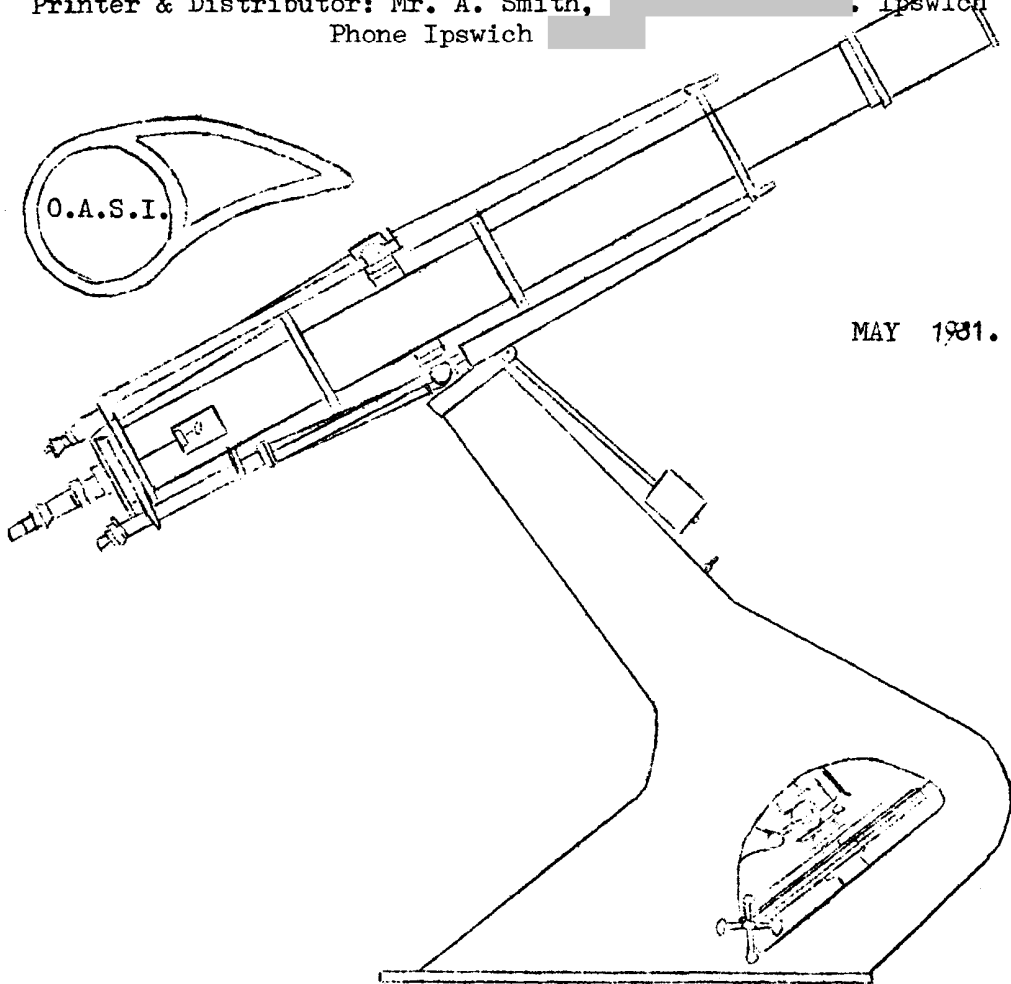


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MAY 1981.

The Orwell Park 10 inch Astronomical Telescope  
at Nacton near Ipswich

THE NIGHT SKY AS SEEN FROM ORWELL PARK DURING MAY:

by Paul Burt.

The zenith is still dominated by Ursa Major this month, with Bootes and Virgo crossing the meridian around mid-night during the early part of the month. To the west of the meridian lies Leo, and the area enclosed by these four constellations contains two small constellations, Coma Berenices and Canes Venatici. To the south-east Libra and Ophiuchus are visible by late evening, while further to the east, Hercules, Lyra and Cygnus are becoming prominent. To the south-west Corvus and Crater are still visible, but further round Cancer and Gemini will be slipping below the western horizon by late evening. The winding shape of Hydra is still fully visible stretching from the southern to the western horizon until mid-night.

THE SUN:

Sunrise is at 04h 40m at the beginning of the month, changing to 03h 40m at month-end. Sunset changes from 19h 30m to 20h 10m. The Sun moves from Aries to Taurus during the month.

THE MOON - Phases

New Moon	4d 04h 19m	Full Moon	19d 00h 04m
First Quarter	10d 22h 22m	Last Quarter	26d 21h 00m

Occultations:

<u>Star</u>	<u>Phase</u>	<u>Mag.</u>	<u>Time</u>		
			<u>d.</u>	<u>h.</u>	<u>m.</u>
1529	D	6.6	12	00	49.7
**1728	D	6.9	13	23	20.9
1733	D	5.2	13	23	45.2
2802	R	6.4	23	00	58.0

D = Disappearance      R = Reappearance

Stars listed according to Zodiacal Catalog (ZC) numbers

\*\* denotes time is correct for latitude and longitude of Greenwich

THE PLANETS

- Mercury is an evening star this month reaching greatest elongation of  $23^{\circ}$  on the 27th, at mag. +0.7 (decreasing) when it will be setting 2 hours after the Sun. This month's apparition of Mercury is the best of the year for the northern hemisphere.
- Venus becomes visible during the latter part of the month, and will be setting only an hour after the Sun at mag. -3.4.
- Mars is too close to the Sun for observation
- Jupiter is visible until the early hours in Virgo, at mag. -1.8. It is in retrograde motion until the 28th when it reaches it's stationary point.
- Saturn lies just east of Jupiter, at mag. +1.0, also in retrograde motion.
- Uranus reaches opposition on the 19th, at mag. 5.7 in Libra, when it's apparant diameter will be  $3''.9$   
R.A. 15h 43m, Dec.  $-19^{\circ} 30'$ .

Source: B.A.A. Handbook 1981. All times are U.T.  
(=B.S.T. minus 1 hour)

FROM OTHER JOURNALS

by Paul Burt.

SATURN - SOME PUZZLES ANSWERED, SOME NOT.

N.A.S.A.'s scientists have now completed their preliminary analysis of Voyager 1's observations of Saturn and it's Moons, but some of the puzzles thrown up by the fly-by remain unanswered.

It is now known that the 'braiding' in the 'F' ring extends well beyond the short region originally photographed, with two of the ringlets twisting around each other at least eight times. One theory is that one of the ringlets is electrically charged, and is affected by Saturn's magnetic field. Alternatively the twisting may be caused by the

eccentric orbits of the two small Moons whose gravity affects the 'F' ring particles.

The total number of ringlets in the whole system is over 1000, and the average size of the icy rocks in the rings ranges from 2m in the dark inner 'C' ring to 8m in the Cassini division ringlets, and 10m in the bright 'A' ring. The 'spokes' are made up of much smaller particles possibly lifted out of the plane of the rings by Saturn's magnetic field.

Saturn's Moons have densities similar to that of ice-Tethys is pure ice and Dione is 60% ice, 40% rock. Titan is 50/50, as is Jupiter's largest Moon Ganymede, and the N.A.S.A. team were surprised to find that Titan is only 5140km in diameter, in fact smaller than Ganymede. Titan's nitrogen atmosphere has a pressure of 1.6 bar at the surface, and a temperature of  $-180^{\circ}\text{C}$ , and the nitrogen should not be liquid at the surface as earlier thought. Methane, though, will be close to its triple point condition (where solid, liquid and vapour can co-exist), so there could be methane rain, rivers and glaciers on the surface. Other trace elements in Titan's atmosphere include ethane, acetylene, ethylene and hydrogen cyanide, and the orange clouds which envelope the Moon probably consist of organic polymers of these chemicals.

Voyager has confirmed the explanation for Saturn radiating more energy than it receives from the Sun. The theory said that hydrogen and helium are separating out with the planet, and this means that helium should be depleted in the atmosphere. Voyager observed that this is fact in the case.

Saturn's rotational period was measured by Voyager to be 10 hours 39 minutes 26 seconds, while the equatorial clouds rotate in 10 hours 14 minutes implying wind speeds of 1000km/hr.

Another puzzle which remains inanswered is the existance of high altitude hazes on Saturn, 150km above the normal haze layer. An inexplicable amount of heat is required to support dust and aerosols at this height, and the haze structure indicates that this heat does not come from within Saturn.

- New Scientist.



ORWELL ASTRONOMICAL SOCIETY (IPSWICH)

MEETINGS FOR MAY 1981.

At the Observatory, Orwell Park School, Nacton.

TUESDAYS from 7p.m. Solar, Lunar & Planetary Sections  
5th, 12th, 19th & 26th

WEDNESDAYS from 8p.m. Nebulae & Faint Objects Section  
6th 13th 20th & 27th

FRIDAYS from 8p.m. Variable Stars Section  
1st 8th 15th 22nd & 29th

SUNDAYS from 8p.m. General Observations Section.  
10th & 24th.

COMMITTEE MEETING:

Sunday at 7p.m. on 3rd May at the Observatory  
all members invited.