

Meetings

Ordinary Meeting and Exhibition Meeting, 2006 June 24

held at the Cavendish Laboratory, Madingley Road, Cambridge

Richard Miles, President
Ron Johnson, Hazel Collett and Nick James, Secretaries

Prior to the Ordinary Meeting, the annual Exhibition was opened by Richard Miles, President, who said he was pleased to report that all but two of the Sections had display stands this year, and that most of the Directors had also been able to attend and were available for members who wished to discuss their work. Although we had almost a full day of talks to enjoy, members should not be shy of coming and going from the lecture theatre at will, and in particular must make sure they took sufficient time to do justice to the excellent Exhibition on offer.

Two other Section Directors would be giving talks later in the day, but meanwhile the President was delighted to introduce Lyn Smith, the new Director of the Solar Section. Lyn was currently the only lady Section Director on the Council, but followed in a fine tradition of ladies that began with the first Director of the Solar Section, Miss Elizabeth Brown, at the foundation of the Association in 1890.

Following applause for Lyn Smith's talk (printed alongside), Dr Miles said that unfortunately the planned sessions online to the Faulkes Telescope North in Hawaii could not take place, as the instrument was currently closed with a fault to its CCD camera. He therefore introduced Mr Martin Morgan-Taylor, BAA Councillor and a lecturer in law at De Montfort University, Leicester, to speak on recent progress on the legal front against the problem of light pollution. Addressing the topic of 'Exterior lighting as a statutory nuisance', Mr Morgan-Taylor described recent legislation on the subject and the extent to which it may be of value to harassed astronomers.

Dr Miles then introduced Mr Martin Mobberley, who would be presenting his very last 'Sky Notes', after 16 years of regular talks on the topic at the Association's meetings.

The summer sky

Mr Mobberley began by thanking Nick Hewitt for his invaluable assistance with all the *Powerpoint*-era Sky Notes he had delivered since early 2002. Although Mr Mobberley had started his Sky Notes in 1990, in the early years they had consisted

of sheaves of overhead transparencies. After a break in 2000/2001 Dr Hewitt had encouraged Mr Mobberley to make his new presentations using *Powerpoint* and had operated the laptop for every Sky Notes since then, freeing Mr Mobberley to concentrate on the presentation and not on battling with Microsoft Windows.

After the usual humorous start Mr Mobberley showed some impressive solar images and animations by Pete Lawrence, using a Coronado PST and webcam. A Potentially Hazardous Asteroid, 2004 XP14, was passing close to the Earth on July 3rd/4th and Mr Mobberley alerted members to its track through Draco. He also showed some recent radar maps of Titan sent back from the *Cassini/Huygens* spacecraft.

Mr Mobberley then announced that, back in April, Tom Boles had reached the phenomenal total of 100 supernova discoveries.

The audience applauded this incredible achievement. Tom had now discovered 103 supernovae, Mark Armstrong had discovered 73, and Ron Arbour had discovered 16. With Stephen Laurie and Steve Foulkes' single discoveries and, allowing for seven joint British discoveries, the UK total was now 187 supernovae! Mr Mobberley felt that, as they had worked alone, and were amateurs, Tom and Mark were the greatest supernova discoverers in the world with only the professional Fritz Zwicky (123 discoveries between 1921 and 1973) standing comparison with them in terms of solo effort.

Mr Mobberley then showed some remarkable Jupiter, Mars and lunar images taken by Damian Peach and Dave Tyler on their recent trip to Barbados. Of particular interest was Damian's image of Jupiter's large moon Ganymede, and his 135 imaging sessions of Mars achieved in the 2005/2006

Observing the Sun with the Solar Section

The main work of the Solar Section is to observe and record solar activity in white light by noting the number of sunspots and sunspot groups on the solar disk on any given day. However due to modern technology, members are able to record data in a variety of ways. Several members observe solar prominences, filaments, plagues and flares in H-alpha and digitally record their observations, submitting some truly stunning images. Occasionally something special happens and in recent years we have been spoiled with major events such as the transits of Mercury and Venus, an annular eclipse visible from Spain and of course the recent total eclipse visible from North Africa and the eastern Mediterranean.

The Section boasts many dedicated and talented observers, but none more so than Eric Strach. A past president of the Liverpool Astronomical Society, Eric has been eclipse chasing around the world since the mid-1970s. He observes daily from his home observatory using a 3" refractor for white light observations and a C8 SCT with a 0.6A Daystar filter for H-alpha observations. His latest paper entitled 'Chromospheric Darkening' was published in the February 2006 edition of the *BAA Journal*. Eric has submitted some very fine drawings of sunspot groups and prominences over the years but now he prefers to image the Sun using a Starlight Xpress SXV M9 CCD camera, and proc-

esses the images on his laptop computer. Commendable work from a first class observer, but when you consider that Eric is now 91, his achievements become truly remarkable!

Over the next three years, the Solar Section aims to make solar astronomy a prominent and active Section within the BAA. Annual meetings will be held to give members the opportunity to meet and discuss techniques. The Section will be represented at BAA meetings around the country to exhibit members' work and to encourage others to both take up solar observing and to take it out into the public domain. Solar observing is ideal as an introduction to astronomy for the general public, as not only is it possible during social hours but provides an impactful visual experience with a real 'wow' factor. Finally, the Section intends to develop its website facilities to exhibit members' material and to provide up-to-date information and alerts.



Lyn Smith, Director of the Solar Section

Lyn Smith, Director



BAA Section Directors at the Exhibition Meeting, 2006 June 24. *From left to right, back row:* Dr Stewart Moore, Deep Sky; Roger Pickard, Variable Star; Neil Bone, Meteor; Bob Marriott, Instruments and Imaging; Dr Richard McKim, Mars, and Mercury & Venus; Dr John Rogers, Jupiter. *Front row:* Roger Dymock, Asteroids & Remote Planets; Lyn Smith, Solar; Dr Laurence Newell, Radio Astronomy Group; Dr Dave Gavine, Aurora. (All photos by Hazel McGee)

session. Mr Mobberley then went on to show a large series of Jupiter mosaics compiled by John Rogers in recent months, showing numerous tiny features within the Jovian atmosphere. Of particular interest at the moment was the possible merger of White Spot Z with White Spot Y and the red appearance of Oval BA, which was looking like a mini Great Red Spot. Oval BA would pass directly south of the Great Red Spot in the next week and Damian Peach was heading for Portugal to image this event.

As far as comets were concerned 73P Schwassmann–Wachmann had put on a remarkable performance in recent months, breaking up into a whole string of smaller fragments, with the large fragment ‘B’ shedding countless smaller cometary chunks. These comets had been imaged by various

UK imagers including the speaker, Peter Birtwhistle and Nick James. Comet 41P Tuttle–Giacobini–Kresak was worth keeping a close eye on in the next few weeks as, although low down, it was prone to perihelion outbursts. Two other comets, Pojmanski and 2004 B1 (LINEAR), were still CCD objects and 4P/Faye would be worth following in the autumn.

Mr Mobberley briefly mentioned the suspected binary black hole ‘blazar’ galaxy OJ 287 which many BAA members had observed in the past year. Its predicted major outburst had not yet occurred and so the ‘jury was still out’ on whether it had an eleven-year outburst cycle. Mr Mobberley then announced that Malcolm Jennings had successfully observed occultations of stars by asteroids 377 Campania and 558 Carmen in recent weeks and he detailed a few upcoming events for UK observers as well as an occultation of a 3rd mag star by 347 Pariana, visible from Australia. As always, the Perseid meteor shower would be taking place in August, but the maximum would be badly hampered this year by the gibbous Moon. Mr Mobberley ad-

vised that the forthcoming lunar eclipse, on September 7, was worth observing, even if it would be very low down and only grazing the umbra.

Finally, Mr Mobberley mentioned a few of the really outstanding and unexpected events that had taken place in the night sky since he gave his first Sky Notes in late 1990. The most memorable events included supernova 1993J in M81, comet Shoemaker–Levy 9 hitting Jupiter, comets Hyakutake, Hale–Bopp and Ikeya–Zhang, Mark Armstrong’s first UK supernova discovery and the 1999 Leonid meteor storm and cloudy Cornwall eclipse.

As his final slide Mr Mobberley showed a picture of himself, looking much younger, with Patrick Moore in 1990 at a BAA meeting. Bearing in mind the toll the last sixteen years had taken on Mr Mobberley’s physical appearance he thought it was now time for him, at last, to retire from delivering the Sky Notes at BAA meetings!

Following enthusiastic applause from the audience in appreciation of Mr Mobberley’s memorable efforts over the past 16 years, the President asked Mr Tom Boles to present a short illustrated report, which he proceeded to do... on the subject of the scurrilous history of Martin Mobberley! Dr Miles then adjourned the meeting for lunch and an opportunity to spend some time looking round the Exhibition.



Left to right: Jeremy Shears, Roger Pickard, David Boyd and Andy Wilson of the Variable Star Section.



Karen Holland, Steve Payne (centre) and Chris Longthorn at the Radio Astronomy Group display.

Following the lunch break Dr David Gavine drew the tickets for a raffle, the prizes for which had been kindly donated by some of the trade stands who were exhibiting. Dr Miles then formally opened the seventh Ordinary Meeting of the 116th session, and invited Mrs Hazel Collett to read the minutes of the previous meeting, which were duly approved. No presents had been received this month, but members were asked to confirm the election of 13 new members, and the President said that if any new members were in the audience he would be delighted to meet them afterwards.



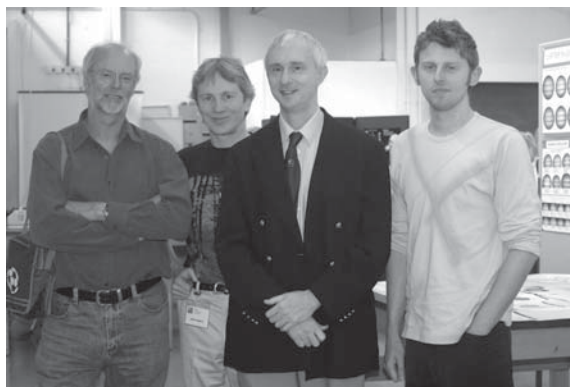
The President thanked Harry Druiff and the staff of the Cavendish Laboratory for their invaluable help in putting on the Exhibition for another year, as well as the numerous BAA organisers, and helpers including Martin Whipp and Steve Cooper from York Astronomical Society for manning the reception desk. The next meeting of the Association would be held at the National Space Centre in Leicester with the theme of 'Stars: Birth, Death and the bits in between'. A European symposium on light pollution would be held in Portsmouth on September 15 and 16, with speakers from all over Europe on this critical topic, and members were strongly encouraged to attend.

Dr Miles then said that it gave him very great pleasure to present the Association's Awards and Medals for 2006.

The Walter Goodacre Award: Richard M. Baum

The Walter Goodacre Award was the senior honour bestowed by the Association, and represented recognition of the recipient's contribution to the progress of astronomy over many years, especially work communicated to the Association. Council had approved the award this year to Richard M. Baum, who had joined the BAA on 1947 January 1.

Quoting from the award citation, Dr Miles said that Richard had made notable contributions to the progress of astronomical observation in the Association in the capacity of Section Director and through contributions to the *Journal* over his nearly 60 years of membership. As a Section Director he was instrumental in re-invigorating observation of Mercury, Venus, Mars and the asteroids, creating the Terrestrial Planets Section in 1979. Following his efforts, individual Sections were



Dave Tyler (left), John Rogers, Martin Mobberley and Damian Peach at the Jupiter Section display.

Asteroids and Remote Planets Section – past, present and future

Roger Dymock described the structure, objectives and work of the Section. The presentation opened with a brief introduction to asteroid groups, their composition and discovery. The first asteroid, 1 Ceres, was discovered in 1801 by astronomers looking for the 10th planet in the Solar System. Recent discoveries have been of distant objects such as 90377 Sedna. Ground-based telescopes and spacecraft will uncover many more distant asteroids when they come online over the next few years.

In 1981 a Minor Planets Group within the then Terrestrial Planets Section was formed by Andrew Hollis. This became a Section in its own right in 1984 and Andrew remained Director until his untimely death last year. The Section has three Assistant Directors, Peter Birtwhistle, Andrew Elliott and Richard Miles. It is an objective of the Section to provide something of interest to both active and armchair observers. A newsletter is issued monthly and a new handbook is in course of preparation. A Section meeting will be held in Newbury on 2007 June 2.

Initially asteroids were observed visually or with photoelectric photometers. Andrew Hollis and Richard Miles were pioneers in that field. Nowadays imaging is carried out with CCD cameras, video



The main-belt asteroid Gaspra imaged by the *Galileo* spacecraft in 1996. NASA/JPL

cameras and digital SLRs. Visual observations of stellar occultations by asteroids continue (Andrew Elliott displayed his video recording of meteors and occultations on the ARPS stand at the Exhibition). The main activities of Section members are CCD astrometry and photometry. Peter Birtwhistle is amongst the foremost amateurs in the field of amateur asteroid astrometry and discovery. As to the future, Alan Cahill is running a project for the Section to assess the suitability of remote robotic telescopes for imaging asteroids.

Roger Dymock, Director

able to re-form and go from strength to strength. Several of today's Directors were encouraged in their early days by Richard and many members have benefited from his quiet encouragement.

Richard has been a notable contributor to the *Journal* over many years, with both observational and historical papers. The observational papers have focused on Mercury and Venus, planets which he assiduously observed with a small refractor, in part to put himself into the perspective of earlier workers with small telescopes. The historical work is often chosen to illustrate observational curiosities of the past, many of which provide interesting analogues of some of today's problem areas. He has written several books, which bring together these themes.

It is highly appropriate that we recognise Richard's contribution to the progress of astronomy in the Association by bestowing upon

him the Association's senior award in the year that will culminate with his 60 years of membership.

Richard Baum was unable to travel to attend the meeting so the award was accepted on his behalf by Dr Richard McKim. Dr Miles read out a letter of thanks from Mr Baum in which he expressed his appreciation and gratitude for the honour of the award.

The Merlin Medal and Gift: Damian Peach

The President said that the Merlin Medal is awarded in recognition of a notable contribution to the advancement of astronomy. Although still in his twenties and based in the unfavourably high northern latitudes of the UK, Damian Peach is widely regarded as the best planetary imager in the world. He first started to rival the world's best imagers in the winter of 1999/2000 when,



using a 30cm LX200 SCT, SBIG ST5 CCD camera and filter wheel, he began stacking very high numbers of images to get the smoothest, most noise-free images. Many of his best early images were taken from the cramped, seventh-storey, south-facing balcony of a tower block in King's Lynn. In long spells of clear weather he started observing every single night, for four or five-hour sessions, often making do with just a few hours sleep.

A few years later Damian headed for Tenerife, where there were more clear nights and where both Jupiter and Saturn were higher in the sky. With a Celestron 11 he secured some of the finest amateur Jupiter images ever acquired from Earth. Funds were then accumulated for a further foreign trip, to Barbados in March–April 2005, which resulted in his acquiring another fine set of

Jupiter images and a detailed set of images of Saturn which revealed subtle colour changes in the Saturnian south polar region that were confirmed by the Hubble Space Telescope. Damian has often assisted with writing reports for the Jupiter and Saturn Sections, and has also been involved with the US-based Association of Lunar and Planetary Observers. His latest images, of the 2005 Mars apparition, again set the world standard in both quality and quantity.

Replying to the President and acknowledging the audience's applause, Damian said he wanted to thank his colleagues and friends in the BAA, especially John Rogers, Richard McKim and David Graham, and the other imagers around the world who had helped him, for their advice and friendship.

The meeting then broke for tea, after which Dr Miles introduced two other talks by Sec-

tion Directors introducing the work of their Sections. Mr Roger Dymock spoke on the Asteroids and Remote Planets Section (see his summary on the previous page) and Dr John Rogers described the work of the Jupiter Section, mentioning in particular the long history of the Section in observing major features such as the Great Red Spot and, more recently, the new storm system called oval BA. Visual observations of the planet were still needed in particular to provide continuity with the historical record.

Following applause for Dr Rogers' talk, the President thanked all involved in the 2006 Exhibition and the audience for attending, and adjourned the meeting until Saturday 2007 September 2, at the National Space Centre, Leicester.

Hazel McGee & Martin Moberley

Annual General Meeting, 2006 October 25

held at New Hunts House, Guys Hospital, London Bridge, London SE1

Richard Miles, President

Ron Johnson, Hazel Collett and Nick James, Secretaries

The President opened the 2006 AGM and invited Mrs Hazel Collett, Meetings Secretary, to read the minutes of the previous year's meeting. These were approved by members and duly signed. The President then welcomed Mr David Freedman, Auditor to the Association, to the meeting, and invited Mr David Boyd, Treasurer, to present the Association's Accounts for the past year.

Mr Boyd reminded members that the Accounts for the year ending 2006 June 30 had appeared in the 2006 October issue of the *Journal*.¹ In summary, the assets had risen in value by £8,854, showing a healthy surplus. Mr Boyd invited questions on the published Accounts, but there were none. He thus proposed that the Accounts be adopted; this motion was seconded by Michael Maunder and passed with two abstentions. The Treasurer concluded by extending his thanks to Mr Roy Dowsett, Accountant, and Mr David Freedman, Auditor, for their advice and assistance in the financial running of the Association.

The President added his own thanks to these individuals, wishing also to mention Mrs Jean Felles, Manager of the Association's Office, who had overseen the implementation of and smooth transition to a new membership database at the start of the year. He further commented that the Association's income from Gift Aid had totalled £12,691 over the past year. This very valuable contribution to its finances had come at no cost

to members at all; it was paid entirely by the Inland Revenue. However, the Association could only claim it if members had signed Gift Aid declaration forms, and any who had not done so were urged to get in touch with the Office immediately.

Dr Miles then proceeded to present his Annual Report of the Association's activities, opening by expressing thanks to his predecessor, Mr Tom Boles, for proposing him for the Presidency. To begin, he summarised the Annual Report of Council which had appeared in the October *Journal*. He wished to draw especial attention to the reports of the Sections, as they gave an insight into the Association's diverse activities and showed the high level of support which it received from its membership. He wished to take this opportunity to thank all the members for making the Association the thriving, active organisation that it was.

Turning to membership figures, Dr Miles reported that the Association had had 2,904 members at the end of July – up from 2,780 at the same time in 2005. Putting this into context, he added that the membership had peaked at 3,200 in 1994, but subsequently gone into decline in the later 1990s. Mr Guy Hurst had reversed the decline during his Presidency with a successful membership drive; Dr Miles was pleased to see the growth in membership continuing and was keen to see it go on. Against this flux of new members, the Association had less happily noted the death of a number of active and talented

contributors during the year, among them Andy Hollis and Harold Hill.

Moving on to the Association's publications, Dr Miles congratulated Mr Callum Potter, Webmaster, for his redesign of the website, bringing to it a considerably more professional feel. Amongst the new additions was a discussion forum, and the President was pleased to see it being well used. Mrs Hazel McGee, Editor of the *Journal*, was thanked for her stalwart work in maintaining the high standard of the Association's main printed publication. In addition, Mr Don Miles had produced four paper circulars, and the electronic circulars service was becoming increasingly popular as a source of the latest news; 46 email messages had been sent over the course of the year. Dr John Mason had recently published a newly-updated edition of the *Observers' Guide*, and Roger Perry had worked with Nick James to produce a DVD of members' video observations of the 2006 March total solar eclipse, which was now available for purchase.

Readers of the *Journal* would be aware that the Association was going through a period of administrative upheaval. The Office would shortly be moving out of Burlington House for the duration of lengthy renovation work. It would be operating in the meantime from temporary rented accommodation on Hallam Street, though the official postal address would remain unchanged, as mail sent to Burlington House would be re-directed. Regrettably, the temporary office



was too cramped to allow visitors access to the library, although Anthony Kinder, Librarian, remained happy to handle enquiries where possible.

At the Exhibition Meeting in June the Association's awards and medals had been presented. The Walter Goodacre Award was presented to Richard M. Baum, and Damian Peach received the Merlin Medal and Gift. Other recipients of notable awards in the past year included Mr Bob Mizon, Coordinator of the BAA Campaign for Dark Skies (CfDS), who had received the 2006 Galileo Award from the European Region of the International Dark Sky Association at the 6th European Dark-Skies Symposium in Portsmouth on September 15. In recent times, his name had become almost synonymous with the campaign against light pollution, and this award was surely well deserved.

Turning to the observing Sections, there had been three changes of directorships over the year. Upon Andy Hollis' death in 2005 November, Roger Dymock had taken over the Asteroids and Remote Planets Section; the President congratulated Mr Dymock upon having settled into the job very quickly, noting that he had produced Section newsletters every month since then, and that their standard had been consistently high. In January, Ron Livesey had stepped down from running the Aurora Section after 23 years of service; his successor was David Gavine. Finally, in May, Lyn Smith had taken over the Solar Section from previous Director Mike Beales.

Briefly summarising the achievements of the individual Sections, the President gave especial mention to the Variable Star Section for having continued to demonstrate that visual astronomy remained a valuable art; over the course of the year they had filed in excess of 38,000 visual photometric estimates. The Lunar Section had appointed a new topographic coordinator, Peter Grego, and produced some superb sketches and CCD images over the course of the year. Perhaps most notable were Damian Peach's CCD images, which reminded the President of images taken by lunar orbiters.

The Comet Section had had a rather dormant year due to the lack of bright objects, though the dearth had recently come to an end with the appearance of 2006 M4. The President noted the visual discovery of 2006 T1 by David Levy on October 3; it was now quite rare for amateur comet hunters to beat professional robotised surveys to comet discoveries. This object was also to be noted because it would make a close approach to Earth at its next return in 2011, and possibly pass close enough to reach naked-eye magnitudes.

The planetary Sections had produced some excellent imaging over the year. Dr Miles especially singled out the Jupiter Section for mention; David Tyler and Damian Peach had

once again produced a plethora of breathtaking images of the planet. The data obtained by the Section had been of sufficient quality that John Rogers, Director, had been able to present it in two papers^{2,3} in *Icarus*, a professional refereed journal.

The President turned finally to the logistics of the Association, thanking Jean Felles and Valerie Stoneham for their work in running the Office. Jean Felles had just completed her first year as Manager following Patricia Barber's departure, and was doing a sterling job. This was the first AGM since Valerie Stoneham had joined the Office, and the President invited her to come forward to receive a presentation, which members applauded.

Dr Miles closed by noting that Richard Flux had this year stepped down from the job of organising the Winchester Weekend after having done so for the past ten years; the 2006 April event had been his last. Thanks were due for his long service, which the audience applauded.

The President then invited Mr Ron Johnson, Business Secretary, to read out the results of the ballot for Council for the 2006–'07 session, expressing his thanks in doing so to the scrutineers of the ballot. Mr Johnson reported the results of the ballot as follows. President: Richard Miles, 361 votes;

Vice-President: Tom Boles, elected ex-officio; Treasurer: David Boyd, 363; Secretaries: Hazel Collett (Meetings), 336; Nick James (Papers), 335; Ron Johnson (Business), 336. Other members of Council: Nick Hewitt, 343; Martin Morgan-Taylor, 337; Ann Davies, 336; Geoffrey Johnstone, 333; John Mason, 332; Sheridan Williams, 327; Callum Potter, 324; Peter Hudson, 321; Maurice Gavin, 315; Mark Armstrong, 308. Dr Nick Hewitt, having received the largest number of votes, therefore became the second elected Vice-President.

Dr Miles then proceeded to deliver his Presidential Address, entitled 'A Light History of Photometry', in which he traced the development of photometric astronomy from ancient times to the present. This address will be published in the *Journal* in due course.

The meeting was then adjourned, and the first Ordinary Meeting of the 117th Session followed.

Dominic Ford

- 1 *J. Brit. Astron. Assoc.*, **116**(5), 248–265 (2006)
- 2 Rogers J. H., Mettig H.-J. & Peach D., *Icarus*, **184**, 452–459 (2006)
- 3 Rogers J. H. *et al.*, *Icarus*, **185**, 244–257 (2006)

Ordinary Meeting, 2006 October 25

held at New Hunts House, Guys Hospital, London Bridge, London SE1

Richard Miles, *President*
Ron Johnson, and Nick James, *Secretaries*

The President opened the first meeting of the 117th session, and in the absence of the Meetings Secretary, invited Dr Nick Hewitt to read the minutes of the final meeting of the previous session. These were approved by the audience and duly signed. The President announced that 118 new members were proposed for election; those 65 who had been proposed at the previous meeting were approved and declared duly elected. The President welcomed any new members in the audience to introduce themselves to him at the end of the evening.

Mr Nick James, Papers Secretary, said that three papers had been accepted by Council for publication in the *Journal*:

Edward Walter Maunder, FRAS (1851–1928), by *Anthony Kinder*

The opposition of Mars, 1999, by *Richard McKim*

Analysis of the first confirmed super-outburst of V337 Cygni in 2006 May, by *David Boyd, Tom Krajci, Jeremy Shears & Gary Poyner*

The President said that the next Ordinary Meeting would be held at the present venue on November 25, when the speakers would include Dr Andrew Bell, giving an update on the analysis of data from the *Huygens* probe and the ongoing work of the *Cassini* orbiter, and Prof Mike Barlow (UCL), on the subject of planetary nebulae. Before then, the Association would be holding the fourth in its popular 'Back to Basics' series of workshops on October 28, to be hosted by the Cotswold Astronomical Society.

The President then introduced the meeting's first talk. Given the media excitement in recent weeks over the International Astronomical Union (IAU)'s decision to downgrade Pluto's status from that of a 'planet' to that of a 'dwarf planet', there were unlikely to be many members who had not heard the news. As Pluto fell within the remit of his section, Mr Roger Dymock, Director of the Asteroids and Remote Planets Section, was invited to give an account of the changes.



Reclassifying Pluto

Mr Dymock explained that two of the resolutions passed at the General Assembly of the IAU in Prague on August 14–25 had concerned the classification of solar system bodies. Resolution 5 prescribed that such bodies should be divided into three categories. The first of these, ‘planets’, would contain those objects which satisfied three requirements: that they (a) were in orbit around the Sun, (b) were of sufficient mass for self-gravity to mould them into ‘round’ shapes, and (c) had cleared all material from the neighbourhood of their orbits. Mr Dymock remarked that (c) seemed somewhat vague – what degree of clearance was required? No doubt, with increasing study of extrasolar planets in years to come, this would be a debate for the future. In the meantime, there were eight confirmed ‘planets’: the traditional list, minus Pluto.

The second category of Resolution 5 was ‘dwarf planets’, members of which had to satisfy (a) and (b) above, but did not have to have cleared the neighbourhoods of their orbits. Thirdly, ‘small solar system bodies’ were all other solar-orbiting bodies, excluding artificial satellites.

Resolution 6 referred specifically to Pluto, determining that it should be classified as a dwarf planet, adding that it was the prototype of the set of trans-Neptunian bodies. The speaker commented that this second resolution seemed largely superfluous; Pluto’s classification was already clear from the previous resolution.

Returning to Resolution 5, the speaker added that the category of dwarf planets would include a wide range of bodies in the outer solar system, including Plutinos (objects just outside Neptune’s orbit, and, like Pluto, locked into a 2/3 orbital resonance with it); trans-Neptunian objects; classical Kuiper Belt objects (KBOs), Scattered Disc objects (SDOs), and some of the larger members of the Asteroid Belt such as Ceres. Such sub-categorisations would not officially be recognised by the IAU; these objects would officially be classed only as ‘dwarf planets’ or ‘small solar system bodies’. As far as the speaker was aware, no definitive list of candidate dwarf planets had yet been published, though several unofficial lists could be found on the Web.

To close, the speaker remarked that the name of his Section was no longer correct; it should surely be changed to ‘The Small Solar System Bodies (Asteroids), Dwarf Planets and Pluto-Like Objects Section (SSSB(A)DPPLoS)’. He suspected the name wouldn’t catch on, though.

Following applause, a member asked why Pluto’s moon Charon was on the list of bodies which might be classified as dwarf planets, given that it was in orbit about Pluto,

not the Sun. Mr Dymock replied that it was unclear what decision would be made here. Charon’s size was sufficiently similar to that of Pluto that the system might be classified as a binary pair of dwarf planets. As yet, there was no definition which could be used to distinguish binary planet pairs from planet/moon pairs – scope for more IAU legislation, perhaps.

After thanking Mr Dymock for his clear account of the matter, the President invited the evening’s final speaker, Mr Nick James, to become the first ‘Sky Notes’ speaker of the post-Mobberley era.

The autumn sky

Continuing from the previous talk, Mr James added that, according to reports he had heard, the IAU intended to give minor planet 2003 UB313 the name *Eris*. The discovery of this object had sparked the recent debate, on account of its being larger than Pluto and yet not classified as a planet. The name seemed most appropriate, as *Eris* was the Greek personification of strife and discord.

Turning to the present sky, Mr James reported that it was not a good one for planetary observers. Mars had reached superior conjunction on October 23 and Venus would do likewise on October 27; Mercury would be at inferior conjunction on November 8, transiting the Sun in the process, and Jupiter would be at superior conjunction on November 21. The only naked eye planet which was not too close to the Sun to be seen was Saturn, and even that did not rise until midnight. It was, however, a beautiful morning object, situated in Leo.

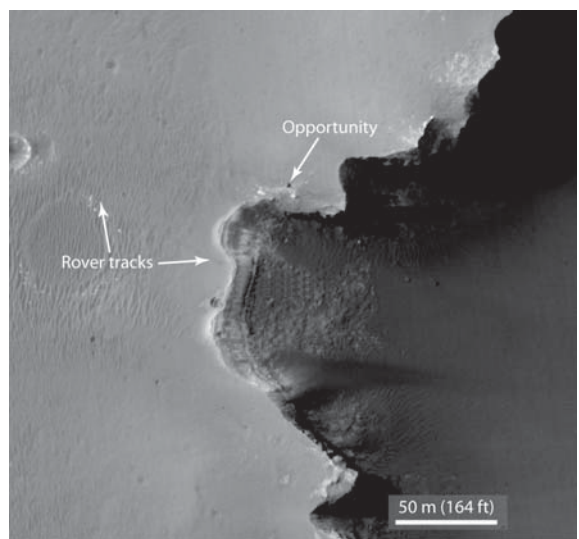
NASA’s *New Horizons* probe, sent to Pluto and the Kuiper Belt, would shortly be passing Jupiter, receiving a gravitational slingshot in the process. Some superb images of Jupiter had already been returned from the encounter, and more, of higher resolution, would be taken as the probe came closer in coming weeks. After passing Jupiter, it would travel for eight further years, reaching Pluto in 2014, but not going into orbit around it; it would instead go on to study other Kuiper Belt objects.

Turning to another NASA probe, Mr James reported that *Mars Reconnaissance Orbiter* (MRO) had descended into its mapping orbit around Mars and was now capable of returning im-

ages of staggering detail, measuring up to 25,105 by 34,530 pixels and resolving features as small as 27cm on the surface. The first published image was of Victoria Crater, a target which the *Opportunity* rover was likely to study in coming months. The quality of the image was such that the rover was clearly to be seen, and even the shadow cast by its PanCam camera boom was clearly visible. The speaker added that there were plans to image the likely crash sites of *Mars Polar Lander* and *Beagle 2*, with the hope of learning more about the causes of failure in each case. However, the uncertainties in the locations of these sites would be a problem, especially in the case of *Beagle 2*. These high-resolution images had a field of view of only 6km, and each one took a whole day to transmit back to Earth, limiting MRO to taking most of its images at lower resolutions and zoom levels.

Turning next to comets, Mr James reported that the recent drought of good visual objects seemed to have ended with the coming of Comet 2006 M4 (SWAN), discovered by amateurs Rob Matson and Michael Mattiazzo in the publicly-available online data archive of the SWAN instrument on the SOHO satellite. The speaker reported that he had observed it to have brightened dramatically over the past few days, by about 2 magnitudes, to mag ~4.5. Guy Hurst, in the audience, added that he too had recorded this brightening. An evening object, it was to be found in Hercules over the next couple of weeks. It would be an easy binocular target, and depending how its brightening continued, possibly naked-eye-visible in dark skies.

Mr James added that SWAN was a very powerful tool for comet hunting, not to be confused with SOHO’s solar coronagraph,



An image by the High Resolution Imaging Science Experiment on NASA’s *Mars Reconnaissance Orbiter* shows the *Opportunity* rover near the rim of Victoria Crater on 2006 October 3. NASA/JPL/University of Arizona



LASCO, which often caught more attention on account of being a prolific discoverer of sun-grazing and Kreutz Group comets. SWAN observed in the ultraviolet, in the Lyman alpha line of atomic hydrogen (121.6nm), taking whole-sky images thrice weekly. The primary purpose of these images was to study solar flares through their excitation of the neutral interstellar hydrogen surrounding our solar system, but they were also superbly suited to detect hydrogen gas around comets, which made up the bulk of the point-sources seen by SWAN.

One other comet demanded mention: 2006 T1 (Levy), discovered on October 2 by David Levy, an amateur from Arizona. Though it was now fading at mag 10.5 and fast sinking south, it remained of interest because of the rarity of its amateur discovery.

The peak of the Leonid meteor shower was due on the night of November 18/19. Though the enhanced activity shown by the shower around the turn of the millennium, brought by its 33-year cycle, was now well past, David Asher & Rob McNaught, whose modelling of the parent dust-stream had proven so successfully predictive in the past, had suggested that a brief resurgence might be observed in a window around 04:45 UT on November 19. According to their models, a rate of 100–150 ZHR might momentarily be reached – equivalent to a good Perseid display. Neil Bone, Director of the Meteor Section, would be keen to hear of either positive or negative observations; both were valuable. A dark observing site was to be recommended, as the stream tended to produce fast and faint meteors.

Mr James commented upon the recent and widely-publicised flight (STS115) of

the space shuttle *Discovery* to install new solar panels to the International Space Station (ISS) – only the second Shuttle flight to have taken place since the *Columbia* disaster. There had been some speculation about how much the new panels would enhance the ISS's visual magnitude. On the previous night, the speaker had seen it pass overhead, and it had appeared remarkably bright: certainly mag –3, perhaps as much as –4. Moreover, it had been deep red in colour throughout the whole duration of the pass; the speaker wondered whether the new panels reflected red light preferentially. He compared the sight to Venus in brightness, and to Mars in colour. The next pass over the UK would be on October 27, at around 7pm BST, and would be followed by a series of further passes over following days. More information could be obtained from the (highly recommended) *Heavens Above* website <http://www.heavens-above.com>

Mr James closed by mentioning the forthcoming transit of Mercury across the face of the Sun on November 8. Unfortunately this would be occurring in UK night-time, and so members would need to travel to see it, ideally to the Pacific vicinity. He wasn't too disappointed; he recalled from previous transits that Mercury was a tiny dot against the solar disk. However, Mike Maunder, in the audience, said that he was travelling to New Zealand to observe it.

Following applause for Mr James' talk, the President adjourned the meeting until 2.30 pm on Saturday November 25 at the present venue.

Dominic Ford

New members

The British Astronomical Association cordially welcomes the following new members:

Elected 2006 November 25

Williams Colin R., Okehampton, Devon.
[We apologise that the name and address of the above member were incorrectly printed in the April Journal.]

Elected 2006 December 16

Adam Steven, Minster Lovell, Oxfordshire
Ahado Dhyam, Chippenham, Wiltshire
Akers David, Rugeley, Staffs.
Anderson Douglas, Bromley, Kent
Annette David William, Axminster, Devon
Barnes Jennifer Mary, Ceaulmont, France
Bayley Jack, Bolton, Lancashire
Bignell Kenneth John, Eastcote, Middx.
Bignell Gail, Eastcote, Middlesex
Bishop Paul, Blakeney, Norfolk
Burt Andrew Philip, Colchester, Essex
Carlin Gunnar, Uppsala, Sweden
Carroll Benjamin, Dunblane, Perthshire
Chapman Laurie, Stowmarket, Suffolk
Clark Peter, South Cave, East Yorkshire
Coles Richard, Dunblane, Perthshire
Cottee Michael David, Friston, Suffolk
Counte Laura Jane, Waltham, Lincolnshire
Dembowski William M., Windber, Pennsylvania, USA
Downham David John, Pontefract, Yorks.
Duffree George F., Grantham, Lincs.
Duggan Daniel, Telford, Shropshire
Ellis Flora, Friston, Suffolk
Featherstone Paul, Weisdale, Shetland
Florentine Geoffrey Patrick, London, SE6
Gilchrist June Mary, Dundee
Hough Kenneth, Kendal, Cumbria
James Guy Geoffrey, Dursley, Glos.
Knudssen Peter, Scunthorpe, Lincs.

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New members joining between August and January will be sent the publications of the current session. New members (regardless of age) joining between February and June may pay the reduced rate of either £22.00 for the February, April and June *Journals* plus the current *Handbook* or £15.00 for the above *Journals* without the *Handbook*.

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