

HABET Active Mission Document

We are in the process of changing our documentation and updating our information. Please check back for updates.

This document is a listing of missions and flights that are in a current active phase. This document is used to show the Mission statements and what flights have flown or planned to be flown for that Mission. For all Missions after 2006 and have been completed, please refer to this Google Doc on [Archived Missions](#) or refer to our website. For past missions before 2006, please refer to our [Pre-2006 Mission Archive](#). For detailed information on upcoming flights and the status of the next flight, please see our Wiki site.

This document now also includes Missions that are non-HABET related. Specifically this now includes LABET flights but in the future will include other UAV and other unmanned vehicles. Many of the same procedures from HABET are now being implemented to ensure safe and successful flights with these new unmanned vehicles.

Links of Interest

[The SSCL Main web site](#)

[SSCL Wiki Site](#)

[SSCL Media gallery](#)

Document Updates:

This document has now been revamped. Flight tables have been converted to a spreadsheet format for easier editing. Old Missions have now been removed and placed into an Archived document.

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HABET Missions

A HABET Mission is what gives our High Altitude Balloon flights a purpose. That purpose could be scientific or for a specific type of research, experimental if we are testing something new,

training exercise to train new students, or it could be to achieve a new goal such as breaking an altitude record or performing a night time flight. A mission may have multiple flights underneath it. The flight is indicated by the letter assigned after the mission number. For more information on how our flight designations work, and what the lettering combinations mean, please refer to this [Google Doc](#).

Mission 100

Mission Status - [Active/Training](#)

Mission 105

Mission Status - [Active/Research](#)

Mission Synopsis

Mission 105 covers flights that relate to night flight hardware. These flights are for testing hardware so that a night time flight is possible. This is to comply with FAR 101 rules that state a visual system must be visible at a distance of 5 miles or greater.

Mission Parameters

Primary Mission Objective: To build a night time system that is compliant with FAA Rules and Regulations and fly it successfully on a HABET flight. Flight must reach above 10,000 feet and spacecraft must be recovered.

Secondary Mission Objective: To capture weather data aboard the spacecraft.

Personnel

Principal Investigator	Matthew Nelson
Mission Manager	Matthew Nelson
Funding Source	SSCL
Chief Engineer	TBA
HABET Manager	TBA
Flight Designation	TX-105-A
Status	Flown Feb. 28th
Flight Purpose	Test hardware to meet FAR 101 rules on night time flights
Flight Dynamics	Tethered
Balloon	350 gram latex
Spacecraft	NA
ETTL	Feb. 28th 2008
Actual Flight Date	Feb. 28th 2008
Electronics	Night time flashing system

Flight Designation	LX-109-B/105-B
Status	In Planning
Flight Purpose	Test hardware to meet FAR 101 rules on night time flight.

	Tested with new HES hardware
Flight Dynamics	Free Flight
Balloon	600 gram latex
Spacecraft	TBA
ETTL	Fall 2010
Actual Flight Date	May 18 2010
Electronics	Night time system

Mission 109

Mission Status: In progress

Mission Synopsis

Mission 109 covers flights that relate to the AeroE 265 class. Students in the class will construct a payload that will be flown later in the semester.

Personnel

Principal Investigator	Matthew Nelson
Mission Manager	Matthew Nelson
Funding Source	SSCL
Chief Engineer	David Peterson
HABET Manager	TBA

Flight Information

The Spring 2009 Aerospace 265 class is planning to launch two spacecrafts as we will have two teams. One team will be doing an experiment with using compressed air and yaw stabilization. The other team will work on taking video of Cy and some cheetos and the effects of near space on both.

Flight Designation	LX-109-A
Status	Flown
Flight Purpose	Fly AeroE 265 payload
Flight Dynamics	Free Flight
Balloon	350 gram latex
Spacecraft	Student built
ETTL	Dec. 2009
Actual Flight Date	12/??/2009
Electronics	HABET and student built electronics

Flight Designation	LX-109-B
Status	Flown
Flight Purpose	Fly AeroE 265 payload
Flight Dynamics	Free Flight
Balloon	600 gram latex
Spacecraft	Student built

ETTL	May 2010
Actual Flight Date	5/18/2010
Electronics	HABET and student built electronics

Flight Designation	LX-109-C
Status	Flown
Flight Purpose	Fly AeroE 265 payload
Flight Dynamics	Free Flight
Balloon	600 gram latex
Spacecraft	Student built
ETTL	May 2010
Actual Flight Date	5/19/2010
Electronics	HABET and student built electronics

Flight Designation	LX-109-D
Status	Flown
Flight Purpose	Fly AeroE 265 payload
Flight Dynamics	Free Flight
Balloon	600 gram latex
Spacecraft	Student built
ETTL	December 2010
Actual Flight Date	December 18th, 2010
Electronics	HABET and student built electronics

Flight Designation	LX-109-E
Status	Flown
Flight Purpose	Fly AeroE 265 payload
Flight Dynamics	Free Flight
Balloon	600 gram latex
Spacecraft	Student built
ETTL	March
Actual Flight Date	
Electronics	HABET and student built electronics

Flight Designation	LX-109-F
Status	Flown
Flight Purpose	Fly AeroE 265 payload
Flight Dynamics	Free Flight
Balloon	600 gram latex
Spacecraft	Student built
ETTL	Feb
Actual Flight Date	Feb. 18th
Electronics	HABET and student built electronics

Flight Restrictions

- Spacecraft must comply with all FCC rules and regulations
- Spacecraft and Flight must follow all FAA FAR 101 rules and regulations
- Flight path must not travel more than 60 miles from Mission Control (Howe Hall, Ames, IA)
- Spacecraft must be under 12 lbs
- Spacecraft must be certified by both Mission Manager and Engineering Director to be safe for

flight

- Spacecraft and AeroE 265 class must pass scrutineering by HABET personal
- AeroE265 must follow any additional restrictions put forth by the instructor

Mission 112

Mission Status: Inactive

Mission Synopsis

Mission 112 covers flights that relate to the Rockoon Project. This project aims to launch a rocket from a High Altitude Balloon. The Iowa State Space Society (ISSS) is working with the SSCL for this project.

Personnel

Principal Investigator	SSCL/ISSS
Mission Manager	Matthew Nelson
Funding Source	ISSS
Chief Engineer	Christopher Reis
HABET Manager	Christine Jensen

Flight Information

Flight LX-112-A will be used to test the ignition system on the rockets that will be used. Two ignitions systems will be triggered at the same time, with a thermocouple monitoring both. One will also have a camera and VCR on it. Thermocouple data will be recorded by a datalogger and transmitted via the HABET normal tracking frequency. Triggering of the ignition systems will be based by altitude and a HABET shutdown circuit board will be the trigger method.

Flight Designation	LX-112-A
Status	Flown - Igniters failed to trigger
Flight Purpose	Test ignition system for Rocket
Flight Dynamics	Fly to burst, min. altitude of 60,000 feet
Balloon	1200 gram
Spacecraft	Up in flames
ETTL	Oct. 24
Actual Flight Date	Oct. 29th
Electronics	HABET Tracking system, video record system, thermocouples and data logger

Flight LX-112-B will be used to test the ignition system on the rockets that will be used. Two ignitions systems will be triggered at the same time, with a thermocouple monitoring both. One will also have a camera and VCR on it. Thermocouple data will be recorded by a datalogger and transmitted via the HABET normal tracking frequency. Triggering of the ignition systems will be based by altitude and a HABET shutdown circuit board will be the trigger method.

Flight Designation	LX-112-B
Status	Flown - Successful trigger
Flight Purpose	Test ignition system for Rocket
Flight Dynamics	Fly to burst, min. altitude of 60,000 feet
Balloon	1200 gram
Spacecraft	"Up In Flames"
ETTL	Feb. 2009
Actual Flight Date	November 2009
Electronics	HABET Tracking system, video record system, themocouplers and data logger

Flight Designation	LX-112-C
Status	In preparation
Flight Purpose	Launch rockoon at altitude
Flight Dynamics	Fly to 70,000 feet, ignite rocket, recover both. Currently planned to be launched from Black Rock
Balloon	3000 gram
Spacecraft	TBA
ETTL	Spring 2011
Actual Flight Date	
Electronics	HES 2.0, BERT 2.0 and custon rocket hardware

Flight Restrictions

- Spacecraft must comply with all FCC rules and regulations
- Spacecraft and Flight must follow all FAA FAR 101 rules and regulations
- Spacecraft must be under 50 lbs
- Spacecraft must be certified by both Mission Manager and Engineering Director to be safe for flight

Mission 116

Mission Status: Mission Complete

Mission Synopsis

Mission 116 covers flights that relate to the testing of the CubeSat platform. This is a restart of the CySAT project in the SSCL and it's goal is to test equipment for use in a final CubeSat spacecraft.

Principal Investigator	SSCL/CySat
Mission Manager	Matthew Nelson

Funding Source	SSCL/CySAT
Chief Engineer	Christopher Reis
HABET Manager	TBA

Flight Information

Flight LX-116-A will be used to test various components of the Cubesat in a prototype form. This will be placed in a mockup cubesat and attached to a standard HABET payload. The mockup cubesat will be larger than a standard cubesat to allow for the fact that prototype boards will be used instead of final PCB as this will be all in testing phases.

Flight Designation	LX-116-A
Status	Flown - Success
Flight Purpose	Test cubesat electronics
Flight Dynamics	Fly to burst
Balloon	1200 gram
Spacecraft	Foam scaled up cubesat plus HABET payload
ETTL	October 27th 2008
Actual Flight Date	December 12th, 2008
Electronics	HABET/Cubesat electronics

Flight Restrictions

- Spacecraft must comply with all FCC rules and regulations
- Spacecraft and Flight must follow all FAA FAR 101 rules and regulations
- Flight path must not travel more than 70 miles from Mission Control (Howe Hall, Ames, IA)
- Each Spacecraft must be under 12 lbs
- Spacecraft must be certified by both Mission Manager and Engineering Director to be safe for flight

Flight Information

Flight LX-116-B will be used to test various components of the Cubesat in a prototype form. This will be placed in a mockup cubesat and attached to a standard HABET payload. The mockup cubesat will be larger than a standard cubesat to allow for the fact that prototype boards will be used instead of final PCB as this will be all in testing phases.

Flight Designation	LX-116-B
Status	Flown
Flight Purpose	Test IMU unit
Flight Dynamics	Fly to burst
Balloon	1200 gram
Spacecraft	CySTAR-II
ETTL	Feb. 28th 8:00 a.m.
Actual Flight Date	
Electronics	HABET Electronics with CySAT IMU board and dataloggers

Flight Restrictions

- Spacecraft must comply with all FCC rules and regulations
- Spacecraft and Flight must follow all FAA FAR 101 rules and regulations
- Flight path must not travel more than 70 miles from Mission Control (Howe Hall, Ames, IA)
- Each Spacecraft must be under 12 lbs

- Spacecraft must be certified by both Mission Manager and Engineering Director to be safe for flight

Flight Information

Flight LX-116-C will be used to test various components of the Cubesat in a prototype form. This will be placed in a mockup cubesat and attached to a standard HABET payload. The mockup cubesat will be larger than a standard cubesat to allow for the fact that prototype boards will be used instead of final PCB as this will be all in testing phases.

Flight Designation	LX-116-C
Status	Flown
Flight Purpose	Test cubesat electronics, record data
Flight Dynamics	Fly to burst
Balloon	1200 gram
Spacecraft	CySTAR-II
ETTL	March 14th 8:00 a.m.
Actual Flight Date	March 14th
Electronics	HABET/Cubesat electronics

Flight Restrictions

- Spacecraft must comply with all FCC rules and regulations
- Spacecraft and Flight must follow all FAA FAR 101 rules and regulations
- Flight path must not travel more than 70 miles from Mission Control (Howe Hall, Ames, IA)
- Each Spacecraft must be under 12 lbs
- Spacecraft must be certified by both Mission Manager and Engineering Director to be safe for flight

Mission 117

Mission Status: Ongoing

Mission Synopsis

Mission 117 covers flights that has a primary purpose to demonstrate HABET's abilities as being used as a public relation outlet or used to educate students and to promote scientific exploration.

Principal Investigator	SSCL
Mission Manager	Matthew Nelson
Funding Source	SSCL or other sources
Chief Engineer	Matthew Nelson
HABET Manager	TBA

Flight Designation	T-117-A
Status	Planned for VEISHEA 2012
Flight Purpose	Public Outreach to potential students to ISU
Flight Dynamics	low altitude cutdown flight
Balloon	350 or 600 gram
Spacecraft	UP House

ETTL	April 21st 2012
Actual Flight Date	June 18th 2008
Electronics	HES v 1.0

Mission 118

Mission Status: Inactive

Mission Synopsis

Mission 118 covers testing new electronic boards including HAWK from AeroDyne and PICPOD from Trevecca.

Principal Investigator	M2I
Mission Manager	Matthew Nelson
Funding Source	M2I
Chief Engineer	Matthew Nelson
HABET Manager	Christine Jensen

Flight Designation	LX-118-A
Status	In Planning
Flight Purpose	Testing of new HES 2.0 electronic systems
Flight Dynamics	Fly to Burst
Balloon	600
Spacecraft	Cresto
ETTL	March 2012
Actual Flight Date	
Electronics	HES v 1.0 and PICPOD

Flight Designation	LX-118-B
Status	In Planning
Flight Purpose	Testing of new HES 2.0 electronic systems
Flight Dynamics	TBD
Balloon	600
Spacecraft	Cresto
ETTL	March 2012
Actual Flight Date	
Electronics	HES Lite (aka HAWK)

Mission 121

Mission Status: On Hold

Mission Synopsis

Mission 121 covers flights that relate to relaying both voice and data signals from the recovery vehicle to Mission Control. This is a test of some possible equipment that could be used to better facilitate the communications between recovery and Mission Control and could also be used on long term flights.

Personnel

Principal Investigator	SSCL
Mission Manager	Matthew Nelson
Funding Source	SSCL
Chief Engineer	Christopher Reis
HABET Manager	TBA

Flight Information

Flight LXI-120-A information will be available shortly.

Flight Designation	LX-121-A
Status	Flown
Flight Purpose	TBA
Flight Dynamics	Free flight
Balloon	600 gram
Spacecraft	Maxwell
ETTL	Late Summer early Fall
Actual Flight Date	Feb. 13th 2010
Electronics	HES2.0+voice repeater and TNC

Flight Restrictions

- Spacecraft must comply with all FCC rules and regulations
- Spacecraft and Flight must follow all FAA FAR 101 rules and regulations
- Winds must be under 10 mph
- Ample sunshine is required for successful NIR photographs
- Spacecraft must be under 12 lbs
- Spacecraft must be certified by both Mission Manager and Engineering Director to be safe for flight

Principal Investigator	SSCL
Mission Manager	Matthew Nelson
Funding Source	SSCL
Chief Engineer	Christopher Reis
HABET Manager	TBA

Flight Information

Flight LXI-120-A information will be available shortly.

Flight Designation	LX-121-B
Status	In development
Flight Purpose	TBA
Flight Dynamics	Free flight
Balloon	600 gram
Spacecraft	Maxwell
ETTL	Summer
Actual Flight Date	TBA
Electronics	HES2.0+voice repeater and TNC

Flight Restrictions

- Spacecraft must comply with all FCC rules and regulations
- Spacecraft and Flight must follow all FAA FAR 101 rules and regulations
- Winds must be under 10 mph
- Ample sunshine is required for successful NIR photographs
- Spacecraft must be under 12 lbs
- Spacecraft must be certified by both Mission Manager and Engineering Director to be safe for flight
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Mission 122

Mission Status: On Hold

Mission Synopsis

Altitude Record using any type of balloon.

Personnel

Principal Investigator	SSCL
Mission Manager	Matthew Nelson
Funding Source	SSCL
Chief Engineer	Chris Reis
HABET Manager	TBA

Flight Information

Flight LX-122-A's mission will be to break the SSCL's current altitude record using a Latex balloon.

Flight Designation	LX-122-A
Status	In development
Flight Purpose	
Flight Dynamics	Free flight

Balloon	3000 gram
Spacecraft	"Blue Vesper"
ETTL	Late Summer early Fall
Actual Flight Date	August 21st 2010
Electronics	Modified BERT Tracking System

Flight Restrictions

- Spacecraft must comply with all FCC rules and regulations
- Spacecraft and Flight must follow all FAA FAR 101 rules and regulations
- Winds must be under 10 mph
- Ample sunshine is required for successful NIR photographs
- Spacecraft must be under 12 lbs
- Spacecraft must be certified by both Mission Manager and Engineering Director to be safe for flight

Flight Designation	LX-122-B
Status	In development
Flight Purpose	Break existing altitude record
Flight Dynamics	Free flight
Balloon	3000 gram
Spacecraft	"Blue Vesper"
ETTL	Summer 2011
Actual Flight Date	
Electronics	Modified BERT Tracking System

Flight Restrictions

- Spacecraft must comply with all FCC rules and regulations
- Spacecraft and Flight must follow all FAA FAR 101 rules and regulations
- Winds must be under 10 mph
- Ample sunshine is required for successful NIR photographs
- Spacecraft must be under 12 lbs
- Spacecraft must be certified by both Mission Manager and Engineering Director to be safe for flight

Mission 123

Mission Status: Active Development

Mission Synopsis

"Up" HABET Flight. This flight is to fly a replica of the house from the movie "Up".

Personnel

Principal Investigator	M:2:I
Mission Manager	Matthew Nelson
Funding Source	M:2:I
Chief Engineer	Ian

HABET Manager	Christine Jensen
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Flight Information

Flight LXI-120-A information will be available shortly.

Flight Designation	LX-123-A
Status	In development
Flight Purpose	TBA
Flight Dynamics	Free flight
Balloon	600 gram
Spacecraft	
ETTL	
Actual Flight Date	TBA
Electronics	HES2.0

Flight Restrictions

- Spacecraft must comply with all FCC rules and regulations
- Spacecraft and Flight must follow all FAA FAR 101 rules and regulations
- Winds must be under 10 mph
- Ample sunshine is required for successful NIR photographs
- Spacecraft must be under 12 lbs
- Spacecraft must be certified by both Mission Manager and Engineering Director to be safe for flight

Mission 124

Mission Status: Active Development

Mission Synopsis

Mission 124 covers the flights for testing a zero pressure flight. This will be started when the facilities are found and research has finished.

Personnel

Principal Investigator	SSCL
Mission Manager	Matthew Nelson
Funding Source	M:2:I
Chief Engineer	Ethan Harstad
HABET Manager	Christine Jensen

Flight Information

Flight LXE-124-A will test a operation of a zero pressure using a latex balloon instead of a plastic balloon. This will help to test some hardware but also demonstrate the ability to launch a zero pressure balloon. Recovery will not be attempted due to the duration and distance traveled.

Flight Designation	LXE-124-A
Status	Flown

Flight Purpose	Testing ZP flight
Flight Dynamics	Free flight
Balloon	3000 g latex
Spacecraft	TBA
ETTL	March 9th, 2012
Actual Flight Date	March 9th 2012
Electronics	HES 1.0

Flight Designation	LXE-124-B
Status	Flown
Flight Purpose	Testing ZP flight
Flight Dynamics	Free flight
Balloon	Polyethylene Film
Spacecraft	1.5 lb Tracking
ETTL	June 12th, 2012
Actual Flight Date	June 12th 2012
Electronics	Friendcom and Open Tracker

Flight Designation	LXE-124-C
Status	Flown
Flight Purpose	Testing ZP flight
Flight Dynamics	Free flight
Balloon	3mm Polyethylene Film
Spacecraft	1.2 lb Tracking
ETTL	June 2013
Actual Flight Date	June 11th 2012
Electronics	Friend Com and Open Tracker

Flight Restrictions

- Spacecraft must comply with all FCC rules and regulations
- Spacecraft and Flight must follow all FAA FAR 101 rules and regulations
- Winds must be under 10 mph
- Ample sunshine is required for successful NIR photographs
- Spacecraft must be under 12 lbs
- Spacecraft must be certified by both Mission Manager and Engineering Director to be safe for flight
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Mission 125

Mission Status: Complete

Mission Synopsis

Mission 125 covers the HABET flight that will be flown for the Grout Museum group in Waterloo. This is related to a workshop that is being worked on in collaboration with the Bluedorn group,

Personnel

Principal Investigator	Grout Museum
Mission Manager	Matthew Nelson
Funding Source	ISGC/Grout
Chief Engineer	Chris Reis
HABET Manager	Christine Jensen

Flight Information

Flight L-125-A information will be available shortly.

Flight Designation	L-125-A
Status	Flown
Flight Purpose	Demonstration for workshop
Flight Dynamics	Free flight
Balloon	Latex, 600 gram
Spacecraft	
ETTL	March 5th 2011
Actual Flight Date	March 6th 2011
Electronics	HES 2.0/HAS System

Flight Designation	L-125-B
Status	In Progress
Flight Purpose	Demonstration for workshop
Flight Dynamics	Free flight
Balloon	Latex, 600 gram
Spacecraft	
ETTL	April
Actual Flight Date	April
Electronics	HAWK

Flight Restrictions

- Spacecraft must comply with all FCC rules and regulations
 - Spacecraft and Flight must follow all FAA FAR 101 rules and regulations
 - Winds must be under 10 mph
 - Ample sunshine is required for successful NIR photographs
 - Spacecraft must be under 12 lbs
 - Spacecraft must be certified by both Mission Manager and Engineering Director to be safe for flight
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Mission 126

Mission Status: Complete

Mission Synopsis

Mission 126 covers the HABET flight that will be flown in conjunction with the Ames School District. Students 6th grade to 12th grade will be working on a spacecraft and the SSCL will assist in launching their spacecraft.

Personnel

Principal Investigator	Ames School District
Mission Manager	Matthew Nelson
Funding Source	Ames School/SSCL
Chief Engineer	Chris Reis
HABET Manager	Christine Jensen

Flight Information

Flight L-126-A information will be available shortly.

Flight Designation	L-126-A
Status	Flown
Flight Purpose	Demonstration for workshop
Flight Dynamics	Free flight
Balloon	Latex, 1200 gram
Spacecraft	
ETTL	April 16th 2011
Actual Flight Date	TBD
Electronics	HES 2.0/HAS System

Flight Restrictions

- Spacecraft must comply with all FCC rules and regulations
- Spacecraft and Flight must follow all FAA FAR 101 rules and regulations
- Winds must be under 10 mph
- Ample sunshine is required for successful NIR photographs
- Spacecraft must be under 12 lbs
- Spacecraft must be certified by both Mission Manager and Engineering Director to be safe for flight
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Mission 127

Mission Status: Complete

Mission Synopsis

Mission 127 covers the HABET flight that will be flown in conjunction with the ISSS in celebration of Yuri's night. The flight will launch 1-3 balloons equipped with bright LEDs to

comply with FAA rules. Only one payload will be equipped with a tracker to see how high the balloons go.

Personnel

Principal Investigator	SSCL/ISSS
Mission Manager	Matthew Nelson
Funding Source	ISSS/SSCL
Chief Engineer	Chris Reis
HABET Manager	Christine Jensen

Flight Information

Flight L-127-A information will be available shortly.

Flight Designation	L-127-A
Status	In Progress
Flight Purpose	Yuri's night celebration
Flight Dynamics	Free flight
Balloon	Latex, 600 gram
Spacecraft	
ETTL	April 12th 2011
Actual Flight Date	TBD
Electronics	BERT/LED Flashing hardware

Flight Restrictions

- Spacecraft must comply with all FCC rules and regulations
- Spacecraft and Flight must follow all FAA FAR 101 rules and regulations
- Winds must be under 10 mph
- Ample sunshine is required for successful NIR photographs
- Spacecraft must be under 12 lbs
- Spacecraft must be certified by both Mission Manager and Engineering Director to be safe for flight

Mission 128

Flights related to Image processing combined with GPS data.

L-128-A was flown, however a malfunction in the tracker made it unrecoverable.

L-128-B will be in the Fall

Mission 129

Mission Complete

Flights related to the 2nd Annual Academic High Altitude Conference

ETF - June 21 and 22nd 2011

L-129-A was flown on June 24th

Mission 130

Advanced photography Mission

L?-130-A - Will be flown on March 1st

Flight Designation	L-130-A
Status	In Progress
Flight Purpose	Watch balloon pop
Flight Dynamics	Free flight
Balloon	Latex, 600 gram
Spacecraft	
ETTL	4/18/2014
Actual Flight Date	TBD
Electronics	BRB/LED Flashing hardware

Mission 131

Mission status: In Progress

Drop test Platform for Aero 462 senior design planes

Flight Designation	L-131-C
Status	In Progress
Flight Purpose	Platform Validation
Flight Dynamics	Tethered
Balloon	TBD
Spacecraft	Drop platform MK2
ETTL	November 2nd 2013
Actual Flight Date	TBD
Electronics	on platform Arduino RFD 900 combo in planes ardupilot, RFD 900

Requirements for success

- Planes must be successfully released
- GPS must lock
- Planes must begin transmitting on release
- parachute must deploy

Flight Designation	L-131-D
Status	In Progress
Flight Purpose	Platform Validation
Flight Dynamics	Free flight
Balloon	TBD
Spacecraft	Drop platform MK2
ETTL	November 15th 2013
Actual Flight Date	TBD
Electronics	on platform Arduino RFD 900 combo in planes

Flight Restrictions

- Spacecraft must comply with all FCC rules and regulations
- Spacecraft and Flight must follow all FAA FAR 101 rules and regulations
- Winds must be under 10 mph
- Ample sunshine is required for successful NIR photographs
- Spacecraft must be under 12 lbs

Mission 132

Mission status: Active Development

Recording of cosmic rays in atmosphere using detectors

Flight Designation	L-132-A
Status	In Progress
Flight Purpose	Cosmic Ray detection
Flight Dynamics	Free flight
Balloon	TBD
Spacecraft	
ETTL	July 11th 2013
Actual Flight Date	TBD
Electronics	Open Tracker Friend Com and detection electronics

Requirements for success

- must be recovered
- must record cosmic ray data

Flight Restrictions

- Spacecraft must comply with all FCC rules and regulations
- Spacecraft and Flight must follow all FAA FAR 101 rules and regulations
- Winds must be under 10 mph
- Spacecraft must be under 12 lbs

Mission 133

Mission Status: Inactive

Flights for studying HF radio communication using a balloon as a repeater

Flight Designation	L-133-A
Status	In Planing
Flight Purpose	HF comunciations
Flight Dynamics	Free flight
Balloon	TBD
Spacecraft	TBD
ETTL	October 2013
Actual Flight Date	TBD
Electronics	Open Tracker Friend Com and HF radio repeater

Flight Restrictions

- Spacecraft must comply with all FCC rules and regulations
- Spacecraft and Flight must follow all FAA FAR 101 rules and regulations
- Winds must be under 10 mph
- Spacecraft must be under 12 lbs

Mission 134

Mission Status: Active Developemnt

Flights into Thunderstorms measuring weather data and air currents

Flight Designation	L-134-A
Status	In Planing
Flight Purpose	Study of thunderstorms
Flight Dynamics	Free flight
Balloon	TBD
Spacecraft	TBD
ETTL	April 2014
Actual Flight Date	TBD
Electronics	Custom electronics on board using synapse moduals and custom antenna pointer on following pickup

Flight Restrictions

- Spacecraft must comply with all FCC rules and regulations
- Spacecraft and Flight must follow all FAA FAR 101 rules and regulations
- Spacecraft must be under 12 lbs

Mission 135

Mission Status: Inactive

Flights to assist in testing other M2I groups electronics

Flight Designation	L-135-A
Status	In Planing
Flight Purpose	Test Cydrones ground station
Flight Dynamics	Free flight
Balloon	TBD
Spacecraft	TBD
ETTL	February 2014
Actual Flight Date	TBD
Electronics	Open Tracker Friend Com and Cydrone electronics

Flight Restrictions

- Spacecraft must comply with all FCC rules and regulations
- Spacecraft and Flight must follow all FAA FAR 101 rules and regulations
- Spacecraft must be under 12 lbs

Mission 136

Mission Status: Complete

Flights of gas sensor for University of florida's sensor

Flight Designation	L-136-A
Status	In Planing
Flight Purpose	gas sensor flight
Flight Dynamics	Free flight
Balloon	600g

Spacecraft	special built two shelf
ETTL	4/16/2014
Actual Flight Date	6/26/2014
Electronics	Gas sensor

Flight Restrictions

- Spacecraft must comply with all FCC rules and regulations
- Spacecraft and Flight must follow all FAA FAR 101 rules and regulations
- Spacecraft must be under 12 lbs

Mission 137

Mission Status: Active Developemnt

Development for Solar Eclipse Flight in 2017 in conjunction with NSGC

Flight Designation	LX-137-A
Status	In Planing
Flight Purpose	Solar Eclipse design
Flight Dynamics	Free flight
Balloon	600g
Spacecraft	Standard foam box
ETTL	October 4th
Actual Flight Date	December 2015
Electronics	Raspberry pi with camera Ubiquity Wifi radios and standard tracking

Flight Restrictions

- Spacecraft must comply with all FCC rules and regulations
- Spacecraft and Flight must follow all FAA FAR 101 rules and regulations
- Spacecraft must be under 12 lbs

Development for Solar Eclipse Flight in 2017 in conjunction with NSGC

Flight Designation	LX-137-B
Status	In Development
Flight Purpose	Solar Eclipse design
Flight Dynamics	Free flight
Balloon	600g
Spacecraft	Standard foam box
ETTL	October 4th
Actual Flight Date	December 2015
Electronics	Raspberry pi with camera Ubiquity Wifi radios and standard tracking

Flight Restrictions

- Spacecraft must comply with all FCC rules and regulations
- Spacecraft and Flight must follow all FAA FAR 101 rules and regulations
- Spacecraft must be under 12 lbs