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ASTRONOMY

Clouds force astronomers to wait, then work fast

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BY TOM STATLER

I'm on a plane with my grad students, heading for southern Arizona and five nights at the MDM Observatory. We're off on another observing run, to measure the spins of near-Earth asteroids.

As an airline passenger, a near miss is something I have no interest in experiencing. But for asteroid near misses, January was a banner month.

The asteroid 2007 WD5 looked, for a while, as if it might impact Mars. Astronomers the world over were disappointed to learn that it would pass harmlessly to one side on Jan. 29.

The same night, 2007 TU24 was not hitting Earth, passing just

40 percent farther from us than the moon is. Most astronomers had the good graces not to complain about that one.

We were at the observatory that night, too, but not observing. Instead, we were cursing the clouds and watching far too many episodes of *The Muppet Show* on DVD. Sometimes astronomy just is that way.

Our plan was to use the first five nights of our six-night run to observe other objects and get comfortable using a new imager. Its fast download time would be perfect for the short exposures we planned for TU24. Tricky work, and we wanted a chance to practice, to make sure we got the best possible data. Instead, we listened to the rhythm of the pouring rain.

It wasn't until 3 a.m. on the last night that we pointed the telescope at TU24. No practice shots, no careful coordinate calculations, no precision guiding. Five-second exposure, six-second download, move the telescope 10 arcseconds south, and do it again. Three hours, 503 exposures -- real seat-of-the-pants astronomy!

TU24 was one of the most intensely observed asteroids of the past few years, and we acquired what we believe to be some of the highest time-resolution photometry ever. Merging our data with other observations will take a lot of work. But we're adding a piece to the puzzle that is our solar system's history.

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