ORWELL ASTRONOMICAL SOCIETY IPSWICH

MARCH 1991

SOCIETY NEWS

1 1991 Subscriptions

Membership subscriptions are due on 1st January of the new year. Please either send monies directly to David Barnard. See back page for address.

Rates for 1991 are:-

Child & OAP	£ 7.00
Adult	£10.00
Family	£11.50

This will be the last newsletter you will receive if you

ave not
yet paid your 1991 subscription.

2 COMMITTEE MEETING

The next committee meeting will be on Saturday 9th March, with a start at 7.30pm in the club room. As usual this is an open meeting and any member who wishes to attend will be welcome.

NIGHT SKY

All times GMT

SUN Rises approximately between 06.50 to 05.40
Sets approximately between 17.30 to 18.30

MOON

8th 16th 23rd 30th

MERCURY Mercury is at superior conjunction on the 2nd. It will be at greatest eastern elongation on the 27th (19°), and will be setting about 2 hours after the sun.

VENUS Venus will be visible in the evening sky. With a magnitude -4.0 it is unmistakable.

MARS Mars remains a prominent evening object, even though its brightness will be fading to Mag. 1.0 By the end of the month it will be setting at about 02.00.

JUPITER Jupiter will be well placed for observing all night. Mag.-2.6

SATURN Saturn will be visible low down in the morning sky. It will be rising at about 03.30, by the month. Mag.0.7

URANUS Uranus will be rising about 1 hour before Saturn.

NEPTUNE Neptune lies between Saturn and Uranus through out the year

R.Gooding

Astronomy in Edinburgh 2
Blackford Hill from 1896

by J.Walsh.

Thanks to the Earl of Crawfords extensive collection of books and equiptment from his observatory in Dunecht the new Scottish Royal Observatory was built on Blackford Hill in 1896. A new Astronomer Royal was appointed, his name was Ralph Copeland, former chief Astronomer to the Earl of Crawford. Ralph Copeland was very active in all fields of Aatronomy and firmly established the Observatorys time and meteorological duties. When he died in 1905 his successor, the fourth Astronomer Royal Frank Dyson held the post until his reirement in 1910. In 1930 the 36" Reflector was installed in the East Dome. The fifth Astronomer Royal at that time was Ralph Samson, he improved the Observatorys timekeeping service yet again with the shortt free pendulum clock.

In 1938 with the treat of war looming, an alternative Time Service was needed to that of Greenwich. So W.M.H. Greaves, who was by then the sixth Astronomer Royal,was asked to provide this and the service was maintained throughout the second world war. After the war, work began on the new 14/24 Schmidt Telescope in the West Dome. This was completed in 1951.

The seventh Astronomer Royal H.A.Bruck started the awesome task of improving the observatorys instruments in 1957. This was to cater for the masses of information coming in on the plates of the Schmidt Telescope. Also by this time, the observatory had a new 16" Twin Telescope, and a new remote control unit had to be built for this, plus new buildings and offices to accomodate the new systems, all this was completed in 1963.

In 1965 the Observatory ended it's association with the Scottish Office to become part of the Science Research Council(which later became the Science and Engineering Research Council in 1981) to mark this occasion the Queen and Prince Phillip visited the Observatory.

The city of Edinburgh was expanding more and more and with it came more Industrial Pollution and Light Pollution "Seeing Conditions" were getting worse. So in 1970 it was decided to open the Observatory's first Outstation at Monte Perzio near Frascati in Italy. Which houses a Schmidt Telescope and is still in working order today.

In 1972 saw the opening of the Crawford Room, it was specially adapted to keep the Crawford Collection perfectly preserved at exactly the right temperature and humidity for generations to come.

H.A.Bruck retired in 1975 and the eighth Astronomer Royal was appointed his name Dr V.C.Reddish, he was also the project manager of the United Kingdom Schmidt Telescope sited at Sliding Springs in New South Wales, Australia. Also in 1975 the Cosmos came into being replacing the old Galaxy method of measuring plates from the Schmidt Telescopes. The word Cosmos is derived from the following: Co - Coordinates, S - Sizes, M - Magnitudes O - Orientations and S - Shapes.

In 1979 the official opening of the 3.8 Metre United Kingdom Infrared Telescope took place. Situated on Mauna Kea a huge dormant shield volcano 4,200 Metres (13,776 Feet) high and is the best site in the world for this type of astronomy, with it's clear nights and stable atmosphere due to it's very high altitude. Also in 1979 plans for the International Northern Hemisphere Observatory were being finalised. The choice of site was ironically on La Palma. The Roque De Los Muchachos Observatory was not far from where Piazzi Smyth first carried out his mountain astronomy experiments over one Hundred years earlier.

The ninth and current Astronomer Royal is Malcolm Longair, the first Scotsman since Thomas Henderson to hold the title Astronomer Royal for Scotland. He was appointed in 1980, and under his guidence we have seen the opening of the James Maxwell Telescope, also on Muna Kea this Telescope is designed for observations at millimetre and sub-millimetre wave bands and is a joint British, Dutch and Canadian venture.

In 1988 saw the centienary of the Earl of Crawfords gift of equiptment and books to the observatory, and this was commemorated by an extension of the Crawford Room, it was opened by the 29th Earl of Crawford on 23rd September 1988. On the 4th July 1989 the Duke of Edinburgh visited the Observatory, and the New South Building was opened by Professor E.W.J.Mitchell the Chairman of S.E.R.C.

So here we are at the present day 204 years from the laying of the first foundation stone at Carlton Hill. We have come a long way from those humble beginings, we have seen a lot of history at Edinburgh Observatory and I'm sure we shall see just as much in the future.

CONTINUATION OF THE OBSERVING GUIDE TO VENUS

3.Night-side events

These include (i) the strikingly beautiful effects of the illuminated atmosphere, produced by sunlight filtering through the upper part of the planet's atmosphere and (ii) the enigmatic visibility of the dark side, of which very little can be affirmed and for which no cause has yet been discovered. Both appearances are accessible to modest telescopes but the latter is so feeble that great care must be exercised in its observation. The illuminated atmosphere usually shows after greatest elongation east. It consists of faint cusp extensions that gradually creep around the dark limb until at inferior conjunction they link to encircle the planet in a ring of pearl-like light. The cycle is reversed after inferior conjunction.

The visibility of the dark side is divided into three phases:

(a) In daylight or bright twilight the unilluminated side is always darker than the sky. The contrast is exceedingly slight but unmistakeable. It is thought to be optical but opinion is evenly divided.

(b) The bright phase, otherwise known as the Ashen Light. It manifests itself as a faint glow on the dark side. It is variable, often patchy, though sometimes affects the whole of the unlit side. It has no preferred point of display and is very feeble. Its detection requires favouraable conditions and an acute eye.

(c) The neutral phase. Occurs when the Sun is about 6 degrees below the horizon, roughly 30 minutes after sunset, and the same interval before sunrise. It apparently marks the transition from dark to bright at an eastern elongation and from bright to dark at a western.

An occulting bar fitted in the eyepiece is a necessity when searching for the Ashen Light for at that time Venus is being observed against a dark background. However, it is a somewhat imperfect device as glare does tend to creep around each side of the bar. Accordingly, the observer needs to develop an expertise in order to discriminate between the elusive reality and what is patently illusion.

4.Contour anomaly

This is an irregularity in the apparent outline of the telescopic image. The terminator can have an uneven curvature and the cusps can have a slightly different shape (especially around dichotomy when a blunting of the southern cusp cap is regularly seen). Projections are occasionallv seen along the limb but more often down the line of the terminator. A careful watch should be maintained and the observer should not expect to see the geometric norm.

5.Use of colour filters

Colour filters form a significant extension to the programme of the Venus observer. At present, the range most widely is the Kodak Wratten series of gelatin-based filters. These come in various colours and densities and may be conveniently cut to fit eyepiece filter adaptors etc. Filters are useful in three areas:

(a) To reduce the glare of reflected sunlight from the top of Venus' cloud deck and hence render the subtle cloud shadings a little more apparent. Neutral density filters are often used for this purpose.

(b) To investigate te vertical structure of the atmosphere by measuring the observed phase in different filters This phase is usually seen smallest in filters admitting the shorter wavelengths of the visible spectrum, and largest in those admitting the longer wavelengths. (c) To standardise drawings made by different observers whose sensitivity to the visible spectrum may vary. For this purpose the Kodak W15 yellow filter is most suitable.

PHOTOGRAPHY

Astronomical photographic techniques can be applied to Venus with successful results. The observer should experiment with a range of exposures to determine what is best for his or her own individual method and instrumentation. The techniques of prime-focus and eye-piece projection are the most popular.

Ultra-violet photography is difficult but may be attempted. The rewards for success are substantial, though, since Venusian cloud features, delineated by the UV absorbers in its atmosphere, become apparent. The main difficulty is caused by the absorption of UV by ordinary glass. Hence photography must be undertaken at the prime focus or with a quartz eyepiece (available from suppliers as single-element eyepieces). For optimum results,a UV filter should have its maximum transmission between 3200A and 3700A. The Kodak W18A filter, amomg others, has this characteristic. Ordinary emulsions such as Kodak Panatomic X. Plus-X and Tri-X are sensitive in the UV.

After April,1989. Venus moves into the evening sky. If you would like to join in the work of the BAA Venus Group (you could either be an individual BAA member or your local society may be affiliated) then write to John McCue at the address below for observing forms and more details. Good observing!

This guide was prepared by:

Mr. David Graham,JAS Planetary director.

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NEXT MONTH I WILL INCLUDE THE DIAGRAMS FOR TERMINATOR LINE PROFILES AND PHASES PLUS AN OBSERVING REPORT FORM

E. SIMS

PROGRAMME FOR MARCH

DAY	DIRECTORS	SECTION	PHONE No.s
Mondays from 8.00pm		GENERAL OBSERVATION SECTION	
4-11 18-25	Mr R Newman	[redacted], Felixstowe, IP11 9DY.	Tel. Fel. [redacted]
	Mr J King	[redacted], Felixstowe, IP11 9LQ.	Tel. Fel. [redacted]
Tuesdays from 8.00pm		GENERAL OBSERVATION SECTION	
5-12 19-26	Mr R Newman	[Address above.]	Tel. Fel. [redacted]
	Mr J King	[Address above.]	Tel. Fel. [redacted]
Wednesdays from 8.00pm		NEBULA AND FAINT OBJECTS SECTION	
6-13 20-27	Mr M Cook	[redacted], Ipswich, IP4 5PZ.	Tel. Ips. [redacted]
	Mr D Payne	[redacted], Wickham Market, IP13 0SD.	Tel. W.M [redacted]
Fridays from 8.00pm		PLANETARY AND LUNAR SECTION	
1-8-15 22-29	Mr P Richards	[redacted], Ipswich, IP4 1QB.	Tel. Ips. [redacted]
	Mr R A Lobbett	[redacted], Felixstowe, IP11 8UJ.	Tel. Fel. [redacted]
	Mr G Marriott	[redacted], Ipswich, IP4 4JB. [Assistant Director]	Tel. Ips. [redacted]

All nights are open to all members, but, on nights other than Wednesdays, ring directors to confirm. Directors will also be able to tell you if a group visit is taking place. All sections observe anything of interest, but the title indicates the main specialism.

Lectures and other events : COMMITTEE MEETING
The next committee meeting will be on Saturday 9th March at the observatory starting at 19.30. As usual this will be an open meeting and any member may attend if they wish.

1991 COMMITTEE

CHAIRMAN	D Payne	[Address above.]	Home: [redacted] Work:
VICE CHAIRMAN /VISITS CO-ORD	D Barnard	[redacted], Ipswich, IP4 5PP.	Home: Work:
SECRETARY	R Gooding	[redacted], Ipswich, IP1 6AE.	Home: Work:
TREASURER	M Nicholls	[redacted], Capel St Mary, Ipswich, IP9 2EX.	Home: Work:
MAINTENANCE CO-ORD	M Cook	[Address above.]	Home: Work:
JOURNAL CO-ORD	E Sims	[redacted], Ipswich, IP1 4HA.	Home:
LIBRARIAN	P Richards	[Address above.]	Home: Work:
EQUIPMENT CURATOR	J King	[Address above.]	Home:
SPECIAL EVENTS CO-ORD	A Smith	[redacted], Ipswich, IP4 5RZ.	Home: Work: