

**PhD student:** Andrew Alberini

## **Description**

I obtained my bachelor's degree in Physics from the University of Pisa, with a thesis work entitled "Habitability zone for extrasolar planets." Subsequently, I achieved my master's degree, from the University of Florence, in Physics and Astrophysics (specialization in Astrobiology) through a thesis work entitled "Laboratory experiments to support detection of organics on Mars by the NASA Mars 2020 Perseverance rover and future exploration missions of planetary surfaces."

Now, I am a PhD student at the Arcetri Laboratory of Astrobiology (INAF-Arcetri Astrophysical Observatory), under the supervision of Dr. John Robert Brucato and Dr. Teresa Fornaro, the latter Participating Scientist of the NASA Mars2020 Perseverance mission. Specifically, my research project is focused on the search for traces of extraterrestrial life on the Martian surface, with the main objective of creating an infrared spectroscopy database to support the interpretation of planetary surface studies by space missions. In addition, I supported with laboratory activities the MIRS infrared instrument that will be part of the payload of the Japanese MMX mission to study the moons of Mars, collaborating with Prof. Brucato and the Co- Investigator of the mission, Giovanni Poggiali of LESIA - Observatoire de Paris.

I have experience with many laboratory instruments, such as FTIR spectrometer, vacuum pump, UV lamp for irradiation and subsequent spectral analysis with OPUS and Matlab software. I also developed manual skills with sample preparation and handling. In addition, I participated in the management of the laboratory to supply materials for scientific research.

**Interests:** astrobiology, planetary formation, Mars, Asteroids, Moon, prebiotic molecules, origin of life, mineral-biomolecules interaction.