

JOURNAL of the  
ORWELL ASTRONOMICAL SOCIETY (IPSWICH)

JULY 1974

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"What's up?" The Solar System as seen from Ipswich (July 1974)

The Sun: will be in the constellations of Gemini/Cancer this month. As mentioned in the May journal solar activity at present is at a minimum but the odd few Sun spots still crop up from time to time. For those interested in recording Sun spots here is some data which will enable you to make a useful drawing and record of any seen.

Rotation No. 1616 commenced June 18.53  
 " No. 1617 commences July 15.73  
 " No. 1618 commences Aug. 11.95

Heliographic co-ordinates as at noon U.T.

	July 4	July 8	July 12	July 16	July 20	July 24	July 28
P	- 1.3°	± 0.5°	± 2.3°	± 4.1°	± 5.9°	± 7.6°	± 9.3°
Bo	± 3.3°	± 3.7°	± 4.1°	± 4.5°	± 4.8°	± 5.2°	± 5.5°
Lo	148.7°	95.7°	42.8°	349.9°	296.9°	244.0°	191.1°

P indicates the position angle of the northern end of the Sun's axis relative to the hour circle ± if east - if west of the hour circle.  
 Bo indicates by how much the Sun's equator is curved north or south ± if the equator is curved south - if north. When the Sun's equator is curved south as indicated above the northern end of the axis is pointing towards us.  
 Lo indicates the longitude of the Sun's disc presented to us on its meridian on axis as we see it.

On July 7th P. will be at zero and change from - to ± for the rest of this year.

Sun Spots An observation on June 9th showed a group of seven spots on the equator at approximately 13° longitude, two spots near the eastern limb at 5° S. latitude, longitude 70° and one spot at 5° S. latitude 170° longitude.

MERCURY: will be visible as a morning star in Gemini from around July 9th onward, it reaches an apparent stationary point of its orbit on July 12th at 01h UT. Greatest western elongation occurs on July 22nd at 09h UT (20° west). On July 18th at 04h UT Mercury will be 2° south of the Moon and on July 24th at 16h UT 1° 2' south of Saturn. Mercury will be magnitude ± 2.4 at the start of the month increasing to - 0.1 by the latter part of the month. Remember to contact Roy Cheeseman if you are interested in observing Mercury through the 10" OG and if there is sufficient interest the observatory may be opened early in the morning to view this object.

VENUS: is a morning star in Taurus/Orion/Gemini, rising about 2 hours before the Sun at the beginning of the month. On July 17th at 10h 15.7m Venus will be occulted by the bright limb of the Moon, it will re-appear at the dark limb at 11h 27.3m UT. This event will be in broad daylight but should still be observable due to the brilliance of Venus's magnitude - 3.4.

Venus is quite interesting to observe in daylight and the phase can be seen quite distinctly in a small telescope. Finding Venus is a different matter unless you can set your telescope accurately but more about this later. Venus will be in conjunction with Saturn on July 31st at 09h UT when it will be 0° 2' North of Saturn.

Venus will transit the meridian at the following times this month:

1st	Declination	± 19.7°	9h 43m UT	altitude	57.7°
6th	"	-I 20.8°	9h 48m UT	"	58.8°
11th	"	± 21.6°	9h 54m UT	"	59.6°
16th	"	± 22.3°	10h 00m UT	"	60.3°
21st	"	± 22.6°	10h 06m UT	"	60.6°
26th	"	± 22.7°	10h 12m UT	"	60.7°
31st	"	± 22.6°	10h 19m UT	"	60.6°

EARTH: reaches aphelion on July 5th when its distance from the Sun will be approximately 152,000,000 KM.

MARS: Not a spectacular sight it will be in the constellations of Cancer and Leo. Aphelion July 5th also. On July 26th at 09h UT. Mars will be  $0^{\circ}.7$  North of Alpha Leonis or Regulus.

JUPITER: Now rises late in the evening and can be found in the constellation of Aquarius. Magnitude - 2.2 at the beginning of the month increasing to - 2.4 by the end of the month. Jupiter will be  $7^{\circ}$  South of the Moon on July 10th at 07h UT.

SATURN: will be a morning star from the middle of July seen in Gemini, it will be in conjunction with Mars on July 24th and Venus on the 31st.

MOON: Phases:

First quarter	June 26th	19h 20m UT	
Full Moon	July 4th	12h 40m UT	
Last quarter	July 12th	15h 28m UT	New Moon July 19th
First Quarter	July 26th	03h 51m UT	12h 07m UT
Full Moon	Aug. 3rd	03h 57m UT	
Apogee	July 6th	21h	
Perigee	July 19th	22h	

Eclipse: The partial eclipse of the Moon which took place on June 4th certainly was a very interesting sight, the Moon was seen to enter the Umbra right on time. As the Moon rose higher into the sky the eclipsed portion became more distinct and by the middle of the eclipse in the region of 85% of the Moon's disc was covered by the Earth's shadow. In November there will be a Total Eclipse totality will occur shortly before Moonrise but more about this in November.

METEORS: The Delta Aquarids will be visible this month, maximum per hour predicted at 35 on and around July 27th - 28th. You will have to be up very early to see these, the radiant will be very low reaching only about  $20^{\circ}$  altitude.

COMETS: No bright comets around this month unless someone cares to discover one!

OCCULTATIONS: July 2nd ZC 2523 (51 Ophiuchi) magnitude 4.9 will be occulted by the dark limb of the Moon at 21h 50.9m UT. Moonrise on July 2nd will be at 18h 52m UT and Moonset at 1h 53m UT. July 16th two stars will be occulted:

ZC 631 (51 Tauri)	magnitude 5.6	Reappearance only at 1h 59.9 UT
ZC 654 (56 Tauri)	" 5.3	" " at 2h 33.6 UT

Moonrise on July 16th will be 0h 32m UT

Moonset will be at 17h 29m UT

Reappearance of both stars will be at the dark limb of the Moon.

July 17th Venus occulted in daylight.

#### TRIAL RUN

The trial run for the grazing occultation in October which took place on May 26th turned out to be a bit more successful than the first attempt in April.

About fifteen members turned up altogether with telescopes of all dimensions, three observation stations were set up, Station A at Raydon and Stations B and C at Shelley. Seeing conditions were good and at around 21h 26m UT the star alpha Cancri was seen to be occulted instantaneously by the Moon.

Parties at Stations B and C were supposed to meet back at Station A afterwards but ended up losing themselves again!

The next trial run will be on July 2nd, the meeting place being "The Chequers" pub at Raydon 20h BST. These events prove to be great fun and very interesting, all members are welcome so come along, the more the merrier. Bring your telescopes/binoculars and portable tape recorder if possible.

10" O.G. : We have at Orwell Park one of the finest refractors in this country. When Colonel Tomlin had his telescope built he wanted the best he could afford it. The telescope still ranks as one of the best and it can be used to perform much useful work.

Many of us tend to just sweep the sky for the next bright object that catches our eye through the slot of the dome, when we could be looking at most of these objects with our own equipment. There are many interesting objects to be seen with the 10" OG which most of us could never expect to see with our own sort of equipment.

Dr. Dewhirst who recently visited Orwell Park summed up the situation very well when he commented "It's as though you are going to the opticians to have your eyes tested and reading only the top line of letters on the card". We could be looking at the much fainter objects with the 10" OG.

It is however appreciated that many new members just starting to become interested in the Society and astronomy in general have to make a start somewhere.

EDITOR I would like to thank on behalf of the Society Mr. Charles Radle who for the last couple of years has been editor of your journal. As you know Charles has been organising the trial runs for the grazing occultations next October, which have been great fun, he also recently arranged the splendid trip to Cambridge radio and optical observatories which was very enjoyable. These events you might say are a climax to his departure, they have brought the Society's members closer together and new friendships have sprung up as a result.

I feel sure we all wish him every success for his examinations and studies in the future.

QUESTIONNAIRE FORMS: Many thanks to all the members who have so far returned the questionnaire forms. If you have not returned your form yet, would you please fill it in and post it back now.

These forms will be analysed in detail and from them useful information will be derived which will assist the committee in knowing the interests of the Society's members, they will also serve as a guide for the future development of the library.

MEETING JUNE 7th: An informal meeting took place at Orwell Park on Friday June 7th - not the 5th as publicised in last month's journal. About a dozen or so members turned up and the meeting was opened by our Chairman Roy Cheesman.

The first topic of discussion was the observatory itself and the repair work necessary to three dome bearing wheels, it was anticipated that removal and repair work should be carried out in August.

This followed with suggestions on the possibility of more organised trips, among those mentioned were:- London Planetarium, Science Museum Lectures, Natural History Museum, Norwich Astronomical Society Lectures.

Some members felt that as they could not always attend the Society's lectures, it would be a good idea if we could tape record them so anyone missing the lecture could hear the recording.

Following this our librarian talked for about an hour on the meteor count that was to be held on June 15th weather permitting. The Lyrid shower was discussed in general together with the various techniques of observation and photography required to give a good coverage for an accurate count.

Finally the Society's library was discussed and it was suggested that a time limit be imposed for the return of books in order that everyone had a chance of borrowing a book listed on a classification index.

RUSSIAN MOON PROBE: Luna 22 was launched from Russia on May 29th. It entered moon orbit on June 2nd and was in orbit during June 4th lunar eclipse. No further information.

#### A TRIBUTE TO MAN'S INGENUITY

The day July 21st

The time 20h 18m B.S.T.

A time in history when mankind on our planet Earth paused for a moment. Through the silence echoed these words:

"Tranquility base here". "The Eagle has landed".

If you have an alt-azimuth or equatorial mount on your telescope and no means of setting this up accurately continue reading.

When you walk around your garden next time, find the ideal place to observe your meridian, you can use a compass to get a rough idea of South.

Next take a wooden stake about one inch square and about six to nine inches long, make two saw cuts at right angles in the form of a cross on the end and knock the stake into the ground until it is flush but with the cross showing.

If you fix a plumb line centrally on the underside of your telescope mount or accessory tray and position your telescope centrally above the stake with the plumb line centralised just above the cross, you will have fixed the position of your telescope. The next step is to determine your meridian accurately which is best done at night time but to do this you will need to set declination or altitude accurately as on a Transit telescope.

To do this purchase a semi circular protractor from any stationers price about 15p, these can be obtained with half degree divisions. Drill a small hole at the intersection of the  $0^{\circ}$  and  $90^{\circ}$  lines and fix a short length of thin twine or fishing line through the hole which has been previously knotted at the end a couple of times to stop it pulling through the hole. Next fix a steel nut or something of similar weight at the end of the twine and you have a device for setting altitude or declination. If you have an equatorial mount adjust this to the alt-azimuth position.

Determine sidereal time when it is dark and look for a bright star with a right ascension a few minutes later than the sidereal time, this means it will cross the meridian in a few minutes time (do not forget Ipswich is about  $1^{\circ}$  east of Greenwich so sidereal time will have to be corrected plus 4 minutes).

Set the altitude or declination of the star using the flat part of the protractor device on the underside of the telescope tube, the twine hanging vertically, your altitude will be the number of degrees off the  $90^{\circ}$  line, e.g.  $30^{\circ}$  altitude corresponds to  $60^{\circ}$  on the protractor.  $8^{\circ}$  declination. As we are at about  $52^{\circ}$  latitude the altitude of the equator is  $38^{\circ}$ .

Adjust your mount in azimuth until at the precise moment your sidereal time and star's right ascension correspond and the star is central in your field of view, your star is then on the meridian, so lock the azimuth adjustment.

Level your telescope carefully, look through your telescope adjusting focus if necessary and see what you can find in the field of view, it may be a fence post or a brick wall, if you note whatever it is, this will determine your meridian from your fixed point above the stake.

You are now set to observe Venus in broad daylight or anything else you wish to observe in transit across the meridian.

JUNE IYRIDS METEOR  
STREAM 1974  
TOM CARDOT



Meteor observing in June in the British Isles is always difficult. The sky never goes completely dark as the sun never sets far below the horizon. In past years the stream has yielded bad reports from Great Britain because of this fact. With this in mind and also the fact that instead of this stream getting stronger it has become weaker in the last few years, the members of the Society felt it important to observe the stream.

On the evening of June 15th, at Foxhall Stadium we began our observation at 23h 30m BST. Over a period of two hours with fair to good skys we recorded 18 meteors. At first coming on fast and heavy and subsiding to just a few in the last hour. A preliminary rate is in the area of 13 per hour for the first hour and 5 per hour for the second.

I believe the response was very good, indicating how well the Society is welding into an effective team. Eleven members took part in the observation who were as follows:

VISUAL SECTION

John Deans<sup>X</sup>  
Nigel Gage

Mike Howell  
Mike Hadden

R. Norman  
David Barnard

PHOTOGRAPHIC SECTION

Roy Choeman  
David Bearcroft<sup>X</sup>

David Ling

Tom Cardot  
Steve Flory

<sup>X</sup> Denoting Section Supervisors.

Due to the fact that I have only a short time to analyze the reports before this Journal goes to press I will submit a full report in the next months Journal.

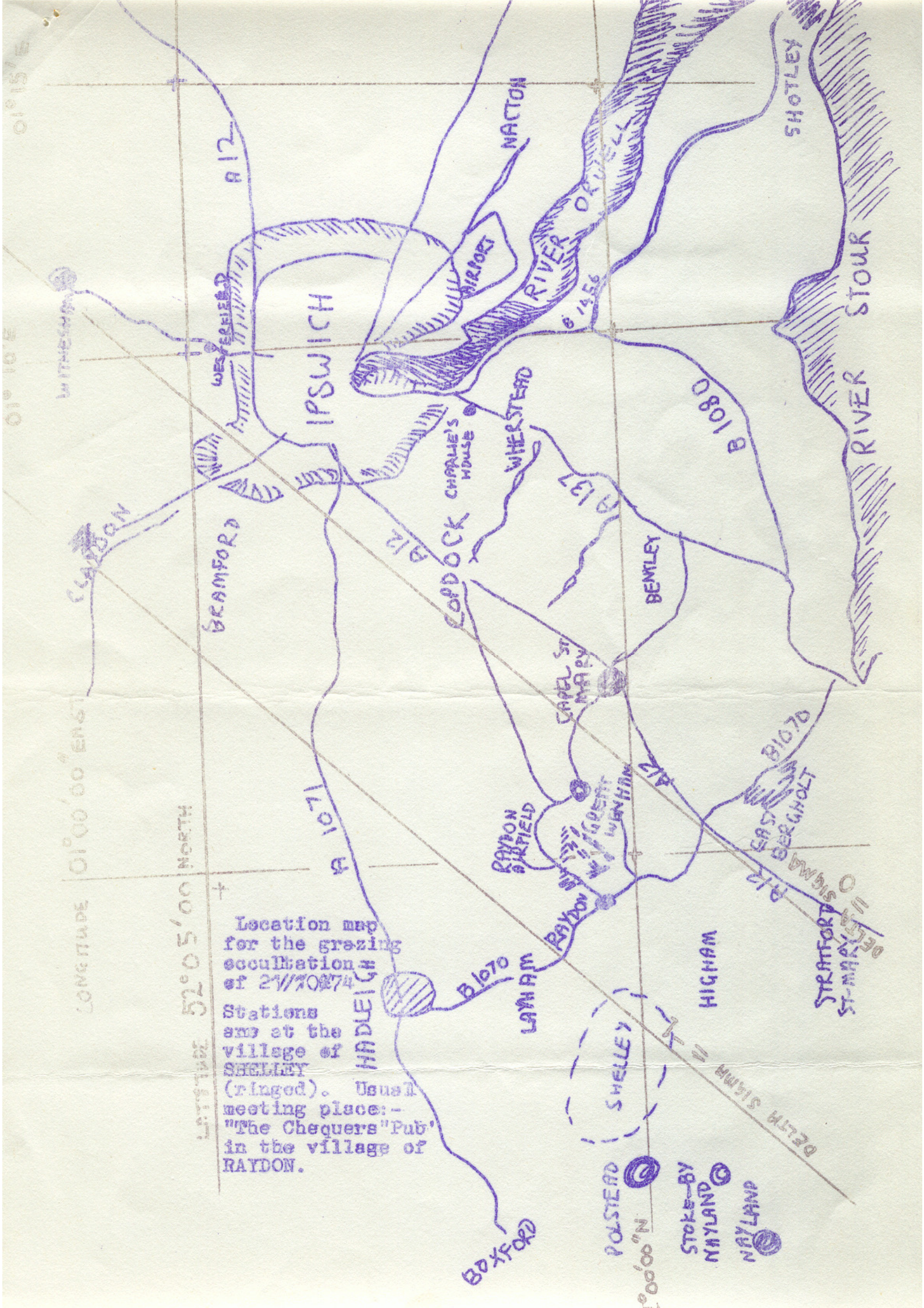
The next Meteor Stream worth watching will be on 27th and 28th July which is maximum. The stream is Delta Aquarids. The moon will be out of sight for the shower so we will be able to put the photographic section into operation as well. For further details attend the next general Meeting at Orwell Park on July 5th.

LIBRARY NOTICE: Donation of Sky and Telescope Mag. dating Oct. 1972 through to Dec. 1975 are available in the Library at this time, but of course not to be removed from Club Room.

SKY & TELESCOPES: Anyone interested in subscribing to this magazine please contact John Deans.

The Society is currently trying to negotiate concessionary subscription rates and it is hoped that further information will be available for next month.

FOR SALE: 3 inch aperture telescope (Refractor) F.L. 900mm. Equatorial Mount. 6 Foot tripod, collapsible. 3 eye pieces, 20mm, 9mm, 4mm. Barlow Lens for photography and increased magnification. Zenith Prism/Star Diagonal. Slow Motion controls in RA and Declination. Excellent view finder with cross-hairs. All in presentation case. Offers to David Nelson, [redacted], Wherstead, Ipswich or telephone: Ipswich [redacted]. This telescope was used in the Graze Dummy Run on May 26th and will be used on July 2nd's Dummy too. David Bearcroft used it, so get his comments.



Location map  
for the grazing  
occupation  
of 21/10/74

Stations  
are at the  
village of  
SHELLEY  
(ringed). Usual  
meeting place:-  
"The Chequers" Pub'  
in the village of  
RAYDON.

LONGITUDE 01° 00' 00" EAST  
LONGITUDE 01° 15' EAST  
LATITUDE 52° 05' 00" NORTH  
LATITUDE 52° 10' 00" NORTH

1st July, 1974.

Over the last year many new members have joined our Society so I thought that again I would publish a list of rules for using the Observatory.

#### CLUB NIGHTS AT OBSERVATORY.

A list of nights held at the Observatory is published in the monthly Journal and also in Saturday's edition of the Ipswich 'Evening Star' under 'Youth & Adult Activities'. Some of these nights will only be held weather permitting as many Directors live outside Ipswich. These nights will be marked 'Weather Permitting' in the Journal.

#### NOISE.

We are guests at Orwell Park School and our good relationships with the Headmaster, staff and pupils has been built up over many years. You are therefore requested to **KEEP AS QUIET AS POSSIBLE** so that we do not disturb the staff and pupils of the School. Remember that all people are not interested in astronomy and do not keep up to weird hours of the night.

#### ENTRANCE TO OBSERVATORY.

We are only authorised to use the entrance to the observatory by the carpenter's shop to the east of the School and must keep to the observatory and tower. Do not go into the School.

#### TOILETS.

We have been given permission to use the boys downstairs lavatory by the squash court.

#### CAR PARK.

We have been asked by Mr. Belle, Headmaster of Orwell Park School, to keep off the tarmac car park next to the carpenter's shop as this area is now used as a roller skating ring. Park your cars on the grass or on the concrete area next to the carpenter's shop.

#### TELEPHONE.

There is a telephone in the school for **EMERGENCY USE ONLY**. The evening's director will authorise you to use it if the case arises and show you where it is.

#### DOMES SHUTTER.

Only members authorised by the Society's committee may open or close the Observatory shutter.

#### SECURITY.

If you see any person about the school who you do not recognise or any person who arouses suspicion challenge them and if necessary report the matter to the evening's director or direct to Mr. Belle or one of his staff immediately.

#### LIBRARY.

We are now establishing a fairly good library of books and cuttings at the Observatory. Some of these books and papers are for reference only and should not be taken away from the library. These books and papers are clearly marked For Reference Only, **NOT TO BE TAKEN AWAY**. All library books which can be borrowed should be signed for when taken and signed back when they are returned. For full details see notice in the library.

#### DIRECTOR'S RESPONSIBILITY.

It is the responsibility of the evening's director for:-

1. Keeping everyone as quiet as possible so that the people at the school are not disturbed.
2. Opening and closing the dome shutter.
3. General safety of members at the observatory.
4. At the end of the evening ensuring that all lights are put out, doors are locked and that there is no risk of fire through smouldering cigarette ends.

Any problems at the observatory i.e. shutter sticking etc. should be noted in the observatory log. Anything serious should be reported immediately to

1. R.M. Cheesman, [redacted], Ipswich.
2. D. Bearcroft, [redacted] Ipswich, Phone [redacted]
3. D. Brown, [redacted] Ipswich, Phone [redacted]

or

*R.M. Cheesman  
Chairman OAS*



ORWELL ASTRONOMICAL SOCIETY (IPSWICH)

PROGRAMME FOR JULY 1974

TUESDAYS from 8.30p.m. PLANETARY SECTION  
Director. D. Bearcroft, [REDACTED], Ipswich, Phone [REDACTED]

9th July  
23rd "

WEDNESDAYS from 7.p.m. SOLAR SECTION.  
Director. R.M. Cheesman, [REDACTED], Ipswich.

3rd July  
17th "

from 8.30p.m.

10th July  
24th "

THURSDAYS from 9 p.m. VARIABLE STAR SECTION.  
Director. E. Cardot, [REDACTED], Ipswich, Phone [REDACTED]

4th July  
11th "  
18th "  
25th "

FRIDAYS. At 8p.m. on 5th July  
Committee Meeting plus general discussion evening at Observatory.

FRIDAY at 8p.m. on 19th July  
General discussion meeting at observatory.

THURSDAY 2nd JULY OCCULTATION.  
Capt. G. Deans, [REDACTED], Capel St. Mary, Ipswich  
Phone Ipswich [REDACTED]

Meet at 8p.m. at the Chequers Inn, Raydon.

SATURDAY 27th July. AQUARIUS METEOR SHOWER  
Directors; S. Flory, [REDACTED], Ipswich, Phone [REDACTED]  
and D. Barnard, [REDACTED], Ipswich, Phone [REDACTED]

Meet at entrance to Foxhall Speedway Station, Foxhall, Nr. Ips  
at 10.00p.m.