SAVERIO CAMBIONI
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Education

PhD student, Planetary Science (GPA: 4.0), University of Arizona (UA)	Jan. 2017 – Present
MS, Space Engineering (with Honors), Sapienza, University of Rome	2014 – 2016
BS, Aerospace Engineering (with Honors), Sapienza, University of Rome	2011 – 2014
Certificate in Business Fundamentals, University College Lamaro Pozzani	2011 – 2016

Research and teaching experience

University of Arizona, graduate assistant/associate. Advisor: Prof. Erik Asphaug	2018–present
University of Arizona, graduate assistant. Advisor: Prof. Renu Malhotra	2017
University of Arizona, teaching assistant. Instructor: Prof. Steve Kortenkamp	Fall 2018
Observatoire de la Côte d'Azur, visiting researcher. Host: Dr. Marco Delbo	Summer 2018, 2019
TU Delft, visiting student (ERASMUS+ programme)	Spring 2016
University of Arizona, visiting student. Host: Prof. William Hubbard	Summer 2015
CVA (Community of Ariane Launcher Cities), summer school student	Summer 2014

Space mission involvement

NASA DART mission, Student collaborator	2020 – present
NASA Psyche mission, Student collaborator	2019 – present
NASA OSIRIS-REx mission, Student collaborator	2019 – present

Grants and awards (total amount: ~$20840)

- UA/GPSC research grant (2019)
- UA/TAP research grant (2019)
- UA/GPSC travel grant (2018)
- UA/LPL travel grants (2018, 2019)
- UA/Galileo Circle award (2018, 2020)
- Member of Phi Kappa Phi (2019)
- UA/LPL teaching award (2018)
- Sorgente group travel reimb. (2016)
- Erasmus+ visiting student grant (2016)
- ISSNAF research grant (2015)

Scholarships

University of Arizona, full tuition remission	2017–2020
Sapienza, University of Rome, full tuition remission	2011–2014
College Lamaro Pozzani scholarship (covering living expenses in Rome)	2011–2016

Academic service

Graduate representative, UA/LPL department curriculum committee	2019 – present
Grant judge, University of Arizona's Graduate	2018 – present
LPL Rep, UA Associate Graduate Council for the College of Science	2018 – 2019

Invited talks and outreach

Application of Machine Learning to Planetary Science, SWRI, Boulder	Nov. 2018
Earth Trojans: The Phantom Asteroids. Space Drafts talk, Tucson (video)	Sep. 2017

5 peer-reviewed publications (3 first author, 2 co-author); h-index = 3

Cambioni, S., Jacobson, S., Emsenhuber, A., Asphaug, E., Rubie, D. C., Gabriel, S. J. T., Schwartz, S. R., and Furfaro, R. Realistic On-the-fly Outcomes of Planetary Collisions III. The Effect of Inefficient Accretion on Planetary Differentiation. Submitted to PSJ. See conference abstract here

Cambioni, S., et al. Characterizing the Properties of Planetary Bodies using Machine Learning: Radar-Thermal Data Fusion for Icy Bodies. In preparation. See conference abstract here

Emsenhuber, A., Cambioni, S., Asphaug, E., Gabriel, T. S. J., Furfaro, R., and Schwartz, S. R. Realistic On-the-fly Outcomes of Planetary Collisions II: Bringing Machine Learning to N-body Simulations. ApJ, 891(1): 6, 2020. https://doi.org/10.3847/1538-4357/ab6de5

Cambioni, S. Asphaug, E., Emsenhuber, A., Gabriel, T. S. J., Furfaro, R., Schwartz, S. R. Realistic On-the-fly Outcomes of Planetary Collisions: Machine Learning Applied to Simulations of Giant Impacts. ApJ, 875(1): 40, 2019. https://doi.org/10.3847/1538-4357/ab0e8a

Cambioni, S., Delbo, M., Ryan, J., Furfaro, R., Asphaug, E. Constraining the Thermal Properties of Planetary Surfaces using Machine Learning: Application to Airless Bodies. Icarus, 325:16– 30, 2019. https://doi.org/10.1016/j.icarus.2019.01.017

Cambioni, S., & Malhotra, R. The Midplane of the Main Asteroid Belt. AJ, 155:143 2018. https://doi.org/10.3847/1538-3881/aaab6b

Rizk, B., et al. (including Cambioni, S.) OSIRIS-REx low-velocity particles during outbound cruise. Advances in Space Research, 63(1): 672-691, 2018. https://doi.org/10.1016/j.asr.2018.08.020

Book chapters, reviews, white papers

Cambioni, S., Asphaug, E., Furfaro, R. Combining machine-learned regression models with Bayesian inference to interpret remote sensing data. Book chapter for a forthcoming volume on Machine Learning for Planetary Science. Submitted.

Azari, A. R., et al (including Cambioni, S.) Integrating Machine Learning for Planetary Science: Perspectives for the Next Decade. White paper 2020. arXiv e-prints, arXiv:2007.15129

Selected conference proceedings and outreach activities

Cambioni, S., et al.. Constraining the Collisional History of Asteroid (16) Psyche using Machine Learning. LPSC 2020, 1486 (pdf)

Cambioni, S., Bennett, C.A., Walsh, K.J., et al. A Search for Smooth Terrains on Asteroid (101955) Bennu using Machine Learning. EPSC-DPS 2019, 162-1. (pdf)

Cambioni, S., et al. Machine Learning–Based Thermophysical Analysis of OSIRIS-REx Sample Site Candidates. Asteroid Science Workshop, 2019, 2189 (pdf)

Asphaug, E. Cambioni, S., Emsenhuber, A. Furfaro, R., Gabriel, T.S.J. and Schwartz, S.R. Mercury as a Stranded Runner of Earth-Venus Formation. EPSC/DPS 2019, 1349-1. (pdf)

Emsenhuber, A., Asphaug, E. and Cambioni, S. Collision Chains among the Terrestrial Planets: why Venus doesn't have a Moon? EPSC/DPS 2019, 319-4. (pdf)

Cambioni, S., Malhotra, R. et al. An Upper Limit on Earth's Trojan Asteroid Population from OSIRIS-REx. LPSC, 2018 – 1149. (pdf)

Pellegrino, A,. et al. (including Cambioni, S.). HORUS: a CubeSat-based Multi-Angle and Multispectral Earth Observation (EO) System. IAA-Book Series, 1, 7, IAA, Paris, 2017. (pdf)

Software development

Emsenhuber, A., & Cambioni, S. 2019, collresolve, 1.1, Zenodo (link)

Pearson, K., Emsenhuber, A., Cambioni, S. Planetary Collisions in Virtual Reality (github page)

Co-developer of "Look App", 1st prize at NASA Space Apps Challenge Hackathon, Rome (2014)