

OPERATIONALLY  
**ORS**  
RESPONSIVE SPACE



# Operationally Responsive Space-4

## "Super Strypi – Responsive Small Launch"

### Mission Description

The ORS Office with support from the Sandia National Laboratories is developing a small launch vehicle known as Super Strypi. The goal is to deliver payloads in the range of 300kg to Low Earth Orbit (LEO). This effort includes the development of three new solid rocket motors from the venerable rocket motor and engine provider Aerojet. The University of Hawaii's HiakaSat will fly as the primary payload on the Integrated Payload Stack with an additional 13 CubeSats flying as secondary payloads. Super Strypi is unique in that it is spin stabilized throughout the entire flight. This sounding rocket approach keeps the system as simple as possible and eliminates the significant amount of engineering hours required on guided rockets to develop control algorithms and testing.

### Mission Goals

- Develop three new solid rocket motors
- Demonstrate Super Strypi launch capability
- Deliver HiakaSat to orbit
- Utilize excess lift capacity for CubeSats and ORS test objectives
- Demonstrate Autonomous Flight Safety Assembly and receive credit as a certification flight

#### Partners:

Sandia National Labs  
Aerojet  
Hawaii Space Flight Labs, University of Hawaii  
NASA Ames

#### Major Milestones:

LEO 7 Static Fire 14 Aug 2012  
Delta CDR of 15 September 2012  
ILC of NET 1 September 2013

### The ORS-4 Mission will:

- 1 Demonstrate alternative launch vehicle concept that reduces total mission cost through simple and repeatable process.
- 2 Move launch vehicle processing from heavy reliance on engineering hours to technician hours.
- 3 Reduce launch vehicle integration and processing timelines, contributing to responsive and lower cost launches.

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