

ASTRONOMY

When the sun goes down, they get a light in their eyes

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Maybe you've been sent on a pizza run or a beer run, but unless you're a professional astronomer, you've probably never been on an observing run.

That's what we call it when we travel to a dry, isolated mountaintop to spend long, sleepless nights with a telescope, trying to tease a few secrets from the universe.

To an astronomer, observing time is golden. Without it, we have no way to test our theories and no route to discoveries.

This month I've had the pleasure of observing twice at the MDM Observatory's 2.4-meter telescope on Kitt Peak, Ariz. MDM is owned by a consortium that includes Ohio and Ohio State universities.

A typical shift at the observatory begins about 4 p.m. We start by checking out the instruments, taking calibration data and deciding what objects we'll be observing and when.

A quick break for dinner before sunset and then we're opening the observatory dome. We work until dawn, and after twilight fades, we're on to our main targets: galaxy groups.

Galaxies, such as the Milky Way, tend to cluster in groups. Our galaxy is the second-largest member of the Local Group, which also includes the Andromeda galaxy, the Milky Way's bigger brother.

Galaxies in these groups constantly bump and jostle each other. Their gravity can pull unsuspecting stars from their orbits and fling them into intergalactic space.

In extreme cases, small galaxies can be ripped apart or ingested by bigger siblings.

A certain amount of galaxy shredding is expected. Our observations at MDM were directed at measuring the rate of shredding by detecting the light from intergalactic stars.

Pat Durrell, of Youngstown State University, and his colleagues have been delving into the dark, seemingly uninteresting parts of the Virgo Cluster with the Hubble Space Telescope.

They found thousands of intergalactic stars, four star clusters and an entire galaxy – a small one, of course – all previously unknown.

Galaxy groups are a little like families. The more we learn about these families, the more we see that they are not all that different from our own – complicated, a bit messy and not always completely peaceful.

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