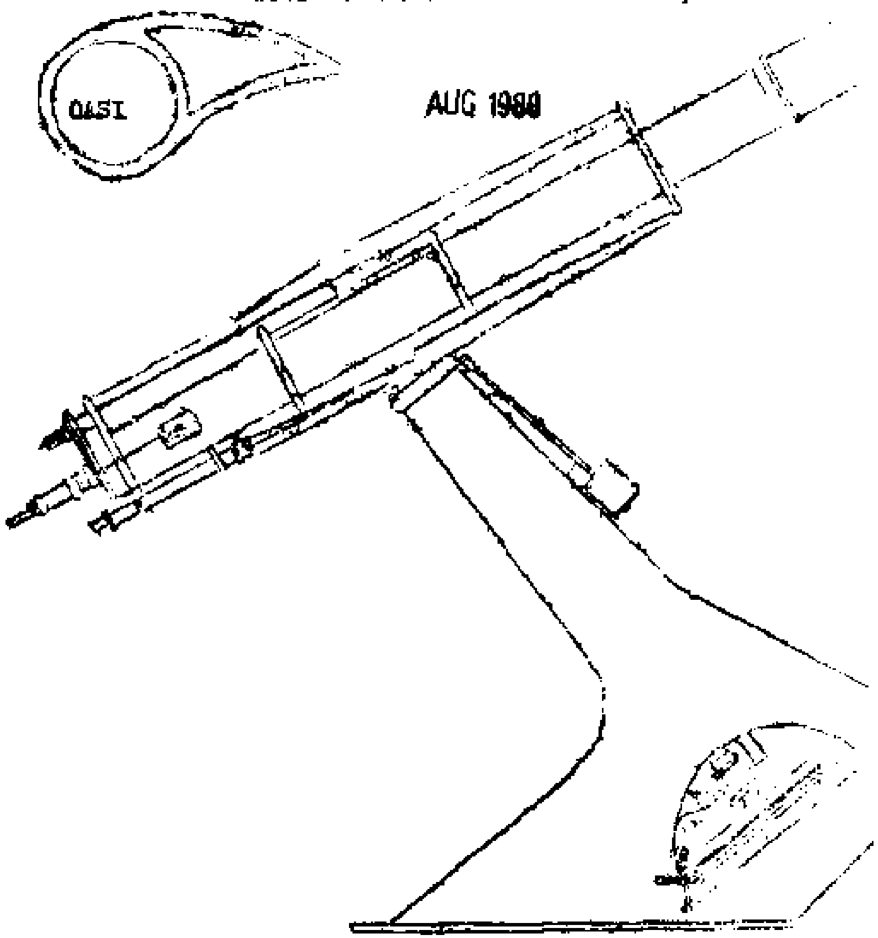
JOURNAL OF THE ORWELL ASTRONOMICAL SOCIETY (I...

Editor: Mr. P. ... [redacted], Ipswich, IP...
'phone Ipswich [redacted]
Producer: Mr. R.... [redacted]
W... ..., Chelmsford, Essex.



The Orwell Park 10 inch Astronomical T...
at Nacton near Ipswich

THE NIGHT SKY AS SEEN FROM ORWELL PARK DURING AUGUST

The unmistakable cross of Cygus dominates the zenith this month, surrounded by Draco and Cepheus to the north; Pegasus to the east; Delphinus, Sagitta and Aquila to the south; and Lyra to the west. Aquarius is well above the south-eastern horizon by late evening, with Capricornus just to the south of it. The western sky is filled by Ophiuchus, Hercules and Bootes, while over to the north-east Perseus and Cassiopeia are becoming prominent. And of course the Milky Way is at it's glorious best at this time of year, sweeping right across the sky through the zenith.

THE SUN

Sunrise is at 04h20m at the beginning of the month, changing to 05h10m at month-end. Sunset changes from 20h00m to 18h50m. The Sun moves from Cancer to Leo during the month.

THE MOON

Last Quarter	3d 12h 00m	First Quarter	18d 22h 28m
New Moon	10d 19h 09m	Full Moon	26d 03h 42m

Occultations:

Star	Phase	Mag.	Time d.	h.	m.
*692	D	1.1	5	13	35.9
*692	R	1.1	5	14	20.8
SATURN	D	1.4	13	20	17.4
*2223	D	4.0	[illegible]	19	42.2
*2497	D	6.6	20	21	20.4
*2639	D	6.0	21	21	04.1
2642	D	7.1	21	21	55.6
*150	R	6.2	28	23	22.6
444	R	6.2	31	01	59.5

D = Disappearance   R = Reappearance
* denotes double star.
Stars listed according to Zodiacal (ZC) numbers.

ECLIPSE:

There will be a penumbral eclipse of the Moon on the 26th of magnitude 0.73, visible from Western Europe, Africa, and the eastern half of South America.

Moon enters penumbra 01h 41m and leaves 05h 20m.

THE PLANETS:

MERCURY is a morning star, at greatest elongation west (19°) on the 1st, rising an hour and a half before the Sun at Mag. 0.0. It will be visible until about the 14th, and will reach superior conjunction on the 26th.

VENUS

is also a morning object, reaching greatest elongation west (46°) on the 24th, at Mag. -4.0, and will be rising at around 01h 00m throughout the month.

MARS

is in Virgo at Mag. +1.4, and is setting about an hour and a half after the Sun.

JUPITER will be lost in the sunset glow this month.

SATURN will also be lost in the sunset by the end of the month.

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

FROM OTHER JOURNALS:

VENUS MAPPED (also see 'News Review' "Getting to know them" on page 10)

The Pioneer spacecraft now in orbit around Venus has been mapping the surface of Venus by radar, enabling N.A.S.A.'s artists to produce pictures. The main features to emerge are three continental masses, surrounded by smooth plains which are cut by great rift valleys. This is identical to how Earth would look if it was devoid of water (except that we have five continents, of course). The radar pictures seem to prove fairly conclusively that not only is Venus a rocky Earth-type planet, but also that the tectonic processes of 'seafloor' spreading and continental drift, associated with

the rift systems, must occur on Venus as on Earth. The discovery of these features also puts paid to the threory of the 'cometary' origin of Venus from Jupiter.

- New Scientist.

ARTICLES TO READ:

"Chinese roots of modern Astronomy" - New Scientist 26th June.

A look at how modern astronomers can still learn from the records of ancient Chinese star gasers, going back some 2,000 years.

"The Solar Maximum Mission" New Scientist 3rd July.

An in-depth account of the observational equipment on board the SMM satellite, launched in February this year, to study solar flares. Complete with colour photosequence of a flare formation.

METEOR NOTES:

This month, out of the four showers we will be holding a meteor count on Saturday 9th August to observe the Aquarids Shower. The normal limits of this shower fall between July 15th and August 25th with the maximum on the 6th of about 6 meteors per hour. If enough people come along for an hour or so then we will also be able to observe the Perseids shower which has many bright flaring meteors with fine trains. The normal limits for this shower fall between July 25th and August 18th with the maximum on August 18th. The ZHR of this shower if in the region of 68 meteors per hour.

RECAP: Meteor Count on Saturday 9th August. Meet 00[illegible] the 'Levington Ship' public House at 10p.m. irrespective of weather conditions. Please come along even if it is only for an hour or so, bring your friends, and their friends, bring a packed picknik - have you had a pack nik at midnight - come along and try it while you are observing.

WITH A

SOCIETY NEWS.

DRAW TICKETS:

With this month's Journal nearly every member should have received £5 worth of Draw Tickets to sell on behalf of the Society.

The Annual Draw which takes place on our Open Day on Saturday 20th September, 1980 provides the Society with much needed income to enable us to run and to keep our Subscriptions down. The selling of Draw tickets not only helps to increase our spending money but also advertises our Society and hopefully encourages new members. If you would like any more Draw Tickets, or have not received any, please contact David Barnard, [redacted], Ipswich, phone Ipswich [redacted].

OPEN COMMITTEE MEETING:

There will be another Open Committee Meeting to which all members are invited to attend. Again this meeting will mainly discuss arrangements for the Open Day. Please come along and give us your ideas. The meeting is on FRIDAY 8th AUGUST IN THE OBSERVATORY STARTING AT 8p.m.

OPEN DAY:

Your help is desperatelly required to run a succesfull Open Day. As we might be using the new Sports Complex at Orwell Park for the Open Day we have a great deal of room to fill with exhibits some of which are very valuable and help is needed to 'police' the area as well as running the exhibits, looking after the Dome and the visitors.

CARAVAN CLUB RALLIES AT ORWELL PARK:

This month we have two Caravan Clubs visiting Orwell Park, both of which have asked us to open up the Observatory for them. Your help is needed on these nights. Please do not leave it to the usual members to look after as many of them are away from Ipswich on holiday.

The Suffolk Caravan Club will be at Orwell Park from Friday 22nd August through to the 26th while the Cavalier Caravan Owners Club visits us on Saturday 30th August.

DEADLINE FOR SEPTEMBERS [illegible] 18 AUG 1980

A NIGHT'S OBSERVING FROM ORWELL PARK:

Report by Robert Townsend.

Date: 10/11th May, 1980. Time: 2100 - 0330 hours U.T.
Telescope: 10inch Orwell Park Refractor
Observers: M. Barriskill
R. Townsend
R. Robertson.

Observing from approximately 2100 hours to 0330 hours U.T. Venus was found by Mr. Barriskill, and was seen to have a large crescent phase. Mars was in the gibbous phase, but little detail could be made out.

Jupiter showed several belts, and the Galilean satellites were easily visible. We had to by-pass Saturn in search of other objects.

The Galaxy M51 in Ursa Major showed great detail. The nucleus was surrounded by a fainter disk of light, the population 1 regions. There was a hint of two spiral arms within these regions. A third, much fainter arm extended from M51 to the companion Galaxy, N.G.C. 5195. The Companion itself did not appear as a round blob of light, but like a smaller version of the Orion Nebula, like a rose seen from sideways on. The whole object appeared quite large, it was observed under a power of x156.

Markarian 421 BL Lacerta Object was found with no difficulty at all. I have tracked it down with my own telescope before. It lies close to the star 51 Ursae Majoris, which is in the Norton's Star Atlas. Markarian 421 appears as a point of light at magnitude 15.

[illegible] Quasar. This probably the ultimate object for amateur astronomers, took a lot of tracking down. It would have been impossible for us to find were it not for the finder chart supplied by David Child of the Ipton Astro. Society and some faint stars near it that were marked in the Atlas Coeli. At magnitude 12.5 to 13 it is probably the most [illegible] object at a distance of 3 billion light years. It is in a unique pattern of stars that appear as

a miniture version of Cassiopeia. The star at the middle of the 'W' is much harder to see than the Quasar which lies right next to it. I think that I have seen stars from the identification field down to magnitude 14.

M13 Globular Cluster. A spectacular sight, there are literaly thousands of stars in a dense ball. There are hundred of stars which sprawl quite a long way from the centre of the cluster, further than I had previously realised.

Pluto: This was a monumentous task undertaken by Mr.Barriskill After a long search with the aid of the diagram in the B.A.A. Handbook, he found it, but none of us could be sure which object, in the rough area outlined in the Book, was Pluto! There were several faint objects and dots of light which would have been it. We can be pretty sure that we did see Pluto.

M57 Planetary Nebula.

A nice object, it showed up well in the refractor. The centre was easily seen as being darker than the surrounding ring.

N.G.C. 6210 (+5) Planetary Nebula.

A small but very bright disk of light. It is extremely blue in colour and it would be very rewarding to compare it with others of it's kind, such as 6543 or 7662. It needs high powers to bring it out well. Under low powers the inexperienced eye would mistake it for a star.

Barnards Star:

Much easier to find than I had thought. It stood out in the finder, it was helpful to know exactly where it is, so I used a chart supplied by the Royal Greenwich Observatory. Barnards Star is well worth looking for. It is the nearest interstellar object visible from England. Only six light years away and moving at a speed of 10.3 seconds of arc per annum.

Robert Townsend.
Stevenage.

NEWS REVIEW by Simon Harvey.

COMSAT AND DE-REGULATION:

May 9th - COMSAT (The American Communications Satellite Corporation), the Federal Communications Commission has ruled should be restructured. The F.C.C. states that (a) COMSAT should be split in two, one company for International Communications and the otherfor domestic, (b) COMSAT should be able to sell it's International services straight to the U.S. customers, and that (c) COMSAT and other U.S. International carriers should be able to sell their customers both present and advanced technology. However, COMSAT is troubled by slitting of it's business, although at present there are two organisations - COMSAT Corp. and COMSAT General Corp. both handling slightly different tasks. It is COMSAT General that probably would be reshaped. However, the motion has still to be passed through Congress.

- COMSAT Corp./'Electronics'

May 12th - THERE IS ANOTHER NEW STAR IN THE SKY.

NAVSTAR VI has been successfully launched from Vandenburg Air Force Base into a 10,900 mile circular orbit, and is soon to be declared operational. Following the launch by ATLAS F Launcher, a spokesman for the contractors (Rockwell International) said that the transfer orbit trajectory was almost perfect, and that no proposed orbit maneuvers did not have to be performed. The Air Forces Satellite Control Station, California, has responsibility for controlling NAVSTAR's eight major subsystems. This launch is one of a series in the test and evaluation of the OPS system. Provided there are no major hitches, about twelve to eighteen NAVSTARS will be launched, providing world-wide accurate position and velocity fixes.

- Rockwell Space Systems Group.

May 14th - MEXICANS LOOK TO SPACE.

Mexico's Minister for Communications and Transport - Miguel Angel Barberena announced recently that Mexico is undertaking indepth studies to build it's own domestic communications satellite. He revealed that Mexico has a specialised team already working towards that goal. He was speaking at the

inauguration of the first domestic ground station, gifted to Mexico by Japan. The Japanese Ambassador to Mexico- Nabuo Matsunaga - said that the station had been specially fitted out for Mexico's own satellite, and that use of the most advanced technology available made the earth station considerably smaller.

Mr. Barberena also revealed plans to install 200 similar ground stations within two years. Mexico joined INTELSAT in 1968 with it's Tulancingo, Hidalgo Earth Station which is now saturated. Mexico is currently negotiating with Western Union for use of one of it's WESTAR satellites. With this gift by the Japanese Government, and Japan's newly developed launcher soon coming into the market, one wonders who might be in the forefront to launch Mexico's satellite?

- COMSAT/ 'THE NEWS' (Mexico City)

INTERNATIONAL ULTRAVIOLET OBS FINDINGS PRESENTED.

Hoisted by the Goddard Space Flight Centre, IVE investigators have given accounts of the main discoveries made over the last two years. For instance, through IVE observations Astronomers have found out more about the 'halo' which surrounds our galaxy. They estimate the 'halo' to have a temperature of about 100,000°C and composed of oxygen, sulphur, iron, silicon and carbon. Scientists have also studied X-ray Binaries. X-rays are emitted by material that due to gravitational effects spiral into one or other of the stars. Investigations also found that quasars lieing close to each other in the sky were in fact the same quasar.

- N.A.S.A.

NUCLEAR WASTE IN SPACE?

A $296,000 contract has been awarded to Boeing Aerospace to study methods of disposing Nuclear waste in space. Apparently the option could get rid of those long lived fuels which are unwanted here on earth. If the programme looks promising, Marshall S.F.C. together with the Department of Energy will conduct studies into the impact of the option. The parties will study payload protection proceedures, identification of final destination, the type of space transportation and possible launch sites. - N.A.S.A.

[redacted] TO GO, BUT ANOTHER MILESTONE REACHED:

The Qualification Test 1 of the forward reaction control system(R.C.S.) at White Sands New Mexico, has enabled it to be qualified for a first flight aboard Orbiter Columbia next year. Altogether, 3847 seconds firing were accumulated over the forteen thrusters. 10,428 seconds were also accumulated on the two small Vernier engines. The pod will now undergo the second Qualification Test to make it ready for complete operational use. - ROCKWELL SPACE SYSTEMS GROUP.

May 21st: WHAT IS A DAY?

Ten hours and 39.9 minutes on Saturn, according to scientists using data from the two Voyager interplanetary probes. The measurements were based on radio noise from Saturn, and will now supersede the Earth based estimate of 10hours 15minutes.

- N.A.S.A.

FOR YOUR INFORMATION:

Unless otherwise stated all the information for my 'News Review' items comes direct to me from the Oranisations or contractors mentioned. To these we are very grateful. These items are only a small account of the activities going on throughout the world and if you would like more information on these items or fuller accounts of what is going on please write to me direct:

Simon Harvey, Code NRH, [redacted], Needham Market, Ipswich, Suffolk or Simon Harvey, Code NRH, Map 1, School of Maths and Physics, University of East Anglia, Norwich, Norfolk. NR4 7TJ.

Your items for inclusion in this Journal will be appreciated. Apologies are forthcoming for those organisations who have submitted material, but due to space is not present here.

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

Simon Harvey.

May 20th: FINDING SOME SPACE.

Scandinavia is looking for it's own satellite system, and the Franco-German T.V. Satellite design is thought to be 'up front' for choice. Officials of the Swedish Government decided that such satellites should have two areas of coverage, different numbers of channels being allocated to each. The East-West area, that is Denmark, Finland, Norway and Sweden, would have eight channels, while Iceland and the Faroes would be allocated five. Sweden bearing the bulk of the bill, NORDSAT would consist of three satellites eventuall,, the first to be launched by Ariane 3 in 1985. A 'go-a-head' decision is expected this year.

Meanwhile, Australia is looking for a satellite to cover the northern and central regions of her continent. Tenders for the contract were to be submitted last month. A large deligation from Canada is being led by TELESAT, the state owned telecommunications organisation. It is stated that Australia would require quite a lot of the technology to rub off onto Australia's industry. The ANIK C type satellite may be a strong contender for the contract. With Mexicos proposed satellite (see this month's newsletter) and NORSAT, perhaps we are on the brink of seeing an epidemic break out - the satellite fever has finally hit us hard.

- COMSAT/"SATELLITE WEEK"/'FINANCIAL POST'

May 28th: GETTING TO KNOW THEM.

Yes, at last, we will have someway of talking about VENUS without saying "a little left of right of centre, just above that greyish mark". Using data from the radar mapper aboard the Pioneer-Venus orbiter, a working group has come up with names for newly identified features on the masked planet's surface. PV has mapped 85% of the surface, from 75°N to 63°S latitude. The data has revealed deep rift valleys, rolling plains, high plateaus and mountains. On the basis the topography should be named after mythological women from various cultures!! We will now start to hear names such as 'Ishtar Terra' and 'Aphrodite Terra' in text books. Massachusetts Institute of Technology and the U.S. Geological survey are getting together to produce a detailed relief map of the planet that has been hidden for so long by clouds. Although it will take quite a while to complete, it should be worth seeing just what Venus actually looks like. - N.A.S.A.

ORWELL ASTRONOMICAL SOCIETY (IPSWICH)

MEETINGS FOR AUGUST, 1980.

AT THE OBSERVATORY, ORWELL PARK SCHOOL, NACTON.

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

5th 12th and 19th

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

6th 13th** 20th and 27th

** the 13th is the night of the Saturn occultation.

FRIDAY: 8th August, from 8p.m.

OPEN COMMITTEE MEETING to which all members are invited to talk about arrangements for the Open Day

OBSERVATORY OPEN DURING EVENINGS FOR:
Suffolk Caravan Club, 22nd to 26th
Cavalier Caravan Owners Club 30th August.
HELP NEEDED BY MEMBERS

- - - - - - - - - - - - - - - - - -

METEOR SECTION: Meteor Count on Sat. 9th. Meet OUTSIDE the LEVINGTON SHIP AT 10p.m. IRRESPECTIVE OF WEATHER

PROPOSED TRIP TO GREENWICH

SATURDAY 4th OCTOBER

1980

As mentioned in previous Journals this year's Society 'Day Out' we propose going to Greenwich. On arrival at Greenwich members will have the day to do as they please.

The cost will be in the region of £3.50 for adults and £2.00 for those under sixteen years of age. According to how many members (or non-members) come along and whether we can fill the coach up the cost could be reduced.

If you would like to come on this 'Day Out' please advise me as soon as possible so that we can book the coach if enough members (or non-members) are interested.

.....

PROPOSED GREENWICH TRIP

SATURDAY 4th OCTOBER

Please reserve me seats for .....Adults

.....Children

Signed.....

Address.....

Return to David Barnard, [redacted], Ipswich

A.S.A.P. PLEASE