AUGUST 1989

SOCIETY NEWS

1 **Next Committee Meeting**

The next meeting will be held on Saturday 16th September at the observatory, starting at 7.30.This is open to all members.

2 **OPEN WEEKEND**

This will be held from October 6,7,8,9th.As usual for these events HELP will be required to run each evening.From previous years experience at least 6 members are needed each night.

3 **PERSEID METEOR WATCH**

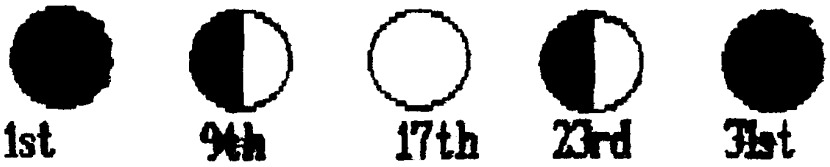
There will be a Perseid meteor watch on Friday 11th August.The meeting will be at the Ship Levington at 21.00.

NIGHT SKY

(ALL TIMES G.M.T.)

SUN Rises approximately at 04.20
Sets approximately at 20.00

MOON



MERCURY Mercury will be setting at about 1 hour after the sun at the begining of the month.Greatest eastern elongation is on 29th.

VENUS Venus will visible in the evening sky.It will be setting about 1 hour after the sun during the month.Mag.-4.0

MARS Mars will be low down in the west, setting less than a one hour at the begining of the month and reducing to less than ½ hour at the end.Mag.1.8

JUPITER Jupiter will be rising at between 01.00 and 23.30 during the month.Mag.-2.0

SATURN Saturn will be rising before sunset, and sets between 02.00 and 00.00.Mag.-3.8

URANUS Uranus rises and sets about 1 hour before Saturn.Mag.5.6.

NEPTUNE Neptune is located at about 2 degrees to the east of Saturn.Mag.7.9

R. GOODING

An Occultation of 28 Sagittarii by Titan

On 3rd July 1989 Saturn's moon Titan was predicted to occult a mag 5.4 star. Unfortunately, owing to the late arrival of an incorrect BAA circular only two members of the society observed the event. The occultation of Saturns rings by the same star was totally missed because of the inaccuracy of the circular !!

The society does not yet own a photometer so only a simple timing of the event was possible. Using 2 cassette recorders and the MSF Rugby clock to record and measure the event proved to be successful except for one deliberate mistake !

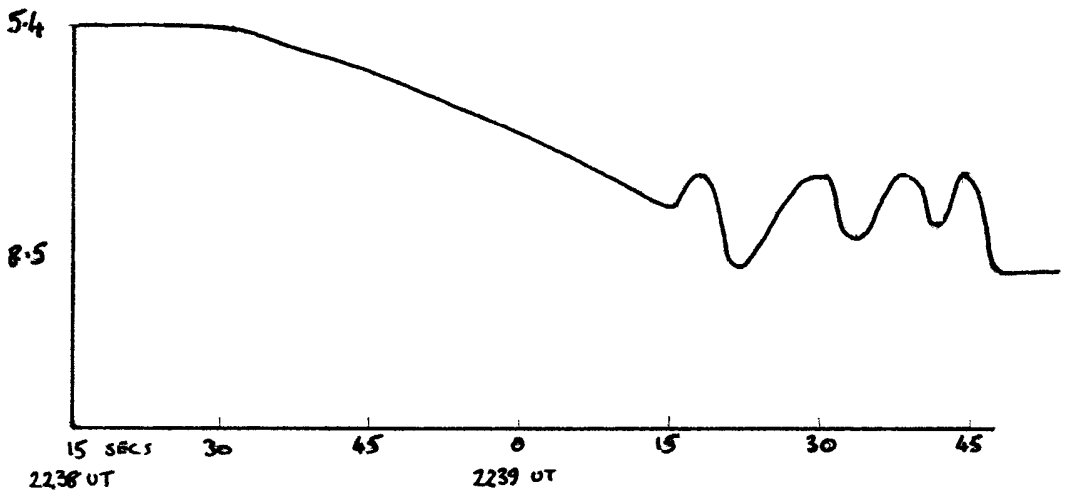
The observatory was opened up at 2200hrs UT and the 10 inch refractor aligned with Saturn. Titan was located with a little difficulty owing to the very poor seeing, the close proximity of the very bright star 28 Sagittarii and the floodlights mounted on the clock tower shining straight into the dome! The recorders were switched on and audio tests performed. The microphone picked up every whisper of the floodlit garden party taking place in the school grounds but only loud shouts from the observers!

Using a 270 magnification eyepiece, recording started at 2230hrs, with the event expected at 2240hrs. By this time the star and Titan were unsplitable and it was difficult to predict when something would happen. However, as we watched the brightness of the star dimmed, went out, came back and the finally dimmed again. Visually it was hard to follow what happened exactly. We will have to wait for the photometric light curves that will no doubt be published to explain our observation.

The next problem was when would the reappearance occur. For three or four minutes nothing happened, then Martin, who was using the 4inch jockey telescope shouted that the star was back ! I checked again and there was definitely NO increase in brightness through the 10 inch. Another three or minutes went by and it became apparent that something was wrong. This is where the deliberate mistake comes in. As the telescope was tracking across the sky following Titan it was simultaneously being increasingly occulted by the edge of the dome slot! The 4 inch jockey scope, being mounted off to one side of the 10 inch was unaffected.

The light curve as observed is shown below.

A.J.Smith
M.Cook



Uranus a Topsey Turvey World.

by J.Walsh.

More than 1,604,000,000 Miles (2,574,400,000 KM) from Earth, orbiting the Sun at a mean distance of 1,783,100,000 Miles (2,869,600,000 KM.) is the Planet Uranus. At this moment in time Uranus is the third largest of the Planets we know of in the Solar System, it's Equatorial Diameter being 32,192 Miles (51,800 KM), the Sidereal Rotation Period, or Day, is very short just over 15 Hours.

Uranus was the first of the planets to be discovered by Telescope, and was first seen by the Rev. John Flamsteed, the then Astronomer Royal on the 23rd December 1690. Because it is such a slow mover (it takes over 84 years to orbit the Sun.) it was dismissed as a Star. It wasn't until 13th March 1781 that William Herschell using a 6.2" Reflector with a 7' Focal length and a Magnification of 227 X noticed that this "Star" had moved over several Days. And, although at first thought to be a Comet, was eventually found to be a Planet.

Six Years later on the 11th January 1787 the first two of Uranus's Moons were discovered by William Herschell, and were named Oberon and Titainia. Two more Moons were discovered on the 24th October 1851 by an amateur astronomer W.Lassel using a 24" Reflector, they were named Ariel and Umbriel. The fifth of Uranus's Moons was discovered 16th February 1948 by G.Kuiper using the 82" Reflector at the Mc Donald Observatory in Texas, this one was named Miranda.

On the 10th March 1977 Uranus was due to occult the Star SA0158687. Thirty Minutes before this was due the Star was seen to "wink" five times. After the occultation there were subsequent "winks" as the Star appeared from behind Uranus, a Ring System had been discovered,

It wasn't until the 1985-6 Voyager Fly-By that Uranus's Ring System was seen in detail. Also the Fly-By discovered 10 more Moons. The first the these new moons discovered being Puck on 30th December 1985. The rest were all discovered in early 1986 and are now named. They are - Belinda, Rosiland, Portia, Juliet Desdemona, Cressida, Bianca, Orphelia, and Cordelia.

Voyager 2 also told us a lot about the atmosphere of Uranus,

the temperature at the clouldtops was -214 degrees centigrade (59 K), and is made up of mainly Water, Amonia, Methane, Hydrogen, Helium and Neon.

So as we leave this Blue / Green World moving slowly round the Sun with it's Ring System and 15 Satellites, the whole System tilted at the crazy angle of nearly 98 Degrees, we can truly say that Uranus is a Topsey Turvey World.

TOTAL LUNA ECLIPSE.

On the 17th of August 1989 there will be an exellent opportunity to see a Luna eclipse, (This is when the orbit of the Moon takes it through the Earth's shadow) . This type of eclipse may not have the ecitement and universal appeal of a Solar eclipse, but it comes a close second. Also since it takes place over a period of approx 3 hours and can be seen from almost anywhere that the Moon is in the sky at the time, it is much easier to observe than a Solar eclipse which lasts approx 40 mins and is visable as total only in a strip along the Earth's surface approx 100 miles wide; and of course nobody ever went blind looking directly at a Luna eclipse!

One unfortunate problem with this Luna eclipse is that it will take place from midnight onwards for observers in England. So you have to be a pretty dedicated eclipse observer to get up at midnight . Another problem with this eclipse is that from England you can only see the eclipse up to totality (this is when the Moon is totaly in the Earths shadow). This is because moonset occurs on the 17/08/89 at 04:52(GMT) just before the Moon starts to come out of eclipse at 04:56(GMT).

When you observe a Luna eclipse, one feature that may confuse you is that as the Moon moves east to west due to the rotation of the Earth, it is eclipsed trailing edge first, in that the shadow appears to catch up with the Moon . This is because the Moon's orbit is west to east when compared to the background stars. As is the Sun's apparent movement against the stars. But while the Sun takes a year to make one circuit of the stellar sky the Moon takes approx one month or 29.53 days (this period is called a Luna month, for obvious reasons). So as you watch the Moon moving with the stars you may not see instantly that the Moon is drifting behind a little all the time, and when on the rare occasions that the Moon's orbit either takes it across the Sun's disk or in to the shadow caused by the Earth, you will (if you are in the right place at the right time) see an eclipse. Thus in both types of eclipse, Solar and Luna, it is the motion of the Moon which makes up the major part of the total motion and so during a Luna eclipse it is the Moon moving eastwards through the Earth's shadow that you see and not the other way round.

If you wish to observe this eclipse, first find yourself an observing sight with a moderately flat southern horizon. Street lights and other light pollution is not so important since the Moon is quite bright until it is fully eclipsed. So unless you are thinking of taking long exposure photos around mid-eclipse, when any lighting that is visable directly ie. (you can see the light source as opposed to sky reflection), may reflect off the inside of the camara lens and produce ghost images.

For a Luna eclipse the mark one eyeball is perfectly adequate . But any instrument either binocular or telescopic will improve your view and help you to see the more subtle features. Like the flashes of colour along the edge of the eclipse terminator, which separates the lit from the eclipsed portions of the Moon or the changes in colour when the Moon moves through mid eclipse, at which time the only light reaching it is the long wavelenghts (red light etc) which will have been bent round the Earth's edge by the atmosphere.

The following table may help you to pick an observing sight and time. The times shown are in (UT/GMT) so for British Summer Time add one hour to the times listed. The coordinates of altitude and azimuth are in degrees, minutes and seconds with the horizon as zero degrees altitude and azimuth measured with zero degrees as north and reading east as 90 degrees, south-180 degs. and west as 270 degs. Also included are sunrise and moonset times, so you can see how far the eclipse runs into twilight.

Time	Azimuth	Altitude	eclipse position
0:23:0	+187:45:15.8	+23:24:39.4	Penumbral phase begins
1:21:0	+202:16:42.4	+21:24:51.6	Umbral " "
2:20:0	+216:17:27.3	+17:21:36.1	Total " "
3:09:0	+227:10:9.3	+12:42:7.2	UT of maximum eclipse
3:57:0	+237:10:30.1	+ 7:12:34.8	Total phase ends
4:56:0	Below the horizon from		Umbral " "
5:54:0	Suffolk.		Penumbral " "
4:52:0	+248: 3:34	+ 0: 0: 0	Moon sets
4:41:55	+ 66:37:44.2	+ 0: 0: 0	Sun rises

The times shown are for:-
lat(52 deg:0':5.5")North long. (1 deg:14':9")East. These are the coordinates of the observatory. But any one in suffolk should get exactly the same times. For any further details, especially photographic hints and tips see the August edition of Astronomy Now which is on sale today. Also the times and positions shown in Astonomy Now for London are of course slightly different to those for Ipswich and this is why the end of the Umbral phase is below the horizon from Ipswich but above from London. 100 miles can just make a difference for a luna eclipse!

By G. Marriott.

EARTH CALLING BASINGSTOKE

A documentary, in the Equinox series, about amatuer astronomers is scheduled to be broadcast, on Channel 4, at 7.00pm on the 30th July. The programme is called 'Earth Calling Basingstoke' and features amatuer astronomers many of whom will be known by mem bers of the OASI.

Orwell Astronomical Society (Ipswich)

Orwell Park Observatory

Situated at Orwell Park School

* Nacton Nr Ipswich *

Open Evenings 1989

October 6th FRIDAY 7th SATURDAY 8th SUNDAY 9th MONDAY

From 7.30 p.m. to 10.00 p.m Each Evening

PROGRAMME FOR AUGUST

Mondays from 8pm GENERAL OBSERVATION SECTION

7-14
21-28

Mr R Newman [redacted] Felixstowe, IP11 9DY. Tel. Fel. [redacted]

Mr J King [redacted], Felixstowe, IP11 9LQ. Tel. Fel.

Tuesdays from 8pm GENERAL OBSERVATION SECTION

1-8-15
22-29

Mr R Newman [redacted] Felixstowe, IP11 9DY Tel. Fel. [redacted]

Mr J King [redacted], Felixstowe, IP11 9LQ Tel. Fel. [redacted]

Wednesdays from 8pm NEBULA AND FAINT OBJECTS SECTION

2-9-16
23-30

Mr M Cook [redacted], Ipswich, IP4 5PZ Tel. [redacted]

Mr D Payne [redacted], Wickham Market, IP13 0SD. Tel.W [redacted]

Fridays from 8pm GENERAL OBSERVATION SECTION

4-11
18-25

Mr P R Richards [redacted], Ipswich, IP4 1QB. Tel. [redacted]

Mr M Harlow [redacted], Trimley IP10 0XB. Tel.

Mr R A Lobbett [redacted], Felixstowe IP11 8UJ. Tel.

All nights are open to all members, but, on nights other than Wednesday ring directors to confirm dates. [Directors will also be able to inform you of whether a group visit is taking place that evening.] All numbers, Ipswich (0473) unless otherwise indicated.

1989 COMMITTEE

CHAIRMAN	D Payne	(Address above)	Home: [redacted] Work:
VICE CHAIRMAN	D Barnard	[redacted], Ipswich, IP4 5PP	Home: Work:
SECRETARY	R Gooding	[redacted], Ipswich, IP1 6AE.	Home: Work:
TREASURER	M Nicholls	[redacted], Capel St Mary, Ipswich, IP9 2EX.	Home: Work:
MAINTENANCE	M Cook	(Address above)	Home: Work:
JOURNAL CO-ORD	E Sims	[redacted], Ipswich IP1 4HA	Home:
LIBRARIAN	P Richards	(Address above)	Home: Work:
EQUIPMENT CURATOR	J King	(Address above)	Home:
SPECIAL EVENTS CO-ORD	A Smith	[redacted], Ipswich IP2 9ES	Home: Work: