

# Student Hands On Workshop I (2009)

## Agenda

June 10 – 13, 2009  
Boulder, Colorado

### ***Wednesday, June 10, 2009***

5:00	(30)	Registration & Dinner (Provided)	Atrium Atrium
5:30	(20)	Welcome and Introductions – <i>Chris Koehler and Jared Clements</i>	DLC 1B-70
5:50	(15)	Overview of Goals and Review of Workshop Agenda – <i>Chris</i>	DLC 1B-70
6:05	(15)	Overview of BalloonSats and Ballooning – <i>Chris</i>	DLC 1B-70
6:20	(10)	Introduction to Hands-On Activities & Team Forming	DLC 1B-70
6:30	(40)	<b>Light to Pluto</b>	DLC 1B-70
7:10	(20)	<b>Let them Fly</b>	Courtyard
7:30	(15)	Break	Atrium / Courtyard
7:45	(60)	<b>Soldering 101</b>	DLC 1B-70
8:45	(15)	Preview of tomorrow activities	DLC 1B-70

### ***Thursday, June 11, 2009***

7:30	(30)	Hot Breakfast (Provided)	Atrium
8:00	(15)	AVR PCB Overview	DLC 1B-70
8:15	(75)	AVR PCB Assembly and Testing [Total 5.0 hrs] – Part I	DLC 1B-70
9:30	(15)	Break	Atrium
9:45	(120)	AVR PCB Assembly and Testing – Part II	DLC 1B-70
11:45	(30)	Lunch (Provided)	Atrium / Courtyard
12:15	(60)	AVR PCB Assembly and Testing – Part III	DLC 1B-70
1:15	(15)	Break	Atrium
1:30	(45)	AVR PCB Assembly and Testing – Part IV - Power On Systems Test (POST) – Lesson 0 Software slides - AVR Checkout	DLC 1B-70
2:15	(60)	Introduction to the Atmel AVR - Introduction to Analog and Digital, C Programming, and the Big Picture	DLC 1B-70
3:15	(15)	Break	Atrium
3:30	(120)	AVR Programming and Testing [Total 7.0 hrs] – Part I - Lesson 0: Power On Systems Test – POST (10) - Lesson 1: Blink an LED (40) - Lesson 2: Flash Memory (40) - Lesson 3: Data Retrieval Utility (30)	DLC 1B-70
5:30	(15)	Wrap up and Preview of next day activities	DLC 1B-70

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### **Friday, June 12, 2009**

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7:00	(30)	Hot Breakfast (Provided)	Atrium
7:30	(110)	AVR Programming and Testing – Part II - Lesson 4: Analog to Digital Converter (30) - Lesson 5: Data Parser (50) - Lesson 6: Camera (30)	DLC 1B-70
9:20	(15)	Break	Atrium
9:35	(15)	Introduction to the Environments at 100,000 feet	DLC 1B-70
9:50	(120)	AVR Programming and Testing – Part III - Lesson 7: Heaters and Timers (30) - Lesson 8: Flight Code Programming (30) - Lesson 9: Flight Code Testing (60)	DLC 1B-70
11:50	(30)	Lunch	Atrium
12:20	(40)	AVR Programming and Testing – Part IV - Lesson 10: Flight Preparation Testing (40)	DLC 1B-70
1:00	(15)	Introduction to Construction	DLC 1B-70
1:15	(45)	“BalloonSat Construction, Switches, Integration, and Test”	DLC 1B-70
2:00	(15)	Break	Atrium
2:15	(105)	“BalloonSat Construction, Switches, Integration, and Test”	DLC 1B-70
4:00	(15)	BalloonSat Weigh-In and Final Checkout --- Break When Checked In	DLC 1B-70
4:15	(15)	Break	Atrium
4:30	(30)	Launch Logistics	DLC 1B-70
5:00	(10)	Mobile Ground Station Overview	DLC 1B-70
5:10	(10)	Recap of Day 2 and Adjourn – <i>Chris</i>	DLC 1B-70
5:20	(30)	Driver and Navigator Training	Atrium

NOTE: We need drivers to pick up vans and load tracking stations until 6:00 PM

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### *Saturday, June 13, 2009*

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- 5:45 Leave Boulder for Launch Site (Deer Trail, CO which is 76 Miles SE of Boulder)
- 7:00 Arrive at Launch Site  
- Continental Breakfast, Coffee, Juice  
- Set up of van tracking stations
- 7:10 Final Checkout of BalloonSats
- 7:50 Fill EOSS Balloon
- 8:14 Launch Test Balloon
- 8:15 Release EOSS Balloon
- 8:16 Begin Recovery and Tracking Operations  
- Assemble recovery teams  
- Distribution of Radios, Maps, and GPS Units  
- Review Predicted landing site and rendezvous points
- 8:25 Depart (Each van will have drinks and box lunches)
- ~11:00 Arrive at Landing site  
- Hike begins
- ~1:00 Recovery Complete  
Data Retrieval
- 3:00 Arrive in Boulder – Need help unloading and returning vans
- 3:01 Rest
- 6:30 Dinner and presentation of results at the Discovery Learning Center
- 8:30 Conclusion and Workshop Closure – *Chris*