The Variable Star Section CCD target list

The Variable Star Section CCD target list was first produced in 2002, and has just undergone its first revision. The full list is available on the Section Web pages.[1] This target list exists to encourage observers to build up their knowledge and skill in this area, by progressing from basic projects initially, to progressively more challenging work.

For this reason, the targets on the list are split into five different levels of difficulty. The majority of these projects provide an opportunity to collect unique data on systems that are of real scientific interest, and more detailed information regarding the purpose behind each project is included on the Web pages.

The five categories can be described as follows:

The **Beginners'** category comprises bright, fast eclipsing binaries, which are ideal for new CCD observers to monitor, enabling them to test their systems and check results on stars of known brightness and period.

The **Basic CCD Data** category is designed for CCD observers who want to use their CCD cameras to do more useful work, but who are not yet ready to use filters, or to do transformations to convert their magnitudes to a standard system. This means that projects in this category are aimed primarily at the detection of changes which are too faint for visual observers to monitor routinely, and which will alert other CCD observers to follow these objects.

The **Precision Timing Data** category requires that measurements be made with an accurate measurement of time, but no filter is required for these projects.

The **Approximate Differential Photometry** category of projects is for those CCD observers who are starting to use an appropriate V filter which, when combined with their CCD camera response, puts the derived magnitudes approximately on the standard Kron–Cousins system, without transformations being necessary. Potential observers who would like advice on filter/CCD camera combinations should contact the Section CCD advisor.[4] Data from this category can be combined with that of other observers to build up a useful set of data for analysis.

Precision Differential Photometry is currently the most difficult category, although all-sky photometry is even trickier! These projects are aimed at the experienced CCD observer who is not only happy to use a filter, but who is also confident at applying the correct transformations to the reduced magnitudes, in order to precisely transform those magnitudes to that of the standard Kron–Cousins system.

Sequences for these stars are available on the Web pages.[2] For the majority of stars a sequence will be defined as a list of suitable comparison stars; only in cases where there may be some difficulty identifying the star will a chart be produced.

Individual observers should retain copies of their raw images, but fully-reduced data may now be submitted to the VS section CCD database, from which light curves can be generated for display on the Web pages. If researchers require the raw data for further analysis, then the respective observers will be contacted.

For more general information please contact the Director, Roger Pickard;[3] for assistance from the Section's CCD advisor, contact Richard Miles,[4] or to be allocated a CCD mentor, please contact Karen Holland.[5]

Roger Pickard, *Section Director*

Notes

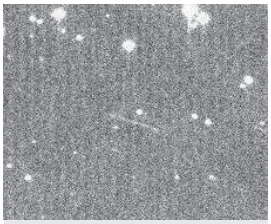
1 http://www.britastro.org/vss/ccd_target_list.htm
2 http://www.britastro.org/vss/comps_all_charts.PDF
3 Roger Pickard, 3 The Birches, Shobdon, Leominster Herefordshire HR6 9NG. [rdp@star.ukc.ac.uk]
4 Richard Miles, Grange Cottage, Golden Hill, Stourton Caundle, Dorset, DT10 2JP. [rmiles.btee@btinternet.com]
5 Karen Holland, 136 Northampton Lane North, Moulton, Northampton, NN3 7QW. [Karen.holland@xcam.co.uk]

Two more UK near Earth asteroid discoveries

On 2004 June 14 Ken Pavitt became the first UK participant in the Spacewatch Fast Moving Object programme to discover a near Earth asteroid (see the *Journal*, 2004 October, page 244). Last October I made the second discovery from the UK, and as this *Journal* went to press, editor Hazel McGee found a third.

The Spacewatch programme allows participants worldwide to search images obtained by a 0.9 metre telescope on Kitt Peak in Arizona, USA. The telescope is run by a group at the University of Arizona's Lunar and Planetary Laboratory.

I noticed a faint streak on an image downloaded at around 9:00 a.m. on 2005 October 27, and notified the resident Spacewatch observer. The object was subsequently added to the Minor Planet Center's NEO Confirmation Page to encourage other observers to image it. Prior to this discovery I had reviewed approximately 1300 images without success.



The faint streak of 2005 UH5 as it appeared on the Spacewatch review image on 2005 October 27.

The following night the object was detected by the Spacewatch II and Mt Lemmon survey telescopes. These additional observations allowed an initial orbit to be calculated and the designation 2005 UH5 assigned. At my request UK amateur astronomer Peter Birtwhistle also obtained an image of the newly discovered asteroid.

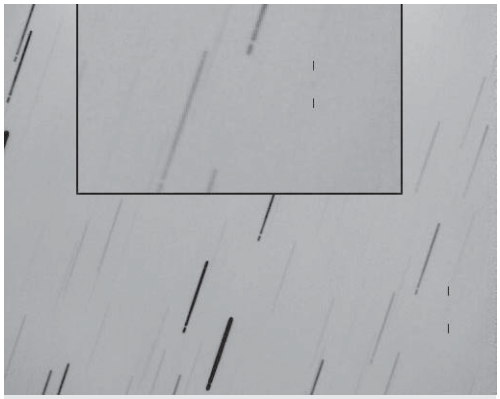
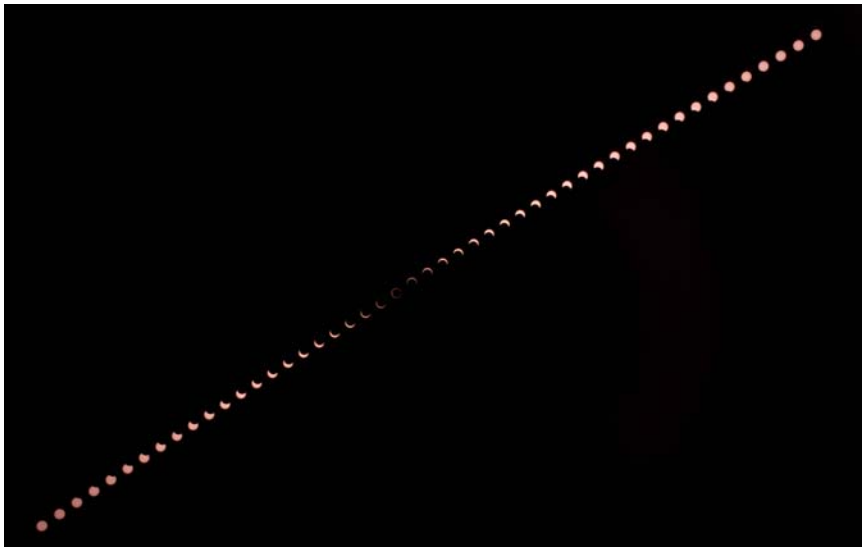


Image of 2005 UH5 at magnitude 18.8, 5m 20s exposure, 400mm SCT + CCD. The object was moving at 24" a minute. *P. Birtwhistle.*

Hazel McGee identified a tell-tale streak on an image downloaded at about 06.25 on 2006 January 7, after unsuccessfully reviewing 4027 images. The object, designated 2006 AT3, was confirmed by the Spacewatch II telescope and by BAA President Richard Miles.

Since the project began two years ago, 42 asteroids have been found by Spacewatch reviewers. October 2005 was a record month with nine discoveries being made.

Roger Dymock,
Director, Asteroids and Remote Planets Section



Annular solar eclipse, 2005 October 3

The eclipse was widely seen from southern Europe and north Africa.

Clockwise from top:
Denia, Spain; compilation of several video frames. *John McElroy*.
Madrid, Spain; 420mm lens at f/9, Kodak 200ISO Elitechrome slide film. *Keith Rickard*.
Moraira, Spain; Canon EOS 350D digital camera, f8 500mm mirror lens, 1/4000s unfiltered. *Sheridan Williams*.
Tunisia; exposures at 4 minute intervals on a single frame of 35mm film. *Nigel Evans*.