1100, creating amongst other things, medieval Europe's great universities.

Bright Comet for Spring

A new Comet Ikeya-Zhang (also designated C/2002 C1) bright enough to be visible to the unaided eye under good conditions and an easy binocular object is gracing the Spring skies. An exception to the raft of comets called Linear it is named after the two astronomers - one Japanese and one Chinese - who discovered it in February. The comet passed perihelion (it's closest to The Sun) on March 18th. It should be at its best in the beginning of April being at magnitude 4. The tail should reach a maximum length of 5 to 10 degrees.

I picked it up in 10 x 50 binoculars and also observed it using a 90mm telescope (a Meade ETX) low in the West at about 7.40 pm on March the 9th. A tail was clearly visible in the binoculars and the ETX.

The comet reaches its brightest at the end of March beginning of April and can be seen in the North West after dusk and the North East before dawn. By 10pm BST on at the beginning of April the coma of the comet will be at around 10 degrees altitude (on outstretched hand-span at arms length covers about 15 or 20 degrees of sky). It will actually become circumpolar: ie. it will move towards the North Celestial pole to a position where it will not set below the Northern horizon from our latitude. It's close to M31 (the Andromeda galaxy) around the 4th being to the left (as you look Andromeda) before and to the right after that date.

Robin Scagell and Paul Sutherland report that "The comet is now known to be a periodic comet, returning to the inner solar system on a regular basis, so it has almost certainly been seen before. It was visible in 1661 and may also have been seen in 1273 and 877. Some calculations by Graeme Waddington suggest that it is possible that at a previous return it split, with the larger fragment returning in 1532."

Naming of Comets

As most amateur astronomers know, comets are usually named after their discoverer - be that a human observer, a satellite or an automated telescope. Halley's Comet is an exception being named in honor of Sir Edmund Halley who successfully computed that comet's orbit and predicted its subsequent return.

A new comet is also given a designation code which starts with either /P for a short period comet or /C for a long period comet, followed by the discovery year, followed by a letter representing the half month in which it was discovered A = January 1st - 15th, B = January 16th - 31st, followed by a number allocated consecutively from 1 for each comet discovered in the period. Comet Ikeya-Zhang is a long period comet which was the 1st comet to be discovered in the first half of March 2002, hence it is designated the code "/C2002 C1". "Short period" is up to 200 years: "Long period" comets like Hale-Bopp take thousands of years to orbit the Sun.

Information about Ikeya-Zhang for users of telescope star charts, setting circles or computers

www.heavens-above.com will show the current position of the comet. The following ephemeris is from that website and may be useful for anyone with software which can produce finder charts. I used this with Redshift. The orbit ephemeris didn't give an exact perihelion time (it gave a date of 18th March) so I experimented and found that setting the value of "Time perih. pass" to 2003 3 18.945 gave positions close to those given in daily ephemeris tables available on the above website. Here is the ephemeris for the orbit from "heavens-above" with the parts needed for the Redshift software underlined.

Perihelion: 0.5072 AU (18-Mar-2002) Aphelion: 114.86 AU
 Period: 438.1 years Longitude of Node: 93.416°
Eccentricity: 0.991207 Inclination to ecliptic: 28.111°
Longitude of ascending node: 93.416° Argument of perihelion: 34.578°

I also found www.spaceweather.com and www.space.com also provided finder charts and other information. An alternative ephemeris is available at <http://cfa-www.harvard.edu/iau/Ephemerides/Comets/2002C1.html> from which the following are taken.

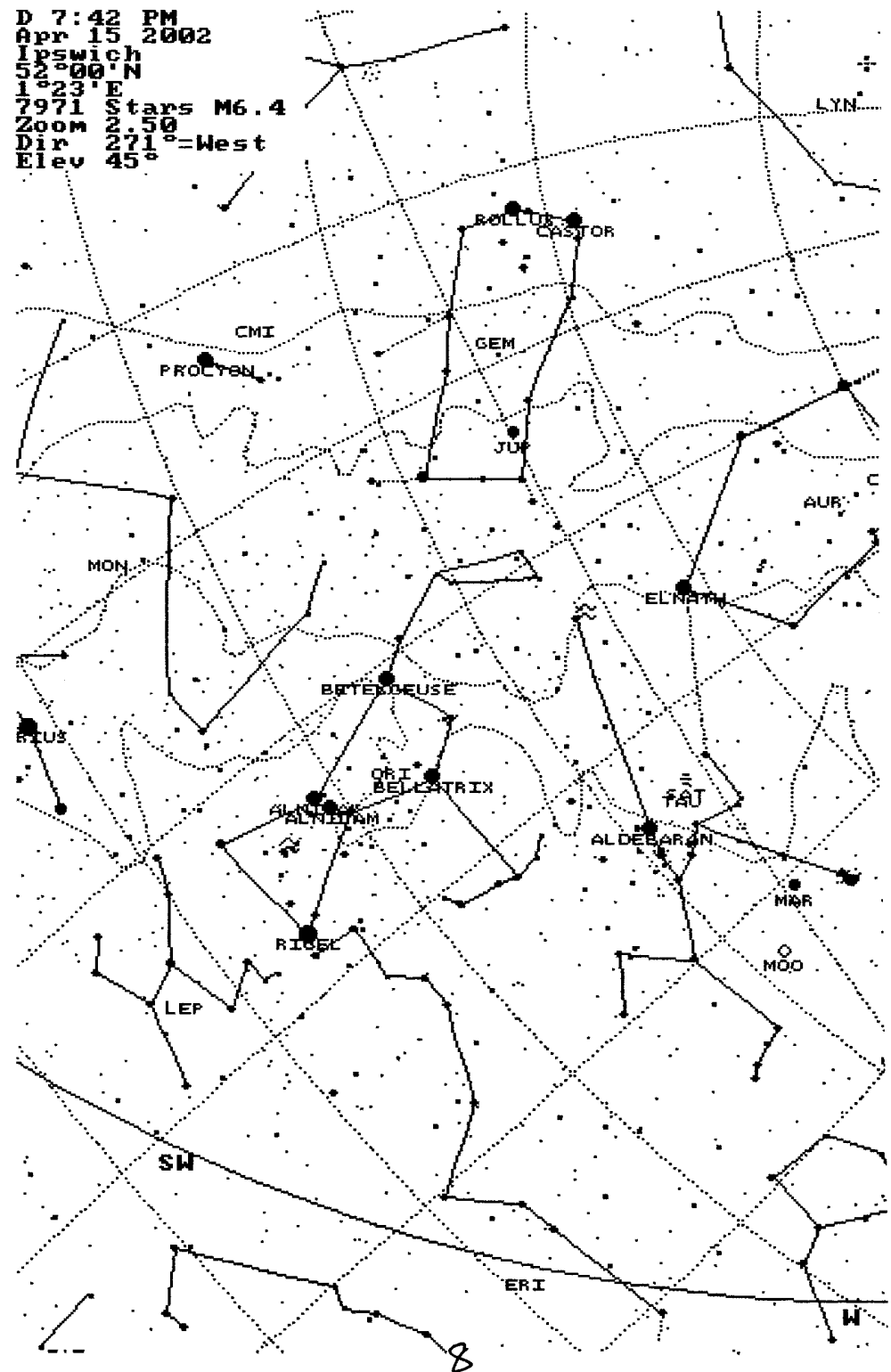
Date	RA	DEC	Mag
April 1st	01 06.00	+36 47.5	4.1
April 6th	00 43.37	+43 31.2	4.3
April 11th	00 09.51	+50 00.2	4.6
April 16th	23 19.97	+55 49.9	4.9
April 21st	22 09.39	+60 07.0	5.2
April 26th	20 39.77	+61 26.3	5.5

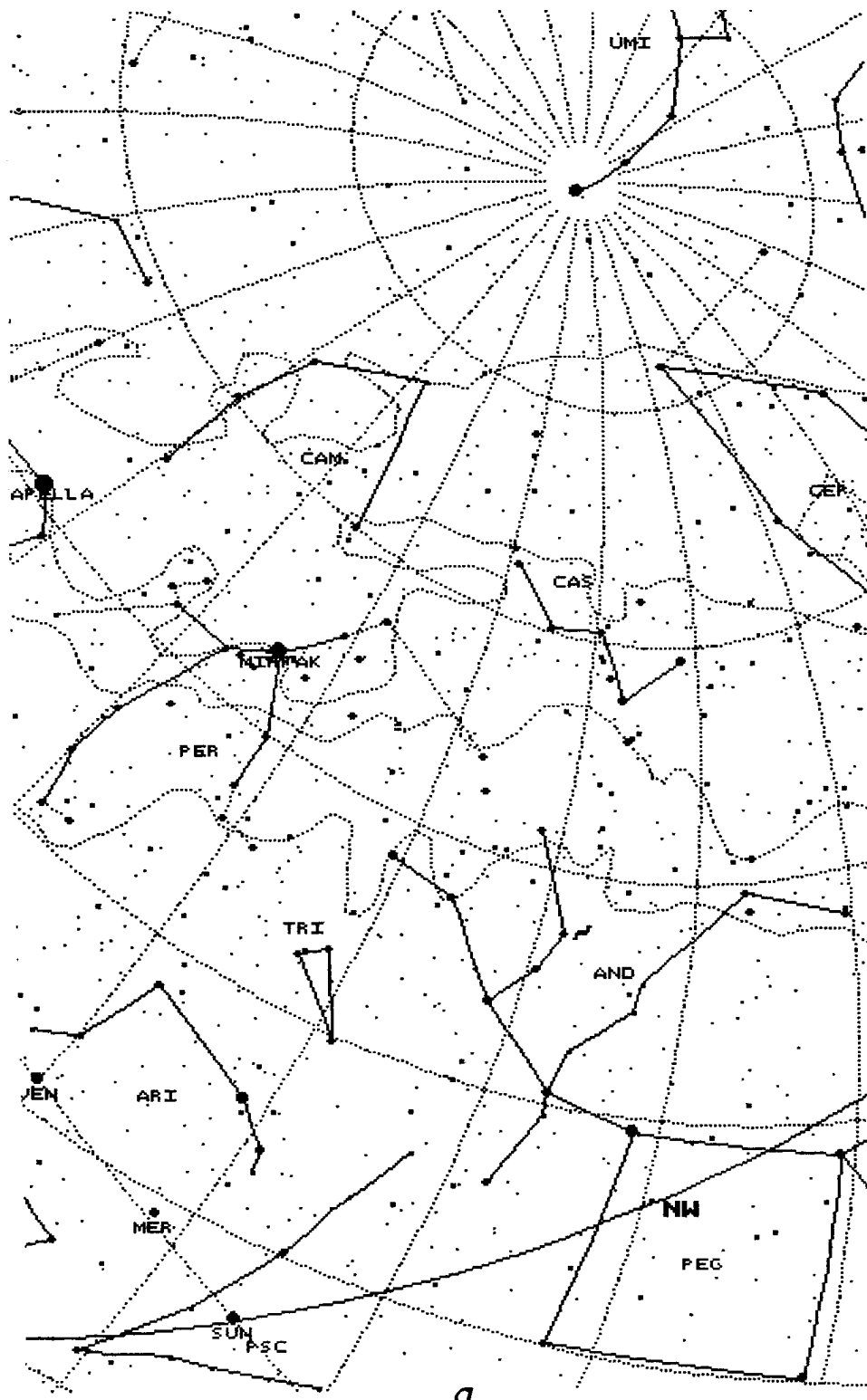
About Comets

In 1949 F Whipple proposed a model of comets as dirty snowballs. Ground based observation combined with results from the Giotto mission to Halley's Comet in 1986 proved that model was accurate.

The core of the comet is a relatively small icy body which forms the nucleus. Comet Halley, for example, is about 16 x 8km or 9 by 5 miles. When these icy bodies move in from the outer solar system towards the Sun the ices begin to melt producing a large envelope of gas and dust around the nucleus forming a "coma" which can be a million kilometres across. Some of the dust may be driven into long, often curved, tails by radiation pressure (essentially being hit by photons of sunlight) and charged particles stream off in a straight line driven by the magnetic field of the solar wind forming the gas tail. The two tails are usually directed in slightly different directions the gas tail streaming away from the Sun. The tails can be as much as 100 Million Km long.

D 7:42 PM
 Apr 15 2002
 Ipswich
 52°00' N
 1°23' E
 7971 Stars M6.4
 Zoom 2.50
 Dir 271°=West
 Elev 45°





OCCULTATIONS DURING APRIL

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

D / R	Date & Time (UT)	Lunar Phase	Sun Alt (°)	Star Alt (°)	Min Dist rad	Star	Mag
D	21 Apr 01:54	0.56+	-21	6	0.84N	gamma Cnc	4.7
D	22 Apr 21:01	0.76+	-16	51	0.57N	ZC 1535	6.8
D	23 Apr 21:48	0.85+	-20	46	0.67N	ZC 1659	6.7
D	26 Apr 01:48	0.98+	-20	23	0.63N	65 Vir	5.9
D	26 Apr 02:28	0.98+	-16	18	0.39N	66 Vir	5.8
D	26 Apr 22:13	1.00+	-21	24	0.31N	kappa Vir	4.2

The Moon occults Saturn during the month. The following table gives details of the event.

D / R	Date and Time (UT)	Lunar Phase	Sun Alt (°)	Saturn Alt (°)	Min Dist rad	Saturn Mag
D	Tue 16 Apr 20:57	0.15+	-17	16	0.86S	0.2
R	21:27		-20	12		

The occultation will be seen as a graze from locations to the far south of Orwell Park Observatory. This event is the last opportunity to observe a night-time occultation of Saturn until 2007.

James Appleton

Observing Programme For April

Dates	Observing Director	Activities
Monday		Nothing Booked
Tuesday		Nothing Booked
Wednesdays 3rd 10th 17th 24th from 8.00pm	M Cook D Payne	Nebular & Faint Objects
Thursday 18th	Box Office Club	Group Visit
Friday		Nothing Booked

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

Special Events

1. COMMITTEE MEETING

The date for the next Committee Meeting has not yet been arranged but will be advertised in the next news letter.

2. ASTRONOMY WORKSHOP April 3rd

The next Astronomy Workshop is "Time in Astronomy" Ted Sampson and others,

This is held in the School Science Room 7.45pm to 9.00pm.

2002 COMMITTEE

		Home Phone	Work Phone
CHAIRMAN	D Payne		
SECRETARY & WORK PARTY ORGANISER	R Gooding		
TREASURER & PUBLICITY	K Goward		
MECHANICS	M Cook		
NEWSLETTER CO-ORDINATOR	E Sims		
BEGINNERS MEETING CO-ORD & VISIT CO-ORD	T Sampson		
EQUIPMENT CURATOR	G Coleman		
LIBRARIAN	J Walsh		
	M Whybray		
CO-OPTED MEMBER			
LECTURE CO-ORDINATOR & DARK SKIES	P Richards		
JOURNAL ARTICLES TO CORRESPONDENCE ADDRESS	E Sims		Ipswich Suffolk IP1 4HA
	R Gooding		OASI Secretary Ipswich Suffolk IP1 6AE
MEMBERSHIP	M. Cook		Ipswich IP4 5PZ

11

Society Contact Details

	Home Phone	Work Phone
Chairman	D Payne	[REDACTED]
Secretary	R Gooding	[REDACTED]
Contact details for the full committee are inside the back page.		

e-mail queries: ipswich@ast.cam.ac.uk
 WWW address: <http://www.ast.cam.ac.uk/~ipswich/>

12