

# Starting Student Space Hardware Programs III: Workshop Agenda

June 17 - 19, 2004  
Boulder, Colorado

## ***Thursday, June 17, 2004***

7:30	(30)	Registration (Continues until 9:30) Continental Breakfast (Provided)	Atrium Atrium
8:00	(30)	Welcome and Introductions – <i>Bill Hiscock &amp; Chris Koehler</i>	Auditorium
8:30	(20)	Overview of Goals and Review of Workshop Agenda – <i>Bill &amp; Chris</i>	Auditorium
8:50	(25)	Testimonials from last year	Auditorium
9:15	(20)	Overview of BalloonSats and Ballooning – <i>Chris &amp; Bill</i>	Auditorium
9:35	(10)	Team Forming	Auditorium
9:45	(25)	Hands-on Activity: “Light to Pluto”	Auditorium
10:10	(15)	Hands-on Activity: “Let them Fly”	Courtyard
10:25	(15)	Break	Atrium / Courtyard
10:40	(15)	Introduction to Hands-on Activities - <i>Chris</i>	Auditorium
10:55	(45)	Hands-on Activity: “Soldering 101”	Auditorium
11:40	(35)	Hands-on Activity: “Timing Circuit, Power, and Camera Integration” – Part I	Auditorium
12:15	(45)	Lunch	Atrium / Courtyard
1:00	(55)	Hands-on Activity: “Timing Circuit, Power, and Camera Integration” – Part II	Auditorium
1:55	(25)	Integration of StudentSat Programs into Curriculum - <i>Chris</i>	Auditorium
2:20	(25)	Group Discussion on Curriculum Integration	Auditorium
2:45	(15)	Break (Snacks Provided)	Atrium / Courtyard
3:00	(10)	Introduction of Environments at 100,000 feet – <i>Chris</i>	Auditorium
3:10	(40)	Hands-on Activity: “Heater Circuit”	Auditorium
3:50	(10)	Introduction to HOBO Computers – <i>Chris</i>	Auditorium
4:00	(45)	Hands-on Activity: “Temperature Experiment and Solar Experiment”	Auditorium
4:45	(10)	Introduction to Construction – <i>Chris</i>	Auditorium
4:55	(30)	Hands-on Activity: “BalloonSat Construction, Switches, Integration, & Test” – Part I	Auditorium
5:25	(10)	Submission of Team information	Auditorium
5:35	(05)	Recap of Day 1 and Adjourn – <i>Bill &amp; Chris</i>	Auditorium
5:40		Dinner on your own	

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## **Friday, June 18, 2004**

7:00	(30)	Continental Breakfast (Provided)	Atrium
7:30	(15)	Overview of Today's Tasks <b>PLUS Van Assignments</b> – <i>Bill &amp; Chris</i>	Auditorium
7:45	(90)	<b>Hands-on Activity: “BalloonSat Construction, Switches, Integration, &amp; Test” – Part II PLUS HOB0 Activation</b>	Auditorium
9:15	(15)	Break	Atrium / Courtyard
9:30	(70)	<b>Hands-on Activity: “BalloonSat Construction, Switches, Integration, &amp; Test” – Part III</b>	Auditorium
10:40	(30)	<b>Hands-on Activity: BalloonSat Weigh-in and team photo</b>	Auditorium
11:10	(50)	CubeSats: A Step Beyond BalloonSats – <i>Bob Twiggs</i> CubeSat Animation	Auditorium
12:00	(40)	Lunch (Provided)	Atrium
12:40	(20)	Starting a Ballooning Program: The Montana Example – <i>Bill</i>	Auditorium
1:00	(10)	FAA Regulations – <i>Bill</i>	Auditorium
1:10	(25)	Preflight planning – <i>Sean Kirn</i>	Auditorium
1:35	(20)	Introduction to HAM Radio – <i>Dave Klumpar</i>	Auditorium
1:55	(20)	Balloon Tracking System – <i>Kim Cochran &amp; Sean Kirn</i>	Auditorium
2:15	(10)	Mobile Ground Stations – <i>Chris</i>	Auditorium
2:25	(30)	<b>Hands-on Activity: Mobile Ground Station</b> - <i>Steve Wichman</i>	Atrium
2:55	(15)	Break (Snacks Provided)	Atrium
3:10	(10)	Ballooning Continued: Power Systems Options – <i>Sean Kirn</i>	Auditorium
3:20	(25)	Hardware: Payload capsules, Parachutes, Balloon fill – <i>Mark Munro &amp; Liz Agosto</i>	Auditorium
3:45	(60)	<b>Hands-on Activity: Balloon Inflation (Weather Permitting)</b> – <i>Team BOREALIS</i>	Atrium
4:45	(10)	Group Picture	Courtyard
4:55	(25)	Launch Logistics – <i>Chris</i> Procedures, Meeting Location, Transportation, Van Assignments, Launch Day Procedures, Chase and Recovery, and Miscellaneous	Auditorium
5:20	(10)	Recap of Day 2, Workshop Effectiveness Survey, and Adjourn – <i>Bill &amp; Chris</i>	Auditorium
5:30		Dinner (on your own)	
5:40	(20)	<b>Navigator Training for those who have volunteered</b>	Atrium
5:40	(20)	<b>Flight String Attachment for those who have volunteered</b>	Auditorium

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## *Saturday, June 19, 2004*

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- 4:30 Leave Boulder for Launch Site (Deer Trail, CO which is 76 Miles SE of Boulder)
- 5:45 Arrive at Launch Site  
- Continental Breakfast and Coffee  
- Tour of Launch Operations  
- Assignment of Launch Tasks  
- Set up of van tracking stations
- 6:00 Final Checkout of BalloonSats
- 7:10 Fill EOSS Balloon
- 7:29 Launch Test Balloon
- 7:30 Release EOSS Balloon
- 7:55 Fill Montana Balloon (Estimate)
- 8:14 Launch Test Balloon
- 8:15 Release Montana Balloon
- 8:20 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)
- ~10:30 Arrive at Landing site  
- Hike begins
- ~12:00 Recovery Complete  
Data Retrieval
- 1:30 Arrive in Boulder  
- Please leave film at student table in parking lot
- 1:30 Rest
- 6:00 Pizza Banquet and presentation of results at the Discovery Learning Center
- 8:00 Conclusion and Workshop Closure – *Bill & Chris*