



EDITOR: Rosemary Naylor, 256 Bacup Road, TODMORDEN,

Lancashire OL14 7HJ Tel: 0706 817767

TREASURER: Ken Marcus, 5 Cedars Gardens, BRIGHTON

BN1 6YD Tel: 0273 556265

SECRETARY: Christine Sheldon, "Whitehaven", Maytree Road,

Lower Moor, PERSHORE, Worcs WR10 2NY Tel: 0386 860202

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Federation of Astronomical Societies

ANNUAL GENERAL MEETING AND CONVENTION

Member societies are invited to attend the Federation AGM on Saturday May 5 in the Herbert Lecture Theatre, Coventry. The AGM starts at 11.30 am and after a break for lunch will be followed by the Convention running from 2.00 pm to 6.00 pm. Attendance: £2.50 each, to include tea, coffee.

For those attending for the first time, a map of the location was shown in the Newsletter; Issue 18 of April 1989. This shows the Herbert Art Gallery and Museum in relation to the Coventry Ring Road and the Railway Station and Car park. Alternatively ask Ken Marcus for a photocopy when booking. The meeting will take place in the Herbert Lecture Theatre, slightly detached from the Museum.

There is a little space for societies to exhibit their own displays, which should be checked with the organiser, Paul Money, and arrive early. There will be the odd trade stand there too: books, telescopes.

We know from your own newsletters and magazines that many more of you are taking sky photographs. Please bring them for the competition.

Lunch can be taken at a variety of places around the Cathedral area.

COMPETITIONS AT COVENTRY

Please bring your entries for the photographic competitions, which should be displayed before 1.00 pm as they will be judged during the break for lunch. This year we are back to our more relaxed competition, since the prizes will not be in the same league as last year's high powered Space Prints competitions. Nevertheless, entries should be registered with the FAS table as you sign in, so that the judge will know which to include from those put on display.

The rules are few: the number of classes will be decided at the time of judging, depending on the number of entries submitted. Photographs may be black and white prints, colour prints, or slides. Awards will be made to individuals, not to groups, and each competitor may submit no more than 3 photographs in total.

AFTERNOON PROGRAMME

Dr Ann Smith: Women in Astronomy; Ladies of the Night
Mr Brian Griffin: Building a Society Observatory
Mr Paul Money: Chasing Cygnus

Convention organiser:
Paul L. Money, Valley Cottage, Winceby, Horncastle, Lincs LN9 6PB

THE MUSEUM AUTHORITIES
OPERATE A STRICTLY NO
SMOKING RULE AND WE ARE
REQUIRED TO ENFORCE THIS.
PLEASE LEAVE THE WEED AT
HOME.

THE ANNUAL GENERAL MEETING 1990 May 5 at 11.30 AM

AGENDA

- 1 To approve the minutes of the 1989 AGM
- 2 Matters arising
- 3 To hear the Treasurer's report
- 4 To fix the subscription rate for 1990-91
- 5 To hear reports from and put questions to other officers
- 6 To elect officers for 1990-91
- 7 Any other business

The Minutes of the last AGM together with reports from officers will be sent to each society in the same distribution which brings you this newsletter. Also enclosed will be a booking form for those wishing to attend. Please make a society booking to Ken Marcus. Remember, societies sending 6 or more delegates to the AGM will have their subscriptions waived when they become due in September. The accounts for the year ending April 1990 will be presented at the AGM and copies will be distributed there.

ELECTION OF OFFICERS TO SERVE 1990/91

The Council has put forward the following names. Further nominations may be made on the day and will need a proposer and seconder.

President; Rosemary Naylor
Vice-President; Bob Owens
Secretary; Christine Sheldon
Assistant Secretary; Tony Ireland
Treasurer; Ken Marcus
Editor; Ken Sheldon
Editor Council Newsletter; Bill O'Shaughnessy
Editor Handbook; Pam Chick
Meetings Organiser; Paul Money
Education Secretary; Eric Zucker
Society News Editor; Pam Chick
Assistant Society Editor; Martin Chick
Publicity Officer; Dave Powell

(The Council also includes members not elected at the AGM but elected/selected by the regional groups they represent.)

FUTURE EVENTS

FAS NORTHERN CONVENTION

Saturday July 14 at the Headquarters of the West Yorkshire AS in Pontefract. Speakers will include Dr Robert Dugdale; Northern England from Space; Dr Allan Chapman; Mr David Swaby; "Mission to Mercury" and more. This will be a big event at the home of a very active local society. Those attending will if they wish stay overnight on site to observe. Both WYAS (Pete McKenna) and FAS (Paul Money) are planning a very full day (and night). More information to follow. Book the date now for your day at the Rosse Observatory, Pontefract, West Yorkshire.

"THE SCOTTISH CONTRIBUTION TO AMATEUR ASTRONOMY"

Scottish astronomers gather annually for a residential weekend, either in Dundee or Edinburgh. This year's weekend will be organised in conjunction with the British Astronomical Association. Of course astronomers from the whole of the UK will be welcomed. The organiser is Dr Fiona Vincent of Mills Observatory, Balgay Park, Glamis Road, Dundee DD2 2UB.

The meeting will be held in the University of Dundee, where accommodation will be available, from 17-19 August, 1990.

Speakers will include Ron Livesey, Dr Michael Gadsden, Melvyn Taylor, George Spalding and George Haig. A public lecture will be given by Dr Patrick Moore. Visits to the Mills Observatory and to St Andrews University Observatory will be possible. Bookings should be made through Dr Vincent, address as above.

THE STARGAZERS TRUST

A registered charity, set up in 1988 and called the Stargazers Trust, will be of interest to members of the Federation. One of its aims is to seek to interest the public, particularly young people, in the Universe. Amateur astronomers should benefit too from the Trust's activities. Already, as viewers of BBC TV's Blue Peter may have seen, Canterbury High School has received a digital clock showing both universal and sidereal time for their observatory, from the Trust. Other equipment has been loaned.

The Trust, which depends heavily on financial support from interested parties, would like to offer more help in terms of equipment, given or loaned, and expertise. As part of its expanding activities, the Stargazers Trust is launching a competition which will be open to UK amateur astronomers, either as individuals or collectively. Details of this competition will be published on a separate sheet and sent out to societies with this issue of the Newsletter. Please ask your society secretary for details of this competition. The prize monies are going to be worth your consideration.

An address for the Trust will be found with the competition details, published separately.

SOCIETY NEWS ROUND UP

AYLESBURY AS In November, Ian Welland gave a talk on William Herschel. The December meeting took the form of a quiz followed by refreshments and a chance to chat to other members. The Society's 6-inch refractor is now back in working order. A replacement finder has been fitted. The Main telescope was focussed on a distant telegraph pole and the finder adjusted accordingly. It was not until the adjusting screws on the finder were tightened that it was realised that telescope and finder were looking at different telegraph poles. The Society is registered as an educational charity and gives many talks on astronomy to other groups. A local Boys Brigade were recent visitors to the observatory and Peter Edwards gave a talk to local Brownies studying for the stargazer badge.

CARDIFF AS The Society has had some interesting lectures to start the season. Neil Bone started the new year with a talk on aurorae and included many good aurorae photographs. Prof Mike Disney gave an update on his hopes for the launch of the space telescope in March or April.

COTSWOLDS AS Chris Sheldon found the sun elusive during December, managing only ten observations in the month. Some members were hoping to see the play written by Nigel Henbest and Michael Bennett at the Malvern Theatre Festival in February. John Fletcher was getting despondent with the bad weather, feeling that having vast amounts of equipment standing idle is a sheer waste of time and money. Thirty members attended the Society's Christmas/New Year dinner at Eventos in Cheltenham.

COVENTRY AND WARWICK AS The newsletter includes some very good drawings of lunar features. Also included is an introduction to observing Venus and aurorae; and a sky diary for the period January to March.

ELY AS The Society now has an observatory where the opening night was held in December. The January meeting was held there too. An official grand opening is being planned for the summer. Future meetings include a talk from Peter Duffett-Smith in March and Robert Argyle of the RGO in May. The April meeting will be a talk on Meteors.

FITZHARRYS (OXFORD) AS The poor weather has been brightened up by interesting speakers. Mike Haggood entertained with a talk on aurorae accompanied by some beautiful slides of 'lights in the sky' taken in northern climes. In November, Guy Hurst told of the interesting work of the Novae/Supernovae search project. In December, David Stickland of the Rutherford Appleton Laboratory spoke about the International Ultraviolet Explorer satellite and the arduous (?) life of astronomers working at the tracking/control station in Madrid. On November 11 a group went to the Oxford University AS symposium. This was an excellent event attended by surrounding societies. In October, treasurer Paul Leyland married Jean and the Society is now hoping for a new member!

AS OF HARINGEY The Christmas meeting was in the form of a quiz, accompanied with wine and light refreshments. The annual dinner was held late January at a Greek restaurant. Current meetings include a talk by David Whitehouse, a BBC science correspondent, and Dr Chris Welch speaking on 'Tethered Space Systems'.

HUDDERSFIELD AS The annual photographic competition had a very large audience but only one entrant. Simon Higgins therefore won the Henderson cup without needing to show any slides. The winning photograph was of Aquila taken using the step-focus technique to enhance the colour of the stars, pioneered by David Malin.

The major event of the summer was the redecoration of the club room. The 16-inch telescope is working again although the wormwheel is still not working too accurately. The public observing week was held in October. Les Wooliscroft gave a public lecture in November, speaking on Space Science up to 2000AD.

LEEDS AS The new year started with the AGM when President Robin Jakeways spoke on the Colours of the Stars. Other meetings include Prof M Woolfson on the origin and evolution of the solar system and Paul Money on rings and things.

LEICESTER AS The Society has had another successful year with a lot of interesting speakers and outings. For the first time, a photographic competition was held, attracting a fair number of entries. Their star photographers, Tony Pacey and Andrew Atterbury, were asked to act as judges, (to give others a chance to win). They hope this will become an annual event, with support increasing. First prize was one of Ann Smith's cakes. Recent events included a visit to London for the BAA Christmas lecture and the annual dinner with a second world war theme. The Society is looking forward to Comet Austin.

LIVERPOOL AS The annual astronomical weekend was held at Croxteth Park, West Derby in February. Telescopes and binoculars were on hand to show society members, and members of the public the Moon, Jupiter and its moons, and many other night sky wonders. Society members were available to answer questions and offer advice as required. There were refreshments. 'Earth and Sky' and 'Scope City' were on hand to offer advice and sell books and equipment.

February's talk was by Mr S Newberry who spoke about 'Amateur Radio Astronomy'.

NORWICH AS The annual bonfire and barbecue was held to coincide with an organised firework display; members would be able to get a good view. A 6-inch Newtonian telescope made by Billy Freeman has been presented to the Society. The Society has mirror silvering facilities for mirrors and flats up to 10-inches in size. Proposed trips to Jodrell Bank and Greenwich are proving popular. The Society has been holding talks with neighbouring societies with a view to forming an Anglia group. Plans for moving the observatory are progressing. Building work is expected to start near the Colney Lane site which would make it useless. A likely possible site is at Hemphall which will be the third site for the Norwich Observatory. Open evenings are planned for March, to include slide shows and telescope observing, weather permitting.

NOTTINGHAM AS Talks for the spring session include 'The ozone hole and atmospheric pollution' by Chris Milne of Friends of the Earth. In March, Prof Woolfson of York University presents his own controversial views on 'The Origin of the Solar System'. In May, Dr L Briarty of Nottingham University talks on 'Biology in microgravity'. He has been working with on-board experiments in space missions involving seed and plant development in microgravity. Open nights were held in February at the Sherwood Observatory.

ORWELL AS Club sweatshirts and sweaters are proving very popular. The new year started with the AGM and the new lecture season started with a talk by Neil Taylor about asteroids. Observing directors are available throughout the week to help people with their use of the observatory. Different directors take

different nights, each with a set theme to

observing.
SOLENT AMATEUR ASTRONOMERS In March, the Society hoped to open their new 16-inch College Observatory, which houses a 16-inch driven reflector. The re-building has taken about two years and has cost over £1000. It is hoped that Ichen College will make full use of this facility. The Southampton Astronomical Club has applied for affiliation and it is hoped that this will lead to better use of the Solent AA Toothill Observatory. Toothill is set on top of a high hill five miles from the city centre. Only one house is visible from the site and on a clear night a panoramic view of the sky is incredible. Now that the hard work of building these observatories is complete; Toothill re-opened in June 1987, the Society hopes to put its effort into using them and promoting astronomy in the community.

SOUTH WEST HERTS AS K Malin-Smith gave a clear and concise account of relativistic phenomena, making minimal mathematical demands on his audience. He accompanied the talk with a number of entertaining demonstrations using two different coloured LEDs to illustrate time-dilation caused by the presence of gravitational fields. Phil Ealey used slides and video recordings to illustrate his talk on the construction of a portable observatory. In January, Clive Jackson gave an account of his systematic comparison of different types of film for astrophotography. The Society is hoping to be exempt from paying rates for an observatory, so the treasurer has written to the Council pointing out that the Society is non-profit making and receives no Council services whatsoever. They are waiting for reply.

SOUTHERN AREA GROUP OF ASTRONOMICAL SOCIETIES The January meeting was held at Chichester with Crawley AS as chairing society. The meeting was followed by a skittles match.

STEVENAGE & DISTRICT AS The Society has started to offer club membership and the Ninth Harpenden Everest Cub Scouts are the first group to take up this offer. The C group receives the monthly news letter for the Cub with the Cub Leader attending meetings. Society member Eric Hutton has been attending the Cubs' weekly meetings and encouraging it back by setting them a three month project: the astronomy badge. The Society has found an observatory site and is considering ways of raising money to support the project. A 6-inch reflecting telescope has been donated by B Jackson which it is hoped will be a good telescope for the main telescope when an observatory is built. All society members receive a FAS Handbook as part of the membership subscription and a newsletter produced monthly. New members also receive a copy of the current Spaceprints calendar.

WEST OF LONDON AS A number of members are hoping to visit Hatfield Polytechnic when it has its open evening in near future. Members have been to an observatory before but it was cloudy. David Fuller spoke of his thirty years of telescope making at the December meeting. Clive Jackson of SW Herts spoke about different types of film for astronomical use. Stu Malin will talk about 'Time' at the March meeting. The annual social evening and dinner took place in January. In April, several members will travel to Tenby in South Wales to search of dark skies and a comfortable hotel the weekend.

WEST YORKSHIRE AS Last Autumn, 10 members braved the cold and enjoyed a weekend camping at Howe Stean George

some observing from a dark site. The took the Society's 6-inch telescope and were treated to a cloudless sky. Venus and many deep sky objects were observed. The site also offered good walking and close proximity to cafes and pubs. Next year it is hoped that more people will be joining the group. A new season of visits to the observatory has started and members who have passed their telescope driving test are available to show groups round. The Society find group visits are a good way of spreading interest in astronomy and a useful source of income.

WOLVERHAMPTON AS The lecture season will cover a wide variety of topics including Neptune, Antarctica, Astrophotography and Observing Techniques. The Society's annual weekend course "Astronomy Today" will be held in Alston Hall in March. Speakers will include David Hardy, Dr John Baruch and David Harris. This is a residential weekend and in the past has always been successful. The summer trip will be to the Science Museum and the Planetarium in May.

NEWS FOR INCLUSION IN THE ROUND UP SHOULD BE SENT TO :
MARTIN AND PAM CHICK,
2,MAGNOLIA WAY, CHANDLERS REACH,
LLANTWY FARDRE, NR PONTYPRIDD
CF38 2PQ
PLEASE NOTE THE CHANGE TO THE
POSTAL CODE.

NATIONAL ASTRONOMY WEEK **1990 November 17 to 24**

Local astronomical societies and regional academic institutions will take part in this week to be spent promoting astronomy with the public.

A list of contacts at the various participating educational establishments is shown in order that local societies may co-operate with those in their region. They are:-

University College, London; Dr Derek McNally
Lancashire Polytechnic; Prof Ian Robson
Mullard Radio Astronomy Observatory, Cambridge;
Dr Paul Alexander
University of Glasgow; Dr David Clarke
Liverpool Museum and Planetarium;
Martin Suggett
University of Keele; Dr Ron Maddison
University of St Andrews; Dr P W Hill
Armagh Observatory; Dr Mark de Groot
University of Southampton; Dr Malcolm Coe
Jewel and Esk Valley College; Dr David Gavine
University of Newcastle upon Tyne;
Dr D G McCartan
Institute of Astronomy, Cambridge;
Dr M F Ingham
Open University Physics Dept and Astronomical
Society; Dr A Cooper
University of Leicester X-Ray Astronomy Group;
Prof K Pounds
Hatfield Polytechnic; Iain Nicholson
Armagh Planetarium; Martin Ratcliffe
The London Planetarium; Teresa Grafton

NOW IN THE SKY:-

A favourable maximum of the Leonid meteor shower starts the week. The Moon will be a fine crescent, allowing deepsky observing of other things but a fine view of the moon itself at the end of NAW. Mars will be high in the sky between the Hyades and the Pleiades and just prior to a fairly favourable opposition. Jupiter rises during the evening, in Cancer. And during

the day, the Sun ought to show sunspots, with its maximum being this year. Dare we hope for aurorae?

CAMPAIGNING THEME FOR NAW: Lets all fight against local authority light pollution. Streets should be lit to make them safer at night, but that doesn't have to mean lighting up the sky as well. The NAW committee is liaising with the International Dark-Sky Association based in Arizona. Perhaps local societies could keep an eye on lights in their area. Do they do the job of keeping the light directed at the ground only or is power being used wastefully?

Contact address for NAW matters is Martin Ratcliffe, Secretary NAW, Armagh Planetarium, College Hill, Armagh BT61 9DB.

NORTON, THE ATLAS, THE MAN **Charles Padgham; Aylesbury AS**

The first edition of the well-known and much loved Norton's Star Atlas was published in 1910, and since then has appeared in 17 editions, during which time Halley's Comet has done more than one circuit. The last editions were for epoch 1950. Now the Atlas has been brought up-to-date, replotted by computer by John Bartholomew & Son of Edinburgh to epoch 2000, and issued under the title Norton's 2000.0. The magnitude limit is now 6.5 giving a total of about 8700 stars, in addition over 6000 deep sky objects are shown, with different symbols for nebulae, clusters and galaxies. Its cost is £14.95, and a good account of it is given in Astronomy Now for December 1989 pp 14 and 15.

Although that article gives a very short biographical note on Arthur Norton, little is known of the man himself. It might be of interest therefore for me to relate a few personal reminiscences of him. He was born in Cardiff in 1876, son of the Rev Philip Norton. He went to school in Worcester, and then took a BA degree at Trinity College, Dublin. He became a geography teacher, holding several posts, before going to the Judd School, Tonbridge, in 1914, from which post he retired in 1936.

I was a pupil at the school in the early 1930's, and was taught geography by him for a couple of years. Although we did not know it, he had been a good athlete in his younger days, and was also keen on tennis, walking and cycling. Latterly he took up bowling. His affectionate name was 'Lip', perhaps due to the fact that he was a man of few words, or perhaps it was just a contraction of his second name. We never knew. We liked his lessons because he was somewhat unconventional, and had a fund of stories, but he would tolerate no nonsense. Generations of nasty school boys were pledged never to laugh at his jokes, as a reaction to which he was forced to chortle to himself ending with an outward gasp of breath. Strange for an astronomer, he could not abide the cold. So when new buildings were built, he 'bagged' the room over the boilers, since this was to be the warmest spot. He lived to regret this however, having overlooked the fact that in those days the boilers ran on coke which was delivered very noisily down a chute just outside his window.

His interest in astronomy began as a small boy when he had the use of an ancient, but efficient, telescope which belonged to his great-grandfather. Although he retired soon after I went to the school, he lived nearby, and knowing of my interest in astronomy, he was

very kind to me. I often went to tea with him, and he gave me parts to help me to construct my first 2.5-inch refractor. Later he lent me wooden patterns to get castings made for an equatorial mount he had designed for a reflector. He had a reflector in the garden (I think an 8-inch) entirely constructed by himself. This was mounted in a shed with a run-off roof. He did not boast of his achievements, and it seems to have escaped common knowledge that he was the discoverer of one of the novae in Aquila; of which one I am uncertain; but I think it was probable that he was a co-discoverer of the very bright Aquila No 3 of 1918.

He was also interested in horology, and constructed a grandfather clock with a very accurate gravity escapement. There is also a clock made by him working on a similar principle in Ottery St Mary Church in Devon. Latterly his health and sight failed. It was a sad day for him when he could no longer use his beloved telescope, and he disposed of it to a friend. He was a bachelor, but was lovingly cared for by a devoted housekeeper. He died at the age of 79 in 1955. There is an obituary in the British Astronomical Association Journal for February 1956.

DIY COMPUTER SETTING CIRCLES **Richard Thorp, West Yorkshire AS**

A computer-based system to display telescope co-ordinates to a resolution of 1/16 degree in declination and 15 seconds in RA. Mechanical design by Tony Doubtfire Electronics design by Richard Thorp

INTRODUCTION: Here at the West Yorkshire AS we have a fine 18-inch Newtonian reflector on a German Equatorial mount, housed in an excellent observatory, all built by members of the Society. There is a motorised drive on the polar axis but the telescope is moved between objects by hand. Ever since the telescope was built, members complained that it was very difficult to find objects even using the conventional setting circles. We decided that it was time to up date the telescope and the first project was the addition of computer setting circles - the subject of this article.

SHAFT ENCODERS: Accurate measurement of angle by computer is best done with incremental shaft encoders, which is the method used by commercial manufacturers of 'Digitized Setting Circles' and 'CAT' systems. This type of shaft encoder is readily available, very robust, capable of fine resolution, and relatively cheap. Its operation is quite simple. Attached to a rotatable shaft is a slotted wheel which interrupts a beam of light falling on two photo-detectors. The output of each detector is a train of pulses with frequency proportional to the speed of rotation. One photo-detector is offset by 1/4 pulse from the other, which means that as the shaft turns, one train of pulses leads the other by 90 degrees, allowing the direction of rotation to be deduced. The two outputs are usually denoted Channels A and B.

Optical shaft encoders are sold by RS and Farnell with resolutions from 100 to 1000 pulses per revolution, and prices from £30 to £180. However, we have seen them as cheap as £5 from Proops (a model engineering supplier). The cheap devices are supplied in 'skeleton' form, ie the disc and the detector are separate. The user must provide the shaft assembly, and mount the detector in the correct position to give an accurate 90 degree offset between Channels A and B. With this type of

On Sat June 16
MANCHESTER AS have
a Convention at
the Museum of
Science and
Industry. Tickets
- £3 will include
visit to this
large museum.
Details from Tony
Cross, 2 Hogarth
Walk, Cheetham,
Manchester M8 7RT.