

JOURNAL of the
ORWELL ASTRONOMICAL SOCIETY (IPSWICH)

July, 1975

Editor. Mr. J. Deans
[REDACTED],
CAPEL ST. MARY,
Ipswich, Suffolk.
'phone GT. WENHAM [REDACTED]

What's Up? The Solar system as seen from Ipswich, July 1975.

SOLAR SECTION. This month the Sun will be in the constellations of Gemini and Cancer. Sunrise will be approx 03h 4m U.T. and sunset 20h 20m U.T. at the start of the month,

Rotation number 1629 commenced June 8.14d
" " 1630 commences July 5.24d.

Heliographic co-ordinates as at noon U.T.

	P	Bo	Lo		P	Bo	Lo
3rd July	-1.8°	+3.1°	24.4°	19th July	+5.3°	+4.7°	172.6°
7th "	0.0	+3.5°	331.4°	23rd "	+7.1°	+5.1°	119.7°
11th "	+1.8°	+4.0°	278.5°	27th "	+8.8°	+5.4°	66.8°
15th "	+3.6°	+4.4°	225.5°	31st "	+10.4°	+5.7°	13.9°

O.A.S.I. Sunspotting project.

Would any member/director who has participated in the project please forward their drawings or reports to the editor for collation. To date nothing has been received so it is regretted there will be no drawings reproduced in this month's Journal.

PLANETARY SECTION.

Mercury is a morning object +0.9 magnitude at the start of the month increasing to -1.2 by the end of the month. Mercury will be occulted by the Moon on the 7th, the event being during the daytime. Due to the magnitude of Mercury +0.4 a reasonable large telescope will be necessary to observe the event. Disappearance occurs 13h 57m U.T. and reappearance 14hr 50.4m U.T.

Venus is still an evening star setting approx 2 hours after the Sun at the start of the month, Venus reaches greatest brilliancy for this apparition on the 22nd, mag -4.2. On the evening of the 8th Venus will be close to Alpha Leonis or Regulus apparent magnitude 1.34 shortly after Venus has set it will pass 0.4° of Regulus. A crescent Moon will be near Venus on the evening of the 12th July.

Earth. The Earth will reach aphelion (152,080,000km) on July 6th at 03hrs U.T. You will notice that the position angle given in the heliographic co-ordinates on July 7th 6.6° indicates that the Sun's axis is practically in line with the line of apsides of the Earth's orbit, hence apparent nutation of it's axis as we orbit the Sun (described in last month's Journal) It is also interesting to note the displacement of Summer solstice and aphelion, a difference between the the line of apsides and line of solstices of 10° approximately.

Mars. The 'Red Planet' will be rising 0h20m U.T. at the beginning of the month and by the end of the month 23h U.T. approx. Mars is in the constellation of Pisces and will be moving into Aries very shortly, mag +0.7. This year's apparition will not be so favourable as the 1973 one. Opposition will occur in December when the planet will present a disc 16.6 seconds of arc in diameter, it will however attain a higher altitude than in the 1973 opposition.

Jupiter, rises about half and hour or so before Mars and can be seen in the constellation of Pisces, mag -2.0. The Moon will be in the vicinity of both planets (Mars and Jupiter) on the morning of the 5th.

Phenomena of Jupiter's satellites.

July	4th	01h 17m U.T.	Satellite	II	Eclipse disappearance
"	4th	02h 09m U.T.	"	I	transit ingress
"	5th	01h 37m U.T.	"	I	occultation reappearance
"	6th	01h 28m U.T.	"	II	transit egress
"	8th	01h 01m U.T.	"	III	" "
"	13th	01h 28m U.T.	"	II	transit ingress
"	19th	01h 49m U.T.	"	I	eclipse disappearance
"	22nd	01h 05m U.T.	"	II	occultation reappearance
"	28th	01h 47m U.T.	"	I	" "
"	29th	01h 02m U.T.	"	II	occultation disappearance

Saturn will be unobservable this month, conjunction occurs on the 15th at 15hours U.T.

Lunar Section.

Lunation 650

Moon Phases:

New Moon	July 9th 04h 10m U.T.
First Quarter	" 15th 19h 47m U.T.
Full Moon	" 23rd 05h 28m U.T.
Last Quarter	" 31st 08h 48m U.T.

Perigee July 11th 20hrs U.T.

Apogee July 27th 16hrs U.T.

Occultations:

July 18th	83B Sco	Mag 6.7	D	22h 45.2m U.T.
" 20th	30G Sgr	" 6.2	D	23h 15.1m U.T.
" 26th	6G Psc	" 6.2	R	22h 08.0m U.T.
** " 29th	51 Psc	" 5.7	R	01h 44.2m U.T.

** denotes star is a double

Meteor Section.

Capricornids, July 25th - 26th maximum ZHR 6. The radiant will transit the meridian at 00h 50m U.T. and attains an altitude of 23° . Bright meteors, Very Unfavourable.

Delta Aquarids July 27th - 28th. This shower has a double radiant i.e. 22h 36m R.A. - 17° Dec and 22h 36m R.A. 00° Dec., transit time 02h 10m U.T. Z.H.R. 35. For further information contact the Meteor Director, Mr. S. Flory and also see this month's programme.

A.S.T.P.

July 15th is the day set for the joint Soviet-American space project, it was hoped that some special information would arrive direct from N.A.S.A. for inclusion in this month's Journal but alas it has not arrived.

See March 1975 Journal for details and radio frequencies being used, also watch 'Daily Mail' satellite predictions usually next to the weather forecast for day to day predictions, Inclination of orbit 51.8° suggests that it will pass directly overhead at Ipswich.

Committee Meeting at Observatory.

There will be another committee meeting held at the observatory on Friday 11th July starting at 8.30p.m. to which you are all invited to discuss any topic you wish. It is hoped that more members will come to this meeting so that the Committee can find out what the members/would like the Society to do for them. Also at this meeting we will discuss the coming 'Open Day'

OPEN DAY.

The Open Day at the observatory will now take place on Saturday 4th Oct 1975. and not during September as was previously proposed. As many members as possible are requested to help in running this function not only on the day but also in getting the observatory ready. This Open Day is the main source of income and the more we can make the more we will be able to spend on equipment, books, e.t.c.

ANYONE OUT THERE?

During the past twenty-five years or so interest in astronomy has been aroused by the 'space-race' to get a man on the Moon. Now that this great ambition has been achieved the great question which arises is how far man will be able to travel into space in the foreseeable future. Will trips to the Moon and planets be a part of everyday life in the future? Now that we are in space our thoughts also turn to the possibility of life on other planets either within our own galaxy or in galaxies beyond ours who might have evolved before ours who have mastered long distance space travel?

At the present time, however on earth, the rockets which are used today in space travel are only capable of reaching the inner planets of our solar system. To get some idea of the size of the solar system in which we live and the distances which we would have to travel it is easiest^x we tried to imagine trying to make a scale model of it. To do this the instructions would read as follows:-

First place a football in the centre of London, this would represent the Sun. Now drive seventy miles and drop a ball-bearing of one-sixteenth of an inch in diameter and this would represent the planet Mercury, the nearest planet to the Sun. Driving on another fifty-five miles we would stop and drop a pepper-corn which would be Venus. The next planet on our trip would be the Earth which would be another forty-five miles drive and would be represented by a small pea. We would now be one-hundred and seventy miles away from London and the pea at our feet would be our planet Earth and only four inches away from it a pin-head would be the Moon. Driving on in our attempt to make a model of our Solar System we would have to travel another one-hundred and five miles to drop another ball-bearing to represent Mars and onward we go to the giant Jupiter but we would have to change our motor-car for some other means of transport for Jupiter, which would be represented by a ping-pong ball would be placed in Rome. Next stop would be for Saturn which would be a little smaller than the ping-pong ball and one thousand seven hundred and twenty-five miles away from our football which we placed in London, and Uranus and Neptune on our scale would be represented by marbles and three-thousand five-hundred miles from London and five thousand four hundred and seventy miles respectively. Finally the outermost planet which we know about in our solar system would be over seven thousand miles from London and represented by another small ball-bearing. To make this model would require a great width (very nearly the diameter of the Earth. As you can see even on this small scale the dimensions of the solar system in which we live is quite immense and when we think that the stars are many light years away we could not even try to make a model of our galaxy with the size items that we were using.

The galaxy in which we live is made up of (give or take a few thousand) one-hundred thousand million stars of which the Sun is just an ordinary common or garden one. The size of our galaxy and the relation of size and distances away of other galaxies can drive one mad, and to be an astronomer people say that you have to be a little mad anyhow!

There seems no limit to the size of space, as bigger telescopes and various means of electronic instruments are made so the size of the universe takes on new dimensions.

Apart from landing on the Moon man's greatest ambition is to find life in outer space, whether on the planets in our solar system or in other systems within or outside our galaxy. Recent probes, including the Pioneer probe which is still on its way to Saturn have found no evidence of life on the planets which it has passed, and pictures taken of Mars show it to be as lifeless as the Moon.. We know that we never meet Moon men or Martians (although the science fiction writers still seem to make a living out of writing about such people). The earth has been in existence for about four-thousand years and 'intelligent' man only a few thousand years. We have been in the space age for just over twenty-five years which represents a very minute fraction of the history of man. This means that if we were to find a planet with similar conditions to the Earth the chances would be millions to one against finding something we could 'talk' to. Since the early days when man believed the Earth to be the centre of the Universe, man has continued to have a conceited view of the Universe.

... they cannot be mis-understood for anything other than messages sent from another intelligent civilisation. So far these messages have been unanswered. It is obvious that other intelligences in space do exist and that Man is not unique. On the other hand every human being is different in some way from his fellows and to find something in outer space similar to ourselves would be remarkable.

Only the vast distances in space keeps us away from our neighbours in space. Only a few years ago it was proved by statistics that if a human body was to travel at more than twenty-odd miles per hour the human body would be crushed. Around 1958 the 'Sound Barrier' seemed an impossibility to break through and the thoughts to man travelling and landing on the Moon were for mad-men and science fiction writers only. These early problems have been overcome but we are still very far away from interplanetary space travel. To give another example of the distances which we would have to travel and the time it would take to get to, say Alpha Centauri, which is $4\frac{1}{4}$ light years away it would take 117745 years to get there travelling at seven miles a second (25,200 miles an hour or 215,308,800 miles per year). "Ah! Ah!" you say, "but soon we will be able to travel in space faster than this!" But assuming we could increase our speed ten-fold or even one-hundred fold it would still take 11,774 years and 117 years respectively to just get there, let alone get back.

The great Greek Euclides, whom we call Euclid, laid down several laws in mathematics which were regarded as self evident truths. For nearly two-thousand years they were unquestioned and on the basis of these 'truths' many wonderful engineering feats were performed. It was not until Newton and Einstein that these 'truths' were proved to be wrong, and as I have already said that many impossible engineering feats were achieved.

All we want now is someone who will completely dis-regard Newtons Laws of Relativity and Einstein's 'curve in space' and work out new methods of space travel in excess of the speed of light the Universe would be in our grasp. Perhaps some 'wonder-brain' on another world who has not heard of Newton or Einstein and their theories might have already mastered the speed of light or the forth dimension, time, and the people of that world are already engaged in interplanetary space travel and visited our Earth.

R.M. Cheesman.
July, 1975.
O.A.S.I.

Programme for JULY 1975.

WEDNESDAYS: from 7p.m. Solar, Lunar & Planetary Section.
Director Mr. R.M. Cheesman, [REDACTED], Ipswich.

2nd July
9th "
16th "

THURSDAYS: From 8.30 p.m. Double Stars Section.
Director Mr. D. Bearcroft, [REDACTED] Ipswich, 'Phone [REDACTED]

10th July
24th "

FRIDAYS: from 8.p.m. Lunar & Planetary Section.
Directors Mr. J. Deans, [REDACTED], Capel St. Mary,
'Phone Gt. Wenham [REDACTED]
and Mr. K. Dye, [REDACTED], Ipswich, 'Phone [REDACTED]

4th July
18th "

FRIDAYS: from 8.30p.m. Nebular & Faint Object Section.
Directors, Mr. H. Stow, [REDACTED], Ipswich
and Mr. R. Hazelwood, [REDACTED], Ipswich,
'Phone [REDACTED]

25th July

*****Friday 11th July at 8.30p.m at Observatory. *****
*
Committee Meeting to which all members are invited

SATURDAY 26th July Meteor Section,
Director, Mr. S. Flory, [REDACTED], Ipswich, 'Phone [REDACTED]

Delta Aquarid Meteor Count Saturday 26th July, meet at entrance to
Foxhall Stadium at 10p.m. irrespective of weather conditions.