Alessandro Frigeri

Research Geologist, Istituto di Astrofisica e Planetologia Spaziali (IAPS-INAF)
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Degree in Geology
Thesis on dynamic numerical modeling of geologic structures (2000, University of Perugia, Italy)

Doctorate in Geology
Thesis on the geology.of Martian compressional structures (2006, University of Perugia, Italy)

Experience and Research Activities

Alessandro Frigeri is a research geologist at the National Institute for Astrophysics / IAPS in Rome, Italy. His geologic background includes experience in field mapping (primarily structural and stratigraphic), numerical modeling, and the integration of geological and geophysical field surveys (seismic, radar). In 2008, he was a visiting scientist at the USGS/Astrogeology program in Flagstaff, AZ, where he worked on an improved version of the geologic map of Mercury derived from the merging of the 1:5M single digital geologic maps. At IAPS/INAF since 2010, he has had the opportunity to access and process planetary mission data (radar, spectrometers), focusing on multi-instrument and multi-resolution analysis dedicated to the description of the geologic context of the study areas. During the years, he contributed to developing and improving Free Open Source Geographic Information System (GIS) packages and developed geospatial software for the projects he was involved in.

He has been part of the scientific teams of orbital radar sounders ESA/MEX/MARSIS and NASA/MRO/Sharad and is currently contributing to NASA/Dawn/VIR at Vesta/Ceres and ExoMars/Ma_MISS on Mars. In 2008, he led a Ground Penetrating Radar (GPR) experiment within the AMADEE18 simulated mission on Mars in Oman. Since 2020, is part of BepiColombo's Simbio-sys science team and part of the ESA ExoMars Rover Science Operations Working Group (RSOWG) Macro Mapping group coordinating the collaborative geologic mapping of the ExoMars 2022 landing site. He is currently responsible for the *field testing* working package of the ESA/ExoMars/Ma_MISS experiment. In 2023, he took part in planetary analog field campaigns in the US, Spain, and Italy.

Awards

• **1999** Medal from the Italian Ministry of Interior, for radio operations during the emergency of the 1997 earthquake in central Italy.
• **2013** NASA *Group Achievement Award* for the scientific activities of the NASA/Dawn at Vesta
• **2013** ESA *Outstanding Contribution to Mars Express mission* for the contribution to ESA's Mars Express
• **2016** NASA *Group Achievement Award* for the scientific activities of the NASA/Dawn at Ceres
• **2017** ESA *Award* In recognition of the outstanding contribution to the ESA Rosetta Mission

Relevant Peer-Reviewed Publications

ISI Web of Science h-Index (October 2023): 30

Frigeri, A. and Ercoli, M. Nov. 2020. "The ScanMars Subsurface Radar Sounding Experiment on AMADEE-18". In: *Astrobiology* 20.11, pp. 1338– 1352. DOI: 10.1089/ast.2019.2037.

De Sanctis, M. C., [. . .], **Frigeri, A.**, et al. Aug. 2020. "Fresh emplacement of hydrated sodium chloride on Ceres from ascending salty fluids". In: *Nature Astronomy* 4.8, pp. 786–793. ISSN: 23973366. DOI: 10.1038/s41550-020- 1138-8.

Frigeri, A. et al. Jan. 2019. "The spectral parameter maps of Ceres from NASA/DAWN VIR data". In: *Icarus* 318, pp. 14–21. ISSN: 10902643. DOI: 10.1016/j.icarus.2018.04.019.

Hare, T. M., [...], **Frigeri, A.**, et al. 2018c. "Interoperability in planetary research for geospatial data analysis". In: *Planetary and Space Science* 150, pp. 36–42. ISSN: 00320633. DOI: 10.1016/j.pss.2017.04.004.

Frigeri, A. et al. Aug. 2018. "The geology of the Nawish quadrangle of Ceres: The rim of an ancient basin". In: *Icarus* 316, pp. 114–127. ISSN: 10902643. DOI: 10.1016/j.icarus.2018.08.015.

Frigeri, A. et al. 2011. "A working environment for digital planetary data processing and mapping using ISIS and GRASS GIS". In: 59.11-12, pp. 1265– 1272. ISSN: 00320633. DOI: 10.1016/j.pss.2010.12.008.