Spacewatch 0.9m Mosaic Camera Survey, v1.0
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Description of the Spacewatch 0.9m Mosaic Camera Survey
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The Spacewatch 0.9m Mosaic Camera Survey began in March 2003 and ran through 2016 with the goal of discovering near-Earth asteroids by surveying the sky mainly within 15 degrees of the ecliptic. The survey officially ended at the end of 2016 when the telescope operations had fully transitioned from surveying to targeted recoveries. The survey was conducted in a series of observing runs centered around the new moon with a break between observing runs spanning several nights before and after the full moon. The observing run number is the higher of the two Brown Lunation Numbers (Brown 1933) that occurred during the observing run (*i.e.* the Brown Lunation number that began at the new moon during the run). The limiting magnitude of the survey was 21.7 in V (under good conditions).

Each night, the survey would visit multiple series of pointing centers (regions) near the ecliptic and generally concentrated near opposition. Each series consisted of seven regions. The telescope would slew to the first region (pointing center) and take a 120s exposure. The exposures were unguided and the telescope moved with sidereal tracking. To avoid electronic noise interference from the telescope drive motors, the image was read out before slewing to the next of seven regions. This produced an average cycle of 4 minutes from the start of one exposure to the start of the next exposure. It took approximately 0.4 hours to observe all seven regions, at which time the regions were visited a second and third time. Thus seven image triplets were collected in about 1.3 hours. On average, 1400 deg^2 of sky were covered during each observing run. With 120s exposures, the limiting magnitude of the images was between V=21 and 22.
See Figure 1 for examples of sky coverage between May 2003 and May 2005.

References:
Brown, E. W. 1933. The Motion of the Moon, 1923-1931. *MNRAS* **93**, 603-619.

McMillan, R. S. and the Spacewatch Team. 2007. Spacewatch preparations for the era of deep all-sky surveys. *Near Earth Objects, our Celestial Neighbors:/Opportunity and Risk, Proceedings of IAU Symposium 236*. Edited by A. Milani , G.B. Valsecchi, and D. Vokrouhlický. Cambridge: Cambridge University Press, 2007, pp. 329-340.

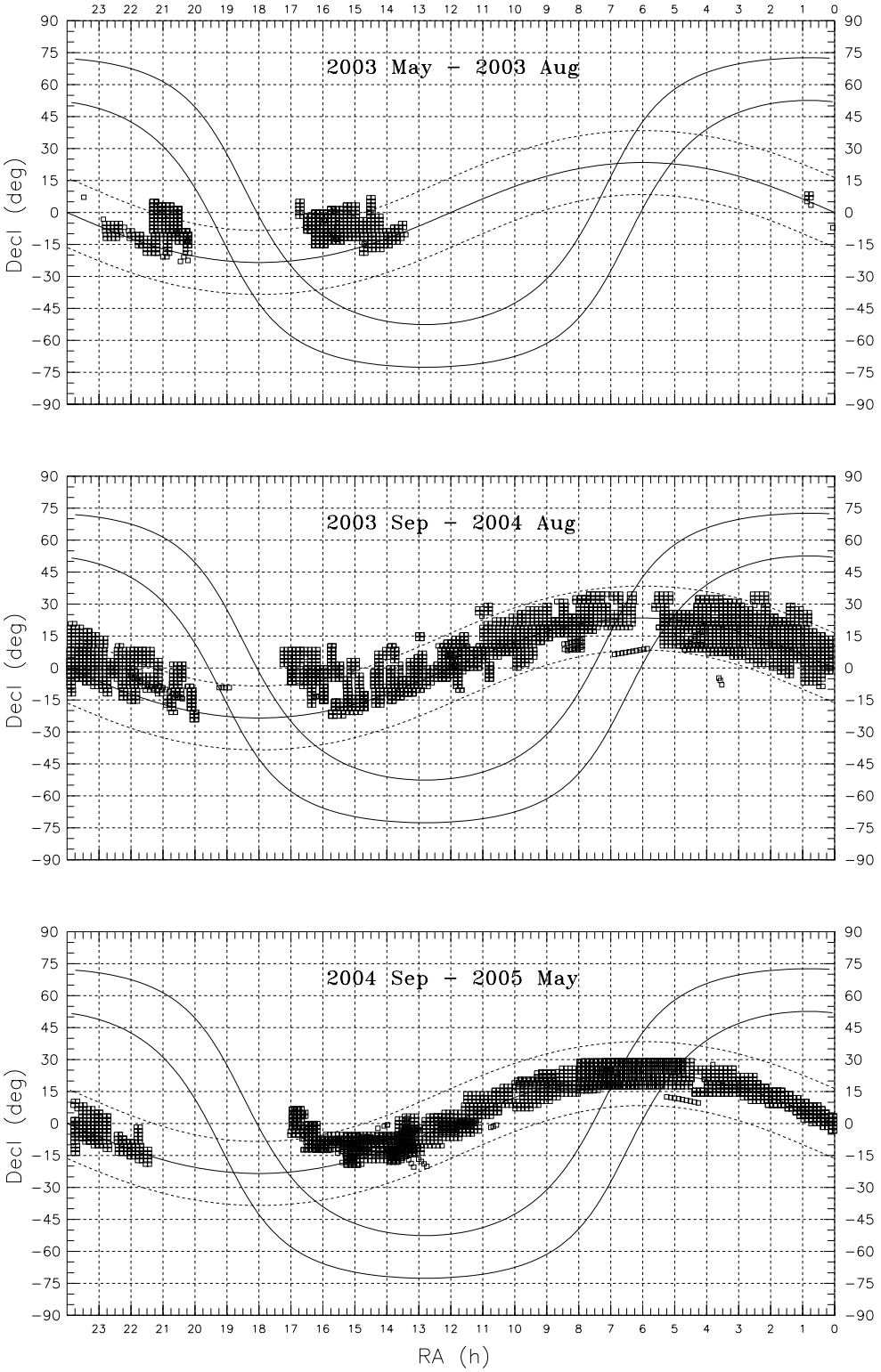

Figure 1. Figure 3 from McMillan *et al.* 2007.
"Regions observed with the Spacewatch mosaic of CCDs, 2003 March – 2005 May. The ecliptic and Milky Way are also shown."