

Center for Isotope Cosmochemistry and Geochronology – Part of the NASA Facility for Astromaterials Research (NFAR) at NASA Johnson Space Center

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The NASA Facility for Astromaterials Research (NFAR) is a User Program that provides access to the unique combination of laboratories, instruments, infrastructure, and technical expertise within the Astromaterials Research and Exploration Science (ARES) Division at the NASA Johnson Space Center. The User Program aims to expand access to these laboratories via an external user base, while focusing on training the next generation of scientists.

NFAR provides access and training to three major laboratory types within ARES: 1) Astromaterials Sample Analysis, 2) Planetary Process Simulation, and 3) Robotic-mission Analog Research. Type 1 includes the Center for Isotope Cosmochemistry and Geochronology (CICG), which applies novel elemental and isotopic analytical techniques to understand solar system formation, from processes occurring during the earliest Solar Nebula, to the evolution of planetary bodies during planet formation and differentiation.

CICG consists of an integrated suite of labs, including dedicated spaces for specialized handling and preparation of meteorites and planetary return samples, metal-free clean chemistry, and mass spectrometry. In addition to a Thermo-Scientific Triton thermal ionization mass spectrometer (TIMS) for high precision isotopic analyses in processed samples, CICG houses two additional mass spectrometers with laser ablation capabilities for high spatial resolution *in-situ* measurements: (1) a Thermo-Scientific ElementXR inductively coupled mass spectrometer (ICPMS) with a Photon Machines Analyte Excite+ laser ablation system, and (2) a Nu Sapphire 1700 multi-collector ICPMS, a large geometry instrument with a multi-pole collision cell, with an Applied Spectra J200 tandem laser induced breakdown spectroscopy (LIBS) fs laser ablation system

Here, we give an overview of the NFAR program and more specifically, on the analytical capabilities of CICG. We also highlight select current *in-situ* planetary science projects currently being undertaken in CICG.