

# Star Gazing

By Lori Cowan

**H**ave you ever looked up at the South Dakota night sky and marveled at how truly black it is? Well, Ron Dyvig, owner of the Badlands Observatory, did and what he discovered as a child in the 1950s continues to amaze him yet today.

## Childhood Imagination

"I was on a Boy Scout camping trip and the leader doused the camp fire and started pointing out things. I asked him where the planet Mars was and he pointed it out on the horizon. Then it was terminal."

Additional enthusiasm for astronomy came with the gift of a telescope one Christmas and influence from an older brother who was involved in the U.S. Army guided missile project. So, it was no surprise when Dyvig jumped at the chance to become a member of the Black Hills Astronomical Society in 1957. One of the club's youngest members, he had to have his parents drive him from their home in Deadwood, S.D., to Rapid City for meetings because he was not old enough to hold a license.

## Grown-up Ambitions

Dyvig took his hobby a step further when he attended the University of Arizona at Tucson and became involved with the astronomy and optical science departments. While there, he picked up additional skills in the art of telescope making. Later on, back in Rapid City, he conducted classes on the subject.

However, the draw of home and of dark South Dakota skies was strong and Dyvig left Arizona. And after spend-

ing a brief time in Wyoming, he came back to his home state to pursue his dream.

"When I left Arizona, I made a vow to myself that someday I would set up an observatory with a research grade telescope where I could do some serious astronomy," Dyvig said.

When he returned to the Black Hills, Dyvig examined possible locations for his observatory. In the end, the abandoned hospital building in Quinn became the victor because of price, size, location and help from the community and a local electric cooperative.

"I had looked at 43 different sights in the Black Hills and this not only had a structure, but the city council and West River Electric Association were willing to put light fixtures on lights," Dyvig said. The fixtures act as shields to direct the light from street lamps more efficiently and cut down on light pollution.

While the search continued for an observatory location, construc-

tion on the telescope continued simultaneously. Since Dyvig knew that the type of telescope he wanted would cost nearly \$200,000 to purchase, he decided to design the scope and fabricate the optics himself. The telescope mirror, at 26 inches in diameter, was constructed in his basement optical shop in Rapid City and a local machine shop did the heavy welding and machine work for its base.

In 1998, the project was nearing completion when Dyvig moved into his new home at the observatory in Quinn. Then the unexpected occurred. In the early hours of a late December morning, a defective chimney on a wood burning stove caused fire to break out in the old building. Although the fire was brought under control



Ron Dyvig realized his dream upon the completion of the Badlands Observatory.

quickly, winter winds at speeds of more than 40 miles an hour re-kindled the flames and Dyvig was sure that the entire structure and the telescope's 26-inch primary mirror would be lost.

"We had pretty much given up hope," Dyvig said.

However, after receiving important information from local firefighter Frank Slater, firefighters from Ellsworth Air Force Base and nearby Phillip decided to try to save the mirror and in doing so realized that a part of the building could be saved as well.

### From the Ashes

In the weeks following the fire, the trauma of the event began to fade and Dyvig decided to complete the observatory on a smaller scale. In March of 2000, with help from old friends from the Black Hills Astronomical Society, the telescope was placed and achieved first light, a milestone that was doubtful only two years earlier.

### Seeing Stars

The Badlands Observatory telescope is used primarily to aid the International Spaceguard Foundation in identifying and tracking near-Earth asteroids. The goal of the foundation is to locate and track these asteroids in the effort to prevent one of them from striking the earth, which is one of many theories on how dinosaurs reached extinction. And although an asteroid has yet to make it to the top level as potentially dangerous to Earth, several have come closer to our planet than our moon.

One hundred observatories in the world share the important job of identifying these asteroids; half of them run by professionals and half by amateurs. And to be among them is a prestigious honor.

"In order to be issued a sight code, you have to pass a test. But right now amateur astronomers that have learned the techniques are lending a lot of service to professionals because they (professionals) do not have the funding for follow-up," Dyvig said.

Dyvig's telescope is controlled using three computers located in the observatory control room. The computers are used for weather and Internet access, telescope control, camera control and image processing.

And it was in this very room where Dyvig spotted a new asteroid and tracked it long enough to log its orbit, giving him the right to name it No. 216715 South Dakota. In addition, he has also found 26 main belt asteroids and gained rediscovery credit on a near-Earth asteroid that had been lost since 1987. This rediscovery is one of his favorite events thus far at the observatory.

"I accidentally found it," he says with a smile.

### Gazing into the Future

So after looking millions of light years back in time and observing a new asteroid, what's next for Ron Dyvig and The Badlands Observatory? Dyvig plans to remain a contributing observing station for the Spaceguard Foundation and, through affiliation with the South Dakota Space Grant

Consortium, with headquarters located at the South Dakota School of Mines and Technology, expand both the educational outreach and public access of the observatory. "I am contemplating a lot," said Dyvig.

The telescope at Badlands Observatory is now accessible for remote observing via the Internet. In September, the telescope will be available to educators and researchers, as well as the general public. More information on the telescope and the remote observing program can be found at <http://www.sdsmt.edu/space/boREMOTEACCESS.htm>

For now, it sounds like the future of the little observatory on the South Dakota prairie may be up in the air – or should we say above the atmosphere? ■

## Nebraska Star Party

For the last 10 years, a unique group of people has gathered in a remote area 30 miles south of Valentine, Neb. And no, they are not the farmers or ranchers one might expect to be in the sparsely populated area south of the Sandhills.

This event of nearly 300 people is a gathering for amateur astronomers.

The Nebraska Star Party was organized by the Prairie Astronomy Club, Lincoln, Neb., along with the Omaha Astronomical Society as an opportunity for amateurs to share ideas, learn new techniques and enjoy the recreational activities in the Valentine area. The already established vacation spot of Merritt Reservoir not only provided restaurants and other facilities, but also supplied very dark skies – a necessity for stargazing.

Doug Bell, a member of the Prairie Astronomy Club and star party contact person, says, "When you begin observing, something you realize pretty quickly is that you have to get away from city lights. When you get out to central South Dakota or Nebraska, there aren't a lot of lights. It's a new experience for most of the people who come out."

Once the groups decided on a location for their event, the next step was to work with the Nebraska Department of Game Fish and Parks to put shields on lights in the area. The shields help cut down on light pollution, which occurs when illumination from light leaks to areas other than those intended.

With the shields in place, the first annual Nebraska Star Party was held in 1994 and has continued to grow in popularity. Registrants traveled to the event from as far away as California, Ohio, Florida and Texas. Dates for the 10th annual star party will be July 27-Aug. 1, 2003.

For more information on the next Nebraska Star Party or amateur astronomy, visit the Web Site at [www.nebraskastarparty.org](http://www.nebraskastarparty.org) or contact The Prairie Astronomy Club at PO Box 5585, Lincoln, NE 68505-5585.