

SOCIETY NEWS

ORWELL ASTRONOMICAL SOCIETY (IPSWICH)

JUNE 1984

PROGRAMME FOR JUNE

MONDAYS from 8pm 4, 11, 18, 25	DOUBLE STAR & PLANETS SECTION Mr N Taylor, [redacted], Farmlands Trimley Mr T Gillan, [redacted], Felixstowe	Tel: Fel. [redacted] Tel: Fel. [redacted]
TUESDAYS from 7pm 5, 12, 19, 26	GENERAL OBSERVATION SECTION Mr N Gage, [redacted], Trimley Mr R Newman, [redacted], Felixstowe	Tel: Fel. [redacted] Tel: Fel. [redacted]
WEDNESDAYS from 8pm 6, 13, 20, 27	NEBULEA & FAINT OBJECTS SECTION Mr M Cook, [redacted], Ipswich Mr D Payne, [redacted], Wickham Market.	Tel: Ips. [redacted] Tel: W.Mkt [redacted]
FRIDAYS from 8pm 8, 22	VARIABLE STAR SECTION Mr R Gooding, [redacted], Ipswich Mr M Nicholls, [redacted], Capel St. Mary.	Tel: Ips. [redacted] Tel: Ips. [redacted]

1. Open Weekend

Our Open Weekend fund raising event will be held on September 28th, 29th, 30th and October 1st. As with previous Open Weekends the observatory will be opened to the public each evening. In order to do this, a minimum of 6 members will be required to be in attendance on each night.

As well as using the 10", it is planned to have 2 or 3 smaller telescopes in use on the balconies.

If you can HELP, please contact R. Gooding.

2. Draw

1,000 Raffle tickets are to be printed for a draw to be held on Monday, 1st October. These will be distributed to members for sale, either with the July or August Newsletters.

The next committee meeting will be on Saturday, 9th June from 7.30 p.m. in the Club Room. All members welcome.

NIGHT SKY

Constellations (all times G.M.T.)

The Spring constellations of Bootes, Hercules and Corona Borealis are prominently visible above the Southern horizon.

Sun Rises approx. 03.50

Sets approx. 20.10

Partial eclipse of the Sun on May 30th

Begins 17hr.14m. Ends 19hr. 0m.

Moon ● 6th ○ 13th ● 21st ● 29th

Occultations

2nd ZC 1155 mag. 6.3 D 21hr. 5.8m

6th ZC 1669 mag. 6.7 D 23hr. 8.0m

Mercury Superior conjunction 23rd

Venus Superior conjunction 15th

Mars Rises before sunset mag. 1.1

Jupiter Rising at about sunset

Opposition on 29th May, mag. -2.2

Saturn Rises before sunset mag. 0.6

Uranus Rises before sunset. Opposition on the 1st. mag. 5.8

Neptune Rises just after sunset. Opposition on the 21st. mag. 7.7

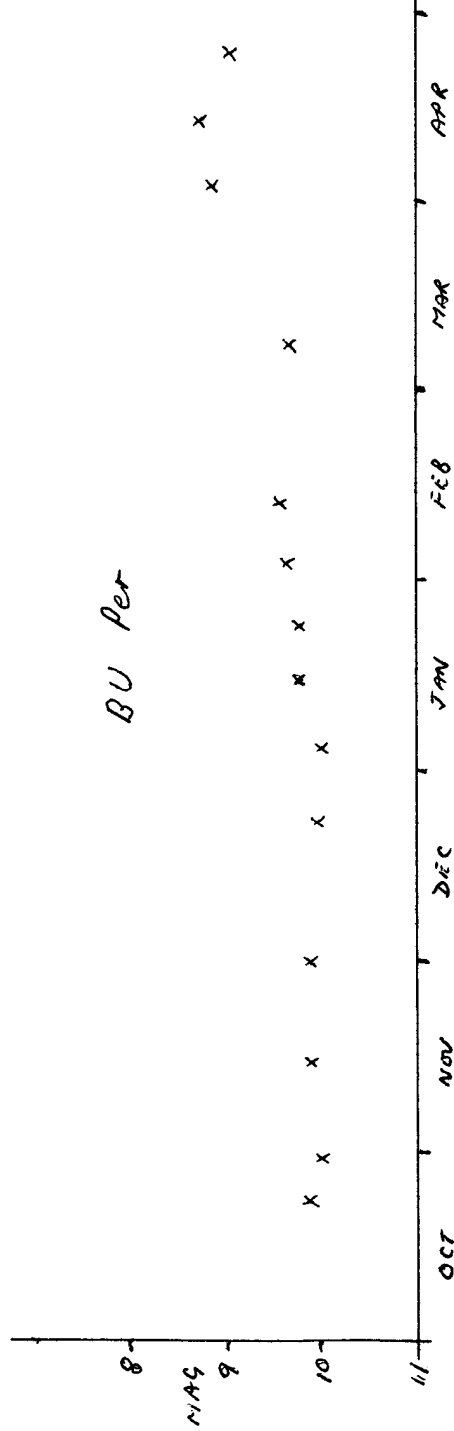
R. Gooding

VARIABLE STAR OBSERVATIONS

by Mike Nicholls

This light curve shows the semi-regular variable star BU Persei from October 1983 to April 1984. As can be seen, the star has not got a very great light range, but this is typical of most semi-regular variables. The period is given as 365 days but this is only very approximate, and can vary considerably. BU Per lies very close to the 'sword handle' clusters, however, I do not know whether it is a member.

Observations were made with an 8" reflector.



TWO SOCIETY EXCURSIONS

1. South East Essex A.S.

On Saturday 28th April, four cars carrying 11 members set out independently for Westcliffe-on-Sea, to attend the 10th Anniversary Meeting of the South East Essex Astronomical Society. The venue was at St. Thomas Moore High School. Using the map printed on the reverse side of a ticket, the school was found quite easily. After travelling for about an hour, the first car arrived at 10.15, carrying A.Smith, R.Gooding, C.Cornish and C.Button. Although the day's programme was not scheduled to begin until 11.00, the hall containing the exhibition and trade stands was quite full.

By 11.00 a.m. the rest of our group had arrived: D.Payne and family, M.Nicholls and R.Cheesman.

The day's main attraction was the lectures given by four well-known speakers:

- | | |
|-----------------|----------------------------|
| Nigel Henbest: | The New Telescopes |
| Heather Couper: | Exploring the Universe |
| Mat. Irvine | It's a small Universe |
| Patrick Moore | Exploring the Solar System |

The first lecture was held in the morning with the remainder following in the afternoon.

Lunch as well as refreshments could be purchased from the School's canteen. Throughout the entire day it never appeared to be closed. Those who had brought their own lunches either retired to their cars, or braved the cold breeze on the School's playing field, for lunch.

The day's programme ended about 18.30, at which point, after an enjoyable trip, we all set course for home.

A few days later, I learnt that S. Wenham, had also attended.

2. Cambridge

A week later, on Saturday 5th May, 11 society members once again set out on another visit. This time it was to Cambridge, to visit the optical and radio observatories.

At 11.00 we all assembled outside the Library of the Institute of Astronomy where we were met by Dr. D. Dewhurst. The tour began in the Library where a brief account was given of the history of optical astronomy at the University. This was followed by visiting the 12" Northumberland Refractor, the Schmitt Camera, the 36" reflector domes and the photographic plate measuring equipment. The visit was concluded in the Institute's map room. Photographic plates taken with the U.K. Schmitt Camera at Siding Springs, Australia, were examined, together with an extensive discussion of various star catalogues. The visit ended a little after 13.00. Lunch was taken at the Barton Public House, situated about 1 mile from the Mullard Radio Observatory.

At 14.00 we were met by Dr. Elsmore at the Radio Observatory. The tour began with a short introduction to the type of work carried out at the observatory. The largest instrument in use is the 5 km telescope. The telescope consists of 4 movable and 4 static 60' dishes. It was built on the site of an abandoned railway line. A close inspection of one of the eight dishes and the control room was undertaken. A short drive followed before walking round another part of the Observatory grounds. The visit lasted for nearly 2 hours before we proceeded to make our way home.

Members who came on the visit were D. Payne and family, M. Barriskill, D. Barnard, E. Sims, R. Gooding, R. Cheesman and a friend, and M. Cook with a colleague from work.

R. Gooding.

Visits this month.

Wednesday, June 6th 1.30pm. School children organised by Bob Newman.

Tuesday, June 19th 1.30pm. Visit by Gusford Primary School. Then at 2.30 this is followed by Beacon Hill Special School. Organised by D. Barnard.

Also this month, there is the Greenwich Meridian stamp issue on the 26th.

S T O P P R E S S . . .

On Monday April 23rd, at 2027 U.T a minus 10 magnitude fireball crossed the skies. In this month's journal a photo should appear taken with our All Sky camera by Alan Smith.



MONDAY NIGHTS

Monday nights can easily be distinguished from other days of the week by the meteorological phenomena of rain and/or cloud! Ever since the long gone days of 1983 a plague of clouds has daunted even the staunchest of observers to venture out on Mondays to our far flung part of the empire known as "The Dome". However, we live in hope that the gods if not actually smile on us, at least look the other way when we are trying to have a look around OUR universe. Now that Spring is here we are hopeful that our observing plans, at least as far as the planets go, will come to some fruition, especially now that Saturn, Mars and Jupiter are becoming more favourable.

The Sunday Times "Sky at Night" feature gives an excellent summary to planetary activity for the forthcoming week and can be thoroughly recommended.

Some items this month to be noted:

1) Los Angeles. The world's largest telescope, valued at \$100 million & financed in part of a grant, will be built on MAUNA KEA, a 14,000ft. peak on the island of Hawaii.

(Sunday Express)

2) The Open University have now included an Astronomy course in their associate student programme. The course, "Matter in the Universe", is run on a correspondence type basis, together with eight TV programmes & a local tutor. Although the cost of £175 is high, associate courses are of an excellent standard and we have no hesitation in recommending this course to members who are keen to delve deeper into this fascinating subject. Details from the Associate Student Office, Walton Hall, Milton Keynes.

Neil Taylor & Tom Gillan,

Heavy Star

D Barnard

A Soviet astrophysicist claims that a peculiar supernova explosion observed in 1961 must have resulted from the disruption of a supermassive star. The star would have been 2000 times heavier than the Sun.

The supernova occurred in the galaxy NGC 1058 in Perseus. At the time the supernova was observed, astronomers realised that it was unlike any other supernova because of its very long outburst. The 1961 supernova took a year to reach maximum brightness instead of a few days as normal. It then declined very slowly and erratically.

The observed light curve of the supernova matches that expected for the explosion of a star of 2000 solar masses and a diameter of 100 times that of our Sun. Just before it exploded, the star had a core of silicon, surrounded by oxygen and carbon, with outer layers containing about 95% helium and 5% hydrogen. The energy of the explosion was at least 10 times that of any 'normal' supernova.

Pluto the outer most (known) planet of the solar system, was at opposition on Friday 20th April. The apparent magnitude was 13.7 and should therefore have been visible in the 10" Orwell Park refractor. During the Easter week following the opposition of Pluto, we were blessed with excellent weather and clear evening skies, making it an opportune time for searching for this mysterious world.

Those of you who purchase the magazine "Astronomy", or who come up to the Observatory and read the Society's copy, will have seen the excellent star chart showing the predicted position of Pluto against the stellar background. With the aid of this chart the "Nebulae and Faint Objects Section" of the Society decided to attempt a search for the planet on Wednesday 25th April, using the 10" Orwell refractor.

We started searching about 21:30 U.T., first identifying the brighter star patterns with binoculars. Having found the brighter stars in the vicinity of Pluto, we used the 2.5" finder to position the 10" telescope close to the predicted position of Pluto. The 10 inch was now used with a x70 eyepiece giving a field of view of around 1/2 degree. The initial difficulty was identifying the stars visible in the 10" field with the stars shown on the chart in the "Astronomy" magazine.

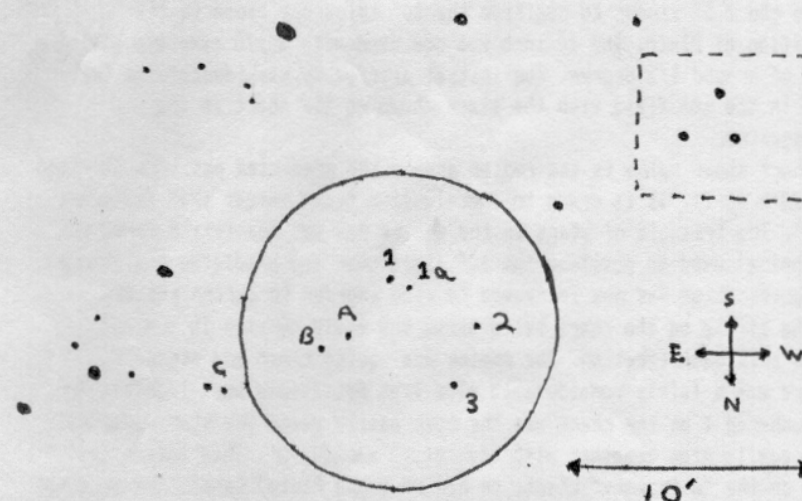
The chart shown below is the region around the predicted position of Pluto on Wednesday 25th April. It is drawn to a scale five times larger than the chart in "Astronomy". The triangle of stars in the square box was identified first and then 'star hopping' used to position the 10" field over the predicted position of Pluto. The magnification was now increased to x150 in order to darken the sky background. The circle on the chart below shows the field of view in the 10" telescope with this magnification. The seeing was quite clear and steady (although there was a fairly considerable glow from Felixstowe Dock lights). The star I have numbered 1 on the chart was the most easily seen. The star numbered 2 was next most easily seen together with the 'star' marked 'A'. This latter star was not shown on the "Astronomy" chart, so had we found Pluto? Careful observation of the 10" field revealed the star numbered 3 but we were unable to see the star marked 1a on this Wednesday evening.

Although we were fairly certain that the star marked 'A' (it was also observed by Stewart Dedman and Darren Payne) was Pluto it could only be confirmed by further observations on successive evenings, to see if it moved. Luckily the clear weather held and Thursday night (26th April) was clear. This enabled a further observation with my 10" reflector at Wickham Market. I found the area of sky quickly, easily recognising the patterns from the previous evening. The stars numbered 1, 2 and 3 were easily seen and I could also see the star numbered 1a. The star at 'A' on the previous night had moved to the position 'B', confirming that it was indeed Pluto!

I was unable to observe again until Sunday night (29th April). Pluto had moved a considerable distance to the position 'C' on the chart and now formed a faint, close pair with another star. Unfortunately the weather deteriorated on the

evening of Monday 30th April (and seems to have been poor ever since) and I was unable to confirm which of the two stars at position 'C' was Pluto. I believe it to be the one nearest to the A & B positions but cannot be certain because of the inaccuracies in the estimates of position.

If there were any other members observing Pluto during April I would be interested in hearing from them. It was clearly visible with direct viewing using my 10" reflector on the Thursday evening and would probably have been visible in an 8" with averted vision.



Observations of PLUTO:

A: Wed. 25-4-1984, 22:40 UT, Orwell Park 10" Refractor, x150.

B: Thur. 26-4-1984, 22:30 UT, 10" reflector, x150.

C: Sun. 29-4-1984, 23:15 UT, 10" reflector, x280.