

Session # 19 Maria's Comet

Overview

This book imagines the childhood of Unitarian Maria Mitchell, America's first woman astronomer. Maria (pronounced ma-RYE-ah) possesses determination, a questioning spirit and a gentle heart. Though Maria helps her mother care for her eight siblings and keeps tidy their home on Nantucket Island in the early 1800s, she never loses her infectious love for the stars, a passion she inherited from her father. When her brother Andrew asks her to run away with him to a life on the sea, Maria determines, "I will be an explorer, but I want to sail the sea of stars." The author plants the seeds for Maria's later accomplishments (the first professor of astronomy at Vassar and discoverer of a comet.)

Goal: To understand the value of curiosity and science in our faith.

Principle: We help each other learn.

Source: The use of reason and the discoveries of science.

Belief: We believe that we can make choices using love and reason.

UU Identity: Curiosity

Holiday/Theme: Stars

Supplies:

Book

Copies of Take Home Page

Supplies for the activities you chose

Décor for the room or chalice lighting altar – a whisk broom.

Camera for taking pictures for your own picture book

Set Up: Ask if there are any astronomers or amateur astronomers in the congregation and invite them to visit and describe their experiences with the stars.

Entering Activity:

Sea shells, a sand table, or other items that evoke the beaches of Nantucket Island. Invite the children for free play in the sandtable (or trays and bowls filled with sand.)

Sharing Circle:

After the children have arrived, invite them to gather in a circle around the chalice for the story.

Chalice Lighting:

Bring out the chalice and candle, matchbook, match holder, and snuffer. Set out the chalice and the water bowl with rocks to drop in for sharing "Joys and Concerns."

Invite the children to recite with you the following chalice lighting words:

“To this quiet place of beauty we come from busy things, pausing for a moment for the thoughts that quiet brings.”

Light the match and hold it to the candle wick.

“We light this chalice for the warmth of love, the light of truth and the energy of action.”

Invite the children to share important things that have happened in their lives, passing a talking stick, shell or rock to indicate whose turn it is to share. This would be a good session to pass around a whisk broom as a Talking Stick. Have each child share a joy or a concern by dropping a small polished rock into the water bowl.

Say something like: “We will now share our joys and concerns in our sharing circle.

Each of us will have a turn to speak while the rest listen. You don’t have to share, you can always say, “pass.”

After everyone has shared who wishes to, add one more rock and say, “For all the joys and concerns which remain unspoken, we add this rock.”

You may prefer to extinguish the chalice flame with the snuffer at this point.

“Though we extinguish this flame, we kindle the flame to carry in our hearts together.”

Read “**Maria’s Comet.**”

UU Identity teachable moment: Ask the children for their reflections on the story. Say something like, “One of the sources of our faith is “Science and reason. In this book, we find out that Maria was very curious about the stars even as a young girl. She became an astronomer at a time when young girls weren’t usually given an education. We Unitarian Universalists value curiosity and science. Today, each of us will be able to explore something about stars and use our own curiosity.” Describe the activities that you have prepared and invite the children to engage in them.

Activities: Choose from the following options.

1) **Take pictures for “Our Own Picture Book.”**

2) **Make your own constellation.**

Using star stickers and black construction paper, invite the children to create a picture of a constellation from their imagination.

3) **Make yourself into a constellation.**

Outline each child’s body onto a strip of mural paper. Invite the children to make themselves into a constellation by drawing stars at their elbows, eyes, feet, shoulders, and head, then decorate themselves with markers

4) **Look at pictures of stars and comets.**

Download or use pictures from a book about stars, comets and Nebula. "The Hand of God" is a good source of pictures about the universe.

5) Play "Pin the Star on the Constellation."

Cut out a star shape for each child and attach a small piece of tape. Tape one star on the wall. Blindfold a child or have them close their eyes. Spin them around 3 times and have them approach a wall with a star and tape to hang it on the wall. See how close they can get to the one hanging on the wall. Invent a constellation based on the arrangements of the stars. (Thanks to teacher Laura McCollom for inventing this star game!)

Closing: Make a circle by linking hands. Say something like, "We as Unitarian Universalists (or repeat the name of your congregation) value education and curiosity." Sing the Do-Re-Mi Principles song. "Go in Peace."

Background for Teachers:

If you have an older group, you may wish to find the biography "Maria Mitchell, The Soul of an Astronomer" by Beatrice Gormley. This book would be good to read aloud some chapters, and look at the pictures included in the center, but it is for older children.

Maria Mitchell (1818-1889)

Maria Mitchell, an American astronomer, was born August 1, 1818 in Nantucket, Massachusetts, USA. Her father, a member of the Quaker religion felt strongly that girls should receive education equal to that of boys. When Maria was sixteen she was already a teaching assistant to a schoolmaster. He was Cyrus Peirce, the founder of the first normal school in America, nowadays called a teacher's college. When she was seventeen she decided to open a school of her own. She rented a room and put an advertisement in the newspaper. The school closed after a year when Maria was offered a job as a librarian of Nantucket's Atheneum Library. This job was perfect for her, because she was earning a good salary and had time to study and read books. Her father also was hired as cashier of the Pacific Bank. With his new job came the living quarters attached to the bank. Mr. Mitchell built an observatory on the roof and installed a brand-new four-inch telescope. He used it to do star observations for the United States Coast Guard and Maria helped her father with the measurements.

One night in the Autumn of 1847, Maria looked at the sky through the telescope and saw a star five degrees above the North Star where there had been no star before. She had memorized the sky and was sure of her observation. It occurred to her that this might be a comet. Maria recorded the presumed comet's coordinates. The next night the star moved again. This time she was sure it was a comet. Her father wrote to Professor William Bond at the Harvard University observatory about Maria's discovery. Professor Bond submitted Maria's name to the king of Denmark who had offered a gold medal to a person who discovers a comet seen only through a telescope. Another person, Father Francesco de Vico of Rome discovered the same comet two days later than Maria Mitchell and the decision was made to award him the prize before news of Maria's earlier discovery

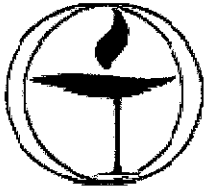
arrived in Europe. After some negotiations Maria Mitchell was awarded the medal for this discovery a year later. The comet was named "Miss Mitchell's Comet."

She continued working as a librarian, but now she was also receiving letters of congratulations from scientists and tourists were coming to take a look at the woman astronomer. In 1848 the American Academy of Arts and Sciences voted her the first woman member. The Association for the Advancement of Science did the same in 1850. In 1849 she was offered a job by the U.S. Nautical Almanac Office as a computer (one who does computations) of tables of positions of the planet Venus. She also started traveling to attend scientific meetings.

In 1856 she received an offer from a rich man named General Swift to accompany his daughter Prudence on a trip to the South and to Europe. Maria accepted and took her almanac work with her. They went south to New Orleans, then to London, where Maria visited the Greenwich Observatory. Prudence returned to the States, but Maria remained in Europe. She went to France on her own, then continued on to Rome with Nathaniel Hawthorne's family. She had hoped to visit the Vatican Observatory, but she was told that women were not admitted. She tried to get special permission and finally succeeded, but was allowed to go in only in the daytime. She was not able to look at the stars through the telescope at night. After her return home, she was presented with a new telescope bought with money collected by women for the first woman astronomer of the United States. She used it to study sunspots and other astronomical events.

In 1865 she became professor of astronomy and director of the college observatory at the newly-opened Vassar College in Poughkeepsie, New York where she had the use of a twelve-inch telescope, the third largest in the United States. She often invited her students to come up to the observatory at night and watch meteor showers or other astronomical events. Maria Mitchell continued her own research in studying the surface features of Jupiter and Saturn and photographing stars. In 1869 she was the first woman elected to the American Philosophical Society. In 1873, she helped found the American Association for the Advancement of Women and served as its president from 1874 to 1876. In 1873 she attended the first meeting of the Women's Congress. The Congress was also attended by many women's rights activists, like Elizabeth Cady Stanton, Susan B. Anthony, Lucy Stone, Dr. Elizabeth Blackwell, Antoinette Brown Blackwell, etc.

Maria Mitchell retired from Vassar in 1888 because of poor health. She died June 28, 1889 in Lynn, Massachusetts. Soon after Maria's death her friends and supporters founded the Maria Mitchell Association on Nantucket in 1902. In 1905 she was elected to the Hall of Fame of Great Americans at New York University (now at Bronx Community College). In 1994, she was elected to the National Women's Hall of Fame in Seneca Falls, New York. The house on Nantucket where Maria was born is open to the public during the summer. For further information on Maria Mitchell, contact the Maria Mitchell Association at <http://www.mmo.org/> - from Distinguished Women of Past and Present Website at <http://www.distinguishedwomen.com/biographies/mitchell.html>

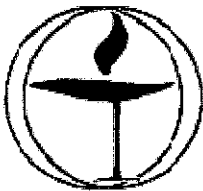


Picture Book U.U. Identity: Maria's Comet

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