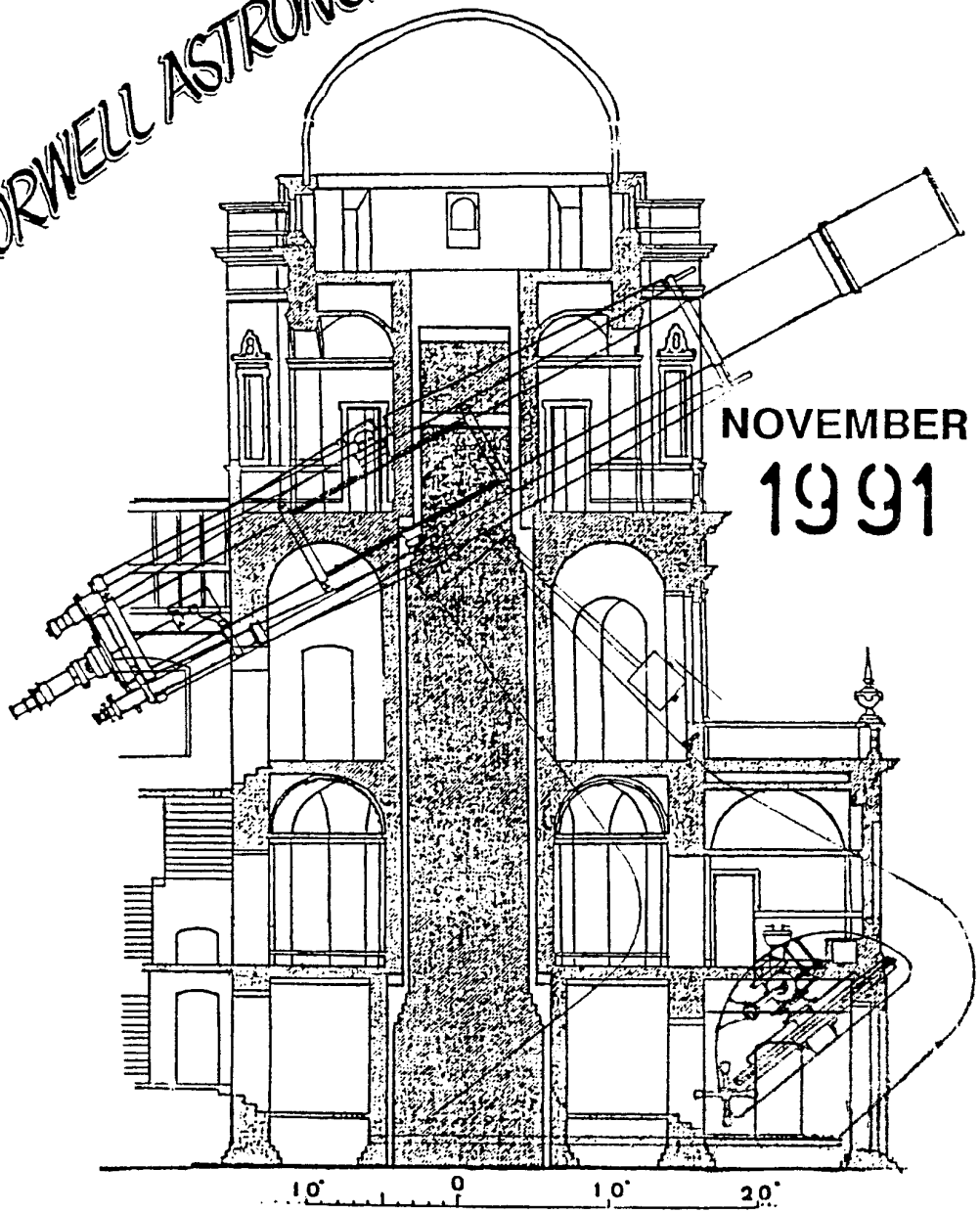
ORWELL ASTRONOMICAL SOCIETY IPSWICH



NOVEMBER

1991

SOCIETY NEWS

1 COMMITTEE MEETING

The next committee meeting will be on Saturday 23th November with a start at 7.30pm in the club room. As usual this is an open meeting and any member who wishes to attend will be welcome.

2 CHRISTMAS MEAL

The Christmas meal will be at the Marlborough Hotel Felixstowe, On Wednesday 11th December. There will only be a limited number of places available, so it will be first come first served. The price will be £13.95. The function will be in the Landguard room, which has been booked for the whole evening. Interested members please contact Roy Gooding as soon as possible.

NIGHT SKY

All times GMT

SUN Rises approximately at 07.00 - 07.50
Sets approximately at 16.40 - 15.50

MOON

6th 14th 21st 28th

MERCURY Mercury will be visible in the evening sky. Greatest eastern elongation -0.3

VENUS Venus is very prominent in the morning sky. It will be rising about 4 hours before the sun. Greastest western elongation occurs on 2nd (47°). Mag.-4.5

MARS Mars will not be vivible this monthr

JUPITER Jupiter will be visible in the morning sky this month. It will be rising at about 00.00 by the end of the month. Mag. -2.0

SATURN Saturn will be visible in evening sky. It will be setting by 20.00 at the end of the month. Mag 0.5

URANUS Uranus is in Sagittarius, setting at about 2 hours before Saturn. Mag. 5.7

NEPTUNE Neptune is also in Sagittarius, Setting at about 2 hours Saturn. Mag 7.9

R.Gooding

FOR SALE

Astro Systems 150mm f6 Newtonian Reflector on high quality altazimuth mount with adjustable friction controls. Precision Multistart Helican Focus Mount. 6x30mm Achromatic Finder.18mm,9mm & 6mm Orthoscopic Eyepieces. Contrast Filter. 20 months old and little used. Original cost £388.

£250 Dave Standley -Ips [redacted] (day) or Ips [redacted] (eves)

The Icy Moons and Rings of Saturn.
by J.Walsh.

Three Quarters of a Billion miles out in space at it's closest with earth, it's magnificent system of rings and it's large family of moons is the giant planet Saturn. The diameter of Saturn including it's ring system is 171,000 miles. And it is these and the many moons of this amazing planet we will be consentrating on this month.

Fifteen years ago Saturn was thought to be the only ringed planet in the Solar System. But one by one the other gaseous giant planets have given up their secrets, mainly due to the Voyager Programme! Now it is a fact that all the gaseous giant planets have ring systems. Saturns ring system is the only one visible from Earth, the ring systems from the other giant planets being to faint to be seen even with the most powerful of Earth based telescopes.

How does a planet form a ring system? There are three main theories to this. But before going on something must be said about the Roche Limit, named after the man who proposed this theory Edouard Albert Roche. The Roche Limit is the distance from a planet beyond where particles can amalgamate to form moons, inside this limit the planets gravity prevents the moon from forming.

The following theories are built around the Roche Limit.

(a) As dust and gas shrink to form a planet, dust and debris is left orbiting the newly formed planet. from the Roche Limit outwards dust and particles cluster together to form moons. Inside the Roche Limit gravitational pulls from the planet stops the debris and dust from forming moons and it remains there to form a ring.

(b) A Comet, Asteriod or another foreign body comes inside the Roche Limit and is torn apart by the gravitational forces of the planet. The debris then forms a ring system around the equatorial plane of the planet.

(c) Sometimes a moon will exist within the Roche Limit if it was formed while the planet was still growing, as the planet grows so does the Roche Limit, if a foreign body hits this moon the resulting dust and debris will form a ring.

When Voyager passed Saturn in 1981 it sent back pictures and data which changed our views on what we thought the Saturnian system was like. Instead of one thick ring with divisions cut through it, The Voyager pictures recorded tens of thousands of seperate rings, each different in character. At the same time it became apparent just how big a part the moons of Saturn were playing in some of the phenomenal effects seen on the ring system. these moons called shepards, by their behaviour can alter the very structure of the rings. Some of the moons move up and down very slightly as they orbit around Saturn, this upward/downward movement will cause the rings to have a rippling effect. While electromagnetic forces from within the planet will force some of the dust from the rings to form the famous "spokes"seen on Voyager photograghs. And of the braided ring effect caused by the interaction of the gravatational pull of two shepard moons.

We cannot leave the Saturnian system without looking at some of it's moons. Although Saturn has 17 named moons only Titan is planet sized, at 3,200 miles (5,150 KM) Titan is the second largest moon in the Solar System, after Jupiters mighty Ganymede. Titan also has an atmosphere, which would be much denser than Earths own atmosphere if Titan and Earth were the same size. One of the main constituents of Titans atmosphere is Tholin, it's this that gives Titans atmosphere it's reddish brownish colour. If tholin was mixed with water it produces Amino Acids which is the basis of many proteins "the building blocks of life"!!

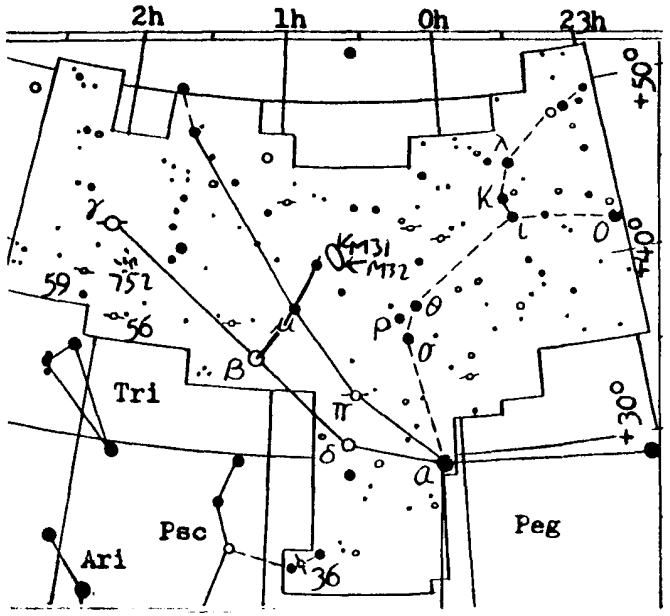
The rest of Saturns moons are less than 1,000 miles in diameter, like Mimas it's huge crater which covers nearly a third of it's diameter. The crater has been named Hershell thus immortaliising one of our greatest astronomers. Listed below are all of Saturns 17 named moons, their diameters and distances.

NAME	DIAMETER	DISTANCE
Atlas	19 miles	85,077 miles
Prometheus	62 miles	86,319 miles
Pandora	56 miles	88,182 miles
Janus	118 miles	93,771 miles
Epimetheus	74 miles	93,771 miles
Mimas	242 miles	116,127 miles
Enceladus	310 miles	147,798 miles
Telesto	15 miles	183,195 miles
Tethys	658 miles	183,195 miles
Calypso	15 miles	183,195 miles
Dione	695 miles	234,738 miles
Helene	19 miles	234,738 miles
Rhea	950 miles	326,646 miles
Titan	3,200 miles	758,241 miles
Hyperion	158 miles	919,701 miles
Iapetus	907 miles	2,211,381 miles
Phoebe	137 miles	8,058,160 miles

ANDROMEDA

Andromeda is a small constelation forming a plough handel for the Square of Pegasus. Andromeda is the top left hand star of the Square of Pegasus belongs to both constelations

The most famous object in the constelation is the Andromeda Nebula M31 which can be easily seen with the naked eye as a small diffuse "cloud" if you follow the line from β through μ beyond the third star. It is another galaxy similar to our own at a distance of about 1,600,000 light years making it one of our nearest neighbours. Just below is M32 an elliptical galaxy.There is a large open cluster near the star γ with the number NGC 752.



Double Stars

Pos.	1	m 2	D	d"	P A	No.
000241	6.1	-9.8	o	5.3	168	OE514
1343	6.0	-9.9	c	9.0	76	h1947
3433	4.4	-8.7	d	36.1	174	π
5223	6.2	-6.6	b	0.7	183	36
5744	6.0	-6.8	b	8.0	193	E79
011537	6.4	-9.5	b	6.0	62	E108
020042	2.2	-5.0	c	10.0	63	$\gamma_{1,2}$
	5.5	-6.3	b	0.5		γ_2
0738	6.0	-6.7	c	16.7	34	59
235633	6.5	-6.7	b	1.4	270	E3050

γ White, blue.
γ ALMACH: Beautiful contrast. Orange, greenish-blue. The companion is a difficult test for large telescopes.
59 Yellow, blue.
56 For binoculars. (189 sec.)

Club logo Astro-Wear

By special request another set of orders for OASI club sweatshirts and other items will be placed soon.

1. Acrylic V-neck Sweater	£10.40
2. Polo shirt	£10.40
3. Crew neck sweatshirt	£9.11
4. Fleecy lined sweatshirt	£9.69
5. Lambswool V-neck sweater	£15.86
6. Luxury lambswool V-neck sweater	£19.39
7. Luxery lambswool V-neck slipover	£18.21
8. Hanes sweatshirt	£14.39

Size ranges:

Childrens sizes deduct 40p and multiply by 0.851 [ie no VAT].
Add £1.[redacted] per garment for postage and packing [there might be some refund of P&P or donation to OAS, depending upon numbers].

(A) 1. Childs: 26/28", 30/32", Adults S(34/36"), M(38/40"), L(42"), XL(44"), XXL(46/48")
2.. As(A)except no childs sizes or XXL.
3, 4. As(A)except no XXL.
5, 6, 7. 36", 38", 40", 42", 44"
8 ?

Most colours are available (except purple, orange or flourescent turquose): for more details either ring me [Peter Richards : address on back page], the clothing company [Alpa on 0924-404566] or come to the dome.

If you are interested please send **a written order including your name and address with a cheque, payble to the Orwell Astronomical Society, or a postal order** to me P R Richards [address on back page] or bring all these to the dome (cash is OK if handed over in person).
If you are not intending to arrange collection of the item from the dome please include a suitable package which has been addressed to you and add postage of 75p per item to the cheque/PO.

Send me a note if you are interested in a club tie; we have not, in the past, had enough requests to place an order.

ORDERS MUST BE RECEIVED BY 15th NOVEMBER.

PROGRAMME FOR NOVEMBER

DAY/DATE	DIRECTORS	SECTION	PHONE
Mondays from 8.00pm		GENERAL OBSERVATION SECTION	
4-11	Mr R Newman	[redacted], Felixstowe, IP11 9DY.	Tel. Fel. [redacted]
18-25	Mr J King	[redacted], Felixstowe, IP11 9LQ.	Tel. Fel.
Tuesdays from 8.00pm		GENERAL OBSERVATION SECTION	
5-12	Mr R Newman	[Address above.]	Tel. Fel.: [redacted]
19-26	Mr J King	[Address above.]	Tel. Fel.:
Wednesdays from 8.00pm		NEBULA AND FAINT OBJECTS SECTION	
6-13	Mr M Cook	[redacted], Ipswich, IP4 5PZ.	Tel. Ips. [redacted]
20-27	Mr D Payne	[redacted], Wickham Market, IP13 0SD.	Tel.W.M
Fridays from 8.00pm		PLANETARY AND LUNAR SECTION	
1-8-15	Mr P Richards	[redacted], Nacton, Ipswich, IP10 0HS.	Tel. Ips. [redacted]
22-29	Mr R A Lobbett	[redacted] Felixstowe, IP11 8UJ.	Tel. Fel.
	Mr G Marriott	[redacted], Ipswich, IP4 4JB.	Tel. Ips.

All nights are open to all members, but, on nights other than Wednesdays, ring directors to confirm. Directors will also be able to tell you if a group visit is taking place. All sections observe anything of interest but the title suggests popular subjects.

Lectures and other events : COMMITTEE MEETING
The next committee meeting will be on Saturday 23rd November at the observatory starting at 19.30. As usual this will be an open meeting and amy member may attend if they wish.

1991 COMMITTEE

CHAIRMAN	D Payne	[Address above.]	Home: [redacted] Work:
VICE CHAIRMAN & MEMBERSHIP SECRETARY	D Barnard	[redacted], Ipswich, IP3 8RN.	Work:
SECRETARY	R Gooding	[redacted], Ipswich, IP1 6AE.	Home: Work:
TREASURER	M Nicholls	[redacted], Capel St Mary, Ipswich, IP9 2EX.	Home: Work:
MAINTENANCE CO-ORD	M Cook	[Address above.]	Home: Work:
JOURNAL CO-ORD	E Sims	[redacted], Ipswich, IP1 4HA.	Home:
PUBLICITY & VISITS CO-ORD	P Richards	[Address above.]	Home: Work:
EQUIPMENT CURATOR	J King	[Address above.]	Home:
SPECIAL EVENTS CO-ORD	A Smith	[redacted], Ipswich, IP4 5RZ	Home: