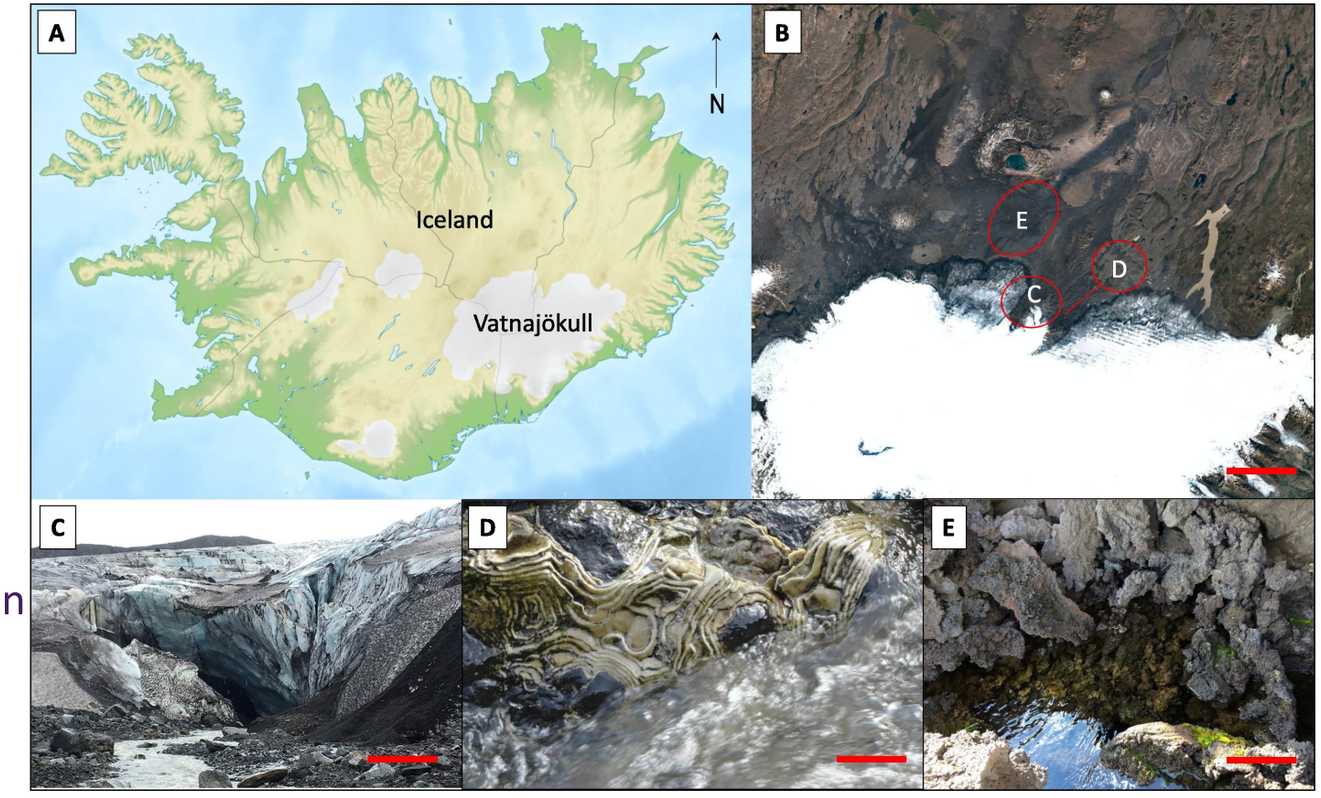
Using a Versatile Instrument to Explore Diverse Planetary Environments

Raman spectroscopy is a technique that can identify specific biomaterials, and Laser Induced Breakdown measures the specific elements they are composed of. Goddard scientists tested a field instrument combining these technologies to measure differences in several locations in Iceland. In the future, similar instruments may be used on other planets with diverse environments.

- Scientist with the GIFT and FLaRe teams tested the abilities of a portable, combined instrument in three different environments in Iceland
- Specific minerals and biomolecules in each sample set were detected, and the distinguishing signatures for different environments were identified in the GSFC-based laboratory.
- This work is important for designing life-detection missions and understanding the limitations of measurements done in the field on Earth or by spacecraft on other worlds, such as Mars.



Bower et al. (2021) Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy, 263, 120205 https://doi.org/10.1016/j.saa.2021.120205