South Pole Scientists Get View of Jupiter-Comet Clash

By Robert Lee Hotz

In a freezing wilderness where explorers once died for the sake of a penguin's egg and chunks of jellyfish washed ashore, astronomers at the South Pole are collecting spectacular imagery of a fire in the sky.

As the South Pole — stop an impoundment two miles wide, where it is drier than the Sahara and colder than parts of Mars — astronomers such as Nguyen this week are getting something that may be the clearest view on Earth of Jupiter and a comet clash in the heavens overhead.

While their colleagues at other major observatories around the world concern with rain, fog, pollution and viewing opportunities constrained by daylight, Nguyen and his colleagues at the South Pole Station can be exposed to periods of darkness throughout the celestial encounter.

At this time of year, the sun at the South Pole never rises and Jupiter never sets, because the station is centered on the axis of the earth's rotation. So the comet and the red planet, the closer than ever before, will be visible at all latitudes.

Atmospheric conditions are so extreme — the temperature was minus Friday with 25 mph winds — that the scientists can see with the naked eye a comet glowing through a golf-course-sized clear space in the sky.

The South Pole contains less than one-twentieth the water vapor found over the Murray Mountains in Tibet, one of the best of all existing telescope sites.

Infrared light, an invisible form of light emitted by heat, is more easily seen by the naked eye than visible light. The infrared telescope also is more sensitive when it is refrigerated, the small 24-inch SPHERE instrument is yielding some of the most dramatic and important images of the impact on Jupiter.

"The atmosphere at the South Pole is more suitable than anywhere else for high-resolution research," said John D. Cloutier, director of the National Science Foundation's South Pole Station. "And it's an excellent place for studies of the polar ice cap, which is a target of great interest to the scientific community."

"We're interested in understanding the impact of the comet on the planet's surface, its atmospheric chemistry and the effects on the ionosphere," said Cloutier.

"The South Pole is the best place in the world for this kind of work," he said.

"Our goal is to find out whether the comet has actually hit Jupiter and to determine the extent of any damage."