

Journal of the  
ORWELL ASTRONOMICAL SOCIETY (IPSWICH)

March, 1975

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'What's Up?' The Solar System as seen from Ipswich, March, 1975.  
Solar Section.

The Sun: will be in the constellation of Aquarius until the 13th when it will cross into Pisces and pass through the first point of Aries i.e. the Vernal Equinox on the 21st at 06hrs U.T. The first point of Aries being in the constellation of Pisces due to precession of the equinoxes.

Rotation number 1625 commenced Feb 19.07d.  
" " 1626 commences Mar 18.40d.

Heliographic Co-ordinates as at noon U.T.

	P	Bo	Lo		P	Bo	Lo
March 1	-21.6 <sup>o</sup>	-7.2 <sup>o</sup>	222.7 <sup>o</sup>	March 17	-24.8 <sup>o</sup>	-7.1 <sup>o</sup>	11.9 <sup>o</sup>
" 5	-22.5 <sup>o</sup>	-7.2 <sup>o</sup>	170.0 <sup>o</sup>	" 21	-25.3 <sup>o</sup>	-7.0 <sup>o</sup>	319.1 <sup>o</sup>
" 9	-23.4 <sup>o</sup>	-7.2 <sup>o</sup>	117.3 <sup>o</sup>	" 25	-25.7 <sup>o</sup>	-6.9 <sup>o</sup>	266.4 <sup>o</sup>
" 13	-24.1 <sup>o</sup>	-7.2 <sup>o</sup>	64.6 <sup>o</sup>	" 29	-26.0 <sup>o</sup>	-6.7 <sup>o</sup>	213.6 <sup>o</sup>

Planetary Section.

Mercury: Rises around 06hrs U.T. which is approximately one hour before sunrise at the start of the month. It reaches maximum western elongation (27<sup>o</sup>) on the 6th at 06hrs U.T. magnitude +0.3, it is not likely that you will see Mercury this month.

Venus: Is a brilliant object in the evening sky at magnitude -3.4, it is pulling further away from the Sun and by the end of March will have reached 33 Eastern elongation. Venus will then be setting nearly three hours after the Sun. Venus is in Pisces at the moment but will move into Aries for most of the month.

Daytime observation of Venus should now be safer due to the increasing elongation of Venus, though it cannot be over emphasised that care must be taken not to accidentally look at the Sun through any telescope.

Venus will transit the meridian at the following times:-

	<u>Declination</u>	<u>Time</u>		<u>Declination</u>	<u>Time</u>
March 1	+1.9 <sup>o</sup>	13h54m	March 21	+12.0 <sup>o</sup>	14h05m
" 6	+4.5 <sup>o</sup>	13h57m	" 26	+14.3 <sup>o</sup>	14h09m
" 11	+7.1 <sup>o</sup>	14.00m	" 31	+16.4 <sup>o</sup>	14h13m
" 16	+9.6 <sup>o</sup>	14.02m			

The above times will have to be corrected for Ipswich which is about 1<sup>o</sup> East of Greenwich in longitude so deduct 4minutes.

British Summer Time.

B.S.T. starts just before Spring and if you think that's confusing on March 16th at 02hrs G.M.T. or Universal Time (U.T), we put the clocks on 1 hour. This means you will be getting up an hour earlier that morning (Sunday) and the evenings will seem that much lighter at the B.S.T. time compared with G.M.T. Stars and Planets will transit the meridian 1 hour later than compared with G.M.T. Sideral time can be calculated by subtracting 1 hour from B.S.T. then converting as normal from U.T.

Spring starts on March the 21st with the Sun crossing the equinoctial colure at 06hrs U.T.

Mars: is remaining inconspicuous in the morning twilight mag: 1.4. It will be moving slowly westward in Capricornus reaching 48<sup>o</sup> western elongation by the end of the month.

Jupiter Appulse, February 14th.

I wonder how many people discovered the fact that despite adverse weather conditions it would be impossible to have seen the Jupiter Appulse from this country at 21h43m U.T., i.e. 9.48p.m. because Jupiter had set at about 19hrs40m U.T.

This is what happens when you are preparing information a month ahead and you take the basic facts for granted without further investigation. Apologies to everyone for misleading information and to Spode who in this instance did not intervene.

Jupiter: Is moving into the glow of sunset, mag -1.6. Conjunction occurs on March 22nd at 02hrs U.T. Jupiter will remain in the constellation of Pisces for the rest of the year.

Saturn: remains in Gemini this month and is visible throughout most of the night setting at about 04hrs 30m U.T. At the start of the month Saturn will be magnitude +0.2 and retrograding until the 14th when it reaches its stationary point at 06hrs U.T. and resumes a direct motion until November.

Uranus. is an evening star in Virgo, magnitude +5.3. A gibbous Moon will be close to Uranus in the early hours of the morning on the 29th. The diameter of Uranus will be about 4" of arc.

Geocentric positions for Uranus.

		<u>R.A.</u>	<u>Dec.</u>
March	1st	14h01.0m	11°44'
"	11th	14h00.1m	11°39'
"	21st	13h58.9m	11°32'
"	31st	13h57.5m	11°24'

Lunar Section.

Moon Phases, Lunation 646

			<u>Moonrise</u>	<u>Moonset</u>	
New Moon	March 12th	23h47m U.T.	05h44m U.T.	17h52m U.T.	
First Quarter	" 20th	20h05m U.T?	09h44m U.T.	01h27m U.T.	
Full Moon	" 27th	10h36m U.T.	19h01m U.T.	05h20m U.T.	
Last Quarter	April 3rd	12h25m U.T.	01h43m U.T.	10h17m U.T.	
Apogee		March 11th	05h U.T.	Perigee March 25th	09h U.T.

C.E.D. (Crater extinction Devise, Ed.)

Those of you that are interested in Lunar observation and have been following the various techniques of C.E.D. will know that originally the Kodak No. 3 step tablet was being used to compare the relative brightness of certain Lunar features by the B.S.T.

This was found to be unsuitable as it was produced by a photographic process and so the B.S.T. Lunar Section changed to Neutral Density Filters. In the February Lunar Section Circular, Mr. L.E. Fitton writes - "As an alternative to neutral density filters, it should be possible to fit a piece of Polaroid in the draw tube and a similar piece to the front of the eyepiece (1.0. nearest to the 45° flat). If a pointer is fitted to the eyepiece exterior and a 0 - 90° scale is fitted to the draw tube, rotation of the eyepiece will 'cross' the Polaroids so that extinction of a Lunar feature can be obtained. The amount of rotation can be read off against the scales in the number of degrees and recorded as the "extinction factor" for that object. Mr. Fitton carries on to say that in many cases a devise can be made from an old pair of (genuine) Polaroid sunglasses and that if the polaroids are curved this should not be apparent or cause difficulty either mounting or observationally.

Inspired by the words of Mr. Fitton, I set off to the opticians in Ipswich with my unusual request for an old pair of Polaroid glasses to look at the Moon. The optician probably thought that I was some kind of a nutcase but I succeeded in obtaining two fine Polaroid spectacle lenses for the grand sum of 25p. I have since constructed a devise from copper tubing which can fit into a 24.5mm drawtube and and take 24.5mm push eyepieces, I find that the devise not only has potential for C.E.D. but it is also possible to compare relative brightness of stars as well.

If anyone would like to know more about this please write to me.

Occultations - add one hour for B.S.T. after March 15th.

March 1st	SAO 157849	Mag 7.2 R	01h51m U.T.
" 1st	SAO 157895	" 7.5-R	04h17m U.T.
* " 3rd	SAO 159490	" 4.7 R	01h34m U.T.
* " 3rd	SAO 183272	" 8.8-	02h09m U.T.
" 22nd	ZC 1197	" 6.0 D	20h23m U.T.
" 23rd	60 Gnc	" 5.7 D	20h53m U.T.

\* Denotes stars redoubles.

SAO 159490 Iota Librae mags 5.2, 5.8 sep 0.1°  
SAO 183272 mag 9.1, 10.1 sep 0.7°

## Meteor Section:

There are no spectacular meteor showers this month but next month will see the start of the April Lyrids from around the 19th April, and providing there are no other 'April Showers' we should see some bright meteors.

## Space News.

### A.S.T.P. (Apollo-Soyuz Test Project)

Preparations are well advanced for the launch of an Apollo spacecraft on July 15th as part of the joint Soviet-American space mission. The docking module which is 10 feet long and 5 feet in diameter is now at N.A.S.A.'s Kennedy Space Centre where it has joined the Apollo command and service module CSM III which arrived from Rockwell's plant at Downey, California last summer.

The docking module is basically an airlock through which astronauts can pass from Apollo to Soyuz or vice versa, and equalise pressure before they pass through to the other vehicle in the docking configuration. Apollo will be at one end with Soyuz attached at the other end connected by docking devices compatible with respective spacecraft.

Apollo will be pressurised with pure oxygen at 5 lbs sq.in. Soyuz however which normally has a 14.7 lb. sq.in. oxygen/nitrogen atmosphere will on the ASTP will be pressurised at 10 lb.sq.in.

The Apollo end of the docking module carries a drogue fitting of the type used on the Lunar module so that the probe on the CSM III can achieve a rigid docking with the docking module. The Soyuz end of the docking module carries an androgynous system whereby either Apollo or Soyuz can be active during linkup so that both craft can move about. It is also interesting to note that it is intended that all future manned space missions will employ the use of the new androgynous systems.

Several modifications have been made to the Soyuz spacecraft to suit ASTP. At the forward end of the spacecraft is an orbital module for the crew to inhabit during work and rest in orbit. It is 7.3 feet in diameter, 8.7 feet long and weighs 2,700 lbs. Behind this lies the descent module with flight controls and two couches for use during launch and re-entry, it is 7 feet in diameter, 7.2 feet long and weighs 6,200 lbs. The instrument module at the rear is 7.5 feet long, carries the other propulsion equipment and weighs 5,850 lbs. Two solar cell panels are attached 180° apart and span more than 30 feet. The complete Soyuz vehicle is 23.4 feet long, 7.3 feet maximum diameter and total weight 14,750 lbs.

The ASTP Soyuz will be launched at 12.20 GMT on 15th July into a 123 x 101 n.m. orbit at 51.8° inclination. Ideally only one 40 ft/sec manoeuvre will be necessary to set up the orbit for rendezvous, this being an apogee burn to circularise at 123 n.m. on revolution 17. A small trim burn may be made to compensate for insertion errors on the forth revolution, this is optional and would depend on post-launch information from Russia and U.S. tracking stations.

At 19.50 GMT ASTP Apollo CSM III will be launched on a Saturn IB SA-210 rocket, it will place Apollo into a 90 x 81 n.m. orbit. Sixty-four minutes after launch Apollo will separate from the S-IVB stage adaptor, turn round and dock with the drogue on the docking module and extract it from its truss assembly mounting 2 hrs 34 minutes into the flight.

About 21.36 G.M.T. Apollo will begin a complex series of manoeuvres in preparation for rendezvous with Soyuz at 121 n.m. altitude at 15.52 GMT on 17th July.

By this time the orbit of Soyuz will have decayed two miles from its circular 123 n.m. path. Docking should occur at 16.15 GMT. The first transfer from one vehicle to another will begin when the astronauts remove the Apollo command module hatch and stow it away under a couch, having first pressurised the tunnel. The docking module is then pressurised to 5 lbs sq.in. and its Apollo end hatch opened. Two of the Apollo crew will then enter the module, close the hatch behind them and raise the pressure to 10 lb sq.in. The Soyuz end hatch is then opened and the pressure equalised. After this the Soyuz hatch is opened giving access to the Russian spacecraft. When the crew return the reverse procedure is adopted.

The two vehicles separate at about 16.35 GMT on July 19th after 48 hours 20 minutes of joint activity. The Soyuz de-orbit burn is timed for 10.06 GMT on July 21st with a landing at 12.51 GMT. In the meantime Apollo will conduct an extensive programme of experiments before performing its de-orbit burn at 18.06 GMT on July 27th, The docking module is jettisoned 5 minutes later and CSM III splashes down at 18.55 GMT. The Apollo flight having lasted for 11 days 23 hours 5 minutes and as America's 32 manned flight into space will bring to a close the era of conventional piloted excursions beyond the atmosphere by that country.

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Radio enthusiasts may be interested to know that the following frequencies will be used during ASTP.

VHF amplitude-modulated units operating on the 121.75MHz band will be used by the Soyuz spacecraft and Russian ground stations.

2256MHz and 2077 MHz will be relayed through AST-6 satellite stations in synchronous orbit and this will improve voice and television coverage.

Acknowledgment to 'Flight International' for this information.

### Forthcoming Events:

'Do you believe in U.F.O.'s?' is the subject of the lecture organised by us to be held at the Friends Meeting House, Fonnereau Road, Ipswich at 8p.m. on Friday 7th March. The lecture will be given by Mr. C. Blount F.R.A.S. of the Norwich Astronomical Society.

Please detach the poster at the back of this journal and display it in a prominent place. Further copies of the Poster can be obtained from Mr. Cheesman.

### Federation of Astronomical Societies 1975 Convention.

The FAS is holding its 1975 convention at Salford University on March 29th and 30th. The convention is open to all persons interested in Astronomy whether or not they are FAS members, and the cost for the week-end is £6 (food and registration fee) with a reduction pro-rata. Overnight accomodation on the 28th and 29th may be booked at a further cost of £3.30 per night, accomodation will be in the halls of residence. An optional excursion will be available for the Sunday afternoon.

For full details and registration form write to:

Peter B. York,

[REDACTED],  
London, SW17 8HY.

### MEMBERSHIP SUBSCRIPTIONS 1975.

All membership subscriptions for 1975 became due on the 1st January, 1975. Those members who have not renewed their membership should send their cheque made out to the 'Orwell Astronomical Society (Ipswich)' and send it to the treasurer S.A.P.

Mr. G. Collier,

Hon. Treasurer, Orwell Astronomical Society (Ipswich)

[REDACTED]  
Church Road,

Chelmondiston,

Nr. Ipswich.

## PROGRAMME FOR MARCH, 1975

TUESDAYS: from 8p.m. Double Stars Section.

Director: Mr. D. Bearcroft, [REDACTED], Ipswich, Tel. [REDACTED]

4th March

18th "

1st April.

TUESDAYS: from 7.30p.m. Nebular & Faint Objects, Section.

Director. Mr. M. Stow, [REDACTED], Ipswich

and Mr. R. Hazelwood, [REDACTED], Ipswich, Tel [REDACTED]

11th March.

WEDNESDAYS: Solar, Lunar & Planetary Section.

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

from 7.p.m. 12th March

19th "

from 8.30p.m. 5th March

26th "

THURSDAYS: from 7.00p.m. Variable Stars Section.

Director. Mr. T. Cardot, [REDACTED], Ipswich, Tel. [REDACTED]

and Mr. D. Barnard, [REDACTED]; Ipswich, Tel. [REDACTED]

6th March

13th "

27th "

FRIDAYS: from 7.30p.m. Lunar & Planetary Section.

Directors. Mr. J. Deans, [REDACTED], Capel St. Mary,

Tel. Gt. Wenham [REDACTED]

and Mr. K. Dye, [REDACTED], Ipswich, Tel. [REDACTED]

14th March

28th "

FRIDAYS: from 7.30p.m. Nebular & Faint Objects Section.

Directors. Mr. M. Stow, [REDACTED], Ipswich.

and Mr. R. Hazelwood, [REDACTED], Ipswich Tel. [REDACTED]

21st March

Monday 3rd March Committee Meeting at Chairman's House at 8.30p.m.

Committee Members only please.

Thursday 20th March from 8.p.m. Visit to Observatory by Castle Hill Womens Club, organised by Mr. R.M. Cheesman.

Saturday 15th March at 7p.m. Visit to Observatory by 1st Westerfield Scouts

Wednesday 19th March. Visit to Observatory by 6th Ipswich Venture Scouts from 8.p.m.

\*\*\*\*\*FRIDAY 7th March at 8.p.m. Lecture at the Friends Meeting House, Fonnereau Rd. Ipswich given by Mr. Cyril Blount, F.R.A.S. of the Norwich Astro. Soc. The subject of the lecture is:

'Do you believe in U.F.O.s?'

ORWELL ASTRONOMICAL SOCIETY, IPSWICH.

presents

a lecture on

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Do you believe in

**U. F. O.s?**

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By

**CYRIL BLOUNT F.R.A.S**

at

The Friends Meeting House  
Fonnereau Road, Ipswich

on

**FRIDAY MARCH 7<sup>th</sup>**

at 8 p.m.

**ADMISSION FREE**

Secretary: Mr. M. Stow,  
13 Ladywood Road,  
IPSWICH.