Measuring Venus' Bulk Elemental Composition with BECA

The Bulk Elemental Composition Analyzer (BECA) instrument uses high energy neutrons and gamma rays to measure the bulk elemental composition of Venus beneath a landed probe. We will present the results of a BECA prototype tested at NASA/GSFC.

SINGR: A Single Scintillator Neutron and Gamma-Ray Spectrometer for Acquiring Rapid, Remote Geochemical Data on Future Planetary Science Missions

SINGR is a single scintillator detector coupled with a pulsed neutron generator that is currently being prototyped, modeled, developed and tested in order to acquire rapid geochemical data, hydrogen abundance and depth profiles on planetary missions.

The Mapping X-Ray Fluorescence Spectrometer (MapX)

MapX is a full-frame X-ray imager that collects 2.5 × 2.5 cm elemental maps with ≤100 µm spatial resolution. Quantitative XRF spectra from ground- or instrument-selected Regions of Interest (ROI) can be used to identify rock types and mineralogies.

LIBS for Martian Moons eXploration (MMX)

JAXA’s Martian Moons Exploration (MMX) is planned to be a sample return mission from Phobos, one of the satellites of Mars. We propose adding a laser-induced breakdown spectrometer (LIBS), which enables to determine the origin of the moons.