

Picturing an Astronomer

Activity M6

Grade Level: 4–12



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What’s This Activity About?

Media and past experience have shaped and created our expectations of people in various careers, and astronomers are often “typecast” as middle-aged, white, “nerdy” males by students and adults alike. Yet astronomy is carried out around the world, by men and women in every country, by people young and old. This activity is a wonderful way to call attention to, and discuss, our preconceptions about who “can” be an astronomer.

What Will Students Do?

Students are told to picture an astronomer and describe or sketch a person who does astronomy. Students compare and discuss their different mental or artistic images.

Tips and Suggestions

- This is an excellent activity to start any unit on astronomy, at any grade level. The activity can be revisited at the end of a unit, to investigate whether students have begun to change their views.
- Using videos, books, and activities that include women and minorities as equal contributors to the science of astronomy, we have a wonderful opportunity to dispel the myth that astronomy is the domain of a particular gender, age, or culture. See the following Resource Guides in *The Universe at Your Fingertips*: “Women in Astronomy” (5.6), “Astronomy of Many Cultures” (5.5).

What Will Students Learn?

Concepts

- Preconceptions about who does science

Inquiry Skills

- Recognizing Bias
- Imagining

Big Ideas

- Diversity

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The Activity

Before an astronomy unit or the first visit by an astronomer to your classroom, it can be instructive to have the students picture what an astronomer looks like and then discuss their assumptions. You might begin by reading the following paragraph:

Close your eyes and picture this scene. It is the end of a long night at the observatory and the astronomer is closing up as the first rays of dawn are seen on the horizon. The astronomer is tired and ready for a good day's sleep. Now focus in on the astronomer, coming toward you on the road that comes from the observatory. Get a good close look at the astronomer, rubbing tired eyes. Draw a picture (or for older students—get a clear mental image) of what the astronomer looks like.

Note that this paragraph carefully omits any hint about the gender, age, or race of the astronomer. After students have made their own picture (as elaborately or as simply as time allows), have them compare and discuss the different pictures they came up with. In the past, there has been a tendency for participants of all ages to draw scientists as middle-aged white men. If your students also show such a tendency, this gives you an opportunity to discuss who became an astronomer in the past, and how the opportunities have expanded today and some (but by no means all) of the societal barriers have fallen.

Extensions:

1. Have students discuss the images of astronomers (or scientists in general) in the media. What gender, race, or age are astronomers they may have seen in the movies, on TV? Have any of them seen astronomers in the newspaper or on the TV news? What kind of news or stories about astronomy have the students read or seen recently? If students don't remember seeing astrono-

Aims

This activity is intended to

- 1) Help students look at their assumptions and stereotypes about who might be an astronomer
- 2) Encourage class discussion about scientists in general

mers in the media in particular, you can broaden the question to scientists in general.

2. Have students research what preparation is required to become an astronomer. An excellent web document on "A Career in Astronomy" is available from the American Astronomical Society: <http://aas.org/education/careers.php>. Additional web sites that have useful information include:

- The National Optical Astronomy Observatory's: <http://www.noao.edu/education/astfaq.html>
- Cornell University's: <http://www.astro.cornell.edu/~brs/faq.html>
- The Astronomy Café's: <http://www.astronomycafe.net/qadir/acareer.html>

Based on this information, have students brainstorm about why it might be harder for some groups in our society to prepare to become astronomers than others.

3. Have students report on what it is like to do astronomy today. Reports can be oral or in writing, individual or done as a team. Your students may be surprised by what they find. For example, much astronomy can be done during the day; many astronomers no longer work at the telescope in an open (and cold) dome, but

rather sit comfortably in a heated control room at a computer console; and many astronomers never come near a telescope at all, concentrating instead on creating or refining astronomical theories. (You might begin by giving each student or group the background sheet “What Astronomers Do” (2.5) from *The Universe at Your Fingertips*.) As an alternative, you can assign each group a different astronomer whose life and work they can research and report to the class about.

4. Use this activity as preparation for a visit from a local astronomer to your classroom. Be sure the students do the activity before the astronomer comes. During the visit, the astronomer might begin by talking a bit about how he or she first became interested in astronomy. After the visit, give students an opportunity to talk about how the astronomer was similar or different from the mental picture they had before the visit.

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