



JOURNAL of the
ORWELL ASTRONOMICAL SOCIETY (IPSWICH)

DECEMBER 1973

Editor: Charles Ridley,

██████████,
WHEATFIELD,

IPSWICH,

IP2 8NQ

Phone Ipswich ██████████

SPACE PROBES ON THEIR WAY :- There are now seven space probes on course for four different planets, described as below:
Mariner-10 Venus/Mercury, launched November 3rd. First two planet mission. Will pass Venus on February 2nd 1974, and swing round reaching Mercury on March 23rd 1974. Its TV camera and instruments will monitor both planets as it passes. Pictures of Mercury's surface down to 0.1kilometre resolution will be attempted (that is better than the detail we can see on the Moon thru' our 10"OG). Mariner-10 is scheduled to return to Mercury on 22nd September 1974, and 17th March 1975. If its instruments still work, they will take more readings and pictures. Mariner-10 should obtain more information about Mercury in a fortnight than we have so far obtained in the history of astronomy.

Four Russian probes, Mars 4-7, are scheduled to reach Mars with roughly one week intervals in February and March 1974. The USSR have indicated that at least one soft landing will be attempted. Mars-3 soft-landed on Mars in November 1971, but 90seconds after touchdown, its transmitter failed.

Pioneers 10 & 11 are on their way to Jupiter. Pioneer-10 is due to reach the planet in this December. Pioneer-11 is due to reach Jupiter in early 1975.

BAA Handbook I mentioned in last months' newsletter that BAA Handbooks containing predictions for most of the astronomical goings on in 1974 are now available. If you would like a copy I can obtain them for you at the reduced price of 60p. If you would like a copy, please send the money to me in advance. DO NOT make out cheques/P.O. to me or the O.A.S.I., please make them out to "The British Astronomical Association". If you would like me to post the handbook to you please send me a stamped addressed envelope measuring 7"x10" (17.5cmx25cm), otherwise I will give it to you at a meeting.

THE ANNUAL GENERAL MEETING WILL BE HELD AT ORWELL PARK SCHOOL ON FRIDAY
4th JANUARY, 1974 at 8 p.m. U.T.

USEFUL AMATEUR ASTRONOMY

At the last committee meeting there was some discussion about trying to do more than just gaze idly through the 10", so here are some suggestions. Drawings of planets, stating with each drawing, time, date, magnifications, telescope, and quality of seeing and steadiness. Timing lunar occultations accurate to 1/10th of a seconds.

Finally, here are two simple but useful programmes:-

1) T.I.P. search. helpful if a moonblink (device for introducing red and blue filters in quick succession into the light path) is used. Details from me. The idea is to observe a crater carefully. Use a moonblink if available, to see if there are any unusual coloured spots, bright spots, flashes, or obscuration of detail. N.B. NEGATIVE OBSERVATIONS ARE AS IMPORTANT AS POSITIVE OBSERVATIONS. When making a TIP observation, state time, date, telescope, viewing conditions, etc, and crater observed, and whether the observation is negative, or what was seen. Craters worth watching on the Moon are:- Theophilus, Alphonsus, Hycho, Copernicus, and any other craters. Each crater should be observed several times in an evening if possible, and if possible more than one crater should be observed.

TIPs may be seen on the nights of 9th/10th December, and 10th/11th December, and the nights before and after that. This is due to the unusual combination of Full Moon, Perigee, Perihelion, lunar eclipse all occurring within a short space of time. See this month's What's Up article.

2) Another useful and recently begun BAA programme is the C.E.D. (Crater Extinction Device), which simply uses a step wedge light filter on different craters of the Moon at different phases of the Moon, and seeing which filter is needed to totally extinguish the crater.

c) BAA Lunar Section Project Moonhole is also a useful project, using the sizes of the shadows of various lunar craters to determine their profiles.

For further details of one or other of these Moon programmes, contact me.

"What's Up?" The Planets in December

Mercury having transited the Sun on November 10th (which was clouded out at Ipswich on the day, but was beautifully clear on the day before and the day after!!!****grrrr!! Curses, just like it was in 1970, no more of them until 1986) is now a morning star. No doubt photographs of the transit taken by more fortunate observers will be published in due course.

Mercury will be best visible around the time of maximum elongation which will be on November 27th, so start looking now. It grows brighter but smaller as time goes on, rising from mag +0.6 on November 19th to mag -0.5 on December 24th. It shrinks from 8.4" on Nov 19 to 4.8" Dec 24. At elongation it will be mag -0.5, and diameter about 6.6". It will be visible in the east before dawn, rising 05h40m, with sunrise at 07h30m. This is the best opportunity to observe it at the moment this year. It Mercury may also be visible as an evening star next February or January.

Venus is now a fairly conspicuous object in the south-west after sunset. It reaches greatest brilliancy of mag -4.4 on December 19th. Mars is well past its best, but is still fairly conspicuous in the south-east, high up. JUPITER is still visible, but fading.

Here are some more mutual phenomena of Jupiters' satellites:-

December 7th, I & III, start 16h 29m, end 16h 35m. III will be seen to fade and then brighten, while I passes not far away from III.

December 9th, start 16h 52m, end 17h 02m, only slight, may not be visible.

N.B. December 10th:- OCCULTATION of two satellites, starting 17h 52m, ending 18h 11m, I & III will be seen to approach, merge into one, and then separate.

N.B. December 11th, 18h 13m until 18h 21m, III will be eclipsed by I, and will appear to fade, then brighten.

SATURN Important event:- Saturn will be occulted by the Moon on the night of the 10th/11th December. Starting at 24h 03.7m U.T. December 10th, and ending at 00h 36.9m a.m. U.T. December 11th. This will be very interesting.

Use any telescope (the bigger the better!) and watch the planet approach the Moon, and disappear. When the occultation ends the planet will reappear at the opposite edge of the Moon. This is an infrequent and very interesting phenomenon, well worth watching.

THE MOON New Moon Nov 24th, First Quarter Dec 3rd, Full Moon Dec 10th, Last Quarter Dec 16, New Moon Dec 24, First Quarter Jan 1st.

Note:- Perigee Dec 10th, 22h; Full Moon Dec 10 01h Lunar Eclipse (=Full Moon) Perihelion January 4th (just 24 days later). This all goes to increase the possibility of a TLP this month.

There is an eclipse of the Moon this month, here are details:- Starts December 9th at 23h 37m U.T. Enters the umbra on December 10th at 01h 09m a.m. U.T., middle at 01h 44m U.T. Leaves umbra at 02h 20m, eclipse ends at 03h 52m.

It will be well worth staying up on December 9th to see the eclipse and on December 10th to see the Saturn occultation. Why not become nocturnal for those two days!!! STAY UP TO WATCH COMET KOHOUTEK RISE IN THE EAST SOUTHEAST BEFORE DAWN.

MERRY CHRISTMASS AND HAPPY NEW YEAR TO YOU ALL.

CLEAR SKIES FOR COMET KOHOUTEK!

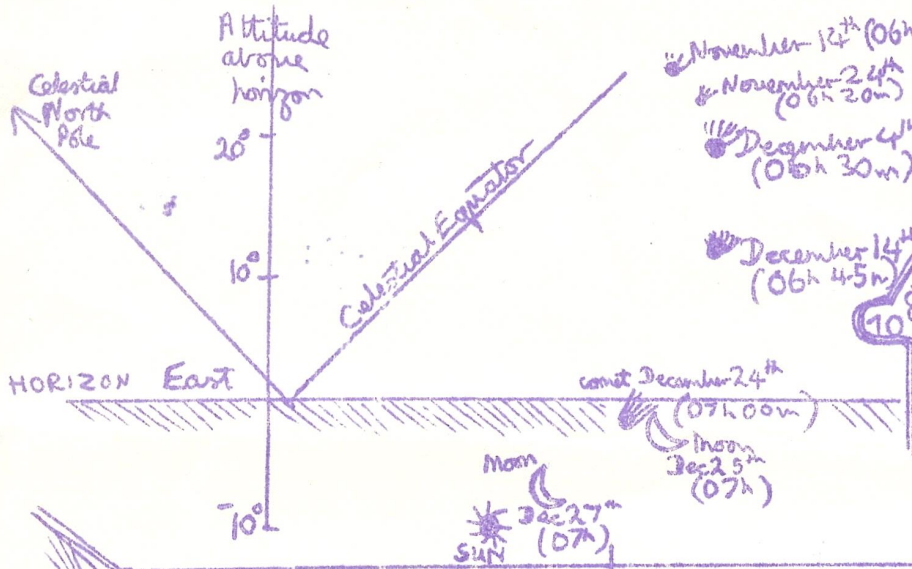
NEW MEMBERS:- NUMBER 100
101

GRAHAM SMITH, [REDACTED] KESGRAVE.
STEPHEN BROWN, [REDACTED] FELIXSTOWE.

FOR SALE PRINZ 100 ZOOM TELESCOPE. 60mm (2 1/2" Aperture)

Zoom mag magnification from 15x to 60x. Tempered type.
Good for wide fields, eg Comet Kohoutek.

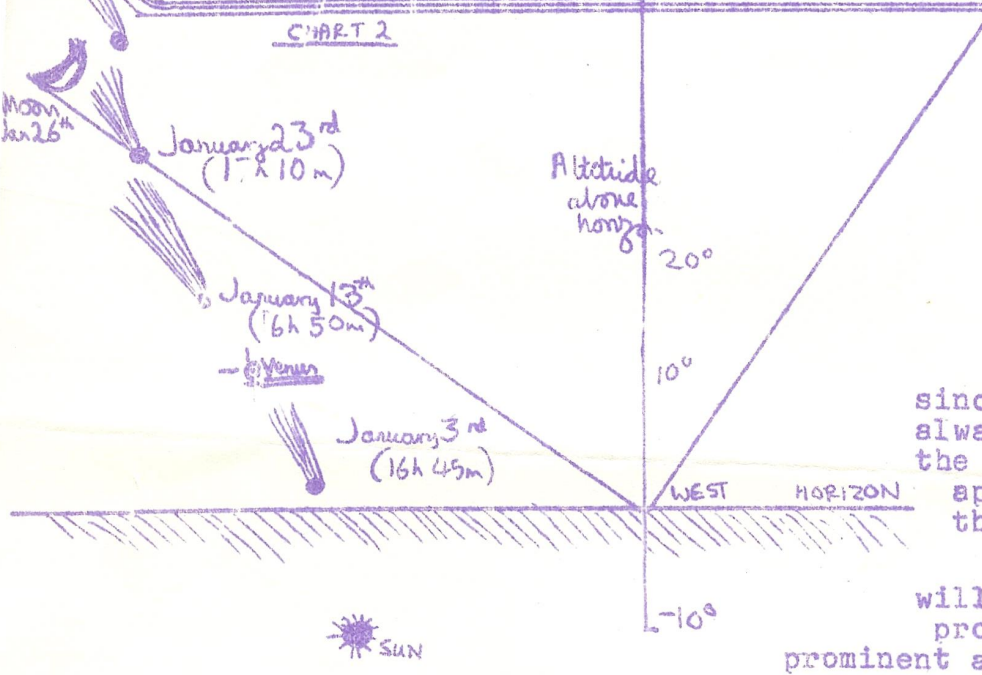
Contact: Patrick Carroll, [REDACTED], Ipswich.



Here are charts to find comet Kohoutek 1973f. Chart 1 shows the view looking East, when the Sun is 10° below the horizon. The times in brackets indicates the time on that particular date when the Sun will be below the horizon.

Also on these charts the Moon is shown when it is close to Kohoutek. Venus is marked on Chart 2.

CHART 2



Conjunction and perihelion will be on December 28th/29th. Before conjunction the comet will be south of the ecliptic, and after conjunction the comet will be north of the ecliptic; also, since the comet's tail will always be pointing away from the Sun, its tail will appear longer and brighter than before.

Therefore, the comet will be best in January, probably becoming most prominent about January 15th.

Many exciting experiments will be taking place to observe the Comet in new ways. Comets Ikeya-Seki (1965) and Comet Bennet (1970) were both observed by Earth satellites, but Kohoutek will be even more carefully observed than these two.

Skylab was launched after a small delay on November 17th. They will be in space for twelve weeks, coming down in the first or second week of February. This will allow the three men to track Kohoutek continuously throughout its brightest phase in December and January. As well as Skylab a number of satellites orbiting the Earth will monitor the ~~sexelix~~ comet with special instruments.

At the same time, Mariner-10, millions of miles away will also take TV pictures of the comet. This will be a fantastic first. For the first time we will be able to observe the comet from two different angles, allowing the first stereoscopic pictures of a comet to be made.

Also, radar will be beamed at the Comet. Radar echoes, if any, will give some information on the material in the comet's nucleus.

The comet's track across the background of stars was outlined in the October and November editions of this newsletter. Here it is again.

Up to December 7th it will be in VIRGO. December 8th until 14th it will be in southern LIBRA. December 16th until 22nd in SCORPIO (passing close to ANTARES on about December 20th). Dec 23-25, OPHIUCHUS. Dec 25- until January 4th, SAGITTARIUS, it will then pass through CAPRICORNUS and AQUARIUS, and after moving into PISCES it will fade into obscurity, not to be seen again for thousands of years, if at all.



ORWELL ASTRONOMICAL SOCIETY (IPSWICH)

PRESENTS

A TALK AND DISCUSSION ON

VARIABLE STARS

by

MR. C.R. MUNFORD F.R.A.S.

AT THE

FRIENDS MEETING HOUSE

39 FONNEREAU RD.

IPSWICH

ON FRIDAY 7th DECEMBER 1973

AT 8 P.M.

ADMISSION FREE

REFRESHMENTS AVAILABLE

SECRETARY- MR M. HADDEN
33 CROFTON RD IPSWICH-78768

MEMBERSHIP SUBSCRIPTIONS 1974.

All membership subscriptions for 1974 become due on 1st January, 1974 and are at the following rates:

Junior Membership (those under 18 years of age)	.75p.
Full Membership	£1.50p.
Family Membership	£2.00p.

Cheques/postal orders should be made out to 'Orwell Astronomical Society (Ipswich) and should be sent to me at the following address:-

Mr. G. Collier,
[REDACTED]
Church Street,
CHELMONDISTON,
Nr. Ipswich.

TREASURER.

ORWELL ASTRONOMICAL SOCIETY (IPSWICH)

██████████,
IPSWICH.

1st December, 1973.

You are invited to attend the Annual General Meeting of the Orwell Astronomical Society (Ipswich) which will take place in the Library of Orwell Park School Wacton on Friday 4th January, 1974 at 8p.m.

ELECTION OF OFFICERS FOR 1974.

The undermentioned officers elected at the last A.G.M. are willing to be re-elected if required. Any further nominations for officers of our Society should be sent to me by 31st December, 1973.

Officers elected at the last A.G.M.

Mr. R.M. Cheesman, ██████████, Ipswich (Chairman)
Mr. M. Hadden, ██████████, Ipswich (Secretary)
Mr. G. Collier, ██████████, Church Street, Chelmondiston (Treasurer)
Mr. C. Radley, ██████████, Wherstead, Nr. Ipswich. (Editor)
Mr. D. Bearcroft, ██████████, Ipswich.
Mr. M. Stow, ██████████, Ipswich.
Mr. V. Wilkes, ██████████, Ipswich.

M. S. Hadden.

M. Hadden, (Secretary)