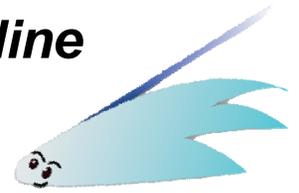




# ***The Tales Comets Tell—A Historical Timeline***

Developed by Dee McLellan for the  
Stardust-NExT Education and Public Outreach Program



## **EDUCATOR GUIDE**

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### **ACTIVITY DESCRIPTION:**

Throughout history, people have observed the unexpected but remarkable phenomena of bright objects in the sky, which we now know are comets. In earlier times, before anything was known about comets, people interpreted, through stories or myths, the erratic and unpredictable flashy objects they observed in the sky, and the comets themselves were seen as bad omens or divine messengers from the gods. Comets appeared in historical accounts as well as in art and literature.

In this activity, students create a physical timeline of comet appearances in art and literature throughout history. Participants use a set of photos depicting comets in art images and science missions and place the images in chronological order, while learning about the perceptions of comets during that time period. As an extension, teachers may expand upon the timeline entries by studying each in depth with students and making a presentation.

### **OBJECTIVES:**

Students will:

- Describe the history of human observation and perception of comets
- View how attitudes and perceptions of comets changed through history
- Sequence historical events in a timeline
- View art and science through a historical perspective



Comet Hale-Bopp over San Francisco Peaks near Flagstaff, AZ. Courtesy: NASA

### **NATIONAL SCIENCE EDUCATION STANDARDS:**

#### **Grade(s) K-4**

E.2.4. Women and men of all ages, backgrounds, and groups engage in a variety of scientific and technological work.

G.1.2. Men and women have made a variety of contributions throughout the history of science and technology.

G.1.3. Although men and women using scientific inquiry have learned much about the objects, events, and phenomena in nature, much more remains to be understood. Science will never be finished.

#### **Grade(s) 5-8**

E.2.2. Many different people in different cultures have made and continue to make contributions to science and technology.

F.5.4. Science and technology have advanced through contributions of many different people, in different cultures, at different times in history. Science and technology have contributed enormously to economic growth and productivity among societies and groups within societies.

G.3.2. In historical perspective, science has been practiced by different individuals in different cultures. In looking at the history of many peoples, one finds that scientists and engineers of high achievement are considered to be among the most valued contributors to their culture.

G.3.3. Tracing the history of science can show how difficult it was for scientific innovators to break through the accepted ideas of their time to reach the conclusions that we currently take for granted.



## LESSON PLAN:

**TIME:** 45 minutes

### MATERIALS:

- Timeline Cards depicting comet images with historical explanations.
- Any paper to tape together for timeline.
- Tape
- Markers



### PREPARATION:

1. Print one set of the Timeline Cards with a color printer
2. Cut each page on the dotted line to make 8 ½" by 5 ½" sheets.
3. Fold each 8 ½" by 5 ½" sheet so the picture is on the front and the information is on the back. Now they are 4 ¼" by 5 ½" cards.
4. Tape the open side of the folded card together or laminate the cards for student use.

### LESSON:

1. Mix the Timeline Cards so that they are out of chronological order.
2. Pass out one card to each student or student team.
3. Ask students to put themselves in order by the date of the event depicted in their image (on the back of the card).
4. Once students are in chronological order, have the class discuss the images and information about them. (Optional: post them in the class for continued reference.)
5. Have students make their own timeline. They can decorate them with their own pictures or you can supply them with images from cards.

### ASSESSMENT:

1. Ask the students to describe how attitudes and perceptions of comets changed through history.

**EXTENSION:** (up to three 45 minute periods)  
Have students research the event on their card and write a paragraph about it.

Put on a drama enacting the "comet tales" by:

- Having each student / student group write a script about their event to read for the class.
- Encourage students to put together costumes and present their script to the rest of the class as a "Comet Tales" drama. (Best done with groups presenting in chronological order).



Sample Comet Tales Drama  
Courtesy Dee McLellan

### RESOURCES:

Watch "Comets: Time Capsules of our Solar System's Past" by Dr. Donald Yeomans

<http://www.jpl.nasa.gov/videos/lectures/vklecture-7-21-05cc.mov>

Read the article "Comets in ancient Cultures"

[http://www.nasa.gov/mission\\_pages/deepimpact/media/f\\_ancient.html](http://www.nasa.gov/mission_pages/deepimpact/media/f_ancient.html)

Check out the comet interactive:

<http://solarsystem.nasa.gov/cometinteractive/index.html>