

NASA SBIR/STTR Technologies

12-1 S4.01-9812 MARVY: Mars Velocity Sensor

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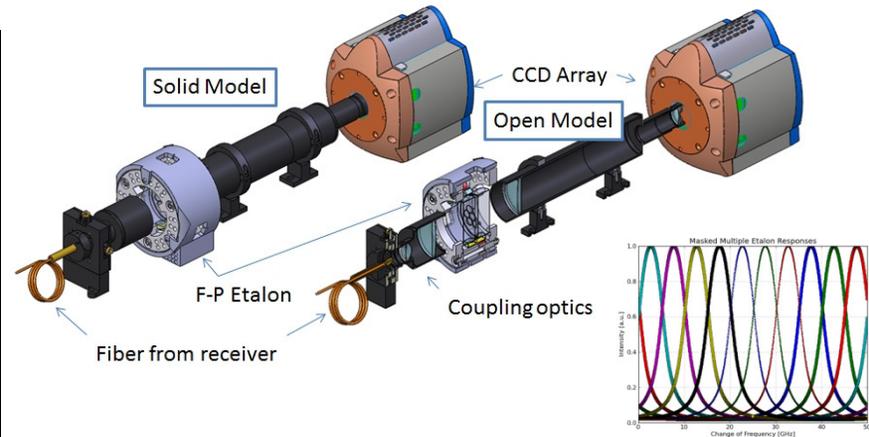
Identification and Significance of Innovation

The proposed Mars Velocity sensor, MARVY:

- Is a short range air data sensor based on direct detection of backscattered light.
- Operates in the absence of aerosols, in completely clear atmosphere,
- Is designed with optical components supporting miniaturization

This Phase I entailed modeling and design of the instrument.

Expected TRL Range at the end of Contract (1-9): 3



Technical Objectives and Work Plan

- Objective 1 (Task 1):** Determine the operational envelope for MARVY and the resulting requirements.
- Objective 2 (Task 2):** Perform trade studies and photon budgets using models to determine the design parameters of the instrument.
- Objective 3 (Task 2 and Task 3):** Design of the micro Fabry-Perot interferometer.
- Objective 4 (Task 3 and Task 4):** Design the full instrument for prototype fabrication and testing in Phase II.

NASA and Non-NASA Applications

NASA Applications

Airspeed measurement during Mars and other planetary atmospheric entry, projects involving UAVs and hypersonic vehicles.

Non-NASA Applications

Extremely compact, high bandwidth, optical air data systems (OADS) for UAVs, cruise missiles and other ordnance with significant flight time, and re-entry and hypersonic platforms.

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NON-PROPRIETARY DATA