



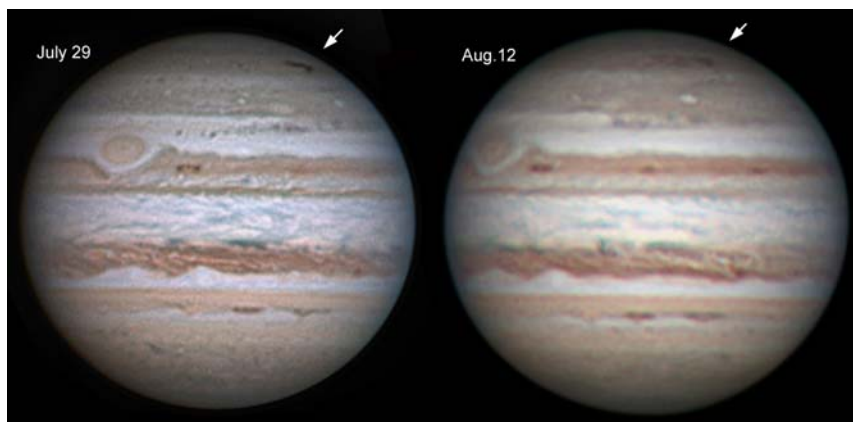
Jupiter Section

Anthony Wesley's 'bird strike': A new impact on Jupiter

Exactly 15 years after the famous bombardment of Jupiter by comet Shoemaker-Levy 9 (SL9), a new impact site appeared on 2009 July 19. It was discovered by Anthony Wesley, on a freezing winter's night at his home in the mountains of New South Wales (see cover pictures). He immediately recognised it as an unnaturally dark spot resembling the SL9 impact scars, and alerted the astronomical community by e-mail.

The new impact site was in the South Polar Region, at 57°S. It had a nearly-black oval core, and a diffuse patchy arc on the NW side. Images from the USA on the previous rotation showed nothing there, so the impact must have occurred on the dark side some time between 07:40 and 14:00 UT on July 19.

On its second rotation, early on July 20, the impact site was widely observed and imaged from Europe; several visual observers in the UK noticed the new dark spot independently. Antonio Cidadão and Damian Peach both obtained methane-band images,



Two images showing the impact site (arrowed) with the Great Red Spot at left. *Left:* July 29, 03:06 UT: Fabio Carvalho (Brazil). *Right:* August 12, 05:11 UT: Donald C. Parker (Florida).

which showed it as a bright spot. In visible and in methane-band images, the site remained conspicuous right up to the limb. All these characteristics showed that it was a very high-altitude cloud, just like the SL9 impact sites.

Thus it consisted of nearly-black 'smoke' deposited in the stratosphere by the initial explosion of the impactor and the splash-back of the ejecta.

The appearance remained similar over the next week, even becoming more conspicuous – more so than any other spot on the planet. In the first four days it resembled a satellite shadow, though foreshortened and not quite as black. The impact soon became known as the 'bird strike', since Wesley's nickname is Bird.

Professional astronomers quickly turned infrared telescopes on Mauna Kea towards the impact site. The Hubble Space Telescope was also speedily recruited, using the Wide Field Camera 3. This new camera was just installed by astronauts in May and its programme of checkout and calibration was interrupted for the Jupiter images, which show its excellent quality – an appropriate debut, since HST's coverage of the impacts 15 years ago was one of its earliest and greatest successes.

From July 29 onwards, the site became less dark, and began to spread out rapidly in longitude and to break up. At the time of writing in mid-August, it has broken into about eight small grey clouds dispersed over nearly 50° longitude, and it will probably have disappeared by the time you read this.

A more detailed report will appear shortly in the *Journal*. Meanwhile, our interim reports are on the Jupiter Section website, and for anyone who would like to share the real excitement of the event, three other websites are essential viewing:

- Details of the discovery and further images, by Anthony Wesley:
<http://jupiter.samba.org/jupiter-impact.html>

From the President

I'm sure every President must feel the same, but it does seem remarkable that my two-year term of office is now complete.

I ended my first 'From the President' by saying that I hoped to successfully combine the post of President with that of Variable Star Section Director. I'm not sure I've been totally successful in this direction as I know I have had to let some VSS responsibilities slip a little, but I was overwhelmed when, at the recent VSS Meeting in Cardiff, John Toone made a presentation to me for becoming the longest serving VSS Director of modern times. However, I have an idea that this is because nobody else wants to do the job! But this is surprising, as like the Presidency, it is very rewarding, although it can be very demanding on one's time. In this connection, I'm sorry to admit that my observing has suffered over the last two years but hopefully, with only one job to do, this will now change.

I have also done much travelling over the last two years, not just to BAA events, although this has been the main cause, but also to give talks to a number of local astronomical societies – not necessarily about variable stars! – and, of course, as part of the International Year of Astronomy. In addition, and occasionally one of the 'perks' of the job, you receive official invitations to attend various functions, the latest being an evening soirée at the Royal Society. This

was part of their summer exhibition, which is open during the day for the whole week and is free to all members of the public. If you get the chance to go along next year, I strongly advise you to do so as it was excellent and I could easily have spent much longer than one evening there.

Whilst chatting to members of local societies I have been surprised by how many are involved with 'outreach', with some, the Orpington Society being one excellent example, having quite an extensive and well organised programme. I've passed this information to Dave Bowdley to see how the BAA might help societies in this way.

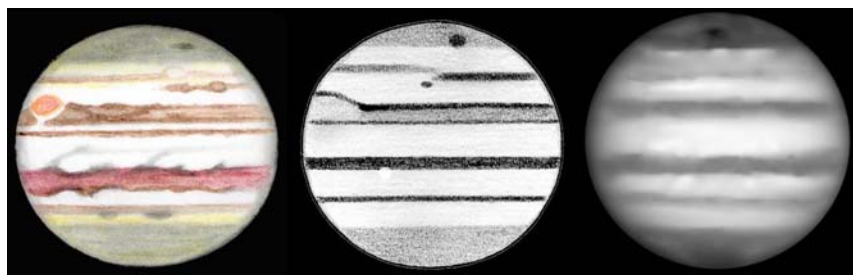
I've been pleased to see that the traffic on the Members' Forum has increased a little over the last couple of years but I'd still like to see more in both the *Journal* and on the website about members' experiences. There are so many good articles in society magazines that it seems a shame for them not to have the benefit of a wider audience.

I must thank all those people that have helped me over the last two years, especially my fellow Officers and the ladies in the office. It would have been very difficult without any of them.

I wish David Boyd a very successful and enjoyable term as your next President and I know the Association is in very safe hands.

Roger Pickard, President

- Graphic display of the development of the impact site, in animated polar projection maps, by Hans-Joerg Mettig & Theo Ramakers:
http://www.ceastronomy.org/gallery/main.php?g2_itemId=6848
- The Hawaiian rock version, '1994 (The Jupiter Impact of 2009)', by Kelly Fast:
http://www.youtube.com/watch?v=Ie_eiv4zzxk



Three drawings from the UK on the night of July 24/25. *Left:* 00:09 UT: Paul Abel, 203mm reflector. *Middle:* 00:45 UT: Lee Macdonald, 222mm reflector. *Right:* ~01h UT: Peter Grego, 102mm refractor. The impact spot was notable even in a small telescope.

John Rogers, Director

The total solar eclipse of 2009 July 22

The umbral shadow of the great total eclipse of 2009 July 22 started its journey across the Earth's surface at 00:53UT just off the western coast of India. Five minutes later it



Mid-totality from the 'Chengshangou Scenic Site', showing the corona attenuated by thin cloud. *Nigel Evans.*

clipped Nepal and Bangladesh before crossing Bhutan into China. The shadow raced eastwards towards the densely populated Yangtze delta region reaching Shanghai, a city of 18 million people, at 01:40UT. Thereafter the shadow swept out into the Pacific crossing a few small islands on its 15,150km long journey before lifting off into space at 04:18UT.

This eclipse was a member of Saros series 136 as were those of 1973 June 30 and 1991 July 11. This Saros produces the longest eclipses at the current epoch and this one had a maximum duration of 6m 39s at a point in the middle of the Pacific, although this could only be reached by ship.

The duration was still an exceptional 5m 56s at the much more accessible site of Shanghai and this was the base used by many observers, despite

the fact that it was the monsoon season and weather prospects looked distinctly dubious. As it happened, on eclipse day the weather was particularly poor over much of the Yangtze delta region with widespread thunderstorm activity and consequent thick cloud and rain. The different groups in this part of China had variable luck with the weather. It was raining in Shanghai during totality so the huge number of people there only experienced the effects of a very dark shadow – although we saw the scene as it might have been, as graphically depicted by a young boy who was travelling on the Shanghai Metro (see image).

I was with a group at Chengshangou, around 60km north of Hangzhou, and we were able to see most of totality through varying amounts of moderate cloud. Some remarkably good images were taken at this site given the weather conditions and it did get very dark during totality, pre-



Earthshine on the Moon recorded in much clearer weather in the Pacific. *Nick Quinn.*



3rd contact during a relatively clear interval at Hangzhou. *Nick Howes.*

sumably due to the wide shadow and extensive cloud cover. The view was similar in Hangzhou itself where several observers obtained good images of 2nd and 3rd contact and the corona.

The very best views were obtained by those people on islands or ships in the Pacific. Nick Quinn was on the *Costa Classica* just north east of Iwo Jima and had a perfect view with the ship in a calm sea. Totality



Child's eclipse drawing seen on the Shanghai Metro – video frame grab by Nick James.