



The Federation's latest secretary, Mrs Chris Sheldon is seen here observing sunspots by projection in her garden at Pershore, Worcestershire. Mr and Mrs Sheldon have an observatory with a run-off roof which can be seen in the background. Chris was elected FAS secretary at the AGM in May. She is a member of the Worcester AS. Since the AGM an assistant secretary has been found from the neighbouring society, Cotswolds AS. He is Tony Ireland, 8 Merestones Drive, The Park, Cheltenham, Glos.

SUBSCRIPTIONS

Subscriptions for the year beginning 1st September 1988 were fixed at the AGM. Yet again they remain unaltered, due to the continuing economic successes of the various FAS activities. Rumours that the FAS plan to put in a bid for Herstonmoucheux Castle should be ignored, and Treasurers should, with confidence, renew their Society's membership at the rate of £7.50 per year from September 1988 or £4.00 for a newly formed society (or one with fewer than 25 members). Cheques made payable to FAS and sent to the Treasurer.

FAS HANDBOOK 1988

The 1988 Handbook came out in April and all paid up Societies should have received a copy. If you have not received a copy, check that your current subscription has been paid. Further copies can be obtained from the Handbook Editor, Brian Jones. The cost is £2.30 per copy to members and £2.80 to non-members (including p&p). The Handbook is such a useful reference to all things of astronomical interest that local societies should show a copy to their local reference library, information centre etc. and persuade them to buy a copy from the Editor who will supply both Handbook and invoice.

The following Council members were elected at the Annual General Meeting:

PRESIDENT: Bob Owens, 3 Duxford Close, Llandaff
CARDIFF, CF5 2PR
Tel: 0222 554154

VICE PRESIDENT: Tony Balfour, 43a Ellesborough Road,
WENDOVER, Bucks., HP22 6EL
Tel: 0296 622442

SECRETARY: Mrs Chris Sheldon, "Whitehaven", Maytree
Road, Lower Moor, PERSHORE, Worcs., WR10 2NY
Tel: 0386 860202

TREASURER: Ken Marcus, 5 Cedars Gardens, 'BRIGHTON',
East Sussex, BN1 6YD
Tel: 0273 556265

EDITOR: Mrs Rosemary Naylor, 256 Bacup Road
TODMORDEN, Lancashire, OL14 7HJ
Tel: 0706 817767

EDITOR (Council Newsletter): Bill O'Shaughnessy,
14 New Way, WOODBURY SALTERTON, Devon, EX5 1PW
Tel: 0395 33192

EDITOR (Handbook): Brian Jones, 17 Havelock Street,
Thornton, BRADFORD, West Yorkshire, BD13 3HA
Tel: 0274 833651

MEETINGS ORGANISER: Stephen Williams, 120 Brickhill
Road, WELLINGBOROUGH, Northants., NN8 3JP
Tel: 0933 77972

EDUCATION SECRETARY: Eric Zucker, 35 Gundreda Road,
LEWES, East Sussex, BN7 1PT
Tel: 0273 474347

SOCIETY NEWS EDITOR: Martin Chick, 2 Magnolia Way,
Chandlers Reach, Epsall Isaf, Near Pontypridd, CF38 2NJ
Tel: 0443 206594

ASSISTANT NEWS EDITOR: Mrs Pam Chick, address as above

There are also three non-elected members of Council,
each representing a group of societies, as follows:

CHILTERN GROUP: John Smith, 26 Mahoney Court, Oakridge
Road, HIGH WYCOMBE, Bucks., HP11 2NH
Tel: 0494 442425

SOUTHERN AREA GROUP: Roy Easto, 60 Whitworth Road,
South Norwood, LONDON, SE25 6XJ
Tel: 01-771 3230

YORKSHIRE GROUP: Paul Harper, 62 Kingston Avenue,
Dalton, HUDDERSFIELD, West Yorkshire, HD5 9HL
Tel: 0484 25988

FAS SLIDE SCHEME

Members who have taken 35mm transparencies of astronomical subjects which they consider of a good quality are invited to submit them to the FAS, c/o Ken Marcus, for possible inclusion in the FAS Slide List. Any slides accepted will be used by the FAS in two ways. They may be reproduced and sold as a service to teachers and others, the FAS retaining the resulting minimal profit. They may also be used as illustrations in publications etc., but only with the owner's consent. Royalties usually ensue from this use, to the benefit of the photographer. The copyright remains with the original photographer. It is essential, therefore, that members submit only their own work.

Ken Marcus' address is shown on the Council List.

SOCIETY NEWS ROUND-UP

PLEASE SEND YOUR SOCIETY NEWS TO PAM AND MARTIN CHICK
AT THEIR NEW ADDRESS SHOWN ABOVE BY MID OCTOBER.

AYLESBURY AS: In their latest Newsletter a member gave details of a device which enables the user to tell the time at night, and which can be made on a cloudy evening. You view the Pole Star through a hole in the device and turn a handle until it points at the Pointers of the Plough and read the time on a cardboard disc. Talks to the Society have included Cosmology, Pluto and its Satellite Charon and the Planet...

ASSETLAW AS: They have recently purchased a 6-inch Newtonian telescope. Fund raising events for the summer include a sponsored walk and a barbecue. A visiting lecturer from Mansfield & Sutton AS gave a talk on advanced techniques of astrophotography. They will be at the Hocklopp Hobbies Fair in July with a stall to publicise the Society. Further details from Paul Stanley, 28 Festival Avenue, Harworth, Doncaster, DN11 8HF.

BRADFORD AS: The Society has recently received a grant of £300 from the Bradford Metropolitan Council which was used to purchase a pair of 11 x 80 binoculars and a heavy-duty tripod. They have recently held a sponsored walk which raised around £180 for Society funds. This will be used to purchase a television and video for use at meetings. In September a treasure hunt will be held to raise funds for the purchase of new telescopes and equipment.

BRITISH AEROSPACE AS: A visit to the Condor Brow Observatory, Lancaster was planned for March. Patrick Moore was a guest speaker at a meeting held in Preston. To encourage observing a Messier League started in January. Dr Allan Chapman gave the Christmas Lecture on the History of the Discovery of Neptune.

COVENTRY & WARWICKSHIRE AS: The magazine contains many observational reports and includes excellent drawings done at the telescope of the Moon and Jupiter.

COTSWOLD AS: John Fletcher spent a week at St Andrews University in January with Andrew Packer who is studying astronomy there. St Andrews has five observatories housing instruments ranging from a 6-inch refractor to a 37-inch Schmidt-Cassegrain, and John took the opportunity of using them as well as making use of the other facilities the University has to offer. Andrew Packer has landed himself a summer holiday job at the Anglo-Australian Telescope in Australia taking photographs using the UK Schmidt and the AAT.

GUILDFORD AS: A lot of work has been carried out on the Society's 20.5-inch telescope including fitting a 6-inch guide scope loaned by the BAA, an open finder sight with illuminated cross wires and a finder which lights the mirror, flat, eyepiece holder and finder which are electrically heated. The main mirror heater of 24 watts keeps the mirror dry except in the most severe conditions of rising temperature and humidity. The Astrogathering on a Saturday in May attracted many visitors. There was a display of amateur radio astronomy, several trade stands, refreshments and talks. The lectures included Hebrew Astronomy, Amateur Radio Astronomy and the Observatories of France. Neil Bone won a telephone donated by British Telecom in the competition/quizz.

HUDDERSFIELD AS: At a meeting in March every member was invited to give a 2-minute talk on any subject. The 8th HAPS photographic competition is in the summer with members entering astrophotos taken during the last twelve months. The Perseids will be a sponsored meteor watch with a difference. Members are being asked to observe for five hours on the 12th and 13th, rather than count the number of meteors spotted. Sponsorship will be by the hour to allow for cloudy nights.

NORTH EAST LONDON AS: Talks to the Society included "New Thoughts on Quantum Physics and Cosmology" by Dr M MacCallum and "Hunting Down the Dragon - 70 Years of Quasar Research" by Dr A Lawrence of QMC, London. One member, John Larard, reported on his visit to the annual meeting of the Catalogue des Composants d'Etoiles Doubles et Multiples which took place at the Meudon Observatory in France last August. It consisted of two and a half days of reports from groups, discussions and talks.

OAKHAM SCHOOL OBSERVING SOCIETY: The Society held two trips; one to Jodrell Bank and the other to the London Planetarium. Patrick Moore gave a memorable talk on Voyager and the Outer Planets. Colin Goodman of Leicester has also given a talk. Events planned for the future include a trip to Cambridge Observatories and the annual dinner.

ORWELL AS: 16th July was the Society's Open Day at the Observatory and included games, telescope making, lectures, refreshments and trade stands. The Open Day was to celebrate 21 years of the Orwell AS. E Sims attended a Sky Camp organized by the North Star AS in

East Haring. Despite rain and cloud it was possible to observe for four hours on one night.

PLYMOUTH AS: At the 23rd anniversary meeting in February four speakers gave short talks on a variety of subjects. Several "brick parties" have been held during the year to help with the construction of a path to the observatory suitable for vehicles. Lawrence Harris has been on hospital radio for a few months and this has helped publicise the Society. The main summer event is a hike on Dartmoor followed by a barbecue.

SAGAS: Croydon hosted the SAGAS meeting in July at Chichester; a skittles match was planned for the evening.

SALFORD AS: The Society visited the Bradford Museum of Photography and Television and saw the IMAX film about the Space Shuttle programme. Several members attended the David Malin lecture organized by Linda Simonian of the Amateur Astronomy Centre. Talks to the Society this session included one on the best sites for observing, from a meteorological viewpoint. The Observatory is open to the public once a month, and every Friday is the Messier Meeting when deep-sky objects are observed, weather permitting.

S W HERTS AS: Dr Robert Hutchinson from the Natural History Museum gave the Society a preview of the talk he is to present at the 150th meeting of the British Association in Oxford, on the subject of "Early Planetary Processes: the Evidence from Meteorites". The Society held a cheese and wine party followed by a talk by Allan Swan and Jan Willemstary on the history of the Society for its 20th anniversary meeting. The Society obtained some land at High Top in 1974 from a landowner, Hon M A R Cayzer, for a peppercorn rent. When the landowner officially opened the Observatory on 22nd June 1974 he donated the site to the Society. A barbecue is planned for July.

WEST MIDLAND AA: In April the WMAA celebrated its 10th anniversary and held a special meeting of lectures called "The Solar System: A Microcourse". Topics included "Minor Bodies of the Solar System", "Brownlee Particles", "Interstellar Dust and Meteors", "Lunar Occultations" and "The Severn Bore". The WMAA is mainly a postal association but meetings are well attended when held. It was formed in 1978 by Alan Wells of Chelmsley AS who had been running a monthly astronomy programme on BRMB Radio for the previous two years. The response from the listeners was so great that the postal association was formed. WMAA's observing project for the summer focusses on the Perseids.

WEST OF LONDON AS: At a recent meeting a video was shown made by Robert McNaught who is at Siding Spring Observatory in Australia. In it he talks to several of his amateur colleagues in Australia, including Rev Bob Evans, who has a reputation for discovering supernovae in other galaxies. A convention is planned for 17th September and will include speakers, competitions, a bring and buy stall, computer demonstrations and trade stands.

WEST YORKSHIRE AS: A planet marathon is planned for 9th July when observers hope to observe all eight planets and the crescent Moon between midnight and dawn. A Newtonian conversion for the 18-inch is now complete and will be used for photography and viewing deep-sky objects. The Cassegrain focus will still be used for visiting parties and viewing the Moon and planets. The changeover between the two configurations should take five to ten minutes. A deep-sky computer database is now complete with details of over 2000 objects. Observers can now select the objects they wish to view and obtain a printout for use at the telescope. There are also plans to have a keyboard extension and monitor in the dome.

WOLVERHAMPTON AS: The Society held its annual weekend course at Alston Hall, Preston in March. Friday night was a members' session and the video made by Robert McNaught was also shown. Cloud and a full Moon made observing difficult. Konrad Malin-Smith gave two talks, the first on Astrophotography, with some slides taken from Tenerife. His second talk was on Pulsars, using a model made from pipe cleaners and polystyrene, and demonstrations which involved odd mixers and eggs. Dr Fiona Vincent gave talks on Astronomy and the Radio Amateur and the Minor Planets. Dr Gillian Pearce spoke about SN1987A in the LMC and Observations of the Sun. The weekend is already booked for next year.

Ben the laws of physics if you must; stir the beliefs of chemistry periodically; rewrite the history of the universe every decade (and why not?), but please, please, please don't break the laws of mathematics. Elementary algebra rules!

William-Bell Inc., publishers of astronomy books, have just published an extremely well researched book on asteroids by Clifford Cunningham. As might be expected, the first chapter begins with a statement of the empirical formula of Titius. This takes the form - and I quote from the book:

$Y = .4 + .3(2^{n-1})$ where $n = 0, 1, 2, \dots$ for $n = 0, Y = 0.4$, which corresponds to the orbit of Mercury in astronomical units. End of quote.

Now if you forget about the fact that Mercury orbits at 0.4 AU from the Sun and just substitute $n = 0$ in the formula, you get $Y = .4 + .3(2^{-1})$ which then gives $Y = 0.55$. Definitely not what we want for Mercury.

Elementary astronomy books usually quote the rule thus:

Begin with the series 0, 3, 6, 12, 24, 48 etc. Add 4 to each of these and then divide by 10 to bring to astronomical units. This gives the correct answer for Mercury, is 0.4 AU. In actual fact, 3, 6, 12, 24, 48 etc is a genuine series, but the initial 0 does not belong.

If the series is reversed; 48, 24, 12, 6, 3 then it follows that the next number should be 1.5, which again gives the position of Mercury at 0.55 AU.

Too much of science is just a fudge, but, and here I'll admit my bias as a graduate mathematician, mathematics should be inviolable. Can anyone now explain why Mercury does not fit into place?

LETTER TO THE EDITOR

NE London AS June 28 1988

Dear Rosemary

Re your editorial on the experiences of Crayford Manor House. (Issue 15)-

I can't recollect receiving any notice of the meeting but it may have been sent to a former secretary who has retired through ill health.

Speaking generally, information from other societies may arrive too late and be history by the time we hold our monthly meeting. The chances are that the one or two who might have been interested will miss that month anyway. I only reply when a s.a.e. is enclosed.

Let me quote some examples:

- 1) Orwell AS 21st anniversary, July 16 - notice arrived after April meeting, no response from NELAS members in May. June meeting cancelled. July meeting too late.
- 2) Guildford Astrogathering May 21 - details arrived May 4. Our meeting May 15, notice too short. Nobody interested anyway.
- 3) Brighton AS 21st Birthday June 11 - notice received April 28, told members May 15, no one interested.
- 4) WOLAS 21st anniversary Sept 17 - Notice received June 17. Our June meeting cancelled. Hope to announce the convention in July.

We fail to drum up interest even when an event is free! For example; we were offered free use of the 28 inch telescope by the National Maritime Museum but no one thought it worth making arrangements because of British weather. Admittedly we might have been more responsive had Greenwich been a bit closer.

I would point out that one of our members has used the 28 inch and has experienced problems. He might have still used it but he moved to Blackpool. He still makes our monthly meetings though. Yours sincerely

BERNARD BEESTON

EDITOR'S NO COMMENTS !!!!!!!!!!!!!

WEST OF LONDON AS

To celebrate the 21st Anniversary of this Society, a Convention will be held at Winston Churchill Hall, Buislip, on Saturday 17th September. Speakers will include Heather Couper, James Nuiriden, Wat Irvine and Greg Smye-Rumsby. There will be various other activities, exhibitions and trade stands. Admission £2.00 unless tickets are purchased in advance at £1.50 from Corina Clinton, 31 Eresby Place, Kingsgate Road, Kilburn, London, NW6 4JT.

The Department of Education and Science (DES) has set up a number of school curriculum working groups. Amongst them is a working group on science under the chairmanship of Professor Jeff Thompson, pro-Vice Chancellor of the University of Bath. The group has produced an interim report on the science curriculum (which runs to about 80 pages); astronomy is included as part of science.

The DES circulated copies of the interim report to a number of interested bodies, asking for their comments. Amongst these were the FAS and the AAE (Association for Astronomy Education). As often happens with this kind of exercise, there was very little time to meet the deadline and to involve the FAS as a whole in a lengthy discussion. It was thus left to the Council to respond to the report, and this was done in March, 1988.

The AAE, also under pressure of time, had made its response to the DES a week or so earlier, and the FAS Council supported the AAE response and added two items of its own. The 8-page response suggests the following topics to form the basis of the astronomy curriculum: the Solar System and our place in space; the different states of matter encountered in the Universe; Space-ship Earth and its future in our hands; the Universe, structure and theories; some basic biographies of famous astronomers.

These topics cover the age range 5 to 16 (ie. both primary and secondary schools).

Anyone wishing to have a photocopy of the FAS response in full should contact me at the address below (a SAE would be appreciated).

The Outcome

The DES has decided (subject to confirmation at the time of writing - June 1988) that astronomy will indeed form part of the school curriculum, covering about 1 out of 17 themes in science. We also understand that this decision will mark just the beginning of a period of activity in astronomy in schools. The FAS may be pleased that its views were taken into account when the DES made its decision. Eric Zucker (Education Secretary), 35 Gundreda Road, LEWES, East Sussex, BN7 1PT.

ASSOCIATION FOR ASTRONOMY EDUCATION CATALOGUE OF ASTRONOMICAL VIDEOS AND FILMS

A catalogue of videos and films is currently being prepared by the AAE with whom we have close links. This will be a useful guide to societies when planning their meetings. It will be available free to FAS members and each society will be sent one copy in due course.

PLYMOUTH'S EDITOR SCOOPS TOP PRIZE

Congratulations to Jason Semmens of the Plymouth AS for coming out top writer in a national competition for young people posed by the weekly 'New Scientist' magazine. Barbara Beddard, Plymouth's secretary writes that their quarterly magazine, edited by Jason, is the best amateur magazine around. It can be obtained on subscription for anyone interested. However, Jason has achieved national recognition for his writing for the essay competition set by officials of New Scientist.

Jason at 16 years old beat over 200 other contestants with his essay on William Herschel, entitled 'Through a telescope brightly'. His winnings include a visit to Oxford for the meeting of the British Association for the Advancement of Science in order to be presented with a cheque for £200. He also gets a year's subscription to New Scientist. But best of all, he will receive an invitation and ticket to travel to California early next year to view the Voyager encounter with Neptune.

So, I can assume all members of the FAS will want to add their congratulations. Well done Jason Lee Semmens!

Pam and Martin Chick are wishing to relinquish the task of writing the Round-Up for the Newsletter. In due course a successor will have to be found. The work involves receiving and reading society magazines and preparing the Round-Up. If anyone feels they can take on this commitment please write to the Council c/o Mrs Sheldon.

EXCITING NEW PROPOSALS FOR THE DEVELOPMENT OF THE HERSTMONCEUX TELESCOPES

This article has been written by a distinguished astronomer under the pseudonym "Aquilus". It is intended for simultaneous publication in the newsletters of the AAE and the FAS. The plan has already been welcomed by the Council of the FAS, and by the Southern Area Group of Astronomical societies. The AAE Council will consider the plan in September.

Ask yourself three questions:-

- 1) We all know that the moon causes the tides. We only have one moon so why are there two tides every day?
- 2) How high could the highest mountain be on the earth and why?
- 3) If the whole solar system was shrunk down to the size of a typical classroom how large would the earth and sun be on the same scale and how far would the earth be from the sun?

These questions are the astronomical equivalent of asking what colour daisies are, or how big are elephants or fleas, neither of which many children have actually seen. If you do not know the answers to these questions then perhaps you, like many of today's children, were brought up with inadequate educational facilities directed at the nature of the world in which we find ourselves.

The Americans have had men on the moon and space probes visiting Jupiter and Saturn. The Russians have sent probes to Venus and had a man in space for almost a year, returning him to earth in apparently good health. Britain, once a leader in exploration, has not only failed to invest in mankind's future in space but even fails to educate its young in astronomical matters. It is just as much a part of learning about the environment to know the answers to the above questions as it is to learn about the seasons, the names of trees and animals and about the birds and the bees. A society which does not have the will to explore its environment and to learn how it relates to both the large and the small in nature probably lacks the will to survive. If we fail to educate the young about nature on both the large and small scales then how can we hope that a new generation will even seek to find answers to some of the questions which might one day be important for our survival as a society?

The decision of the SERC to abandon the Herstmonceux site has created a unique opportunity which must be firmly and decidedly grasped. There is no other example of a government giving up its own national astronomical observatory complete with telescopes and instrumentation and the opportunity is, therefore unlikely to occur again. Decisions as to the future of the Herstmonceux site, which will have to be taken over the next year or two, will directly influence future generations' access to astronomical knowledge and the way in which our society views its future as a technologically and scientifically aware culture.

It might be thought that astronomy is sufficiently far removed from the world of commerce and industry that it should play no part in the everyday effort of our society. Instead, the converse is true. Many who do enter into a scientific career do so, not because of their immediate involvement, but rather because they identify with the less immediate goal of the search for pure knowledge and the broader perspective of viewing mankind against a larger backdrop. Astronomy, perhaps the oldest of the sciences, provides that reference frame. Any society which is possessed of such a poverty of spirit that it cannot find the effort to pause and wonder occasionally will not only fail to attract people into its high technology but will also fail to retain its best brains and its most enquiring minds; the very people that it needs to become the future leaders of both industry and society. It is within this context that the future use of the Herstmonceux site should be viewed.

The new plan for the site which is currently under discussion with a wide variety of those interested in astronomy in Britain has already received the support of many professional astronomers and amateur astronomical societies both in this country and in the wider context of Europe.

A new educational charity is being formed, the purpose of which is the furtherance of astronomical knowledge throughout society at large and among the young in particular, and to encourage and sponsor astronomical research both by professional and amateur astronomers.

The following bodies will be invited to put forward one representative each for the management committee of the Trust. The three main amateur astronomical bodies in the UK (the BAA, JAS and FAS), the AAE (Britain's major body for encouraging astronomical education), the RAS, Wealden District Council, East Sussex County Council, the English Tourist Board and the Trust itself. It is to be hoped to attract patrons of stature including politicians of national status and scientists of international repute.

A recent survey of the structure of the domes and the connected buildings has shown them to be in sound condition. The telescopes were in regular use until approximately 10 years ago and are still used occasionally. There is therefore no need for any significant rebuilding of them. It is intended that the existing domes would be supplemented by a new building containing both a public exhibition and a lecture theatre.

The lecture theatre is intended to cater for two groups; parties of school children and amateur astronomers. The parties of school children would be given a tour of the site and exhibition and then a chance to ask questions of the astronomers on the site. Herstmonceux is well placed to serve the whole South East region from the Portsmouth Southampton complex in the West to the whole of the Greater London area in the North.

The second group at which the lecture theatre will be aimed is amateur astronomers. There has never been a major forum in Europe to promote interaction between professional and amateur astronomers.

This is a rapidly growing area of interest. Contacts with senior French amateurs suggest that they, as well as British amateurs, would welcome such a forum. The idea is to create a centre for "summer" schools for amateurs where they can be taught the skills and techniques required to allow them to make serious scientific contributions.

Therefore the development and exploitation of the telescope site forms a central part of the project and is intended to be the central engine which generates publicity and income for the site. The exhibition would cater to the needs of both the tourists and the parties of school children. The lecture theatre would provide facilities for both the school parties and the amateur astronomers' needs. A new coude refractor telescope, in a transparent dome would be provided and would make available safe observing facilities for both the young and the old in a comfortable environment. The surplus funds raised from the education and tourism would be used to fund both serious research on the existing large telescopes and to provide facilities for dedicated amateur astronomers to make serious scientific contributions. Thus a direct link would be forged between those who have an interest in astronomy and who want either casual information (the tourists), education (school parties and amateur astronomers) or to make serious contributions (the professionals and the dedicated amateurs). The concept is novel and has never been attempted before but it is very much in line with present government thinking in the way in which it would provide a direct link between the consumer and the producer of astronomical information.

Additionally Herstmonceux would serve as a central location for the organisation of international amateur astronomical observing campaigns, from where data would be received, collated, analysed, redistributed and published. It is also intended that Herstmonceux should act as a centre for the manufacture and distribution of several items for serious astronomical use such as a new generation of telescopes and both single and multi-channel photometers.

Herstmonceux, with its attractive setting, its reputation as a national observatory, its position in a major tourist area of South East England and its proximity to mainland Europe should be the core of a major resurgence of astronomical effort and interest.

continued over ...

A major change with established astronomy in Britain will be the use of commercial sponsorship for specific projects from companies who might be able to see some corporate advantage in being associated with such projects. Negotiations have already started with Europe's largest manufacturer of carbon fibre who would be interested in the new high technology telescope design and with England's longest established manufacturer of telescopes. One of England's largest electronics and entertainment industries has also expressed a willingness to provide sponsorship once the viability of the scheme has been demonstrated.

ON SITE RESEARCH

For the Herstmonceux site to realise its proper potential it is vital that it is an active research centre where new discoveries are made and from where these discoveries are made public. To this end a short, and incomplete, list of research projects is attached. They have a common theme in that they are all long term projects which cannot be undertaken at Britain's overseas observatories where observing time is allocated for a few days at a time only. They would thus be complementary to the work of our overseas sites.

- 1) Photometric and spectroscopic monitoring of Be, Beta Cephei and Delta Scuti stars to discover whether their variations can tell us more about their true nature.
- 2) Observations of long period variable stars which have recently been shown to contain several different periods.
- 3) Observations in conjunction with observers at other longitudes to search for very low level variations.
- 4) Analysis of data to search for multiperiodic phenomena.
- 5) Monitoring of massive binary star systems including both those stars which do not emit x-rays and those that do, eg. Cygnus X-1, the potential 'black hole' candidate.
- 6) Binary star measurements.

If agreement with the present owners of the site, the SERC, and the new owners of the site, whoever they might turn out to be, can be reached then out of the dissolution of the old observatory a bright new future for British astronomy might yet dawn.

"Aquarius"

Herstmonceux

This REALLY is our last chance to meet at our favourite venue, Herstmonceux Castle, near Hailsham, East Sussex. The Federation's regular October meeting will be held on Saturday October 8 (not October 1 as originally thought), and the turn out looks like being the best yet. Admission fee, again £2.50 per member. There will be a mid-day meal and an evening buffet for those staying to the evening lecture. Charges for these will be announced later in a circular to society secretaries.

Speakers will include:
DAVID STICKLAND: IUE; the most productive telescope in the world.
ALLAN CHAPMAN: The Drudges of Airy

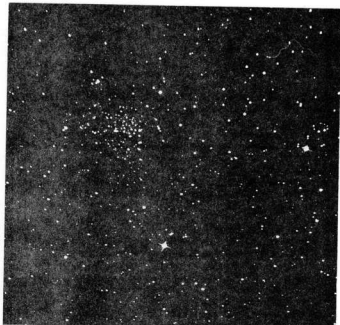
There will be the usual other activities; competitions, exhibitions, visits, trade stands.

We may even know more about the future of Herstmonceux Castle by then.

Your suggestions as to how we should mark the occasion/ make this a memorable day/ get yourselves arrested ... should be sent to the organiser:

Ken Marcus, 5 Cedars Gardens, BRIGHTON BN1 6YD

Do come!



NGC 6939, an open cluster in Cepheus. Photograph taken at the 10 inch F/5 reflector on Tri-X film. This 8 minute exposure by Bernard Abrams, Cotswolds AS.



Messier 51, the Whirlpool Galaxy in Canes Venatici. 8 minute exposure at the 10 inch F/5 reflector on T-max 400 film by Bernard Abrams. The spiral nature of this "nebula" was recognised by Lord Rosse before the days of photography.

ASTRONOMY: PRINCIPLES AND PRACTICE

A E Roy and D Clarke, Adam Hilger, Bristol, 1988
3rd Edition, ISBN 0-85274-393-9, pbk, pp357, £15.00
(Also available in hardback at £45.00)

The two companion volumes, "Astronomy: Principles and Practice" and "Astronomy: Structure of the Universe". by Professor Roy and Dr Clarke of the University of Glasgow, have proved to be successful textbooks since they first appeared in 1977. They ran to a second edition and now "Principles and Practice" has appeared in its third edition. The books evolved out of lecture courses given at the University of Glasgow. The subject matter is arranged in a logical manner, but as the authors point out, the books should be of help to the serious amateur astronomer, as well as to students at universities and polytechnics in which there are astronomy courses.

The two volumes are so complimentary that I would prefer to have them numbered Volumes I and II, although they could be read in any order. Indeed, the two could well be combined in a single volume but, apart from the resulting physical unwieldiness, I am told the cost would be prohibitive. "Principles and Practice" deals with fundamental astronomy, and contains sections dealing with naked-eye observations, observations with instruments, the celestial sphere and astrometry, timekeeping, celestial mechanics, telescopes (optical and radio), brightness measurements and spectrometry. The third edition contains a brand new section on astrophysics (The New Astronomies) with material on X-ray, gamma-ray, ultra-violet, infra-red and mm astronomy, neutrino astronomy and gravitational waves. The book concludes with a section on possible experimental work.

I have, in the past, recommended this book, with its companion, as the standard text for my own first-year astronomy students, and they still found it useful in their second and third years. The book is attractively set out with very wide margins, some of which are used for diagrams. This format distinguishes it from other books of the same level. The Table of Contents is very comprehensive and there is an extensive Index. There is sufficient mathematics to deal with the topics one would expect to meet in a first-year textbook, but the keen amateur, whose maths may be a little "rusty", need not be deterred by this - it can be by-passed if necessary.

I would certainly recommend this book to readers of this Newsletter as a worthy addition to their astronomical libraries.

Eric Zucker
5th June 1988

THE COSMOS FROM SPACE

David H Clark, Adam Hilger, hbk, pp168, £14.95

Books abound, written by journalists and science correspondents on the various aspects of the exploration of space, so it is a delight to find a book on astronomical discoveries made from space written by a professional astronomer with real experience of conducting experiments in space. David Clark combines his work with the Science and Engineering Research Council with a writing career designed to inform the intelligent reader. This first book persuades the reader that important discoveries about the Universe have already been made by Earth-orbiting craft and many more wait upon future missions.

The book is largely devoted to describing those missions which have expanded our knowledge of the Cosmos by viewing at wavelengths which don't penetrate to Earth's surface, namely X-rays, infrared and ultra-violet. He describes the instrumentation and methods employed and details the American and European personnel responsible for the achievements of the last few decades.

Chapters covering X-ray astronomy, uv astronomy etc. are interspersed with "Interludes". The book appears to be aimed at the intelligent lay reader; the kind of person who reads a quality newspaper. The Interludes fill in on background astronomy and a routine account of the development of the space programme. This works fairly successfully, but I would have preferred to see far more detail on astronomical results. After all, full length lectures can be given on individual satellites, each carrying a variety of instruments and functioning often for several years. Come to think of

deserve a whole book. One must guess that the author has had to have preferred to offer at least twice the length of this short book but was obliged to be brief to satisfy his publisher. Nevertheless, he still finds space to elaborate on his personal views on the future for man and machines in space. He considers robots much better value than men in space and looks forward wholeheartedly to the Hubble Space Telescope, while offering doubts about the necessity for a manned orbiting platform.

Once one can adjust to the many acronyms employed (IOC for Initial Operations Capability being one such), the book is worth a quiet serious read. There is an amazing amount of information here and much of the political manoeuvring amongst scientists and politicians which goes on in the background gets good airing.

As in the previous book from the same author, "The Quest for SS433", the simple line drawings used in the illustrations are rather a waste of space. The reviewer found that where a concept was already understood, the diagram was comprehensible, but where these were to illustrate an unfamiliar concept, eg the focal plane of the HST, then the diagrams were most baffling than the text.

All in all, this is a useful addition to one's bookshelf.

Rosemary Naylor

NIGHT SKY PHOTOGRAPHY

H J P Arnold, George Philip & Son Ltd.
Hbk, pp152, £9.95, ISBN 0-540-01180-0

In recent years there has been an outbreak of interest in astrophotography. This has been supported by several textbooks: Gordon at \$18.95, Martinez at \$18.95 and Covington at £15.00 and, most recently, the subject of this review. I have no experience of Gordon or Martinez but regularly refer to Covington. My first thought when I saw this book was "not another book on astrophotography", but on scanning the pages I was delighted to find that it complemented Covington beautifully, approaching the subject from an unusual and different aspect.

The credentials of the author are most impressive and I feel that I would have to bow my head in his presence should I be lucky enough to meet him. I am totally unqualified to question the technical aspects of the text which contains many useful formulae and equations. The general approach is to attempt to acquaint the photographer who has no knowledge of astronomy with the necessary facts, and to give the astronomer with no photographic skills sufficient information for him to make a start.

The formulae seems to have worked well in the most part although as a teacher I believe that using such words as Sirius, Polaris and parsec without explanation might be a bit too much for the non-astronomer. The book deals mostly with unguided photography of the night sky with equipment that most amateur photographers have readily to hand. There is a discussion of equipment for long exposure stellar photography, including useful instructions for making a "Haig mount" or "Scotch mount" or "screw drive" which ever you wish to call it.

The final chapter deals with more advanced equipment and techniques which may well lead to the purchase of a more specialised book.

Night Sky Photography should prove to be very popular and useful. However, another minor criticism would be that there is virtually no mention of colour printing. Admittedly this is not a great deal of use to the astrophotographer, yet experience tells me that this is the first type of emulsion that the photographer reaches for. Furthermore I have found that many amateurs never use slide film; some are not even aware of its existence.

All in all, a delightfully presented and useful text book, beautifully illustrated.

Geoffrey Johnstone

CLEVELAND AS

A Convention will take place at Teesside Polytechnic, Middlesbrough, Cleveland, on Saturday 15th October. Speakers will include Heather Couper, Nigel Henbest, Peter Rea, David Gavine, Neil Bone and Paul L. Mor. There will be trade stands in attendance. For information from Neil Hagath, 5 Fountains Cresce, Easton, Middlesbrough, Cleveland, TS6 9DF.