

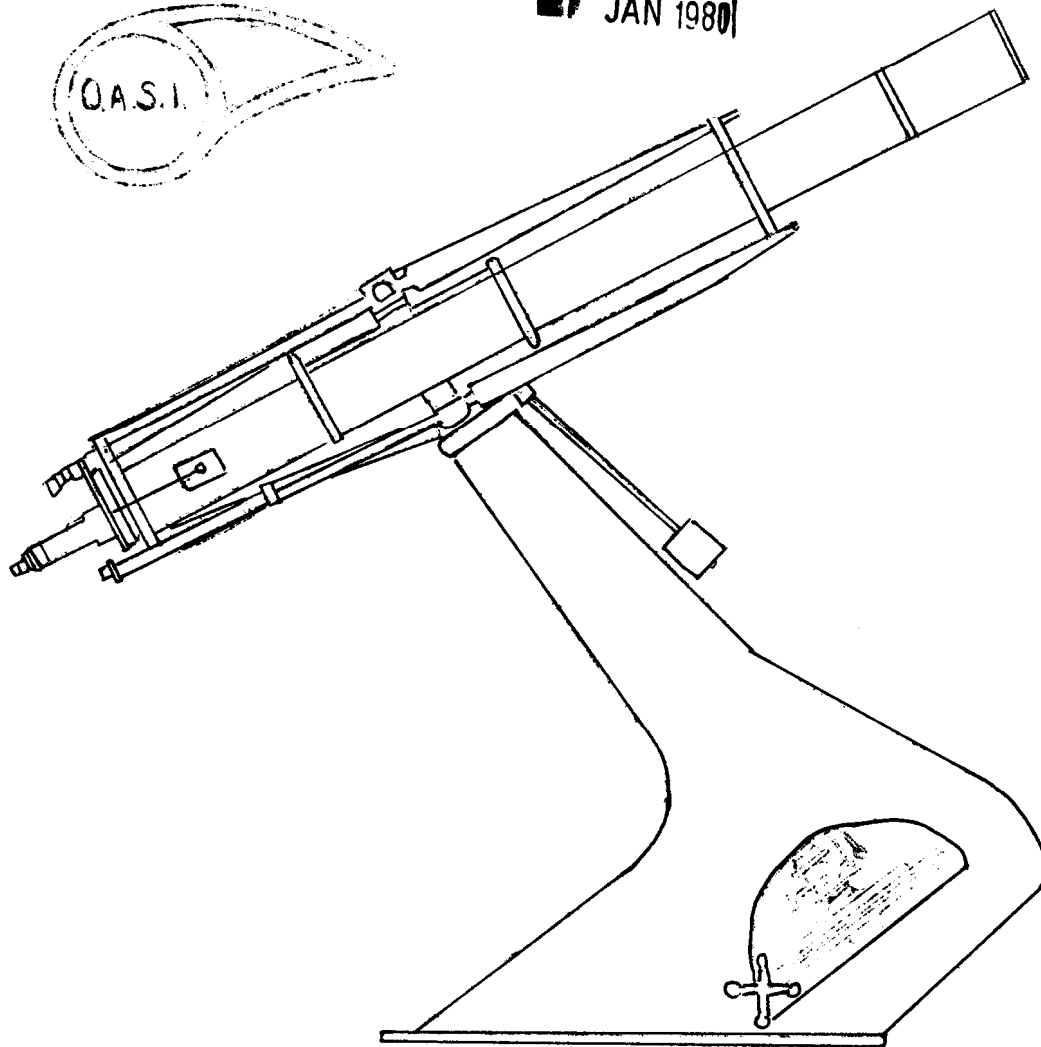
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WEST HANNINGFIELD, Chelmsford, Essex. CM2 8LQ

JAN 1980

O.A.S.I.



The Orwell Park 10 inch Astronomical Telescope  
at location near Ipswich

Well..... as you saw from the size of the December Journal we again had printing problems and had to go out with what we had already had printed. As promised in my little note we are again in print for January on the old ink duplicator and while I am typing it up hope that the Society's printing machine will work satisfactory but at this early stage (5.30a.m. Monday 3rd December) I can only hope and keep my fingers crossed so please bear with us if anything goes wrong with the production.

My thanks go to so many members who rallied round to get things moving again and special thanks must be given to Alan Smith who has spent so many hours trying to get the printing machine going again and we hope that it will be ready for 'lift off' when I have typed this lot up.

This month's Journal will include, as far as space will allow many items which should have been in the December Journal.

To keep you up to date with what has happened since November:-

OPEN DAY:

Mrs. Bearcroft, our Treasurer, has completed the accounts for the Open Day and we made a profit of £180 towards our Society's funds. Over £60 was taken at the gate; £47 on the sale of refreshments; over £70 on the Grand Draw while the balance was made up from donations, sale of Histories, etc. Our thanks go out to so many members who did so much to make this day such a most profitable and enjoyable one.

Building work at Orwell Park School:

We have been advised by Mr. I. Angus, headmaster of Orwell Park School, that during the coming months new buildings will be erected and classrooms modified in the area which we use for our car park. All members are advised to take great care when going to the Observatory.

RADIO ORWELL:

On Wednesday 7th November David Barnard was invited to give a little ten minute talk on Radio Orwell about astronomy during Patrick Eade's afternoon programme. Since this first broadcast this astronomical item has been included each week and follows the 5p.m. news on Wednesdays. Living out near Chelmsford I am out of the Orwell area but yesterday (2nd December) I heard tape of the four or so broadcasts to date.

..... although very nervous at first David has become quite at home and doing a great job in spreading the word about astronomy and our Society in his broadcasts.

#### Heather Couper Lecture on 7th December:

Heather Couper's lecture on 'Exploding Galaxies' again exploded when she advised us that she had a cold and could not make the lecture. The message got to me at just after midday and instead of cancelling the meeting I rang round as many members as possible to give a little talk as we thought that as David had mentioned it in his little radio broadcast on Orwell we would have lots and lots of people turn up. I left off work early, went back to my 'pad' near Chelmsford and collected as much stuff as I could pack into my car. On arriving about two miles away from the famous Army & Navy round-a-bout was greeted with a traffic jam nearly 3 miles long. Every way in was blocked because of an accident. My engine got warmer and warmer, then the water boiled over. After waiting a little while I managed to get going again and after nearly two hours in the traffic jam got through Chelmsford only to break down at Witham with the car's thermostat gone. I rang Alan Smith and told him my tale of woe and made my way back to Chelmsford, arriving back at my little place at gone 11 o'clock.

Meanwhile, back in Ipswich, Alan had got things organised and a good evening was had by all. Roy Gooding shew some slides, David Barnard talked about Meteors and David Payne gave a little talk and the evening went down very well.

Heather Couper has written to us and offered to come to Ipswich to do the talk in maybe March or April - perhaps our next arranged lecture for her in Ipswich will be lucky!

#### TWO LITTLE REMINDERS:

1. The ANNUAL GENERAL MEETING of our Society will be held in the Library of Orwell Park School, Nacton on SATURDAY 12th January starting at 7.30p.m. sharp.

2. All membership subscriptions became due for 1980 on 1st Jan. All renewals should be sent to:-

Mrs. P. Bearcroft

IPSWICH.

..... NOTE NEW ADDRESS .....

If you have already sent your subs to her old address worry as we are having all her mail diverted.

### THE NIGHT SKY AS SEEN FROM ORWELL PARK IN JANUARY.

The unmistakable yellow Capella in Auriga dominates the zenith during late evening this month. The string of faint stars forming a line between Capella and Polaris to the north is Camelopardalis, and running at right angles from this constellation down to Leo in the west is another faint line of stars forming Lynx. The southern sky is shining in its full winter glory with all the brightest zodiac constellations on show (Leo, Cancer, Gemini, Taurus and Aries). On the meridian during late evening Orion outshines all others, and above the southern horizon Canis Major, with Sirius of course, is fully visible, as is Lepus, the quadrilateral shape directly below Orion.

#### THE SUN

Sunrise is at 08h00m at the beginning of the month, changing to 07h 50m at month-end. Sunset changes from 16h40m. The Sun moves from Sagittarius to Capricornus during the month.

#### THE MOON.

Full Moon	2d 09h 02m	New Moon	17d 21h 19m
Last Quarter	10d 11h 49m	First Quarter	24d 13h 58m

#### OCCULTATIONS

Star	Phase	Mag.	Time		
			d	h	m
*1875	R	6.5	10	3	51.6
Venus	D	-3.5	20	11	37.1
Venus	R	-3.5	20	12	53.2
76	D	5.9	22	18	11.6
Vesta	D	7.4	24	20	5.4
491	D	6.2	25	21	50.3
598	D	6.2	25	23	32.8
626	D	6.4	26	20	6.8
635	D	3.9	26	22	30.3
659	D	6.4	27	01	35.0
661	D	4.6	27	01	53.8
**945	D	6.2	29	01	09.1

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 not visible this month

Venus is an evening star, setting about 3 hours after the Sun at Mag. -3.5

Mars will be rising during early evening by the end of the month, at mag. -0.3 (brightening rapidly) in Leo.

Jupiter will also be rising early by month-end, at mag. +2.0 in Leo.

Saturn will be rising at 2200h at mid-month between Leo and Virg at mag. +1.1

Source: B.A.A. Handbook 1979. All times are U.T.

### FROM OTHER JOURNALS:

#### New Threat to Radio-Astronomy

Following the threat to radio-astronomy from the possible Solar Power, Satellite project (see 'From other Journals' Jan '79), comes another disclosure from British radio astronomers, this time concerning microwave ovens. Tests were carried out on various ovens, and all produced 'Leaking' radiation over the range of 1 to 6 GHz, which covers four of the most important frequency bands used in radio astronomy.

The Jodrell Bank team calculated from their results that at a distance of 1Km, a microwave oven will raise by a factor of 12 the background 'noise' in a radio telescope observing at 1.4GHz and a telescope tracking an object in space will be affected by any microwave oven within 25Km. The team estimates that 10% of all radio astronomical measurements are affected by radiation from microwave ovens.

(Nature/New Scientist)

### Space Bubble-Scopes

A Canadian astronomer, Dr. Harvey Richardson, has suggested the idea of making future space telescopes out of plastic bubbles, far larger mirrors could possibly be made on Earth. The three basic components - a gas cylinder, a liquid plastic cylinder, and a metal ring to form the outer rim, would be carried up by Space Shuttle. The liquid plastic is blown into a bubble by the gas cylinder, until it is a perfect spheroid, the diameter being governed by the metal rim. The pressure is then reduced slightly, thus forming a perfect paraboloid. The plastic then solidifies, either by chemical hardening or naturally due to the low temperature of a near-earth orbit. The unwanted material is cut away, leaving the framework of a mirror. With outer space acting as a vacuum chamber, alluminium can be evaporated off the surface to form the reflective coating. Dr. Richardson sees the prototype as a modest 1.5m diameter, but envisages increasing the size eventually to 125m diameter, the amount of material that could be carried on one shuttle flight.

(New Scientist)

### ARTICLES TO READ.

'The Universe through X-Ray Eyes'- New Scientist 29th Nov. 1979.

A look at the results from HEAO 2 (The Einstein satellite), which have transformed x-ray astronomy from an infant science to a mature area of study.

'Saturn - Lord of the Rings' - New Scientist 13th Dec. 1979

An account of the new discoveries made by Pioneer II of themake up of Saturn's rings, magnetic field, atmosphere, and the internal structure of the planet itself.

'Deep Space Probes' - Elecyronius Today International - Jan 1980.

One of the E.T.I.'s occasional astronomical articles. This one looks at the Viking, Voyager and Pioneer spacecraft, describing their instrumenatation as well as their discoveries.

### METEOR NOTES by David Barnard.

This month there is only one major shower - the Quadrantids, with the maximum ocuring on the 4th at 1000 hours. The normal limits of this shower fall between January 1st and the 6th. This is quite a rich shower and at maximum about 110 meteors

an hour can be expected.

The radiant is 15hours 28mins, Dec. +50°, and is in the constellation of Ursa Major, but this shower is still named after the old constellation Quadrans, hence the name Quadrantids.

This shower is rich in faint meteors, but unfortunately this year the Moon will seriously hinder observations.

#### E.S.A.

Many months ago we wrote to The European Space Agency in Paris for posters and book-lets to give out at our Open Day. Two large parcels left Paris 10 days after the Open Day and were followed by bills for carriage for over £70!!!

Since the initial shock of this bill we have written to E.S.A. and they have accepted the full costs. If you would like a poster or some book-lets about E.S.A. then they are up the Observatory. A small donation to Society funds for these would be appreciated.

#### CHANGE OF TELEPHONE NUMBERS:

Nearly all the telephone numbers in the Belstead/Stoke Park areas of Ipswich have been changed during the last month or so. If your telephone number has been changed please advise Mr. R.M. Cheesman so that our records can be updated and we can also publish in the Journal the new ones.

#### DEADLINE FOR FEBRUARY JOURNAL:

All articles which you would like published in the February Journal should be sent to Mr. R.M. Cheesman, [REDACTED], WEST HANNINGFIELD, Chelmsford to reach him by 17th January.

#### NEWS REVIEW, JANUARY, 1980

by Simon Harvey

#### AUGUST, COLONIZING SPACE - WITH ANTS.

No, there are no plans to colonize Mars or any other planet for that matter. A group of Camben N.J. High school students have won a competition under a N.A.S.A. programme, and sponsored by R.C.A., to place aboard a 1981 Shuttle flight some thousand

of ants, with a view to studying their behaviour. The ants will be split into three sections of a five cubic foot chamber. One part will provide the weightless environment, another slight weightlessness, and the last that of half the earth's gravity. N.A.S.A. considers it a timely experiment for the eventual long term habitation of space by Human beings.

N.A.S.A. Activities.

#### SEPT. 28th. EXPERIMENTS FOR FIRST SHUTTLE FLIGHTS ARRIVE AT K.S.C.

A number of experiments packages have arrived at K.S.C., FL., for mounting on or to the British Aerospace built payload pallet. The experiment OSTA-1 (from N.A.S.A.'s Office of Space and Terrestrial Applications) has already been mounted on the pallet in the operations and checkout building. Columbia's second flight will carry among other things a 2.1 by 9.1 Shuttle imaging radar antenna. The antenna works on a similar principle to that on the Seasat-A satellite. Since the Spacelab pallet arrived in December 1978, McDonnell Douglas Technicians have been fitting it out with command, thermal and electrical subsystems.

- Spaceport News (K.S.C./N.A.S.A.)

#### November 19th INTELSAT INUNDATED FOR 1980 OLYMPICS COVERAGE

Intelsat, the 102 member organisation set up to provide global satellite communications, anticipates capacity bookings for the 1980 Moscow Olympic Games. Present estimates put the 'potential television audience' at two billion. Mr. Santiago Astrain, INTELSAT Director General said of the 3,072 T.V. hours available from eight satellite channels over that period, over 77%, or 2,357 had already been booked. Television broadcasts will emanate from the Lvov earth station near the Polish border, and from a new station at Dubna north of Moscow. Atlantic Major path's 1 and 2 are to be used, as well as major channels of the Indian Ocean Intelsat IVA's.

- INTELSAT.

SHUTTLE LAUNCHES...LAUNCHES...LAUNCHES...LAUNCHES...

N.A.S.A. announced November 19th that the failure earlier in the month of an SSME Hydrogen Line at the National Space Technology laboratories is attributable to the use of Improper welding wire. The rupture occurred at the base of one of the engines, at a place called the 'steerhorn'. Engineers will now perform simple acid etch tests on all engines to make sure they will not be affected by the same problem.

- N.A.S.A.

November 30th NEW SHUTTLE SCHEDULE TENTATIVELY POSTED.

First Shuttle launch is now 'fixed' for June 30th 1980. This depends on achieving the following goals:

1. Late March, Columbia rollout from OPF to VAB
2. Mid April, Complete STS moved from VAB to launch complex 39A.
3. Mid May second Flight readiness firing of Columbia's SSME Conducted on pad.
4. June 30th. First Orbital Flight.

- N.A.S.A.

December 4th. A SKY HIGH INVESTMENT.

Hughes Communications Inc. has filed an application with the Federal Communications Commission requesting the go ahead to build and operate a new U.S. domestic satellite system. The subsidiary is looking for interested foreign nations as well, so as to provide a timely leased satellite system. Plans call for HUI to invest \$190 million in building 3 C-band satellites to be launched by either Thor-Delta or Shuttle no earlier than 1981.

(N.B. 1 of the three is maintained as a spare)

- HUGHES AIRCRAFT COMPANY.

LAUNCHES....LAUNCHES....LAUNCHES....LAUNCHES....

The Department of Defence's third Fleet Communications Satellite FLTSATCOM C, has been rescheduled for launch by Atlas Centaur not later than January 17th. The delay was caused by a leak detected in the high pressure pneumatics part of the booster..... Also, on

the subject of Launches, R.C.A.'s SATCOM C was launched December 6th. The 2,000lb spacecraft will serve users in the Cable T.V. industry. The spacecraft has 24 channels, each capable of carrying an FM/Colour T.V. transmission.

R.C.A. Commercial  
Communications Systems.

For more information on these and other recent News Items, please write: Mr. S.G. Harvey, Code NRH, [REDACTED], NEEDHAM MARKET, Nr. Ipswich Suffolk, or Mr. S.G. Harvey, Code NRU, Map I, School of Maths & Physics, University of East Anglia, Norwich, Norfolk, NR4 7TU. Your items for inclusion in this Journal will be appreciated. Apologies are forthcoming for those organisations who have submitted material, but due to Space restraints is not present here.

Organisations interested in receiving more up to date news items should contact me at the University address.

Simon Harvey.

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Our centre spread photo this month (kindly reproduced by Simon Harvey at his own expense, is of Shuttle Enterprise on the pad, courtesy of Rockwell Space Systems Group. Enterprise was moved by crawler with two SRB's and an ET to verify whether future shuttles would interface with pad facilities adequately.

Next month Simon will review the First Ariane Launch, and as mentioned earlier in this Journal posters and booklets are available in the Observatory at Orwell Park.

ORWELL ASTRONOMICAL SOCIETY (IPSWICH)  
MEETINGS FOR JANUARY 1980.

at the Observatory, Orwell Park School, Nacton near Ipswich.

TUESDAYS: from 7p.m. Planetary Section

Directors: Mr. J. Hood, [REDACTED], Ipswich  
and Mr. J. Ranson, [REDACTED], Ipswich, Tel. [REDACTED]

January 15th & 29th

TUESDAYS: from 7p.m. Solar & Lunar Section

Directors: Mr. J. Hood, [REDACTED], Ipswich  
and Mr. M. Barritt, [REDACTED], Ipswich

January 8th & 22nd

WEDNESDAYS: from 8p.m. Nebulae & Faint Objects Section.

Directors: Mr. D. Payne, [REDACTED], Wickham Marke  
Tel. Wickham Market [REDACTED]  
and Mr. M. Cook, [REDACTED], Ipswich, Tel. [REDACTED]

January 2nd 9th 16th 23rd & 30th

SATURDAYS: from 8p.m. General Observation Section.

Directors. Mr. M. Barriskill, [REDACTED], Ipswich  
and Mr. R. Adams, [REDACTED], Ipswich  
Tel. [REDACTED]

January 5th 19th & 26th.

ANNUAL GENERAL MEETING:

SATURDAY 12th January starting at 7.30pm sharp in the  
Library of Orwell Park School, Nacton.