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Stargaze

By Bob Davis

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MAYHILL, N.M.—My daughter and I flew to New Mexico to watch the night sky. It didn't disappoint.

The rolling hills around New Mexico Skies. The ridges help block light from El Paso about 125 miles away ILLUSTRATION: JOANNA DAVIS

On a moon-less fall night, the sky was painted with stars and ribbons of light so brilliant they looked like clouds. Jupiter was the brightest object, a beacon that outdid the North star. The light from the Milky Way cast shadows on the ground.

Quite a show for a city boy like me who rarely thinks to look up at the sky at night.

Lynn and Mike Rice a pair of 68-year-olds, run what they call a bed-and-telescope for serious stargazing on a hilltop in the Lincoln National Forest, a 2 ½ hour drive north of El Paso. The guests include astronomers hunting asteroids and novices who couldn't see a constellation if it were painted in the sky with a glow-in-the-dark marker. New Mexico Skies isn't like other B&Bs. First, there's no breakfast, so you have to cart in your own food and drink. "Who knows when an astronomer would want to eat," says Mrs. Rice. "They're up all night."

Second, there are no glare-producing white lights outside the lodge's seven cabins, which would dim the view of the sky. Instead there are red lights everywhere—even the refrigerator bulbs are red— and you stumble around the grounds at night using red-bulb flashlights until your eyes get used to the dark skies.

New Mexico Skies rents guests telescopes for about $175 night—big ones that cost $50,000 a piece—and has a small staff eager to instruct beginners. It also rents retractable white domes for 30 remotely-operated telescopes. It makes for an odd scene. The domes come to life in the dark, whirring and swiveling, like big R2D2's, as astronomers somewhere are positioning their telescopes for a night's work.

I've been intrigued with starry nights skies since I studied abroad in Israel in 1972, camped out in the Sinai, and was awed by star show overhead. My 22-year-old daughter Joanna had a similar experience in the Namibian desert in 2009 during her study-abroad stint in South Africa. When Mike Rice told us that the Milky Way was so bright during the summer that you could read a book by the light, we were hooked and booked a weekend stay.

The first night, we learned how to use a 10-foot tall, computer-controlled telescope, shaped like an artillery cannon. It turned out be simpler to control than the little tripod-mounted telescope I had as a kid, which I only managed to focus on the moon and my neighbor's windows. Programmed into this one, with its 30-inch mirror and 150-fold magnification, were the location of 100,000 galaxies, stars and planets. Punch the name into the handheld controller and the telescope's motors pointed the contraption in the right direction.

M-57, the planetary nebula, as seen through a telescope with a 30-inch mirror and 150-fold magnification. ILLUSTRATION: JOHANNA DAVIS

Through the telescope's eyepiece, M-17, the omega nebula, appeared as a small cloud, which Mike Rice explained to us were gasses that would eventually turn into stars – "a star nursery," he called it. M-57, a planetary nebula, was odder. It looked like a smoke ring surround a spec of light, which was actually the remains of a star that had exploded and released gasses that formed the peculiar circular shape. "It wasn't like anything I had ever seen before," my daughter said later..

After taking early retirement as vice chancellor at the University of Alaska Fairbank, Mr. Rice hunted the southwest for the right setting to pursue his longtime interest in astronomy. The 50-acre site near Mayhill was especially good because the area is sparsely populated and the ridges block out stray ground lights, while the high-altitude location (7,300 feet) and arid climate keep the air unperturbed.

The vantage point is so pristine that a half-dozen spectacular shots taken at New Mexico Skies have wound up on the **National Aeronautic and Space Administration's "Image of the day" website**, which is kind of like a Playboy calendar for astronomers, except the pictures are of celestial bodies.

Mr. Rice didn't mind the warmer weather either. Alaskan astronomers risk getting their eyes stuck to a telescope's eyepiece during the brutal winters, he told us. What then? "Don't panic," he says. Eventually the eye's warmth heats the eyepiece enough to unstick the unlucky astronomer.

To me, the most exciting view was Jupiter. Through the eyepiece, we could clearly see bands of clouds crossing the planets surface and four of Jupiter's moons. Magnified, the light from the planet was so powerful that my head snapped back when I looked. Galileo had seen a fuzzier version of the scene with a far simpler telescope, hundreds of years earlier. If anything, that made the scene sweeter.

We hadn't come for anything as high faulting as a quest of discovery –- we just wanted to have a cool time way off the usual tourist trail. But that first night you couldn't help but realize the limitations of the body. It took a powerful telescope to reveal to us the peculiarities and beauty that our eyes couldn't see. The second night we realized the limitations of even the telecope's technological boost.

M-27, a gaseous formation, which was photographed through 'imaging,' a process of taking photos of distant objects ILLUSTRATION: JOANNA DAVIS

That's when we had our first lesson in "imaging" – that is, taking photos of distant objects. Randy Reimers, a former high school computer teacher, showed us how to run a telescope with a 16-inch mirror and color camera connected to a computer screen displaying a map of the night sky. Joanna moved the cursor over M-27, a gaseous formation usually described as having a dumbbell shape, but which looked to me more like bowtie. The telescope moved into position.

Then she aimed a second telescope-mounted camera at a nearby star, which became a guide post to keep the telescope focused on M-27 as the earth rotated. She took four 10-minute exposures of the galaxy, while we chatted in the crisp fall night.

In the lodge's library, a red-lit room with four computers, Mr. Rice, retrieved the photos and showed Joanna how to remove imperfections and superimpose one image on top the other. The result was a photo with a 40-minute exposure, with far greater detail than we could have seen by looking through the telescope.

The most stunning change came when the color was added. The bowtie shape disappeared and was replaced by a red-and-blue bubble that looked like it was about to burst. The red wisps were ionized hydrogen; the blue was ionized oxygen

We were staring at the remains of a supernova – a star that had exploded with immense power, producing gasses and radiation. It was stunning. We could see not just the beauty of the sky but the dangers. "You wouldn't want to be within 100 light years" of a supernova, Mr. Rice told us. "It could send so much radiation, it could lead to extinction."

Joanna and I returned to our room and took turns playing with M27 image and turning it into a screen saver. "Mike kept calling the Milky Way the arm of our galaxy," Joanna said. "There are so many more." Neither of us may take up astronomy as a hobby, but we've seen deeper into the sky than we ever expected to.

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