Gateway To Space

ASEN 1400 / ASTR 2500

Class #17

Colorado Space Grant Consortium
Today:

- Announcements

- Grades

- Mid Semester Team Evaluations

- Time with Teams
Announcements:

- Long time away
- Feel very out of touch with class
- Hope to catch up with everyone today
- Where I was...
Announcements:

- Then off to DC last week…
RockOn 2016...

The Next Hands-On Workshop

Colorado & Virginia Space Grant Consortium, Wallops Flight Facility and NASA Education

Chris Koehler
Director, Colorado Space Grant

March 3, 2016
What?

Hands-On workshop

“I learned more in days than I could of in a college semester engineering course”
What?

Teams of 3 build a payload in 3 days

“Provided me with confidence to try new things”
It was OK but I would rather be playing XBOX.
Where?

NASA’s Wallops Flight Facility

“Fantastic workshop!
An experience of a lifetime.”
Where?

NASA's Wallops Flight Facility

"It was OK but I would rather be playing XBOX"
Announcements:

The National Space Grant Distinguished Service Award

2016 Recipient: Dr. Bill Nye

Program

6:30PM - 7:30PM: Reception
7:30PM - 8:35PM: Dinner
8:35PM - 8:45PM: Welcome by Eric Darg
8:45PM - 9:00PM: Presentation of Award by Stephen Rahbin
9:00PM - 9:45PM: Remarks and Q&A by Dr. Bill Nye

Friday, 4 March 2016

For Breeden
Scre Rules!
Bill Nye
Digital Converter
OSO era, 1968

This “potted” digital converter is similar to those used on OSO satellites. It converted an analog signal to digital data. The amber-colored potting is an electrically neutral insulating sealant needed to keep the electronics from arcing and shorting out in the vacuum of space.

Transferred from NASA Goddard Space Flight Center

A19880231000
Balloon-Borne Pyrheliometer

1913

These components are from a recording device for measuring the Sun’s heat. It was designed by Charles Greeley Abbot, director of the Smithsonian Astrophysical Observatory and later the secretary of the Smithsonian. His goal was to measure the solar radiation received by Earth before absorption by the atmosphere. It was one of several flown in 1913 to an altitude of more than 24 kilometers (15 miles). Note the exposed photographic film still in the drum.

Transferred from the Smithsonian Astrophysical Observatory

A19880212000
**Balloon-Borne Pyrheliometer**

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Transferred from the Smithsonian Astrophysical Observatory.
Vega Atmosphere Experiment and Balloon

French and Soviet scientists collaborated on one of the main experiments carried to Venus by the Vega 1 and 2 spacecraft. As each Vega approached Venus, it released a scientific balloon into the planet’s atmosphere. The balloon supported a gondola of instruments on a 13-meter (42-foot) tether. They measured velocity, density, light levels, and pressure as they floated in the Venustian clouds for almost two days, covering over one-third the circumference of the planet.

A replacement balloon and an engineering model of the gondola hang above. The engineering model of the Vega probe stands near the balloon, among the scientific payloads.

Gift of H. Buckley Hightower and Gregory Schnurr and Lankford Scientific Production Company
Announcements:

- So that is my story

- I don’t plan to be gone any other class days this semester
Other Announcements:

PDRs

- Huge difference with this class in that you haven’t had a chance to actually present to the class

- Most were good

- Feedback today
Other Announcements:

HW #7

- Submitted?

- Done?

Pressure Sensors

- Teams with old ones, need new ones
Other Announcements:

**Weight**
- Don’t do something stupid to save weight
- Acceptable to not fly camera but talk to me first
- Trade weight with teams but need documented agreement
- I do have some reserve weight but not much
Other Announcements:

Hardware
- Missing orders?
- Items to be ordered?
- What do you need?
**Other Announcements:**

**Hardware**
- Must protect battery terminals
- If the battery gets hot, you are shorting the positive and negative terminals
- Once shorted, battery likely dead
Other Announcements:

Office Hours
- Please use them
- Both mine and TA’s
- Missing out on great resource for your team
Other Announcements:

Design Document Rev A/B
- In process of being graded
- Feedback to teams this Friday
- Design Document Rev C is due 4/07/16
Other Announcements:

**Space Grant Bell Jar**
- If your team needs to do vacuum testing, I am offering the use of the SG Bell Jar

- You will need to answer the following question prior to be granted supervised use:

  “*Explain in detail, why your team needs to complete a vacuum test and what you will learn from the test.*”

- Send request via email with Bell Jar in subject
Grades:

- 85% of passwords were correct

- Still have many of the passwords so doesn’t appear folks are too worried

- Have new grades today

- If you have issues, send email to prof.koehler@gmail.com with details on your issue
Mid Semester Team Evaluations...

- Due next class

- Make sure your name is on the form
Mid Semester Team Evaluations…

- Due at the start of class on Thursday
- Team of six has **1200 points** (seven has 1400)

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Total = 1200 points
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Mid Semester Team Evaluations…

- Say not everyone is pulling their weight

Total = 1200 points
Mid Semester Team Evaluations…

- I take everyone’s scores and do the math, taking into account how self scoring compares to team score for you.
Thursday...

Rocket History “Best Lecture Ever”

Mid Semester Team Evals Due
Next Tuesday…

Launch Vehicles “4th Best lecture ever”

Community Service Approvals Due
Next Thursday…

Orbits and Mission Design

Ready For Flight Cards Handed Out
Questions?