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Images of Comet Swift-Tuttle: Amateur-Professional Collaboration

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More and more often, ownership of a home observatory under dark skies has proved advantageous to amateurs who are unhindered by the constraints professionals face when trying to secure observing time on heavily-subscribed telescopes.

This was borne out in 1992 when Comet Swift-Tuttle was in the northern hemisphere and opportunities arose to image it. I am an amateur astronomer who was at the time imaging using a 25" f/5 homemade Newtonian telescope and an ST-6 CCD camera. Each evening, I would image the comet from my home in Sooke, British Columbia, and the following morning send my wife, Alice, off to her work at the University of Victoria (UVic) with disks full of images in hand.

Dr. Jeremy Tatum and Dave Balam, both with UVic's Department of Physics and Astronomy, would graciously receive the images, and immediately set to work processing them using their powerful image processing program. The results were amazing: for the first time, jets emanating from the nucleus of the comet could be clearly seen.

In the sequence shown, I used 5 second exposures so as not to over-expose the nucleus, and separated the exposures by about a minute and a half. With the nucleus as the centroid, the stars appear as long, dotted streaks similar to star-trailing in a long exposure while guiding on the comet.

This is an example of a very simple collaboration which produced pleasing results for both amateur and professional alike. The image sequence was unique and provided important scientific information on the comet's structure. As an amateur, I was delighted to be able to contribute images, while Dave and Jeremy were extremely helpful in providing both the astrometry and image processing.