

Variable Stars

National Science Education Standards Content Standard K-12:

Unifying Concepts and Processes

- **Unifying Concept and Processes -Constancy, Change, and Measurement**—Changes vary in rate, scale and pattern, including trends and cycles....Changes in systems can be quantified. Evidence for interaction and subsequent change and the formation of scientific explanations are often clarified through quantitative distinctions—measurement.
- **Unifying Concept and Processes – Evidence, Models, and Explanation** – Models are tentative schemes or structures that correspond to real objects, events, or classes of events...Scientific explanations incorporate existing scientific knowledge and new evidence from observations...into internally consistent, logical statements.

Science as Inquiry 9-12

- **A (Grades 9-12) Inquiry – Communication** ...Students in school science programs should develop the abilities associated with accurate and effective communication. These include writing and following procedures, expressing concepts, reviewing information, summarizing data, using language appropriately, developing diagrams and charts, explaining statistical analysis, speaking clearly and logically, constructing a reasoned argument, and responding appropriately to critical comments.

Earth and Space Science 9-12

- **D (Grade 9-12): Earth and Space – The Origin and Evolution of the Universe-** Stars produce energy from nuclear reactions, primarily the fusion of hydrogen to form helium. These and other processes in stars have led to the formation of all the other elements.

Principles and Standards for School Mathematics

Measurement Standard 9-12

- **Understand measurable attributes of objects and the units, systems, and processes of measurement. Bullet point #1:** make decisions about units and scales that are appropriate for problem solving situations involving measurement.
- **Apply appropriate techniques, tools, and formulas to determine measurements. Bullet point #1:** analyze precision, accuracy and approximate error in measurement situations.

Data Analysis and Probability Standard 9-12

- **Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them. Bullet point #4:** understand histograms, parallel box plots, and scatterplots and use them to display data.

Problem Solving Standard PK-12

- **Bullet point #1:** Build new mathematical knowledge through problem solving.
- **Bullet point #2:** Solve problems that arise in mathematics and in other contexts.

Communication Standard PK-12

- **Bullet point #1:** Organize and consolidate their mathematical thinking through communication.
- **Bullet point #2:** Communicate their mathematical thinking coherently and clearly to peers, teachers, and others.

Representation Standard PK-12

- **Bullet point #1:** Create and use representations to organize, record, and communicate mathematical ideas.