

**PRESIDENT**

Pam Spence, 1 Waters Edge, Brighton Road, LANCING, West Sussex, BN15 8LL  
Tel No. 0903 752834

**TREASURER**

Alan Drummond, 27 York Rd, CRAWLEY, West Sussex, RH10 5JS

**SECRETARY**

Christine Sheldon, Whitehaven, Maytree Rd, Lower Moor, PERSHORE, Wores. WR10 2NY  
Tel. No. 0386 860202

**EDITOR**

Ken Sheldon, Whitehaven, Maytree Rd, Lower Moor, PERSHORE, Wores. WR10 2NY

Tel. No. 0386 860202

**Issue 38**

# FEDERATION OF ASTRONOMICAL SOCIETIES

## THE FAS CAMBRIDGE CONVENTION

Saturday 24th September 1994  
at the Pippard Lecture Theatre Cavendish Laboratory  
Madingley Road, Cambridge.

### CAN YOU AFFORD TO MISS A DAY OUT LIKE THIS

9.00	Doors open		
10.00	WELCOME by PAM SPENCE		
10.15	Dr PAUL MURDIN	PPARC	<i>Supernovae</i>
11.15	Dr JOHN ZARNECKI	University of Kent	<i>Cassini Mission to Saturn</i>
Lunch in the interval. Meals at the Cavendish need to be pre-booked from Alan Drummond			
2.30	Dr CHRISTINE SUTTON	University of Oxford	<i>Spaceship Neutrino</i>
3.30	Dr CHRIS KITCHIN	University of Hertfordshire	<i>The End of the Universe</i>
5.00	Professor CAROLE JORDAN	University of Oxford	<i>The Sun</i>
6.00	Concluding remarks and Bon Voyage from PAM SPENCE		

Tours to RGO, IOA and MRAO must be booked in advance since we **need** to know numbers.  
Trade Stands and Association Stands.

Admission £4.00 booked before the day. £5.00 on the day. Under 16 half price.

Meals £4.00

Book with Alan Drummond, 27 York Road, Crawley, West Sussex, RH10 5JS

### EDITORIAL

Did YOU see it! I am of course referring to the SL9 - Jupiter impact(s). It really was much more impressive than I believed that it would be and thank goodness for that. A real pity that the media got it involved with astrology, the BBC being the worst offender! Incidentally I can't think that Patrick would have been too pleased by the intro to the July Sky at Night which was introduced as an astrology programme!!!! Black mark for Presentation.

As I write this we are smack in the middle of the Perseid shower and I have seen one. However the radio results are not affected by the clouds and they seem to be quite impressive. In fact Chris and I logged about 600 in a 4 hour period either side of the max. Total cloud!!!!

In the box below I am printing some information about the *talking science* + scheme organised by the British Association. It really looks like a worthwhile idea. Please use it.

Clear Skies and see you at Cambridge.  
Ken

### *talking science+*

If you would like help or ideas for organising a science or technology event - a conference, hands-on day, activity morning or just someone to come along and give an informal chat, ring Jane Mole at *talking science* +. The *talking science* + database now contains the details of over 1,000 experts who are prepared to give talks and take part in science-based activities.

For more information about this free service, call Jane Mole on 071 287 0980 or write to *talking science* +, British Association for the Advancement of Science, 23, Savile Row, London W1X 1AB

# SPECTROSCOPE FOR UNDER A TENNER

If you would like to see Fraunhofer lines in the solar spectrum or the emission lines from street lighting then here's the instrument for you. The cost? Less than the price of a couple of fish suppers.

In true "Blue Peter" tradition all you need is a couple of razor blades, cardboard, glue, "Lazer Specs", a small convex lens of a few centimetres focal length and black electrical tape (sticky back plastic is optional).

Essentially the instrument consists of three components;

- a slit formed by the two razor blades,
- a lens to collimate the rays of light from the slit.

\* a plastic transmission grating from the "Lazer Specs" (see fig 1).

The slit is made from a couple of single edged razor blades which have a strip of aluminium folded over the blunt edge. Prise the strips away from the blades but do not discard them. The two razor blades are remounted between the two strips so that they are turned through 90 degrees to their original orientations, their razor edges together. Adjust the blades to give a narrow slit and then compress the strips with pliers until they again grip the blades. If you prefer you could simply glue the razor blades to a plastic slide mount. Now apply pieces of black electrical tape to the sides of the blades (avoiding the slit itself) to prevent unwanted reflections and blank out the central holes in the blades.

With the cardboard and some paper glue make a tube into which the lens can fit. The total length of the tube should be such that the distance between the slit and the lens is equal to the focal length of the lens. If you are unsure of the focal length of your lens focus the image of a distant object onto a screen and measure the lens to screen distance - this will be the focal length of the lens. Next fit the

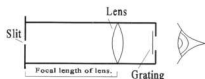


Figure 1

lens at one end of the tube and the slit at the other end (Blu-Tak, Sellotape or glue will do the job).

To complete the spectroscope you will need the cross grating out of a pair of "Lazer Specs". These are available from the Camera Obscura in Edinburgh at just £2.50. Remove the flexible plastic gratings from the specs and mount one just behind the collimator lens. The orientation of the grating is important and should be such that one set of spectra appear

to extend from the ends of the slit. This will assure that the spectra we are interested in will be perpendicular to the slit and yield the greatest degree possible of dispersion.

The "Lazer Specs" spectroscope works very well considering its crude construction and inexpensive components. When viewing spectra you will see at least two, one on each side of the slit. These are the first diffraction orders but if the source is very bright (i.e. the Sun on a clear day) you will see the second and maybe third order spectra. The dispersion will be greater in these higher order spectra but they tend to merge into one another, which may be confusing if you are trying to identify spectral lines.

To view each order clearly move your eye to the right or left until the spectrum is as bright as possible. If it is the sun that you are looking at you should see a good number of dark lines in the spectrum, which are parallel to the slit. Dark streaks running perpendicular to the slit are caused by dust contamination, just brush or blow the slit clean and they should disappear.



Figure 2

Once completed, the spectroscope should reveal the dark absorption lines in the solar spectrum (see Figure 2). If you can't see these, try adjusting the slit to be as narrow as possible, and view the Sun on a clear day. However if the weather is consistently cloudy, try viewing the emission-line spectrum from street-lights, fluorescent tube lighting or the neon indicator lights on domestic appliances (Figure 3) [Note that the spectra in figures 2 and 3 have been stretched laterally for the sake of clarity.]

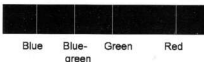


Figure 3

It may take moment or two for your eyes to focus on the spectra. If you still fail to see any lines, double-check that the lens-to-slit distance is indeed equal to the focal length of the lens, and adjust if necessary. You may choose to make this distance variable from the outset, by adjusting the design.

If you do not live near to Edinburgh, or cannot locate a pair of Lazer Specs locally, it is still possible to build an inexpensive spectroscope. Ask your local camera specialists for a diffraction effects filter. For example, Jessops sell a x2 diffraction filter for £7.99; although more expensive than a pair of Lazer Specs it will give better spectra and

improved resolution. For one thing the Jessops grating is ruled in one direction only, so fewer diffraction orders are produced, and they should be brighter. Secondly the greater number of lines per millimetre will result in fewer orders and greater dispersion; hence lines that remain unresolved with the cheaper cross-grating may perhaps just be resolved with the Jessops grating. (Try viewing the Sodium D-line in street-lights, which is actually a doublet separated by just 0.6nm.)

A third advantage is that, if you become bored with your spectroscope, you could also use your Jessops filter as an objective grating. A combination of the diffraction grating, a fixed 35mm camera with a 135mm telephoto lens and T-MAX P3200 film, will show the hydrogen lines in the spectra of various bright stars such as Vega. If you use a driven mount and fine grain film you ought to get even better results.

Finally if you are unable to obtain Lazer Specs or photographic effects filters, there is at least one other route to take. If your music collection contains a CD that you seldom listen to, or if you are able to pick up an inexpensive disc, then you have the basis of at least half a dozen spectroscopes.

The disk tracks on a CD form concentric circles, and towards the edge of the disc they can almost be thought of as forming parallel lines. Since these tracks are very close together, a small sector cut out of a CD would form a crude reflection grating. However, because the data tracks of a CD are not "printed" on top of the plastic surface, but below it, a CD grating will not only form spectra but will also reflect an image of the slit.

Using a hack-saw, cut out a small square from the outside part of your least favourite CD (say one inch square). Then mount this at approximately 45 degrees to the optical axis of the spectroscope, and make some form of hood to prevent stray light masking details in the spectra. Despite the short-comings of the CD spectroscope, it will still show the major lines in the solar spectrum and the emission lines in street-lights.

When constructing a spectroscope, do be careful when making the slit. The fact that razor blades are extremely sharp is obvious, but they are also brittle. So beware of "flying" splinters - wear safety specs, ordinary spectacles or even lightly-tinted sunglasses. Tosh Lubeck

Editor's note. All the warnings about pointing things at the Sun still apply but if you have done it right it will be OK. Another source of lines is a colour TV picture. Only 3 lines Red, Green and Blue but they do give a reasonable brightness and an indication of dispersion of the spectrum. Have a go!

# SOCIETY NEWS ROUNDUP

If your Society has not had a mention I am sorry but space is always at a premium.

**AYLESBURY AS** Contact Nigel Sheridan on 0296 623255 or write to him at 22 Moor Park, Halton, Aylesbury, Bucks HP22 6AX AAS are following their usual happy course with a mix of lectures and observing sessions and result discussions. One real highlight of the Spring was Dr Allan Chapman talking about George Biddel Airy. The newsletter carried the sad news of a break-in at David Hinds Ltd. It was suggested that if you are offered a Celestron on a tripod you should contact David. I have put a note of his phone numbers on the back page.

**BEDFORD AS** BAS have had the usual quiet summer after their trip to Cambridge in June and after several members observing the SL9-Jupiter impact sites. But things are starting to happen again with an autumn programme decided, speakers are Paul Money and Jocelyn Bell Burnell in October and November. December will be a quiz. The idea of a society observatory has come up again after a visit to Leitchworth. They are looking for a members prepared to take on the task of directing the setting up. Interesting items of poetry in the July newsletter. Probably the biggest change in the BAS programme is the change of venue. The move has been made to the Pavilion at Bromham with the School only being used for special events. Contact Peter Cox on 0234 354552 for Society info.

**BRIDGEND AS** The full colour cover on the BAS Newsletter made me really jealous - it included a colour photo of an "observing session" - in full daylight of course. The society take a summer break normally but Clive couldn't resist printing this special issue. Contact Clive Down on 0656 740754 for details of meetings which take place on alternate Fridays.

**BRISTOL AS** Geoff Cane on 0272 798375 is the man to contact. The Autumn programme will be starting soon and of course there is the bi-annual Convention to be held in Bristol on the 8th of October. We will be there and it looks a good day. **CAMBRIDGE AA AND CAMBRIDGE YA.** The CAA and CYA have had their usual busy programme of events for young and old during the long hot days of the summer but they are embarking on their busy and very active Autumn session shortly. One of the events in which Cambridge play a big part is the FAS Cambridge meeting at the end of September but they do lots of other things. Come along to the Convention and find out what they do get up to. If you can't make it (and you should) then contact Dr Frank Murphy at 98 High St, Harlow, Cambridge CB3 7ES or on 0223 262421 for membership and programme info.

**CARDIFF AS** The new season is just beginning - it begins with Allan Chapman and that sets the pace for the year. It finishes just about with me and that is the low point of next Summer. The AGM saw a reshuffled committee with one or two new faces. The Society met fortnightly in the Physics Dept of Cardiff University and the person to talk to about the programme is Dave Powell on 0222 551704

**COTSWOLD AS** The July meeting was the inimitable Allan Chapman on Halley. The programme is not finalised but what has been planned looks fascinating. A late summer trip to Jodrell Bank is planned. Contact Irene Hatton on 0242 673923 or John Daniel on 0453 757026 for more details of the programme.

**LA SOCIÉTÉ GUERNESAISE ASTRONOMY SECTION** The Society newsletter *Sagittarius* for July/August has the story of the Hubble repair very well explained by Daniel Cave but as usual it would be invidious to select one article since the whole production is a very high class one. I particularly like the observing notes - 8 pages in this issue - and Dave Le Conte's visits to Societies around the UK. If you are on holiday in Guernsey and fancy an evening with fellow astronomers then contact Geoff Falla the Hon. Secretary on Guernsey 724101.

**HAG** The person to contact for details is Roy Dodd on Waterlooville 254032.

**AS OF HARINGEY ASH** meetings are held in the upper rooms of the Palm Court at Alexandra Palace. They occur on the 3rd Wednesday of the month from 7.30 with lectures starting at 8.00pm. Contact Jerry Workman on 071 607 7751 or Jim Webb on 081 441 7421 for more. Like most UK societies the Summer period was spent on Apollo and SL9 events. It was a good period for the Society and included a good Impact Party. The new season's programme includes talks by Bob Hutchinson (Meteorites) and Allan Chapman (John Herschel). The AGM is in November. Incidentally they must have really good printing facilities since the pictures in the ASH Newsletter 2002 are most remarkable.

**HUDDERSFIELD AS** Like most Societies the HAS are finding the provision of cash to be hard to come by but they do seem to be surviving and have actually had a gift of money for a complete rewiring of the Observatory electrics. The AGM report suggested a slight reduction in membership. A little surprising since the Society meet every week.

**IRISH AS** The Society Summer newsletter contained some very interesting material including drawings for a Barlow diagonal (A very neat idea) and a long article on the Huygens probe. Contact James Lynch on 820 2135 (dialling code is 010 353 1 I think) for information on meetings and publications.

**ISLE OF MAN AS** The Society is growing at a good rate, recruiting includes members from Leeds AS. A Star Party held in early spring was excellent, about 70 members of the public attended on a clear moonless night On view was Comet McNaught-Russell and many clusters doubles etc. Recent talks have included one by Melvyn Taylor on Meteors, one by Mark Taylor on the 1991 Total Eclipse and a most excellent Apollo Anniversary talk by Howard Parkins. To come Dr Soper will be talking on his Spectroheliograph and Dr Alan Hircott from Ronaldsway Met Office. IOMAS logged 242 meteors on the night of the Perseid max. (Ed - Lucky!!) Contact John Martin on for more information

**KETTERING & District AA** KADAS seem to be recovering from the AGM and are now deep into the organising with Mike Inglis the FAS Convention next May. They seem to be doing things and have a good programme for the coming season. The contact is Stephen Williams at 120 Brickhill Road, Wellingborough, Northants NN8 3JP

**LEITCHWORTH & District AS** I am filled with envy whenever I pick up one of the LAS

newsletters, 18 pages this time, 36 sides of A4. It makes my skinny 4 sides seem very mean. Mind our postage bill is around £100 for the 3000 units (in Society size lumps, 15, 30 or whatever!) I read to think what the postage would be for an FAS Newsletter mailing of the same volume! Anyway please keep it up. I really enjoy the read. I did like the article on To CCD or Not to CCD. I know how he felt. A good writeup of Paul Money's Jupiter story.

**LEICESTER AS** Enquiries to Ann Bonell on 0533 394481

**LIVERPOOL AS** The LAS Silver Apollo production went extremely well with over 90 members of the public present. A comprehensive exhibition plus videos were followed by a talk from Murad Ghorbal on the Moon and observing it. The anniversary cake was demolished quickly. The August newsletter included a supplement of SL9-Jupiter images. It was fascinating. The new observatory seems to be proceeding well with lots of work being done. The usual full Autumn programme will shortly be under way beginning with the Presidential address on 16th Sept. Contact Ken Clark at 31 Sandymount Drive, Wallasey, L45 0LJ with an SAE for more details.

**LOWESTOFT & YARMOUTH REGIONAL ASTRONOMERS** The LYRA are looking forward to their Autumn and Winter programme which has Paul Money as their October speaker. They are also anticipating their new activities at Lound where they hope to run Astronomy courses for Junior groups such as Cubs and Brownies. Contact Bob Cheek on 0502 572697 for details of programme and meet some of the friendliest people in Amateur Astronomy.

**MEXBOROUGH & SWINTON AS** The Society observatory is in constant use (remember the report of the opening last winter) and they are hoping to computerise it soon. Visitors are always welcome The Society were hoping to have an Astrosquat in Wales for the Perseids with the results to go to the various Meteor organisations. They are also looking forward to winning the Astromind contest being staged by Sheffield AS. Report by Gareth Coulson.

I have also received an illicit copy of the new M&SAS mag called the *Militant Astronomer* which caused a great deal of amusement in the Sheldon household. Not a tremendous amount of real astronomy but a great deal of human interest. I just hope that my correspondent does get into trouble!! (I haven't publish any of it, I'm sure that I would be sued!!)

**ORWELL AS** OASI Without being wild look as though they are still doing things of interest. Again I was fascinated to read Ian Swann's account of his trip to the COAA and his imaging exploits. Some nice images were published in the July newsletter. The Society are going to be involved in the Bury Star Party on 10th December. If you want to know more or if you wish to visit the Orwell Park Observatory and it is worth a visit contact Peter Richards on 0473 659806 (Eve and W/E) or on 0473 644828 (Office Hours)

**PLYMOUTH AS** Contact Sheila Evans 0752 222772 (office hours) or 0752 706908 evenings and w/ends for details. The 30th season starts in September. The Chairman Alan Penman is the CFDS rep in the SW and has achieved some good results. Devon CC have received a "Good Lighting" Award! Meetings planned include "Astronavigation" 14/10 Tony Jenks, "Mars-the

red Planet" 11/11 John Brimble and the Christmas meeting 9/12 with Vernon Davidson. The Society has been working with other local societies and comparing results.

*Sheila Evans*

**SALFORD AS** Throughout the week of SL9's destruction, the observatory was open to the public each evening and attracted a large number of visitors. Skies were mostly clear though sometimes hazy and as soon as Jupiter could be located with the 45cm telescope, the event was continuously video recorded. Everyone observed on monitors, hoping to detect a flash at impact, without success. However excitement abounded when on Monday evening 18th, with better skies, the combined impact sites of D and G fragments were clearly visible. Wednesday evening 20th, saw the impact site of the G Complex again, plus L, with K on the far limb and Friday 22nd the impact sites of W+K+U with the G Complex coming round the limb. Members and visitors also observed visually with the 45cm in the dome and members telescopes. The Jupiter Watch will continue.

#### A CHANGE OF POSITION AT THE TOP

At the AGM Robin Haslam, chairman since 1979, retired, as did Edna Matthews, Treasurer and Walter Matthews, Vice Chairman. The new officers are:- Chris Jordan, Chairman, Mrs Sarah Jordan, Treasurer and Paul Randell, V-C. Contact Kath Redford on 061 794 3179 for Society news.

*Kath Redford*

**SHREWSBURY AND DISTRICT AS** The Society is now well into its stride with a full programme of lectures and visits. In August alone they had a trip to the AC and another to the Liverpool Museum and Planetarium (in conjunction with Shropshire AS). Speakers for the Autumn include, Nick Beard (Astronomical Networking), Chris Baddiley (The Universe on a Micro), Charles Jackson (Earth Weather from Space), David Woodward (A Tour of Popular Objects) and Ken Sheldon after the AGM. Contact the Chairman David Woodward on 0743 872991 for more details.

**SHEFFIELD AS** SAS are hosting the Yorkshire Astronomical run by Radio Leeds on Saturday October 15th. A great anticipation hangs over all the Yorkshire Group after all they think that they will be walking away with the Trophy this year. Should be great fun. Contact Mrs Bloodworth on 0742 652608 for more details.

**SOUTH EAST KENT AS** SEKAS have been busy with the SL9 impact with Jupiter. After a couple of members went the AC Star Party they have also persuaded Paul Money to come and talk in September.

**STRATFORD upon AVON AS** Meet twice a month at the Home Guard Club, Tiddington. The Society has a very full and exciting lecture programme for 1994/95. Speakers in the Autumn session are Eric Strach "H-alpha Solar Observing", Peter Willmore "Astronomy in Space - a personal view" Paul Money "Messier Marathon" and Andy Salmon on "Space Travel". Alternate meetings are Star Party/Social evenings Contact Phil Coldicott on 0789 267366 or John Harrison on 0789 268775 for more information

**SUNDERLAND AS** Contact the Museum on 091 514 1235 for details. *Don Simpson*

**WEST OF LONDON AS** Meetings continue at the Scout Activity Centre Wealdstone or at The Nave Uxbridge. Contact either Arthur Davis on 081 866 3858 or Maggie Daly on 0895 637400 for information on meetings and speakers.

**WEST YORKS AS** Recovering now from their Anniversary (a great success) WYAS are back into the observing mode with of course you guessed it SL9 featuring high on the scale. Great public observing sessions which also incorporated a look at the Moon.

Plans were made to observe from Howe Stean Gorge over the weekend of the Perseid maximum - hope that they were lucky. The Quiz against Bradford AS went to a cliffhanging last round when WYAS turned a 4 point deficit into a 2 point win. Great but tough. I really enjoyed the holiday saga in *Phobos* - a continuation of last years epic! Dr Richard Keening (SpaceTime Curvature), Alistair McBeath (Comets & Meteor Streams) and Nigel Metcalfe (CCD imaging to 27th magnitude) all feature in the Autumn programme. Contact Pete Lunn on 0924 360064 for programme of meetings. **WORCESTER AS** The summer brought a trip to the Old RGO with 18 members and offspring making the journey. Great fun for all concerned except the driver(s). Speakers have been Peter Hingley from the RAS talking about its history and Ann Bonell with her fascinating Ladies of the Night. Interesting that there are so many notable lady astronomers. Contact Ian Gray on 0386 47352 for more information.

**WORTHING AS** Ring Nick Quinn on 0903 814090 for full details of the programme.

**WYCOMBE AS** Contact Phil Hodgins on 0494 715647. WAS meet every third Thursday of each month and also observe every Friday from August to May at Woodrow House near Amersham. The opening of our observatory, housing a 12" Newtonian will take place this August. Speakers already this year: Phil Hodgins (HST Repair), Richard Fleet (Telescope Making) and Dr Victor Clube (Cataclysmic Comets). Future lecturers include Dr Allan Chapman, Dr Barrie Jones, Dr Robert Lambourne, Dr Gillian Pearce and Professor Jocelyn Bell Burnell. *Paul Scott*

#### Devon AA Interim report

The DAA will hold its AGM on Saturday 8th October from 2 p.m., in the Municipal Hall in Taunton, when our hosts for the afternoon will be the South Somerset AS. The AGM will be preceded by a Public Lecture, details for which I do not have at hand. Our President, Dr George Wilkins, is arranging a speaker, but is currently away on holiday, hence the lack of detail. However we have had some excellent speakers over the past few years, so it will be a good meeting. This is usually followed by member Society news, refreshments, and the AGM itself, which is only open to member Societies.

*Sheila Evans*

#### SOFTWARE REVIEW

STARWATCH 3.0 reviewed by Ken Sheldon. Once again I have been privileged to get my hands on a copy of the latest version of STARWATCH. As those of you who have used it will know STARWATCH is not upgraded just for the sake of giving it a facelift but to introduce useful features. This time it has several new ones. The most important to me is the inclusion of stars to magnitude 10. This means that I can run it on my old 286 PC in the Observatory without thinking that it would be better if we had a CD Rom drive

out there. Planetary zoom facilities and on-line data are also new features which make it great fun to "play" with on cloudy nights. Add to those the ability to append observing notes and to write demos and animations using a relatively simple and intuitive language and you see why I consider that it is still great value for money and I now only need a Windows version so that the Postscript printing of star maps can be used. I hope that you are listening. Ian. If you are interested Ian can be contacted on 0386 47352 or see him at Cambridge.

#### ATTENTION!!!

If you are offered a new Celestron on a trip please contact David Hinds on 0442 827768 or 0442 824369.

#### Meetings

**Bristol AS** Convention October 8th Contact Geoff Canes on

**Sheffield AS** Yorkshire Astronomical Saturday October 15th. Contact Mrs Bloodworth on 0743 652608 for more details.

**Liverpool AS** Astronomical Weekend at Trawsfynydd in North Wales 2nd/4th December 1994. Contact Paul Casey on Liverpool 474 673, during the summer.

**FAS** May 6 1995 AGM & Convention at Tresham College Campus, Kettering. Run by Kettering and District AS. More details later.

**FAS** September 30 1995 Autumn Convention Cambridge

**FAS** May 1996 AGM & Convention at Liverpool AS. Details later.

\*\*\*\*\*  
If you wish to get any news or information onto a bulletin board and you do not have the facilities contact the Liaison Officer Graham Bowden-Peters and he will do it for you. Graham's address is 49, Coldharbour London, E14 9NS.

His phone number is 071 515 6311

\*\*\*\*\*

## HELP!!!!

if you feel that you or some one in your Society could write an article for the Handbook please get in touch with me to check that 5 other people are not doing the topic!! But please do think about it since articles are always welcome

Publication dates.

**Winter late November Deadline 28th October**

**Spring late Feb Deadline 28th January**

Please try to get material to me in good time

*Views expressed are not necessarily those of the Council of the FAS.*

©Copyright property of FAS. Copying with written permission from the Treasurer only.  
Published by CAKE, Whitehaven, Maytree Road, Lower Moor, PERSHORE. Typeset by Townend Typesetters, Nightwick, Worcester. Printed by John Knight & Sons, Printers, 35 Littleworth Street Evesham