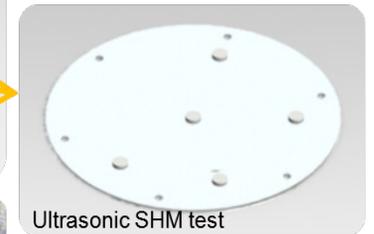
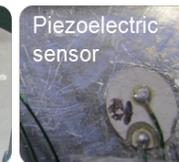
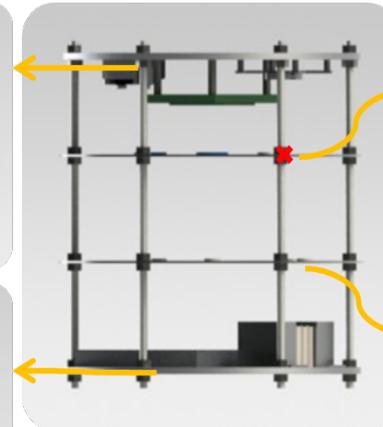
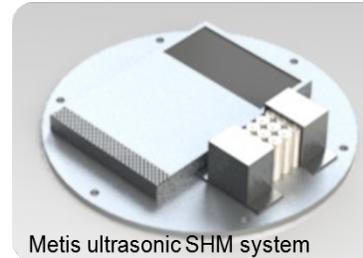
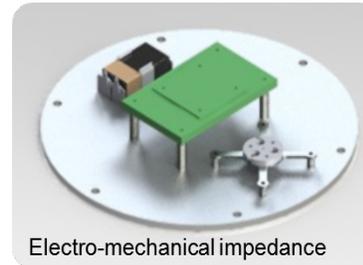




**Campaign Dates:** late October, 2012  
**Total payloads:** 1  
**Flight Provider:** Near Space Corporation  
**Platform:** Small Balloon System (SBS)

## Team

- **PI/System Integration:** Andrei Zagrai, New Mexico Institute of Mining and Technology (NMT)
- **Hardware:** Structural Health Monitoring (SHM) Payload. Components from Metis Design, Los Alamos National Lab (LANL) and MicroStrain.
- **Funding:** FAA, NMT, AFRL.



## Objectives

- Proposed flights will allow to test selected SHM technologies in realistic environment
- Investigate fundamentals of elastic wave propagation in realistic flight environment.
- Monitor sensor/structure integrity using electro/magneto mechanical impedance tests.
- Demonstrating wireless sensing capabilities during spaceflight.
- Wave propagation and impedance data will guide development of future SHM systems for space vehicles.

## Technology Maturation

- Validate sensor endurance and durability of sensor/structure integration.
- Verify functionality of sensors and electronics in near space and space environments.
- Provide SHM data during flight.

## Hardware

- Metis Design's ultrasonic SHM system.  
**Wave propagation test, Ultrasonic SHM**
- LANL's WID3 impedance measurement boards.  
**Sensor performance, Impedance-based SHM**
- MicroStrain's wireless strain measuring system  
**In-flight wireless strain measurements**