Planetary Geology Resources Compiled by the Geological Society of America (GSA)

Planetary Geology EarthCache Topic Ideas
These are some geologic features that scientists have studied on Mars and on Earth, which could serve as suitable topics for planetary geology EarthCache sites.

- Volcanoes & lava flows
- Impact craters
- Dunes, yardangs, & wind streaks
- Concretions
- Valleys, channels
- Canyons
- Landslides

Resources About Mars-Earth Analogs
An analog is a feature or location on Earth that has geological or environmental features comparable to those found on other objects in space, such as Mars.

- Where on Earth is Mars? (NASA)
- Comparison of Mars and Earth rocks (Geology.com)
- Terrestrial analogue sites (Wikipedia)

GSA Mars Resources

All GSA technical articles related to Mars (open access):
- Search results at GeoScienceWorld

A selection of GSA's technical articles of particular interest (open access):
- Red rock and red planet diagenesis: Comparisons of Earth and Mars concretions
- Caldera collapse: Perspectives from comparing Galápagos volcanoes, nuclear-test sinks, sandbox models, and volcanoes on Mars
- Substrate controls on valley formation by groundwater on Earth and Mars
- Desiccation cracks provide evidence of lake drying on Mars, Sutton Island member, Murray formation, Gale Crater
- Candidate microbial ichnofossils in continental basaltic tuffs of central Oregon, USA: Expanding the record of endolithic microborings
- Iron isotopes constrain the pathways and formation mechanisms of terrestrial oxide concretions: A tool for tracing iron cycling on Mars?
- Planetary science: Multiple data sets, multiple scales, and unlocking the third dimension

Resources compiled by the GSA Planetary Science Division:
- Planetary Imagery Sites
- Universities with Planetary Geology programs

GSA Position Statement, which discusses the importance of studying other planets
- Supporting Planetary Exploration

Additional Technical Articles Related to Mars (open access):
These scientific articles, most of which are from the Smithsonian Institution, were hand-picked by GSA because they cover topics that closely tie Martian geology to terrestrial (Earth) geology, and might be of interest to individuals creating Planetary Geology EarthCache sites.

- Volcanic Features of New Mexico Analogous to Volcanic Features on Mars
- Eolian dunes and deposits in the western United States as analogs to wind-related features on Mars
- Field guide to exhumed paleochannels near Green River, Utah: Terrestrial analogs for sinuous ridges on Mars
- Theo's Flow, Ontario, Canada: a terrestrial analog for the Martian nakhlite meteorites
- Improved topography of the Carrizozo lava flow: implications for emplacement conditions
- Alluvial Fans on Mars
- Geomorphology of Theater-Headed Valleys
- Topical Martian Field Studies in the Ka'u Desert, Hawaii
- Inverted River Channels and Volcanic Channels
- Terrestrial Field Studies in the Simpson Desert, Australia
- The geology of Australian Mars analogue sites

Additional Mars Resources

- Arizona State University (ASU) Mars-ePedia
- NASA Mars Exploration Program
- NASA Solar System Exploration (Mars page)
- United States Geological Survey (USGS) Astrogeology Science Center
- Google Mars