



## Scoring Rubric: The Crab Through Time

Scoring Criteria	1 Attempted Demonstration	2 Partial Demonstration	3 Proficient Demonstration	4 Distinguished Demonstration
<p><b>Content Understanding</b> Ability to describe and interpret data, using the different wavelengths of the electromagnetic spectrum relating it to supernova processes.</p>	<p>Attempts to describe or interpret data from at least 2 images. May omit relating data to our knowledge of the supernova and its life cycle or attempt at relating data is weak or erroneous.</p>	<p>Partially describes and interprets data from at least 2 images representing at least 2 portions of the electromagnetic spectrum and partially relates the data to our knowledge of the supernova and its life cycle. There may be minor errors.</p>	<p>Describes and interprets data from 3 images representing the visual, radio, and x-ray spectra and relates the data to our knowledge of the supernova and its life cycle.</p>	<p>Clearly describes and interprets, in detail, data from 3 or more images representing at 3 or more different portions of the electromagnetic spectrum and clearly relates the spectra data to our knowledge of the supernova and its life cycle.</p>
<p><b>Understandings of the Use of Technology</b> Describe how scientists use technology to help us learn more about the universe.</p>	<p>Attempts to describe one or more examples that illustrate how technology has expanded scientists' knowledge of the universe but contains major flaws.</p>	<p>Describes 1 example that illustrates how technology has expanded scientists' knowledge of the universe.</p>	<p>Describes 2 examples that illustrate how technology has expanded scientists' knowledge of the universe.</p>	<p>Clearly describes 3 or more examples that illustrate how technology has expanded scientists' knowledge of the universe.</p>
<p><b>Concepts of Scale</b> Ability to accurately represent the vast scale of the interstellar space</p>	<p>Attempts to locate or describe the position of the Crab nebula. Description is incomplete or may be erroneous.</p>	<p>Partially locates and describes the position of the Crab Nebula.</p>	<p>Locates and describes the position of the Crab Nebula, including its distance from the Earth and how long the light traveled to get here, and explains why what we see actually happened far back in time.</p>	<p>Accurately and precisely locates and describes the position of the Crab Nebula, including its distance from the Earth and how long the light traveled to get here, and explains, in detail, why what we see actually happened far back in time.</p>
<p><b>Use of a Conceptual Model</b> Students' skill in constructing 3 analogies, making the distance, the energy released, and the physical size of the nebula,</p>	<p>Creates at least 1 analogy to make the vast distances or amounts of energy involved understandable to the general public. Analogy may be difficult to understand or inappropriate.</p>	<p>Creates an appropriate analogy to effectively make the vast distances and/or amounts of energy involved understandable to the general public</p>	<p>Creates 2 appropriate analogies to effectively make the vast distances and amounts of energy involved understandable to the general public</p>	<p>Creates 3 or more appropriate analogies to effectively make the vast distances and amounts of energy involved understandable to the general public</p>

more easily comprehensible.				
<b>Communication</b> ability to integrate information and images into a piece that communicates science to the general public.	Attempts to communicate some scientific ideas to the general public, but communication is weak or ineffective.	Partially communicates scientific ideas to the general public, but lacks support and detail.	Clearly communicates scientific ideas to the general public providing support and detail.	Clearly and effectively communicates scientific ideas to the general public using rich, vivid, and powerful detail.
<b>Historical and Cultural Perspectives</b> Ability to describe historical and cultural contributions to scientific knowledge.	Attempts to describe historical or cultural perspectives of ancient or present society. May contain flaws.	Partially describes historical or cultural perspectives of ancient and present society.	Describes historical and cultural perspectives of ancient and present society.	Clearly describes, with detail and vivid examples, historical and cultural perspectives of ancient and present society.