

BAA Update

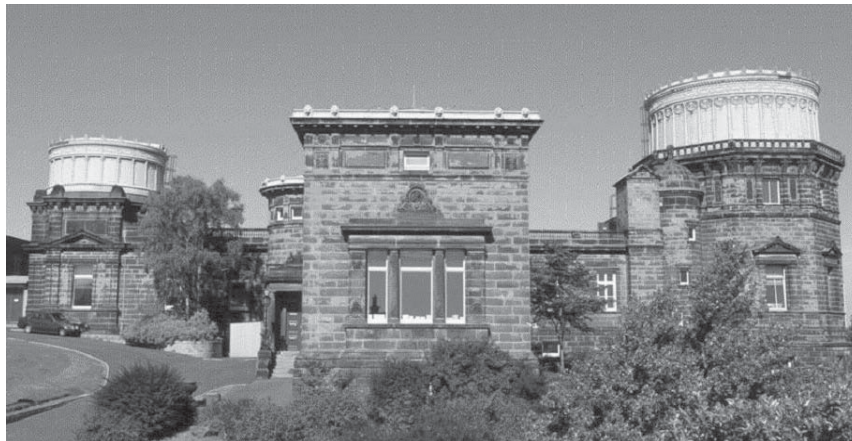
Meeting of the Variable Star Section

held at the Royal Observatory, Blackford Hill, Edinburgh on 2007 May 5

Altogether, some 55 delegates attended this historic event, the first VSS meeting to be held north of the border. (Many of the following talks will be featured in more detail in future editions of the Variable Star Section *Circulars*). Following a brief welcome by the Director, Roger Pickard, he introduced the first speaker of the day, Dr Michael Hawkins of the Royal Observatory Edinburgh, who spoke on 'Dark Matter - The Hidden Universe'. Dr Hawkins gave an excellent review of the problems faced by cosmologists today.

Stan Waterman spoke next on 'A study of some GCVS and NSV stars in Cygnus'. This came about from his attempts over the last several years to discover an exoplanet, something he had not yet achieved. However, he has discovered a number of new variable stars and went on to describe his *modus operandi*, where he has developed data searching methods similar to techniques used by the WASP survey, and some results to date.

After lunch and guided tours of the Royal Observatory undertaken by members of staff, the Director introduced Prof Andrew Collier Cameron of the University of St Andrews to speak on 'Sizing up extrasolar planets with small telescopes'. Andrew began with a brief overview of the history of exoplanet discoveries and the methods used to detect them. He highlighted a number of problems before describing in some detail the SuperWASP camera arrays. There is also another dimension to transit hunting which involves the variable star community. One project has pioneered a pro-am collaboration in which individuals with suitably equipped telescopes can perform follow-up photometry, allowing the survey teams to



The historic buildings of the Royal Observatory, Edinburgh.

decide which objects should be studied further with larger telescopes. Finally, Prof Cameron said that with help from amateur variable star observers, it should be possible to speed up the process of sifting genuine planets from stellar binaries.

Dr Martin Hendry from Glasgow University was the last professional astronomer to speak and his talk was on 'Gravitational microlensing'. Both Einstein's special and general theory were the basis of the speaker's work. A variety of visible distortions of background objects as demonstrated by Einstein Rings detected by HST were shown. Variations in these gravitationally distorted views of cosmologically distant galaxies could not only lead to distance calculations and clarification of the Hubble Constant, but assist in finding fainter galaxies and consequently investigating early galaxy formation. In a statistical analysis of

many galaxies over smaller distances the interpretation of data from type Ia supernovae and 'standard sirens' could be re-checked.

The VSS Binocular Secretary, Melvyn Taylor, briefly described the reasoning behind the recent publication of the booklet *Binocular Variable Star Charts Volume 2* (available from the BAA Office price £2.50) before highlighting one of the best followed binocular variables, CH Cygni. This star is of type ZAND+SR and has a range of mag 5.6 to 10.5. The speaker drew attention to the intervals near several of the star's major fades, one of which started in 2006 July when the star had steadily dimmed from visual magnitude 7.7. It had continued fading at a rate of about 0.13 magnitude per 10 days and was around 9.9 to 10.0 in December to January this year. Interestingly, jet activity had been detected by radio observations at around the time of the steep descent.

John Toone, the BAA VSS Chart Secretary, spoke next about the work of the International Chart Working Group (ICWG) and its aims and criteria in the goal of producing a coherent data set of comparison stars. Different variable star groups had produced numerous charts over many years, some of which did not have a common magnitude sequence due to a number of reasons. The ICWG, which was formed in 2000, is drawn from a number of organisations such as the BAAVSS, the American Association of Variable Star Observers, and others as a group for sorting out charting problems and in particular the sequences. Checking the quality of charts and comparisons, including the astrometry of objects, and how a final chart version is worked was described in relation to the Working Group's agreed methods. Several relationships of visual (mv) and V



A gallery of Einstein Rings, gravitationally distorted images of distant galaxies, imaged in 2005 by the Advanced Camera for Surveys on the Hubble Space Telescope. *Courtesy NASA/ESA/ A. Bolton & the SLACS team.*



magnitudes were discussed in relation to selection of comparison stars, in particular the colour index (B–V) which was limited to the range up to 0.7 magnitude for ‘red variables’. Although the Group had now been disbanded it was felt that the agreement that had been reached and the recommendations put forward were greatly helping the modern variable star observer. Sources of good quality photometric magnitudes were also benefiting both observer and analyst alike by obtaining uniform data for around 20 million variable star estimates worldwide acquired since the late nineteenth century.

Andrew Wilson, BAAVSS Database Secretary, discussed the spreadsheet that has been developed for CCD observations using the *AIP4Win* software (v. 2) and the advantages of using multiple comparison

stars. He demonstrated the methods of data input and export and explained some of the processes in combining databases, assessing the integrity of observational data, and how it was accessed and submitted over the internet. Extracted data could be identified with various labels; star, observer, filter and date. Examples of current spreadsheets for visual, CCD and possibly PEP-based observations were shown. In a proposed re-design of the database, which would likely take a few years, the speaker was looking to produce a web-based system whereby data could be submitted, verified and accessed online.

Mention must also be made of the excellent poster displays by several members, especially by Tom Lloyd–Evans on spectroscopic monitoring of carbon stars; David Ri-

chard on projects he has undertaken including B,V,R, and I photometry; and Robin Leadbeater on low resolution spectra of GSC 3656-1328, the variable object seen in Cassiopeia last autumn which may have been a micro-lensing event.

The Director brought this historic meeting to a conclusion by commenting on a few aspects of all the speakers’ topics. He highlighted a request for observations of the active galaxy and black hole candidate OJ+287, and the programme to monitor a number of Polars. He thanked the speakers, the local organiser Des Loughney (who is also the Section’s Eclipsing Binary Secretary) and the RoE staff including Alan Pickup, Eleanor Gilchrist and Tania Johnston.

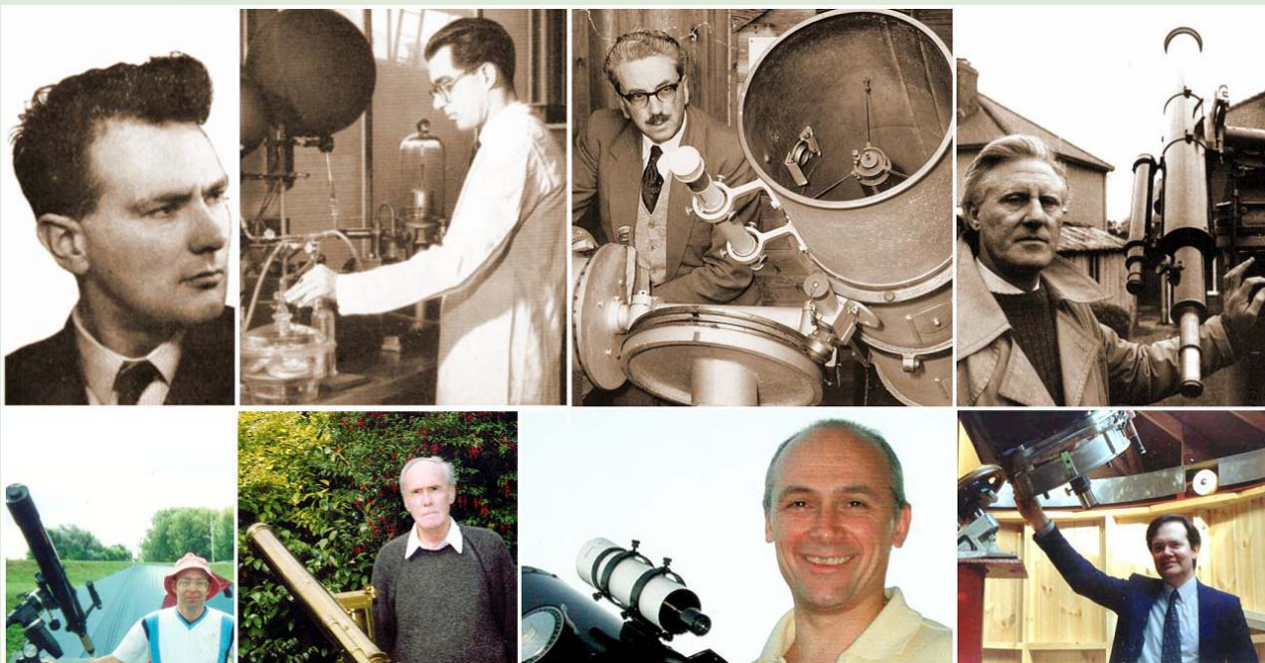
Melvyn Taylor & Roger Pickard

New Honorary Members

Congratulations to the following, who have been members of the Association for a continuous period of fifty years at the start of the new session, and therefore now become Honorary Members:

	<i>Date elected</i>		<i>Date elected</i>
Mr K. A. Brackenborough	1957 Jun 26	Mr D. P. Gowing	1957 Feb 27
Mr R. H. Davies	1957 Jun 26	Mr A. W. Pearson	1956 Nov 28
Mr C. R. Dickens	1957 Jun 26	Mr P. H. Vince	1956 Nov 28
Dr R. J. Dodd	1956 Nov 28	Mr P. Willbourn	1956 Nov 28
Dr F. H. Flynn	1957 Jun 26		

Mercury & Venus Section: A gallery of Section Directors



Top row, left to right: Patrick Moore (later Sir Patrick), Director 1956-1963 (photo 1957); Dr Francis Jackson, Director, 1963-1965 (conducting simulated martian environment experiments on *The Sky at Night*); the late J. Hedley Robinson, Director 1965-1979 (a 1960s photo by courtesy of Mr D. Hedley Robinson); and Richard Baum, Director 1979-2000 (photo Yorkshire Television 1979).

Bottom row, left to right: Robert Steele, Director 2000-2003 (photo 1999); the late Edward Ellis, Director 2003 (photo 2006); Mario Frassati, Director 2003-2004 and Dr Richard McKim, Director 2004 to date.

A paper in the April *Journal*, and another currently in preparation, deals with BAA observations of Venus for 1991–2006, and will eventually complete an unbroken run of Section Reports covering the 50 years from 1956. This mon-

tage of Directors of the Mercury & Venus Section has been produced to mark the occasion. The early work of the Section was the subject of many reports by Henry McEwen, its first Director during 1895–1955, but a truly continuous record

was not obtained until the Directorship of Patrick Moore. Each photograph was taken during (or within a short time of) the Director's term of office.

Richard McKim, Director

200,000 variable star observations



On 2007 April 17 at 21h 55m (UT) Gary Poyner (pictured) reached a remarkable milestone while observing the faint U Geminorum-type variable star DW Cnc: this was his 200,000th visual variable star estimate.

The only other observers to have accomplished this amazing feat are Albert Jones from New Zealand with some 500,000 (!) and still observing; Danie Overbeek from South Africa who made around 287,000 and Wayne Lowder of the US who made some 209,000 observations. From the UK only two other observers have achieved 100,000 estimates (half Gary's total): John Toone with 122,000 and counting, and Charles Butterworth, active in the 1930s, who made some 106,000.

Gary is to be heartily congratulated on this remarkable achievement especially considering the tremendous effort over a sustained period of time required to accomplish it.

Roger Pickard, Director, Variable Star Section