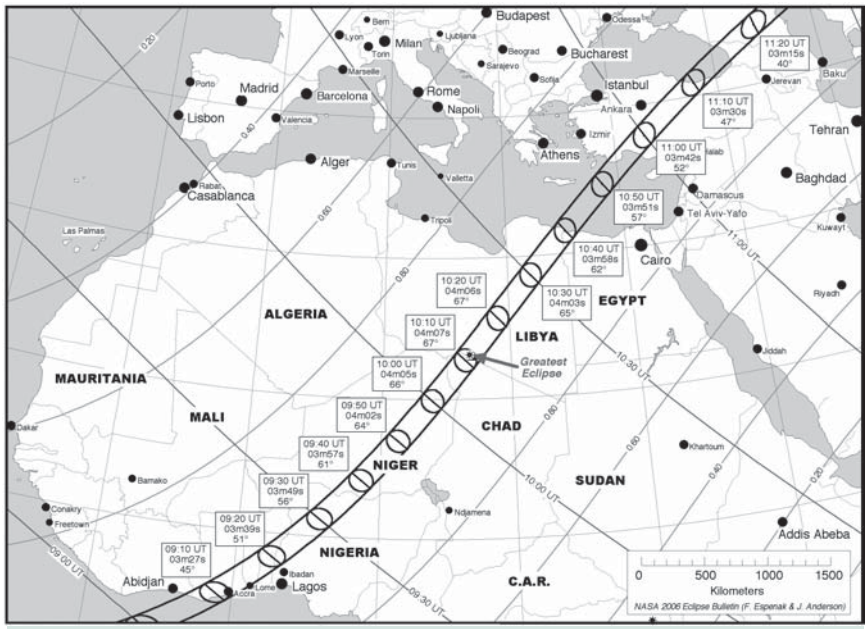
'The eclipse with everything'

At last a solar eclipse that disappointed nobody. On 2006 March 29, thousands had journeyed from the UK and continental Europe to Turkey, North Africa and deep into the Sahara Desert, to be rewarded with crystal clear skies in every location, up to four minutes seven seconds of totality, and a textbook set of observed phenomena that caused Dr John Mason in Libya to exclaim 'This truly was the eclipse with everything.'

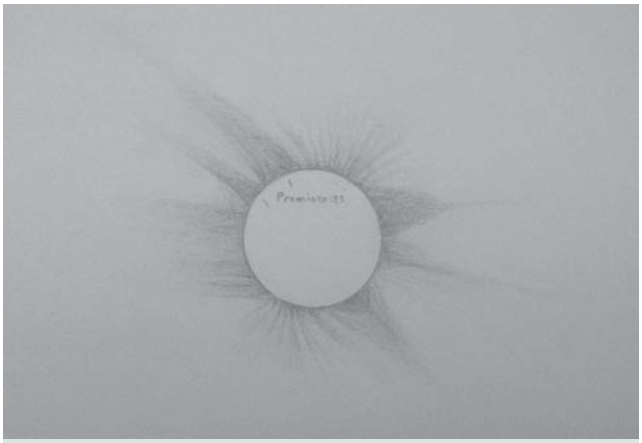
The Moon's shadow first touched the Earth in the rainforests of the Brazilian Amazon, then crossed the Atlantic Ocean to meet the west African coast near Accra in Ghana. Passing through Nigeria, Niger and a corner of Chad (where greatest eclipse occurred at 10.10 UT) the shadow track crossed the Sahara Desert through Libya to meet the coast of North Africa at the Libyan/Egyptian border. Crossing the Mediterranean to Turkey, it intersected the track of the 1999 eclipse near Sivas, then crossed the Black Sea to Georgia, Russia and Kazakhstan, finishing its journey at sunset in Mongolia.

Hundreds of visitors observed the event from the coast of Turkey, many departing the UK on the spur of the moment when it became clear that the weather prospects were good. Others arranged their trips months in advance despite the 50% risk of cloud cover in the area at this time of year, and all were fortunate enough to experience a magnificent eclipse in superb conditions.

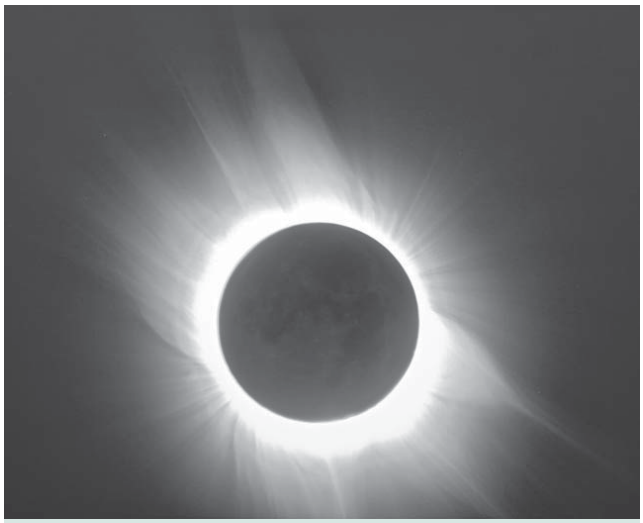
The largest single expedition to the centre line was organised by Explorers Tours from the UK. I joined 780 other travellers, including many BAA members, on a modest but comfortable Greek-based cruise ship, the MV Perla, in Heraklion on March 26, and cruised across an unusually placid Mediterranean Sea to Benghazi in northern Libya. Starting out well before dawn on March 29, twenty buses took us on a gruelling 500km journey through the desert to a location south of the green oasis town of Jalu, well clear of the typical coastal cloud which could have threatened observation from more northerly sites.



The track of the eclipse over Africa and Turkey, reproduced from the *NASA 2006 Total Eclipse Bulletin*, courtesy F. Espenak & J. Anderson.



Sketch made by Chris Proctor, south of Jalu, Libya. *C. J. Proctor.*



Composite image by Eddie Guscott in Side, Southern Turkey, showing Earthshine and the corona. 80mm f7 refractor and Canon 300D digital SLR camera, 2, 3 and 5 secs., ISO 100. *E. Guscott.*

At this position (28°14'30.2"N, 21°31'4.6"E) the Sun's altitude was 65°, well away from horizon dust and atmospheric disturbance. Cooling in the dry air was particularly noticeable during the partial phases (see temperature graph on page 114). Soon we noticed the subtle change in the quality of light that uniquely distinguishes a solar eclipse. John Mason's matched images (p.115) record the sharpened edges of shadows and the effect on the appearance of the ground as the solar crescent narrowed. Now it was almost impossibly thin – surely it must break soon, although the sky still seemed surprisingly light...

Then suddenly the whole desert came alive, shadowy snakes rippling and shimmering across the landscape to the horizon, a quite remarkable and almost physically disorienting effect like being on a moving ship. 'Shadow bands!' the cry went up. 'Look at the shadow bands!' You could not avoid looking at them,

...continued on page 114

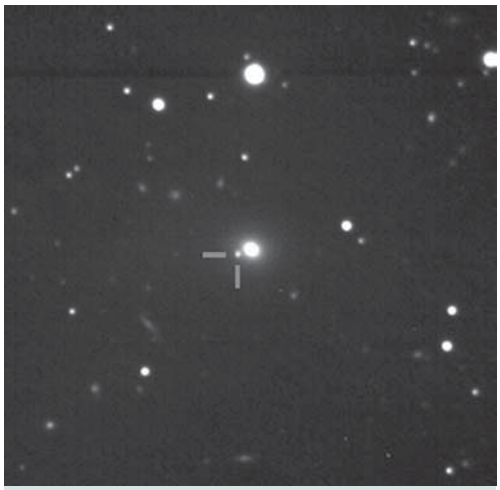
From the President

Here we are almost halfway through the year and I have another opportunity to bring you up to date on developments here at the BAA. One important subject to highlight on this occasion concerns the recent changes to the Association's website [**http://www.britastro.org**], which is overseen by our very able World Wide Web manager, Callum Potter. If you haven't visited our website recently then I would recommend doing so – only the other day when I logged on, I discovered that I was just one of 353 'guests' perusing the website at that very moment!

Callum has introduced a number of improvements and additions, which I hope you will find useful. When you go to the homepage, you will find a completely new look including the option to log into a 'Members Only' section. Here access is restricted and you will need to register so as to obtain a username and password. By setting aside an area of our website for BAA members, we are able to provide additional resources in a very cost-effective manner. Once you have registered you will be able to search the 'Downloads' section where you will have access to various publications such as the current BAA *Handbook* and its *Explanatory Supplement* as well as some Section publications. Callum has also put in place a 'Forum' area where folks can discuss topics of interest or ask specific questions.

We are keen to expand the Members Only resources in such a way as to meet our members' needs. Over the coming months, we aim to post more and more items of interest. For example, a recent discussion on the Members' Forum aired the idea of webcasting BAA meetings. We shall certainly look at the options, including posting meeting reports and copies of talks such as the 'Sky Notes' presentations with recent observations and details of forthcoming astronomical phenomena. Only a very small percentage of the membership are able to attend our meetings whether in London or elsewhere, and so it would be a great boon to these people if we could include video highlights on the website. Of course, the ultimate would be to broadcast the meeting live over the Web – we shall have to see! If you have any views on these and other matters then do get in touch.

One of the main objectives of the BAA is to stimulate interest in, and understanding of astronomy. For some, this means a hands-on approach by way of active observation of celestial objects. As such many of our members are very dedicated in their pursuit of the subject, none less so than my predecessor as President, Tom Boles, who has just notched up a major milestone by achieving 100 supernova discoveries from his observatory in Coddenham, Suffolk. Although Tom was not the first UK observer to discover a supernova, he was motivated to get involved in the hunt for these rare and elusive events following Mark Armstrong's first discovery of a supernova from the UK, that of SN 1996bo on 1996 October 23. Tom was rewarded with his first success by way of SN 1997dn, which he found on 1997 Oct 19, since which time he has undertaken nine years of searching, inspecting some 12,000 distant galaxies in the process. MCG+06-33-20, a galaxy some 680 million light-years distant in the Boötes galaxy cluster, played host to Tom's 100th supernova discovery on 2006 April 3 (SN 2006bk). I should point out that no other amateur astronomer in the world has come close to discovering so many supernovae single-handedly – well done, Tom! I still clearly remember listening to Patrick Moore's prophetic words when he formally opened Tom's observatory back in the summer of 2001, in that he was quite convinced that many important discoveries would ensue as a result of the upgraded facility. I am sure Patrick is very pleased to learn that his prophecy has indeed come true. If you are interested in finding out more about Tom's tremendous discoveries then do visit his website at **http://www.coddenhamobservatories.org/,** where you will find a splendid exposition of all that is Coddenham Astronomical Observatory.



Tom Boles' discovery image (35cm reflector and unfiltered CCD) for his 100th supernova, 2006bk in galaxy MCG+06-33-20. At discovery on 2006 April 3 the object was approximately mag 16.9. A second image the following night confirmed the find.

Finally, whilst on the subject of expositions, I would like to remind you that we are holding our popular Exhibition Meeting at the Cavendish Laboratory, Cambridge on the 24th of this month. As an innovation this year, a good number of our Section Directors will give a short informal introduction to the work of their Section. If you are contemplating joining one or other of our observing Sections then do come along and hear what they have to say. I do hope to see you there!

Richard Miles, *President*

Solar Section

2006 January

The most notable group of the month was first seen on January 20. This was AR848, a DAO type group at –19°/321° with an area of 120 millionths. By the next day more spots had appeared between the symmetric leader and the slightly larger asymmetric follower. Some of these had penumbra. The group now straddled the central meridian, was of type Dac and had an area of 200 millionths. The next observation on Jan 24 showed it to be of a similar total area but now comprising a string of small penumbral spots at the leader part and another string at the follower part. The group had a similar appearance on Jan 25 but by Jan 27 only two small penumbral spots were seen near the western limb.

There was only one observation, on January 15, with sunspots in both hemispheres. The solar disk was spotless between January 12/14 and 28/31, with the north also spotless on January 20, 21, 24 and 25/27, and the south spotless on Jan 05, 06 and 11. *(Report by Peter Meadows)*.

Hydrogen alpha

Prominences

The prominence MDF for January was 3.54 (9 observers).

Most were small, often on the borderline of countability. Outstanding was a dense detached prominence seen on January 15 at +42° on the E limb. Two dense prominences were seen on the SW limb on Jan 17, one at –04°/07° being arc-shaped, the other at –25°/–29° consisting of three low pillars.

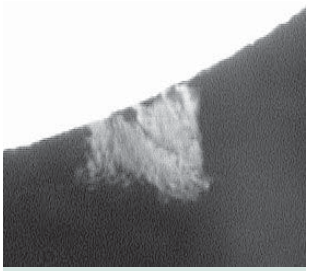
On Jan 21 two interactive prominences were recorded on the E limb at +16° and +20°. Both had streamers directed towards each other.

Filaments

Many filaments were observed in the month, especially on January 01 under excellent conditions. One in the S hemisphere wound in the NW direction from near the CM at –28° towards –10°/W25°, just short of connecting with a very dense goblet-shaped filament

to the S of a spot at –3.5°/W32°. Together they would have been the length of the solar radius.

A long filament was first seen on Jan 26 to the E of the CM, extending from a point at +5°/E5° to +27°/E20°. On Jan 28 it had rotated to the west, maintaining its obliquity. I last observed it on Jan 29 when it had rotated further west.



Prominence on SW limb on Feb 15 at 09:58. *Eric Strach.*

Another long winding filament was seen in the SW quadrant on Jan 28 and 29. On the same day I noted two short filaments in the NE, one crossing the 40° parallel, the other at +45°. *(Report by Eric Strach.)*

2006 February

Sunspot activity for February was very low with blank disks on 19 days. The northern hemisphere only saw activity on February 14, 16 and 18.

AR 853 was first seen on Feb 09 as a bipolar group at –09°/120° but was no longer seen the next day when only a plage was in its position. **AR 854** appeared on Feb 15 as a small bipolar group at –07°/327°, it was still present the next day but it quickly decayed on approaching the CM on Feb 17 and was no longer seen after Feb 18.

AR 856 was first seen close to the E limb on Feb 27 as a faint spot associated with strong faculae at –09°/128°. It remained as such for two days with an unusually pronounced plage. Brian Mitchell reported compact filament activity surrounding this spot on Feb 28.

The quick fading of the groups may be one of the characteristics of solar minimum, yet no high latitude spots have so far appeared, so we are still a few months away from the minimum phase.

BAA sunspot data, 2006 January–February

	January		*February*	
Day	*g*	*R*	*g*	*R*
1	3	37	0	0
2	2	31	0	0
3	2	29	0	0
4	2	24	0	0
5	1	16	0	0
6	2	19	0	0
7	1	11	0	0
8	1	11	1	10
9	1	11	1	10
10	1	11	0	0
11	1	11	0	0
12	0	0	0	0
13	0	0	0	0
14	0	0	1	10
15	2	23	1	18
16	2	35	1	14
17	2	29	1	10
18	2	34	0	0
19	2	31	1	10
20	1	20	0	0
21	1	26	0	0
22	2	37	0	0
23	2	48	0	0
24	1	36	0	0
25	1	27	0	0
26	1	18	0	0
27	1	13	1	10
28	0	0	1	10
29	0	0		
30	0	0		
31	0	0		
MDFg	1.21 (45)		0.31 (23)	
Mean R	19.35 (37)		3.81 (37)	

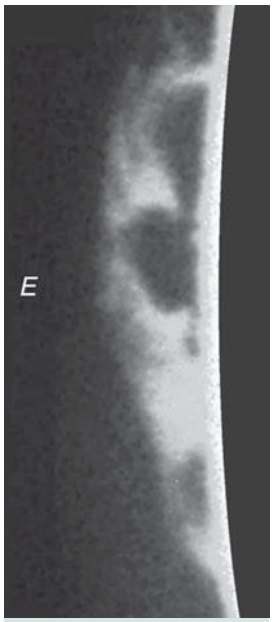
Hydrogen alpha

Prominences

In contrast to the very low MDF of sunspots, the prominence MDF was higher than the last three months at 4.68 (8 observers). Most prominences were of the smaller type but there were some remarkable ones to be seen during the month.

Two connected detached prominences were seen on the SW limb at –47°/–51° on Feb 09. A high pyramidal shaped prominence was seen in the SW at –47°/–53° on Feb 14. On Feb 15 it was seen as a mighty structure with fine detail and reaching a height of 170,000 km (see image). It changed its appearance during the day. At 09:58 UT it seemed to be partly split, its northern part somewhat proud of the limb but connected by several strands. At 13:21 it was more uniform and revealed its fine structure. No remnant was seen of it on Feb 16.

An array of prominences was recorded on Feb 16 on the NE limb spread over +08°/+24°. The central parts consisted of two intertwined detached prominences. Two interactive prominences were seen on Feb 27 on the W limb at –12° and –16°.



Prominence on E limb on Feb 02 at 10:20 UT. *Peter Paice.*

Filaments

A long filament was seen on Feb 27 near the W limb. Its southern part seemed to point towards the northern part of the above prominences and there may have been a slender connection, which was obvious on Feb 28.

A long winding filament was seen on Feb 26 in the SW quadrant.

North & south MDF of active areas g

	MDFNg	*MDFSg*
January	0.41	0.59 (31)
February	0.07	0.38 (37)

g = active areas (AAs)
MDF = mean daily frequency
R = relative sunspot number
The no. of observers is given in brackets.

Mike Beales, *Director*

Eclipse: continued from page 111

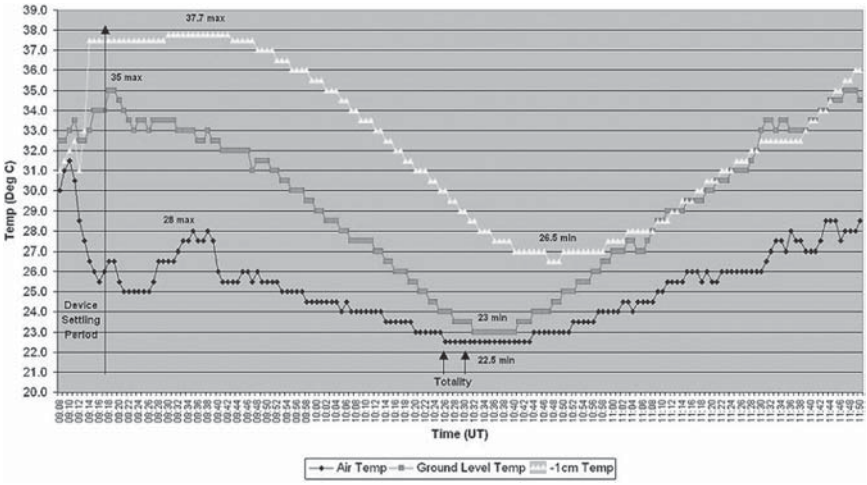
they were so spectacular, like nothing any of us had ever seen before. Nick James' video records them for a full 74 seconds, starting at 10:25:19 UT and continuing right up to second contact at 10:26:33.

Then all at once a flash of Baily's Beads on the top left of the Sun and the corona unfolded in all its splendour. Immediately with the naked eye I saw a bright carmine prominence just to the right of where the second bead had faded, and a streak of chromospheric light soon hidden by the Moon's black disk. The massive prominence remained visible almost until third contact. Intricate whorls of coronal material surrounded the Moon, extending out for two or three diameters, and in binoculars the inner corona was almost too bright for the eye. Venus shone brilliantly below the Sun with Mercury obvious halfway between them, but no stars were seen. A golden sunset glow around the horizon marked the edge of the lunar umbra as it sped away across the desert.

All too soon new prominences appeared to the bottom right of the Moon and another gaudy pink slash of chromosphere heralded third contact. A magnificent double diamond ring stabbed the sky and then illumination quickly returned, as ethereal rippling bands of shadow once again flickered across the landscape.

This was the first easily-accessible eclipse when most of the thousands of cameras carried to the track of totality used digital rather than film technology, and some remarkable images were obtained. Many observers succeeded in capturing Earthshine on the disk of the Moon (see page 111), enhancing the contrast later to bring out the pattern of the lunar maria. Others used digital processing to combine multiple images of the corona, aiming to reproduce its appearance to the naked eye, as printed on the cover of this *Journal*. And on the MV Perla, the immediacy of digital processing enabled John Mason to combine contributions from two dozen people into a spectacular presentation of images to all the passengers.

Hazel McGee



Valerie and Andrew White measured temperatures at ground level, 1cm below ground, and 1.2m above ground at 2 minute intervals throughout the eclipse in Libya, south of Jalu at 28°14'30.2"N, 21°31'4.6"E. *V. & A. White*.

On the opposite page

(clockwise from top):

The convoy of 20 buses in the Libyan desert south of Jalu. *Photo: Jeremy Calderwood*

Arriving at the desert site. *Hazel McGee*

In the desert at totality. *Jean Felles*

Double diamond ring at third contact, from video images. *Nick James*

The view at totality from Side, Turkey. *Nigel Puttick*

Prominences at second contact, from near Tobruk, Libya. *Sheridan Williams*

Asteroids & Remote Planets Section

Asteroid 2006 BZ8 – a 'sword of Damocles'

2006 BZ8 was discovered on 2006 January 23 by the Catalina Sky Survey. The discovery was confirmed on Jan 24 and 25 by several observers including BAA member Peter Birtwhistle (J95, Great Shefford).

Its orbit is quite unusual. As can be seen in the diagram, its perihelion is just outside the orbit of Mars and at aphelion the asteroid is close to that of Uranus. An inclination of 165° signaled that its motion is retrograde.

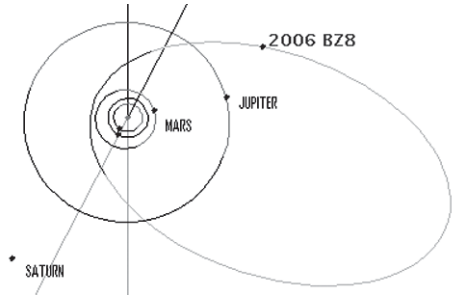
The object did not fit any of the well known groups or families of asteroids. However its semi-major axis, 9.6AU, aphelion, 1.9AU, and eccentricity of 0.8 placed it in the category of 'External Jupiter-crosser' as listed in *Description of the system of asteroids* by Gerard Fauré (translated into English by Richard Miles). A diagram in the book *Comet Science* by Crovisier and Encrenaz showed that such a body just fell into the Halley-type comet category. These have a period of between 20 and 200 years, intermediate between Jupiter family and long-period comets. A search of the internet suggested that 2006 BZ8 might be a 'Damocloid' and David Jewitt, Institute for Astronomy, Hawaii, confirmed that this was the case.

Damocloids are thought to be inactive nuclei of Halley-type or long period comets. They are the only class of asteroid that crosses from the inner to the outer solar system. The criteria for distinguishing Damocloids are not universally accepted and thus the number of objects listed by different astronomers varies, e.g. David Jewitt lists 20 in his paper 'A first look at Damocloids' (*The Astronomical Journal*, 2005 January) whereas Brian Skiff's list on the Lowell Observatory website totals 28 objects, 12 being common between the two.

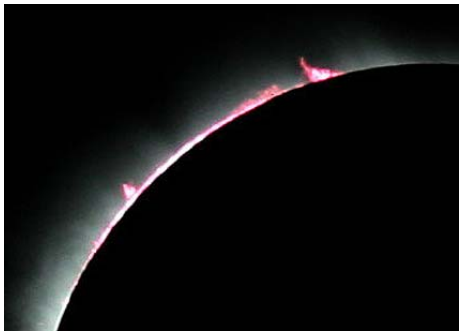
Damocloids are extremely dark and their highly eccentric orbits cause them to spend most of their time well away from the Earth. These attributes make them difficult to discover – less than a 1% chance at each perihelion according to Duncan Steel in *Rogue asteroids and doomsday comets*. It is estimated that Damocloids make up roughly 10% of the total impact hazard due to both comets and asteroids.

(5335) Damocles, which gives its name to the group, was discovered by R. H. McNaught at Siding Spring on 1991 February 18. The 'sword of Damocles' is a symbol of impending disaster, and the asteroid was so named because its unstable orbit might one day cause the thread suspending it above the Earth to break.

Roger Dymock, *Director*



The orbit of 2006 BZ8 extends from just outside that of Mars almost to Uranus. *(Courtesy NASA/JPL)*



These matching photos were taken by John Mason to illustrate the effect of the narrowing solar crescent on the sharpness of shadows and the quality of light as totality approached. Far left, shadows and the desert floor, before or just after first contact. The second picture was taken with the same aperture and exposure about ten minutes before totality. Note in particular the change in appearance of the ground surface as the stones became crisper and more sharply defined. *J. W. Mason.*

Appreciation

Joy Griffiths (1942–2006)

The stars have lost a friend and a champion: on March 30 this year, Joy Griffiths, one of the BAA Campaign for Dark Skies' 137 local officers, lost her five-month battle against the effects of a severe stroke. The sadness of Joy's struggle was compounded by the fact that she and her husband Bob had just moved from their home in Chard, Somerset, to darker skies and wide views in a rural location in Herefordshire, and were in the process of setting up their small observatory in the garden.

In spite of a disability restricting movement and causing her continual pain, Joy, like so many other CfDS campaigners all around the UK, freely gave of her time and apparently endless energy to spread the dark-skies message. Bob Griffiths was constantly at her side, an 'unofficial' CfDS local officer in his own right. Joy's diminutive stature belied her considerable presence in the environmental debate in Somerset and beyond, and her efforts were directed towards owners of lights both great and small: persuasive argument and sheer persistence led to improvements in the night sky from establishments as modest as a rural farm shop and as grand as the local council offices complex. Of the 250 Good Lighting Awards which the CfDS has presented, Joy has personally handed over 15 of them. However, she may best be remembered for her intervention in the lighting scheme of the Somerset village of Hinton St George, which preserved its night sky while subtly lighting its lanes with luminaires of the highest environmental standard.

CfDS officers achieve much of their success through getting to know the right people: those who choose, buy and install public lighting. They also seek out like-minded individuals and groups, and it was precisely in this way that Joy became instrumental in the re-lighting of the seafront at historic Lyme Regis. Lamps which both look good by day and perform well by night are sadly too rare in the UK. Joy met with local and county council officials, and environmentalists in Lyme, and this led in 2003 to its promenade being relit with an intriguing 'ammonite' column design, using full-cutoff lamps which follow CfDS' tenet of 'the right amount of light, directed where necessary'.

At the Fourth European Dark-Sky Symposium in September 2004, held at the Paris Astrophysical Institute in the grounds of the old Paris Observatory, representatives of the International Dark-Sky Association (IDA) presented Joy with the IDA Achievement Award, with specific reference to her work in Hinton St George and her contributions to IDA literature and newsletters.

Joy Griffiths admires the new full-cutoff 'ammonite' lamps in Lyme Regis, which she was instrumental in having installed.

Her life was a busy one. One would have thought that the work she put into the Campaign might take up most of her time, but she was also a talented calligrapher, sculptor in wood, maker of jewellery, harpist, and, in earlier times, one of the best pistol shots in the country. Moreover, she was not averse in younger days to a little mountaineering, we are told…

Bob Gent, vice-president on the Board of Directors of the International Dark-Sky Association, underlined the reputation Joy had achieved on the other side of the Atlantic in his message, sent on the day of Joy's funeral, to Bob Griffiths and copied to the CfDS, reprinted here with permission:

'On behalf of thousands of IDA members around the world, please accept our most sincere sympathy.

Joy was a bright star and an inspiration to all of us, and we were so pleased to be able to present the much-deserved IDA award to her in Paris in 2004. Her superb writing skills for the IDA newsletter, her lighting awards program, her support of the Campaign for Dark Skies, and so much more have set the example for all of us. We are deeply indebted to her for her truly outstanding service to dark skies. She truly was such a wonderful person to know and all of our lives are better for what she shared with us – her compassion, her friendship, and her sharp wit.'

The CfDS is investigating ways to commemorate Joy's work.

Bob Mizon, *Co-ordinator, BAA Campaign for Dark Skies*

Aurora Section

2006 January and February

On behalf of all our observers and contributors I would like to thank Ron Livesey for running the Aurora Section so efficiently for 24 years as Director, and before that as Aurora Coordinator of the Solar Section. He and I have observed the aurora continuously since the International Geophysical Year of 1957–'58, over three solar cycles, learning the ropes from the then Director James Paton who organised the European network from the Balfour Stewart Laboratory in Edinburgh. Ron brought his skills of management and engineering practice to the Section along with a sense of pawky Scottish humour, and has done an enormous amount of work in tabulating and statistically analysing the many thousands of reports which came in during his tenure.

Happily, Ron will be staying on as an Assistant Director, and we have taken on as another Assistant Ken Kennedy who is retired but helps to run the Mills Observatory in Dundee. Ken has been observing and photographing the aurora (and many other phenomena) since the late 1950s. He will help Tom McEwan to collect and organise noctilucent cloud observations in the summer months, and can be contacted at ken.kennedy@tiscali.co.uk. David Pettitt continues as Magnetometry Coordinator. It'll be business as usual, but we will make more use of e-mail.

With an almost spotless Sun and quiet magnetic fields we can now expect only the weak aurorae of high geomagnetic latitudes associated with coronal holes, however, even during solar minimum a major outburst can happen at any time, like the huge display of 1986 February which was seen in Hawaii. (Your new Director has been caught out on at least one notable occasion, as Neil Bone will testify).

On January 16/17 this year, with the 3-hour planetary index Kp (scale 0–9, supplied by GeoForschungsZentrum Potsdam)

at only 4, Stephen Martin saw a low homogeneous band from an aircraft at 53ºN 55ºW. On 20/21 Dr Simmons saw faint auroral light very low near Glasgow, and our most prolific observer Jay Brausch in N. Dakota reported a band with a little rayed activity up to 11º on 22/23 from local midnight to 04:00, and the same on 25/26 with a magnetic sudden commencement and Kp touching 5, David Pettitt's fluxgate magnetometer at Carlisle registering 'stormy'. Fiona Vincent and Roger Stapleton at St Andrews reported auroral radio propagation to the north. Bartels diagrams show this to be the recurrence by rotation of a solar disturbance which gave auroral light in central Scotland around 2005 Sept 10–15. On Feb 19/20 Jay again reported a low arc, band and a few rays, with Kp 4 at midnight UT, and radio aurora to the south of England, by the same, but weakening solar area. Jay's less fortunate colleagues in Britain had to put up with weeks of very poor weather conditions which have deteriorated even more in March.

David Gavine, *Director*

Mars Section

Mars in 2005: Second interim report

This second and final interim report briefly reviews other aspects of the recent opposition not covered by the first report[1] (which was devoted to dust activity). At the time of writing – late in the wintry spring of 2006 – the planet can still be viewed in the evening sky, but its disk diameter has recently dropped below 6 arcseconds.

It is interesting to compare the amount of material contributed at the similar opposition of 1988, which received a similar level of participation. (1988: 118 contributors; 2005: 111 contributors (so far).) In 1988 the Director filled *seven* boxfiles with BAA drawings and photographs. This year the paper results occupy just *one* boxfile, and the CCD work fills a CD-ROM. The number of CCD and webcam images is now too high even to count. Examples by Mobberley and Peach as well as some from new contributors P. J. Garbett and M. M. Taylor feature in Figure 1 (overleaf). Although the number of visual observers has declined, the Director was able to make nearly 140 drawings (between 2005 early June and 2006 late March), of which an example appears in Figure 2, and significant numbers of visual observations were also sent by the following: G. Adamoli, N. Biver, N. M. Bone, A. W. Heath, C. Hernandez, K. C. Howlett, N. Longshaw, P. W. Parish, Mrs E. Siegel and G. Teichert. Encouragingly, the list includes some new contributors. J. R. Fletcher and W. P. Sheehan were able to observe from the Lick Observatory, and I. Hancock had some views from Flagstaff.

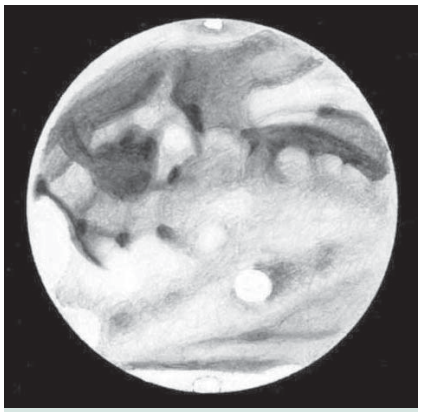


Figure 2. ***UK visual observations, I.***
Drawing by Richard McKim, with 410mm Dall–Kirkham Cass., ×410, ×512, white light +W23 orange filter, 2005 November 6d 21h 20m, CML= 112°. *Solis Lacus* appears large and complex (as in 1986–2003); *Phasis* is well seen following it (as in 2003). The circular bright spot in the N. hemisphere marks the place of *Olympus Mons*. A faint orographic cloud is also shown near *Arsia Mons*. Dark areas and deserts were mottled all over. *Caralis Fons* (*Newton* crater) was visible as a dark spot S. of *Mare Sirenum*. Mare Sirenum appeared dark blue and showed much structure; its W. end seemed to be returning to the classical configuration it showed before the 1986 opposition.

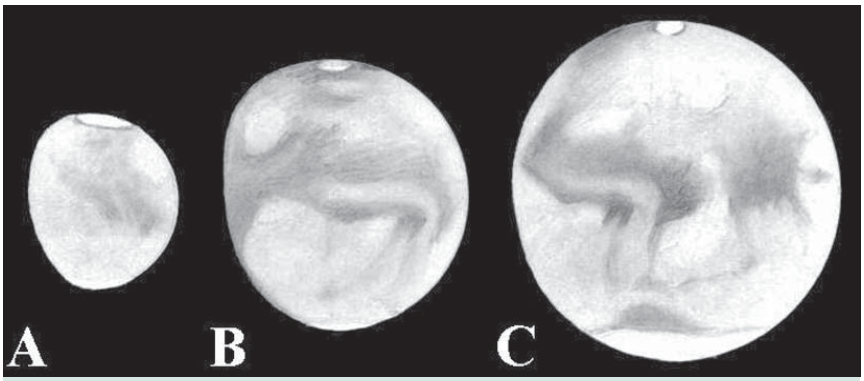


Figure 3. ***UK visual observations, II***
Pre-opposition drawings by Harold Hill with 203mm Mak–Cass., ×333. The disk diameters are drawn to the same relative scale.
A. 2005 July 11d 02h 50m, CML= 221°, D= 9.9 arcsec. 'SPC – 35° diameter?... Maria – sage green.'
B. 2005 September 12d 02h 30m, CML= 335°, D= 15.4 arcsec. '*Syrtis Major* and *Sinus Sabaeus* dark grey or greenish grey... Central regions a pale salmon... *Mare Serpentis* dark to the west of a creamy *Hellas*.'
C. 2005 October 14d 01h 10m, CML= 19°, D= 19.3 arcsec. Most maria were described as greenish, but the coloured original sketch shows *Margaritifer Sinus* bluish. Noted also were the tiny S. polar cap, bright N. polar hood with its bluish, irregular S. edge, and the bright cloud from *Eos* to *Chryse*: an early sign of the large regional dust storm that had begun earlier that night.[1]

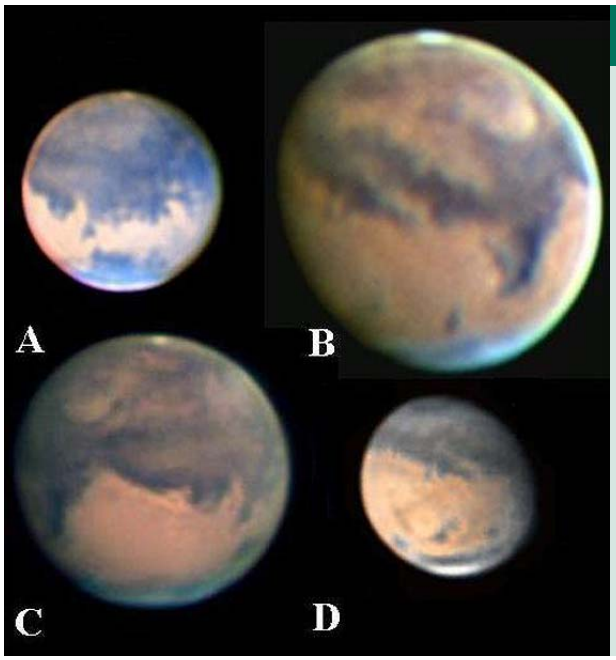
Just prior to opposition we were sorry to hear of the death of Harold Hill at the age of 85. Harold – a noted visual observer of the Moon and planets – had been observing up to a few days before his death, and we are grateful to Edward Hill (his son) for the loan of an original notebook for the purpose of reproducing some of Harold's work here as a tribute: see Figure 3. Harold had occasionally contributed to the work of the Section since the 1945/'46 opposition.

In the figure captions the Director has added some comments and quotations. In the latter, less dusty stages of the apparition, observers were able to document the formation of the S. polar hood above the residual cap, to record the changing meteorology and to pinpoint the transition from N. polar hood to ground cap (the latter around 2005 mid-February, Ls~10°). The early behaviour of the spring NPC was also followed.

I hope observers will monitor the planet for as long as they can: solar conjunction will not be until 2006 October 23. For those who have already given up, Mars will again be at opposition on Christmas Eve 2007.

Richard McKim, *Director*

1 McKim R. J., *J. Brit. Astron. Assoc.*, **116**(1), 6 and front cover (2006).



Mars Section (see previous page)

Figure 1. ***UK CCD work.*** Disk diameters are not to scale.

A. CCD image by Martin Morgan–Taylor, 203mm catadioptric, f/25, Philips Toucam webcam, LRGB composite, 2005 November 21d 00h 48m, CML= 29°. Bluish a.m. clouds and bluish NPH (partially covering *Mare Acidalium*). Fine details in S. *Chryse* and around *Valles Marineris*.

B. CCD image by Martin Mobberley, 254mm refl., f/50, Lumenera USB 2.0 LU075M webcam, RGB composite, 2005 September 21d 02h 56m, CML= 256°. *Nodus Alcyonius*, unchanged during the last two decades (with *Nepenthes* again invisible), is at the CM. *Hellas* shows floor details. Throughout 2005 the N. part of *Ausonia* (*Trinacria* on the IAU map) has been lighter than it was in early 2003 due to dust deposition from the major dust storm activity of the last opposition.

C. CCD image by Peter Garbett, 300mm Schmidt–Cass., f/41, ATK-1HS II CCD camera, RGB composite, 2005 October 23d 03h 23m, CML= 332°. Hints of dust at the SW (S*f.*) limb. Many fine details on the N. edge of *Sinus Sabaeus* and across *Noachis*. Also note a dark patch within the *Huygens* crater SW of *Syrtis Major*, in *Iapigia*.

D. CCD image by Damian Peach, 235mm Schmidt–Cass., f/42, Lumenera USB 2.0 LU075M webcam, RGB composite, 2006 March 22d 18h 29m, CML= 239°. Many fine details despite the 6 arcsecond-diameter image. The NPC is visible, with a dark band to its south. *Elysium* is dull and cloud-free; following it, the *Aetheria* development (since 1978) remains.

Mercury & Venus Section

Mercury in colour: an observational challenge

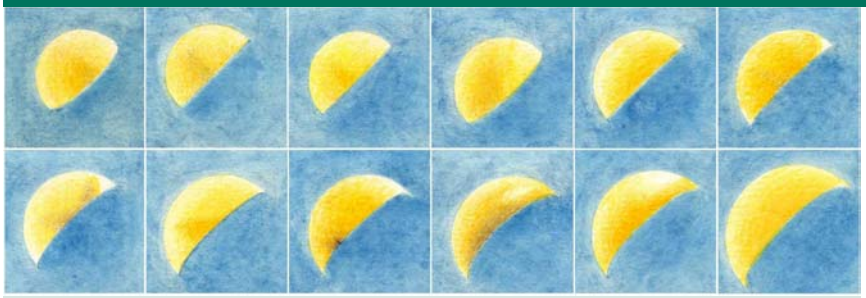


Figure 1. Mercury drawn at eastern (evening) elongation by Henry McEwen from Cambuslang, Glasgow, in 1923. 127mm (5-inch) OG, ×135, ×144. Seeing fair unless otherwise stated. South at top. Top row, left to right: 1923 April 27d 20h 30m, 28d 20h 00m, 28d 20h 50m, 30d 21h 00m (trembling image), May 1d 21h 10m, 3d 20h 20m; bottom row, left to right: 1923 May 3d 21h 15m, 6d 20h 00m, 6d 21h 00m (fair to good), 8d 20h 05m, (good) 8d 21h 00m, 12d 20h 45m (trembling).

In my recent paper on the life and times of Henry McEwen,[1] this Section's first Director (1895–1955), I mentioned a series of coloured Mercury drawings made by McEwen in the spring of 1923. These could not be reproduced in colour with my paper, nor in the *Journal* in McEwen's lifetime, so I have taken the opportunity of publishing them now. In 1929[2] McEwen described one of these drawings as being among the most interesting he had ever made. Given that he used a 127mm (5-inch) Wray refractor, they may encourage those with small telescopes to look at Mercury.

The best CCD images of the planet ever sent to the Section were made by a native Dutchman, Erwin van der Welden, who had emigrated to Australia. We reproduce some here. Sadly, Erwin died last September at the early age of 39. These colour images show the warm tint of the planet and bright spots towards the limb. The latter we now associate with clusters of bright impact craters, but McEwen was strongly influenced by Antoniadi's view[3] that they represented atmospheric phenomena. Only towards the end of his life, writing in the *Journal* in 1948[4] did he correctly imply, with reference to the bright lunar rays, that Mercury's bright spots might be akin to those on the Moon.

I hope that this comparison of old and new Mercury observations will inspire a few more imagers and visual observers to give this little world some attention. The Director would like to have an archive containing good images of all Mercurian longitudes, and preferably in colour. Who will rise to the challenge?

Richard McKim, *Director*

1 McKim R. J., *J. Brit. Astron. Assoc.*, **115**(1), 13–24, and **115**(2), 87–97 (2005). This paper reproduces some stippled versions of McEwen's 1923 Mercury series.
2 McEwen H., *ibid.*, **39**, 297–311 (1929)
3 Antoniadi E. M., *The Planet Mercury*, Paris, 1934
4 McEwen H., *op. cit.*, **58**, 238–239 (1948)

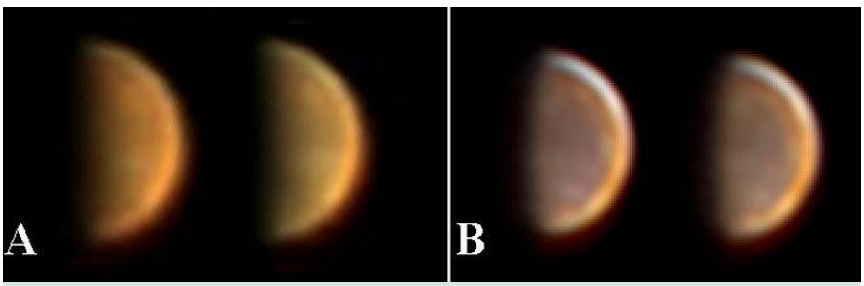


Figure 2. Mercury imaged in 2005 at western (morning) elongation by Erwin van der Welden from Brisbane, Australia. 235mm Schmidt–Cass., Vesta Pro CCD camera, f/26, about 4000 stacked images in each composite. South at top. **A.** 2005 April 28d 21h 00m (approx.), CML= 203°; **B.** 2005 May 5d 21h 00m (approx.), CML= 238°.