

## BAA Update

### Meeting of the Deep Sky Section, 2006 March 4

#### at the Northamptonshire Natural History Society, Humfrey Rooms, Castilian Terrace, Northampton

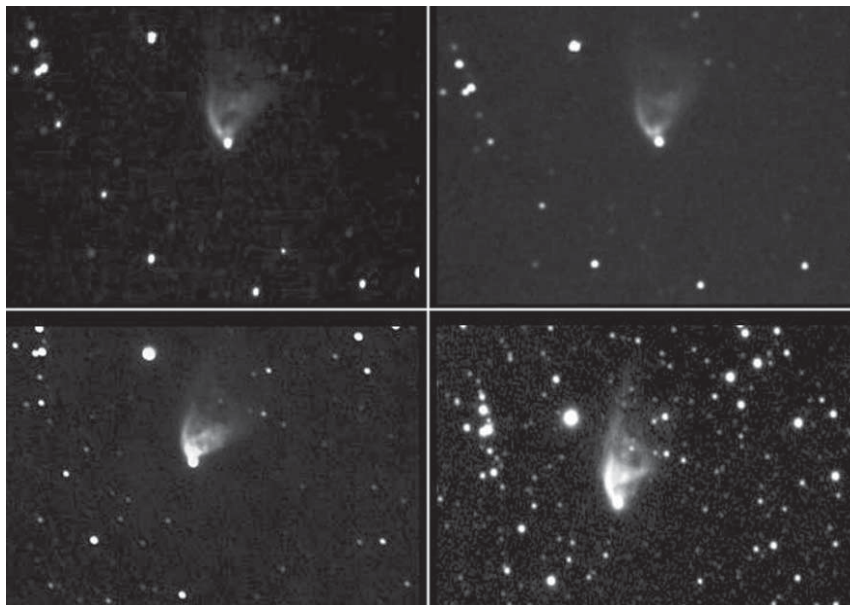
The Section Director, Dr Stewart Moore, welcomed the audience to the annual Deep Sky Section meeting. He showed examples of images received over the previous year, including SN 2006X in M100, IC 1613, NGC 147 and Leo I. Numerous images had also been received for the ongoing study of variable nebulae, of the Hubble, Hinds, McNeil and Gyulbudaghian nebulae. Images had also been received of supernova remnants such as the Crab Nebula, and IC443. Moreover, Abel 85 had been nicely re-done. Dr Moore said that as he had not received any images of M3, M5, 10, 14 and 34, he would particularly welcome these.

Dr Moore also welcomed two new visual observers to the Section, re-iterating that visual observing is still a valuable source of data which should not be underestimated.

Dr Moore then handed the meeting over to the first speaker of the day, Dr Nick Hewitt, who spoke on 'Remote globulars'. Dr Hewitt opened his talk with the remark that it was his dying wish to observe a globular cluster with a very large telescope. He then stated that they offer challenges and that we have learned a tremendous amount from them. They shed light on stellar families, give clues on stellar evolution, stellar distances, ages, chemistry and even galactic structure and evolution. He then posed the question, what are they?

Dr Hewitt said that the stars in a globular cluster were formed at the same time. Clusters provide the oldest datable supernovae in the Universe. There are 200 known to be associated with the Milky Way. Shapley noted that most are clustered towards the centre of the galaxy in Sagittarius, and Shapley also noted the importance of distance. Distance may be calculated using Cepheid and cluster variables. Cepheids are bright and visible over great distances, whilst cluster variables are short period Cepheids, which were discovered by S. I. Bailey in 1895. These stars are quick to rise and peak, varying some 0.2–2 magnitudes, but typically by just under one magnitude. Although RR Lyrae was the first discovered outside of a globular, we know of 1,200 to 1,300 RR Lyrae type stars in globulars.

The secret of distance is revealed by the link between the period and absolute magnitude of the star. Once the period is known the absolute magnitude is also known; the distance can then be derived from the difference between the actual and apparent magnitudes. This technique appears to be accurate to some 640 light years. It seems that the most distant globular associated with the



Images of Hubble's Variable Nebula, NGC 2261. *Top, left to right:* 2004 Nov 20, Nigel Bryant; 2004 Dec 07, Nigel Bryant. *Bottom, l to r:* 2005 Feb 05, Martin Morgan-Taylor; 2005 Dec 27, Jeremy Shears. Although showing changes in the nebula over time, these images also illustrate the need to obtain consistent images with the same equipment and exposure conditions for comparison purposes.

Milky Way is AM 1 Horologium in the southern hemisphere. BAA members with CCDs may like to try NGC 2419, the 'Intergalactic Tramp', which is some 272,000 light years distant! It should serve as an interesting project as it contains 32 RR Lyrae variables, all of around magnitude 17.

Dr Moore then handed the meeting over to the second speaker, Guy Hurst, whose title was 'Drawing and imaging open clusters for enjoyment'. There are about 1,200 open clusters in our galaxy, of which the Pleiades and Hyades are the most well known. Indeed, there are 29 open clusters in the popular Messier catalogue. But continuing on the theme of distance, just how far are they away? The Hyades is very important and highly studied, with a distance of some 40 parsecs, and a diameter of about eight light years. At some 400 million years old, it is part of the Taurus moving cluster, and was at its closest to the solar system some 800,000 years ago. Such a cluster has a life expectancy of 100 million years. Guy Hurst had carried out a Hyades study, the 'Earls Barton study' in 1971 with a 26cm reflector.

Mr Hurst described his technique. He drew the framework of brighter stars first to avoid distortion of the patterns. He then drew in the remaining visible stars using several different magnifications, labelled doubles and noted coloured stars. Approximate

magnitudes were also listed, as was a scale bar in arcminutes, an orientation arrow, for example pointing north, the number of stars, magnitude range and the instrument and power(s) employed.

Today, stars of magnitude 12 may be imaged using a CCD camera and a standard photographic lens with a stack of four images of four seconds each. However, Mr Hurst commented that a Canon 20D digital SLR camera may reach magnitude 12 in 30 seconds at ISO 400 with an F1.8, 85mm lens.

The Alter Catalogue of Budapest contained 1,500 cards on non-NGC objects in 1970. It is essentially a bibliography with the position of each of 1,039 open clusters. It contains small catalogues of objects such as Collinder and the 'ultimate challenge' Berkeley clusters (of which 90 are known).

Open clusters also provide a golden opportunity to study stellar evolution, facilitate the training of observers as well as offering excellent photographic and CCD opportunities for sheer enjoyment. 'This is what observing is all about.'

Dr Moore then introduced Gary Poyner, whose talk was entitled 'The OJ+287 observing campaign'. This object is of the  $\beta$  Lacertae type, which is a blazar (an active galaxy). It offers the observer a golden opportunity to study this form of object as it is close by and therefore fairly bright. It is

situated in Cancer, near M44, and is about magnitude 12, with a double outburst period of 11.6 and 1.1 years. However, the object needs further study as there may be another cycle of 60 years or so. The period could be due to one of three possibilities. First, the object is a possible binary black hole. Secondly, it may have precessing jets; or last it may have a rotating helical jet.

The next predicted outburst was for 2006 May/June, and so the speaker urged vigilance. He also suggested that OJ287 offered an opportunity for collaboration with the Radio Astronomy Group. Charts are available in the Variable Star Section database or at the author's website, [www.garypoyner.pwp.blueyonder.co.uk/oj\\_camp.html](http://www.garypoyner.pwp.blueyonder.co.uk/oj_camp.html).

The Director then introduced Owen Brazell to speak on 'Planetary nebulae associated with clusters'. The speaker said that the Palomar POSS and DSS plates offer an excellent project for the amateur, to re-examine the plates for fresh objects. Indeed, one does not even have to go outside and get cold!

A very good general source for planetary nebulae is <http://www.hs.uni-hamburg.de/DE/Ins/Per/Kohoutek/index.html> (the Kohoutek catalogue). However, it must be noted that the 1967 Kohoutek PK numbers do not agree with ESO and Strasburg new designations. Moreover, the Kohoutek list is not a full list. Planetary nebulae last from about 40/80,000 years, so they are quite short-lived. As a result, there is only a small chance of catching them associated with a cluster.

The speaker suggested M46 with NGC 2438 and Mink 1–18 in Puppis, although he pointed out that one would need about a 50cm telescope to see them all. However, is the planetary connected? Who knows? The speaker also commented that NGC 2818 with NGC 2818A in Pyxis is a very beautiful sight, however, it is not visible from the UK. M38 and Abel 9 are visible from the UK though Abel 9 is faint. There have been a number of sightings, but it has not been seen using the 60cm telescope on Tenerife. However, it is on the POSS plates. The speaker suggested that the object may be OIII bare, and suggested that observers could try H Beta or UHC filters instead. Indeed, it offers a splendid CCD target.

There are only four planetary nebulae associated with globular clusters, despite theoretical predictions indicating there should be as many as 16. Clearly, there is room for further research into this discrepancy.

Dr Moore then introduced Karen Holland's talk entitled 'Praesepe: two merging clusters?' Karen said that the project is being carried out jointly with the Leicester University Astronomy Group. The original aim was to determine if Praesepe (M44) harbours brown dwarves (in a repeat of the Pleiades study). However, the study developed from the original aim.



Lunch at the DSS meeting was enjoyed by all. *Photo: Stewart Moore*

Karen asked the question as to why they were looking for brown dwarves anyway. The answer is that brown dwarves are failed stars, so they do not glow like ordinary stars and they are clearly faint. As a result, you need to maximise the chance of finding them, and so clusters are ideal. However, cluster stars also share common properties, such as similar ages, distances and metallic content, all in a small area where the stars interact gravitationally. This means that they also facilitate the study of cluster evolution.

The biggest stars are at the centre of clusters, with lighter stars at greater radii. Thus it is possible to prepare a density and contour plot for a cluster. However, the plot for M44 was anomalous. The speaker suggested that M44 is flying apart, and will disperse in some ten million years. She also said that this may be the result of two clusters colliding.

Dr Moore then introduced Martin Nicholson, who spoke on 'Remote observing'. The speaker lamented that light pollution is a major problem even at his Daventry home, despite it not being anywhere near a large city. Indeed, the speaker said that he suffered badly from domestic floodlights, and despite speaking to the owners politely, he achieved nothing. As a result, he did a cost/benefit analysis of upgrading his equipment and decided that it was not worthwhile.

However, Mr Nicholson suggested that a possible solution is remote observing, using a rent-a-scope system, such as 'New Mexico Skies'. Here the observer may rent a telescope in pristine skies and operate it remotely via the internet. Very expensive equipment may be rented quite inexpensively and the speaker said that the money which would have been spent on upgrading his setup could be better spent on this sort of arrangement.

The speaker showed some stunning images which he had obtained with this setup, but he added that it may also be used for research. Indeed, the speaker had already discovered four new minor planets, 26 new variable stars and various other new objects. As a result, such a scheme can be very rewarding indeed.

Dr Moore then introduced Martin Morgan-Taylor, legal advisor on light pollution to the CfDS, the SPA and a consultant to DEFRA (Dept of the Environment, Food and Rural Affairs), to speak on the new law dealing with light pollution. The Clean Neighbourhoods and Environment Act 2005 came into force in England in 2006 April. The effect is to make obtrusive lighting a statutory (that is a criminal) nuisance, if certain criteria are met. However, not all lighting is covered, so public transport and licensed goods vehicle operating depots, lighthouses and prisons are exempt. Moreover, the statute is silent on street lighting, but local authorities cannot prosecute themselves so street lighting will probably fall outside the new law. All business premises have the defence of 'best practical means' so that the light will only amount to a nuisance if its harm outweighs the public benefit (and the costs of removing the nuisance would not be 'unreasonable').

To be covered, the lighting must be 'prejudicial to health or a nuisance'. The speaker stated that his view was that this is an either/or test, and so did not require a mandatory and significant negative effect to health as has been suggested elsewhere. This is also the view of DEFRA, who have drafted the new law. However, the law is not a panacea, it only protects if these criteria are met. Floodlights shining into windows at night would obviously be covered under either head, but lights shining across observing sites, or simply into the night sky from a distance creating skyglow would not meet





the tests so easily (if at all). So the astronomer is not in a strong position.

Any victim of bad lighting should first try diplomacy, and if that fails, they need to complain to their local environmental health department, at their local council, who must then investigate. The speaker had heard of a number of instances where councils had refused to investigate, saying that astronomy is 'hypersensitive', that is an unreasonably sensitive hobby. The speaker suggested that any council deciding which laws to obey and which not to obey could be taken to the Ombudsman, as any possible nuisance must be

investigated to determine its merit and not dismissed out of hand. The speaker suggested that a complainant may want to avoid mentioning their interest in astronomy if at all possible, and consider dealing with the wider effects of bad lighting, such as its shining into windows, when they complain.

For a full analysis of the new law, see the speaker's latest paper on the subject, available at the Campaign for Dark Skies website, [www.britastro.org/dark-skies/](http://www.britastro.org/dark-skies/).

Bob Marriott then showed a number of electronic slides taken with a Canon Digital Rebel camera, which highlighted the

problems of light pollution from Northampton. Chris Taylor then reminded the audience that Gamma Virginis (the famous double star Porrima), which had recently closed to 0.3 arcseconds' separation, had widened to 0.5 arcseconds by the time of the meeting, but in his opinion it still violated Kepler's Laws!

Dr Moore thanked the audience for its attendance, and the speakers, for making possible a very full, productive and enjoyable day.

**Martin Morgan-Taylor**

## New members

The British Astronomical Association cordially welcomes the following new members:

### Elected 2005 November 26

**Barron** Nigel, Grays, Essex  
**Bennett** Roger, Stockbridge, Hants.  
**Brooks** William, Market Harborough, Leics.  
**Brown** Michael, Twyford, Berks.  
**Chalk** Anthony, Colwyn Bay, Conwy  
**Cooper** Rob, Brentwood, Essex  
**Creed** Dudley, Frome, Somerset  
**Devey** Andrew, Barnsley, S. Yorkshire  
**Draper** Charles, Bath, Somerset  
**Duwe** Mark, Blackheath, London  
**Dyne** George, Reading, Berks.  
**Ellison**, Douglas, Leicester  
**Elsey** David, Great Yarmouth, Norfolk  
**Farn** David, Coventry, W. Midlands  
**Faulkner** Robert, Eton, Berks.  
**Giannuzzi** Aciano, Faversham, Kent  
**Gilsenan** John, Guildford, Surrey  
**Hall** Kevin, Royston, Herts.  
**Harrington** Jeanette, Frome, Somerset  
**Heaven** Laurie, Chorley, Lancs.  
**Johns** Gordon, Chippenham, Wilts.  
**Kilday** Albert, Stevenage, Herts.  
**Kyriacos** Kyriacos, Plaistow, London  
**Leckie** Julian, Rugby, Warwicks.  
**Little** Peter, Horndean, Hants.  
**Livesey** Robert, Cuckfield, W. Sussex  
**Livesey** Linda, Cuckfield, W. Sussex  
**Lovell** Gina, Trafford, Greater Manchester  
**Maffin** Helen, Leicester

**Maloney** Conrad, Cheltenham, Glos.  
**Munro** Christopher, Forres, Morayshire  
**Naraine** Yuri, East Ham, London  
**Naylor** Brian, Milton Keynes, Bucks.  
**Nelson** Martin, Claines, Worcester  
**O'Brien** Philip, Maidstone, Kent  
**O'Brien** Karen, Maidstone, Kent  
**Olivier** Charles, London, W2  
**Paul** David, Braintree, Essex  
**Radice** Mark, Farnborough, Hants.  
**Sharp** Ian, Walkern, Herts.  
**Simpson** Alan, Brookfield, Renfrewshire  
**Thistlethwaite** Robert, Wrexham  
**Vassallo** Lou, Epsom, Surrey  
**Wilkinson** Will, Riverhead, Kent  
**Wilkinson** Alex, Riverhead, Kent  
**Williams** Stuart, Bloxwich, W. Midlands

### Societies elected 2005 November 26

**Jersey Astronomy Club**, Rondebosch, 38 Clos des Sables, Route Orange, Jersey, JE3 8GJ, Channel Islands.  
**The Open University Astronomy Club**, Room N 1001, Venables Building, Walton Hall, Milton Keynes, Bucks.

### Elected 2005 December 17

**Alexander** Philippa, Leominster, Herefords.  
**Ball** Donald, Bury St Edmunds, Suffolk  
**Belam** Desmond, Dulverton, Somerset  
**Bennett** Martin, Wirral, Merseyside  
**Bloomfield** Alan, Winchester, Hants.  
**Boulton** Michael, Camberley, Surrey

**Brindle** Peter, Leicester  
**Brown** Ronald, Hornchurch, Essex  
**Bryan** Leon, Maidstone, Kent  
**Byrne** Stanley, Saltburn, Cleveland  
**Clarke** Christopher, Rhondda, Mid Glam.  
**Cliffe** Jonathan, St. Albans, Herts.  
**Coffey** Stephen, Stoke sub Hamdon, Somerset  
**Cole** Martin, Keighley, Yorks.  
**Connelly** Mark, Croydon, Surrey  
**Cooke** Michael, Trowbridge, Wilts.  
**Cowell** Philip, Johnson City, New York, USA  
**Cowell** Barbara, Johnson City, New York, USA  
**Dargis** Duane, Kinaleck, Co. Cavan, Ireland  
**Davidson** Andrew, Edinburgh  
**Davies** Marcel, Pontypool, Gwent  
**Denton** Barrington, Broadstairs, Kent  
**Downs** Stephen, Sudbury, Suffolk  
**Downton** Geoffrey, Trowbridge, Wilts.  
**Emmerson** Kenneth, Kilwinning, Scotland  
**Erridge** George, Deal, Kent  
**Eskelson** Andrew, Barking, Essex  
**Evans** Richard, Fitchburg, MA, USA  
**Evans** Steve, Llangefni, Anglesey  
**Forster** Christine, Burton on Trent, Staffs.  
**Forster** Nigel, Burton on Trent, Staffs.  
**Fowler** Alan, Waltham Abbey, Essex  
**Fretten** Terence, Bampton, Oxon.  
**Fulford** Michael, Radlett, Herts.  
**Galloway** William, Sittingbourne, Kent  
**Gardner** Arthur, Didcot, Berks.  
**Garrod** Nigel, Stanley, Co. Durham  
**Gerrard** George, Stanmore, Middx.  
**Gifford** Anthony, London, SE28  
**Giles** Timothy, High Wycombe, Bucks.  
**Gouldstone** Clare, Sutton, Surrey  
**Gover** Kenneth, Malton, N. Yorks.  
**Griffiths** Mark, North Moons Moat, Worcs.  
**Halsey** Alun, Reading, Berks.  
**Harding** Justin, Warminster, Wilts.  
**Har-Ewen** Raphael, Tonbridge, Kent  
**Harrod** Geoff, Sudbury, Suffolk  
**Henshall** John, Urmston, Manchester  
**Hooker** Christopher, Didcot, Oxon.  
**Howell-Jones** Anthony, Poltimore, Exeter  
**Hudd** Nicholas, Tenterden, Kent  
**Ixer** Michael, London, SW15  
**Kavanagh** Paul, Winyates East, Worcs.  
**Kemp** Brian, Basildon, Essex  
**Leigh** Joy, Southend-on-Sea, Essex

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 Contact: [astronomy@jcu.edu.au](mailto:astronomy@jcu.edu.au)

Centre for  
Astronomy



## CfDS 2006: the 6th European Dark Skies Symposium, Portsmouth, 2006 September 15–16

The BAA's Campaign for Dark Skies took its turn in 2006 to stage the 6th European Dark Skies Symposium, similar events having been held in previous years in Switzerland, Germany, France and Belgium. The event was the best attended to date, with more than 150 delegates from eleven European countries, the USA and even South Africa. Between sessions, delegates were given a tour of the night skies of the world in the South Downs Planetarium, where Dr John Mason simulated the effects of light pollution. This was followed by a visit to the Clanfield Observatory, courtesy of the Hampshire Astronomical Group, later in the evening, where the real night sky and a little real light pollution were observed. The whole event was kindly sponsored by the BAA and Abacus Lighting Ltd.

A principal aim of the two-day symposium was to advise planners and other decision-makers, and those who make, choose and install lighting, about the legal and moral issues surrounding light pollution. It is not, of course, the Campaign's intention to ban lighting, but to ensure that where outdoor lighting is required, it is designed and installed correctly, thereby causing little or no nuisance and reducing energy costs. These non-astronomical aspects were very much to the fore on the first day of the conference, which was opened by one of CfDS' best allies in Parliament, Lembit Öpik MP. Mr Öpik expressed his delight at seeing so many delegates, and confirmed his continuing support for the initiatives CfDS pursues within Parliament: for example its discussions with DEFRA on the subject of the proposed planning directive (PPS 23) on light pollution.

Dr John Mason, a founder member of CfDS and an eloquent speaker who needs no introduction to BAA members, examined the nature of light pollution and skyglow – what he and Sir Patrick Moore once described as the 'Aurora Bognor Regis'. John discussed solutions, and suggested that the increasing cost of electrical energy would eventually come into play as a factor in decreasing light waste – Essex County Council, for example, is already committed to switching off selected lights at night to save millions of pounds per year.

Bob Mizon then took delegates through the last three years, describing CfDS' involvement in the Science and Technology Select Committee proceedings in 2003, its liaison with the recent Campaign to Protect Rural England (CPRE) *Night Blight* publicity initiative, and its reactions to the 'nuisance lighting' section of the Clean Neighbourhoods and Environment Act (2005). Bob stressed that the Act is by no means a solu-

tion to skyglow, as it deals only with intrusive lighting into premises, and he emphasised CfDS' commitment to overturning the nonsensical (mostly transport-related) exclusions to the legislation.

Mike Simpson, Technical and Design Director at Philips Lighting UK, and past president of the Institution of Lighting Engineers, spoke on technical solutions and product development. Mike is an old friend of CfDS, and it was his early interest in defining and solving the problems of light pollution which gave the lead to the industry in general. As Bob Mizon reminded the audience, it was Mike who wrote, in the early 1990s, that 'light pollution is not a legacy we should perpetuate'

Dr Chris Baddiley, CfDS committee member and its technical adviser, talked about how the design of luminaires affects skyglow both in their immediate locality and further afield. Chris has put in a vast amount of work on a paper, to be published in conjunction with the Institution of Lighting Engineers, showing the mechanisms whereby different kinds of lamps create skyglow at various distances. Those within the lighting industry who are calling for shallow-bowl lamps rather than flat-glass cutoff types will, it is hoped, be convinced by Chris's arguments that the night sky can be better protected, and roads more efficiently lit, with the latter.

Two more lighting professionals then took the stage. First came Tom Webster (DW Windsor Lighting), who provides a great service to the CfDS committee as its 'link-man' with the lighting industry. He broached the much-debated subject of lighting and crime. Tom stated his belief that lighting can both aid and deter potential wrongdoers: glare from poorly sited lamps can abet them, if potential witnesses are dazzled. So lighting, he said, must be carefully sited and directed to increase the visibility of criminal and anti-social activity. Neil Johnson, of Abacus, described the lighting scheme which his company had recently completed at the Kempton Park racecourse, stating how, with the use of telescopic masts and directional lighting, the impact both by day and by night on the local environment had been minimised.

Martin Morgan-Taylor, lecturer in the Law Department of de Montfort University and a BAA Council member, spoke on the legal aspects of obtrusive lighting. Martin is the UK's leading expert on this aspect,

and he explored fascinating byways of the 2005 Clean Neighbourhoods legislation: can streetlights be 'premises'? Can local councils be asked to prosecute themselves if they cause light nuisance? What is the relevance of cases which have already been brought by private individuals against owners of invasive lights?

The last paper on this first day came from Alex Pollard, of Cardiff University, who discussed the impact of artificial night-time light-



Lembit Öpik MP addresses the audience at the opening of the 6th European Dark Skies Symposium.

ing on wildlife, with particular reference to the behaviour of the robin, of which she has made a special study.

The second day of the Symposium was entitled 'Astronomers and Light Pollution'. It was chaired by one of the world's most respected and active dark-sky campaigners, Bob Gent, Vice-President of the Board of Directors of the International Dark-Sky Association (IDA) based in the USA. Bob underlined the importance to us all of the night sky, and both he and Friedel Pas (Platform Lichthinder, Belgium) discussed IDA's activities and their desire to see greater expansion of the IDA's European member base. Friedel, a dauntless campaigner in what is arguably Europe's most light-polluted country, spoke on developments in Belgium, for example the new programme of inventories by local astronomical groups and environmentalists, working with local authorities to reduce light waste in various ways.

Andreas Haenel, from Germany, spoke of his work analysing recent satellite data of night light obtained by DMSP satellites during 1992–2003. These data are valuable for tracking changes in illumination levels over extensive areas in Europe, which show considerable increase in light pollution. They also show a close correlation with many human activities like oilfields, soil use, traffic corridors, population density etc. However, the data must be interpreted with caution



because there seem to exist problems with the terrestrial coordinates and an inhomogeneous sensitivity of the data.

The afternoon session was chaired by Robert Key MP, whose parliamentary biography reveals why he is well qualified to address such a meeting. His parliamentary responsibilities have included the environment, energy, science and technology and our national heritage. Philip Perkins, whose magnificent astrophotographs many astronomers will know and have admired, showed some of his images and described the best ways to achieve them, underlining the richness and value of what is in the night sky and why we should preserve it.

Next to speak was Wim Schmidt (Platform Lichthinder, Netherlands), who has dedicated himself to assessing and reducing light pollution in the Netherlands (where glasshouses cause much of the wasted light). His work includes the creation of dark-sky havens such as the Veluwe National Park. Wim described his efforts as chairman of the Dutch Lichthinder Group, and his investigations leading to an advisory role for Dutch government, locally and at the national level.

Dr Paul Marchant, a statistician at Leeds Metropolitan University, spoke of the need to apply careful methodology to claims that

lighting levels and crime are closely related. Can we tell that the claims for lighting's anti-crime benefits are true? In a quest for a scientifically rigorous approach to this question, Paul showed how studies can be well done, and not so well done.

Robert Key MP closed the event with a rousing call to further action on light waste (and on the problem of aircraft contrails), promising his own continuing involvement with the protection of the atmosphere and the sky.

Bob Mizon thanked the indispensable Pete Seiden and his reception and catering team, whose hard work for many months before the event and efficient, unobtrusive management of the venue had been a major factor in presenting such an inspiring and informative Symposium. Darren Baskill, Graham Bryant, Richard Flux, Martin and Jane Male, Dave Paul, Mike Tabb and Martin Morgan Taylor all gave sterling service organising trade stands, providing technical backup and troubleshooting generally.

The next European Dark Sky Symposium will be held in September 2007, in Slovenia. Watch CfDS' website, [www.dark-skies.org](http://www.dark-skies.org), for details.

**Bob Mizon**

## New members (cont. from p. 327)

- Lewis** Ray, Bognor Regis, West Sussex  
**Liddiard** Tom, Underwood, Notts.  
**Lindsay** Richard, Redruth, Cornwall  
**Mallett** Richard, Dunstable, Beds.  
**Mandry** Kenneth, Eastleigh, Hants.  
**Martley** Luke, St Helens, Merseyside  
**Mason** Charlotte, Charlton on Otmoor, Oxon.  
**Maxwell** Graham, Kings Pyon, Hereford.  
**McKeown** Neill, Greenisland, Co. Antrim  
**McKinstry** Ian, Hyde, Cheshire  
**McMahon** John, Watford, Herts.  
**Merriott** Philip, Dovercourt, Essex  
**Miller** William, Airdrie, Glasgow  
**Mogford** Graham, Tettenhall, Wolverhampton  
**Monks** Emily, Hull, Yorkshire  
**Moorby** Tracey, Wakefield, W. Yorkshire  
**Moore** Francis, Erdington, Birmingham  
**Mount** Robert, Southport, Lancs.  
**Olliver** Christina, Plumstead, London  
**Payton** Rex, Iver Heath, Bucks.  
**Pearce** Charles, Reading, Berks.  
**Pearson** Frank, Cannock, Staffs.  
**Phillimore** Paul, Morden, Surrey  
**Pierro** Mark, Reading, Berks.  
**Prinsloo** Charles, Stirling, Scotland  
**Puntin** Andrew, Morpeth, Northumberland  
**Reid** Colin, Telford, Shropshire  
**Richardson** Christopher, Colwich, Staffs.  
**Robinson** Mathew, Peterlee, Co. Durham  
**Sanford** Jonathan, Cottenham, Cambs.  
**Scott** Andrew, Sapcote, Leics.  
**Sheepy** Becki, Easingwold, York  
**Skinner** Paul, Aston, Sheffield  
**Storey** Alexander, Woodhouse, Sheffield  
**Sutterby** Martin, Welwyn Garden City, Herts.  
**Sweeney** Margaret, Milton, Glasgow  
**Tarrant** Jon, St Helier, Jersey  
**Taylor** Frank, Greenhithe, Kent  
**Taylor** Peter, East Grinstead, W. Sussex  
**Than** John, Peterculter, Aberdeen  
**Turner** Kevin, Worthing, W. Sussex  
**Turpin** Anthony, Weston-Super-Mare, Somerset  
**Valentine** Barbara, Kempston, Beds.  
**Vickers** Peter, Haywards Heath, W. Sussex  
**Vickery** Raymond, Epsom, Surrey  
**Wagstaff** David, Acocks Green, Birmingham  
**Ware** Richard, Gillingham, Dorset  
**Wayne** Pete, Woodlands St Mary, Berks.  
**Webster** Tom, Albury, Herts.  
**Wickens** Robert, Clapham, Bedford  
**Williams** Marc, Brecon, Powys  
**Withey** Winston, Gosport, Hants.  
**Withnall** Stuart, Cheltenham, Glos.  
**Wright** Denis, Purley, Surrey  
**Wright** Roger, Chelmsford, Essex  
**Wyles** Michael, Tunbridge Wells, Kent  
**Young** Maurice, Mynyddcerrig, Llanelli

## Societies elected 2005 December 17

- East Sussex Astronomical Society**, 15 Ian Close, Bexhill on Sea, E. Sussex, TN40 2RL  
**Lunds Universitet**, P.O. Box 117, S-221 00 Lund, Sweden

## BAA Awards and Medals for 2007

Early in the new year Council will consider nominations for the Association's Medals and Awards for 2007. If any members wish to nominate a fellow member for some notable contribution, please send a suitably worded citation to the Business Secretary no later than 2007 February 9. All nominations must be in writing and signed by two sponsors. Please try to confine citations to one side of an A4 sheet of paper. Thank you.

Conditions relating to each award are given below. Members are requested to read the conditions carefully and to ensure that citations comply with the conditions for the relative award. A list of previous recipients of the awards may be obtained from the Business Secretary.

### Merlin Medal and Gift

'This award shall ordinarily be made not more than once in any year and not less often than once every five years... It shall be made in recognition of a notable contribution to the advancement of astronomy. If two or more persons have been jointly concerned in any particular work, a joint award may be made, in which case each recipient shall receive a medal and gift.'

### Lydia Brown Medal and Gift

'This award shall be made at the discretion of the Council. [It] shall be in recognition of meritorious service to the Association in an honorary capacity over many years on grounds which would not qualify a nominee for either the Walter Goodacre or Merlin Awards. If two or more persons have been jointly concerned in any particular work, a joint award may be made,

in which case each recipient shall receive a medal and gift.'

### Stevenson Award

'This award shall be made at the discretion of the Council. It shall be awarded to a member who has made an outstanding contribution to observational astronomy.'

### Horace Dall Medal and Gift

'The award shall be made at the discretion of the Council but not more than once in any calendar year. It shall be made to a person, whether or not a member of the Association, who has shown marked ability in the making of Astronomical Instruments. If two or more people have been jointly concerned in a particular work then each person may receive a medal and gift.'

**Ron Johnson**, Business Secretary





## Elected 2006 January 25

**Allgrove** Charles, Carlisle, Cumbria  
**Armstrong** Michael, Phoenix, Arizona, USA  
**Bates** Julian, Southampton, Hants.  
**Blaney** John, Gillingham, Kent  
**Bowser** Gordon, Esher, Surrey  
**Brittain** Michael, Thropton, Northumberland  
**Bullen** Stewart, Hertford, Herts.  
**Burton** Kim, Norwich, Norfolk  
**Callagher** Barry, Carlisle, Cumbria  
**Clancy** David, Sutton, Surrey  
**Crook** Michael, Preston, Lancs.  
**Culley** Matthew, Camborne, Cornwall  
**Davies** John, Congleton, Cheshire  
**Easton** Clifford, Thames Ditton, Surrey  
**Eyeons** Keith, Cambridge  
**Flowers** Mark, Leamington Spa, Warwicks.  
**Green** Alan, Melksham, Wilts.  
**Hamilton** David, Bridge, Aberdeen  
**Harper** Allan, Fontvieille, Monaco  
**Hasler** Rolf, Durnten, Switzerland  
**Hay** David, Reading, Berks.  
**Herbert** Clive, Narborough, Leics.  
**Hirst** Douglas, Swindon, Wilts.  
**Holland** Joshua, Worcester, Worcs.  
**Hooper-Greenhill** Antony, Gaunts Common, Dorset  
**Hope** Graham, Beckenham, Kent  
**Houghton** Donald, Bideford, Devon  
**Hughson** Graham, Scalloway, Shetlands

**Hunt** John, Portslade, Brighton  
**Jacobs** Alan, Kidderminster, Worcs.  
**James** Phil, Harrow, Middx.  
**James** Adam, Sandhurst, Berks.  
**Johnson** Christopher, Holywood, Co. Down  
**Jones** Julian, West Linton, Peeblesshire  
**Jones**, Anita, West Linton, Peeblesshire  
**Jordan** Andrew, Ammanford, Dyfed  
**Kavanagh** Alan, Bexleyheath, Kent  
**Kewin** Gary, Onchan, Isle of Man  
**Kille** Mark, Glasgow, Scotland  
**Kingsley** Chris, Sutton, Surrey  
**Klemenic** Philip, Worthing, W. Sussex  
**Lansdell** Susan, Yelverton, Somerset  
**Latos** Zygfrid, Worthing, W. Sussex  
**Lee** Anthony, Earls Barton, Northants.  
**Lorrain** Alan, Basingstoke, Hants.  
**Lowry** William, Ballyclare, Co. Antrim  
**Mackin** Stephen, Guildford, Surrey  
**McIntosh** Mike, Croydon, Surrey  
**Miles** Alfred, Tadworth, Surrey  
**Mountjoy** Keith, Doncaster, S. Yorkshire  
**Murphy** Paul, Pensham, Worcs.  
**Page** Eric Harold, Harlow, Essex  
**Pigram** Ian, Woking, Surrey  
**Prestwich** Adrian, Honiton, Devon  
**Redfern** Douglas, Kings Lynn, Norfolk  
**Rees** Helena, Ammanford, Dyfed  
**Richards** Terence, London, E1  
**Richings** Alexander, Calstock, Cornwall

**Roberts** Ricky, Benfleet, Essex  
**Ruben** Natasha, Horsted Keynes, W. Sussex  
**Sato** Takeshi, Hatsukaichi City, Hiroshima, Japan  
**Schofield** Paul, Poulton le Fylde, Lancs.  
**Seymour** Anthony, Boston, Lincs.  
**Sharp** Ian, Chichester, West Sussex  
**Stedman** Anna, Harrow, Middx.  
**Stimpson** Garry, Abingdon, Oxon.  
**Storrie**, Robert, Market Harborough, Leics.  
**Theakston** Clay, Hall Green, Birmingham  
**Theakston** Bryan, Hall Green, Birmingham  
**Thear** Dennis, Tadworth, Surrey  
**Theodosopoulos** Theodore, Rottingdean, E. Sussex  
**Theodosopoulos** Patricia, Rottingdean, E. Sussex  
**Troughton** Michael, Blythburgh, Suffolk  
**Tuit** Michael, Edmonton, London N9  
**Turner** Paul, Halesowen, W. Midlands  
**Veasey** Charles, Winfrith, Dorset  
**Ware** John, Kendal, Cumbria  
**Whittle** Daniel, Lancaster, Lancs.  
**Williams** Glyn, Stoke on Trent, Staffs.  
**Wilson** Richard, Winchester, Virginia, USA  
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## Society elected 2006 January 25

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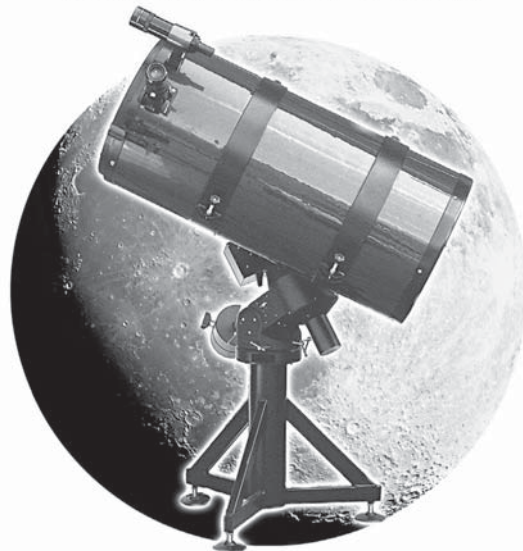
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