ORWELL ASTRONOMICAL SOCIETY IPSWICH

Charity No 271313

MAY 1998

Society News

1 Next Committee Meeting

The next committee meeting will be held on Saturday 9th May from 19:30 in the club room. As usual this is an open meeting and any one who is interested is invitee to attend.

2 Events for 1998

Lecture meeting Members Talks: Mike Harlow and Nigel Evens	15th May
Summer Excursion	No date fixed
Summer Barbecue	No date fixed
BAA Exhibition Meeting	27th June
Astro Camp	From 16th August
Horncastle Weekend	From 11th September
Lecture meeting: Nial Tavir Intergalactic Stars	2nd October
FAS Cambridge Convention	3rd October
Thetford Astro Camp :- Ashdown AS	From 3rd October
Open Weekend	16th, 17th 18th October
Lecture Meeting: Martin Mobberley	November date to be fixed
Christmas Meal	9th December

Night Sky

All times GMT

Sun

The sun will be rising approximately between 04:50 and 03:50
The sun will be setting approximately between 19:30 and 20.05

Moon

1st Quarter	Full Moon	3rd Quarter	New Moon
3rd	11th	19th	25th

Mercury Mercury is in the morning sky this month, but will be to near the sun to be observable. Greatest elongation is on the 4th at 27°.

Venus Venus is still a morning object this month. It will be low down in the eastern sky before sun rise. Magnitude –4.2.

Mars Mars is in conjunction with the sum this month and will not be observable this month.

Jupiter Jupiter will be rising by 01:30 at the end of the month. Magnitude – 2.2

Saturn Saturn will be rising at about 03:20 in mid month. Magnitude 0.6

Uranus Uranus will be rising at about midnight by the end of the month. Magnitude 5.7

Neptune Neptune will be rising at about 23:30 at the end of the month. Magnitude 7.8

Meteor Showers

Name	Limits	Max	ZHR
η Aquarids	April 24th to May 20th	May 4th	35
a Scorpids	April 20th to May 19th	April 27 & May 12th	5

OCCULTATIONS DURING MAY 1998

The table lists stellar occultation disappearance events which occur during the month under favourable circumstances. The data relates to Orwell Park Observatory, but will be similar at nearby locations.

D or R	Date & Time (UT)	Lunar Phase	Sun Alt (d)	Star Alt (d)	Min Dist (r)	Star	Mag
D	05 May 23:40	.74+	-22	26	.38N	59 Leo,c Leo	5.1
D	10 May 02:29	.98+	-12	13	.18N	95 Vir	5.5
D R	11 May 21:58 22:32	1.00-	-16 -18	17 20	.90N	gamma Lib	4.0

James Appleton

Meteor Diary - May

The Eta Aquarids produce excellent displays for Southern hemisphere observers, but some meteors can be seen from our latitudes. The shower is associated with Halley's Comet.

Peak day	Shower name	Peak rate (ZHR)	Effect of Moon
5th May 1998	**Eta Aquarids**	40	Noticeable
13th May 1998	Alpha-Scorpiids	20	Great

Gas Giants in the Autumn Sky.

By J.Walsh.

The giant planets Jupiter and Saturn are prominent in the evening sky this autumn, in fact we have a whole arc of planetary bodies across the evening sky. But this time I will write about our two largest members of the Solar System.

The giant planet Jupiter is the largest of the Suns family which makes up our Solar System, at 88,980 miles (146, 200 KM.) in diameter, it revolves around the Sun at a mean distance of 483,640,000 miles (778,320,000 KM), taking 12 Earth years to do so. Jupiter has the shortest rotation period, or day of all the planets in the Solar System. Just 9 hours and 50 minutes. Jupiters atmosphere consists of mostly Hydrogen and Helium with trace ammounts of Ammonia, Methane, Acetylene, Ethane and Phosphine. also Water has been detected. Jupiters most striking feature is of course it's "Great Red Spot" which is a huge storm which has been raging for centuries and at over 30,000 miles (48,270 KM) in diameter could swallow the Earth whole.

Being a gaseous giant world, Jupiter has no surface like that of Earth, and if we could decend down into the atmosphere, the pressure would keep mounting until the gasses turned "slushy" and possibly turn to liquid before you got to a small rocky core.

Several probes have been sent to Jupiter in recent years. The Pioneers in 1973 and 1974, the Voyagers in 1979 and just recently the Galileo probe in 1995. The Pioneers discovered a belt of lethal radiation around Jupiter, the Voyagers discovered Jupiters thin dark ring system and a lot more information about Jupiters moons and Galileo sent us back details of Jupiters atmosphere and more detailed information of Jupiters four largest moons, the Galileans. All of this information will keep scientists busy for years to come.

Jupiter has 16 satellites, the four largest, as previously mentioned are called the Galileans after Galileo Galilei (1564-1642) who discovered them in 1610, were targeted especially by the Voyager probes and the Galileo orbiter. The outermost of the Galileans is Callisto a heavily cratered world just under 3,000 miles (4,827 KM). It orbits Jupiter about every seventeen days and it's mean

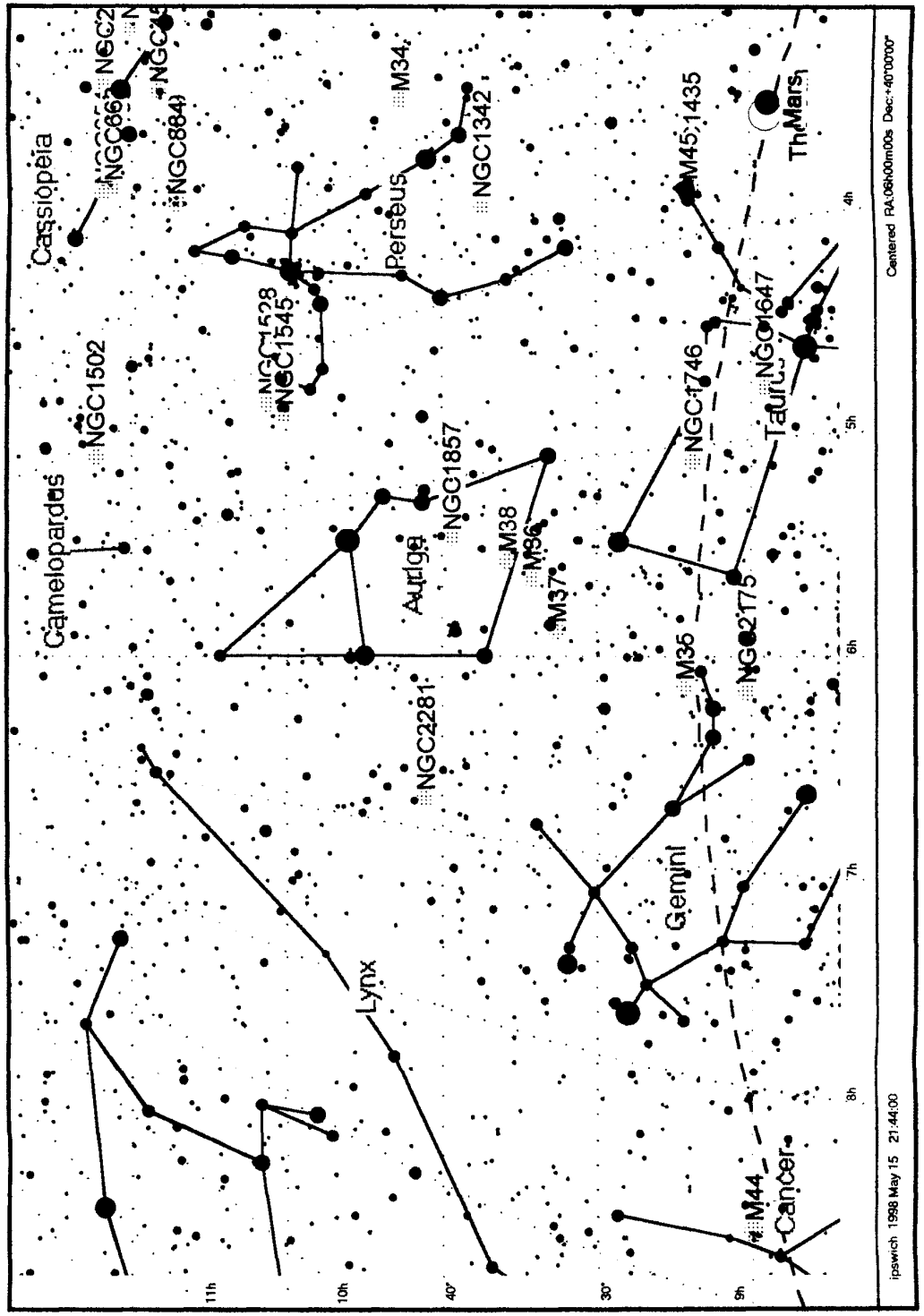
distance from Jupiter is 1,170,000 miles (1,882,530 KM) At 666,000 miles (1,071,594 KM) from Jupiter, the next of the Gaileans is the mighty Ganymede, largest of the moons in the Solar System at over 3,200 miles (5,149 KM) in diameter. Another cratered world, Ganymede has a magnetic field which suggests an iron rich core. Europa is the next of the Galileans in towards Jupiter, has a smooth icy surface with shallow cracks in a crazy paving kind of effect. Underneath this ice it has been suggested that an ocean exists heated by some kind of internal heat source which keeps the water at a temperature at a level where possibly primitive life forms could exist. At 2,000 miles (3,218 KM) in diameter, Europa orbits Jupiter at a mean distance of 417,000 miles (670,953 KM), taking just over 3½ days to do so. Well inside Jupiters deadly radiation belt orbits Io, the innermost of the Galileans. It's distance from Jupiter is 262,000 miles (421,558 KM). and it's diameter is slightly larger than that of Europa at 2,200 miles (3,540 KM). Io is the only planetary body in the Solar System, apart from the Earth, known to be volcanically active, it resembles a giant pizza and this it due to it's Sulphur deposits which are produced by the volcanic activity. Io's volcanic activity is thought to be caused by the combined gravitational forces of Jupiter on one side and the much weaker forces of the rest of the Galileans on the other. This has the effect of squeezing Io, causing heat and pressure to build up inside the moon and is released as volcanic activity.

Before we leave Jupiter, I mentioned before, that Jupiter is the parent body of Ganymede, the largest moon in the Solar System, well Jupiter is also the parent body to tiny Leda which at only 6 miles (9½ KM) is the smalles moon that we know of in the Solar System.

Saturn is the second largest planet in the Solar System and has a diameter of some 74,560 miles (120,000 KM), it revolves around the Sun every 29½ years at a mean distance of 886,710,000 miles (1,427,000,000 KM). It spins on it's axis every 10 hours and 39 minutes. Saturn is best known for it's magnificent system of rings. It is now an accepted fact that all of the gaseous giant planets have ring systems thanks to the Voyager Probes. But only Saturns ring system can be seen from Earth. Saturns ring system measures 170,000 miles (273,530 KM) in diameter and is made up of countless particles icy rock. The rings are split into three parts, or areas which are lettered A,B and C, between the A ring and the B ring, there is what is known as the Cassini Division named after it's discoverer Giovanni Domenico Cassini (1625-1712) who first spotted it in 1675. The division is about 2,500 miles (4,022 KM) wide, and can be seen in most small telescopes. There is a much smaller gap in the outer A ring called Encke's Division, this can only be seen with moderate to large telescopes, and is named after it's discoverer Johann Franz Encke (1791-1865). The C ring is semi transperant, and known as the Crepe Ring. This was discovered by an American astronomer, W. Bond in 1850. It is thought that the gaps in the rings are controlled by the gravatational effects of Saturns family of satellites, 31 in all. Some of these satellites are situated within the ring system itself, these moons are known as Shepherd Moons.

The largest satellite in the Saturnian System is called Titan, orbiting Saturn at a mean distance of 760,000 miles (1,222,840 KM) and is the second largest satellite in the Solar System after Jupiters Ganymede. At just over 3,000 miles (4,827 KM) in diameter, and is the only moon in the Solar System to have an appreciable atmosphere. In Titans case mainly Nitrogen and Methane. We hope much more will be learnt when the recently launched Huygens Probe reaches there in 2004. Saturns other satellites range from Telesto, which is only 15 miles (24 KM) in diameter, through to Rhea, which is nearly 1,000 miles (1,529 KM) in diameter and has a heavily cratered surface. Three more of Saturns satellites are over 500 miles (804 KM) in diameter apart from Titan and Rhea, they are Iapetus which is 907 miles (1,459 KM) in diameter, black on one side and white on the other. Dione, 695 miles (1,118 KM) in diameter and has a vague surface of what could be eroded craters. And Tethys which is 658 miles (1,059 KM) in diameter and has a huge gash in it's surface from north to south poles.

As mentioned earlier, Jupiter and Saturn are prominent in the autumn sky, high up in the south after dark and are easy to spot, even with the naked eye. Do look for them and have fun in observing the gas giants in the autumn sky.



PROGRAMME FOR MAY

Mondays from 7.30pm *Mr N Gage*	*GENERAL OBSERVATION SECTION* *Mr G Tilt*
Tuesdays from 7.30pm *Mr P Richards*	*OBSERVATORY VISITS FROM OUTSIDE GROUPS*
Wednesdays from 8.00pm *Mr M Cook*	NEBULA & FAINT OBJECTS SECTION *Mr D Payne*
Thursdays from 7.30pm *Mr P Richards*	OBSERVATORY VISITS FROM OUTSIDE GROUPS
Fridays from 7.30pm STARS 1st - 15th - 29th *Mr J Hood*	DOUBLE

All members are welcome on any night, but on nights other than Wednesday please check with the director of the night that the observatory will be open.

Lectures and other events:

Committee Meeting

The next committee meeting is to be held on Saturday May 9th in the club room at the observatory at 7.30pm. All members are welcome to attend.

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WWW url http://www.ast.cam.ac.uk:80/~ipswich/

1998 COMMITTEE

		Home Phone	Work Phone
CHAIRMAN	D Payne		
SECRETARY	R Gooding		
TREASURER	M Harlow		
MAINTENANCE CO-ORD	M Cook		
JOURNAL CO-ORDINATOR	E Sims		
SOCIETY ACTIVITIES & DARK SKIES	P Richards		
EQUIPMENT CURATOR	J Walsh		
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