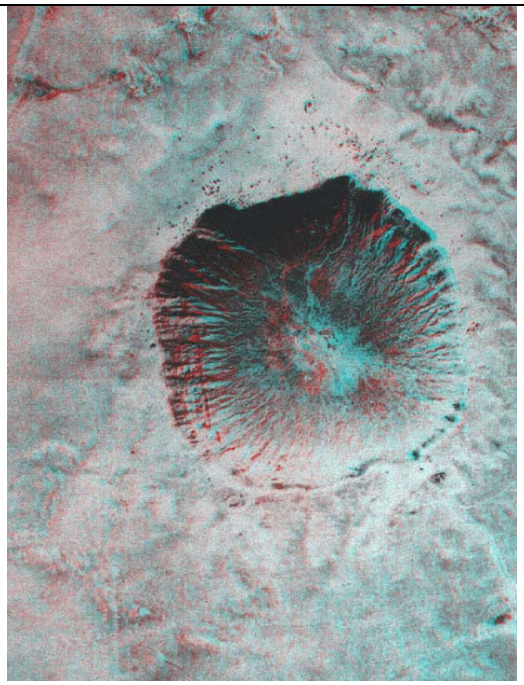
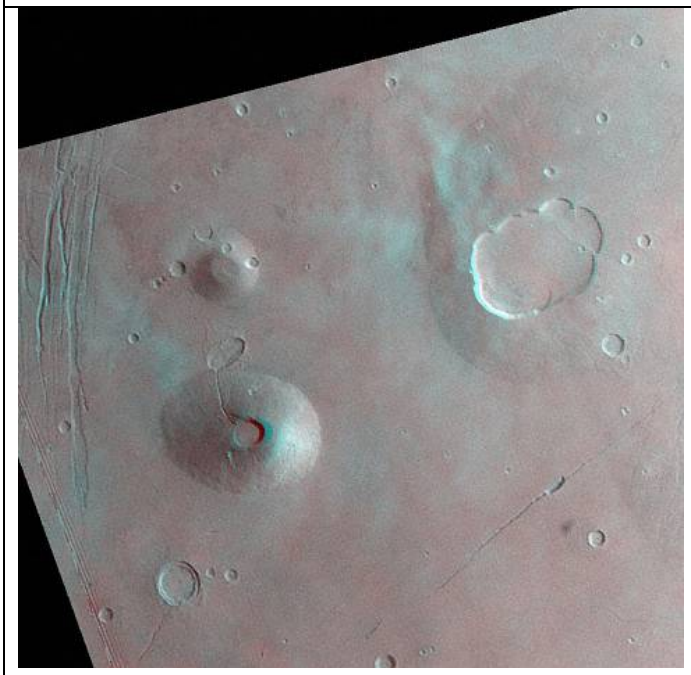
Try This!

Use your 3D glasses to decode the images below.
Were these craters formed by **volcanos** or by **asteroid** impacts?

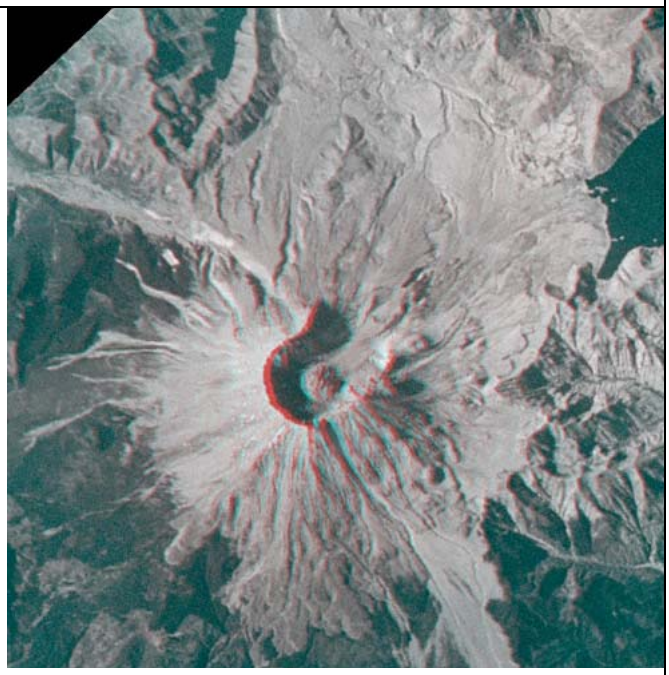


A

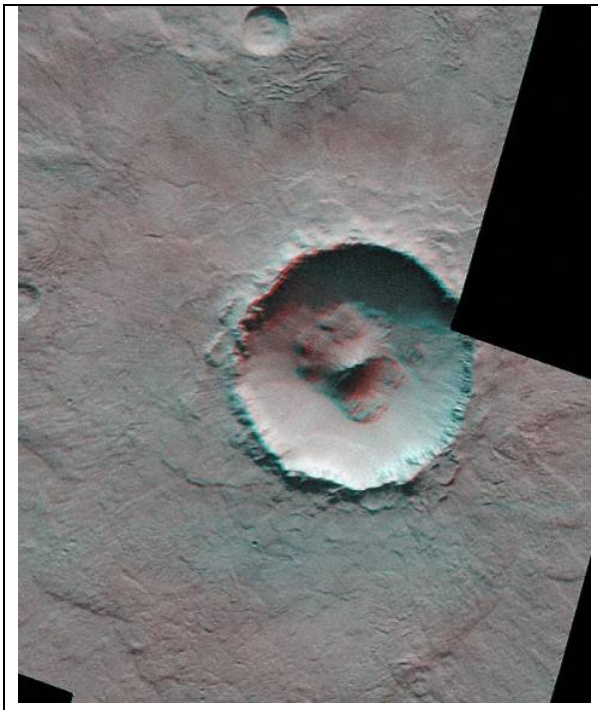
B



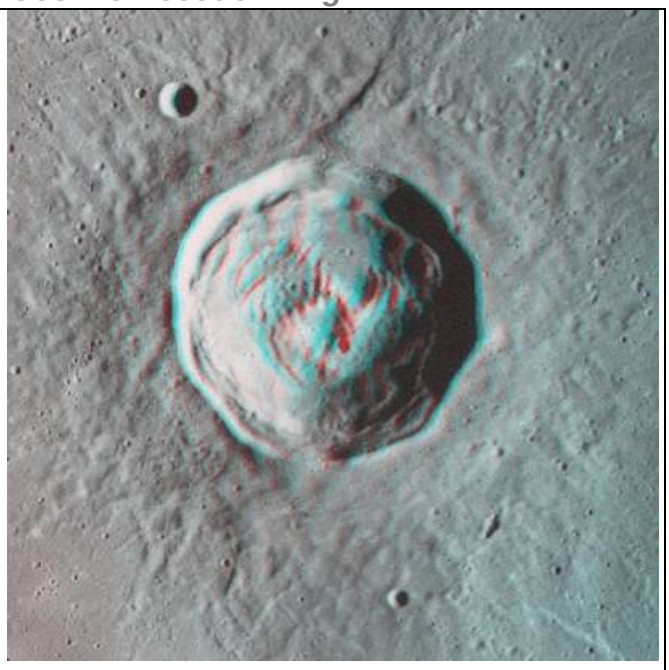
C



D



E



F

It can be difficult to tell them apart. Both volcanos and impact craters may have a high region in the center (a volcanic dome or an impact peak), and their rims can be higher than the surrounding area.

One important difference is that the floor of an impact crater is lower than the ground surrounding the crater, while the bottom of a volcanic crater is still higher than the terrain.

Answers:

The asteroid impact craters are pictures A, E, and F;
volcanic craters are shown in B, C, and D.

Websites for Further Exploration

Ways to Get Involved

Connect to the Moon
http://www.lpi.usra.edu/education/lprp/
This site includes paths for inquisitive adults, students, and formal and informal educators to find online resources, information, and opportunities for involvement in lunar science and exploration.

Moon Zoo
http://www.moonzoo.org/
Moon Zoo uses about 70,000 high resolution images gathered by the Lunar Reconnaissance Orbiter. Citizen scientists are invited to categorize craters, boulders and more, including lava channels and even all sorts of different spacecraft sitting on the Moon's surface.

Lunar Science for Kids: Why is the Moon covered with craters?
http://lunarscience.nasa.gov/kids/moon_craters
This site, geared toward children ages 10 and up, features answers to a variety of questions about the Moon.

Windows to the Universe: The Moon's Geological History
http://www.windows2universe.org/earth/moon2.html
This site shares our Moon's geological history and other pages link to other details about the Moon. The information is presented at three levels, for ages 8 and older.

Enchanted Learning: Impact Craters on the Moon
http://www.enchantedlearning.com/subjects/astronomy/moon/Craters.shtml
This site offers a variety of information, resources and activities for kids ages 5 and up, but this page with detailed information about the Moon's craters is geared toward older children.

Solar System Exploration: The Moon
http://solarsystem.nasa.gov/planets/profile.cfm?Object=Moon
This website, suitable for ages 12 and up, offers information including headline news about the Moon, lunar missions, a gallery of images, facts and figures, and activities.

The Center for Lunar Science and Exploration
http://www.lpi.usra.edu/nlsi/index.shtml
This NLSI team site includes background science information, images, the traveling exhibits, high school research projects, and more.

Moon Poster: Evolution of Our Moon
http://www.lpi.usra.edu/education/moonPosters/Poster1/backb.pdf
This is a detailed description of the evolution of the Moon, written for teens to adults.

Craters on the Moon from Galileo to Wegener
http://www.springerlink.com/content/kw62k57677t9vl37/fulltext.pdf
This well-researched paper on the history of the impact hypothesis is interesting reading. It is easily understood but written for adults.

Terrestrial Impact Craters Slide Set
http://www.lpi.usra.edu/publications/slidesets/craters/
These pages include detailed descriptions, background, and images of craters on the inner planets and moons. The text is written for adults.

Lunar Impact Crater Geology and Structure
http://www.lpi.usra.edu/expmoon/science/craterstructure.html
This page at the Lunar and Planetary Institute has detailed information about the types and formation of craters on the Moon. Written for adults.

Books for Further Exploration

Check out Your Library

There are several sections to look for information about the Moon in your local library; you may want to start with these sections:

- 523.3 Moon / Astronomy
- 525 Earth and Moon
- 559.91 Lunar Geology

What the Moon is Like (Let's-Read-and-Find-Out Science, Stage 2)
Franklyn M. Branley, HarperTrophy, 2000, ISBN 0064451852
The lunar environment — including the possibility of water on the Moon — is explored for children ages 4-8. Hands-on activities allow the children to learn more about cratering and other lunar features.

On the Moon
Anna Milbourne and Laura Fearn, Usborne Books, 2004, ISBN 0794506178
A book for children ages 4 to 8 that examines the Moon, its environment, and the astronauts who explored it.

The Best Book of the Moon
Ian Graham, Kingfisher, 2005, ISBN 0753459027
Lunar cycles and eclipses, features, landings, and myths are presented for children ages 4 to 8

The Moon
Elaine Landau, Children's Press, 2008, ISBN 0531125629
The author provides children age 9-12 basic information about the Moon. Images support the text.

Jump Into Science: Moon
Steve Tomecek, National Geographic Children's Books, 2005, ISBN 0792251237
Children go on a journey with a bug and a cat to discover the Moon's scientific history and concepts; written for children ages 9-12.

Earth And The Moon
Ron Miller, 2003, 21st Century, ISBN: 0761323589
Written for young teens, this book examines the theories of the Moon's formation, and the complex relationship between the Earth and Moon.

The Earth and the Moon
Linda Elkins-Tanton, Chelsea House, 2006, ISBN 0816051941
Written for young adults and adults, this book discusses Earth's size, orbit, mass, seasons and more as well as the evolution of the Moon.

The Moon and How to Observe It
Peter Grego, 2010, Springer, ISBN: 1852337486
A book for practical amateur astronomers who not only want to observe, but want to know the details of exactly what they are looking at. Includes observation guides, photos, and clear explanations of the Moon's geological evolution.

The Modern Moon: A Personal View
Charles Wood, 2003, Sky Publishing Corporation, ISBN: 0933346999
The perfect companion to lunar telescope viewing. Wood works his way across the lunar surface, identifying features of scientific importance and the people involved in unraveling their story.

The Once and Future Moon
Paul Spudis, 1998, Smithsonian Inst. Press.
A geologist discusses what our exploration of the Moon has taught us, and what we might do in the future to know and use the Moon better.