

August 1974

JOURNAL of the  
ORNELL ASTRONOMICAL SOCIETY (IPSWICH)

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'Phone Ipswich [REDACTED]

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

The Sun: will be in the constellations of Cancer/Leo this month.

Rotation No. 1617 commenced July 15.73d  
" " 1618 commences Aug 11.95d  
" " 1619 commences Sep 8.20d

Heliographic co-ordinates as at noon U.T.

Aug. 1	Aug. 5	Aug. 9	Aug 13
P +10.9°	+12.5°	+13.9°	+ 15.4°
Bo + 5.8°	+ 6.1°	+ 6.3°	+ 6.6°
Lo 138.2°	85.3°	32.4°	339.5°

A B C D

Aug 17	Aug 21	Aug 25	Aug 29
P +16.7°	+18.0°	+19.2°	+ 20.4°
Bo + 6.8°	+ 6.9°	+ 7.0°	+ 7.1°
Lo 286.6°	233.8°	180.9°	128.1°

Sun Spots (Editor) I would like to receive drawings/reports of Sun spot observations or even reports that no spots have been seen from anyone willing to participate in a sun spot recording exercise this month. If we can get enough reports and a good coverage for the month we will be able to monitor sunspot movements fairly accurately. Please note the above column A.B.C.D. if you decide to take part, determine the nearest date to the column above and note which letter you come above or under, if you come under say B make your observations on or around the dates indicated against the letter B this will I hope avoid too much duplication. To standardise reports please make your projected image 60 mm diameter indicate N/S E/W, date P.A. of axis, time of observation (UT), instrument used, magnification power and name of observer. Don't worry about the co-ordinates too much if you find them a little difficult to grasp, these can be plotted in later, the main thing is to make the recording. Finally if the outcome of this exercise is successful I will display the reports at the observatory for all who are interested to see.

MERCURY: Is in the constellations of Gemini/Cancer/Leo not very well placed for observation this month, magnitude - 1.2 falling off to - 0,6 by the end of the month. Superior conjunction occurs on August 17th at 10h U.T. On the morning of August 2nd at 06h U.T. Mercury will be 7° south of Beta Geminorum (Pollux)

VENUS: is still a morning star and can be found in the constellations Gemini/Cancer, magnitude - 3.3 at the start of the month increasing to - 3.4 by the end of the month. Venus rises in the E.N.E. about two hours before the Sun for best prt of the month. On the morning of August 10th at 02h UT Venus will be 7° South of Pullux and on August 16th at 09h UT 4° North of the old crescent Moon. For anyone interested in the daylight meridian transits of Venus see below, by the end of the month Venus will be getting too close to the Sun for useful observation and will remain so until later in the year when it will become an evening star.

1st	Declination	+ 22.5°	Transit 10h 20m UT	Altitude	60.5°
6th	"	+ 22.0°	" 10h 26m UT	"	60.0°
11th	"	+ 21.3°	" 10h 33m UT	"	59.3°
16th	"	+ 20.2°	" 10h 39m UT	"	58.2°
21st	"	+ 19.0°	" 10h 44m UT	"	57.0°
26th	"	+ 17.5°	" 10h 50m UT	"	55.5°
31st	"	+ 15.9°	" 11h 00m UT	"	53.5°

**MARS:** Is a 2nd magnitude object setting not long after the sun. On the morning of August 19th at 06h UT Mars will be  $7^{\circ}$  North of the Moon. Sunrise being at 04h 50m U.T., Moonrise 7h 16m UT on that particular day. Mars will be in the constellation of Leo this month.

**JUPITER:** Is retrograding in Aquarius, a brilliant object of - 2.4 magnitude, Moon near the planet on the evening of the 5th. Jupiter will be in conjunction with the Moon on the 6th at 10h UT when it will be  $7^{\circ}$  south of the moon the latter event not being observable.

**SATURN:** is a morning star in Gemini, magnitude 0.4, moving eastward, by the end of the month it will rise shortly after 01h U.T. On the morning of August 15th at 03h UT Saturn will be  $1^{\circ}.8$  North of the old crescent moon.

#### MOON: Phases

Lunation 638	First quarter	July 26th	03h 51 m UT
	Full Moon	Aug. 3rd	03h 57 m UT
	Last quarter	Aug. 11th	02h 46 m UT
Lunation 639....	New Moon	Aug. 17th	19h 02 m UT
	First quarter	Aug. 24th	15h 38 m UT
	Full Moon	Sept. 1st	19h 25 m UT
	Last quarter	Sept. 9th	12h 01 m UT

Apogee August 3rd 01h UT/August 30th 05h UT  
Perigee " 17th 07h UT

**METEORS:** The famous Perseid meteor shower occurs this month maximum on August 12th, notable characteristics being bright sometimes fragmenting meteors with fine trains, supposed to be excellent for photography. The predicted hourly rate being 68. The radiant is circumpolar and visible in the North east at around 0h UT on the 12th, at transit it will be  $6^{\circ}$  from the Zenith. The waning Moon rises at 23h 14m UT being a slight hinderance to observation.

#### OCCULTATIONS:

August 6th	21h 31.4m UT	ZC 3482	Magnitude 5.6	Reappearance
" 30th	0h 09.4m UT	ZC 2986	" 6.4	Disappearance

Moonrise on August 6th 20h 20m UT  
" " August 30th 17h 34m UT

**GRAZING OCCULTATION:** The last trial run scheduled for July 2nd turned out you might say a 'wash Out' the rain persisted throughout most of the evening, still for the landlord of "The Chequers" pub at Raydon the evening went well, about ten members altogether turned up. The next trial run will be on September 27th, a Friday, your last chance to get experienced and find out what it is all about before the real thing on October 21st. Meeting place, 'The Chequers' pub Raydon. If interested telephone Charles Radley, fast if possible. On Sept. 27th we will be observing two ordinary occultations at 22h 50m UT (5.3 magnitude star) and at 22h 52.2m (7.1 magnitude star) - corrections for Ipswich applied to both - which should be both interesting and useful. It is about ten minutes to midnight B.S.T. and we are hoping for a good turnout. The usual meeting time is 8. p.m. B.S.T. (19h00m U.T.) but we will probably hang around there until 9. or 9.30 p.m. B.S.T. (20h to 20h30m U.T.). We will then proceed to our stations at Shelley.

Participants in the dummy run should bring as many of the following as they can. Remember, there are always plenty of willing people to give lifts, or carry equipment if you can't yourself:- Telescope(s), portable tape recorder(s) of some descriptions and tape(s) and vehicle if you have one. Pray for clear skies.



GRAZING OCCULTATION cont'd: Finally C. Radley wishes to make it clear that he intends to see the Grazing occultation project through.

GRAZING OCCULTATION OCTOBER: (Editor) The actual event will take place on Monday October 21st at 17h 44m U.T. the skies will be a lot darker then, than at the same time now. However we do not revert to Greenwich meantime until October 27th so the B.S.T. time will be 18h 44m. If you are participating you will have to have everything set up ready at Shelley by this time, i.e. recorded time signal as well. I am publishing this information now to avoid last minute misunderstandings as some members may find it a bit of a rush to get to the observation site.

#### FORTHCOMING EVENTS

NORWICH ASTRONOMICAL SOCIETY: The N.A.S. will have a public meeting on September 21st when a speaker from the University of East Anglia will be talking on Artificial Satellites, and he hopes to tune into a weather satellite and get a television picture out of it. Anyone interested in going?

OPEN DAY: For those members who have never been to one of the Open Days yet (the last one was April 1973) which isn't many, You can be assured of a good time. It will be on the afternoon and evening of Saturday September 28th. Lots of volunteers needed to organize raffle, exhibits, guide visitors, ladies needed to run refreshments stall. Lots of telescopes, posters, astronomical maps, books with flashy covers of the Andromeda Nebula etc. are needed for the exhibition. Please lend the above things to the exhibition, they will be well taken care of. Lots of manpower is needed. If you have any suggestions about what we should do on the Open Day, please make them known now.

JULY DELTA AQUARIDS: On July 27th there will be a meteor count (weather permitting) similar to the last one, i.e. June Lyrids, same meeting place - entrance to Foxhall Stadium 22h B.S.T. If it is either cloudy or raining on the 27th the meeting will take place on the 28th, same time same place, if conditions still prevail meeting will be postponed. If you decide to come, bring along an easy chair, a pen or pencil,. Photographic enthusiasts bring along your cameras tripod if you have one plus a locking cable release for the camera shutter.

#### SKY AND TELESCOPE MAGAZINE subscription rates:

These are the cheapest rates found available to date:

1 year £5.25. 2 years £9.50. 3 years £13.50

Any interested members please contact the editor for further information.

#### NEW MEMBERS

The following new Members are welcomed to the Society.

Mrs. P.A. Long, [REDACTED], Ipswich.  
Bernard Tomilty, [REDACTED], Ipswich.



## LIBRARY NOTICE

Tom Cardot

First: Compliments to C. Radley for his donation to the Society Library "O" Level Astronomy by Patric Moore. This article is now on loan from our Library.  
Second: Recent addition to the library "Photography made Easy from Negative to Print". Available in the library for loan.  
Third: Compliments to Nigel Gage for donating the New Popular Star Atlas.  
Fourth: Compliments to Steve Flory on his excellent job of making a new shelf for the library cabinet.  
Fifth: At the last General Meeting on the 5th July the Rules for the library were adapted in full to be followed by club members using the facility. They read as follows:

Upon request from the Committee, I have been asked to draw up a set of RULES AND REGULATIONS governing the use of the Society's Library by its members. This notice is in compliance with this request.

1. The library and its surroundings will be kept neat and in an orderly fashion. That is to say books and etc. put back in their respective locations. This is the responsibility of all members who utilize this facility.
2. The shelves in the cabinet will be so used:
  - a. 1st shelf for books and etc. that are checkable from the facility.
  - b. 2nd shelf for books and assorted articles to be used in the dome when the telescope is in operation.
  - c. 3rd shelf will be utilized for research articles such as maps, BAA journals, and other assorted articles deemed as research.
  - d. Bottom shelf will be utilized for other assorted articles such as Sky and Telescope mag., catalogs., and forms.
3. All information and books that are checkable from the library will be done only in this manner:
  - a. The Director of the evening will be made aware of your intentions to take the article away.
  - b. The library will have a log which will never be taken off the facility for any reason without the Librarian's or a Committee member's knowledge. The log will contain such information as follows:
    1. Column 1 Name of article.
    2. Column 2 Author of article (if known)
    3. Column 3 The calendar date taken away.
    4. Column 4 Printed full name of person checking item out.
    5. Column 5 Signature of person checking item out.
    6. Column 6 Date brought item back.
4. Upon return of the item you will present the item to the Director of the evening for review for ill treatment and possible damage. It will then be entered back to the library with date returned put in block (6) of the library log. If damage has been done to an article then the Director will either contact the librarian as soon as possible or make an entry in the Dome log book stating the particulars.
5. If by your negligence an article is de-faced or damaged then it will be your responsibility to remit the cost of the article which will be established by the librarian.
6. The check out time for any one or more articles will be one FORTNIGHT. The limit to the number of articles signed out to one person will be five. This means simply no more than five (5) articles will be in your possession at a time. If this number is exceeded then you will have to return something before you can make another check.
7. If these Rules are repeatedly ignored then I the librarian will have to submit a report to the Committee for corrective action.

How still the Earth seems on a moonlight night! Yet the Earth has never been still for a moment of time. We do not know how long it has been spinning, but for millions and millions of years it has been flying like a ball through space. It began as a cloud of fiery gas; it cooled and shrank; and at last it became hard and round like an orange. And as we know, the Earth is like a speck in a boundless universe, one of the smallest of a thousand million worlds, all moving on and on in perfect order through space that seems to have no end. What are they like? Are they alive? Are there little children playing there? Perhaps not; we do not know. But they have their place in God's great scheme of things.

The big ball we live on, with its mountains, and rivers, and deserts, and animals, is only a mere speck in the vast infinity of space. It is surrounded by millions of suns and planets burning and spinning, born unknown ages before the Earth came into being. In comparison with its own Sun, the Earth is a tiny thing, and if it were nearer that shining star it would be drawn into one of its fiery whirlpools and devoured like a daisy in a prairie fire.

And there are many suns in space millions of times larger than ours. Besides suns and planets, too, there are tremendous clouds of lowly substance known as nebulae, so huge that the Earth in the middle of one of them would be like a pea in the Pacific Ocean. In space itself the Earth is quite lost. Think of the width, and breadth, and height of space!

The Sun seems a long way off, but its light takes only a few minutes to flash across to us, whereas astronomers who have been measuring the distances of stars have calculated that some of them are so far off that light, which travels at over 136,000 miles in a second, takes hundreds of years to reach us. Even farther off than that there are stars, for every time a new bigger telescope is built new stars come into view beyond the stars that were previously known.

So little then is our Big Ball when we look at it amid the suns and nebulae in the immensity of space, but we must not think less of our Earth.

As we rush round the sun in such a wonderful chariot, with the stars millions of miles away shining into our eyes, must recognise that the Earth's place amid the suns is a place of honour. We are proud when we go 100 miles an hour on the motorways; but what an adventure it is to go flying a thousand miles a minute round the sun, accompanied by Jupiter, Venus and Mars - to go flashing with the sun alone pathless space towards some unknown goal. Life can never be a stupid and dull and sordid thing if we educate our imagination to realise through what a wonderful universe we are rushing.

What we call empty space is not empty for it is full of invisible something we call ether, and it is this ether which conveys light to us, and tells us of a house across the street, of the suns millions of miles away. To see a glowing cloud millions of miles out in space, millions of miles in diameter, which has blossomed in the invisible ether, it certainly was not always there. When astronomer examine such a cloud with telescopes and spectroscopes they discover that the cloud is composed chiefly of the two gases hydrogen and helium. That does not seem very wonderful, but chemists have found out that all the elements in the world are made up out of atoms of these two light gases. In the cloud, hydrogen and helium are being prepared to make other elements that go to make suns and planets. At this stage the cloud is very thin, thinner even than the air we breathe; but as gases form, and new elements are constructed, the cloud contracts, or shrinks, and grows denser and hotter. The chemical processes going on, and the shrinking of the cloud, both produce great heat, and so the cloud becomes a blazing sun like ours.

But at a certain point the heat leaks away faster than it is formed, and the sun cools, and as it cools down heavier elements are formed. We can see many suns which have reached this stage, and the spectroscope shows that they contain numerous elements including iron and many other metals.

(2)

At first this Big Ball of ours was simply a globe of flaming gases and molten metals. As it cooled it formed a solid metallic crust, and as the metal cooled and solidified and condensed, it squeezed out slag. This slag formed the early crust of the Earth. And the amazing thing was that the crust contained iron, lime and sulphur and sodium and potassium - just those elements which were necessary to life. More amazing still, when the giant volcanoes spouted all over the world out of the bowels of the earth came streams which condensed into water and carbon dioxide gas and so the Earth got rivers and seas and an atmosphere. After millions and millions of years of flame and fire, of seething, boiling and bubbling, came the exact things to make life. The water, lifted and tossed by the air broke down the crust into soil and mud - into the clay of life.

And the Earth is the home of mankind, full of beautiful and wonderful things. We are rushing on, no man knows where, through the ocean of infinite space. We are spinning round our axis at about one-thousand miles and hour, we are revolving round the sun at eighteen miles a second, but so smooth is the motion that we feel neither the whirl or the rush.

On and on we go, and when the Earth has revolved some seventy times around the sun, you, I, and each one of us, may go on perhaps on a still more wonderful journey. But while we are here in this wonderful world let us try to explore its wonders and understand it and let us realize that, vast as is the universe, even so vast is the soul that has been given to us to comprehend it.

R.M. Cheesman.  
August, 1974.

PROGRAMME FOR AUGUST, 1974.

TUESDAYS: from 8.30p.m. PLANETARY SECTION

Director. D. Bearcroft, [REDACTED], Ipswich, Phone. [REDACTED]

6th August  
20th "

WEDNESDAYS: from 7p.m. SOLAR SECTION.

Director. R.M. Cheesman, [REDACTED], Ipswich.

14th August  
28th "

from 8.30p.m.

21st August.

THURSDAYS: from 9p.m. VARIABLE STAR SECTION.

Director. T. Cardot, [REDACTED], Ipswich Phone [REDACTED]

1st August.  
8th "  
15th "  
22nd "  
29th "

SATURDAY 10th August. PERSEIDS METEOR SHOWER

Directors. S. Flory, [REDACTED], Ipswich Phone [REDACTED]  
and D. Barnard, [REDACTED], Ipswich, Phone [REDACTED]

Meet at entrance to Foxhall Speedway Stadium, Foxhall  
at 10.00p.m.

FRIDAY. at 8.p.m. on 30th August.

Informal Meeting at observatory at 8p.m.

MONDAY: 12th August at 8p.m.

Committee Meeting at Chairman's house. Committee members, Section  
Directors and assistants only.