



The Crab through Time

Chandra, NASA's newest space telescope, is sending back exciting pictures that are expanding our understanding of the universe and rewriting the astronomy textbooks. In celebration, the science television show "Nebula" is creating a segment to show how Chandra's ability to "see" x-rays is showing us what was hidden until now.

The Crab Nebula is one of the most intensely studied objects in the sky, the remains of a giant supernova around 6400 light years away. Light from the supernova was first seen on earth in the year 1054. We know this because of records that Arab, Chinese and Japanese astronomers left, and from an intriguing petroglyph carved on a rock wall at Chaco Canyon in New Mexico. It has been photographed many times by many different astronomers, through many different telescopes, including of course, the Hubble space telescope. Now Chandra has given us a completely new view that lets us see the Crab in a new way.

The producers of Nebula have decided to tell the story of the Crab Nebula. They want a script bringing the astronomers that first observed the supernova in 1054 together with an astronomer who uses Chandra today. Now they are looking for proposals from writers. The segment will take the viewer from the first sighting of the supernova to today, including graphics and dialogue, explaining what each astronomer sees and understands.

Your Task:

You will write a story, including pictures, bringing a Chinese, an Arab, and a Native American astronomer from 1054 together with a modern astronomer from the Chandra project. The story will:

1. Examine what the sudden appearance and then eventual disappearance of a star in the sky might mean to society 1000 years ago, versus what it would mean to society today.
2. Locate and describe the position of the Crab Nebula, including its distance from the Earth and how long the light traveled to get here, and explaining why what we see actually happened far back in time.
3. Use the observations and at least 3 images available to the astronomers, in the visible, radio, and x-ray spectra, to describe the history of the supernova whose remnants are visible today as the Crab Nebula. Describe how scientists use and interpret information from these wavelengths to accurately represent the supernova process within the life cycle of stars, and to describe the nature of the matter ejected from the supernova .
4. Describe, with at least 2 examples, how technology has enabled scientists to expand their knowledge of the universe.
5. Include at least 2 analogies created by the writer to make the vast distances and amounts of energy involved understandable to the general public.

You may want to use the Chandra website to help you complete this task: <http://chandra.harvard.edu/>, or the NASA Chandra News website: <http://chandra.nasa.gov/>. You may present your story using PowerPoint, a storyboard format, a written script with visuals, a video, or any medium you prefer.