

Our eyes on the stars

Amateur astronomers help out NASA's pros

By Warren Volkman
News-Press Staff Writer

A dedicated group of seven amateur astronomers in Santa Barbara and Santa Ynez has assembled a network of backyard telescopes and state-of-the-art light sensors that NASA astronomers regard as "the best in the world" for detecting rare star flashes.

The intense bursts of light, which have been predicted but never recorded, could signal a brush between two stars far off in the galaxy.

Led by Richard Schwartz, a retired electronics engineer, the Santa Barbara Astronomy Group is under contract with NASA's Goddard Space Flight Center in Maryland to monitor spots in the night sky for any signs of elusive "gamma ray bursters," which flare only for a few seconds then disappear.

"This is very exciting," said Schwartz, who retired at 51 to pursue his lifelong preoccupation with the night sky. "Typically in astronomy nothing happens in less than thousands of years, but in the past few years (satellite sensors) have been observing short term flashes of gamma radiation."

The mysterious sources were first detected in the 1970s when U.S. and Soviet spy satellites, watching for unauthorized nuclear bomb tests, picked up pinpoint blasts of gamma rays from outer space. Calculations indicated the radiation given off in a few seconds could be greater than the energy generated by the sun in a week.

"That would make them the most intense sources of radiation in our galaxy," Schwartz said. The radiation poses no danger because it is blocked by the Earth's atmosphere. About a hundred such bursts have been cataloged.

Astronomers speculate the cosmic explosions might be caused by small, dense, burned-out stars pulling a swirl of hot gasses from an nearby star. The resulting shower of gamma rays is so intense that astronomers predict the neutron star must also give off brilliant light. It is that strobe that Schwartz and group's members are watching for.

The astronomers here coordinate their watch with professional astronomers at UC Riverside's Institute for Geophysics and Planetary Physics and the U.S. Naval Observatory in Flagstaff, Ariz.

"No one has ever seen light from

a gamma ray burster," Schwartz said. "We hope to be the first." The group's search was featured in the December issue of *Sky and Telescope*, a magazine primarily for amateur astronomers.

To record the momentary flare, the astronomers have constructed six domed, backyard observatories with 12- and 14-inch telescopes, cameras, computers and the most sensitive light sensors NASA can provide.

On every clear night, the telescopes are focused in pairs on likely spots in the constellations of Aries, Pices, Orion, Hercules and Camelopardis. At each observatory, the computer does the watching, monitoring the telescope's light sensors while the astronomer sits warm and comfortable inside the house. With any change in light levels, the computer trips the camera, starts a recorder and buzzes the astronomer.

There have been no positive sightings since the project began last year. But there have been hundreds of false alarms including meteors, airplanes, condensation trails, and satellites glinting in the sun. These sightings are easily ruled out because the telescopes watch in pairs from vantages at least six miles apart so only flashes from outer space register at both observatories at once.

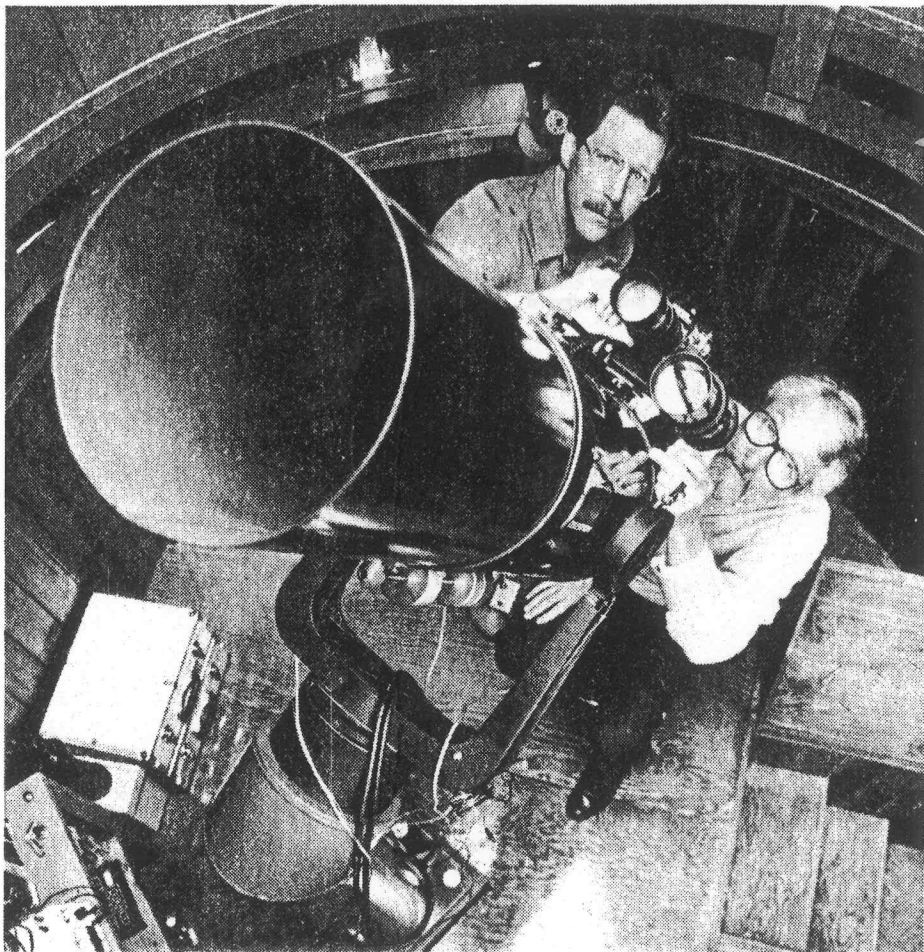
The ability to rule out false flashes makes the astronomy group's setup the best in the world, according to Dr. Bradley Schaefer, professional astronomer and research associate at NASA's Goddard Space Flight Center.

"They currently have the best equipment in the world for this," Schaefer said. "And I would say they are probably one of the top amateur astronomy groups in the world."

The group's Santa Barbara membership includes A. K. Presnell, a retired chemist; Russ McNeil, an engineer for the Santa Barbara Research Center; and Mike Barber, a practicing attorney. Jack Brooks and Allen DeForest, who monitor the sky from Santa Ynez, work for the Santa Barbara Research Center. Scott Whitney, a computer engineer for TRW Inc. in Redondo Beach, Calif., designed the group's computer system, but does not observe.

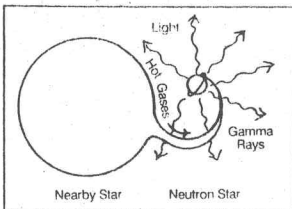
As amateurs, the stargazers can do what professional astronomers usually can not — monitor one spot in the night sky month after month.

See ASTRONOMY, Page D 3

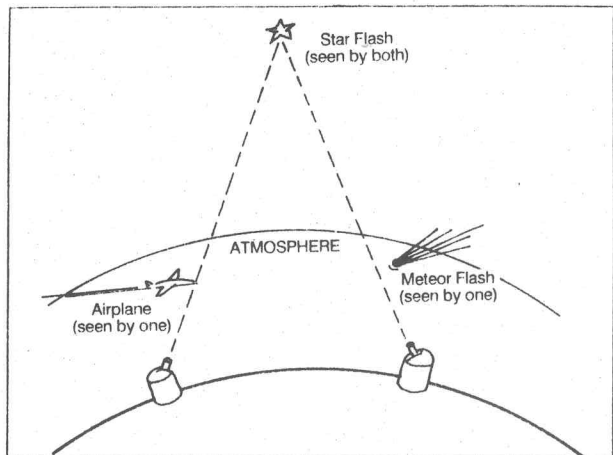


Rafael Maldonado/News-Press

Mike Barber, left, and Richard Schwartz are two local amateur stargazers NASA is depending on.



■ The astronomers here are watching for a burst of light that might be caused by a small, neutron (burned-out) star pulling gasses from a nearby star. The explosion might release as much energy in a few seconds as the sun produces in a week.



■ Having two computerized telescopes "watching" the skies helps eliminate false sighting from airplanes, meteors flashes and other atmospheric occurrences.

Astronomy

Continued from Page D 1

"These optical flashes are rare, so you have to sit and watch a long time," NASA's Schaefer said. "It's hard to get that kind of time on a big telescope. It's also very expensive." The nation's major observatories are booked up by researchers months and years in advance.

Professional astronomers at the Massachusetts Institute of Technology and the European Southern Observatory in Chile are building large telescopes that will better the group's equipment. But until those telescopes are completed in a year or more, the Santa Barbara Astronomy Group has a chance to make astronomy history using nothing more than backyard telescopes.