

Mark Daniel Boryta

Professor, Earth Sciences and Astronomy

Earth Science & Astronomy
Mt San Antonio College
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Education

B.A., Geology, Amherst College (1985)

M.S., Geology, New Mexico Institute of Mining and Technology (1988)

Ph.D., Geochemistry, New Mexico Institute of Mining and Technology (1997)

Professional Research Experience

- **Jet Propulsion Laboratory** (2004-present)
 - Summer Faculty Fellow (2004, 2005)
 - Part-time Contract Employee, Cassini/VIMS team
- **New Mexico Institute of Mining and Technology** (1985-1993)
 - Research Assistant (1985-1993)
 - Studied Geochemistry of Metamorphic rocks from China
 - Analyzed rock samples by Instrumental Neutron Activation Analysis (INAA)
 - Co-Manager, INAA Laboratory (1989-1991)
 - implemented new computer system (VAX Workstation 3100)
 - designed prepared and arranged for irradiations at Sandia National Laboratory's Annular Core Research Reactor
 - instructed users on physics of neutron activation, gamma ray spectroscopy, and handling of radioactive samples
- **Amherst College** (1984-1985)
 - Research Assistant
 - investigated sedimentary (turbidite) structures preserved in Devonian metamorphic rocks of intermediate grade
 - investigated geologic setting and characteristics of selected beaches of the British Virgin Islands

Professional Teaching Experience

- **Mt. San Antonio College** (2001-present)
 - Full-time instructor
 - Teach lower-division courses in Earth Science, Environmental Geology, Earthquakes, Oceanography and Astronomy
 - CoChair of Earth Sciences and Astronomy Department (since 2009)
- **Sacramento, CA** (1994-2001)
 - Part-time instructor at CSU-Sacramento and American River, Cosumnes River, and Sierra Colleges
 - Teach lower-division courses in Earth Science, Geology, Oceanography, Physical Science; upper-division course in Geology of Planets; special course for future teachers of Earth Science (GEOL 50 at CSU-Sacramento)

Abstracts and Publications

1. Walker, B., Long, T. and **Boryta, M.**, 2009. Methods of assessing and improving student metacognition on field trips. *GSA Abstracts with Programs* **41.7**, p. 714.
2. Smythe, W.D., Nelson, R.M. and **Boryta, M.D.**, 2009. Ammonia Frost and Transient Features on Titan. Abstract, American Astronomical Society, DPS Meeting #41, #7.05.
3. Nelson, R.M., Kamp, L., Matson, D.L., Irwin, P.G.J., Baines, K.H., **Boryta, M.**, Leader, F., Cassini VIMS Team, 2009. Saturn's Titan: Surface change, ammonia and implications for atmospheric and tectonic activity. *Icarus* **199.2**, 429-441.
4. Nelson, R.M., Kamp, L.W., Lopes, R.M.C., Matson, D.L., Kirk, R.L., Hapke, B.W., Wall, S.D., **Boryta, M.D.**, Leader, F.E., Smythe, W.D., Cassini VIMS Team, 2009. Photometric changes on Saturn's Titan: evidence for active cryovolcanism. *Geophysical Research Letters* 36.4, L04202.
5. Nelson, R.M., Brown, R.H., Hapke, B.W., Smythe, W.D., Kamp, L., **Boryta, M.**, Cassini VIMS Team, May 2005. Cassini VIMS Photometric Investigation of Selected Features on the Surface of Titan: Relevance to Widespread Precipitation. *AGU Joint Assembly*.
6. Nelson, R.M., Brown, R.H., Hapke, B.W., Smythe, W.D., Kamp, L., **Boryta, M.**, Cassini VIMS Team, April 2005. Cassini VIMS Preliminary Exploration of Titan's Surface Hemispheric Albedo Dichotomy and Constraints on Precipitation. *EGU General Assembly*.
7. Nelson, R.M., Brown, R.H., Hapke, B.W., Smythe, W.D., Kamp, L., **Boryta, M.**, Cassini VIMS Team, March 2005. Cassini VIMS Preliminary Exploration of Titan's Surface Hemispheric Albedo Dichotomy. *36th Lunar and Planetary Science Conference* Abstract

#2139.

8. Condie, K.C., **Boryta, M.D.**, Liu, J. and Qian, X., 1992. The origin of khondalites: geochemical evidence from the Archean to Early Proterozoic granulite belt in the North China Craton. *Precamb. Res.* **59**, 207-223.
9. **Boryta, M.** and Condie, K.C., 1990, Geochemistry and source of mafic dikes from a Late Archean/Early Proterozoic granulite terrane, Inner Mongolia, China. *Geological Society of America Abstracts with Programs*, **22**.
10. **Boryta, M.D.** and Condie, K.C., 1990. Geochemistry and origin of the Archaean Beit Bridge complex, Limpopo Belt, South Africa. *J. geol. Soc. London* **147**, 229-239.