

ORWELL ASTRONOMICAL SOCIETY IPSWICH

Charity No 271313

MAY 2000



Society News

1 Next Committee Meeting

The next committee meeting will be held on Saturday 17th June from 19:30 in the clubroom. This is an open meeting and any one who is interested is invited to attend.

2 Events for 2000

Event	Details	Date
Visit to Cambridge AS and Braintree AS	These were proposed at the AGM	Nothing arranged yet
BAA Winchester Weekend		14 th to 16 th April
Lecture Meeting	Twinkle twinkle little (neutron) Star, Paul Roche National Space Science Centre This talk is entertaining as well as informative. 20:00, Friends' Meeting House	Friday 19 th May
BAA Exhibition Meeting	London Guildhall University	24 th June
Summer Barbecue	To be arranged	
Visit to Norwich AS observatory	To be re-arranged. for the autumn	
Summer Excursion	No date fixed yet. No venue fixed yet	
Open Weekend		7 th & 8 th October
Equinox Star Party	Thetford Organiser; Loughton A.S	25 th October
Lecture Meeting	Mars and the Amateur Astronomer, Richard McKim, Director of the BAA Mars Section.	Friday 24 th November
Christmas Meal	Provisionally set for the 13 th	
Allan Chapman Talk	Orwell Park School	18 th May 2001

Night Sky

All times GMT

Sun

The sun will be rising approximately between 04:30 to 03:40

The sun will be setting approximately between 19:30 to 20:10

Moon

New Moon	1 st Quarter	Full Moon	3 rd Quarter
4 th	10 th	18 th	26 th

Mercury Mercury will be at superior conjunction on the 9th. It will re-emerge into the evening sky

Venus Venus will be approaching superior conjunction early next month, and remains to close to the sun to observe this month.

Mars Mars will be lost in the evening twilight this month.
Jupiter Jupiter will be at conjunction with the sun on the 8th May
Saturn Saturn will be at conjunction with the sun on the 10th May
Uranus Uranus will be rising at about 01:20 in mid month.
Neptune Neptune will be rising at about 0:40 in mid month.



ORWELL ASTRONOMY 2000

Meteor Showers

Shower	Limits	Maximum	ZHR
η Aquarids	April 24 th to May 20 th	May 4 th	40
α Scorpids	April 20 th to May 19 th	April 27 th May 12 th	5
Ophiuchids	April 20 th to July	June 9 th June 19 th	5

Meteor source is the BAA Handbook

Roy Gooding

Telescope Training - First Workshop Wednesday May 10th 8.0 pm

Following the article on 'Telescope Training' in the March issue of the journal, the first training session will be held at the observatory dome on Wed May 10th, at 8.00 pm.

Other sessions will be arranged, and interested members, in addition, can gain experience working alongside any qualified member whenever possible. Do make it known to Dave Payne, Martin Cook, or any trained member that you would like to become qualified, and when you feel you are ready, then book a 'test' by speaking to Dave. The training policy as outlined in the journal article is posted on the notice board. Basic factors about the telescope and its operation are contained in the pink pamphlet issued to new members, and is available in the clubroom.

Catchy title eh? Well, if it has caught your attention - *read on* - 'cos that's the working title for this year's **Open Weekend**, which will be held on **Saturday 7th and Sunday 8th October**.

In the wake of last year's successful event, our Management Committee has been considering a range of options for further improvement and has established a co-ordinating Group to breathe new life into our presentation. Following consultation with the Headmaster of the Orwell Park School and, with his kind permission, we shall be utilising a classroom AND the observatory for a much improved show offering some mouth watering attractions - the result - *Orwell Astronomy 2000*.

In addition to the normal show we stage in the observatory and, subject to final confirmation, exhibits will include:

- **Samples of Lunar Rock**, which were collected on the Apollo 16 & 17 missions, complete with background information display (Courtesy of the PPARC and NASA).
- **Samples of Meteorites** and appropriate background display (Courtesy of the PPARC)
- **Earth & Sky**, well known purveyors of Astronomical books, will be presenting their popular travelling sales stand.
- **An interactive Computerised display**, which will be aimed at entertaining and enlightening the youngsters.
- **Radio Astronomy Display**, featuring the 1994 Shoemaker-Levy 9 impacts into Jupiter (Courtesy of Paul Whiting) - *Paul would appreciate any images of Jupiter that members may have to enhance his presentation?*
- **Display board by pupils of the Orwell Park School**.
- **OASI Stand**, displaying the activities of our society (inc Telescope making, getting started in Astronomy etc) and where visitors can enrol in our ranks or ask whatever questions they may have and collect freebies such as children's info packs, which the PPARC have generously offered to supply.
- **Displays by neighbouring Astronomical Societies**.

To some extent perhaps we are re inventing the wheel, because OASI has staged events of this nature back in the early 80's and they were very successful. The main reason for their demise was because of a lack of volunteers from within the then membership - leaving a notable few to shoulder the burden.

Which brings us nicely to the point;

**AN EVENT OF THIS MAGNITUDE WILL BE LABOUR
INTENSIVE AND, TO PULL IT OFF, WE NEED MANY MORE
THAN OUR USUAL QUORUM OF VOLUNTEERS TO COME
FORWARD..**

We ask that you make a date in your diary and that you give us an indication whether or not you can spare some time to help A.S.A.P. If insufficient volunteers come forward - our plans will suffer a major setback and that would precipitate some drastic pruning of our ideas. On Saturday (7th) we intend to open to the public at 7PM, with last admissions at 9.30PM. On Sunday (8th) we will open at 5.00PM and last admissions will be as per the previous evening. It is also our intention that nobody will be lumbered with onerous duties, such as standing around in the car park for hours on end, everybody will be allowed to nominate a preference and we will TRY to organise things so that those preferences will be met (most likely by a rotation system so that everybody gets a fair crack of the whip). We intend to run the show for the enjoyment not just of the visiting public, but for all our visiting exhibitors and - most importantly - for our members and their families. Every effort is being made to make the show exciting, vibrant and appealing.

If we fail to make you proud to be a member of OASI, we fail full stop.

CAN YOU SPARE US SOME TIME ON EITHER OR BOTH DAYS?

**THE PLANNING CO-ORDINATOR NEEDS TO HEAR FROM YOU
SOONER, RATHER THAN LATER, WITH YOUR PARTICIPATION
PREFERENCES.**

Contact Ken Goward - either personally in the clubroom on a Wednesday evening - or by telephone () - or by writing to him at, , Mistley, Manningtree, CO11 1LH.

We can pull this off if you, our valued members, are willing to come on board. To paraphrase an American Presidential Speech,

**'THINK NOT WHAT YOUR CLUB CAN DO FOR YOU, BUT WHAT
YOU CAN DO FOR YOUR CLUB!'**

Make an effort to contact Ken right away re OAZK !!

An aurora occurs when charged particles (protons and electrons) from the solar wind interact with the Earth's magnetosphere (magnetic field). The magnetosphere focuses the particles along spiral paths towards the polar regions. The interactions of electrons with molecules of nitrogen and oxygen in the Earth's atmosphere produce the characteristic colours of the aurora: diffuse colours varying from whitish green to deep red arranged as curtains or streamers.

Aurora form primarily at an altitude of circa 100km above each pole and for this reason are most commonly seen from extreme northerly or southerly latitudes. However, at times of violent solar activity, the earth's magnetic field can become distorted causing the charged particles to become focused at lower altitudes, resulting in aurora being visible from lower latitudes.

In Latin, the aurora seen from northern latitudes is called *Aurora Borealis*. This means *northern dawn*, which is a particularly appropriate name relating to the characteristic glow in the sky in the direction of the North Pole. The corresponding name for the phenomena in the southern hemisphere is *aurora australis*.

The sun is currently close to solar maximum, and the solar wind is therefore particularly vigorous. This resulted in a spectacular display of *aurora borealis* on the night of 6th April, which was easily visible even from as far south as Suffolk.

The aurora started in late afternoon on the 6th. At 15:30 UT, the ACE space probe, located 1.6m km towards the Sun, detected a fast-moving cloud of charged particles *en route* towards Earth. At the same time, the speed of the solar wind increased from nearly 400km/sec to nearly 600km/sec. The cloud of charged particles arrived at the Earth approximately one hour later, and the aurora commenced. The aurora became visible once the sky became dark.

It was particularly fortunate that the night of 6th April began with the close conjunction of Jupiter, Mars, Saturn and the crescent moon in the early evening. This generated interest among observers who were interested in viewing and/or photographing the event and ensured that many people were outside and looking skywards during the early evening. Once the aurora became visible, the OASI telephone hotline swung into operation, with interested observers telephoning others to inform them of the display. (The hotline provides an informal means of spreading news of any significant and unexpected astronomical event. Contact any committee member if you would like to be added to the hotline list.)

Below are the impressions and experiences of some members of OASI who observed the aurora. The aurora appeared to last for one night only. Several people looked for a display on the subsequent evening without any success.

Ken & Lorraine Goward observed from Mistley, 20:30-21:30 UT, with a northerly view over the Stour estuary and farmland. They observed a very bright northern horizon, from the east around to the north-west. The aurora appeared very red in the northeast with red curtains fading and intensifying at intervals. Around Auriga (to the northwest), a number of pillars of light were evident, in red, white and perhaps green colours. Around 21:30 UT, auroral activity tailed off, and Ken & Lorraine stopped observing.

Nigel Evans and Mike Harlow observed from Bucklesham. This was Nigel's first view of the aurora from the UK.

NM (name withheld to avoid severe embarrassment!) was outdoors at circa 20:30 UT looking at Castor (due south) with a 60mm telescope as a means of experimenting with some new eyepieces. The telescope and eyepieces passed the "Castor test", but unfortunately said member omitted to glance northwards and thereby completely missed the best aurora in a decade! Oooooops!

Dave Payne observed from Wickham Market for periods from 20:00-23:30 UT. He saw a brilliant show! The best displays generally occurred to the northeast particularly in the early evening. A particularly bright period from 20:45 to 21:00 UT included a very prominent red-orange beam to ENE and several bright beams due north, reaching very high into Ursa Major. There were very prominent red colours with some yellow-orange turning to green at lower altitude. Green "curtains" stretched from almost due east through to northwest, spanning almost 180 degrees! Around 23:00 UT the display had turned mostly to green "curtains" but with a lot of structure. There was a very prominent region over Leo, well past the zenith, which lasted about ten minutes! Overall, the display was as spectacular as the great display of 1989.

Peter Richards was recently returned from some time in the "aurora belt" of Alaska, where he'd observed aurora on four out of five nights. Unfortunately, Peter's record of observing aurora from Ipswich is not so enviable. During the 1989 aurora Peter had been at the observatory: looking south! When he closed up, he commented to a fellow observer about some light pollution to the north (the time he closed up coincided with a lull in activity when only a diffuse glow was visible). Then he went down the pub and was totally oblivious to what was going on. During the 1991 aurora (not as spectacular as the 1989 display, but still well worth watching), Peter was in Ipswich enjoying a curry.

True to form on 6th April 2000, Peter was again enjoying a curry in Ipswich! Fortunately, on this occasion, after the curry he was alerted to the aurora by a phone call from one of the party to whom he'd happened to mention aurora earlier in the evening. Observing from Nacton, at circa 23:30 UT, the aurora was mainly faint and diffuse although there were distinct pinkish red glows in places and

occasionally nice sets of distinct rays were visible which changed over periods of minutes. Occasionally diffuse blobs of aurora appeared south of the zenith. On one occasion there were 'organ pipe' rays to the northeast and just south of the zenith. At other times there appeared to be two bands - one reasonably bright to the north and another, fainter, south of the zenith implying that some activity passed slightly below our latitude. Overall, the colours of the aurora seemed more obvious than had been the case from Alaska.

James Appleton observed from east Ipswich for periods from 19:15 – 22:00 UT. The initial view was of an extensive whitish haze at low altitudes with rapidly changing red and white colouration at higher altitudes. The whitish haze spanned from northwest through to northeast and from the horizon to an altitude of about 30°. It fluctuated slowly, over a period of several tens of minutes. The red and white colouration took over from an altitude of about 40° upwards to beyond the Pole Star: it comprised a blotchy red background, sometimes displaying 'curtain' structure and thin white streamers heading towards the Pole Star. Around 22:00 UT, the red colouration became very extensive indeed, spanning approximately 150° from almost East through North to West, and extending upwards to far beyond the Pole Star. There was considerable structure evident, in the form of curtains and streamers. Although raised in the far North of Scotland and therefore quite accustomed to seeing aurora, the display of 6th April was the most impressive that James had ever witnessed.

Mike Whybray observed from Nacton. At 20:55 UT there was a very strong red glow broadly across the sky in the northeast. Over time this contracted to a narrower band and moved progressively through North to finally fade out about 21:40 UT in the northwest. The main colour was a diffuse red glow, but occasionally more vertical structure developed in a lighter white/green colour. As the display moved west, these vertical structure inclined more to the left.

Garry Coleman observed the aurora from Kesgrave. His initial view at 20:30 UT was of a clear starry sky with a maroon haze to the north. The haze varied in intensity between a maximum roughly equalling local light pollution levels to zero and back over time periods of 2-3 minutes. The haze subtended roughly 60° in azimuth and from horizon to 60° altitude. Also visible were vertical shafts approximately 1° wide, and spaced by similar intervals, extending from the horizon to 60° altitude in front of the maroon haze. The shafts were whitish with a hint of green. They also appeared NNW against a clear sky. The intensity of the shafts varied independently of the variations in the haze. By 21:00 UT a smaller patch of maroon haze became apparent to the northeast, in addition to the above. By 22:30 UT activity to the north had ceased, however the maroon haze was apparent low in the sky due west.

James Appleton

NEW LIBRARY BOOKS

I have recently obtained the following two books for the OASI library:

***Totality: Eclipses Of The Sun*, by M Littman, K Willcox and F Espenak, 2nd Edition, Oxford University Press, 1999.**

This book should prove of interest to anybody who attempted to observe the eclipse of August 1999, whose interest in the subject has now been fired, and who would now like an in-depth treatment of the history and science of the subject. It provides a rich source of information on the past, present and future of eclipses. The authors, in particular Fred Espenak, are well-know experts on eclipses.

The book describes the usual physics of eclipses, and devotes many pages to descriptions of how the ancients reacted to and attempted to predict eclipses. It also describes noteworthy 19th and 20th century eclipse expeditions, in particular that of 1919 to Sobral (Brazil) aimed at testing Einstein's Theory of Relativity.

The bulk of the book is devoted to a more modern appreciation of eclipses, with advice on practical observing techniques for visual and photographic observers. Several appendices give more information on the historical perspective, on forthcoming eclipses and on sources of additional information (including Internet Web sites).

***Patrick Moore on Mars*, by P Moore, Cassell, 1998.**

This book is Patrick Moore's *tour de force* coverage of the Red Planet. Early chapters deal with Mars' main physical and orbital characteristics and relationship to the other planets. There follows the obligatory chapter in any book on Mars on the infamous canals. Being a renowned observer himself, the author devotes many pages to the telescopic exploration of Mars. Subsequent knowledge on Mars was gleaned primarily from space probes starting with Mariner 9 in 1971, and the book recounts the story of these endeavours in a very readable manner. Later chapters deal with the the search for life on Mars (Patrick is ambiguous on the subject!) and recent exploration of Mars by the Pathfinder/Sojourner space probe. Finally, the book contains a chapter speculating as to the form of a possible future Mars base, and it closes with an extensive set of appendices providing information on Mars itself and how best to observe it.

The library is housed in the Orwell Park Observatory. It holds a selection of astronomy books, videos and magazines. All members of OASI are welcome to use the library. Please contact me with requests for purchases of books, videos and software, or if you would like to donate any good-quality astronomy material to the library.

James Appleton

Visits by Outside Groups.

With the coming of light evenings once again, the society's winter programme of visits to the Observatory by outside groups draws to a close. In all, 12 groups visited this season, totaling 169 people. The society received donations from these groups amounting to £108.00

The visiting groups were

County Rangers
6th Ipswich Scouts
Bramford Women's Institute
Stowmarket Young Farmers
University of the 3rd. Age, Diss
Sandford Scouts
Birkfield District Rangers
East Anglian Traction Engine Society
Felixstowe Cubs
St Andrews Guides
Stowmarket Inner Wheel
Nacton Women's Institute

A big thank you to all the members who put in time and effort as hosts, to make these visits such a success.

We are now already fully booked for the winter 2000/2001 season, and we are always in need of willing volunteers to host those evenings. This is a very rewarding way for you to contribute to our society. New members, wishing to train as telescope operators, will be required as part of their training programme to assist on at least one visit. Let me have your name, to book your evening session NOW!

Garry Coleman : Visit Co-ordinator Tel:

Small Telescopes Night

The next night for members to try their hand with the smaller telescopes will be Monday May 15th, from 7.30. Due to the increasing daylight, the next session will not be until September - unless members express a wish to meet inbetween. Speak to Ted or Garry.

Also look out for information in this issue on a special astrophotography night planned for Monday May 8th.

Astrophotography night 8th May

As a result of interest generated by Neil Morley's workshop talk on astrophotography, there will be a practical astrophotography session using the society's 10 inch refractor, on 8th May starting around 8pm. Anyone interested is invited to come along and see how to attach a camera to the telescope, and take some photos - you don't have to have attended the workshop! Bring along your camera and a film - screw mount (Pentax) type camera bodies can be attached directly to the telescope; others depend on availability of adapters.

For more information, contact Mike Whybray on [redacted] (daytime) or [redacted] (evening) or [redacted]

2000 COMMITTEE

	Home Phone	Work Phone
CHAIRMAN	D Payne	[redacted]
SECRETARY & WORK PARTY ORGANISER	R Gooding	[redacted]
TREASURER & PUBLICITY	M Cook	[redacted]
MECHANICS	E Sims	[redacted]
NEWSLETTER CO-ORDINATOR	T Sampson	[redacted]
BEGINNERS MEETING CO-ORD & VISIT CO-ORD	G Coleman	[redacted]
EQUIPMENT CURATOR	J Walsh	[redacted]
LIBRARIAN	J Appleton	[redacted]
CO-OPTED MEMBER		
LECTURE CO-ORDINATOR & DARK SKIES	P Richards	[redacted]
JOURNAL ARTICLES TO CORRESPONDENCE ADDRESS	E Sims [redacted] Ipswich Suffolk IP1 4HA	
	R Gooding OASI Secretary [redacted] Ipswich Suffolk IP1 6AE	
MEMBERSHIP	M. Cook [redacted] Ipswich IP4 5PZ	

//

Observing Programme For May

Dates	Observing Director	Activities
Mondays from 7.30pm	T Sampson [redacted]	General Observation
Tuesdays from 7.30pm	G Coleman [redacted]	Group Visits
Wednesdays from 8.00pm	M Cook [redacted] D Payne [redacted]	Nebular & Faint Objects
Thursdays from 7.30pm	G Coleman [redacted]	Group Visits
Fridays from 7.30pm		Double Stars

All members are welcome on any night, but on nights other than Wednesday please check with the appropriate director that the observatory will be open.

Special Events

1. Committee Meeting

The next committee meeting is going to be held on Saturday 17th June in the club room at the observatory at 7.30pm. All members are welcome to attend.

2. Workshop

Wednesday May 10th 8.00pm 1st Telescope Training Session

3. Lecture Meeting

Friday 19th May at the Friends Meeting House Fonnereau Road, 8.00pm
Twinkle Twinkle Little (Neutron) Star. A talk by Paul Roche from the National Space Science Centre.

Society Contact Details

	Home Phone	Work Phone
Chairman	D Payne [redacted]	[redacted]
Secretary	R Gooding [redacted]	[redacted]
Contact details for the full committee are inside the back page.		

e-mail queries: ipswich@ast.cam.ac.uk
WWW address: <http://www.ast.cam.ac.uk/~ipswich/>

12