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ISSUE 59

FEDERATION OF ASTRONOMICAL SOCIETIES

<http://www.fedastro.demon.co.uk>

High Activity for the end of the Millennium

It seems that with the approach of the end of the millennium (whether this year is the end is contentious, I know) everyone and everything wants to get in on the act.

As this edition was going to press NASA were rapidly losing any hope of contacting the Mars Polar Lander. On the 3rd December, after a direct atmospheric entry, the lander was supposed to touchdown using a combined parachute and rocket thruster descent resulting in a 'soft' landing. We may not know for several decades what actually happened. It may well have made a very big 'impact' for the end of the millennium, but for the wrong reasons!

Last month, 7th Nov to be exact, the first direct detection of an extra-solar planet has been obtained. From the predictions made by Geoffrey Marcy (Univ. of California) and Paul Butler (Carnegie Institution of Washington), inferred from the 'wobble' of the star, a measurement of the brightness of the star was taken over the period where the 'planet' was predicted to transit. Right on schedule it dimmed by 1.7% as predicted! This proves the 'wobble' theory correct and now opens up further research which may lead to further discoveries. The star, HD 209458, is 153 light years away in the constellation of Pegasus, and is about the same age, colour and size as our own Sun. It is very near the star, 51 Pegasi, around which the first extra solar planet was discovered in 1995.

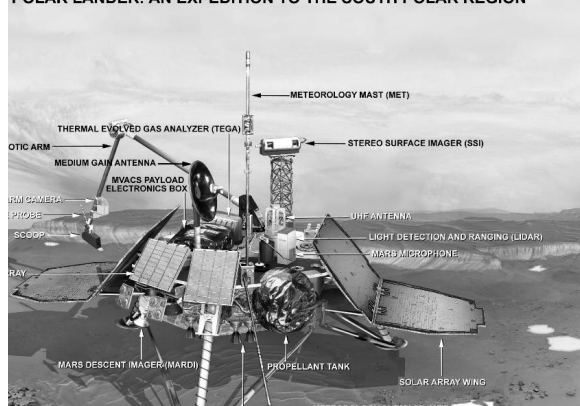
In the amateur world our very own UK Amateurs have been racing each other to see who can enter the new era with the most supernovae discoveries to their name. Mark Armstrong, having discovered 2 within 10 days last month, is keeping ahead of Ron Arbour who is reported to be on 4, and not forgetting the other observers who in recent years have added their count to the collective UK count. Each of these discoveries has a direct impact on the world knowledge base of not just exploding stars but the distance to the outer most reaches of the Universe. Work is being carried out linking faint supernovae in distant galaxies to other violent outbursts such as Gamma Ray Bursts. Each supernovae discovered helps in that research and the amateur community has an important role to play even if detecting a Gamma Ray Burst is currently beyond our reach.

More and more amateurs have at their disposal CCD & video cameras, spectroscopes and robotic telescopes. And if you don't, just remember that the supernova of 1987 was first detected with binoculars! What the future holds is any ones guess, but the facilities for us and the professionals have never been better. So lets hope the rate of discovery and education of the public continues into the next millennium. All of which we can all participate in. I can see from the quantity and quality of the society reports I receive that the amateur community is vibrant and in good health. Of course none of this equipment (and spare time we're all supposed to have more of now!) is of any good without enthusiastic members and one of the best ways to spark that enthusiasm is through society talks by speakers from within and without the society. However, speakers are a very rare and fragile resource so treat them well.

Enough of my rambling. Have a good Christmas and Happy New Year.

Rob Barter - FAS Editor

POLAR LANDER: AN EXPEDITION TO THE SOUTH POLAR REGION



Northants Astronomical Society

Like many other societies, the NAA made the pilgrimage to Cornwall for the Eclipse, but were beaten by the weather. Some members who stayed in Northants actually obtained better views than those who travelled. Many members who were attending a Solar Eclipse for the first time have caught the bug and plan to view the African and Australia eclipses in the years ahead.

Activities of Northants Amateur Astronomers centre around the fortnightly meetings, held in the Kettering area. Over the course of the last twelve months we have been fortunate in being able to meet at a local farm, which has made it considerably easier for observations to be made than at our other location in the town centre.

The society is currently refurbishing a number of telescopes which have been donated to the society recently. These include a 12 inch and 6 inch reflector and a 60mm refractor. Once the works have been completed these will be joining our other two society scopes for use at society and public observing evenings.

At the end of October, the NAA was contacted by Sky One TV who sent a film crew along to one of our observing evenings. The completed result is due to be broadcast on the 'Skyrocket' program as a feature promoting interest in UK amateur astronomy.

Further details on the NAA can be obtained from our web site at www.geocities.com/Cape_Canaveral/Galaxy/6057 or by e-mail from steve@northantsastronomers.freeserve.co.uk. Alternatively write to Steve Williams at 6 Lucas Close, Irthlingborough, Northants NN9 5AJ Telephone 01933 272628.

Steve Williams, NAA Secretary

Breckland Astronomical Society Receive University of Hertford Dome

The society took the decision on 29th October 1999 to go ahead with the construction of an observatory at the Great Ellingham Recreation Centre in Norfolk. This decision was made possible by the generous donation of the observatory dome



by the University of Hertford, which was advertised in the Summer issue of the FAS Newsletter.

Construction is expected to start in a week or two from today and, given fair winds and weather, it is hoped to have the observatory up and running by the end of this year or early next January.

Furthermore, the society was advised last week that an award of £1950 has been granted by the National Lottery, under the "Small Awards for the Millennium Programme", which will enable us to purchase a half metre primary, plus secondary mirror, to be made by Jim Hysom, of Cambridge, for us.

News from Council

The FAS Council meets several times a year to discuss FAS business. It has been decided to use the FAS Newsletter to keep all members informed as to business carried on at Council. So here is the first 'News from Council'.

Due to difficulties, please note that David Thomas is no longer a member of the FAS Council.

If anyone would be prepared to stand as Meetings Organiser or Assistant Treasurer, please let me know. Please note that if these positions are not filled at the next AGM in September next year, it will be very difficult for the FAS to continue.

The societies in Ireland (both north and south) have decided to set up an Irish FAS (IFAS). We have offered full support and co-operation, and hope that we can work closely together with them for the benefit of all astronomical societies. The existence of the IFAS does not prevent any Irish society remaining as a member of the FAS.

The data for the StarWatch UK project has finally started to be sorted out by Open University work experience students. Data will hopefully be made available very soon. Perhaps there is a statistician out there who would like to play with the data and write a report? At present, we do not advise sending in further data.

The FAS will take a stand at AstroFest again next year (4/5th Feb 2000) and there will be space for six societies to have a display. Please let me know if you are interested as soon as possible: first come first served.

Pam Spence, FAS President

Gamma Ray Bursts: a Window on the Dawn of Time

NASA astronomers say they have uncovered a specific property of gamma ray bursts that will enable them to gauge the distances to thousands of these powerful explosions, many perhaps beyond the reach of all existing telescopes. This finding, experts say, may allow scientists to determine the geometry of the Universe throughout its various epochs, as well as when and where massive stars formed in the very early Universe. Because light from very remote objects takes billions of years to reach Earth, the bursts are seen as they appeared much earlier in time, soon after the Big Bang.

The team found that, in a single burst, gamma rays of different energies reached the Earth-orbiting detectors at slightly different time, with the higher-energy gamma rays arriving before the lower-energy gamma rays. The amount of lag time between the two corresponded to the burst's estimated peak luminosity and distance. The lag was shorter for the more luminous bursts.

Comparing the intrinsic burst luminosity (the actual brightness regardless of distance, as measured by redshifts and now, perhaps, by photon lag times) with the measured luminosity (how bright the burst appears to Earth-orbiting gamma-ray detectors) yields a distance to the source.

NASA

To Video a Star

No, this is nothing to do with what might be on TV tonight! We are concerned as to the best results we can get on the real Stars and Planets on Video. The Cambridge AA gave us in Breckland a very good start in the project, a lot has been learnt but we all feel more is still to be learnt and done. More equipment needs to be investigated and modified to assure better results (and at modest costs). The initial need is to be able to see the stars, and maybe the odd galaxy, on the screen in real-time so that viewing for the many at the meetings can be assured.

Obviously one's telescope and guidance system are a matter of the best you can afford and all the parameters are already well known. Now the video camera is where the fun starts, the Cambridge people had started with Philips products. In Breckland we have tried the ASTROVID 2000, as this had more control built in specifically for the job. With some hardware rebuilding this is quite usable in itself, but the whole task of showing the stars in context, i.e. within the constellations etc., needs to be viewed differently other than maximum gain through the largest telescope!

We have some answers to these questions and I am very much interested in helping other societies (or even the individual) to Video the Stars, while at the same time I expect there are others out there who have already done this and are ahead of us. Can we hear from you? Perhaps also there are some Video Engineers out there who can give some technical help on this, especially with the latest technology that is within the Security camera field, as these seem to be our starting point.

Before you all start on about modern CCD equipment and your notepad computers, this is not quite what we are after. The setting up of such systems takes far too long for real-time viewing. and are not versatile enough. We are looking for the immediacy of the Video Image with its ease of usage (all technical bits being built into the equipment initially). Please get in touch.

Alan Osborn, Breckland AS

Ed: Just noticed Abingdon A.S. have a lecture on Video Astronomy by Andrew Elliot on 13th Dec! See Society Roundup.

South East Kent Astronomical Society

Interest in astronomy in this part of the world is maintained at quite a high level. We have been doing observing sessions for the public at various sites around East Kent including Canterbury festival, Shepway festival and Monkton Nature reserve all of which have been well supported. The Eclipse event at Monkton had over 300 attendees.

We have 150 members, monthly meetings, twice monthly observing sessions and a magazine. Shortly we will be running a telescope making group. The full programme is on our website.

<http://ds.dial.pipex.com/awr.tech/sekas/>

Contact Alan Buckman alan@buckman-hardy.co.uk

Manchester Astronomical Society

As summer turned, via autumn, to early winter more sequences from our versatile members of their captures of this year's solar eclipses became available, some being posted to our constantly updated website which is always worth a refreshing visit.

Our President, Ray Brierley, has continued to exercise members' minds through such as visual downloads of the most recent celestial events and relevant astro-research. Our Director, Guy Duckworth, together with such activists as Colin Henshaw, has maintained, inter alia, a close scrutiny of the lengthening dark sky. The Leonids were clouded out for all but the most persistent observers such as Mrs Maresh and for those able, such as the highly energetic Colin Henshaw, to relocate to a carefully selected Yorkshire spot. Member Nigel Longshaw has continued to augment his fantastic lunar drawings with interesting articles thereon - for enthusiasts desirous of viewing such, a visit to the Society's website surely is a 'must'

The Society hosted a reception at the Godlee during early November for the Lord Mayor of the City of Manchester who was given an awareness of past and current foci of members' interests and achievements.

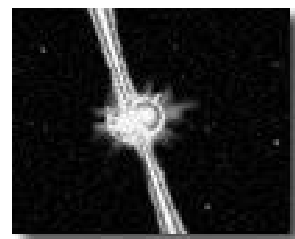
The latest tidal wave of Chandra originating sky views came in the days preceding the arrival of our November speaker from the Royal Observatory at Edinburgh, Dr. O. Almaini, who deployed his high power presentation, 'X Ray Astronomy Takes Off', with a maximum impact on his audience enthralled with his expertise and ease of delivery.

The President produced at our last meeting a 1999 astro review while the new year will bring Professor John C. Brown, Scotland's tenth Astronomer Royal, to talk on, 'Black Holes and White Rabbits' (January 20th) and Dr. A. Zijlstra of UMIST will cover, 'Death of a Mira: The Missing Million Years of Stellar Evolution' (February 16th).

Supernova link to Gamma Ray Bursters

Gamma ray bursts have now been firmly established as one of the most powerful phenomena in the Universe, releasing the mass energy of a neutron star within a few seconds.

The most popular explanation for GRB's to date is that the energy is released when two neutron stars or black holes collide. However, studies of a GRB that occurred on March 26th 1998 revealed that there was a transient optical source associated with the burst which brightened to 60 times the expected level. Also, the spectrum of the object changed dramatically with the colour becoming extremely red. This strongly suggests that supernova explosions are responsible for GRB's and links cosmologically located gamma ray bursts with the deaths of massive stars.



NASA

SOCIETY NEWS ROUND UP

ABINGDON A.S

Contact: Bob Dryden 01491 201620
Or Sebastian Linfoot 01865 725094
Flat 10, Pembroke Court, Rectory Road, Oxford OX4 1BY
13th Dec - "Video Astronomy", Andrew Elliot (Reading AS)
10th Jan - "American Space Exhibitions", John Chapman-Smith
14th Feb - "Life in the Hot Seat (as Editor of The Astronomer)",
Guy Hurst.
13th Mar - "Aurora", Neil Bone

ASTRA: Association in Scotland to Research Astronautics
Contact Mr George McCue, 96, Bloomfield Road, Airdrie, Lanarkshire, ML6 9LX Tel: 01236 750903.
Meets Friday evenings at Airdrie Observ. & monthly in Glasgow.
<http://easyweb.easynet.co.uk/~portwin/Pages/ASTRA/General/ASTRA.html>
E-mail: astra@easynet.co.uk

AYLESBURY

Contact: Alan Smith. 182 Marley Fields, Leighton Buzzard, Beds. LU7 8WN. Tel: 01525 374258
10th Jan - "The past and future of our society"
7th Feb - 3 short talks on telescopes and what can be seen with them.

BEDFORD

Secretary: Lisa Harrington, 24 Swallowfield, Wyboston, Beds. MK44 3AE Tel. 01480 406350
E Mail:(Dave Eagle): daveeagle@observer1.freemove.co.uk
<http://www.observer1.freemove.co.uk>

BIRMINGHAM

Dane Carty 0121 353 6577

BOSTON AS

Details of the 1999 lecture programme are available from Mrs Lorraine Money, 18 College Park, Horncastle, Lincolnshire. LN9 6RE. 01507-524037 (ansaphone), or e-mail Lorraine@astspace.demon.co.uk or Paul@astspace.demon.co.uk."

BRADFORD A.S

Contact: David Cooper, 36 Pollard Lane, Undercliffe, Bradford.BD2 4RN.
Bradford has now got it's own web site:-
<http://www.andybat.demon.co.uk/bas/index.htm>
E-mail: has@andybat.demon.co.uk

BRECKLAND ASTRONOMICAL SOCIETY

We have 11 speakers programmed for the year 2000, including Sir Arnold Wolfendale, FRS, who has accepted an honorary membership, four gentlemen from the Royal Astronomical Society, Dr Jim Lewis, Institute of Astronomy, Cambridge, Jerry Workman and four of our own members. Meetings continue at present on the second Friday of every month, starting at 7:30pm.
Contact: Spence Allen. Tel: 01953 850571.
E-Mail:sastrohing@AOL.com

BRIDGEND

Meets on alternate Fridays between Sept & June.
Contact: Clive Down 01656 740754
E-mail clivedown@btinternet.com
<http://members.aol.com.BridgendAS/>
7th Jan - "The Tunguska Event, Chixilub and other Earth impacts", Dr Bib Owens
21st Jan - "Speculative Astronomy", Dr Amanda Baker
4th Feb - tba
18th Feb - "Observing the origin of stars and planets", Dr Derek Ward-Thompson.
3rd Mar - "Symmetries of the Universe", David Dunbar

BRIGHTON AND HOVE ASTRONOMICAL SOCIETY (BHAS)

Meetings are held at St. Johns's Day Centre, Palmeira Square, Hove on the first Tuesday of each month, commencing at 7:30pm.
Contact: Gary Burford, 27 Tangmere Road, Brighton, BN1 8TJ.
Tel. 01273 883548 E-Mail: gary@cepheus.freemove.co.uk
Society's E-Mail: secretary@bhas.fsnet.co.uk

Web Page: <http://www.bhas.fsnet.co.uk/>

BRISTOL

We meet at Bristol University Physics Building and we alternate Fridays there with Fridays at Westbury Park Methodist Church rooms for club nights.
Details can be obtained from me on 01454 632692 or at this email address. E-Mail: John.Pickard@bristol.ac.uk

CAMBRIDGE AA and YOUNG ASTRONOMERS

Stanley Trafford (01223) 880624
<http://website.lineone.net/~ken.day/caa/caahome.html>

CARDIFF

Contact: Mr D. Powell, 1 Tal-y-bont Road, Ely, Cardiff. CF5 5EU.
Tel: 01222 551704

Meetings are held at Dept. of Physics & Astronomy, Uni of Wales, 5 The Parade, Newport Road, Cardiff

6th Jan - "Inside a neutron star (why stars explode)" Dr Steve Hands

20th Jan - "How big is the Universe", Dr Martin Barstow

3rd Feb - "Alien Life forms", Dr John Morton

17th Feb - "Introducing the Messier objects", Martin Griffiths

2nd Mar - "Ghostly visitors from outer space", Angie Jones

16th Mar - "A personal view of the universe", Dave Eagle

CASTLE POINT

Andy Turner 01702 258640
The Castle Point Astronomy Club now has a website.
<http://www.djmurphy.demon.co.uk/cpac>

CHESTERFIELD

D Denton, Lilac Cottage, Market Place, Castleton, Sheffield, S30 2WQ. Tel 01433 620692

CORNWALL A.S.

Contact: Steve Harris, 26 Nanscober Place, Helston, Cornwall, TR13 0SP Tel: 01326 569254 E-mail: sph@eidonet.co.uk

CRAWLEY AS

Ron Garner, 1 Pevensey Close, Pound Hill, Crawley, West Sussex, RH10 7BL. Tel: 01293 531096.

CRAYFORD MANOR HOUSE ASTRONOMICAL SOCIETY

We have a first class programme of lectures at Crayford anyone who would like more information can contact the secretary Roger Pickard on 01732 850663
Web Site: <http://www.astronomy.freemove.co.uk>

DONCASTER A.S

Contact: Colin Maskill, 58 Thorne Road, Doncaster

EASTBOURNE

Peter Gill, on 01323 646853

GWYNEDD ASTRONOMICAL ASSOCIATION

Contact: Davyth Fear Brwynog, Ffordd yr Orsaf, Llanrug, Gwynedd LL55 4AG Tel. (01286) 672882
e-mail fear@enterprise.net
Meetings are held on the first Thursday of every month at the Electrical Engineering Building, University of Bangor, at 7.30

HAMPSHIRE

Geoff Mann on 01705 596154

AS of HARINGEY

From Feb 2000 the society will meet twice monthly on the 1st and 3rd Wednesdays.

Contact: Jerry Workman, 91 Greenslade Rd, Barking, Essex, IG11 9XF. Phone 0181 5077568
<http://www.garym.demon.co.uk/index.htm>

19th Jan - "Astronomy and Art", Jerry Workman

2nd Feb - "Death of the Dinosaurs", Mike Howgate

16th Feb - "3D Mars", Tony Sizer

1st Mar - "Backyard Observatories", Graham Bryant

15th Mar - "Life on other Worlds and how to find it", Dr Stuart Clark

Clark

HASTINGS AND BATTLE AS

Contact: Keith Woodcock 24 Emmanuel Road, Hastings, East Sussex TN34 3LB. Tel: 01424 443883
E-mail: Keith@habas.freemove.co.uk

HEBDEN BRIDGE AS

The society has 20-30 members and meets every 4th Wednesday at Hebden Bridge Tourist Information Centre, 1 Bridge Gate, Hebden Bridge.

15th Dec - "U.S. Telescopes and Observatories", Paul Yates

12th Jan - "Observing exploding stars with large telescopes", Dr Tim O'Brien, Jodrell Bank

9th Feb - "Birth of Stars", Prof John Dyson, Leeds University

8th Mar - Members night. Slides, videos etc.

5th Apr - "The chemically controlled cosmos", Dr Tom Hartquist, Leeds University

3rd May - AGM + "Big Bang or Big Illusion", Ray Caswell, Bolton A.S.

Contact: Peter Jackson, 44 Gilstead Lane, Bingley, West Yorkshire, BD16 3NP. Tel: 01274 562478

HIGHLANDS AS

Richard Green, 11 Drumossie Avenue, Culcabock, Inverness IV2 3SJ Tel 01463 223826

HINCKLEY & DISTRICT

Shaun Albrighton, 4 Walnut Close, Hartshill, Nuneaton CV10 0HX (01203 397183).

HEART OF ENGLAND ASTRONOMICAL SOCIETY (HOEAS)

Contact: The Secretary, Keith Middleton, 33 Digby Drive, Marston Green, Solihull, B37 7DU.

Email: HOEAS@yahoo.com

Formal meetings held on the last Thursday of the month at Furnace End Village, Shustoke, Warwickshire.

HUDDERSFIELD ASTRONOMICAL & PHILOSOPHICAL SOCIETY

Contact: Robert Williams 01484-537032

Except where indicated meetings are at 4A, Railway Street

ILKESTON & DISTRICT

Mark Thomas on 0115 849 0724 or John Brown on 0177 376 8836.

The society meets at the Function Room, Erewash Museum, Anchor Row, Ilkeston, Derbyshire starting around 7:30pm.

IRISH AS

Stephen Ryan at PO Box 2547, Dublin 11 or Tel: (from the UK) 00 3531 864 1382

ISLE OF MAN (IOMASS)

www.bigfoot.com~gary.kewin

JAVEA & DISTRICT ASTRONOMICAL SOCIETY

Meets on the 3rd Monday of the month at:

Javea (Xabia) International College, Ctra Cabo La Nao 21, Apartado De Correos 311, Javea 03730, Alicante', Spain

Contact: Mike Glazier. Tel: 96 647 1785

LEEDS A.S

Venue: Centenary House, North Street, Leeds from 7:00pm onwards. All are made very welcome.

LEICESTER AS

Meeting at Braunston Civic Centre, Leicester

Details: Ann Bonell, 53 Warden's Walk, Leicester Forest East, Leics. LE3 3G0 Tel. 0116 2394481

<http://www.thenet.co.uk/~obiwan/astro/index.html>

LETCHEWORTH

Meet on the last Wed of each Month

Contact: Eric Hutton 01462 626032 . bookman@rmplc.co.uk

<http://www.rmplc.co.uk/eduweb/sites/bookman/ldas/>

LINCOLN A.S

<http://www.lincolnastrosoc.freemove.co.uk>

E-Mail: philip@lincolnastrosoc.freemove.co.uk.

LIVERPOOL AS

Ken Clarke, 31 Sandymount Drive, Wallasey, Merseyside L45 0LJ (Please encl. large sae) Tel:0151-6383270 / 0151 7945356(24hrs)

E-Mail: ggastro@liverpool.ac.uk.

<http://www.liv.ac.uk/~ggastro/home.html>

21st Jan - "The Uranographia Britannica Star Atlas", Mr Kevin Kilburn.

18th Feb - "Let there be light - The history of Optics", Mr Rod Hine

17th Mar - "The Russian Space Programme", Mr Phil Barker

LOUGHTON ASTRONOMICAL SOCIETY

The venue is Theydon Bois Scout Hall, Loughton Lane, Theydon Bois, Epping, Essex.

Public Open Meetings twice per month during the winter on Sunday evenings, 7pm-9pm.

Meetings every Thursday at 8:00pm.

Contact: Charles Munton. 14a Manor Road, Wood Green, London N224YJ. 0181 8899253,

charles@munton.u-net.com

MACCLESFIELD AS

Contact Cherry Moss 01625 611789

MANCHESTER AS

See separate article on page 3.

Contact: MAS. c/o Godlee Observatory, UMIST, Sackville St, Manchester. M60 1QD. (0161 2004977, 24hrs. Fax 0161 2287040).

<http://www.u-net.com/ph/mas/>

MANSFIELD AND SUTTON

Graham Shepherd on 01623 552276

<http://www.innotts.co.uk/~shepherd/index.html>

MEXBOROUGH & SWINTON

Mark Benton 01709 587887

Email: Mark.benton@rotherham.gov.uk

MID-KENT A.S

See separate article on page 3.

Meetings held at The Visitor Centre, Riverside Country Park, Lower Rainham Road, Gillingham.

Contact: 01634 308035 or 01634 200718

MILTON KEYNES

Pierre Girard on 01234 391489 or pgirard@compuserve.com

NORTH EAST LONDON

Stephen Karpel, 99 Churchfield Road, ACTON, London. W3 6AH
Tel: 0181 992 5751

NORWICH A.S

All meetings at the Seething Observatory from 7:30pm to approx 10:30pm. Admission £2, under 16's £1, ample parking.

Situated off the B1332 Norwich - Bungay Road Signposted 8 miles south of Norwich.

B1332 Signpost Seething Observatory, (Harvey Lane): 1 mile down Harvey Lane/Toad Lane.

<http://nas.gurney.org.uk/>

Contact: Frank Lawlor. 01508 493321

E-mail: FLawlor@compuserve.com

14th Jan - Moons of the Solar System, Frank Lawlor

26th Feb - Messier Objects, Philip Cowley

24th Mar - Collisions with Earth, Emma Drake

21st April - Hubble and the Next Generation Telescopes, Mark Thompson

NOTTINGHAM

Carl Brennan on 0115 854 8687.

E-Mail: carl.stella@virgin.net

ORWELL

Peter Richards on 01473 659806

E-mail: peter.richards@talk21.com

<http://www.ast.cam.ac.uk/~ipswich>

PAPWORTH

Meets on the 1st Wed of each month (except July) from 7:00pm to 9:00pm in the Bradbury Progression Centre, Papworth Everard, near Huntingdon.

Keith Tritton on 01767 677219 (even) kpt2@tutor.open.ac.uk

5th Jan - "Quasars, monsters of deep space", Dr Andy Robinson, University of Hertfordshire

Wed 1st Mar - Open Evening

PLYMOUTH A.S

Contact: Alan Penman, 12 St. Maurice View, Plympton, Plymouth.
PL7 1FQ. Tel: 01752 338491.

PONLAF The Astronomy Forum at the Univ. of North London.
Ponlaf hold monthly meetings (last Fri in month) in term-time, when
an invited speaker talks on a subject of Astronomical interest.
Pat Prigmore, 0171 753 5126

RENFREWSHIRE ASTRONOMICAL SOCIETY

Meetings are held every Friday evening at 7.30 pm at the
Coats Observatory, Paisley.

Contact: Mark Pollock TelNo: 0141 561 3554
Or e-mail Ian Martin at Inmartin@aol.com

SALFORD AS

Contact: Kath Redford 2 Albemarle Road, Swinton, Manchester.
M27 5ST Tel: 0161 7943179.

E-mail: salford@ast.man.ac.uk

WWW:<http://xpp2.ast.man.ac.uk:8000/~salfordac/sasholme.htm>

SAWTRY & DISTRICT

Bernard Dean on 01487832251.

SCARBOROUGH & DISTRICT AS

Meet at Seamer School, on 3rd Saturday of each month
(except December and August) at 7.30 pm.

Contact John Harper on 01723 500389.

SCOTTISH ASTRONOMERS

Ken Mackay at Hayford House, Cambusbarron, Stirling FK7 9PR .

<http://star-www.st-and.ac.uk/~fv/sag/sag.html>

SHEFFIELD ASTRONOMICAL SOCIETY

Email :sheffieldastro@hotmail.com

Internet : www.saqqara.demon.co.uk/sas/sashome.htm

SHROPSHIRE

David Woodward on 01743 872991 or the Programme Secretary
Kevin Wildgoose on 01691 610408 for details on forthcoming events.

SOLENT AS Ken Medway on 01703 582204.

E-Mail: solentaas@delscope.demon.co.uk

Website- <http://www.delscope.demon.co.uk>

We meet on the third Tuesday of each month at the Oaklands
Centre, Lordshill, Southampton 7.30-10pm

21/12/99 Christmas lecture, Variable stars by Storm Dunlop.

SOUTHAMPTON AS

Meetings are held on the 2nd Thursday of each month, except
August, in Conference Room 3, Civic Centre, Southampton, at
7:30pm.

Informal Club Evenings are held on the 4th Thursday of each
month, except December, at members houses.

Contact: John Thompson, 4 Heathfield, Hythe, S'mpton. S045 5BJ
. Tel: 01703 842531

13th Jan - The Great Galaxy in Andromeda, Alan Drummond

10th Feb - Red Moon, Andy Salmon

9th Mar - Recipe for a Solar System, Pam Spence

13th Apr - Short talks by members

SOUTH Lincs ASTRO. & GEOPHYSICAL SOC.

Contact Mark Underwood on Tel 01775 766084

E-Mail: solags@btinternet.com

Formal meetings are held monthly on the third Wednesday at the
Adult Education Centre in Pinchbeck, Nr Spalding. Observatory
meetings are held on the second Friday and fourth Saturday of every
month at the Peak Hill Observatory in Cowbit.

STAFFORD & DISTRICT A.S.

Meet on the 1st & 3rd Thursday of each month from September
to August at 7:15pm at Weston Road School, Blackheath Lane,
Stafford.

Contact Lydia Hodkinson at 6 Elm Walk, Penkridge, Staffs. ST19
5NL. Tel: 01785 712065

STRATFORD upon AVON

Robin Swinbourne, 18 Old Milverton, Leamington Spa, CV32 6SA,
Tel: 01926 882187

SWANSEA A.S

Maurice Convey , 132 Eaton Crescent, Swansea. SA1 4QR

Tel: 01792 466814

<http://www.swan.ac.uk/astra/starpage.htm>

TORBAY A.S

Secretary Tim Moffat (01626) 361041)

Meetings at Torquay Town Hall:-

Contact: TAS@halien.net

Web: <http://www.halien.com/TAS/>

VECTIS AS

John Smith on 01983 865451 or 27 Forest Road, Winford, Sandown,
I.O.W. PO36 0JY.

MEETINGS 7.30pm, fourth Friday of each month except Decem-
ber, NEW VENUE(from January): Newport Parish Church Centre,
Town Lane, Newport

WALSALL

Meetings every Thursday at the Free Trade Inn, Wood Lane, Pelsall.
For details of monthly lectures and astro diary phone Alan Ledbury
on 01922 632 624

<http://wkweb5.cableinet.co.uk/G.Ledbury/WASINDEX.HTM>

WEST CORNWALL

Mr. Robin Hughes

93 Atlantic Way, Porthtowan, Cornwall TR4-8AH. 01209 890736

WEST OF LONDON

Duncan Radbourne on 0181 952 2816

WEST YORKS

Ken Willoughby, 11 Hardistry Drive, Pontefract, West Yorkshire,
WF8 4BU on 01977 795535 Email Terry Cymbalsty on

terry@ndl.co.uk

<http://staff.ndl.co.uk/terry/wyas>

WILTSHIRE ASTRONOMICAL SOCIETY

Simon Barnes. 88 Oakfield Road, FROME, BA11 4JH

E-mail: simon@rohmann.freereserve.co.uk

WOLVERHAMPTON

The Society meets on alternate Mondays at 7:30 p.m. at Beckminster
Methodist Church Hall, Birches Barn Road, Wolverhampton.

For more information please contact the Secretary

Michael Bryce, at Iona, 16 Yellowhammer Court, Kidderminster,
Worcestershire, DY10 4RR.E-mail: michael_bryce@hotmail.com

Tel: 01562 863545, Fax: 01562 639329

<http://wemfas.future.easyspace.com/>

WORCESTER

Sally Bateman, 12 Bozward Street, Worcester. WR2 5DE

Telephone : (01905) 420531. E-mail:sallyann@zoom.co.uk

Meetings are held on the second Thursday of each month 8 to
10 pm at Worcester College of Higher Education, Henwick Grove,
Worcester .

WORTHING AS

All monthly meetings are held at the Heene Church Rooms, Heene
Rd, Worthing @ 7:30pm, 2nd Wednesday of the month.

Contact: Dave Storey at dave.storey@controls.eurotherm.co.uk

<http://www.worthingastro.freereserve.co.uk>

WYCOMBE A. S

Contact Paul Millington 125 Telford Way, Downley, High Wycombe,
Bucks, HP13 5SZ Tel 01494 637901

e-mail yix76@dial.pipex.com

The Society meets 3rd Wednesday of the Month at Woodrow High
House, Cherry Lane, Amersham Buckinghamshire at 19.45hrs

Web site <http://www.wolf359.demon.co.uk>

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adverts of a more commercial nature we can provide up to A4
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ership.

Contact the Editor for details.

Leonid Report from La Palma

For this year's predicted Leonid meteor storm I decided to go to the Canary Island of La Palma. I hoped that the weather would be better than in the UK and that the geographical longitude would ensure that the radiant would be above the horizon at the right time. In the event I nearly missed out!

Myself and three friends rented a cottage at Puntagorda on the north-western side of the island an hour's drive from the Roque de Los Muchachos Observatory. Our plan was that if we were clouded out, we could drive up to the observatory and observe from above the cloud, at an altitude of 2,300 metres. The Sky and Telescope group were also on the island and had made arrangements to observe from outside the observatory's accommodation building.

A visit to the observatory on Tuesday 16th found the mountain top covered in cloud, and snow falling, while lower altitudes had intermittent sunshine: clearly the Roque was not the place to be! Wednesday evening was cloudy at Puntagorda and in desperation we drove to Fuencaliente at the southern end of the island in an attempt to find clear skies. In the car park for visitors to the Volcano de San Antonio, we found the Sky and Telescope group and local amateur astronomers from La Palma. Cloud still covered the sky and rain showers dampened the hopes of the assembled people. However, weather changes rapidly on the island, and breaks in the cloud raised cheers as the Moon and a few stars shone through. We decided to head back to Puntagorda and keep our fingers crossed.

At 02:08 hrs on the 18th, at David Asher's predicted time of the storm, total cloud cover prevailed. But a few minutes later, holes in the cloud began to appear and we started to see a few meteors. Our best rates were seen between 02:30 and 02:45 hrs as the increasing clear sky counteracted the decreasing rates from the 'storm' which, we later learnt, we had just missed. However, observing up to six meteors a minute, sometimes in two's and three's, was still a marvellous sight. From about 03:00 hrs the sky stayed virtually free of cloud until dawn, while the Leonids continued to put on a good show.

Nick Quinn (Worthing AS)

Salford Astronomical Society

It was unbelievable, that after being clouded out on the UK mainland for totality on August 11th, that it should happen again on November 17th/18th for the maximum of the Leonids - the two major events on the 1999 astronomer's calendar, being denied to us.

In Salford suburbia, from around 3:30am on the morning of the 18th, in what up to then had been complete cloud coverage, members saw a change taking place. The cloud was slowly clearing from the north. Gaps began to appear, large enough to give a reasonable view of the sky and bright meteors were seen at a rate of about one in five minutes, in increasingly clearing skies up to dawn.

One member, who travelled to the Canaries, confirmed that maximum did occur around 2:00am, when a rate of about twelve bright Leonids a minute was observed in clear skies. For further enquiries contact Kath Redford, 2 Albemarle Road, Swinton. Manchester, M27 5ST. Tel: 0161 7943179

New Spanish Society Javea & District

The Costa area in which Javea is situated is a beautiful coastal and mountainous part of Eastern Spain. It boasts 320 days of sunshine each year and for 10 months of the year observing can be done wearing shorts and 'T' shirts.

The beautiful skies here attract many people to astronomy although most are just content to sit on their terraces with wine, tapas and binoculars and 'gaze' at the starry heavens.

The Javea and District Astronomical Society was setup to cater for the needs of these observers and others who recently bought telescopes and require assistance in their use.

Society Activity

Javea, being an area deep in the holiday belt of the Spanish Costa Brava, members were, in the main, playing host to family and friends during the summer months, so the Society was declared 'in adjournment'. However, a group of members attended an 'Eclipse Party' on the 11th August.

The eclipse was projected onto card via a 4½" telescope and a series of photographs was taken of all stages. The same evening being the projected maximum of the Persied meteor shower, members attended fully equipped and ready for a controlled meteor count. Despite clear skies and virtually zero light pollution, so little meteor activity was observed that the count was eventually abandoned at 2:30am and all went home to bed.

Monday 20th September 1999 saw the start of our winter season which was well attended. Our founder member, Mike Glazier, gave an in depth talk on Jupiter and its main satellites with slides from NASA. Practical field work was a detailed study of the Plato basin area of the Moon using different magnifications through a refractor telescope. A most informative and successful evening for our first meeting of the season.

Black Holes Provide Half of Universe's Energy

Half the energy of the Universe is provided by black holes at the centre of quasars according to research carried out at sub-millimetre wavelengths by a UK telescope in Hawaii. These giant black holes contain the mass of billions of suns in an area of space no bigger than the solar system. The research suggests that for every quasar we observe at visible wavelengths, there are a further ten which are so shrouded in gas and dust that they remain invisible. However, these can be detected at X-Ray wavelengths, and NASA's recently launched Chandra C-ray observatory (the X-ray equivalent of the Hubble Space Telescope) will be used to detect these quasars. The European Space Agency (ESA) is launching its own version of Chandra in December called XMM. It too will be able to detect these invisible quasars.

From Bridgend AS Newsletter

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AstroFest 2000 4th/5th February

The FAS will be present at the up coming AstroFest in London. You're all welcome to pop by our stand, and lend a helping hand if you wish.

Again this year, there is a room set aside for individual societies. Contact Pam Spence if your society is interested. Spaces are limited so hurry!

FAS Convention 2000

For those of you who plan ahead, next years FAS Convention (and AGM) is on Saturday September 30th 2000 at the Rutherford Appleton Laboratory. Details to follow in future issues of this newsletter.

Publications Available

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Remember to send society contact changes to the Membership Secretary, Eric Hutton, 14 Folly Close, Hitchin, Herts, SG4 9DG. Tel: 01462 626032
E-mail: bookman@rmplc.co.uk

Deadline for submission for next newsletter, 25/02/2000.

Please remember to send ALL articles to the Editor, Rob Barter. Regrettably Material can only be returned if supplied with a SAE.