Spacewatch 0.9m Mosaic Camera Survey, v1.0
spacewatch_steward_observatory_09m_telescope.pdf
Details of the Telescope Used for the Spacewatch 0.9m Mosaic Camera Survey
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TELESCOPE

This survey was conducted using the Steward Observatory 0.9-m telescope on Kitt Peak in the Tohono O'odham Nation. The telescope is the original Steward Observatory 36-inch (now extensively modified for this survey and referred to as the 0.9-meter).

On October 18, 1916, the University of Arizona announced a donation from Mrs. Lavinia Steward, in memory of her husband, Henry B. Steward, to be used to erect an observatory near campus which would include a 36-inch telescope. The telescope was built at the Warner & Swasey factory in Cleveland, OH in 1921 (Fig. 1), installed at Steward Observatory in July 1922, and dedicated in 1923. The original mirror was the first large telescope mirror successfully cast in the United States and the telescope was the first built with all American components. The telescope was visited by many prominent astronomers like V. C. Slipher and also President Calvin Coolidge. In 1962, the telescope was moved (Fig. 2) to Kitt Peak as the first telescope installed as part of the new observatory. It is the oldest telescope on Kitt Peak and has an equatorial mount.

After falling into disuse by the early 1980s, the Director of Steward Observatory, Professor Peter A. Strittmatter, granted Spacewatch exclusive access to the telescope in 1982 on the condition that Spacewatch perform all refurbishment and maintenance. After refurbishment, Spacewatch's first light on the telescope was in May 1983 and surveying for comets and asteroids with a CCD began in 1984.

In 2002, the telescope optics were converted from a Newtonian f/5.34 to a coma-corrected prime focus f/3. The optics include a spin-cast hyperboloid primary mirror and a multi-element field lens. The 0.9-m primary is silvered and protected by a red-optimized overcoating. The primary mirror has a diameter of 0.946-m (37.25-in) and a clear aperture of 0.934-m (36.75-in). At the same time in 2002, the outside of the telescope tube was powder coated white and the inside was covered with light-absorbing 'flock' fabric. Figures 3 and 4 show the telescope after 2002 after the new mirror was installed. The restored refractor finder scope built by Alvan Clark and Sons in 1888 has been relocated to the campus of the University of Arizona for public night viewing.

Figure 1. Steward Observatory 36” telescope in 1921 in the Warner and Swasey Factory, Cleveland, Ohio.
Credit: A. E. Douglass courtesy of Roger E. Carpenter, MD

Figure 2. Steward Observatory 36" telescope leaving the University of Arizona campus in 1962 to be installed on Kitt Peak.
Credit: Image courtesy of University of Arizona Libraries, Special Collections

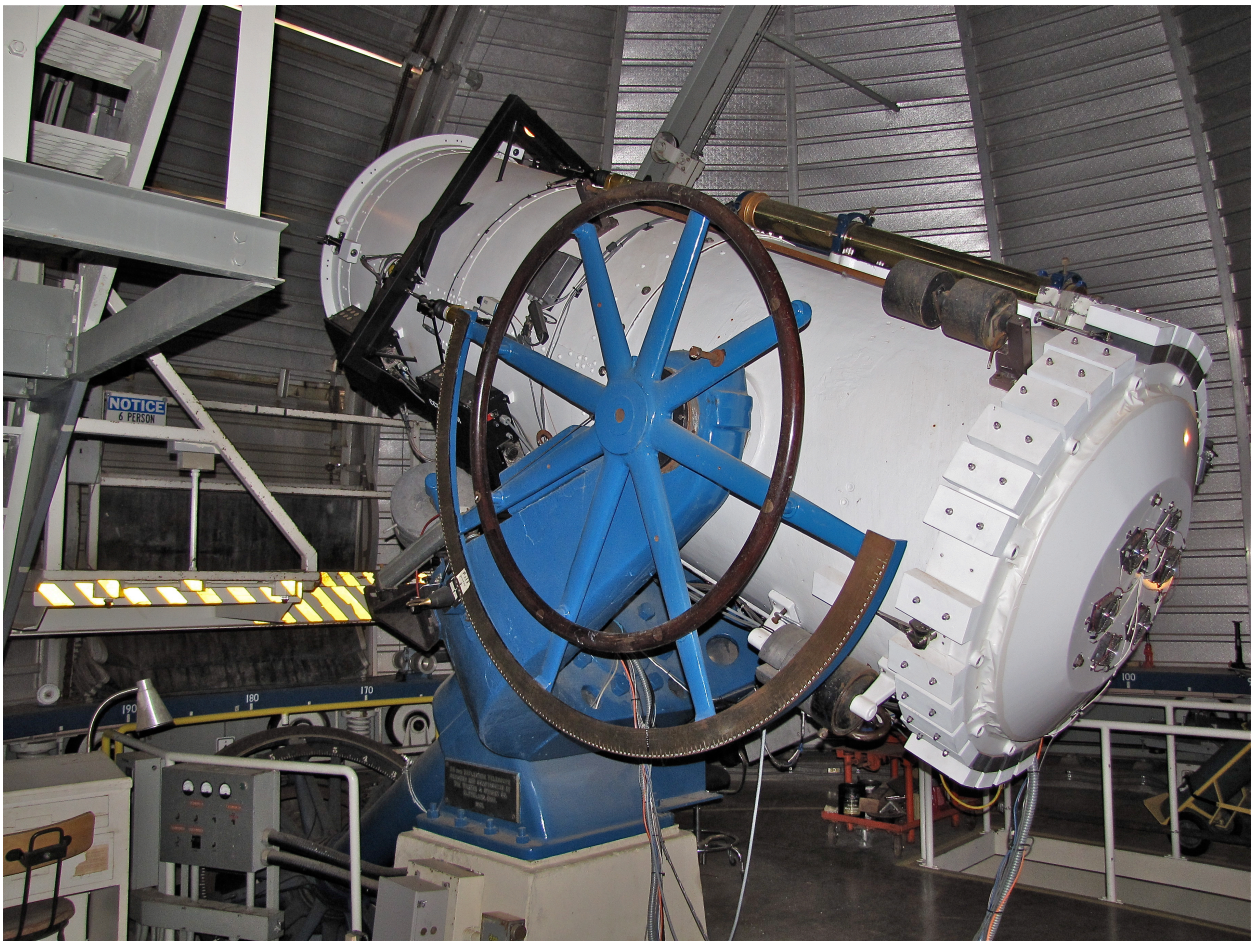

Figure 3. The Steward Observatory/Spacewatch 0.9m telescope on Kitt Peak after the new primary mirror and its mirror cell were installed in 2002.
Credit: Roger E. Carpenter, MD

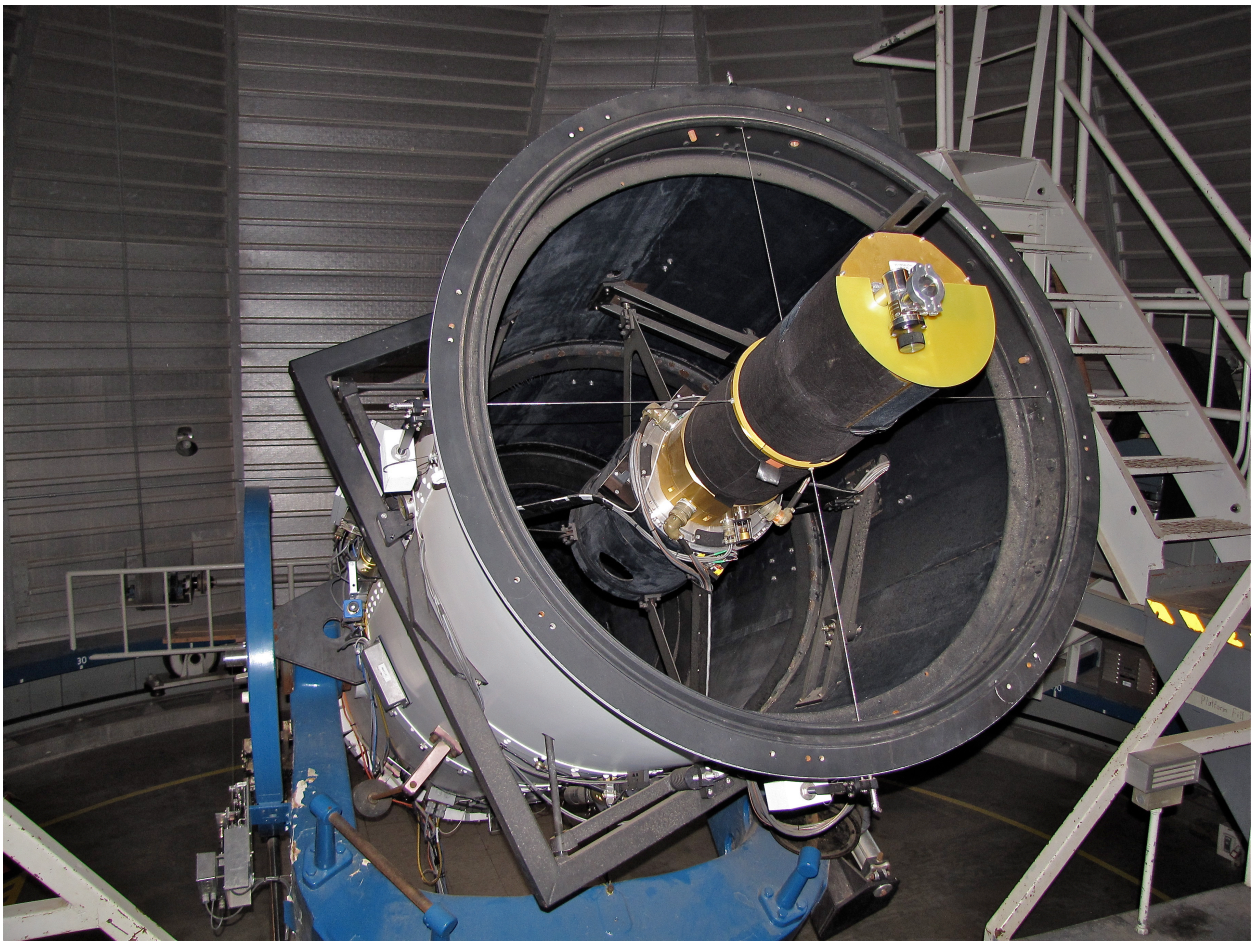

Figure 4. View of the mosaic camera mounted on the front end of the Steward Observatory/Spacewatch 0.9-m telescope.
Credit: Roger E. Carpenter, MD