

## Sky Surveys and Patrols

Several major photographic sky surveys are currently in progress in both hemispheres.

In the North, the Oschin 48-inch Schmidt at Palomar is busy taking plates for the 3-colour POSS-II, which covers the entire northern sky ( $+90^\circ - +0^\circ$ ) on  $3 \times 894 = 2682$  plates. The original plates are reproduced at the ESO photographic laboratory in Garching for the corresponding Atlas; after some problems at Kodak with the manufacture of the copy plates, the production has now entered into a more steady phase. A digitized version of the POSS-II will be produced at the Space Telescope Science Institute in Baltimore.

Following the SERC-J survey of the sky south of  $-20^\circ$  (the blue part of the  $2 \times 606 = 1212$  plate 'ESO/SERC Survey of the Southern Sky'), as well as a 163 plate IR survey of the southern Milky Way and the Magellanic Clouds, the 48-inch UK Schmidt at Siding Spring has now embarked upon the AAO-R survey (second epoch red survey with 606 plates), and a 731 plate IR survey of the remaining part of the southern sky. Moreover, the  $2 \times 288 = 576$  plate SERC-EJ/ER survey of the  $-15^\circ - -0^\circ$  zone is well underway and is being reproduced at the photographic laboratories at the Royal Observatory in Edinburgh. At La Silla, and following the ESO(R) (606 plates) half of the ESO/SERC Survey, the ESO 1-metre Schmidt continues with the 288 plate extension of the Quick Blue Survey (QBS) to the equator and plans are now being made to begin the second epoch QBS south of declination  $-20^\circ$  (606 plates). Both the UK and the ESO Schmidts have long-term objective prism surveys in the south.

These and earlier optical sky surveys have come into extensive use by astronomers engaged in the identification of the many thousands of X-ray sources, recently detected during the ROSAT survey of the entire sky. Many positive identifications have already been made and optical studies of a broad selection of these objects have begun with large telescopes.

Wide-field telescopes have also been intensively involved in the follow-up of transient high-energy sources, detected with the WATCH instrument on the GRANAT satellite. A rapid series of several such events in the second half of July called for good logistics to ensure the close collaboration between the X-ray astronomers and those at the large Schmidts. The launch of another WATCH instrument on the free-flying European Retrievable Carrier (EURECA) with the Space Shuttle Atlantis, on July 31, 1992, will undoubtedly lead to many more detections in the period until its planned retrieval next year.

Some (relatively) good news: it now appears that the photographic Sky Patrol at Sonneberg, Germany, will be allowed to continue for at least another couple of years, before the support from the funding authorities is likely to be cut off. The unique work at Sonneberg has been described in recent articles in the German language journal 'Die Sterne' and also in the June 1992 issue of the ESO Messenger. On every clear night since the mid-1950s, and as far as the weather permitted, the entire visible part of the sky has been recorded with 14 patrol cameras, each covering a field of  $26^\circ \times 26^\circ$  on  $13 \times 13$  plates in blue and red, down to 14.5 (pg) and 13.5 (pv), respectively. More than 140,000 patrol plates are now in the Sonneberg archive, together with another 100,000, mostly from selected field programmes.

Together with their colleagues in Tautenburg and Jena, the Sonneberg astronomers have now begun a project aimed at transferring their great experience in patrol work into the future. In a first study, optical calculations are being made for a new type of wide-field, very fast, medium-sized patrol telescope, optimized for CCD work.

At the end, a sad note: the ASHOT project, described in the last issue of this Newsletter, has run into severe problems, caused by the present change of political structures in Europe. Let us hope that this set-back will be temporary only, and will be overcome when new agreements for the bi- and multi-lateral scientific cooperation between the involved countries come into place.

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