ORWELL ASTRONOMICAL SOCIETY (IPSWICH)

APRIL 1984

S T O P P R E S S....
Lecture by Mr K Dunlop on Friday 30th March at 8pm entitled "The Space Telescope" at Friends Meeting House Fonnereau Road, Ipswich.
ADMISSION FREE

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

SOCIETY NEWS

1. South East Essex A.S.
   Two tickets at £1 each are still available to any member who wishes to attend the meeting on Saturday 28th April at Westcliff-on-Sea. Please contact R. Gooding.
2. Cambridge Visit
   A visit to the Cambridge University's optical and Mallard Radio Telescope Observatories has been arranged for Saturday 5th May. Members wishing to attend should contact R. Gooding.

Other Observatory Meetings
Visit by Holiday Games Club, 7.45 p.m. 11th April.
Open Committee Meeting. All members welcome. 7.30 p.m. 14th April.
Visit by Holiday Games Club, 7.45 p.m. 18th April.
Visit by Rushmere St.Andrew Youth Club. 8.00 p.m. 25th Apr.

NIGHT SKY

Constellations (all times G.M.T.) See map on opposite page.
Sun Rises approx. between 05.50 - 04.30
Sets approx. between 18.30 - 19.30

Moon	1st.	9th	15th	23rd
Occultations				
5th	ZC 628	mag. 4.8 D	21hr. 58.1m	
8th	" 1099	" 6.0 D	24hr. 17.5m	
9th	" 1239	" 6.4 D	23hr. 53.3m	
17th	" 2241	" 5.0 R	22hr. 45.5m	
21st	" 2721	" 3.3 R	3hr. 58.6m	

Mercury	Greatest East elongation 3rd (19°) Inferior conjunction on 22nd	
Venus	Rising between 05.00 to 04.00. close to Jupiter on 27th	Mag. -3.3
Mars	Rising between 22.50 to 20.40	Mag. -1.1
Jupiter	Rising at 01.00 in mid month.	Mag. -1.9
Saturn	Rising between 21.30 to 19.30	Mag. 0.4
Uranus	Rising between 00.20 to 22.20	Mag. 5.8
Neptune	Rising between 01.30 to 23.30	Mag. 7.7

R. Gooding

SOLAR SAILING

Over the past year a number of people in the U.K. have shown interest in designing a solar sail capable of reaching the moon, in response to the proposal of the French group "Union pour la Promotion de la Propulsion Photonique" (U3P) for an international solar sail race to the moon. The theory and technology of solar sailing are both at such an early stage that it is desirable to encourage the development of as many different approaches as possible.

Our present aim is to produce the equivalent of a "Phase A" design study. Those who have attended meetings to date have produced a preliminary orbit analysis and a preliminary spacecraft configuration, (copies of which are available by sending a S.A.E. to the address below). These now need further refinement in order to permit progressively more detailed analysis and specification of subsystems. If the design process progresses satisfactorily through the Phase A stage it might later be realistic to attempt to build a flight model - the success of UOSAT shows that the various problems involved, including financing and obtaining a launch, can be overcome.

If you would be interested in attending meetings on the subject or in contributing to the analysis of specific subsystems &/or problems that arise, please contact: Dr Trevor Williams,
School of Electronic Engineering & Computer Science,
Kingston Polytechnic,
Penrhyn Road,
Kingston-Upon-Thames, KT1 2EE.

Subjects in which we currently require help are structural analysis (especially experience of using NASTRAN), the communications payload and power/mass budget calculations.

Messier Objects in Ursa Major

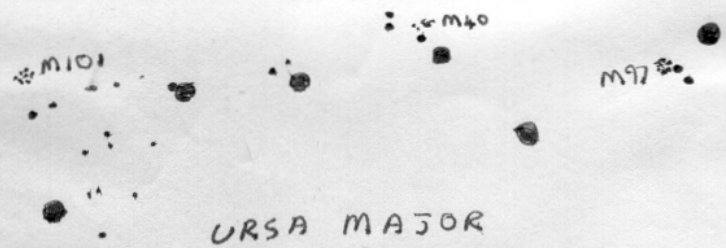
D Payne

The well known constellation Ursa Major or The Great Bear is prominent in the zenith throughout April. It is a rich area for deep sky observers, containing many faint galaxies within reach of amateur's telescopes. The most prominent pair are M81 and M82 described in last months Journal. In addition to these two galaxies there are three other objects listed in the Messier catalogue: M40, M97 and M101.

The first of these M40 appears to be one of the few genuine mistakes in the Messier catalogue. At the co-ordinates given for this object is found a close pair of faint stars with no hint of nebulosity around them. It appears that Messier looked for a nebula in this position guided by the recorded obsevations of Hevelius made in 1660 and found only the two faint stars. Although Messier himself did not observe any neblosity he decided to include the object in his catalogue. There is a faint galaxy NGC 4290 of magnitude 12.7 about 20 minutes of arc due west of the pair of faint stars. However this is definitely not the object observed by Messier and is too faint to have been observed by Hevelius.

The object M97 is not a galaxy but the well known "Owl Nebula". It is one of the largest planetary nebula about 2.5 minutes of arc across. Unfortunately it has a low surface brightness and therefore appears as a featureless pale disk in most amateur telescopes. The 'Owl' face only becomes visible in large telescopes or time exposure photographs when two dark patches either side of the centre give the appearence of large eyes. The distance of M97 is uncertain with estimates ranging from around 1,000 to 10,000 light years giving a diameter between 1 and 10 light years. The central star is a faint 14th magnitude object with a very high suface temperature around 85,000 degrees centigrade and is one of the hottest stars known.

The other Messier object is M101 a fine face on spiral galaxy. Like all galaxies it is faint with little detail visible in amateur telescopes. The apparent diameter on long exposure photographs is about 20 minutes pf arc but visually only the nucleus region is seen extending to 6 or 7 minutes of arc. The distance of the galaxy is estimated to be 15 million light years giving a diameter of 90,000 light years. Although in terms of diameter M101 is a large galaxy it has one of the lowest star densities known being only about one tenth the density of our own galaxy the 'Milky Way'.



*** REMINDER ***
*** SOUTH EAST ESSEX A.S. 'APRIL DAY' ***

A reminder that the South East Essex 'April Day is to be held on 28th April 1984 between 11:00am and 6:30pm at St. Thomas More School, Westcliff, Southend On Sea (Map on rear of tickets).

The original twelve tickets have all been sold and extra tickets have been ordered. Of these additional tickets we have two left, any members wishing to attend this event should contact Roy Gooding.

Any members requiring transport should give their names, as soon as possible, to Eric Sims or Roy Gooding. Final arrangements for transport will be made approximately one week before the event, any members who have not contacted either Eric or Roy will be assumed to be making their own arrangements.

The program outlined for the day is as follows:

11:00	OPEN	
11:00 - 12:30	"THE NEW TELESCOPES"	NIGEL HENBEST
12:30 - 13:30	LUNCH	
13:40 - 13:55	"THE AMATEUR ASTRONOMY CENTER" update by	ROB MILLER
14:00 - 15:00	"EXPLORING THE UNIVERSE"	HEATHER COUPER
15:30 - 16:20	"IT'S A SMALL UNIVERSE"	MAT IRVINE
17:00 - 18:00	"EXPLORING THE SOLAR SYSTEM"	PATRICK MOORE

In addition to the above there will be three competitions: Observing, Astrophotography and Construction (telescopes accessories etc.) plus trade stands and society displays.

1. Virginids
Maximum on April 12th. Double radiant RA 14hrs 04mins DEC -9deg and RA 13hrs 36mins DEC -11deg. Active from 7th - 18th, ZHR of 10.

2. Lyrids
Maximum April 21.8, active between April 19th and April 25th. ZHR of 15. Radiant 18hrs 08mins DEC +32deg, Bright Meteors.
In 1982 rates exceeded 80/hr. Maximum occurs 7pm U.T. on 21st, ie 8:00pm BST, unfortunately this is daylight.
There will be a METEOR COUNT to observe this shower on Saturday April 21st. Meet at the Levington Ship for 9:30pm.

3. Eta Aquarids
This shower becomes active in the last week of the month. RA 22hrs 20mins DEC -1deg. Maximum occurs in the first week in May.

COMETS

Many of you will have read about, or even seen, Comet Hartley - IRAS which brightened to mag +7 and is still visible. Another comet which is observable at present is Comet Russell around mag 12.
This month it may be possible to glimpse comet Encke but it will be low down in the south (Aquarius). Here are the predictions:

	RA		DEC		MAG
	hrs	min	deg	min	
April 20th	23	22.15	-15	41.4	8.7
April 30th	23	15.56	-16	59.0	8.7

Success For Ariane D Barnard

NASA was dealt a blow last month by Europe's space egineers, as the worlds largest telecommunications satellite was launched. The Ariane rocket carried an Intelsat V craft into geostationary orbit after a flawless launch from French Guiana.

This success came just a month after NASA sent two satellites into useless orbits. Ariane's promotional period has now ended. All further launches will be carried out by Arianespace, a private company. The Intelsat satellite weighs 2 tonnes and can deal with 12,000 telephone calls simultaneously.

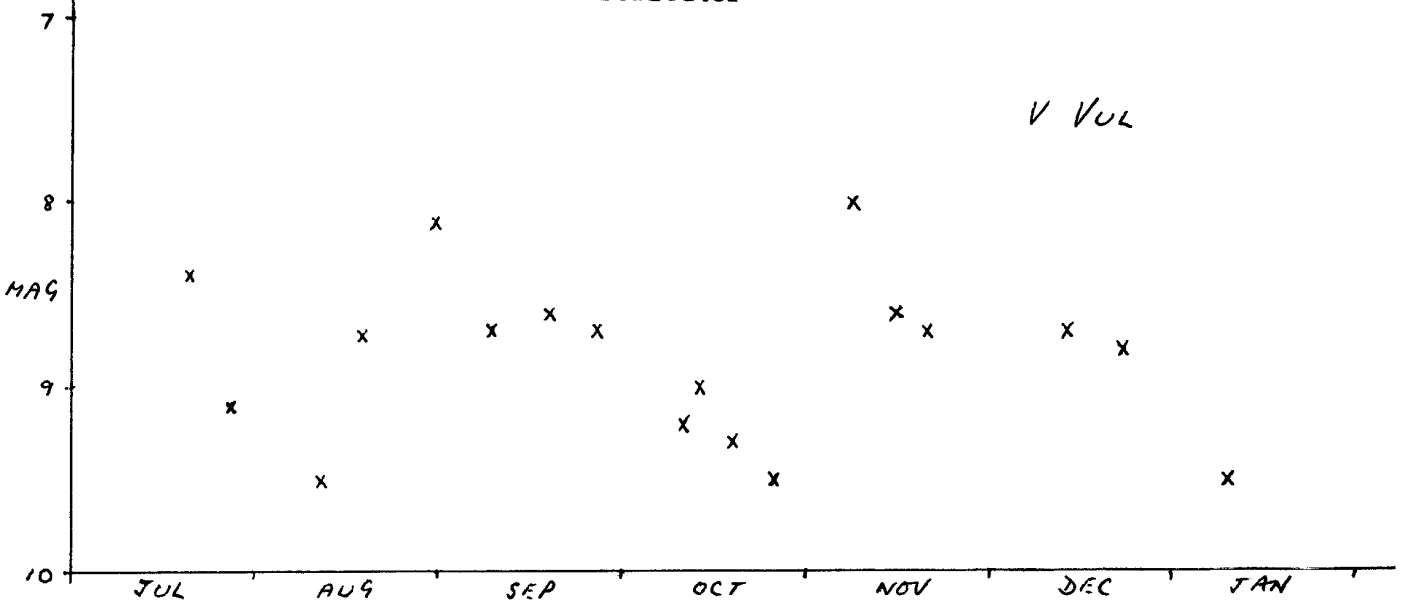
The number of satellites in geostationary orbit has meant that European space controllers have had to free a slot from this orbit ,36,000km up, by firing a redundant satellite GEOS 2 into a higher orbit.

Source: [New Scientist -8th March].

VARIABLE STAR OBSERVATIONS

by Mike Nicholls

The light curve shows V Vulpeculae from July 1983 to January 1984. This variable star is a member of the RV Tauri class which is characterised by alternate deep and shallow minima. A similar star, R Scuti, was featured in the January 1984 journal. The maxima and minima are not easy to distinguish, mainly because there are not enough results, and the period between the deep minima is only about 76 days. The deep minima are probably shown up by the three faintest points. The magnitude range varies from around 8.0 to 9.7. Observations were made with an 8" reflector



PROGRAMME FOR APRIL

MONDAYS from 8pm
2, 9, 16, 23, 30
DOUBLE STAR & PLANETS SECTION
Mr N Taylor, Farmlands, Trimley
Tel:Fel.
Mr T Gillan, Felixstowe
Tel:Fel.

TUESDAYS from 7pm
3, 10, 17, 24
GENERAL OBSERVATION SECTION
Mr N Gage, Trimley
Tel: Fel.
Mr R Newman, Felixstowe
Tel: Fel.

WEDNESDAYS from 8pm
4, 11, 18, 25
NEBULAE & FAINT OBJECTS SECTION
Mr M Cook, Ipswich
Tel: Ips.
Mr D Payne, Wickham Market.
Tel:W.Mkt

FRIDAYS from 8pm
6, 20
VARIABLE STAR SECTION
Mr R Gooding, Ipswich
Tel: Ips.
Mr M Nicholls, Capel St. Mary.
Tel: Ips.

SUNDAYS from 8pm
1, 15, 29
GENERAL OBSERVATION SECTION
Mr R Adams, Ipswich
Mr M Barriskill, Ipswich
Tel: Ips.

1984 COMMITTEE

CHAIRMAN	D Payne, Wickham Market, IP13 0SD	Work:
		Home:
VICE CHAIRMAN	R Cheesman, Corringham, Essex SS17 9BU	Work:(
		Extn 2
SECRETARY	R Gooding, Ipswich IP1 6AE	Work:
		Home:
TREASURER	M Nicholls, Capel St. Mary, Ipswich, IP9 2EX	Work:
		Home:
MEMBERSHIP SEC.	M Barriskill, Ipswich IP1 2EZ	
P.R.O.	D Barnard, Ipswich, IP4 5PP	Home:
		Work:
MAINTENANCE	M Cook, Ipswich, IP4 5QA	Home:
		Work:(
FUNCTIONS	E Sims, Ipswich, IP1 4HA	Home:
LIBRARIAN	N Gage, Trimley St Mary, IP11 9QY	Home:
		Work: