

Exhibition Meeting, 2007 June 30

held at the National Space Centre, Exploration Drive, Leicester

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

The 2007 Exhibition Meeting was held for the first time at the National Space Centre, Leicester. Displays were mounted by most of the observing Sections, and by local astronomical societies and commercial organisations. Most of those attending felt the new venue was a great success, with the advantage of easy access from the whole country, good catering facilities and parking, and enough space for exhibits, although this aspect would be improved in future years. At 14:00 hrs a short Ordinary Meeting was held in the adjacent meetings hall, with Dr Richard Miles, President, in the chair.

Dr Miles began by welcoming the large number of members present to the eighth Ordinary Meeting of the 117th session. The Meetings Secretary, Hazel Collett, read the minutes of the meeting of 2007 May 30 which were approved and signed. Members confirmed the election of 15 new members elected at the recent Council meeting. The President thanked everyone involved in organising the Exhibition, especially Clare Masters and the staff of the National Space Centre, Hazel Collett, Martin Morgan-Taylor, the Section Directors, and the local Leicester Astronomical Society for their invaluable assistance. He reminded members that the next meeting of the Association would be the September Out-of-London weekend, which would take place this year at Strathclyde University, Glasgow.

Dr Miles then said that it gave him great pleasure to present the Association's Awards and Medals for 2007. The Steavenson Award was given to Peter Birtwhistle for his outstanding programme of astrometric observations of asteroids – see citation below. Peter

thanked the President for the award which he said had come as a very great surprise.

The Merlin Medal and gift was awarded to Hans-Joerg Mettig of the Jupiter Section (also see citation below). Mr Mettig was unable to travel from Germany for the meeting so the award was accepted on his behalf by Dr John Rogers, Jupiter Section Director. He briefly described the JUPOS system developed by Mr Mettig, and the effect it had had on the Section's work. Dr Rogers then read out Mr Mettig's response on receiving notification of the award, which was appreciated and applauded by the audience.

Dr Miles then presented the Horace Dall Medal for the making of astronomical instruments, to the telescope designer and manufacturer Peter Wise. Peter replied that he was greatly humbled to receive such an honour, and thanked the President and Council for the award.

Following the awards presentations, Mr Geoffrey Johnstone gave the monthly Sky Notes. He described recent discoveries and observing opportunities, including supernova SN 2007av discovered by Ron Arbour, and an occultation of Saturn by the Moon. On June 18 there had been a daylight occultation of Venus, captured in images by Mark Kilner. Noctilucent Clouds were visible in the summer months, and images were shown of a spectacular display on June 12 seen by



the speaker from Rugby. It was well worth looking to the north in the late evening and early morning on the offchance of a display. Finally members were reminded of the Perseid meteor display which would be at its peak on 12/13 August.

Dr John Rogers then gave a short talk describing recent dramatic events on Jupiter, showing many images of the ongoing SEB revival. Dr Miles then adjourned the meeting until Saturday September 1, at Strathclyde University, Glasgow.

Hazel McGee

Citation

The Steavenson Award, 2007: Peter Birtwhistle

Peter is one of the world's foremost amateur astrometric observers. His first such measurements of asteroids were made in the 1970s, when he joined the BAA and used a plate measuring machine to laboriously carry out astrometry on photographs. Later he upgraded to CCD work and obtained the MPC Code J95 for his observatory, where he has reported 7,215 positions of near-Earth objects since 2002 June, a figure probably unsurpassed by any other amateur worldwide. He has also reported a large amount of comet astrometry as well as astrometry of ordinary minor planets in the course of his work as described below.

With the help of a BAA Ridley Grant and the prestigious Planetary Society Shoemaker grant in 2005, he was able to significantly upgrade his observatory at Great Shefford in Berkshire. He now uses an Apogee Alta U47+ CCD camera attached to a 406mm (16-inch) Meade LX200-GPS telescope.

Since 2002, Peter has discovered 65 asteroids – no mean feat in these days of automated professional surveys – demonstrating that amateurs can still have a role to play in such matters. He is particularly skilful in providing follow-up observations of newly discovered objects announced on the Minor Planet Center's Near Earth Object Confir-





mation Page. His name is frequently mentioned in International Astronomical Union *Circulars* as providing confirmatory evidence of the cometary nature of suspicious objects. His precise measurements of the positions of faint comets make a significant contribution to the determination of their orbits. He also appears in many Minor Planet *Electronic Circulars*, providing additional astrometry to support the initial astrometric measurements made by the discoverers – mostly by the automated surveys such as LINEAR, NEAT and Spacewatch.

During 2004 and 2006 Peter worked with Monty Robson, from the USA, to determine the distances to near-Earth asteroids by near-simultaneous imaging from widely

separated stations on the Earth. During this period 24 pairs of observations were made of nine recently-discovered NEOs and submitted to the Minor Planet Center. They demonstrated that accurate estimates of an object's distance could be obtained far more rapidly in this way than with conventional methods. For example, less than two hours of joint observations allowed them to calculate the distance to the object 2004 XJ as accurately as the Jet Propulsion Laboratory using 13 days of data. They gave a presentation about their project at the Meeting on Comets and Asteroids in Europe (MACE) held in Vienna in May 2006.

Peter Birtwhistle's dedication is revealed by his observing statistics for 2006: 80,515 images were taken on 169 nights, with 798 hours spent observing. In recognition of his expertise he was appointed Assistant Director (Astrometry) of the Asteroids & Remote Planets Section in January 2006. This outstanding contribution to observational astronomy makes him a worthy recipient of the Steavenson Award.

Citation

The Merlin Medal and gift, 2007: Hans-Joerg Mettig

Hans-Joerg Mettig is awarded the Merlin Medal and Gift, for his unique and important contribution to the analysis of observations of Jupiter: principally, the development of the *JUPOS* system which is now the foundation of the BAA Jupiter Section's quantitative reports.

Mettig has spent most of his life to date as a citizen of Dresden, East Germany. There he had the use of a 15-cm Coude refractor at the Radebeul Observatory, with which he became an expert visual observer of Jupiter. He contributed visual observations to the BAA Jupiter Section from 1978 to 1981, and again from 1986 to 1998. During the latter years he became a BAA member. In 1997 he was the most prolific visual contributor to the Section, providing numerous drawings and transits and his own computer-generated charts. In 1998/'99 he provided similar intensive visual observations, and in both years his hand-drawn maps of Jupiter were used as keynote maps in our reports. About this time he moved to West Germany, following the reunification of the country, and changed focus from making his own visual observations to methodically analysing transits and images by others.

The *JUPOS* system was developed in the early 1990s by Mettig, responsible for organisation and data entry, and his friend Grischa Hahn, responsible for writing the software. It was developed from a system designed for the International Jupiter Voyager Telescope Observations Programme in 1978/'79, and was originally intended to create an archive of all existing jovian longitude measurements (visual and photographic) for systematic analysis. But with the advent of hi-res amateur CCD imaging, Mettig and Hahn

adapted it as the *PC-JUPOS* system for on-screen measurement of images. It rapidly proved itself as the most powerful and efficient tool for extracting positional data. In *PC-JUPOS*, the measurer fits a Jupiter template to the correct size and orientation of the image on screen, then clicks the cursor on each visible cloud feature ('spot'), whose latitude and longitude are then calculated automatically. From the resulting database, *JUPOS* generates charts of spot longitudes versus time in selected latitude ranges.

The program was described in our Section Report for 1998/'99,¹ and from that time on it has provided virtually all positional measurements used for our reports.

The program, instructions, and some of the raw charts, are available free on-line: <<http://jupos.org>>. However, in practice, the measurements are done by a small team coordinated by Mettig, and interpreted and published through the BAA Jupiter Section. Accurate and reliable use of the system requires training, which Mettig provides for people willing to undertake this important task. The number of positional measurements entered per apparition has ranged from 29,891 in 2001/'02 to 64,455 in 2003/'04 (plus nearly 1000 visual transits also entered). The interpretation and publication of the results is mainly done through the BAA Jupiter Section. Mettig was appointed an Assistant to the Director in 1999, and is a co-author on our reports since then – not only systematic apparition reports in the *Journal* of the BAA, but also in the professional journal *Icarus*.^{2,3}

Thus the *JUPOS* system, combined with the hi-res images now available, allows the

longitudes and latitudes of spots to be measured with an accuracy and speed that was not previously possible for amateur work.

Another contribution has been to provide charts for observers. Some of Mettig's charts identifying spots of current interest and their movements are sent to the Jupiter Section e-mail list to inform amateur observers. Professional observers also value the results: for instance, Mettig recently provided information requested by space scientists for Jupiter's 'new red spot' (oval BA), to enable it to be imaged by the *New Horizons* probe and the *Hubble Space Telescope*.

Mettig's personal contributions have thus been the planning, development and coordination of the *JUPOS* system, the major part of the measuring of positions, the recruitment and training of measurers, the production of charts, and much of the interpretation of them. His work has transformed the scientific output of the BAA Jupiter Section, for which he is awarded the 2007 Merlin Medal.

References

- 1 Rogers J. H. & Mettig H.-J., 'Jupiter in 1998/'99', *J. Brit. Astron. Assoc.*, **111**(6), 321–332 (2001)
- 2 Rogers J. H., Mettig H.-J. & Peach D., 'Renewed acceleration of the 24°N jet on Jupiter', *Icarus* **184**, 452–459 (2006)
- 3 Rogers J. H., Mettig H.-J. *et al.*, 'Merging circulations on Jupiter: observed differences between cyclonic and anticyclonic mergers', *Icarus* **185**, 244–257 (2006)

(Continued on the next page)



Peter Birtwhistle (left), Richard Miles and Peter Wise. (All photos by Hazel McGee)

Reply

on the award of the Merlin Medal

by Hans-Joerg Mettig

Twenty years ago, in the mid-1980s, when I came into contact with the BAA, I never thought that I would become a member of the Association a few years later, let alone be awarded a Medal twenty years on.

I have been interested in Jupiter since I was 13 years old. Starting in 1975, I observed it at an observatory near my hometown Dresden for almost 25 years. I made drawings, obtained transit timings of the Great Red Spot and other features, and compiled annual reports for a regional group of Jupiter observers.

The roots of *JUPOS* go back to 1988 when I sat in an office of a so-called 'people-owned' electronic company – and had nothing to do because the East German economy began to dissolve. Why not make use of the boring time and develop a piece of software that stores C.M. transit timings to a floppy disk? This program was finished after some weeks. And why not use the one and only plotter in the department to display the longitude movement of the GRS and STB White Ovals graphically? This was also done soon. The plotter was never used for other purposes than drawing time-longitude charts of the Jovian atmosphere, and this was also the main task of my PC! Soon the company, my first job and the communist bloc had disappeared.

In about 1992, Grischa Hahn, another amateur astronomer from my hometown Dresden, became interested in improving the software which was rather rudimentary then. Since that time, he has designed an outstanding tool for recording and analysing

positional observations of the Jovian atmosphere, both visual and atmospheric: *PC-JUPOS* and its successor *WinJUPOS*. Originally, the module for measuring images was a minor addition, just for fun, but it turned out to be an indispensable – and major – item in the late 1990s and later.

JUPOS is an example of how planetary amateur astronomy has transformed from primarily visual work via CCD to webcam images. I started with a few hundreds of positional records in the '80s. Now we derive tens of thousands of longitudes and latitudes from electronic images every year.

JUPOS would not be alive without the efforts of many people. First, the collaborating observers. They are hundreds, too numerous to be named here, and listed on the project's website <http://jupos.org>. Second, the team of measurers who move [or moved] cross-wires across Jupiter disks on their computer monitor: Gianluigi Adamoli, Michel Jacquesson, André Nikolai, Damian Peach, and Marco Vedovato. And last but not least, to Grischa for his long-term work on the software. They all have made *JUPOS* a successful project.

Thank you very much for the Merlin Medal and Gift.

Citation

The Horace Dall Medal and gift, 2007: Peter Wise

This award is given by the Association to a person who has shown a marked ability in the making of astronomical instruments.

Peter is an unusually gifted telescope-maker who has been interested in astronomy since he was a boy. He began making his first telescopes in South Africa in 1974 after being sold a mirror-making kit. He became hooked on telescope design and mirror-making and constructed several Newtonians, a Schiefspiegler and a 355mm (14-inch) Schmidt-Cassegrain, all of which he donated to the Astronomical Society of Southern Africa before returning to the UK in 1983. He joined the BAA in 1986 and began a telescope manufacturing business about this time.

Peter applies creative invention to the design of new optical systems. He backs his inventions with a sound knowledge of phys-

ics and scientific method. In 1997 he launched the Evolution spotting scope, introducing an optical design that was novel at that time. More recently he has produced and patented a new concept in telescope optics, which he has called his Cape Newwise design. Although others have tried similar systems before with limited results, he has solved the limitations of the earlier designs and produced a telescope which uses a very short focus spherical primary mirror, corrected for a wide focal plane using a nest of lenses close to the focal position. Star images are diffraction-limited, the field of view is very wide and contrast is exceptional, giving beautiful views of star fields for example – the system is said to be a clear improvement over other telescopes currently in use.

The 2007 Horace Dall Medal is therefore awarded to Peter Wise.

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