ORWELL OBSERVATORY, NACTON, IPSWICH, SUFFOLK

QUARTERS OF THE ORWELL ASTRONOMICAL SOCIETY, IPSWICH

by Roy Adams (OSAS)

Orwell Astronomical Society is indeed fortunate in having the use of such a site, expensively built observatory, situated away, not too deeply, just off Ipswich's southern-eastern doorstep, about a mile away (or if you prefer, one and a half kilos) from the A45, the observatory is an almost ideal position.

I really appreciate just how close to the place I am. One should be at some visit the Observatory during the day, or, in good weather, the complex stands out against the western end and part of its enormous mansion, now Orwell Park.

Nose can reach the Observatory by travelling down the main road from Ipswich to the outskirts of Ipswich and the new Belstead-Bury, or through Naunton. A way, from Levington, there are no sign of travelling up the main road and the massive iron gates of the mansion in a horse-drawn coach as days of

Till Park is steeped in naval and political history. The present mansion is a redbrick rebuilding of the 1840s by one of the George Tomline. Astronomy was one of the early 19th century, and the house was used to house the British astronomical society, and in 1870, it was vacated as the Observatory to out-of-work labourers, as at the Time Place, the Ipswich to Felixstowe railway built its own private railway, and made other arrangements to the Mansion. The Colonel built early dock facilities at Felixstowe on reclaimed land.

An extremely rich man, no expense was spared in the building of the Observatory. The then Astronomer Royal, M. Sir Robert. And, was engaged for the work, and the world's leading astronomers, including the British, were given the task of building the main telescope and a transit instrument very similar to one at Greenwich which at present was kept in storage there.

The main telescope's object glass was made of 256 mm (10.16 inches) and has a clear length of 3,594 mm (12 feet 9.5 inches). With a resulting F ratio of 15.1, it weighs 827 kg (3373.64 kg), the telescope being 6.128.6 kg. If this seems high, the cost of the building of the telescope - the Main Dome and Transit Room, and the floor elevation of the building 160 feet above surrounding terrain, must be high. No less than 111 staircases and stairways lead up to the observing floor.

The stairs are not the only way up to the scopes. Colonel Tomline also included a four-stage hydraulic lift, working the observer up to the roof level of the main building, where the telescopes are housed. The lift was designed to be operable entirely from the eyepiece position. Various ingenious mechanisms and gear couplings are used to ensure smooth operation. The lift has a capacity of 120 kg (264.5 pounds) and is capable of lifting the observer and their equipment to the roof level.

Opinions are the author's own and do not necessarily reflect those of the Council of the Federation of Astronomical Societies or the Editor. No responsibility is accepted for the content of advertisements.


June 1985

Orwell Park Observatory

Photo: Roy Adams, October 1984

also, possibly in conjunction with a photo-electric guidance system. Last April (1984) a four-inch diameter guide scope with about 6 second star selection, was mounted on the main tube. The aim of this was to improve long-exposure photographic facilities.

The 20-foot diameter dome of a four-inch guide scope and the grid in patinated copper cladding can be turned by one person using a four-feet diameter hand wheel. It is believed that the workforce for this construction came from the local craftsmen and builders. A cast-iron ring beneath the rotating dome rests on wheels set in the top of the brickwork. The shutter is opened and closed by hand, but this really needs two people who are used to the job. One reason, therefore, why there is now a rule stipulating that two directors are needed to "open" and "close".

Looking out in any direction through the shutter opening or small windows gives wonderful views. Nearby, the rest area of the School from which we lea the Observatory, stretches away to the west. To the southwest a clock tower, built in 1959 and equipped with a 16-bell carillon restored recently to full working order, stands just visible amongst trees.

So it was probably to the sound of traditional Scottish tunes on these bells every three hours or so that the Observatory was built and became one of Europe's, if not the world's, leading observatories in the 1970s.

The 6-foot 5-inch Colonel apparently had no difficulty in persuading a professional astronomer from the University of Durham to become full-time Curator of the Observatory, John Isaac Plumier. The Colonel gave Plumier a house in Nacton still called the "Astronomer's House", and with an honorary MA degree on leaving Durham University, the 27-year-old Plumier continued prolific observations for upwards of 16 years, contributing regularly to the Royal Astronomical Society's Monthly Notices, public
DATA PROTECTION ACT 1984
by Alan Drummond

A few SAGAS meetings ago, Mike Haygood asked whether the FAS could offer advice on the Data Protection Act. At the time very little information was available, but I have since found a book* which has proved most helpful. What follows covers the DPA as it appears to concern local societies. For a wider view I recommend you seek out the book, which is presented in a very readable style, and includes the text of the Act.

The aim of the DPA is to avoid the misuse of data which is processed automatically, which essentially means by computers. Manually held data, for example addresses held by local societies for membership purposes, is covered by the Act. Only personal information is covered, and a data subject, as defined by the Act, can only be a living individual; data on other entities (e.g. companies or clubs) is excluded. The Act gives the data subject, on the other hand, can be any individual or body controlling the use of data, or any local society which stores personal data on computer falls into this category.

Fortunately, specific provisions have been made to cover small non-incorporated bodies such as local clubs and societies from registration under the Act in respect of data relating to members, or for the purpose of distribution of information. This law provision was not intended to apply to data on non-members or to data used for automatic purposes, e.g. for the mailing list.

The authors of the book suggest that such personal information may be included as a condition of membership to ensure this does not raise any problems. I can conceive of any circumstances where a member of a society would object to his or her name being held on a computer, but there could be an objection in the case of disclosure to third party.

The DPA received Royal Assent in July 1984, but will not be fully implemented for several years. Local societies need not be too concerned by the Act if they are merely using names and addresses of members, but it might be worthwhile to seek members' permission now if your society holds, or plans to hold, membership information on computer.

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F.A.S. COLOUR SLIDES

These are unique - all taken by amateurs and selected for their visual impact and usefulness to lecturers on astronomy. Guaranteed to arouse enthusiasm! Current printing copyright each plus 25p per copy/p. Price to non-members 35p each.

Orders to Geoff Pearce, 1 Vallottot Cottage, Millbridge, Plymouth, PL1 5PU.

Cheques/postal orders payable to the Federation of Astronomical Societies.

Please allow several weeks for delivery as stocks are not kept - send stamped card if acknowledgement of order is required. For a full list of slides available please see the FAS Handbook.

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The Chairman of the Ottawa Park Observatory is Mr. David Payne, "Dalby", Chapel Lane, Wickham Market, IP33 0SD, whose home telephone number is Wickham Market 79019. The Author's (Roy Adams) address is, "Soalybrook", 16 Fitzwilliam Close, Ipswich, IP2 2QT, and telephone (0144) 483295. The Observatory is usually closed during the day and as visit arrangements are in the hands of Society members it is best to arrange for visits beforehand. This GASI members will be pleased to do. All are welcome to come and look around and join in, and even if the sky is cloudy a drink and a game of pool can virtually be offered at the Hut and Cymtwer a mile away over the Orwell, through the 10-inch telescope! For those less satisfied by purely visual observation, The Ship at Laverington is easy to reach.

It is not many who put the pub first, however, when the sky is clear. At such times it is most evident that the Colonie's site choice was very well made. But even Orwell Park cannot seem to escape at least a little fighting for holding its skies clear, as the very Rocks at Felixstowe which the Colonie pioneered are increasingly likely to expand and increase light pollution to which for some is an intolerable level, particularly for faint-object observation in the southeast. Negotiations are under way regarding this, and we hope they will be fruitful.

Orwell Park Observatory, Oct '94
Photo: Roy Adams

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BAA RESIDENTIAL WEEKEND AT HORNCASTLE, Lincs. will be held this year September 20/22, for all interested in astronomy over the age of 14. Guest speakers, pleasant surroundings, good food and accommodation plus 12-inch reflector in use. £37.50 (single room surcharge £1.50). Book via Mr B Watts, 112 Mill Road, Cleethorpes, South Humberside. SAE for information or £10 deposit made payable to BAA.
CONTRIBUTIONS for Issue No 7 should be sent to the editor, Rosemary Naylor, 256 Bacup Rd, TODMORDEN, Lancs OL14 7HJ by mid-August, please.

HERSTMONUCEX '85 SATURDAY 5th OCTOBER

COMPETITIONS

The competitions will be open to all members regardless of where or not they attend, but those not attending should please send the material in to George Bolland, 25 Deneside, East Dean, Eastbourne, BN20 7HE, ensuring that they include sufficient stamps for return postage. Items will be accepted on the day or by prior posting to the above address. All material submitted must be the work of the person or society in whose name it is entered and competitions are only open to members of the FAS so please make sure that your society has paid the appropriate subscription.

Prizes will be awarded at the sole discretion of the FAS Council and Judges' decisions will be final.

Could you please ensure that each item entered for any of the competitions is clearly marked with the name, address and the Society of the person entering and also, in the case of photographic and art competitions, a title or description of the item and the photographer's name.

1 MAGAZINES: Entries must consist of two different issues only, each to have been published in the year ending October 1985. Each copy should be marked with the Society name, Editor's name and date of issue, and it would considerably help if these could be posted to the organizers before the event at the above address.

2 ASTRONOMY: Paintings, sculpture, pottery, pencil or ink drawings, in fact, any art form. Limited to six items per person.

3 TELESCOPES: All instruments must be amateur constructed apart from the optics. There is no limit on the number of instruments per person.

4 BLACK AND WHITE PHOTOGRAPHIC PRINTS: Any size, mounted on card for display with title, photographer's address and Society. Maximum six prints per person.

5 COLOUR PHOTOGRAPHIC PRINTS: Arrangements as for black and white prints.

6 COLOUR TRANSPARENCIES: Maximum six items per person. Please mark each slide with name and title and include a list giving details of the objects shown in the slides.

SUBSCRIPTIONS 1985/86

It was again decided to peg subscriptions at the level which has been standing for a number of years, i.e. £7.50 full rate and £4.50 reduced rate for new and small societies. These subscriptions become due for payment on the first day of September.

HERSTMONUCEX '85

This year's Convention takes place with the kind agreement of the RGO authorities, in Herstmonceux Castle on Saturday October 5. Bookings may be made through the Treasurer, Ken Marcus, at the usual rate of £2.50 per person (FAS members) and £3.50 for non-members. The evening buffet is extra. Speakers include Eric Zucker, Michael Maund and David Hardy, with more to be arranged, plus all the usual side shows. Full details in the next newsletter.

* Ken Marcus, 5 Cedars Gardens, Brighton, BN1 6YD.

ARTICLES are still required for the FAS Handbook 1986. Please let the Handbook editor know if you are a contributor.

FRIDAY 4 OCT 85

Herstmonceux '85

HERSTMONUCEX '85 SATURDAY 5th OCTOBER

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6 COLOUR TRANSPARENCIES: Maximum six items per person. Please mark each slide with name and title and include a list giving details of the objects shown in the slides.

Small ads.

Any private individual belonging to member society of the FAS can place classified advertisement free of charge. Please keep the wording reasonably short, no more than 20 words. Send the copy to me. I will do my best to include the ads in the next follow-up but I cannot guarantee anything.

Please note that all ads are subject to the rules of the Federation and the Society.

BOSTON ASTRONOMERS ONE-DAY CONVENTION "EYES ON THE UNIVERSE" will be held Saturday July 27 1985, at Blackfriars Spain Lane, Boston. Please book in early as tickets may be sold out. There will be a special "Astronomics" with an SAE for details. Speakers include Heather Cooper, Mike Penfold, Peter Drew and Neville Kidger. Special arrangements by NASA, ESA, etc. Write to Boston Astronomers, South View, Fen St, Boston, Lincoln.

V.V.V.V.V.V.V.V.V.V.V.V.

FOR SALE: Tasco 2.4 inch refracting scope. Steady tripod and accessories. John Stone, Roadside Mill, Havant, PO9 6UV - (01252) 450398 - Peter Jeffrey.

Liven your Society magazine up with a crossword puzzle. Astronomical crossword puzzles supplied, £2 per 12. Send SAE or SAE with £2 for full set. Cheques to be made payable to: Hinckley & District Astronomers, 85-87 Caroline Road, Hinckley, Leics. LE10 2HH.
SOCIETY NEWS ROUND-UP

STUART LONSDALE

ALEXSE: The date of the AGM was postponed from February to April because of poor accommodations and bad weather. Guess what - the weather in April was foul and a power cut meant a candlelit meeting. The supply was restored - at the end of the meeting.

The library has been sorted out, catalogued and Sky Atlas 2000.0 plus some slides are to be added. The grand sum of £50 raised by members will help.

For your diary - the new Chiltern Group Representative is Dave Early, 11 Church Road, Harlingdon, Beds; tel: 9915 3179.

Shortly after the February meeting, member Bill George collapsed and died. Writes Ted Bates, "Bill helped to make and supervise the putting together of the dome..." He negotiated the purchase of the electricity cable and connection to the supply...he was always willing to help any of us...the observatory dome at Whinchen is one, at least, of the memorials to Bill George in this area that will remind us of him."

BOSTON ASTRONOMERS: All eyes will be focussed on Boston on Saturday July 26th because this is the date of their 10th Anniversary "Eyes on the Universe". Speakers include Heather Cooper, Nigel Herbst, Peter Drew and Neville Kidger. There will be trade stands and an exhibition plus morning coffee and afternoon tea. The day looks like being well worth a visit and for just £2 - unbeatable value. Drop a line to Bryne Tongue, South View, Fen Road, Stickleford, Boston, Lincs; tel: 3474 for further details. Hurry though, places are limited to 500 and it's filling up fast!

Other news from Boston - improvements are being made to the instruments including a new pedestal stand for the 4-inch reflector and a realigned mirror. Components have been purchased for constructing 4- and 6-inch Dobsonians.

A recent Jumble Sale raised £56 for funds.

In February, four members attended the 2nd East Anglian Astronomical Societies Convention.

A bumper edition of "Nova" is to be produced for the conference on July 27th.

CLEVELAND AS: A welcome return of this society after a break from this column. Their magazine is called "Paladis" and contains articles on testing your space knowledge, photographing Venus, observing group and other bits and pieces.

The prize for the space quiz is a set of BAA Star Charts.

During December last year, a group of thirty astronomers gathered at Stockton Sixth Form College for the 3rd Annual "Thomas Wright Trophy" Quiz. The two teams competing were Cleveland and Darlington AS - Darlington being the eventual victors 134 to 93.

Due to the falling membership it was decided to amalgamate all the observing sections into the new Observing Group.

The recent Perseid shower resulted in a total of 70 meteors observed by 12 members in 355 minutes. If all the results were put through correction equations it seems that the observer produced a 12HR of 104.75 at 12.925.

COVENTRY & WARWICKSHIRE AS: Plans are being drawn up for NAW and they're planning to re-open the City Observatory, public observing nights and a display in the College Foyle.

Work is continuing on the observatory, the "Horrible" jobs being finished and the finishing touches being applied. A request for prompt payment of subs was for a good reason - they need to spend the money on the observatory.

Thanks to membership Paul Porter, they are now subscribing to "Astronomy" magazine and this together with "Sky & Telescope" and "Popular Astronomy" are available for loan to members.

A call for a "flour" of articles for the magazine "Mira" was being sent to members.

It was hoped we would have more subjects suitable for beginners.

CRAWLEY AS: A Blockbusters Quiz with Brighton AS resulted in a win for Brighton.

A Jumble Sale was held on April 13th.

The BAA Comet Section met in Crewe on April 27th.

A description and drawing for a sunshine recorder appears in the Newsletter but it is not clear who has written it. The recorder measures sunshine over 10 hours during midsummer. It relies on the staining action of the ultra-violet rays of solar radiation on plain paper soaked in lemon juice. Trails period pictures show it works okay. Sunlight shines through a piece of wood with a hole in and on to the paper. It can record several days of sunshine with the changing directions of the sun making each day's line separate.

HAMPSHIRE ASTRONOMICAL GROUP: In the last Round-Up I mentioned a 12-inch reflector being replaced by an 8-inch. Well it seems that when the 12-inch was dismantled, the mirror was tested and as suspected was found to have a turned down edge. With some work it will probably be used to make a Richfield Dobsonian.

Plans are in hand to view Comet Halley through the 30-inch at Greenwich during December.

The "Halley Comet Trail" in the Queen Elizabeth Country Park, has been fairly successful. Favourable comments were received about the exhibition and six new members joined as a result. Weather wise the very wet Easter discouraged walkers and visitors.

HEREFORD LITERARY & SCIENTIFIC SOCIETY; ASTRONOMICAL SECTION: A new astronomical group has been assembled in Heber Bridge and they have promptly joined the Federation. Of course, the fact that Rosemary Mays in their chairman probably has something to do with this.

The group consists of over 20 paid-up members, but membership is expected to grow to about 30. The plan is to learn some basic astronomy, and to get to know the night sky.

Please add this society to your list in the FAS Handbook. Secretary is Mr P Parker, 48 Caledine Avenue, Mytholwcar, Hereford Bridgel, West Yorkshire, HX7 5AJ.

E LONDON AS: Society officials are appealing for more members and cannot understand why publicity in local libraries does not produce a better response. Meetings are in Wastarde but a quick calculation shows that the average "membership-distance" is 1.5 miles.

At the April meeting, Don Willis was the guest speaker; his topic being the Solar System. In order to show the scale of the planets, he brought along a model of the Earth/Moon system.

Of course this scale could not be maintained with the other planets, and Don reverted to the scale of 10 million miles to the inch. The planets were located on the unrolled length of toilet paper which started its journey in the meeting room, extending some 40 feet, mostly in the first floor of the University Mansions. The editor in the newsletter remarks - "Good job we had the house to ourselves". I'll say!

NOTTINGHAM AS: Writes Carl Brennan a break of over 4 years we have decided to re-join the Federation. The Mountfield Observatory was given the dome in a plan which was to be used as an obelisk. Thanks to a generous donation from the Engineering Co Ltd, we now have a new generator.

We are looking forward to Comet Halley and have plans to open the site for public viewing during the NAW. The society has a 8-inch Reflector, a mobile 6-inch plus 5x100 and 20x50 binoculars.

We hope to make a trip to the Newham Observatories and Planetarium on June 22nd.

In a bid to attract new members it is decided to establish a new library, membership cards and to re-join the Federation.

Please note the change of Secretary in the FAS Handbook. It is now C 48 Part 1 Close, The Vale, Liberty House, Nottingham, NG16 2GW; tel: Nottingham 348521.

The Society, by the way, was founded in 1976 so we look forward to their 30th celebrations next year.

OSSWELL AS: On Friday April 12th we visited the Norwich AS.

Saturday June 15th sees a visit to Attingham Park. The society has a display at the 2nd East Anglian Astronomical Societies Convention.

There is a trip to Cromer during August to observe the grazing occultation on the Perseids. It is to be a big weekend.

Maintenance is to be carried out on the observatory. (See an appendix to this issue.)

The society had a display at the 2nd East Anglian Astronomical Societies Convention.

SAGAS: Brighton AS - a scale replica of the Solar System was Brighton's contribution to the Brighton Festival on May 29th. It had to have a public viewing session for the lunar eclipse evening. (I don't know about this!)

It was completed in time and operational. Then on July 20th the Perseid meteor shower was expected. As the observatory is situated between the Chichester 90 Festival and the Chichester 90 Festival, it has been decided to hold a viewing session on the Chichester 90 Festival.

The dates are Saturday July 14th and the observatory is open to the public. The venue is set up with the Society's 12-inch reflecting telescope. It would be a good sign to see if there is any interest in this venture.

ESTRAS: - have changed the date of their meetings from the first Friday of the month to the second Friday of the month. The venue is set up with the Society's 12-inch reflecting telescope. It would be a good sign to see if there is any interest in this venture.
SOCIETY NEWS Round-Up

STUART LONSDALE

Items for the next "Round-Up" should be sent to: 16 Joan Lane, Hooton Levitt, Nr. Rotherham, South Yorkshire, S66 8PN.

SHEFFIELD AS: A set of "Astra Cards" has been purchased for the observatory. The plastic index box holds all the cards.

A visit will be made to the Newchapel Observatory and to Jodrell Bank on September 28th.

The new posters publicising the society were sent out to some 400 schools in the area! Results look extremely encouraging with many bookings and we have new members joining at every meeting.

The recent joint meeting with the Sheffield Photographic Society for Mike Mollard’s talk resulted in over 80 people turning up.

After a break last year, it has been decided to host a Sponsored Meteor Watch once more. It will be held in December for the Geminids.

WOLFHAMPTON AS: For the past ten years, Wolverhampton has organised an Astronomical Weekend at Aston Hall near Preston. The 1985 course was held over the weekend of March 15/16/17. Speakers were Terry Platt on Electronics in Amateur Astronomy, Russell Eberst from the RAE, and Dr. Cedric Mynlie on Astrophotography.

The accommodation is very comfortable and relaxing. Those attending brought along telescopes and binoculars and other supporting gadgets.

It is expected that the 1986 meeting will be held on March again and no doubt some Halley slides will be well to the forefront in the Members’ session.

The normal number that can be accommodated is about 40 and details of the 1986 gathering will be available in November this year. Watch the Newsletter for details. Anyone wanting information now can contact Malcolm Ashby who is the Secretary of Wolverhampton. You will find him at 0902 783212.

RATES FOR DISPLAY ADVERTISEMENTS

Full page £65
Half page £35
Quarter page £19

Smaller ads are £1 per single column cm with a minimum charge of £4.

Copy should be sent to the Editor.

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Accessories, 6, PINWOOD DRIVE, ASHLEY

LENSES

We have a large quantity of cemented achromats and singlets suitable for objectives and oculars. Some examples are:

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Send a note for price list which gives the full range of our new and old lens catalogues.

NOTE: We still have a few ex. Govt. achromatic Barlow lenses in threaded brass condition. These are excellent, and have a T.R. of 1-3. Price: 3.00

We also stock lots of ex. Govt. oculars (over 200 in stock), various ground brass tubes, black anodised draw tubes, starfinders and many other items for the DIY astronomer. We will make adaptors or components to suit your needs.

WEST YORKSHIRE AS: A party of "Rotarians" from the USA were to visit the rosie observatory sometime in June.

The telescope has been given a new colour scheme. Mrs. Joan Joyce, the 15.3-inch mirror was being re-aluminised (during April) as the last job was a disaster. I won’t mention the company for obvious reasons. Contact Derek Hutton for details. An offset guide telescope is being constructed and a variable frequency drive unit.

A Jumble Sale during April raised around £50 for funds.

A visit to Huddersfield AS planned for March had to be cancelled due to part of the Huddersfield dome collapsing.

In conjunction with the York AS, members had a conducted tour of places of astronomical interest in the area. Nice to see societies coming together like this.

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SOCIETY CONTRIBUTIONS TO "ROUND-UP"

An interesting article appears in the 1984 edition of the Salford AS journal written by Dick Munnocks. In the article Dick makes a comparison between societies contributing to the "News round-up" feature of the Salford AS journal and he has drawn up a "goal average" table to indicate the number of contributions made. He has taken the liberty of using Dick’s information and updating it to include the first three issues of the newsletter, so the "goal averages" are:

Aylesbury 7
Bristol 1
Brighton 1
British Meteor Soc 3
Calais 6
Caxton 3
Cotswold 1
Coventry & Warks 3
Crawley 1
Craven 1
Eastbourne 6
Fleetwood 1
Huddersfield 4
Lancaster & Morecambe 6
Mid-Kent 1
Mid-Suffolk 3
Newchapel Observatories 5
Newbury 1
North East London 5
Nuneaton 2
Plymouth 1
Sheffield 1
South Down 1
South East Essex 1
South West Herts 4
West of London 1
West Midlands 6
West Yorks 4
Scottish Societies 3

If you have a low score or, worse, no score at all, there is an opportunity. Pop a letter in the post to Stuart Lonsdale, 16 Joan Lane, Hooton Levitt, Near Rotherham, South Yorke, S66 8PM, and tell him all about your society.

GEORGE BOLAND
Practically every astronomy magazine is carrying articles on Halley's comet, but for some time to come. Up to any rate, Halley has been much fainter than predicted. Whereas predictions indicate that it should have been mag 16, it was not as bright as mag 19, that is approximately 1.5 times as faint, as it should be. It is not clear that it will be fainter throughout the entire apparition, as it has been suggested that the comet perhaps brightens only when a significant coma is present. During Astronomy Week, November 9th to 16th, it can be seen in the naked eye, but should be seen in late December and early January, February and early March it returns as an object, and then we may have another chance but not without optical aid.

The comet will be particularly well placed in the Autumn and Winter and most amateurs will want to take a photograph of it, purely as a souvenier of a once-in-a-life event. There are various ways of tackling this with increasing levels of sophistication. Firstly just a camera and tripod can capture the event when its brightest, provided that the fastest possible film is used, such as 2400 ISO slide film on a Fujinon 50mm lens. If you do not want the star trails, you should also be able to do 600 divided by the focal length of the lens, eg 12 seconds for a 50 mm lens. The smallest the ratio it should be possible to reach mag 7.0 in reasonable seeing time and should just benefit can be achieved by increasing the exposure time or the square of the ratio. Exposures in excess of this increase progressively the effect of sky fog preventing fainter objects from being recorded, but this will depend on local conditions. I recently saw a superb slide taken by Tim Goldstein of the Coventry & Warwickshire Astronomical Society which was a 5-minute exposure on Fuji 400 film with a Zenit camera at f/2 using the standard lens. It dramatically showed the North American Nebula in Cygnus together with the Cygnus Star Cloud. This photograph would probably show stars down to mag 11 or 12. An exposure of this length requires that the camera be driven in some way to counteract the diurnal motion of the earth. If you have a motor drive I am sure that you can attach the camera to the telescope and use the telescope to guide the camera. To keep the guide star in the centre of the eyepiece it is best to defocus the star image so that it nearly fills the field. On the other hand you are fortunate enough to have a motor drive you can synchronize the shutter so that you are using a short focal length lens, then you can go off and have a cup of tea while the exposure is in progress. The amateur without a telescope need not worry, as the form of driven mount is required. The so-called "Sooth" mount is the easiest to construct and most societies are sure, will be able to supply details.

In an entirely different vein the recent favourable apparition of Venus was a gift for the astrophotographer as it was so well placed, being well above the horizon at sunset. The photograph with this article, although not perfect, stands up well when compared with other published examples. It was taken by eye piece projection on Kodak Technical Pan 4145 (ISO 25) using a 30cm Newtonian. The exposure was about 1 second.

At 2.00am on the morning of Monday 11th February there was a great lunar occultation of a 4.6m magnitude star. The track of the star went about 10 miles north of Ipswich and it was therefore a good opportunity for some "field" observations.

For this particular graze we planned to have two groups of observers at two different locations along the centre of the predicted track. Alan Smith had written to Herstmonceux for details of the predictions and had then duly plotted them on a local Ordnance Survey map. These predictions showed the track passing about 2km north of my observatory at Wickham Market. With such a close track I was going to form a third observation point using my 17-inch reflector at home. In this particular occultation the star was passing to the south of the moon and as my observatory was just south of the track I was expecting to observe a "near miss", I will come back to this point later!

On Friday 10th February it began to snow. On Saturday night we had a committee meeting at the Orwell Park Observatory, most committee members had to attend and the roads didn't seem too bad. It looked as if the observations could be on, as long as we got clear skies during the early hours of Monday morning. We parted from the committee meeting planning to go ahead with the observations. Martin Cook and Alan Smith would be going to Wallingford with Roy Cocking with Eric Sims would be the other.

Unfortunately although no more snow fell during Sunday, the winds increased and all the snow eventually deposited over the fields ended up in heaps on Suffolk's roads with the result that the county ground to a halt. This meant that the "field" observations would have to be abandoned. However as I didn't have to travel I decided to persevere with my own observations if the skies cleared.

Having decided to get some sleep before the event I went to bed having set the alarm for 4.00am. Events then proceeded as follows:

1.00am - The alarm goes off! I switch it off as quickly as possible, not wishing to wake the whole family.

First thoughts are now something like this: "Oh God! I've got to get up. I hope it's cloudy." After a few moments however enthusiasm begins to return and peering through the window I can see a few stars through gaps in patchy cloud. "Is it clear enough to be worth getting up? Where's the moon?"

I can't see the moon from the window because of its position in the south east, but I can make out a faint glow on the walls of the observatory and I decided to get dressed and go look.

1.45am - Outside in sub-zero temperatures and not far off a gale blowing. The moon's clear! I collect a couple of eyepieces and open up the observatory.

1.50am - I have found the star shining clearly south west of the terminator. At this point I realize that I have not got any means of timing and recording the observations. I need a fast retreat back indoors to collect a portable tape recorder. I then dialed the speaking clock, got a recording of it on to the tape which I left running through the event. This serves as a time reference (02.01.20) for the following
NOCTILUCENT CLOUDS

by Neil Bone
(Scottish Astronomers Group)

The period between late May and early August is often regarded by observers at our high temperate latitudes as time for a well-earned rest. The sky never gets properly dark, presenting problems for many types of observational work. There remains, however, one important phenomenon, observations of which can only be carried out during the summer - noctilucent clouds.

Noctilucent clouds form at high latitudes in a thin layer between 80-85 km (about 50 miles) height in the atmosphere, at the boundary between the mesosphere (middle layer) and the thermosphere (the highest part of our atmosphere, including the auroral layer and ionosphere). There are a couple of reasons for the restricted period of visibility of noctilucent clouds (NLC). Firstly, NLC are very tenuous and can only be seen against a background sky which is relatively dark while they remain sunlit; such demanding illumination conditions are available only when the sun is between 642 degrees below the observer’s horizon, a situation encountered for most (but not all) of the brightly-twilled summer nights at high latitudes. More importantly, NLC can only form when the mesopause (thermosphere/mesosphere boundary) is cooled by upwelling of cold air from the polar regions, a phenomenon encountered only during the summer in each hemisphere.

Studies of the behaviour of NLC yield useful information on high atmospheric winds and provide clues on general conditions at these great heights. NLC often show rapid southwestwards movement, and observations suggest a 3-day high-altitude global atmospheric circulation time at the mesopause. Attempts have been made to retrieve noctilucent cloud particles using sounding rockets, but there is little consensus as to the nature of NLC material - suggestions include ice condensed around meteoric dust and/or terrestrial material (such as volcanic dust), or even pure ice.

There are strong suggestions of a negative correlation between NLC and the aurora: NLC seem to be most often seen when auroral/geomagnetic conditions are quiet. Activity in the overlying thermosphere possibly generates NLC at the temperature of the mesopause rise. Many more observations are required to examine this possible link, and auroral astronomers can play a valuable role. This work is carried out under the control of the BAA Aurora Section, which collects NLC reports from the UK and Scandinavia.

NLC observations are made during the summer by many amateurs in Scotland and the north of England. It is little-realised, however, that NLC can be seen at least as far south as the Sussex coast and Devon on occasion. Indeed, good NLC displays have been seen from Exeter and Plymouth in the last couple of years on nights when northern observers were under less conventional cloud.

Observations of NLC require no more equipment than the naked eye and a medium of patience. A clear northern horizon is essential, however, as NLC are usually restricted to this part of the sky. In common with the aurora, NLC exhibit a limited number of distinct forms (Fig 1). Perhaps the most distinctive is type C, in which the tightly-interwoven bands produce a "herringbone" structure. NLC are readily identifiable, remaining sunlit even when the highest "weather" clouds are in darkness; low-atmosphere clouds usually appear dark against NLC.

When NLC are present, observers record a number of useful data, including the extent in altitude and azimuth of the cloud field, the types present, and the brightness (on an ascending scale of 1-5). Changes take place fairly slowly, and it is usually adequate to record the details at 15 minute intervals. Annotated sketches are often best for quick and accurate recording, and are usually made in "negative" form as in Fig 1.

Photography, of course, allows accurate and relatively easy way to monitor NLC. Observations on colour films are usually far superior aesthetically to those on black-and-white, and many observers have successfully used slide films such as Ektachrome 400. On this, exposures of between 1/60 and 1/150 seconds at f/2.8 will catch the details, actual exposure time depending mainly on the brightness of the sky background. Slower films, eg 100 ASA, need exposures around 8-10 seconds.

With diminishing solar activity, it is likely that the next few summers will produce several good NLC displays. It should therefore be worth keeping a lookout for these highest, and arguably most beautiful, of all clouds during the "close season" for other observations in the next couple of years.

The new FAC secretary is Dave Powell, 1 Colby-Hunt Rd, Llwyd, Cardif South Wales. Tel: 0222 551704

Dave asked, at the AGM, whether or not other people had experienced the problems we had had in 1986 in connection with Dr Keith Hindley's "Astro News". The Cardif As took out a subscription with "Astro News" the scheme to provide local societies with regular news bulletins and information packs. They paid good money and received poor service. Dave was particularly alarmed that his many letters requesting information including one registered letter were ignored. We never received more than one package against the four which were paid for under Option 1.

Now he wants to know how many other societies have also lost money on this venture which appears to have faded into obscurity. Please get in touch with him with your experiences.

BOOKSHELF

The Cambridge Atlas of Astronomy, 1986, £29.95
The Cambridge Atlas (more an encyclopaedia really) is coffee table size, too heavy to stand upright, too good to leave lying around, and too packed with knowledge to store out of reach. For regular speakers, with £20 to spend on books, it is the best single volume reference work around. One can only hope the price will not escalate too much at the year end. The "Atlas" is an in-depth review of modern astronomy. Although 45% is devoted to the Solar System, stellar astronomy is well covered. I counted 74 H-R diagrams, all colour banded, to explain different aspects of stellar evolution. Illustrations are lavish, there is good use of diagrams and graphs to explain technical concepts. This has got to be an important addition to anyone's library.

R.N.
ANDREW GATWARD F.R.A.S.

invite you on behalf of South African Airways and Premier Travel, to join them on a once in a life time trip to view Halley's Comet in April 1986.

we will be leaving Heathrow Airport on April 6th 1986, for a trip that you will never be able to forget. We will be seeing Halley in all its glory, from the best vantage point in the world. Every care is being taken to ensure that the best viewing spots are available, and we will have the added advantage of joining up with a South African Astronomical Society.

During our time there, we will be staying in one of the world's most luxurious hotels, with three parts of the world, Cape Town, Durban and Johannesburg.

During our stay we will have the use of the Union Observatory, the Waterberg Observatory and the Royal Cape Town Observatory, with optional tours to the Magal's, the Valley of the Flowers and the Cape Wine Lands.

The optional tours will be included in the price, but due to unforeseen price increases, the fact that we want to keep our original price, we will have to leave these as options.

We will be in this wonderful country for 13 days altogether, but there will be an extra week, if you would like to take it. Further details will be available very soon.

South African Airways have taken a tremendous amount of time to arrange a trip with an attractive price, and it is to be expected that the majority of you will be able to do. Halley only comes around once every 76 years, and most of you will never get the chance again.

Come and join us, and make sure you see this once in a lifetime event, in all its splendour, from a wonderful country, with three of the most popular astronomers around.

A finalized itinerary is now available, and for all this our price is only £1,750. This price is quoted on the 22nd May 1986, our dead line for deposits was the 29th May. There may be a slight increase for those booking after the 29th May, but it is unlikely that we will be increasing the price as soon as you can. We will not like you to be disappointed.

The address to write to is Andrew Gatward 19 Belleview Terrace, Halstead, Essex CO9 5DX. Tel: Halstead 476444.

Due to the tremendous interest in the trip, Andrew will promise an itinerary as soon as possible, but please remember to cancel an SAS for your place as soon as possible, with your 10% deposit, making those payments to Premier Travel.

Don't be fools and miss this trip. You will regret it. Heath, Iain, Nigel and Andrew, look forward to spending 2 wonderful weeks in South Africa with you. You will have the time of your life. Pick up your pen and write now. We would love to hear from you.

HALLEY'S COMET 1986. THE CHANCE OF A LIFE TIME. NOT TO BE MISSED.

The National Astronomy Week Committee are preparing a set of Halley Comet posters, which will be available, free, to astronomical societies who are planning exhibitions in conjunction with N.A.W. These will be A3 size and give some details of where and how to observe the comet.

For further information, get in touch with members of the PAS Council who will be kept informed as to when these are available.

Rosemary Naylor,