JOURNAL OF THE ORWELL ASTRONOMICAL SOCIETY (IPSWICH)

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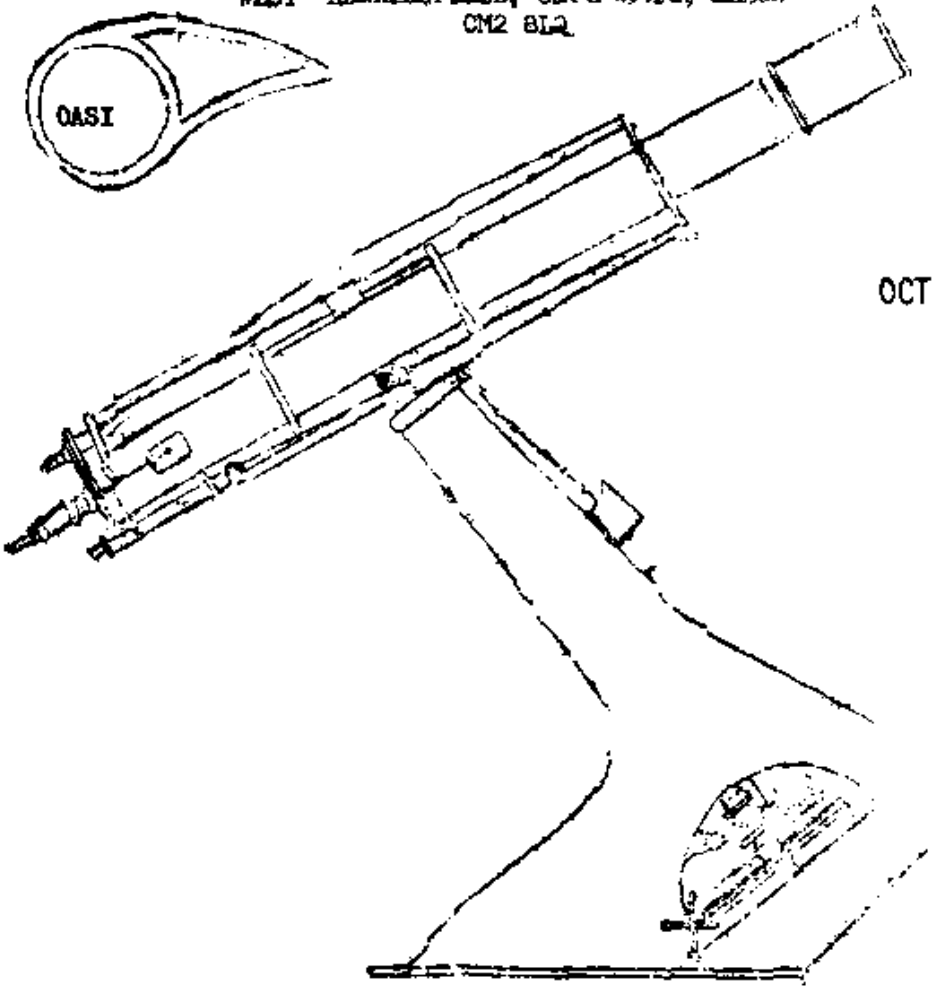

OCT 1980

The Orwell Park 10 inch Astronomical Telescope at Nacton, near Ipswich.

THE NIGHT SKY AS SEEN FROM ORWELL PARK IN OCTOBER.

The zenith is dominated by Cassiopeia this month, while Pegasus and Andromeda are crossing the meridian around midnight. Pisces and Cetus are easily located this month, running side by side directly south-east of the square of Pegasus. To the east Taurus is well into the sky by late evening, and Gemini will be visible by the end of the month. Triangulum and Aries are easily found between Taurus and Pegasus, and still in the east, Perseus and Auriga are in full view.

The western sky is dominated by the Summer Triangle (Deneb, Vega and Altair), with Cepheus lying between Cygnus and Cassiopeia. Finally, do not forget Fomalhaut just above the southern horizon at midnight this month.

THE SUN: Sunrise is at 06h 10m at the beginning of the month, changing to 07h 00m at month-end. Sunset changes from 17h 30m to 16h 30m. The Sun moves from Virgo to Libra during the month.

THE MOON - PHASES:

Last Quarter	1d	03h	18m	First Quarter	17d	07h	47m
New Moon	9d	02h	50m	Full Moon	23d	20h	52m.

Occultations:

Star	Phase	Mag.	Time d.	h.	m.
1375	R	5.6	4	2	23.8
*1487	D	1.3	5	3	25.9
*1487	R	1.3	5	4	29.1
2829	D	6.9	16	18	53.3
*2903	D	5.5	17	19	24.2
3119	D	6.9	18	21	44.6
3245	D	6.9	19	17	45.7
3268	D	5.6	19	22	01.3
**3421	D	5.1	21	00	33.3
* 608	R	6.0	25	23	25.6
* 947	R	5.2	26	02	26.8

D = Disappearance R = Reappearance

Stars listed according to Zodiacal Catalog (ZC) Numbers
*-denotes double star ** denotes time is correct for latitude and longitude of Greenwich.

THE PLANETS:

Mercury is an evening star during October, but is setting only half an hour after the Sun, at Mag. -0.2 (decreasing in brightness)

Venus is rising 4 hours before the sun at mag. -3.6 and will be 0°.5N of Jupiter at 20th 20h.

Mars: is setting only an hour and a half after the sun at mag. +1.5 in Scorpius.

Jupiter will be rising nearly 4 hours before the sun by month-end at mag. -1.3 in Virgo.

Saturn will be rising just before Jupiter also in Virgo at mag. +1.2

Minor Planet Pallas reaches greatest brilliance of +8.8 this month in Cetus.

Date	R.A.	Dec.
8	2hours 34.85m	+17° 07.2'
18	2 " 28.40m	-19° 59.0'
28	2 " 20.62m	-22° 26.4'

(Source: B.A.A. Handbook 1980. All times are U.T.)
(=B.S.T. minus 1 hour)

(News from other Journals will be published in next month's Journal)

METEOR NOTES by David Barnard.

This month (October) there is one major shower, the 'Orionids'. This shower reaches peak activity on October 20th with the normal limits being October 16th to 26th. The Zenith Hourly Rating is about 30. The radiant is 06h 24m R.A. and Dec. +15°. This shower has a multiple radiant and the meteors are characterised by their trains they leave. Moonlight will be a problem for observing this shower this year, with a full Moon shortly after the maximum on the 23rd.

THERE WILL BE A METEOR WATCH to observe this shower on SATURDAY 18th OCTOBER.

Meet OUTSIDE the 'Levington Ship Inn' at 9p.m.

EXPEDITION TO OBSERVE THE AURORA

report by Alan Smith.

On the 15th August six Society Members and one other idiot, set out from Ipswich to travel to Durness, Cape Wrath, on the north-western tip of Scotland.

Twenty-two hours and 787 miles later we arrived to be greeted by a friendly? Scottish voice saying "that'll be £2! and keep your cars off the grass!"

We had arrived at one of the most desolate places in the British Isles, we had not seen a tree, a bush, or any significant vegitation for the last 100 miles and all of us were totally unprepared for the 'Lunar like landscape' we had been travelling through.

Three nights later (and not an aurora to be seen) the seven of us were dressed in oilskins, desperately trying to hold two large frame tents on the ground, (despite the frames being lashed to our mini-bus and car) after being hit by a gale, with winds gusting to 50-60 m.p.h., and forecasted as lasting for another three days.

By mid-afternoon the next day, still wearing oil-skins and having gone without sleep for over thirty hours, we were still hanging on to what was threatening to become two very large hang-gliders. Eventually one of the tents started to frail and we make a hasty decision to abandon camp. Everythingwas slung in the back of the mini-bus (both tents by this time were in a very sad state) and we retreated south to Invergory (near Loch Ness).

What a change!, the scenery was very like a mini-Switzerland, pine forests, lakes and clear skies.

We spent the next five nights observing a few meteors and very clear views of the Milky-Way but again no aurora.

We returned to Ipswich on Bank Holiday Monday with two broken tents, a crashed mini-bus and light wallets, but what a week (and a bit!!) mountains, Lochs, Goldern Eagles, buzzards, Skua's and an odd drink or three (Whisky I think they called it!)

Alan Smith.

SOCIETY NEWS:

SEPTEMBER JOURNAL:

Sorry about the delay in getting the September Journal to you but we were waiting for the Open Day' poster to be printed -- did you notice the mistake in it?

WEDDING:

On 23rd August at Ipswich Registry Office Mr. M. Barritt, one of the Directors of our Lunar, Solar & Planetary Section, was married to Miss Heather Rogers.

NEW EYE-PIECE FOR THE ORWELL PARK TELESCOPE.

We have just received from Messrs. Brotmains Ltd. a new eye-piece wich has a focal length of 32mm which gives a magnification of 132 and about 0,5° field. As this eye-piece cost nearly eighty pounds it will only be used under the direct supervision of one of the Directors of the evenings sections. Our thanks again to Martin Cook for making an adapter for it so it fitted the Orwell Park Telescope.

CHANGE OF TELEPHONE NUMBER:

Please note that Mr. A.J. Smith of [redacted] Ipswich has had his telephone number changed to Ipswich [redacted].

GREENWICH TRIP on 4th OCTOBER:

Because of lack of support this outing has been CANCELLED.

OPEN COMMITTEE MEETING:

There will be an Open Committee Meeting to which all members are invited to attend on Saturday 4th October at 8p.m. in the Observatory.

NOVEMBER JOURNAL:

Deadline for the November Journal is Monday 20th Sept. All items for the Journal should be sent to Mr. Cheesman at his West Hanningfield address.

A BRIEF HISTORY OF TROUGHTON & SIMMS

by Roy Gooding.

The origins of the firm Troughton & Simms can be traced back for over 100 years before the Orwell Park refractor was built.

A firm of instrument makers was establishing itself as one of the best in the country in the second half of the eighteenth century. The firm was owned by two brothers, John and Edward Troughton. Of the two, Edward became the most widely known.

Edward was born in 1753 in Corney, Cumberland. He spent his boyhood on his father's farm, before being sent to London to join his eldest brother John in 1770. John was managing an instrument making business that had been left to him by an uncle. Originally the business was in Surrey Street, Strand, London, where it remained until 1782 when it was transferred to 136 Fleet Street. Edward was taken on as an apprentice before he was made a full partner.

Both of the Troughtons suffered from the family thrait of colour blindness. They were not able to specialize in optics having to contract out any optical work to either Dollonds or the Tulleys.

The Troughtons concentrated on improving methods of graduating instruments. At first simple surveying and drawing instruments were made. During 1778 John made a dividing engine, after which sextants and protractors were manufactured. Edward invented a new way to divide and test arcs, but was unable to take over that side of the business until 1785. One of his first jobs was to dive a 3 feet radius astronomical quadrant. It was one of the last quadrants to be made. Observations were at this time changing over to circular angular measuring instruments. This quadrant was

ordered from the Bilboa Observatory in Spain.

Edward Troughton collaborated closely with the Astronomers Royal Maskelyne and Pond, on improvements to measuring instruments. Troughton had supplied Pond with a 30 inch circle to equip his Wiltshire observatory. After some time having measured the declination of cirtain stars, Pond concluded that the quadrant in use at Greenwich could not be trusted to give accurate results. The then Astronomer Royal, Maskelyn, along with Pond, contracted Troughton to supply a new instrument. The design Troughton proposed was so revolutionary that the Council of the Royal Society were unable to come to any decision upon it. It was not for another six years (1812), at which time Pond had become the new Astronomer Royal, that the Troughtons' new measuring instrument was installed at Greenwich.

The finished instrument was used to measure a star's distance from the Pole. It was accurate to 0.1" of arc. Pond next contracted Troughton to built a transit instrument thus enabling him to measure right ascension to the same degree of accuracy as the mural circle did polar distances.

The firm of Troughton gained a world wide reputation for measuring instruments. Many hundreds of instruments of various types left their premises, Mural circles were ordered for many of the worlds principle observatories, Paris, Cracow, Brussels, Madras and Cadiz, to name but a few. Apart from these large instruments, many smaller ones were manufactured for navigation and surveying work. Throughout his life, Troughton was continuously improving on existing techniques, so much so that he considered Ramsden his only serious rival

Edward Troughton received many accolades because of his work. In 1810 he was elected a Fellow of the Royal Society and in 1822 a Fellow of the Royal Society of Edinburgh. After a visit to Paris, about 1830, the King of Denmark awarded him a Gold Medal for his work. Troughton was one of the founders of the Astronomical Society, his name appearing on the list of Councillors at its first meeting on March 10th, 1820.

Due to the pressure of work and increasing age, Troughton took William Simms into partnership in 1826. Troughton at this time was 72, while Simms was only 33 years old. This partnership lasted for five years and proved quite successful. After this troughton retired from active work, though he remained with the Simm's family until his death on June 12th, 1835.

William Simms came from a family of engineers and instrument makers. His father had set up a business in Aldergate, London. He specialised in mathematical instruments. When he retired in 1820 the business was taken over by his younger sons, James and George. William, the eldest of the three sons, was apprenticed to Bennett who was one of Ramsden's employees. When he finished his apprenticeship, Simms set up his own business. He quickly capitalised on the sweeping changes occurring around him due to the Industrial Revolution. One of his many inventions included a self-acting dividing machine. This machine was able to speed the process of graduating instruments from weeks to a matter of a few hours. Simms, like troughton, was a Fellow of the Royal Society as well as being on the Council of the Astronomical Society.

Under Simm's management, the firm of Troughton & Simms expanded, producing a wide range of products. In addition to astronomical measuring instruments the firm made clock drives, spectroscopes, sextants, eye-pieces, micrometers as well as a few object-glasses. Under the design of Col. A. Strange, Simms made a theodolite for Sir George Everest's Indian Survey, during which the world's highest land mountain was discovered in 1852.

In 1836 William was joined by his nephew, William Simms (son of James Simms). After the death of William Simms Senior, on 21st June 1860, the firm was taken over by the nephew who formed a partnership with a cousin of the same name.

The firm of Troughton & Simms carried on trading until 1922, when it combined with Thomas Cooke & Sons, forming Cooke, Troughton & Simms, Ltd. This firm has since been taken over by Grubb Parsons who still manufacture large astronomical telescopes.

Ref: The History of the Telescope by H.C. King.

NEWS REVIEW by Simon Harvey.

Unless other wise stated all the information for my News Review comes direct to me from the Organisations or Contractors mentioned. To these we are very grateful. These items are only a small account of what is going on and if you would like for information or fuller accounts please write to me direct:

Simon Harvey, Code NRH, [redacted], Needham Market, Ipswich Suffolk, or Simon Harvey Code NRU Map 1, School of Maths & Physics, University of East Angia, Norwich, Norfolk. NR4 7TJ. Organisations interested in receiving more up to date information should contact me at the University address.

JULY 31st: After an 'intensive' study, N.A.S.A. has decided to commit itself to a first Shuttle Orbital Flight Test on March 31st 1981. N.A.S.A's Administrator Dr. Robert A. Frosch said that the decision had been made bearing in mind the recent disturbing engine fire

Braving all outcomes of a report on the fire he siad that nothing would deter N.A.S.A. from that launch date. The decision to announce the date was taken after extensive N.A.S.A. management and contractor discussion. However, Frosch said that the date was difficult but achievable, and that he was counting on all involved to make that date a reality. Columbia is expected to leave the Orbiter Processing Facility at Kennedy Space Centre on November 23rd. Although problems with the Thermal Protection system have largely been solved, the Orbital Maneuvering System has started to present problems. Columbia will receive checks in the Vehicle Assembly Building and on the pad prior to launch.

- N.A.S.A.

JULY 25th: PAINE ON THE U.S. SPACE PROGRAM:

Former N.A.S.A Administrator Dr. Thomas O. Paine told a Congress recently that if the U.S. is to maintain its vigorous Space involvement it must "re-energise" manned

[illegible] and "establish promising new [illegible] goals in [illegible] economic and technological applications". He went [illegible] said "we must initiate, low-cost, Shuttle based [illegible] to orbit, followed later by a practical, re-[illegible] into orbit and Lunar transportation system". Paine also [illegible] disillusionment with Space Programs after the Apollo era. He says that space has become not limitless but limited [illegible]'s expectations. He went on to say that N.A.S.A's present budget was a pitance compared with that of the sixties. Above all, Paine sees 'a bold new goal' essential to a vigorous space program, not unlike the 1961 John F. Kennedy's mandate.

- COMSAT / 'AEROSPACE DAILY'

UNITED STATES AIR FORCE AWARDS LAUNCH SERVICES CONTRACT.

The U.S. Airforce has awarded a $17m contract to Chemical Systems of United Technologies Corporation (C.S.D.) to provide all associated launch services for Titan III and the new generation Titan 34D. The Airforce Space Systems Division (S.S.D.) based at Vandenburg Airforce Base, signed the agreement to cover both western and Eastern continental U.S. launches. The services agreement expires on December 31st 1982. The contractor will assemble the boosters and check pressure and electrical sub-systems on board, O.King the boosters for flight. C.S.D. has produced from 1965 to 1979 118 boosters used in conjunction with Titan III C.D.& E launches.

The boosters are giants; 120" in diameter and consisting of five stackable segments. Now after a record of 100% success, thefirm is building a larger more powerful six-segment booster for the new Titan 34D. The first launch of Titan 34D is set for mid-1981 from Canaveral Airforce Base.

- Chemical Systems Division of
United Technologies Corp.

AUGUST 14th VOYAGER STATUS

	Voyager 1	Voyager 2
Distance to Saturn (KM)	132,531,596	365,583,009
Velocity relative to Earth (KM/S)	49.6	46.6
Closest Saturn Encounter	Nov. 12th 1980	Aug.27, 1981.

ORWELL ASTRONOMICAL SOCIETY (IPSWICH)
MEETINGS FOR OCTOBER, 1980

AT THE OBSERVATORY, ORWELL PARK, SCHOOL, NACTON.

TUESDAYS from 7p.m. Solar, Lunar & Planetary Sections
Directors: Mr. J. Hood, [redacted], Ipswich
Mr. J. Ranson, [redacted], Ipswich
Tel. [redacted]

October 7th 14th & 30th

WEDNESDAYS from 8p.m. Nebulae & Faint Objects Section
Directors: Mr. D. Payne [redacted]
Wickham Market, Tel. Wickham Mkt.
Mr. M. Cook, [redacted], Ipswich
Tel Ipswich [redacted]

October 1st 8th 15th 22nd & 29th.

SUNDAYS from 8p.m. General Observations Section 5th & 19th
Directors. Mr. M. Barrie[illegible] [redacted], Ipswich
Mr. R. Adams, [redacted], Ipswich
Tel. [redacted].

SATURDAY 4th OCTOBER at 8p.m. Committee Meeting to which all members are invited.

VISITS TO OBSERVATORY:

THURSDAY 9th at 7.30p.m. Melton Young Farmers arranged by Messrs. Barnard & Cook.

THURSDAY 16th at 7.30p.m. Sproughton Womens Institute arranged by Messrs Barnard & Cook.

SATURDAY 25th at 7.30p.m. Hollies Club arranged by Mr. Cheesm[illegible]

TUESDAY 28th at 8p.m. Felixstowe Amateur History Society arranged by Messrs. Gage, Hood & Ranson.

OTHER MEETINGS:

at Foxhereen Road, Ipswich at The Friends Meeting [illegible] on Friday 24th October at 8p.m. Miss Brenda Butler will [illegible] on U.F.O.s.

METEOR SECTION Director Mr. D. Barnard, [redacted]
Ipswich, Tel. Ipswich [redacted]
Meteor Watch to observe the Orionid Shower 21st-22nd
Meet OUTSIDE the 'Lexington Ship' at 9p.m. irrespective of weather conditions - all welcome to come along.

[illegible] ASTRONOMICAL SOCIETY (IPSWICH)

presents a talk on

U. F. O's.

given by

MISS BRENDA BUTLER

at

THE FRIENDS MEETING HOUSE
FONNEREAU ROAD
IPSWICH

on

FRIDAY 24th OCTOBER, 1980

8p.m.

ADMISSION FREE

further details from:
Hon. Sec. Mr. M. Barrickill,
15 London Road, Ipswich.