ORWELL ASTRONOMICAL SOCIETY (IPSWICH)

DECEMBER 1983

The Orwell Park Observatory 10 inch Astronomical Telescope at Nacton near Ipswich

SOCIETY NEWS

ANNUAL GENERAL MEETING

The 1984 Annual General Meeting will be held on Saturday 7th January from 8pm in the library of Orwell Park School.

ALL MEMBERS ARE INVITED. PLEASE MAKE A NOTE IN YOUR DIARY NOW.

DECEMBER LECTURE

A lecture titled 'SOLAR SYSTEM DYNAMICS will be given by Mr Neil Taylor at the Friends Meeting House on Friday 9th December starting at 8:00pm.

PLEASE COME ALONG.

NOTICE:

Mr Angus has asked that members of the society using the observatory should use the entrance via the former car park and round basement, instead of entering via the changing room. PLEASE NOTE

NIGHT SKY

Constellations (all times G.M.T.)

The winter constellations of Orion, Taurus, Auriga and Gemini are well visible during the month.

Sun Rises approx. 08.10 Sets approx. 15.50.

Moon ● 4th ◐ 12th ○ 20th ◑ 26th

Occultations

9th	ZC 3130	mag. 5.5	D	18hr. 32.6m
11th	" 3374	" 6.3	D	near gaze
13th	" 60	" 7.0	D	20hr. 35.0m
15th	" 298	" 7.2	D	21hr. 25.6m
15th	" 308	" 6.7	D	24hr. 17.7m

Partial Solar Eclipse Dec. 4th Begins 11hr. 40.5m
Ends 12hr. 04.0m

Mercury	Greatest Western Elongation on 13th (21°)
	Inferior Conjunction on 31st
Venus	Conjunction with Saturn on 17th
Mars	Rises about 6 hrs. before sunrise
Jupiter	Conjunction with Sun on 14th
Saturn	Rises about 4 hrs. before sunrise
Uranus	Conjunction with Sun on 2nd
Neptune	Conjunction with Sun on 21st.

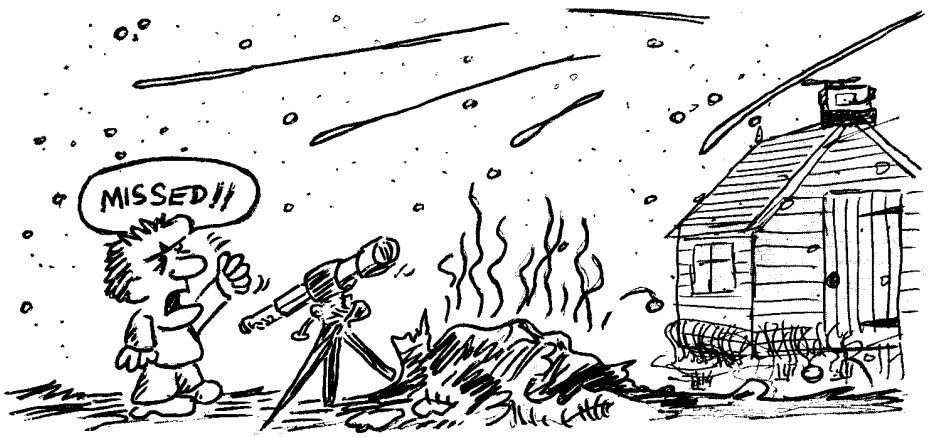
Meteor Notes December 1983 D Barnard

There are two major meteor showers visible this month:

1. The Geminids.
Maximum Dec. 14.2 Normal limits Dec. 7 - 15th.
ZHR = 60. Radiant RA 07hrs 28min Dec +32 degrees.
Rich in fireballs and faint meteors.

2. The Ursids.
Maximum Dec. 23 Normal limits Dec. 17 - 24th.
ZHR = 5? Radiant RA 14hrs 28min Dec +78 degrees.
Rich in faint meteors. This Shower is not well observed (probably too near Christmas) hence the question mark against hourly rate.
There will be a meteor count to observe the Ursids on Friday December 23rd. Meet at the Le vington Ship at 8:00pm. Weather Permitting Only.
Please come along, this will be the last organised event of the society for 1983.

If there is sufficient interest there may be a group Geminid count on sat December 10th. Keep in touch up the dome.
Meanwhile any back garden observations of any of these two showers (especially the Ursids) will be most welcome.
NB. If any members are in doubt wether the Ursids count is on (eg if its partly cloudy at an hour or so beforhand) please phone Dave Barnard on Ipswich [redacted].



Guide Telescope for the 10 inch Refractor D Payne

With the completion of the electric drive for the Orwell Park Telescope, the committee decided in March of this year to investigate the possibility of purchasing a 4 inch refractor as a guide telescope. This would enable long time exposure photographs to be taken through the ten inch telescope. Irregularities in the drive will be compensated manually using the remote control box now fitted to the drive unit.

After several months of fruitless searching contact was made with a Mr Wood of Welwyn Garden City who had a four inch refractor for sale. After several rounds of negotiation a price was reached that was mutually agreeable to both parties and the Society puchased the instrument. Mr Wood is himself a refractor enthusiast and he was very pleased to sell the 4 inch to the Society, knowing it was going to be used on the 10 inch Orwell Park Refractor.

On Wednesday 2nd November, Alan Smith and myself departed from Ipswich for the home of Mr wood somewhere in the depths of Welwyn Garden City. After a two hour drive, much of it through thick fog, we finally found the address. The journey was worth while. The instrument was in very good condition, although because of the weather conditions we could not test the OG that night. The tube is black, stove enameled, aluminium with a fully adjustable cell for the OG. The OG. is an air spaced achromat (in keeping with the ten inch OG) of focal length 48 inches (f12). The focusing mount is a rack and pinion type made by Irving and Son, with adaptors for 1 1/4" and 1" fitting eyepieces. Mr Wood also donated, to the Society, a 30mm focal length orthoscopic eyepiece with cross wires for use with the 4 inch refractor.

We had a very interesting evening. Mr Wood showed us a nickel iron meteorite and a tektite which was one of 60 that a geologist friend had sent from Australia. Apparently the geologist, having been requested to send back a tektite from the Australian desert, comissioned some of the local aborigines to find him some of these 'stones'. In a very short space of time they had presented him with *about 60 of the objects. (Tektites are one of the great mysteries.* They definately came to Earth from space but unlike normal meteorites they are made of almost pure quartz. They are also only found in specific regions on the Earth's surface one of these being the Australian desert).

We left Mr Wood about 10:00pm. By this time the fog had got thicker making the drive back tortuously slow. Eventually however we arrived back in Ipswich with the telescope intact. Now remains the job of fitting it to the ten inch telescope. The mounting needs to be such that the four inch can be moved approximately one degree in any direction independantly of the main telescope. This is so the guide telescope can be positioned with the cross wires over a reasonably bright star that is not necessarily in the field of view of the ten inch telescope. It is hoped that this will be completed before Christmas so that long time exposure photography can be started in the new year.

Possible 10th Planet and New Asteroid discovered by IRAS D Barnard

American analysis of data sent back by IRAS has apparently revealed a tenth planet beyond Pluto. The object is in the constellation of Sagittarius. Its infra-red emmision shows it has a surface temperature of about 230 degrees Kelvin (-40 degrees Centigrade). This is to hot for a dust cloud but to cold for a star. What it maybe is a distant gaseous planet, much heavier than Jupiter and giving off heat as its own gravity causes it to shrink in size.

Meanwhile there have been yet more discoveries by this satellite! Following the recent discovery by the Japanese of a ring close to the sun (A team of Japanese scientists sent up a balloon, during the total eclipse of the sun in June, containing instruments which managed to make recordings of the ring at different wavelengths. The ring has actually been thought to exist for some time - it is thought to be the cause of Zodiacal light. Observations during the eclipse, which lasted for 3mins 50secs, revealed that there is a flat plate of dust out to 3.8 solar radii from the sun. The main components are silicate grains, about 1,000,000 tonnes of them at a temperature of 1300 degrees centigrade) comes the Iras observation of three more rings circling the sun. The temperature suggests that they lie near the asteroid belt. Iras is revealing that much of interstellar space is littered with wispy clouds of dust and gas, known as infra-red cirrus. The brightness around the infra-red wavelength of 100 microns seems to suggest that they are made up of graphite dust that has been ejected from stars as stellar wind and mixed up with ionised Hydrogen gas.

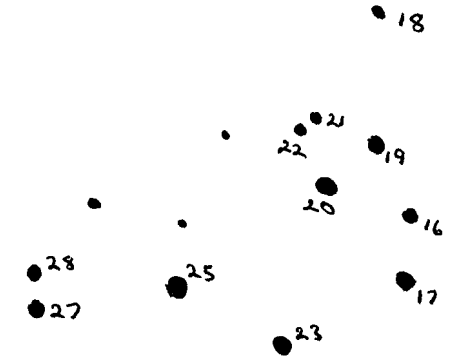
IRAS has also located an asteroid like body which can approach the sun to less than half the distance of mercury. The object, known as 1983TB, was identified on 11th October at Leicester University. It has a 1.5 year long orbit, making it an Apollo asteroid, one of a group of about 50 small bodies whose orbit crosses the Earth's. It swings very close to the sun, 20.7 million km, beating Icarus by 5 million km. The orbit of 1983TB exactly matches that of the particles that give rise to the Geminid meteor shower, visible this month. All of the main meteor streams have an associated parent comet - except until now the Geminids. It is therefor possible that this object is a severly decayed comet that may have been the parent comet for the Geminid shower. Frequent passages of a comet close to the sun can drive off the volatile ices. When these have disappeared the resulting small nucleus would probable resemble an asteroid.

The Pleiades Star Cluster D Payne

Most people be they astronomers or not have heard of the 'Seven Sisters 'properly known as the Pleiades, M45 in Messier's catalogue. The Pleiades cluster is an unmistakeable object in the constellation of Taurus the Bull.

It is an interesting object for naked eye observation and provides a good test of both eyesight and seeing conditions. Most people can easily see six stars these are 17, 19, 20, 23, 25 and 27 and 28 taken as one star (see diagram below for star numbers). Careful observation with the eye usually shows the star 27,28 to indeed be two individual stars making up the famous seven. Keener eyed people will find the stars 16, 18 and 21 and 22 (taken as one star) bringing their total up to 10. The stars 21 and 22 are 2.8 minutes of arc apart and being of almost equal magnitude can be seperated fairly readily without optical aid. This brings the total to 11 stars identifiable with the unaided eye. Sixteen stars have been claimed for naked eye observation and there are potentially about 20 stars within the reach of the eye making such observations an interesting challenge. A word of warning though. It is very easy to convince your self that you can see the more difficult stars of the Pleiades if you are observing with binoculars or low power telescope at the same time. The technique to adopt for naked eye observation is to first observe with the eye alone noting all the stars visible (and preferably drawing them in their relative positions). Having satisfied yourself that no further stars are visible use binoculars or a low power wide angle eyepiece with a telescope, to confirm the stars and positions drawn.

The Pleiades cluster is about 410 light years away with a diameter of about 7 light years. The Brightest stars in the cluster are all blue giant type stars. An interesting feature of the cluster is the faint nebulosity that becomes prominent only in long time exposure photographs. This nebulosity appears to be dust and possibly larger solid particles enveloping the entire cluster.The nebulosity shines by reflected star light from the brighter members of the cluster. The brightest portion of this nebulosity surrounds the star Merope (number 23 in the diagram) and is known as the 'Merope Nebula'. This nebula was discovered by a Professor W Tempel with a 4inch refractor in venice on October 19th 1859. It is however a very difficult object and I have yet to see it either with my own 10" reflector or the 10" Orwell refractor probably because of background sky glow from artificial lights.



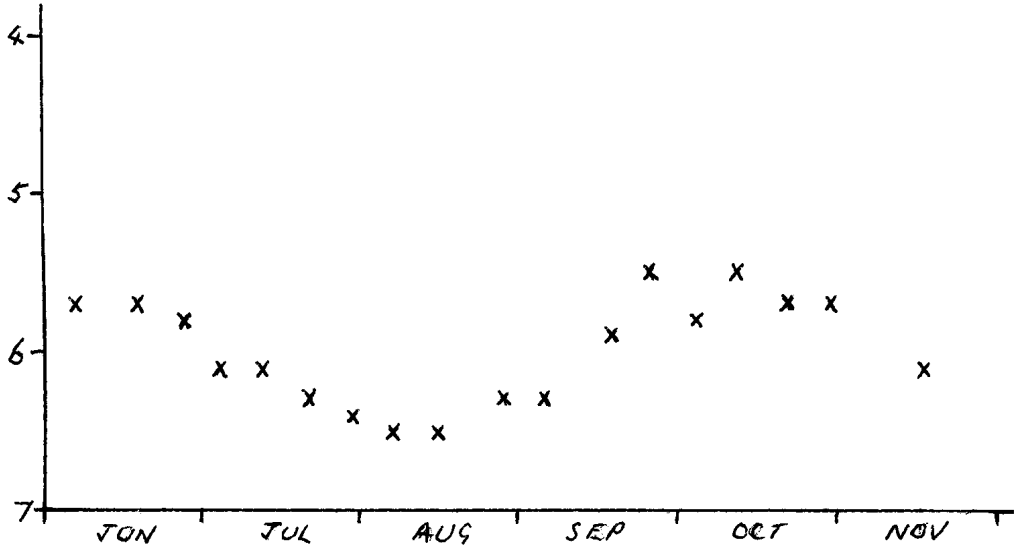
VARIABLE STAR OBSERVATIONS

by Mike Nicholls

The light curve shown below is that of W Cygni from June to November this year. W Cygni is a member of the semi-regular class of variable stars. The light curve shows what appears to be slightly more than a full cycle of variation. The period quoted is about 130 days, which agrees approximately with the light curve, although this is the first time in 3 years that I have seen it do so. This period is said to be superimposed on top of a period of 3100 days, but the curve below cannot show any sign of this, being only 180 days long.

The brightness range is normally between 5.0 and 7.6; most semi-regular stars have light ranges of about 2 magnitudes or less.

This star has been observed using 10x50 binoculars. It is easy to locate and observe; anyone wishing to try will find a comparison star chart in the August 1982 journal. Alternatively I will supply one on request.



PROGRAMME FOR DECEMBER

MONDAYS from 8pm 5, 12, 19	DOUBLE STAR & PLANETS SECTION Mr N Taylor [redacted], Walton Felixstowe. IP11 9BE Mr T Gillan [redacted], Felixstowe	Tel:Fel [redacted] Tel:Fel
TUESDAYS from 7pm 6, 13, 20	GENERAL OBSERVATION SECTION Mr N Gage, [redacted], Trimley Mr R Newman [redacted], Felixstowe	Tel: Fel [redacted] Tel: Fel.
WEDNESDAYS from 8pm 7, 14, 21	NEBULEA & FAINT OBJECTS SECTION Mr M Cook, [redacted], Ipswich Mr D Payne, [redacted] Wickham Market.	Tel: Ips. [redacted] Tel:W.Mkt
FRIDAYS from 8pm 23, 30	VARIABLE STAR SECTION Mr R Gooding, [redacted], Ipswich Mr M Nicholls, [redacted], Capel St. Mary.	Tel: Ips. [redacted] Tel: Ips.
SUNDAYS from 8pm 4, 18	GENERAL OBSERVATION SECTION Mr R Adams, [redacted], Ipswich Mr M Barriskill, [redacted], Ipswich	Tel: Ips. [redacted]

1983 COMMITTEE

CHAIRMAN	D Payne	[redacted], Wickham Market, IP13 0SD	Work: [redacted] Home:
VICE CHAIRMAN	R Cheesman	[redacted], Corringham, Essex SS17 9BU	Work: Extn
SECRETARY	R Gooding	[redacted], Ipswich	Work: Home:
TREASURER	M Nicholls	[redacted], Capel St. Mary, Ipswich, IP9 2EX	Work: Home:
MEMBERSHIP SEC.	M Barriskill	[redacted], Ipswich	
P.R.O.	D Barnard	[redacted], Ipswich, IP4 5PP	Home: Work:
MAINTENANCE	M Cook	[redacted], Ipswich, IP4 5QA	Home: Work:
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