June 4, 2000 saw the safe controlled re-entry of one of NASA's less known but most successful space observatories.

Launched in 1991 from the Space Shuttle, the second of NASA's Great Observatories had a design life of 5 years. At a weight of 17 tons it was the largest unmanned science satellite ever launched by the USA. Its task was to examine the heavens in the most highly energetic wavelength of all - Gamma radiation. In the event the craft operated without a hitch for 9 years and a decision was taken to de-orbit it in a controlled manner on the failure of one of its three steering gyroscopes. This was primarily a safety decision, as NASA wanted to avoid a 17 ton satellite landing in a populated region. The safe re-entry into an uninhabited area of ocean showed this decision to be correct, but brought to an end one of the least known but possibly most significant eras of space science, with implications for the very future of advanced life throughout the Cosmos.

Electromagnetic radiation ranges in wavelength from long radio waves via infra-red visible light, ultraviolet, X-rays, and finally gamma rays - the shortest, most energetic wavelength of all. All these waves travel at the speed of light and their energy is inversely proportional to their wavelength. Very roughly electromagnetic waves correspond to increasing temperature and energy level of cosmic activities as the wavelength is shortened, with gamma rays signifying the most energetic processes of all.

How did the need for such an obscure scientific investigation come to pass?

In the 1960's gamma rays were more widely known through their lethal association with human nuclear explosions here on Earth, and so the US Defence Department had in place satellites to monitor nuclear tests and explosions by recording the gamma ray signatures of such events.

It soon emerged that there were gamma ray explosions or bursts lasting from a few seconds to 20 minutes or so which had nothing to do with human military ambitions, since they came from well beyond our stellar neighbourhood. Little was known at that time except that they were either due to totally unimaginable violent processes occurring at a vast distance beyond our Galaxy, or that they might be due to less violent but unknown "local" processes.

It was largely to settle such questions that the Gamma Ray Observatory, named Compton after one of the early pioneers of radioactivity, was launched.

During its first 8 years of operation Compton detected and took signatures of 2,000 of these Gamma ray explosions, now termed Gamma Ray Bursters (GRBs), and have demonstrated statistically that the vast majority occur at vast distances well beyond our own Milky Way Galaxy - even several billion light years from Earth, and that for their brief moments of glory they produce as much energy in gamma rays as the total energy output of an entire galaxy of 100 billion stars like the Sun!

Thoughts then turned to the possible mechanisms for such unthinkable energy releases. The current best contender is a collision between the members of a co-orbiting pair of neutron stars. These are the ultradense remnants of stars which weigh more than 1.4 times the mass of our Sun at their lives' end, and although so massive are only the size of a large city. Thus the mass of considerably more than our Sun is compressed into a ball 20 kilometres or so in diameter and the atomic matter exists as nuclear particles called neutrons. If two such objects in a pair collide, the energy release is sufficient to account for the Gamma Ray Burster phenomenon. Another
The temperature now (in late January), is daytime 21°C and night-time as low as 14°C. Just right for astronomy.

They are thus the violent death-throes of massive stars; in an extreme case - called a Hypernova - the collapsing star sends such a powerful rebounding shockwave through its surrounding shells of gas that the fireball is "seen" predominantly in gamma radiation rather than the more normal flash of visible light! The usual fiery ending is seen by us as a brilliant supernova - the best known in our time being the supernovae of 1987 in the Greater Magellanic Cloud, while the Crab Nebula in the constellation of Taurus is the result of such a supernova - known to the Chinese as a guest star - seen in 1054 AD.

Although GRBs seen to date have all been at vast distances, there are neutron stars and supernovae in our own Milky Way Galaxy and the objects observed by Compton have not been discriminating in their choice of host galaxy type. Thus there is no a prior reason to assume that our galaxy is immune, and on the statistical basis observed so far we can expect one to occur somewhere in our Galaxy every 100,000 years or so; more to the point, the best estimate is that one will occur within 3,000 light years of Earth every 10 to 100 million years on a statistically unpredictable basis. So great is the radiation level emitted by a GRB that scientists believe that any planet within 3,000 light years of such an event will be sterilized of all but its most hardy and simple life forms.

Humanity and its civilization, of course, would have no chance except on one condition.

Humanity will survive as a mindful and civilized species only if it is, at the time of such an event, already occupying an ecological niche significantly greater than 3,000 light years in extent. This means that our longterm future depends on our building an interstellar civilization - a task which will take many thousands of years. The best guess is that we have a few million years' grace, but we do not and cannot know this. In a race against an unknown deadline where the choice is between life and death the wisest counsel is not to waste too much time arguing the toss, but to put our hands to the astronomical plough.

Diaspora for Humans as a species, just as for Jewry as a culture, is a dynamic, evolutionary, strategy for growth and development in a capricious and changeable Universe.

Thus it seems that the little known Compton Observatory has a vital message for Humankind

"The Future for Man, in the end, is all the Universe - or Nothing!"

Meanwhile, the clock is ticking....


Javea & District Astronomical Society

The last meeting of the year 2000.

The Javea & District Astronomical Society held a joint English/Spanish evening at Campo de Tiro on the Montgo mountain National Park in Denia. Along with members of the Asociatio de Astronomos de Marina Alta, a very active and well known group from Denia, the evening was attended by a host of English, German, and Polish members of the J.A.D.A.S. Eric Hutton gave a splendid talk on meteorites, which was followed by an evening of observations using both English and Spanish owned telescopes. When things began to get a little chilly up there in the mountain we all went inside where the tables were laid out with food, wine and tapas (a typical Spanish dish of small pieces of food to be picked at with fingers).

A presentation was then made to the Spanish guests by our group. Mike Glazier presented the president of the Marina Alta Group with a frosted glass plate engraved with various astronomical objects. It was an evening to remember and forged a link of friendship between English and Spanish Astronomers.

Another favourite 'Stomping ground' is the planetarium of Castellón, about 1½ hours from Oliva on the Costa Blanca. The programmer, lecturer and director is a Spaniard by the name of Josep Ma Trigo I Rodriguez who speaks perfect English and always makes us very welcome, giving private shows and time on the planetarium computer. Josep is the author of many books, works for the Dept. of Astronomy and Astrophysics of the University of Valencia and his speciality is deep space and meteors/bollides.

We meet in Denia every last Thursday of the month at the Campo de Tiro (Shooting range and clubhouse … where there is a bar, and a beautiful view over the town of Denia and out over the Mediterranean Sea). The Campo is situated on the Montgo mountain in the Montgo national park where the only artificial light comes from the Moon.

The Javea & District Astronomical Society meets every last Thursday of the month at the Campo de Tiro, Montgo National Park, Denia.

For information call Mike Glazier 96 285 3202, Hilary Inglis 96 579 5836 or John and Jean Preston 96 573 3147.

Sheffield AS

The past year has been very exciting at Sheffield AS. The committee and members have worked very hard and have seen the society revitalised. In 1999 we moved from a venue in the city centre to a dark sky site. This year we have obtained two 10 inch Meade LX200's, one through a swap for one of our antique scopes and one through a grant from the "Millennium Awards for All" scheme. Membership has continued to grow and we have recently been given access to the University of Sheffield's 24 inch observatory telescope. Our recent member's observing evenings have been well attended and we have taken part in many local events. The future of the society looks very promising.
**Stars & Planets — A Review**  
*By Callum Potter*

A review copy of this book landed on my doorstep out of the blue, and I must admit to being pleasantly surprised. It is not really the sort of book I would look at twice in a bookshop, but it does have much to recommend it. The book is split into two sections. The first deals principally with stars and constellations, with many pages of star maps showing the night sky as it appears each month for both northern and southern hemispheres. This is followed by maps and notes on each constellation, usually with one page for the map and the descriptions on the facing page. All these maps have been nicely illustrated by Wil Tirion. The second section of the book deals with stars, star formation, galaxies, the solar system and is somewhat a whistle stop tour. Of particular interest to observationalists are the Moon maps and maps of the ecliptic showing the movements of Mars, Jupiter and Saturn through the constellations until 2005.

I would say that this is a fine beginners book, and would be attractive to younger astronomers and observers with binoculars. The illustrations are excellent and there are a number of well chosen photographs and images. Although most are NASA, Hubble or other professional observatories it is nice to see a number that are by UK Amateurs.

However, there are some chapters that are included because a book of this sort has to include them. It would be a brave soul not have chapters on Telescopes and Astrophotography, but the brevity does not do justice to the subjects.

And the acid test – does it fit into your pocket. Well it depends upon the size of your pockets! It will certainly not fit into a shirt pocket, but does fit nicely into the side pockets of the anorak I usually wear when observing. Also, if you were planning a trip to the Southern Hemisphere its compact format would be helpful.

Liverpool Astronomical Society

SIDEWALK ASTRONOMERS — Busy time for the Sidewalkers

Pickering Pasture Event hosted by Halton Rangers, Friday 12th January 2001

This event started, at 7:30pm, with quite a large amount of cloud. Gradually, this dispersed and, as on many similar occasions, the clearest weather was after 9pm. Several society members scopes were in use. Jim Stacey had his 8inch Dobsonian and John Naylor set up his 10inch refractor, John Naylor set up his 8in Dobs and Alan Pritchard’s 10inch reflector and completed the line up. The largest being the recently completed 16 inch. The views of Jupiter, Saturn and the Orion Nebula seemed to justify every torturous minute spent in making it. The Moon rose at about 8pm.

Rob Smith, the Halton Ranger was the first to contact us about organising this event at this riverside location, and there was a warm welcome by Steve Southern and Phil Harman, the Society organisers. Observations were also possible of Venus, Jupiter and Saturn.

The Society would like to thank all the young astronomers, mums and dads who attended, and the Society membership who gave up their Saturday to help and organise a day and evening which resulted in such an enjoyable time exploring the Solar System with their feet firmly on the ground but with their heads above the clouds!

Gerard Gilligan

For more information about astronomical activities in Liverpool contact Mr. Ken Clarke, 31 Sandymount Road, Wallasey, Wirral. Tel. 0151 638 3270, email: Clarklinar@aol.com

Leasowe Lighthouse Event Hosted by Wirral Rangers, Friday 26th January 2001

The Leasowe Lighthouse event went very well. The attendance was estimated between 80 – 150. The weather during the day forecast over the radio mentioned clear spells and showers.

It was decided early in the day that we should try and bring both newly completed 16 inch telescopes down to the Leasowe meeting for the first time. By about 7pm that just what happen and with help of the rangers we had selected the area for all the telescopes to be set up ready for viewing the night sky. By this time conditions were almost ideal. Views of Venus, Jupiter, Saturn, M42 and later M1 the Crab Nebula.

Dave Owen & Dave Thomson

Liverpool Young Astronomers Day — March 3rd 2001 — Young Eyes On The Sky!

Twenty seven future Astronomers assembled at the Liverpool Astronomical Society’s Pex Hill Observatory recently to enjoy a day and evening, exploring our Solar System, our nearest Star and the Moon. A full range of events and activities were arrange, from a special tour of the Solar System slide show, event quiz, to supervised observations of the Sun, (with filters), and an 8 day old Moon with the aid of Society members telescopes. Daytime observations were also possible of Venus, Jupiter and Saturn.

The Young Astronomers, plus their mums and dads were given a warm welcome by Steve Southern and Phil Harman, the Society Junior Representatives, and the co-ordinators of this special event. The day began with a slide show presentation, and tour of Our Solar System by David Gittins, who did a whistle stop at each planet and helped with the quiz booklet questions. Through the day the “astronomical” thirst and hunger for not just knowledge, was provided for with hot and cold drinks, and biscuits. The group were then split into teams to work on the full range of activity work and the astronomy quiz booklet. Posters, books and astronomy computer software was also provided. Everyone was eager to look at the Sun and Moon with the telescopes.

The Activity work consisted of making your own planisphere, cut out and make a solar system, and answering questions on the American Apollo Moon landings between 1969 –72. Teams were also shown how to safely observer the Sun using special telescope filters, and Eric Strach demonstrated Priacht’s solar features, for example sunspots, flares and filaments using video images he had recorded over several years. Following a long break for afternoon tea, the teams began an evening session of other activities, which included studying the features of a 8 day old moon, locating craters, mountains and moon landing sites seen on the sunlit side and on the terminator. The many astronomy internet sites that can be found were demonstrated by Dave Owen, and Society members provided laptop computers to use.

The Director of the Liverpool AS Observatory, Geoff Regan also gave a guided tour of the Observatory and 12” Meade LX200 telescope, with views of the planets Venus, Jupiter and Saturn. Once the day had concluded each young astronomer was given a welcome pack to a new group of the Society, Liverpool Young Astronomers, and its hoped more meetings like the March 3rd event can take place later this year. The evening events were nicely rounded off by views of the MIR space station going over Pex Hill and the observation of a ~8 mag Iridium satellite flare.

Scarborough & District Astronomical Society

As a part of our Silver Jubilee celebrations (we formed in March, 1976), the Scarborough and District A.S. is hosting a Summer Star Festival supported by Forest Enterprise. The event is to take place from Friday, 10th August 2001 inclusive. The venue is a large open site in the light pollution-free North Riding Forest, in the North York Moors National Park, exactly midway between London and Edinburgh, John O’ Groats and Lands End. We invite all Astronomical Societies to attend and to avail themselves of what we are offering at our Star Festival in this beautiful part of the country. If you visit our web-site you will see more details about the event and all Astronomical Society secretaries are to be sent details. Camping facilities for caravans and tents will be made available on site.

Other events in 2001 include the commissioning of the Societies 12” f 5.8 and 18.75” Newtonian Reflectors and the Official Opening of the first of our observatories at Low Dalby, adjacent to the Visitor’s Centre in Dalby Forest.

In the Autumn, we are to host the FAS Yorkshire Group’s annual “Astromind 2001” Competition. The date of which is fixed for Saturday, 13th October. Further details will be made available later in the year, when participating societies will be notified. If there are any societies in the Yorkshire area who have never taken part in this event or have not done so for a number of years, they are encouraged to get in touch with us so that they can be sent details nearer the time. We hope to have many challengers for the much coveted “Radio Leeds Cup”!

Scarborough & District Astronomical Society now meets on the third FRIDAY of each month. The venue is Iron and Seamer County Primary School, off Pasture Lane in the village of Seamer, 3 miles SW of Scarborough.

Contact Address: Sheila Anderson, 25 Highfield, SCARBOROUGH, North Yorkshire. Y012 4AW
E-mail: gwerman2@ukf.net or jonvran@aol.com
S&DAS web site: http://www.baryte.demon.co.uk/astro
Central Sidewalk Astronomers - Having fun under the Stars - and online!

Central Sidewalk Astronomers is a group dedicated to Public Service Astronomy in the style and spirit of John Dobson and the San Francisco Sidewalk Astronomers in the USA. As with that group, to which we are affiliated, our aim is to give people the chance to take a look at the night sky through a powerful telescope for the first time.

However, rather than on city streets - our area is not known for its ‘coffee shop culture’ - our fun generally takes place at organised star parties or in association with other astronomical or non-astronomical events organised by other groups or good causes in our area. We operate in the West Midlands and South Staffordshire area of England - and our organisation is purely Internet-based!

Originally formed in 1999 and relaunched in 2001, CSA is one of only two sidewalk astronomy groups presently operating in the UK - the other is Liverpool Sidewalk Astronomers, a group of members of Liverpool Astronomical Society. We are currently recruiting to build up our membership and new members are welcome at all levels of experience.

CSA is unique in UK astronomy in that we hold our meetings at public events, under the night sky and online, having no general programme of indoor meetings or club lectures. Our aim is purely to inspire the public, promote astronomy and have fun under the stars!

We co-ordinate ourselves via email, and our members all keep in touch with the group and each other via email. We run a Yahoo! eGroup to enable members to chat and discuss group events and astronomy online. This enables us to come together at mutually agreed times without the need to have formal meetings or pay subscriptions. Our group offers free membership to anyone with a telescope or tripod-mounted binoculars and access to email who would like to join in the fun and take part in our events!

Central Sidewalk Astronomers can also be contacted directly by email to Stuart Williams at: csa@urania.plus.com or by Snail Mail to: Stuart Williams, Central Sidewalk Astronomers, 26 Matlock Road, Walsall, WS3 3QD.

The Midlands Star Party - An Invitation to FAS Members!

Central Sidewalk Astronomers are organising the first ever MIDLANDS STAR PARTY for 2001, which is a guest event in support of Bloxwich Carnival over 10/11 August. We are organising the Star Party in association with Bloxwich Carnival Committee and the Friends of Bloxwich Parks, and if well-supported it is hoped that it will become a major annual event.

We would like to take this opportunity to invite any FAS member societies who would like to take part to join us at the Midlands Star Party. So far, we will be working with Wolverhampton Astronomical Society and the Society for Popular Astronomy, but the more the merrier, and all societies or their members are welcome!

The main event takes place on Saturday 11 August - the weekend of the Perseids meteor shower peak, which also has a last quarter Moon this year. Our venue is the King George V Playing Fields, a large public park off Stafford Road, just north of Bloxwich town centre on the A34. Bloxwich is located on the A34 between Cannock, Staffordshire and Walsall, West Midlands, England, and is easily accessible via the M6 motorway or the A5/A34.

A fairground and other events, including arena events, stalls and a World War 2 re-enactment with encampment will be taking place on-site in the park during the Saturday. A turnout of around 5,000 members of the public is expected.

A location map and details of the Carnival, plus a panoramic view of the park, can be found via our web site at: http://members.national.nbc.net/central_astronomers or if you do not have internet access you can receive details by sending an A4 s.a.e. to Central Sidewalk Astronomers at the address below.

**OUR AIMS**

The Midlands Star Party has four main aims - to inspire public interest in astronomy, to promote all astronomical societies, to support Bloxwich Carnival and its charities - and to have fun!

For this reason, there is no charge for participation in the event, nor for camping, for which we have arranged permission.

**Camping**

Camping is permitted for Star Party participants on Friday 10 August and Saturday 11 August. Portable toilets will be available on-site, but you will need to bring all other equipment and supplies with you. Shops are 5 minutes away by car or bus. Camping is undertaken at your own risk. The Star Party runs over two days, but the primary public focus is on Saturday 11 August. We are hoping to create an 'astronomy village' if we have enough participants.

**DISPLAYS**

Societies are welcome to put on displays of their work, sell club merchandise - and of course recruit! We are hoping for access to a small marquee, but this cannot be confirmed at the moment, so it is recommended that you bring a tent or gazebo for club displays. It is also recommended that you obtain Public Liability Insurance, as this will be your own responsibility, as will be equipment insurance. You will probably already have the former as members of the Federation of Astronomical Societies.

**FRIDAY 10 AUGUST**

For those who can make it on the evening of Friday 10 August there will be the opportunity for some public and private observing and you can also claim an early camping spot! Members of Central Sidewalk Astronomers will be on hand to advise you.

**SATURDAY 11 AUGUST**

Participants are expected to provide some safe solar observing demonstrations for the public during the daytime on 11 August and to have telescopes available to show any remaining public the night sky during the evening of the same day. Most of the night will however be free for your own personal observing!

Partner societies may have their logo and contact details placed on our web site events page on request, with a link back to their own site.

To take part in the MIDLANDS STAR PARTY, please write to: Stuart Williams, Central Sidewalk Astronomers 26 Matlock Road, Walsall, WS3 3QD

Altrincham and District AS

Has been growing in membership and activities over the last year. Both visual observing from Dark Sky sites and the use of digital imaging equipment has increased. The Society has also been successful in receiving a grant from the Manchester Airport Community Fund for a pair of large astronomical binoculars and improvements to their observatory site.

Visitors and new members are welcomed at the observatory and at meetings held on the first Friday of each month except during July and August.

Web site: http://www.adas.u-net.com/

Paul Clark, ADAS Publicity Officer
Macclesfield Astronomical Society

As we enter our 11th year, the society now has over 170 regular members with attendance at monthly meetings exceeding 100. We meet on the first Tuesday of every month in the Planetarium at Jodrell Bank in Cheshire. The beginners' class is at 7.00pm followed at 8.00 pm by a lecture given by a researcher or distinguished astronomer (Prof. Rod Davies, Prof. Sir Francis Graham Smith, Prof. Colin Pillinger, Dr. Alan Chapman are expected in the near future). We are considering moving our observatory from its present location at Gradbach Mill Youth Hostel to a more convenient site at Langley Cricket Club near Macclesfield. We are also considering the formation of more observing and discussion groups to accommodate the changing needs of our increasing membership.

Last year (October 2000) we were fortunate to receive a grant of £5000 as a result of the Millennium Festival Awards for All programme. The grant has been spent on two new Meade ETX 'goto' telescopes with accessories, including a laptop PC for astronomical presentations and computer control of the telescopes. In addition we are planning to purchase a CCD camera and software to enable images captured by the telescopes to be displayed to members of the public at open days and other events to be held throughout the year. We are maintaining our links with local schools and encouraging and supporting the teaching of Astronomy within and beyond the National Curriculum. We are also purchasing pairs of binoculars and planispheres for use by junior members and those getting to know their way around the sky for the first time.

The society website is changing to www.maccastro.co.uk in the near future. We are considering moving our observatory from its present location at Gradbach Mill Youth Hostel to a more convenient site at Langley Cricket Club near Macclesfield. We are also discussing the formation of more observing and discussion groups to accommodate the changing needs of our increasing membership.

John Thomson, Secretary, 0161 973 6027, email: jhandlec@yahoo.com

Shetland Astronomical Society

Have been awarded a grant of five thousand pounds from the lottery, Awards for All. This was after writing up a project, or a series of projects that embodied the aims and ambitions of the society. I would be happy to talk to anyone who is thinking of making a similar application.

We also registered the society with the Inland Revenue as a charitable organisation. This was after advice from the FAS and from local societies in Shetland but also with some help from the Inland Revenue. We are also trying to insure our telescope and have been pointed in the right direction by the FAS. Possibly the insurance of artefacts could become as inexpensive as public liability insurance if other member societies got together?

We are considering having a get together of some sort when the 2003 eclipse occurs at the end of May in that year. I would like to ask for advice from those who have had successful Star Parties to find out how it is all done, getting exhibitors, speakers and so on.

Good wishes from Pettlar, Shetland.

Peter Kelly, 01957 733242, theglebe@zetnet.co.uk

Salford Astronomical Society

On Saturday February 4th, eight members visited Astrofest, travelling by train on what has now become an annual pilgrimage. Their interest lies mostly in what the exhibitors in the hall have to offer. However, sometime around noon, the fire alarm was activated resulting in the evacuation of the premises for around 20 to 30 minutes and although fortunately, it turned out to be a false alarm, our intrepid travellers took advantage of the incident to go for an early lunch. A good day was had by all.

The society is now the owner of a Starlight Express Colour CCD Camera, obtained with the help of a £500.00 grant from the local council. A team of seven members, headed by the Director of the Observatory, will be responsible for the long term project which is intended to be mainly of benefit to the visiting public on our monthly open nights and other events.

Our meetings take place every Wednesday throughout the year and after the last lecture of the winter session on March 28th (with the exception of the AGM on April 25th), the society enters the summer season of informal meetings at the Observatory in Chasely Field, Chasely Road, Salford.

Contact Kath Redford, 2 Albemarle Road, Swinton, Manchester, M27 5ST. Tel 0161 794 3179.

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

Web site: http://www.salfordastro.org.uk

Vectis Astronomical Society

Here on the Isle Of Wight we have had a good year. The Observatory is shaping up well with installation of our new equipment moving apace. We were successful with a number of grants and donations and have therefore been able to connect a Starlight Colour CCD camera to our telescope and two new computers for imaging and display and we are about to order a new projector.

We have also had some small but useful no-strings cash grants. Our ultimate aim is to automate the telescope and operate the cameras from the warmth of the control room.

We are about to make an instruction video to issue to members who would like to use the instruments but don't know how. I shall ask silly questions like "Which end of the telescope do I look through?" and Observatory Director John Smith will answer with his customary patience and explain that it is necessary to open the dome first etc. The video needs to be very clear and to start from the absolute basics for the benefit of members who are complete beginners.

John has launched a very successful basic Astronomy course for sixth-formers which is our latest project.

Meetings 7.30pm on fourth Friday of each month at Newport Parish Church Centre, Town Lane, Newport. Contact Rosemary Pears (Mrs.), Tel/Fax 01983 853126. E-Mail may@tatemma.

freeserve.co.uk. Web site: http://www.wightskies.fsnet.co.uk
AYLESBURY AS
Meetings on the 1st Monday of the month in the Aylesbury area. Further details from Alan Smith, 182 Marley Fields, Leighton Buzzard, Beds, LU7 8WN, Tel. 01525 374258

BECKINGTON AS
New website www.basnet.org.uk

BRADFORD AS
Lectures held at Eccleshill Library, Bradford at 7.30 pm, April 23 Moon Rocks and Life, Ron Tippett. May 21 The Story of the Metre, David Cook, June 4 Big Fuzzy Blobs, Rod Hine. June 18 Dyson Spheres, David Palmer. July 2 Mars Rover Mission, P. Nixon. July 16 Summer Solar Special. For any further information on these or fortnightly observing sessions please ring 01274 573210 or 01274 672570, or see website at www.bradford-astro.freeserve.co.uk/index.htm

BRIGHTON & HOVE AS
Meet at the St John's Day Centre Church Road Hove. For further details contact Gary Burford on 01273 883548, email gary@cephem.freeserve.co.uk. May 1st Seb Oliver "The Darker Side Of Cosmology", June 5th Dr Robert Smith Presidental lecture "The Active Sun". July 3rd Jonathon Loveday "TBA"

CARDIFF AS
Meetings alternate Thursdays, September to July, 7.30 pm at Dept of Physics and Astronomy, Univ. of Wales, 5 The Parade, Newport Road, Cardiff. Contact David Powell (secretary), 029 2055 1704. Email CAS@i1ldat.demon.co.uk.
Web site: http://carina.astro.cf.ac.uk/cas/cas_home.html

COTSWOLD AS
Meetings 2nd Saturday of the month. New Venue, Shrundington Church Hall, Shrundington, Cheltenham. Contact Duncan Willoughby 01452 416405.
12th May Space Guard, Jay Tate. 9th June Life of Stars, Ken Sheldon. 14th July, Deep Sky Exotica, Nick Hewitt BAA President.

CRAWLEY AS
Our meetings are held on the 3rd Friday of the month at Ifield Community Centre, Ifield Drive, Crawley. This season our speakers have given us very interesting talks on subjects as diverse as Bob Turner on Star Formation, Norman Walker on Work on BAA Sunspot numbers, and Graham Bryant on Building a Backyard Observatory. Future speakers include, Cyntha James on X-ray Astronomy, Dr. David Whitehouse on Astronomy in the Media, and Teresa Grafton from The London Observatory, Rue du Lorier, St. Peters, Guernsey. Tel 264252.

LA SOCIETE GUERNESIAISE—ASTRONOMY SECTION
20 Apr The Galileo/Europa missions to Jupiter, Paul Money 01323 646853.
7 May 9th May - The Hubble & Herschel Deep Fields - Dr N Metcalfe, University of Durham. 13th June - The Hidden Colours of the Universe (X-ray astronomy) - Prof. Bob Warwick, University of Leicester. 11th July - Amateur Meteor Astronomy - Mr. Len Entwistle, of Elland 8th August - The Sunward World (The observation of the Inner Planets) - Mr. Robert Steele, Director of BAA Mercury and Venus section
Also LEEDS ASTROMETEOR 2001, Saturday 10th November

LOUGHTON AS
We meet every Thursday at 8.00pm in the Scout Hall, Loughton Lane, Theydon Bos, Essex. We also hold Open Evenings every second Sunday evening 7.00 - 9.00pm until April at our Observatory in Loughton Hall, Rectory Lane, Loughton, Essex. Contact: Charles Munton, 14a Manor Road, Wood Green, London N22 8YJ, tel: 020 8889-9253, email: charles@munton-u-net.com Web site: http://las-astro.org.uk
10 May Dr Bob Forrest, TBA. 24 May Jerry Workman, Mars. 31 May Dr. Paul Hewitt, Extra-solar Planets

MANCHESTER AS
Secretary now Kevin J. Kilburn FRAS. Email kkilburn@globalnet.co.uk
Manchester Astronomical Society, Gอดlee Observatory, Main Building, UMIST, Manchester.

NEW YORK EAST LONDON
Contact. Bernard Beeston, 020 8363 5696

NORTH ESSEX AS
Meeting are held at the BT Social Club Hall, Collingham Road, Witham, Essex. The Doors open at 19:30hrs for the talk to start at 20:00hrs on third Thursday of every month except August and December. The talks charges are £2.00 for members and other society member and £3.00 for non-members. Contact Iain Manning 01376 521897 or email iain@manning.netlineuk.net or John Green 01376 518512, email j.r.green@anserve.net
15 March, David Nugent – Mars. 19 April, Dr Barrie Jones - Planets and life beyond the Solar System. 17 May Trevor Sproston - Beneath a Victorian Moon. 21 June tba. 19 July Gary Cavie - 2001 A Space Odyssey. 20 September Dave Eagle - Computers in Astronomy

NOTTINGHAM AS
Lecture June 7th “Looking for Life on Mars”, Dr. Mark Sims, Beagle 2 Mission Manager, University of Leicester.

SALFORD AS
1st Wed The Salford Observatory, Chasely Field, Chasely Road, Salford, M6 6TD. Contact: Kath Reed, 2 Ablemarle Road, Swinton, Manchester, M27 5ST. Tel. 0161 794 3179 Email: salfordac@ast.man.ac.uk
Web site: http://www.salfordastro.org.uk

SOUTH EAST KENT AS
Meetings are Saturdays at 7.30pm, Secretary: John Kemp 01227-766470, email johnandcatherinekemp@supanet.com
April 28th Monkton Field Study Centre: “Astronomy with small telescopes” - John Carruthers and Alan Buckman.
May 12th Eastry Church Hall: “Cosmic Impacts and Extinctions” – Dr Michael Barson
2nd June 11am Bexhill-On-Sea. SAGAS Summer meeting; Norman Walker "Observations ancient & modern", Peter Gill “Recent Solar activity and the upcoming Eclipse", Nik Szymanek "CCD imaging and how to get the right results", Michael Maunder “Simplified photographic processing”.
Caters on site, 6 trade stands, ISDN links, seating for 200. Followed by an evening at Herstmonceux Centre Science starting 6.30 till late with tours of the domes and telescopes. Entry by ticket: £1.50 afternoon + £1.50 evening; provide own transport - Please contact SEKAS secretary who will co-ordinate carloads.
11th Aug. 8.30pm Monkston F.S.C. Barbecue and (weather-permitting) Perseid Meteor Watch.

STRATFORD UPON AVON AS
Meetings 7.30pm at the Home Guard Club, Tiddington Nr Stratford upon Avon.
Anthony: www.astro.org.uk or phone Robin Swineburn 01926-882187 Forthcoming meetings:

TIVERTON AS
Meetings are held Saturdays in Willingdon Memorial Hall, Church Street, Willingdon. Contact Bob Cripps, tel. 01323 732067 or Peter Gill, tel. 01323 646853
12 May Aurorae and Noctilucent Clouds, Dr. Dave Gavine
9 June Space Astronomy at the Start of the 21st Century, Dr. Paul Murdin
7 July The Formation of Galaxies, Prof. Joseph Silk, FRS.

F.A.S. Newsletter 64
Spring 2001
LIST OF OFFICERS 2000/2001

President: Malcolm Jones,
See front cover for details
Vice President: Pam Spence
1, Water's Edge, Brighton Road, LANCING,
West Sussex, BN15 8LN. Tel: 01903 752834.
E-mail fas@astroscience.fsnet.co.uk
Secretary: Eric Hutton,
See front cover for details
Treasurer: Rebecca Gardiner,
See front cover for details
Assistant Treasurer: Dave Sutton,
10, The Martlets, Sompting, West Sussex, BN15 9SS
Tel: 01903 754063.
e-mail: doc@tmslws.fsnet.co.uk
Membership Sec: Eric Hutton,
29, Paternoster Close, Waltham Abbey, Essex,
En9 3JU. Tel: 01992610243
E-mail bookman@rmplc.co.uk
Minutes Secretary: Ron Kelly
11 Meadowcroft, Plovers Rise, Whitchurch, Shropshire,
SY13 1BD. Tel: 01948 662201
E-mail rpk@ronkelley.demon.co.uk
Newsletter Editor: Callum Potter
See front cover for details
Handbook Editor: Dave Eagle,
25, Crocus Way, Manor Park, Rushden, Northants,
NN10 OUP. E-mail daveeagle@observer1.freeserve.co.uk
Education Secretary: Peter Corbally
45 Swinton Crescent, Unsworth, Bury, BL9 8PB
Tel: 0161 7663802
E-mail: pipubs@btinternet.com
Publications Secretary: Malcolm Jones,
See President, front cover for details
Meetings Organiser : Stan Waterman
Amadeus House, Temple End, Charlton, Hitchin,
Herts, SG4 7TE. Tel: 01462 433912
E-mail stanwaterman@aol.com
Publicity Officer: John Parratt
73 Woolbarn Lawn, Whiddon Valley, Barnstaple, North
Devon, EX32 8PQ. Tel: 01271 372331
E-mail: john@astro3.freeserve.co.uk
Slide Librarian: Alan Drummond
27 York Road, Crawley, West Sussex RH10 5JS
Tel: 01293 535027
Website Co-ordinator: Nick Quinn
15 Newham Lane, Steyning, West Sussex, BN44 3LR
Tel: 01903 814090
E-mail Nick@nquinn.demon.co.uk
Chilterns Group : Ian Coulson
19 Furnace Cottages, Furnace Lane, Finedon, Northants,
NN9 5NZ Tel: 01536 725563
E-mail albedo@freewire.co.uk
North West Group : Ron Kelley
See Minutes Secretary above.
West Midlands : Andy Salmon
Olympus Mons, 13, Jacmar Crescent, Smethwick, WARELEY,
West Midlands, B67 7LF Tel: 0121 5654845
E-mail Andy_Salmon@compuserve.com
Yorkshire Group : Paul Harper
45, Lydgate, Lepton, HUDSDERSFIELD, West Yorkshire,
HD8 0LT Tel: 01484 606832
Devon Group : John Parratt
See Publicity Officer above
East Anglia Group : VACANT
SAGAS Rep: VACANT

FAS ANNUAL CONVENTION

The 2001 FAS Annual Convention and AGM will return to the Rutherford Appleton Laboratory, Chilton, Oxfordshire on the
13th October 2001
Lectures, tours of RAL, trade stands and exhibits.
If you would like to exhibit your society’s work or provide a trade stand please contact Stan Waterman
Advance Tickets Now Available
Price £5.00 each from Dave Sutton
please send an SAE

Advertising Space
Small adverts for members and their societies are free.
For adverts of a more commercial nature we can provide up to A5 size in area for a small fee.
The newsletter has a circulation over 4000 to a specialised readership.
Contact the Editor for details.

Membership Changes
Remember to send society contact changes to the Membership Secretary, Eric Hutton (see above).

Equinox Star Party—2001
14-23 September
Loughton AS will again host the annual Equinox Star Party on 14th to 23rd September with Saturday 15th being the ‘main event’ day. Further details will be provided in the Summer Newsletter, but for early information please get in touch with Mike Cook, 01708 375146, or by post at
No. 2 Sunset Drive, Havering-atte-Bower, Essex, RM4 1QL.

Deadline for submission for next newsletter, 30th June 2001.
Please remember to send ALL articles to the Editor, Callum Potter. Regrettably material can only be returned if supplied with a SAE.

2001 Handbook
The 2001 Handbook has been printed and circulated to all Society secretaries. If your Society has not received your copy please get in touch with the Publications Secretary