Small Business Innovation Research/Small Business Tech Transfer

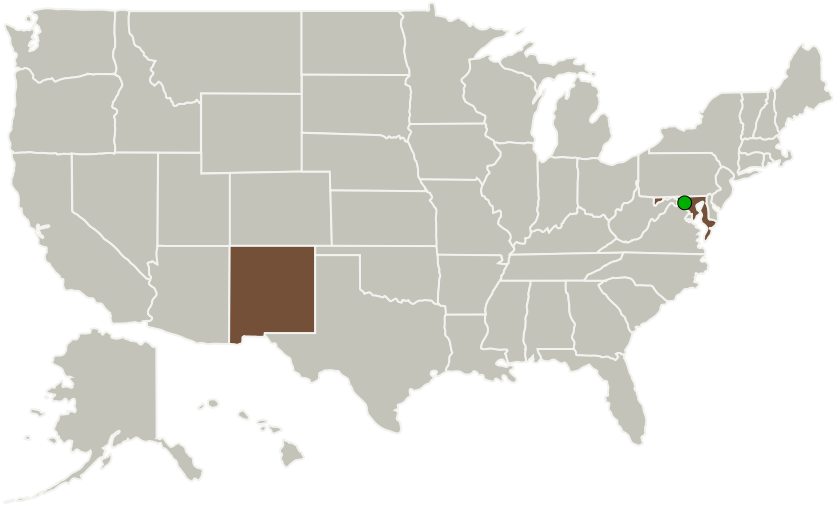
Unmanned Aerial Vehicle Diode Laser Sensor for Methane, Phase II

Completed Technology Project (2015 - 2017)

Project Introduction

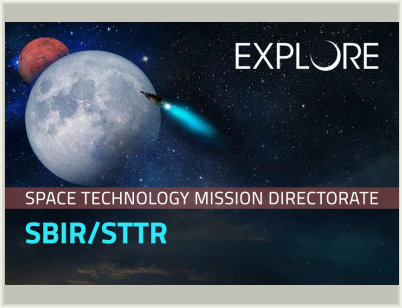
An aircraft system for detecting ambient methane will be developed in this project. The system will use a diode laser to perform a wavelength modulation absorption measurement of this greenhouse gas. The optical system will feature a open path system that is mounted outside the aircraft. The system will make measurements at a 10 Hz rate.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Southwest Sciences, Inc.	Lead Organization	Industry	Santa Fe, New Mexico
●Goddard Space Flight Center(GSFC)	Supporting Organization	NASA Center	Greenbelt, Maryland

Primary U.S. Work Locations	
Maryland	New Mexico



Unmanned Aerial Vehicle Diode Laser Sensor for Methane, Phase II

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Unmanned Aerial Vehicle Diode Laser Sensor for Methane, Phase II

Completed Technology Project (2015 - 2017)

Project Transitions

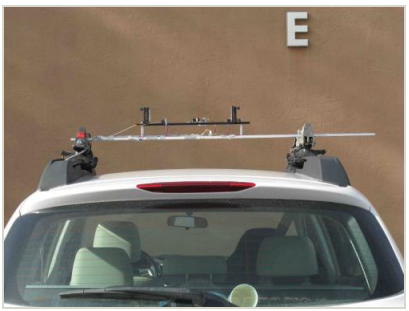
May 2015: Project Start

November 2017: Closed out

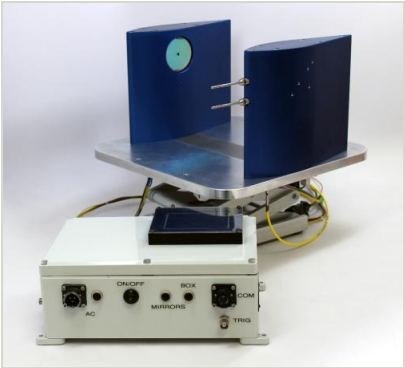
Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/137566)*

Images



Briefing Chart
Unmanned Aerial Vehicle Diode Laser Sensor for Methane Briefing Chart
(https://techport.nasa.gov/image/132006)



Final Summary Chart Image
Unmanned Aerial Vehicle Diode Laser Sensor for Methane, Phase II Project Image
(https://techport.nasa.gov/image/129296)

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Southwest Sciences, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

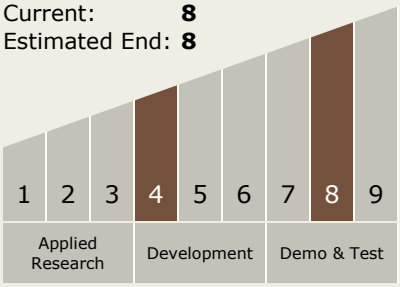
Carlos Torrez

Principal Investigator:

Mark Paige

Technology Maturity (TRL)

Start: **4**
Current: **8**
Estimated End: **8**



Technology Areas

Primary:

- TX08 Sensors and Instruments
  └ TX08.3 In-Situ Instruments and Sensors
    └ TX08.3.4 Environment Sensors

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System