

Team Pleiades (LSU) June Status Report

Student Team Demographics						
	Name	Role	Major	Classification	G.D.	Ethnicity
1	Jordan Causey	Mechanical Design	ME	Sophomore	Spring 2019	Black
2	Joshua Collins	Electrical Lead	EE	Senior	Spring 2017	Caucasian
3	Allen Davis	Mechanical Lead	ME	Junior	Spring 2017	Caucasian
4	Victor Fernandez-Kim	Assistant Project Manager	ME	Senior	Spring 2017	Hispanic
5	Kyle Hamer	Software Design	PHYS	Freshman	Spring 2019	Caucasian
6	Brad Landry	Primary Contact, HASP Project Manager	PHYS	Junior	Spring 2018	Caucasian
7	Adam Majoria	Solar Eclipse Project Manager	PHYS	Senior	Spring 2018	Caucasian
8	Connor Mayeux	Software Lead	CSC	Freshman	Spring 2019	Caucasian
9	Samuel Reid	Electrical Design	EE	Senior	Fall 2017	Caucasian

Table 1: Student Team Demographics

1. Activities of Team Members

- a. Testing the signal strength of various antennas in order to select one for flight on HASP
- b. Improvement of ground station design and transport procedures
- c. Mechanical design
- d. Electrical design and testing
- e. Software design and testing

2. Issues Encountered

- a. Due to attenuation issues and the position of the payload on HASP, the Ubiquiti modem and accompanying antenna will have to be placed in an alternate position on HASP.
- b. Due to concerns of the current draw of the payload being too high, current measurement equipment was purchased and used to perform tests.
- c. Because of the relocation of the Ubiquiti, a new design of the HASP payload box is required

3. Milestones Achieved

- a. Analyzed performance of ground station tracking during ACES-48 flight
- b. Analyzed data collected from ACES-48 flight
- c. Replicated payload failure experienced during ACES-48 launch
- d. Completed preliminary design of control electronics system for HASP
- e. Created high level system design for HASP payload

- f. Designed current sensing circuit with accompanying code
 - g. Completed power characterization of video payload electronics
 - h. Completed power distribution diagram and power budget for HASP payload
 - i. Selected converters to power subsystems on HASP payload
 - j. Created functional flowchart and logical flowchart for v4 flight code
 - k. Created and commented two versions of code, one which utilizes APRS and another that utilizes Iridium for tracking.
 - l. Created and tested code which restores calibration between power cycles of the ground station
 - m. Debugged, commented, and redesigned ground station GUI
 - n. Created code which allows APRS data to be transferred to a data file
 - o. Created code which allows users to input callsigns manually into tracking
 - p. Created and tested code which allows the ground station to be calibrated using the position of the sun
 - q. Wrote a manual for using the GUI with the ground station
 - r. Tested the signal strength of newly purchased antennas at short and medium distances
 - s. Constructed a box to house the ground station electronics and keep it better organized
 - t. Completed a preliminary design of the HASP payload box
 - u. Constructed a prototype Ubiquiti payload for HASP
 - v. Designed a method for mounting the payload for the HASP plate
 - w. Purchased material for mounting payload to HASP plate
 - x. Completed a report for the Micro-Trak beacon that was tested on ACES-46 and 48
 - y. Completed a report on the tests that were conducted during the 2016 LaACES flight campaign
 - z. Tested the signal strength of various antennas at short and medium range
4. What will be worked on in **July**
- a. FLOP document
 - b. Finalize mechanical design of main payload box and Ubiquiti box
 - c. Mount payload and all components to HASP Plate
 - d. Finalize electrical design
 - e. Continue antenna testing (long range) and select one for use on HASP
 - f. Perform full system testing