Can you hear a tree fall in space?

Background knowledge

Of course, there are no trees in space. But if there were trees, would you hear one fall? Sound is created by vibrating matter, such as a liquid, solid, or gas. If there is no matter, vibrations cannot be created. Much of space is not filled with liquids, solids, or gases. It is empty, or a *vacuum*. Since you cannot hear sound in a vacuum, you would not hear a tree fall in space!

Science activity

We know that light travels much faster than sound. If a star explodes in a distant galaxy, would we hear it on Earth? Explain your answer.

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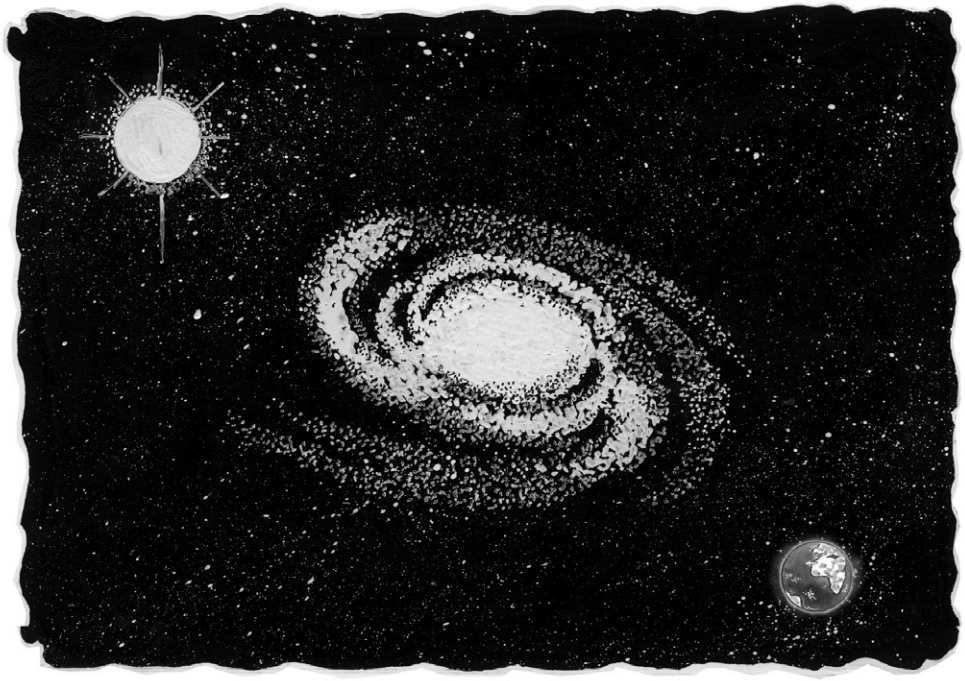

Science investigation

Use the Internet to learn how astronauts talk with one another. Make a poster of your findings and share it with your friends or classmates. Try to find out how the astronauts on the International Space Station communicate with Earth.

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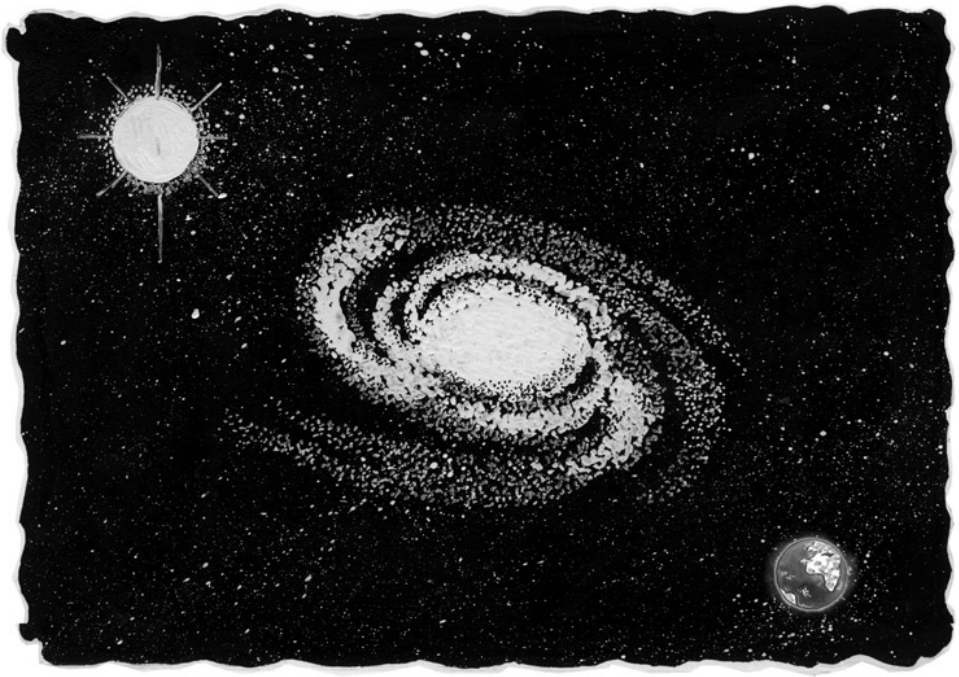
Science activity

We know that light travels much faster than sound. If a star explodes in a distant galaxy, would we hear it on Earth? Explain your answer.

We would not be able to hear the star exploding because vibrations cannot travel through the vacuum of space.



Science investigation

Technology is used to communicate in space. When an astronaut talks to an Earth–bound scientist, her words are translated into radio waves. A receiver on Earth gathers the waves to convert them to sound.