**OBJECTIVES**

Develop Sampling System for Venus surface mission. The sampling system must survive and operate at 500 C temperatures and 92 atm pressure. It has to drill into rocks as hard as basalt and deliver samples from depth to an instrument.

**ACCOMPLISHMENTS**

**NOTABLE DELIVERABLES PROVIDED**
- Interim Demonstration Report
- Final Report

**KEY MILESTONES MET**

The work in Phase I focused on acquiring fundamental data related to penetrating of analog Venus materials using a drill and a trencher and pneumatic sample delivery. We built two experimental setups for drilling and trenching, developed/procured prototype bits, blades, and performed a large number of experiments. Data has been analyzed and architectures for Venus sampling system proposed.

**FUTURE PLANNED DEVELOPMENTS**

**PLANNED POST-PHASE II PARTNERS**
- NASA JPL

**PLANNED/POSSIBLE MISSION INFUSION**
- NASA New Frontiers Venus In Situ Explorer (VISE)
- NASA Venus Mobile Explorer (VME)
- NASA Venus Intrepid Tessera Lander (VITaL)

**PLANNED/POSSIBLE COMMERCIALIZATION**
- NASA, Oil&Gas companies (Schlumberger, Baker Hughes), Geothermal drilling companies

**CONTRACT (CENTER)**
- NNX14CP24P (JPL)

**SOLICITATION-PHASE**
- SBIR 2014-I

**SUBTOPIC**
- S4.04 Extreme Environments Technology

**TRL**

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