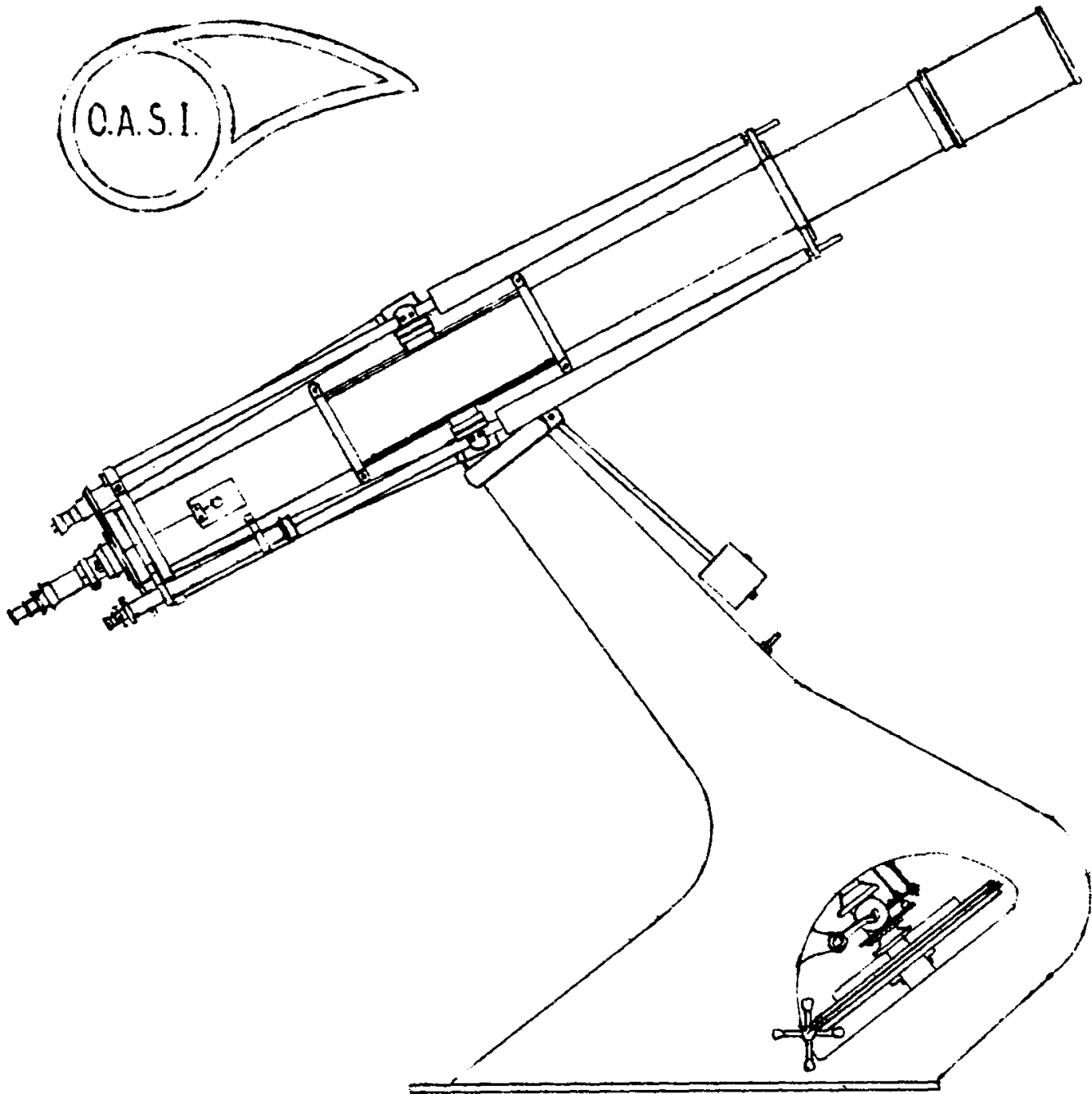
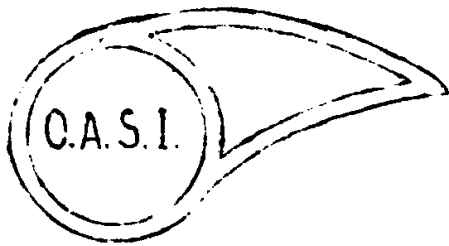


Editor: Mr. Paul Burt, [redacted], Ipswich IP1 6PP 'Phone Ipswich [redacted]

Producer: Roy Adams, [redacted], Ipswich IP2 9ST 'Phone Ipswich [redacted]

Your submissions of items for the Journal will be welcome.



The Orwell Park Observatory 10-inch Astronomical Telescope at Wacton near Ipswich

The winter constellations of Auriga, Gemini, Taurus and Orion are now all visible quite early in the evening, Taurus crossing the meridian at midnight in mid-month. Taurus, of course, is renowned for its two famous clusters, the Pleiades and the Hyades, the latter being a loose cluster scattered around the orange-red Aldebaran (by line of sight only). Both clusters are best viewed on low power or through binoculars. One of the Hyads, theta Tauri, is a naked-eye double. Another famous member of Taurus is the Crab Nebula, one-sixth of the way from zeta to beta, but it is only faintly visible through a small telescope. Below Taurus is the winding and inconspicuous constellation of Eridanus (the River), only half of which is visible from Britain.

THE SUN

Sunrise is at 07h00m at the beginning of the month, changing to 07h50m at month-end. Sunset changes from 16h30m to 15h50m. The Sun moves from Libra to Scorpio during the month.

THE MOON - Phases (November)

First Quarter	7d16h18m	Last Quarter	22d21h24m
Full Moon	14d20h00m	New Moon	30d08h19m

Occultations

Star	Phase	Mag.	Time	
3109	D	6.5	7d20h33.9m	D = Disappearance
3112	D	6.2	7d21h06.7m	R = Reappearance
4	D	6.3	11d00h12.9m	Stars listed according to
*692	D	1.1	16d05h22.6m	Zodiacal Catalog (ZC) numbers.
*692	R	1.1	16d06h25.2m	*denotes double star.
**806	R	5.1	17d04h03.2m	**denotes time is correct
944	R	5.7	18d03h12.0m	for latitude and longitude
1197	R	6.0	20d04h08.6m	of Greenwich.
1409	R	5.1	22d02h53.0m	
1716	R	6.4	25d03h25.5m	

THE PLANETS

Mercury reaches greatest eastern elongation of 23° on the 16th at mag. 0.0 but will be setting only 40 minutes after the Sun. It will be 10.9° S of Mars on the 5th, and 0.10° N of Mars on the 29th.

Venus is at inferior conjunction on the 7th, though it will be rising 3 hours before the Sun by the end of the month, at mag. -4.2.

Mars is virtually lost in the sunset glow (see Mercury).

Jupiter is rising at around 2100h at mag. -1.9 in Cancer.

Saturn in Leo, is rising at about midnight at mag. +1.1.

Source: BAA Handbook 1978. Please note all times are UT.

METEOR NOTES

There are four major regular streams this month:

Epsilon Taurids, from Oct 30th to Nov. 17th, RA 4h16m, Dec 22° N. Slow - some fireballs.

e Taurids, from Nov. 3rd to 15th, RA 3h40m, Dec 13° N. Very slow and bright.

Leonids, from Nov. 13th to 15th, RA 10h00m, Dec 22° N. Very fast. Peak every 33.3 years.

Andromedids, from Nov. 17th to 27th, RA 1h40m, Dec 43° N. Very slow, associated with Beila's comet.

(Data from Norton's Star Atlas - RCA)

FROM OTHER JOURNALS - Launch Date for Space Shuttle

After months of continual problems, NASA has finally announced a provisional launch date for the Space Shuttle flight. It will be on September 28th of next year, assuming that all remaining tests are successful, and that various adjustments to the Orbiter's manouvring system and solid rocket motor are carried out on schedule. (And assuming NASA can come up with the extra \$100-200m required.)

The principal problem has been the Shuttle's main engine, which failed its initial firing tests. However, all the latest tests have been entirely successful. (See Simon Harvey's NASA News Round-up.)

If all goes well during the coming months, and the 53-hour long first flight is made on schedule, it will considerably improve the chances of saving Skylab, which by present NASA estimates will remain stable in space until June 1980. The second space shuttle mission planned for late 1979 or early 1980 is designed to attach a supplementary engine to the limping space station to boost it into a higher and safer orbit.

(New Scientist)

ARTICLES TO READ

Europe's ambitious plans for Spacelab. (New Scientist, Sep. 21st.)

NASA's first twenty years - and the future. (New Scientist, Oct. 5th.)

The Rockwell Space Shuttle (Electronics Today International - September)

If you have access to the above-mentioned magazines, these articles make very good reading, especially as a follow-on to Charlie Radley's excellent lecture at the Friends' Meeting House last month.

SOVIET SPACE DURATION RECORD

The two Soviet cosmonauts on board Salyut 6, Vladimir Kovalyonok and Alexander Ivanchenko, have easily beaten the 84-day space duration record set up in Skylab. Their flight began on June 17th, so now totals well over 100 days, and at the time of going to print they are still going strong.

SIMON HARVEY'S NASA NEWS ROUND-UP

September 11th NASA has selected five experiments to board the Gamma-ray satellite due to be launched in 1984. The satellite will shed light on high energy gamma-ray bursts from pulsars, and general gamma-ray-emitting stars. Experiments should also make clearer the composition of neutron stars. However, funds for this mission have not as yet been approved by the U.S. Congress.

September 15th NASA launched a new generation satellite, Tiros-N, from the Western test range in California. The satellite is classified as being an operational meteorological monitoring platform, positioned in polar orbit. The instruments aboard reflect a considerable technological advance over the previous National Oceanic and Atmospheric Administration (NOAA) series of satellites. Functions of the spacecraft are:

- 1 Improved weather analysis
- 2 More accurate location of ocean currents
- 3 Fishing and shipping routes advice
- 4 Snow cover, snowmelt and snow flow data.

These are just the terrestrial applications, and there are many more experiments designed to analyze the interaction between solar radiation and the Earth's Atmosphere.

September 17th Pegasus 1 re-entered the Earth's atmosphere. 9 705 kg was expected to burn up on re-entry, but the other 726 kg was expected to survive. However,

there was minimal damage since the orbit crossed a large proportion of water. (Page 5)

The satellite was designed to gather data on micrometeoroids, small particles drifting in space.

September 18th NASA launched the new generation satellite, Nimbus-G, designed to monitor, for the first time, man-made and natural pollutants in the atmosphere. The satellite is now on a 955-km high orbit, with a revolution time of 104 minutes. The project is being run in conjunction with the NOAA. Its classification is environmental, monitoring the general surroundings associated with Man's activities on Earth. The ESA is also participating with a ground station at Lannion, France, to process Nimbus-G data.

September 20th Canada's Department of Energy, Mines and Resources signed an agreement with NASA, allowing the Canadian authorities to operate a ground station at Shoe Cove, Newfoundland, to receive SEASAT data.

September 20th The Space Shuttle main engine, that has been causing so much difficulty during the past few months, has passed the major milestone of 5 000 seconds firing time at NASA's space technology laboratories. This is significant, as it is the time required for the engine type to be certified for manual flight.

September 28th Some satellites due to be launched have had to be postponed due to tape recorder and computer troubles. The equipment involved is standard NASA design, and the problems are said to be not serious.

October 1st saw the 20th anniversary of NASA. More recently President Carter visited Canaveral to award the new Congressional Medals of Honour to distinguished astronauts, including Neil Armstrong.

October 6th Voyager status:

	Voyager 1	Voyager 2
Distance from Earth (million km)	705	669
Distance to Jupiter (million km)	151	201
Distance to Saturn (million km)	959	959
Distance travelled, total (millionkm)	817	831
Velocity relative to Earth (km/sec)	24.87	27.10

WHAT ABOUT THE PICTURES, THEN?

Apart from a puzzle corner small black and white photoprint in the June Journal earlier this year, we haven't really tried much on these lines, although ordinary line drawings have been successfully reproduced. So - let's have a go! Starting with a classic star pic. sent to me by Mark Howe some time ago. This one is of the constellation ... well, why not see if you can recognize it from the picture? The camera used was a Zorki 4, right open at F2, exposure 6 minutes on Ilford HP4. (The camera is a 35mm film format, the standard 50mm f.1. lens being used.) For this picture, the camera was mounted on the front of Mark's 4.5-inch reflector, the latter being used at 45x as a guide 'scope. We do not expect all the fainter stellar images to register in the Journal, but some of us can compare the results with the original print. This frame was shot in 1976 - April 23rd.

The other photos in our central opening this month are from the book, 'Someone Else Is on our Moon' by George H. Leonard, and originally from NASA. Whether or not you feel the title to be too assertive or not, the fact remains that these pics are good test-pieces, and may be useful for those of us with very large telescopes and those who enjoy speculation ... certainly plenty of that may be gained from these lunar presentations ... the longer one looks at them, the more one may think they can see.

If funds will run to it, I hope to include as a supplement soon, a black and white rendering at least, of an artist's impression originally in colour of the Space Shuttle Orbiter landing at Kennedy Space Center, Florida.

Photo
Centre-
Page

See page 5
for further
details.

What can you see
think you may be seei
in these 3 pictures fr
'Someone Else is on Our
Moon'?

In Fig. 1, there does
to be a preference of dire
of lines of detail all ov
bottom/left-hand side of
picture. (Has anyone kno
of an enormous lunar paint
roller?)

Fig. 1 Tycho

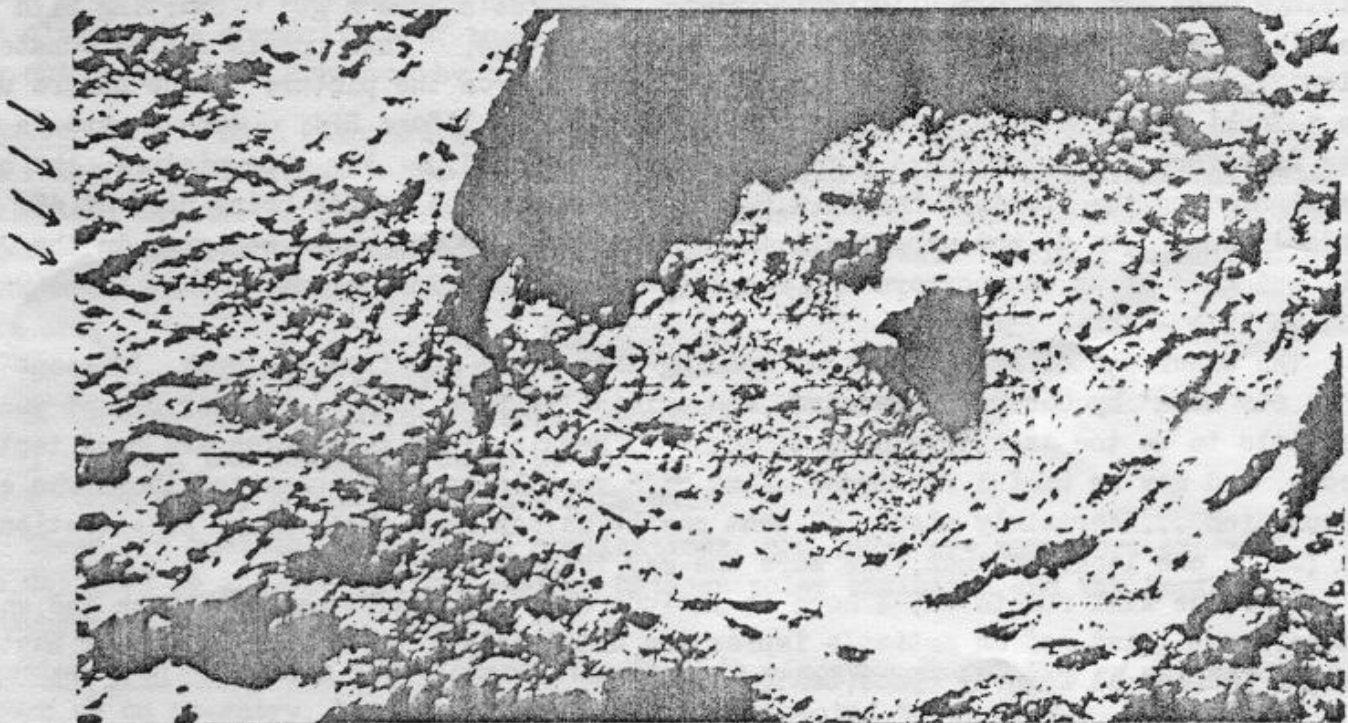
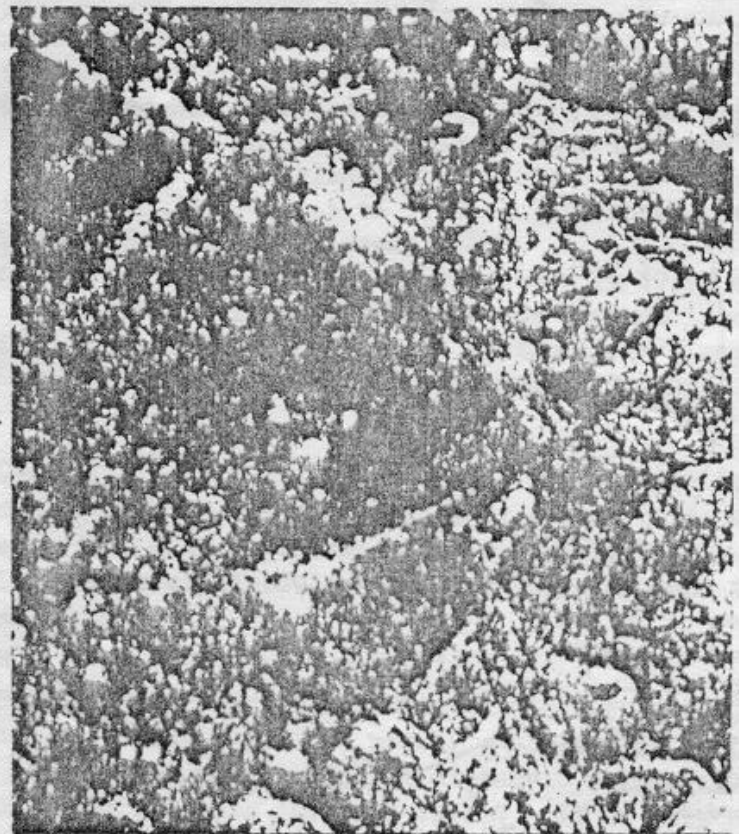




Fig. 2 Tycho/N. Highlands

In Fig. 2, centre top, what is mentioned in the book as a 'power source plate' - anyway, an inconspicuously circular object, show (1). A cross between a knocked-over rocketship, hydraulic blaster and giant 'firestone' appears close to arrow (2). The white-ringed object (3) looks rather like a mined, fossilized battleship from who knows where, and ghosts of others might be discerned.

As for this, Humboldt Crater and Southern Sea area



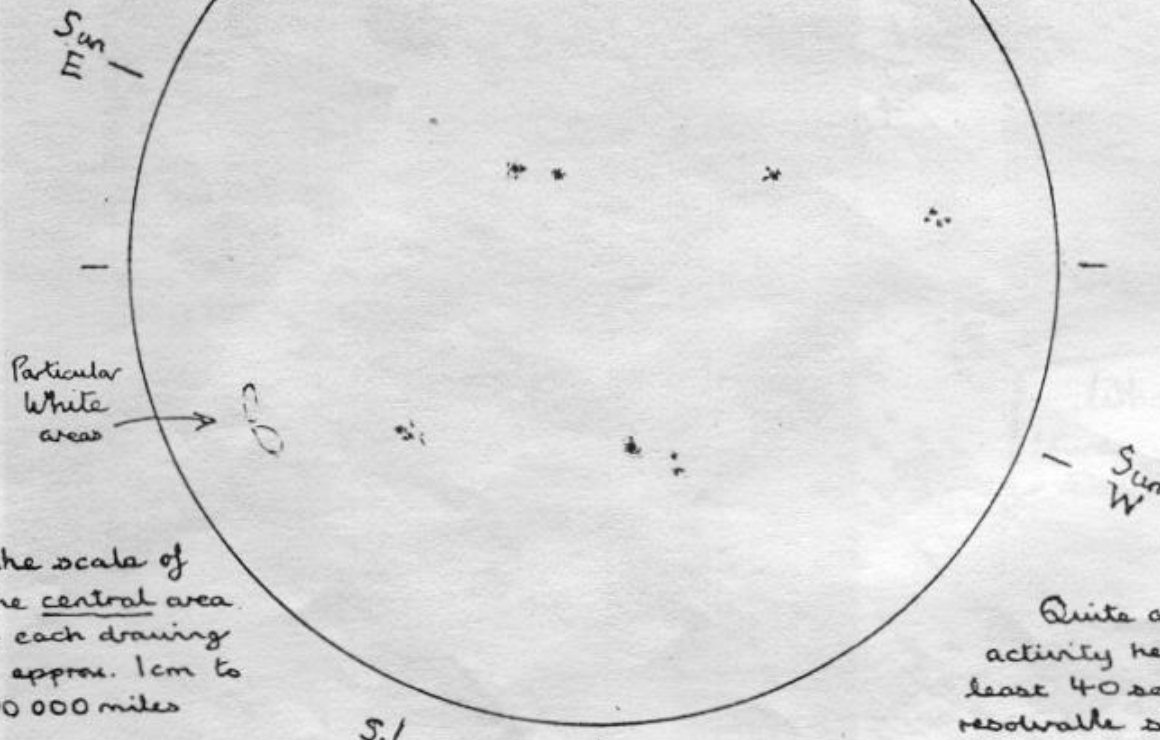
SOLAR ACTIVITY -
 MORE DRAWINGS BY RCA WITH
 PRINZ 60MM OG & 18MM
 EYEPIECE PROJECTION.
 (ELECTRONIC POLAR DRIVE)

Telescope (Celestial) N

1978 Sep. 22, 1450-1530 UT

Sky: Cloud
 varying very thin
 to somewhat
 obscuring

LOCATION: 16 F.C.



The scale of
 the central area
 of each drawing
 is approx. 1cm to
 100 000 miles

Quite a bit of
 activity here - at
 least 40 separately
 resolvable spots.

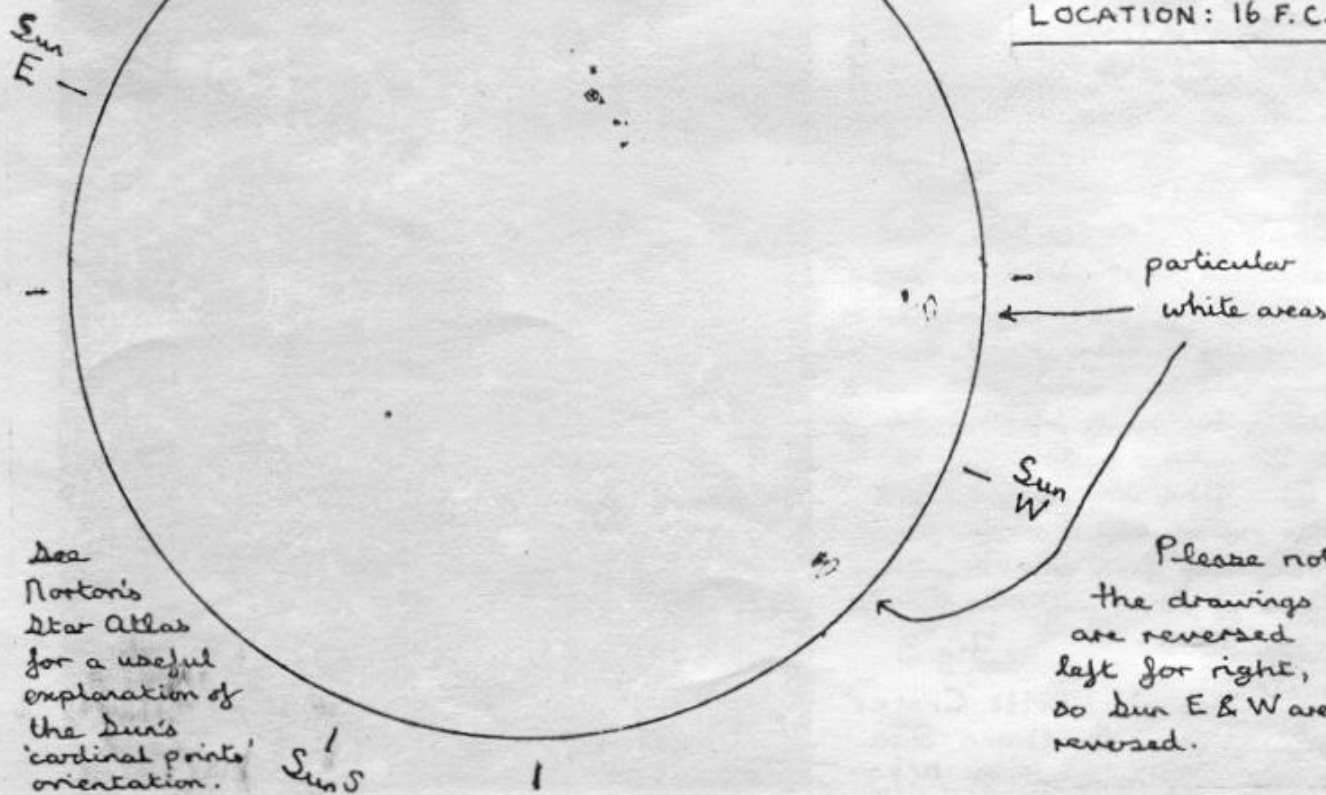
Telescope (Celestial) N

1978 Oct. 24, 1050-1100 UT

'CREDITS'
 AS ABOVE
 DRAWING

Sky: Clear but
 for very thin or thin
 haze (and one aircraft
 vapour trail).

LOCATION: 16 F.C.



See
 Norton's
 Star Atlas
 for a useful
 explanation of
 the Sun's
 'cardinal points'
 orientation.

particular
 white areas

Please note
 the drawings
 are reversed
 left for right,
 so Sun E & W are
 reversed.

Edmund Halley is known by most people nowadays for the periodic comet named after him, although he had a wide range of scientific interests, as well as holding posts varying from sea captain to Astronomer Royal. His contribution to astronomy was considerable, but he was largely overshadowed by his contemporary, Isaac Newton.

There are certain doubts as to Halley's exact birth date. Some sources give it as 8th November, 1656, but Halley's own account gives it as 29th October, 1656. As there is no baptism certificate in his local parish church near Shoreditch, the exact date has never been satisfactorily resolved.

Halley was educated at St. Paul's School, before going on to Oxford. Astronomy had been of great interest to him for several years. At the age of twenty and only halfway through his Oxford course, Halley decided to catalogue stars in the southern hemisphere. Having discussed the idea with friends, including the then Astronomer Royal, John Flamsteed, Halley and a friend set off in November 1676 with a free passage granted from the King, with the East India Company to St. Helena. During his stay he observed a transit of Mercury across the Sun's disk and catalogued the positions of some 360 stars. On returning to England the following year, Halley published his results and received wide acclaim. Shortly afterwards, he was elected a Fellow of the Royal Society, and by the direction of the King, was granted a Master of Arts degree from Oxford.

In 1685 Halley was elected 'Clerk' to the Royal Society and started editing the Society's journal, 'Philosophical Transactions'. The previous year, Halley had visited Newton, persuading him to publish his work on planetary motion and gravity. Newton's book, 'Principia', would probably have been delayed many years if Halley had not paid all the publishing expenses and acted as editor. During his term as Clerk, Halley wrote many scientific papers on subjects ranging from trade winds to astronomy.

At this time many people were involved in finding a quick way of determining longitude at sea. Halley proposed a possible method, which required plotting the magnetic variations of the Earth. He contacted the Admiralty, who took a great interest and decided to commission him to the rank of Captain, giving him a small ship for his research. Halley's first trip began in November 1698 from Portsmouth, but was cut short by a mutiny. His second trip proved more rewarding, and was completed in mid-1700, after covering the Atlantic as far south as the Falkland Islands.

Halley was one of the first astronomers to apply Newton's law of gravitation to comets. He found that they obeyed the same orbital laws as the planets. One particular comet Halley had observed in 1682 aroused his interest in 1705, when he was writing a book on the subject. Comets seen in 1456, 1531 and 1607 seemed to have the same orbit, approaching Earth every 75 or 76 years. He concluded that these comets were in fact the same object, and predicted that it would reappear in 1758. This comet has since been named after him, being next due in about seven years' time.

Halley became the second Astronomer Royal, succeeding John Flamsteed in 1719, and held this post for twenty years. A few of Halley's other achievements include inventing diving equipment for ship salvaging; development of a theory of the Earth's magnetism, and writing on archaeology. He died at the age of 86 in January 1742.

WELL DONE, CHELMSFORD!

Celebrations no doubt followed Chelmsford Astronomical Society's performance in answering questions on the Noel Edmonds TV show on 21st October, last, when, quite apart from getting the highest score of the series, they sky-hooked away a portable astro-telescope and tripod, an encyclopaedia, a pair of binoculars and a calculator (and two ping-pong balls?)

NORWICH IS - T H I R T Y - I N C H E S W I D E . . . - ! !

It is always interesting to hear from other Astro. Societies, and I was surprised to hear from Andy Shorter of Norwich, that they have a 30-inch mirror - apparently they've had this for about 12 years and some of you have heard about it already - which only goes to prove it is not always your Producer who gets the news first! It is only natural that the 30-inch project is a very long term one, being such a size (for the pocket!) Latest is their observatory's now weatherproof and clubroom footings dug.

TUESDAYS from 7 pm: Planetary Section November 14th & 28th, December 12th

Directors Mr. J. Deans, [redacted], Capel St. Mary 'Phone Gt. Wenham [redacted]
and Mr. J. Hood, [redacted], Ipswich

Tuesdays from 7 pm: Solar, Lunar & Planetary Section Nov. 7th & 21st**; Dec. 5th

Directors Mr. J. Hood, [redacted], Ipswich
and Mr. M. Barritt, [redacted], Ipswich **Ipswich 18+ Group Visit

WEDNESDAYS from 8 pm: New Section (General) Nov. 1st, 8th, 15th, 22nd, 29th; Dec. 6th

Directors Mr. D. Payne, [redacted], Wickham Market, Suffolk & 13th
and Mr. M. Cook, [redacted], Ipswich

THURSDAYS from 8pm: Double Stars Section Nov. 9th, 23rd; Dec. 7th

Directors Mr. D. Bearcroft, [redacted], Ipswich 'Phone Ipswich [redacted]
and Mr. J. Ranson, [redacted], Ipswich 'Phone Ipswich [redacted]

FRIDAYS from 8 pm: Variable Stars Section Nov. 10th, 24th; Dec. 8th

Directors Mr. R.S. Manning, [redacted], Ipswich 'Phone Ipswich [redacted]
and Mr. M. Siggers, [redacted], Ipswich

SATURDAYS from 8 pm: General Section Nov. 18th & 25th; Dec. 2nd

Directors Mr. M. Barriskill, [redacted], Ipswich 'Phone Ipswich [redacted]
and Mr. R. Adams, [redacted], Ipswich 'Phone Ipswich [redacted]

*As Mike works nights and for other reasons, 'phone times are somewhat restricted.

TUESDAY, NOVEMBER 21st: Members of the Ipswich 18+ Group will be coming to visit the Observatory, hopefully with showroundship of John Deans and Roy Adams, but other OASI members are welcome and needed to be present. (Who knows, 2 or 3 more OASI members may result eventually from this visit.)

METEOR SECTION meets are usually held on certain heathland outside Ipswich, and details of such meetings and activities may be obtained from Mr. D. Barnard, [redacted], Ipswich ('Phone Ipswich [redacted] subject to availability) or from Mike Barriskill.

COMMITTEE - Next meeting is on November 11th at the usual place.

/WINTER LECTURE PROGRAMME MEETINGS, FRIENDS' MEETING HOUSE, 39 FONNEREAU ROAD, IPSWICH: \

Friday, NOVEMBER 17TH, 8pm "SUN WORSHIPPING" by P. Laycock (South Essex Astro. Society). \

Friday, December 15th, 8pm, Short talks and slides by OASI members. /

Visits by prior arrangement, and other meetings occasionally take place, and for more details about the Orwell Astronomical Society and goings-on, please contact either: Assistant Chairman, Mr. Alan Smith, [redacted], Ipswich, 'Phone Ipswich [redacted], or Treasurer, Mrs. P. Long, [redacted], Ipswich, 'Phone Ipswich [redacted], or any of the persons mentioned in the Observatory Programme above, or our Editor, Paul Burt.

NEW MEMBERS ARE ALWAYS WELCOME and can always come and give us a look 'prospectively'.

LATEST NEWS - GRAZING OCCULTATION, 1978 Oct. 25, 0128.5 UT: Mike Barriskill and Martin Cook; Dave Barnard and Wayne Brieske; Alan Smith and non-member Chris Elbins duly assembled themselves at three different points in the viewing area and Alan reports that on assembly in the Mendlesham area, seeing would have been good enough. But just a few minutes before the event proper, came a dreaded cumulo-nimbus extractus and comment (not for general release) is on tape at all stations ... Full marks for trying, chaps!

PROJECT CAMEO This will now disappointingly be undertaken in daylight, well within the Arctic Circle - so the last news stated. The project is now de-circularized and no more pre-release news is expected. Possible release time was stated as daytime, October 28th, in the zone above the extreme N of the Arctic Circle - some viewers in the region may see something at altitude about 30° if they are very lucky, for about 5 minutes. Research/detection will be by photo-discrimination apparatus of some sort.

NOVA CYGNI 1978 is now steadily fading.

OBSERVATORY WIRING AND NEW INSTALLATIONS should be completed by the time this journal is in distribution - or very shortly afterwards.

MEMBER'S ADVERT: @ FOR ALL CLOCK REPAIRS, B I G or small, ancient or modern, by competent craftsman Society member, 'phone [redacted] (evenings) for all inquiries.

