

**MCDONALD OBSERVATORY STUDENT FIELD EXPERIENCE**  
**POST-VISIT ACTIVITIES**  
**Generating Questions and Communicating Results**  
 Grades 9-12

**Introduction**

In the pre-visit activity, students began an investigation by posing questions, gathering background information, and planning their activity at McDonald Observatory. At the Observatory, students gathered information in several forms such as field notes, pictures, drawings, and/or video. Now, students are ready to conclude by communicating what they learned and comparing their experience to science they have learned in school.

**TEKS and NSES**

*Related TEKS:* IPC and Phy and Ast 2(D+E)

*Related NSES:* Science as Inquiry: understanding about scientific inquiry; Science and Technology: understanding about science and technology; History and Nature of Science: science as a human endeavor

**Activity**

Students produce one of the following to communicate their Observatory experience, and how it relates to science: PowerPoint show and tell, poster, short report, radio show, or video.

**Resources**

Student generated field notes, pictures, and video

*"What Are Astronomers Doing?"* WWW site <http://mcdonaldobservatory.org/research/>

Classroom Resources at McDonald Observatory's WWW site

<http://mcdonaldobservatory.org/teachers/classroom/>

**Assessment**

The student's product should clearly show examples of the "Big Ideas" connecting their school science and mathematics knowledge and skills to their McDonald Observatory experience.

<b>Big Idea in Science</b>	<b>Example from McDonald Observatory Student Field Experience</b>
Scientific Inquiry	Astronomers collect data by observing and measuring light that stars and other celestial objects emit.
Critical Thinking & Problem Solving	Telescopes and instruments need repair that require staff members, like David Doss, to think critically and apply problem-solving based on years of experience and mechanical creativity.
Tools & Technology	Astronomers use tools (telescopes, instruments) to observe and measure light. Sometimes, astronomers build their own tools to suit their measurement needs.
Systems	A telescope and its parts are a machine. You may also think of it as system of parts and simple machines.
Matter & Energy	Light travels through the telescope and into an instrument. On its way, light interacts with many reflective surfaces and lenses. Upon reaching the instrument, light interacts with the CCD detector to register an electronic signal.
Solar System, Earth Systems, The Universe	Astronomers explore objects inside and outside the solar system. Seasonal conditions such as long nights in winter and changing weather conditions affect astronomical observing. Astronomers discover new objects whose properties and dynamics may or may not support current scientific theories of nature.