

Journal of the  
ORWELL ASTRONOMICAL SOCIETY (IPSWICH)

February, 1976.

Editor: Mr. J. Deans,  
[REDACTED],  
CAPEL ST. MARY,  
Ipswich.  
Phone GT. WENHAM [REDACTED]

WHAT'S UP? The Solar System as seen from Ipswich, February, 1976.

SOLAR SECTION.

This month the Sun moves in the constellation of Capricornus and Aquarius. Sunrise about 07hrs 40m, Sunset 16hrs 40mins at the start of the month.

Synodic Rotation No. 1637 commences Jan 12.29d  
" " No. 1638 commences Feb. 8.63d.

Heliographic Co-ordinates as at noon U.T.

	P	Bo	Lo		P	Bo	Lo
Feb 2nd	-12.3°	-6.1°	87.3°	Feb 17th	-17.8°	-6.9°	249.8°
" 7th	-14.3°	-6.4°	21.4°	" 22nd	-19.4°	-7.1°	183.9°
" 12th	-16.1°	-6.7°	315.6°	" 27th	-20.8°	-7.2°	118.1°

MERCURY. is a morning object rising only an hour before the Sun and does not attain much altitude, magnitude +0.2. Mercury reaches greatest elongation west on the 16th at 15hours U.T., it is unlikely that you will see it.

VENUS. is also still a morning star rising around 06hrs U.T. throughout the month, it's angular distance from the Sun is decreasing and by the end of the month will be 29° west at magnitude -3.4. The Moon will be near Venus on the 27th and 28th.

MARS. will show considerable change in the position in relation to the stars this month compared with last month. Prominent throughout the night and early mornings at magnitude +0.1. The Moon will be near Mars on the 10th.

VIKING PROBE TO MARS.

Reports are coming in that the U.S. Viking probe heading towards the planet Mars is suffering some technical difficulties in the soil analysing equipment on board and strangely enough the fault appears to have developed in the same region of space as has many other incidents involving Russian space probes, Who saw 'The Sky at Night' on Wednesday 21st? Patrick showed a N.A.S.A. animated film of Viking, certainly it looks like some form of organic life might exist on Mars, it will be interesting to see what results Viking will achieve.

JUPITER. Visible in the evening sky in the West now setting around 23hrs U.T., magnitude -1.9. The Moon will be near Jupiter on the 5th.

SATURN. is on the borders of the constellations of Cancer and Gemini, magnitude -0.1 at the start of the month decreasing to mag. +0.1 towards the end of the month.

LUNAR SECTION.

Moon Phases, Lunation 657.

New Moon	Jan 31st	06hrs 20m U.T.
First Quarter	Feb 8th	10hrs 05m U.T.
Full Moon	Feb 15th	16hrs 43m U.T.
Last Quarter	Feb 22nd	08hrs 16m U.T.

Perigee Feb 17th 10hrs U.T.

Apogee Feb 5th 13hrs U.T.

LUNAR OCCULTATIONS.

Feb 3rd	ZC 3462	D	Mag 7.5	18hrs 50.8m
" 5th	ZC 143	D	" 6.8	19hrs 31.3m
" 8th	ZC 510	D	" 7.2	22hrs 23.5m
" 8th	ZC 517	D	" 6.4	23hrs 45.7m
" 9th	ZC 654	D	" 6.0	23hrs 29.2m
" 10th	668	D	" 3.6	00hrs 55.7m
" 10th	796	D	" 6.8	23hrs 47m
" 10th	798	D	" 6.4	23hrs 59m
" 11th	947	D	" 5.2	22hrs 48.7m
" 23rd	Neptune	R	" 7.7	03hrs 07.7m

\*\* denotes star is a double.

METEOR SECTION. Director Mr. D. Barnard, [redacted], Ipswich.

The Meteor Count on December 20th was cancelled for the trip to Norwich. The Quadrantids Meteor Count on Jan 3rd saw yet another record broken. A total of 67 meteors were seen by only four people. We meet on Foxhall Heath near the transmitter so if anyone does come along they will know where to find us,

There are no meteor showers at all this month, but we will do one sporadic meteor count on Saturday 14th. Unfortunately this is nearly full Moon but the following two Saturdays are not available as there other Society events.

For the sporadic meteor count on the 14th meet as usual at the entrance to Foxhall Stadium at 9p.m. irrespective of weather conditions.

'MOLECULES IN SPACE' is the title for a talk by Prof A.H. Cook of the Cavendish Laboratory, Cambridge which is being organised by the Norwich Astronomical Society on Saturday 21st February starting at 7.30p.m. at the Assembly House, Theatre St., Norwich. If there is anyone who would like to go to this please contact Mr. R.M. Cheesman, 3 Tasmania Road, Ipswich, who is trying to arrange car loads of people to go to this talk.

\*\*\*\* MEMBERSHIP SUBSCRIPTIONS FOR 1976.

Just a reminder to those who have not renewed their membership that all subs. became due on the 1st January, 1976 and should be sent to

Mrs. R. Markham  
(Hon Treasurer, Orwell Astronomical Society (Ipswich)

[redacted],  
IPSWICH.  
Suffolk.  
IP3 8HB

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'Observing Mercury & Venues with a small telescope' is the title of the talk being given to us by Mr. R.W. Middleton, F.R.A.S at the Friends Meeting House, Fonnereau Road, Ipswich on FRIDAY 6th February, starting at 8p.m. Please come along and bring your friends. Please put poster (at back of Journal) in a prominent position in your window or local shop to advertise this event.

AMATEUR ASTRONOMICAL RESEARCH. by Mr. C. Radley.

It must be pointed out, in all fairness, that the scope for the amateur astronomer to do useful work is very limited. I list below some of the fields where useful work can be done.

1. Variable Stars.
2. Comet and (super) nova sweeping
3. Fireball observation and photography (I.A.U. Definition of a fireball:  
A meteor brighter than mag -5)
4. Grazing Lunar occultations
5. Planetary and stella occultations.

Fields where a small telescope for useful work exists+-

1. Meteors (superseded by radar and photography)
2. Lunar occultations (superseded by radar and Apollo Lunar ranging retro-reflector experiments)
3. Planetary (superseded by space probes and radar) Solar and Lunar T.L.P.s are very dubious. A large proportion are false alarms, including the one I saw.

The most useful aspect of amateur astronomy to me is the educational aspect. The fact that I am an amateur astronomer made a big contribution to getting me to University. Amateur astronomy taught me:- photography, celestial mechanics (orbits etc) telecommunication science, optics, scientific method of recording observations, an awareness of the frailness of man and what a narrow precipice between social collapse man steps, the awe and beauty of the stars and awareness of my local environment (i.e. our solar system, the galaxy and the universe), but alone all it taught me was how better to get on with people. Most of the people reading this article know me personally, and know that they can almost always expect a smile from me.

To perform usefull amateur astronomical observation is a very patient and painstaking (luck is also involved I admit) occupation. I would like to reproduce this section from "Guide to Astronomy" by James Muirden, published by Pan Books. It is very good!

'All would be comet hunters must take as their model George Alcock of Peterborough, an amateur astronomer who by profession is a schoolteacher. After several years of patient searching he created a sensation by discovering, in 1959, two comets within a week, and he added still further to his already considerable reputation by discovering two more in 1963 and 1965 (note - I believe since then (this book was written in 1972) he has discovered at least one more nova, possible three, I cannot remember, and a couple more comets!!) His intense devotion to his work nanifests itself in the following account.'

' From 1931 to 1952 I carried out naked-eye observations of meteors at Peterborough.... The importance of that kind of work diminished after about 1949, when it was largely superseded by radar and improved photography. So I looked around for other astronomical work, and, in 1953, started on my programme of comet-seeking and searching for novae....

Although I discovered no nova, and no comet until August this year (1950) my results were not altogether negative. I reported all the telescopic meteors I saw, and I managed to learn patterns of some 20,000 stars in Galactic fields to help in detecting novae.

The comet searcher can appreciate the beauty of the night sky more than any other observer.

All this time, I felt that my 4" refractor was inadequate for comet-sweeping, so in 1955 I bought a 45mm x 12 binocular and in 1957 a 100mm x 25 telescope-binocular in very poor condition. The second of these instruments had no stand, for the 154 hours that it was in use, was rocked on old coats on the tops of two Stevenson meteorological screens.

At last, in April this year, I bought a good 105mm x 25 instrument. I was not able to use it much until July, and then, at the end of August, I made two discoveries.

On August 25th, on my 560th night, and in my 646th hour of observation, I found my first comet in the northern part of Corona Borealis, - a rather dissappointing object, faint, and very diffuse. As it had no tail, I waited 24 hours to confirm its motion. Three comets announced between 1953 and 1959 had proved to be false ones and I did not want mine to be a fourth. That day was a very long one indeed.

Perhaps some of you will wonder why I did not stop searching after the discovery of a comet. The answer is that I cannot sleep when I know the sky is clear.

On the night of Saturday, August 29th, the sky clouded over and I went to bed, but I woke up at 2.30a.m. to find the sky clearing rapidly. After an hour and a half of fruitless searching I turned to theeastern dawnlit sky, and after a few moments picked up my second comet. As it had a faint tail I rang Herstmonceux to ask them urgently to take a photograph..... a photograph was taken, but I was not told and so had another long day of suspense. I had not been greatly excited by the first discovery, but this was far different.

I could hardly expect an English sky to be clear again the next morning, and cloudy patches did indeed develop over a superb sky before the crescent of the Old Moon appeared. I was then afraid the comet might be occulted. but at last I saw it. The comet and the Moon were together in the field - a pretty spectacle.

As the comets vanish so quickly, I have begun to doubt whether I really discovered them. It is good to know that they were really seen by others,

To anyone wishing to take up the pursuit, it remains only to wish them the very best of luck.

1. APOLOGIES FOR ABSENCE.

Received from Mr. P. Lucas.

2. MINUTES OF THE LAST ANNUAL GENERAL MEETING AND MATTERS ARISING.

An entrance fee had not been introduced for new members as currently the Society did not need this extra money.

Mr. C. Shute proposed that the minutes of the 1975 A.G.M. were correct and this was seconded by Mr. C. Radley. The proposal was carried unanimously.

3. INTRODUCTION BY THE CHAIRMAN

The Chairman thanked the Committee for all their work during the year and especially the Secretary, Treasurer and Editor. Special praise was due to Mr. D. Barnard for his part in painting the Observatory and Mr. R. Markham has thanked for giving his lecture. A tribute was paid to the ladies for providing food and drink on the Open Day and at the lectures.

Committee meetings had been well attended as well as the general meetings at the Observatory during the Summer.

A new venture "Astronomy for Beginners" started in the Autumn (venue Foxhall Heath). The two aims were (a) to learn more about the constellations and planets and (b) to involve more Society members.

One of the chief events in 1975 was the Provincial meeting of the Mercury and Venus section of the B.A.A. This was held in April at Orwell Park School under the chairmanship of the Sections Director, Mr. Hedley Robinson.

The Open Day was not as successful as in previous years if judged by the lower attendance. This was probably due to the Ganges Open Day and the overcast weather conditions.

4. SECRETARY'S REPORT.

The Society had had a successful year as judged by the use of the Observatory and the activities of the Society. Membership stood at about 70 and subscriptions for 1976 were now due.

Mr. Stow thanked the Committee for their support during the year and especially the Chairman for his unflinching efforts, the Treasurer and the Editor. Mr. Roy Gooding was also thanked for his article to the Journal together with other contributors. The Observatory had been open 183 times during the year, 4 times more than in 1974. This was a very good effort and included 140 observing periods. There were five sections at present:- General observation; double stars; solar, lunar and planetary; variable stars and nebulae and faint objects. There had been 14 meteor counts on Foxhall Heath and three meetings at the same venue called 'Astronomy for Beginners'. These latter meetings had been encouraging and are continuing.

There had been numerous astronomical events observed and studied. These included various comets, sunspotting and the total eclipse of the moon in November. In December a number of members ventured to the Norwich Astronomical Society's meeting to hear a talk on "How a Star dies" by Mr. J. Millar.

Five meetings had been arranged at the Friends Meeting House with the object of creating interest for Society members and the general public. The meetings had been very successful and further lectures were already confirmed. The meeting of the Mercury & Venus Section of the B.A.A. in April brought a great deal of public interest.

The Open Day in October was another big occasion about 150 people attended. The Secretary thanked everyone who had made it possible.

In conclusion Mr. Stow hoped that 1976 would be as successful a year as 1975 had been.

5. TREASURER'S REPORT

Mr. Collier said that the Society had £238.90 in the deposit account, £4.03 in the current account and £7 cash in hand. The Society had outstanding bills of about £100 and taking this into account gave a balance of c £200 which was similar to last year. The income from the Open Day was £50 which was mainly from the draw. The outstanding bills were £30 for paper and £70 for Solicitors fees.

The Treasurer said he was satisfied that the expenses could be met in the coming year. Subscriptions had been increased (from 1.1.76) and these will bring in extra money but general expenses and postal charges have increased.

## 6. ELECTION OF OFFICERS.

There were two nominations received by the Secretary for service on the Committee :- Mrs. R. Markham and Mr. K. Dye. As the existing Committee were willing to stand for re-election a ballot was required to decide the 7 Committee members. The elected Committee was :- Mr. R. Cheesman, Mr. M. Stow, Mr. J. Deans, Mr. T. Cardot, Mr. D. Bearcroft, Mr. V. Wilkes and Mrs. R. Markham.

Mr. K. Dye and Mr. G. Collier were therefore not elected.

Nominations for the Honorary posts were:-  
Chairman - Mr. R. Cheesman. Proposed by Mr. C. Radley seconded by Mr. K. Cocks.  
Secretary - Mr. M. Stow " " Mr. T. Cardot " " Mr. J. Deans  
Treasurer - Mrs. R. Markham " " Mr. D. Barnard " " Mr. M. Cook.

The above three nominations were approved unanimously. Mr. J. Deans will continue as Editor of the Journal with Mr. M. Howe as Assistant.

## 7. FUTURE PLANS

Mr. Cheesman said that in many cases only general observations had been carried out with the 10" O.G. telescope during 1975. He urged that during 1976 more serious work should be undertaken and that each Director should spend more time on his particular subject.

More lectures would be arranged during the year and it was hoped to visit either the Mullard Observatories, Cambridge or Greenwich Observatory. It was also planned to re-visit Norwich Astronomical Society to see their observatory and to attend their meetings.

There would be another Open Day in 1976 and it was hoped that the attendance would improve.

In conclusion Mr. Cheesman hoped that more members would play a more active part in the Society.

## 8. ANY OTHER BUSINESS

- a) The Lease. This in fact will be a Licence and the document was passed round for perusal. There was general agreement that this document was acceptable. The Licence will be signed and returned to our Solicitors. Mr. C. Radley proposed a vote of thanks to Mr. R. Cheesman for his work in negotiating the Licence.
- b) Falkland Atlas. The missing page will be obtained by Mr. T. Cardot.
- c) Matched Clocks. Two 24 hour matched clocks will be purchased for the observatory. One will read local time and the other didereal. These will be ordered by Mr. T. Cardot.
- d) A request was made to visit other local observatories and telescopes eg. the Essex University, Colchester. The University was also willing to provide lecturers.
- e) Now that the Licence was about to be signed, the Society will pay for its own use of electricity at the Observatory. This will require installation of a meter and fuse box.
- f) Mr. C. Radley thought that the Society should advertise meetings, field events and observing evenings on Radio Orwell. This matter to be discussed at the next Committee meeting.
- g) Useful suggestions on how the Society could be improved should be sent to the Secretary for discussion at the next Committee meeting.
- h) Members living out of Ipswich were urged to send stamps to cover cost of postage.
- i) It was suggested that the programme of meetings and lectures be arranged earlier in the year so that a notice giving the whole programme could then be prepared.
- j) The cost of installing a telephone at the Observatory would be too costly for the use that would be made of it.
- k) Mr. Cheesman said that he hopes to start a photographic section but an electrical drive for the telescope was required before serious photographic work could be undertaken.

A.G.M. MINUTES (continued.)

It was stated that the eyepieces and lenses of the telescope required cleaning. One suggestion was to contact Mr. H. Dall and another was to purchase a new set of eyepieces. The hole subject will be discussed at the next Committee Meeting.

The meeting closed at 10.15p.m.

Signed.....

Chairman.

Nicholas Copernicus (cont.)

This system which is in use today was not accepted in England until 1752.

After some thirty years of work, Copernicus finally concluded from his astronomical work, and works of others, that the new world structure must be heliocentric, with the sun in the middle and all the planets, including the earth, orbiting it. This new system would not be very welcome from other members of the Church. Knowing this, Copernicus waited for about sixteen years after this book was completed, before having it published. The book was published in 1546 which was the year of his death.

Tycho Brahe

Tycho Brahe was born in Denmark, the son of a Danish Nobleman, in 1546. He was sent to study law at Leipzig University. The enthusiasm he held towards astronomy was evident in his secret nightly studies and observations. Tycho Brahe was convinced of the truth of astrological predictions. He would often compile horoscopes. It was believed that the stars and planets which had influences on events on earth, were dominated by eternal laws. In order to produce a reliable science on these eternal laws a better understanding of the positions of the stars and planets would have to be known. Brahe decided to undertake this research.

On November 11th, 1572, Brahe's attention was caught by a bright "new star" in the constellation of Cassiopeia. The appearance of this star caused a great interest to many people. It proved that the old idea that nothing in the sky changed, was not true. Brahe immediately began to observe this new star by taking many measurements of it with respect to other near-by stars in Cassiopeia. After a short period the star began to fade and after about two years it had disappeared from sight completely. This new star was, in fact, a Super-Nova, similar to the one seen by the Chinese in 1054.

The interest caused by the appearance of the Super-Nova gave many people the idea of building an observatory. King Frederic of Denmark offered Tycho Brahe the small island of Hven, near Copenhagen, in order to build an observatory. The equipment Brahe used was all his own design, and was a considerable improvement on previous designs. The instruments ranged from small hand held devices to large quadrants of about seven feet radius. The largest quadrants were able to measure to within ten seconds of arc.

Tycho Brahe used his equipment to record the most accurate star catalogue so far produced. It replaced the catalogues of Hipparchus and Ptolemy that had lasted for well over a thousand years. Brahe was not convinced by Copernicus' heliocentric model of the solar system. With his numerous positions of the planets, he hoped to prove Copernicus wrong. It was the accuracy of his observations that, in the hands of Kepler, showed the true structure of the solar system.

Johannes Kepler

Johannes Kepler was born on 27th December, 1571, at Weil, in Germany. As a student at Tübingen, he heard a lecture on the heliocentric system given by Mastlin. In 1596 he had his ideas on planetary orbits and distances published. His explanation involved superimposing five regular polyhedrons within the planetary orbits. Kepler assumed that each planetary orbit should be made into a sphere. Between each pair of successive spheres, he put one of five regular polyhedrons, the edges of which touched the exterior sphere, and the faces were tangential to the interior sphere. The ratios of the inner and outer spheres gave the relative distances of the planetary orbits. This model, though greatly thought of at the time is now discredited.

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A.S.M. MINUTES (cont.)

1) It was stated that the eyepieces and lenses of the telescope required cleaning. One suggestion was to contact Mr. H. Dall and another was to purchase a new set of modern eyepieces. The whole subject will be discussed at the next Committee meeting.



ORWELL ASTRONOMICAL SOCIETY (IPSWICH)

Programme for February, 1976.

MONDAYS: from 7p.m. General Observations Section.

Directors Mr. N. Gage, [REDACTED], Felixstowe, 'Phone Felixstowe [REDACTED]  
and Mr. S. Flory, [REDACTED], Ipswich, 'Phone [REDACTED]

2nd February  
9th "  
16th "  
23rd "

TUESDAYS: from 7.30p.m. Variable Stars Section.

Directors Mr. T. Cardot, [REDACTED], Ipswich, 'Phone [REDACTED]  
and Mr. D. Barnard, [REDACTED], Ipswich, 'Phone [REDACTED]

3rd February  
17th "

WEDNESDAYS: from 7.30p.m. Nebular & Faint Objects Section.

Directors Mr. N.W. Stow, [REDACTED], Ipswich.  
and Mr. R. Hazelwood, [REDACTED], Ipswich, 'Phone [REDACTED]

10th February  
24th "

WEDNESDAYS: from 7.p.m. Astronomy for Beginners. 4th February.

The fifth in a series of meetings to help those people interested in astronomy. These meetings are open to all who would like to come along. The meetings will be held irrespective of weather conditions. Wrap up warm and bring along small telescopes and binoculars if possible.

Meet at entrance to Foxhall Stadium at 7p.m. sharp.  
Meetings organised by Mr. R.M. Cheesman.

WEDNESDAYS from 7p.m. Solar, Lunar & Planetary Section.

Director Mr. R.M. Cheesman, [REDACTED], Ipswich.

11th February  
18th

THURSDAYS from 8p.m. Double Stars Section.

Director Mr. D. Bearcroft, [REDACTED], Ipswich, 'Phone [REDACTED]

12th February  
26th "

FRIDAYS: from 8.50p.m. Lunar & Planetary Section

Directors Mr. J. Deans, [REDACTED], Capel St. Mary, 'Phone GT. WENHAM [REDACTED]

and Mr. K. Dye, [REDACTED], Ipswich, 'Phone [REDACTED]

13th February,  
27th "

FRIDAYS: Nebular & Faint Objects Section. from 7.30p.m.

Directors Mr. N.W. Stow, [REDACTED], Ipswich  
and Mr. R. Hazelwood, [REDACTED], Ipswich, 'Phone [REDACTED]

20th February.

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FRIDAY 6th February at 8.p.m.

Talk by Mr. R.W. Middleton, F.R.A.S. on 'Observing Mercury and Venus with a small telescope'.

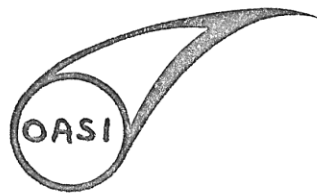
This meeting will be at The Friends Meeting House, Fonnereau Road, Ipswich and start at 8p.m. Admission Free. (See poster at back of Journal)

SATURDAYS: Visits to Observatory organised by Mr. R.M. Cheesman.

Saturday 7th February at 7p.m. 6th Ipswich Cub Pack

Saturday 28th February at 7pm. Hadleigh Group

SATURDAY: 21st February. We are organising a visit to Norwich Assembly House, Norwich to hear a talk by Prof. A.H. Cook of the Cavendish Laboratory, Cambridge on 'Molecules in Space'. This meeting is arranged by the Norwich Astro. Soc. Anybody wishing to go to this meeting should contact Mr. R.M. Cheesman, [REDACTED], Ipswich, and it is hoped to arrange car loads of people to attend this talk.



ORWELL ASTRONOMICAL SOCIETY (IPSWICH)

PRESENTS A TALK ON

OBSERVING  
VENUS AND MERCURY  
WITH A SMALL  
TELESCOPE.

BY

MR. R. W. MIDDLETON F.R.A.S.

ON

FRIDAY 6th FEBRUARY 1976

AT 8 P.M.

AT THE

FRIENDS MEETING HOUSE

FONNEREAU ROAD

IPSWICH.

ADMISSION FREE.

REFRESHMENTS.

SECRETARY

MR. M. W. STOW,  
13, LADYWOOD ROAD,  
IPSWICH.