Welcome to
The Dark Universe:
A Cosmology Short Course for Museum & Planetarium Staff

• What is KICP?
• Goals of this Course
• Your Mission
• Schedule
• Logistics
• Introductions

Randy Landsberg Director
Education & Outreach

“The Dark Universe” Introduction - Landsberg 9/24/2010
• NSF Physics Frontier Center (2001) nee CfCP
  – Profound Advances + **Education & Outreach**
    • What is dark energy?
    • Did inflation happen and if so why?
    • What do the highest energy particles tell us about the cosmos?

• KICP = Kavli Institute for Cosmological Physics
  – $7.5 Million Endowment from Kavli Foundation (2004)
Goal of This Course:  
To incorporate modern cosmology into planetarium/museum programming

BRING COSMOLOGY TO THE PUBLIC

Framework for Understanding Cosmology

Tools to Use @ Your Planetarium/Museum

• Visuals  
• Movies  
• Resources  
• e-Lectures  
• Stories/Experiences
Your Mission....

• Actively Participate
• Bring Cosmology Back HOME
  – Planetarium, Museum, Magazine, Corporation…

• Provide Feedback
  – During the Course
  – Evaluations -what was useful?
  – At GLPA, ASP, IPS ...
  – Keep us informed of your progress
  – Follow Up Evaluations
Schedule: Themes

I. Overview

III. Dark Matter

V. Dark Energy

Visible Matter
(stars 0.4%, gas 3.6%)

Dark Matter
(suspected since 1930s, known since 1970s)

Dark Energy
(suspected since 1980s, known since 1998)
Course Schedule: Friday Sept. 24, 2010

8:00 AM  Coffee and Welcome (Landsberg)
8:30 - 10:00 AM  Lecture I: Dark Matter History (Dan Hooper)
10:00 AM  Coffee
10:30 AM - 12:00 PM Lecture II: Particle Physics, Accelerators, and Dark Matter (Marcela Carena)
12 PM  Lunch
1:00 - 2:30 PM Lecture III: Particle Dark Matter And The Early Universe (Rocky Kolb)
2:30 PM  Coffee
3:00 PM  Cabs to Adler Planetarium
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3:30 - 4:00 PM  Space Visualization Lab SVL (Mark SubbaRao)
4:00 - 6:00 PM Cosmology Visuals: SVL, Universe 3D Theater, Dome
6:00 PM  Cabs to Dinner (Chinatown - Lao Beijing)

6:30 - 8:00 PM Dinner
8:00 PM  Cabs Departs for I-House
Saturday Sept. 25, 2010

8:30 AM  Coffee Question & Answer Session

9:00 - 10:30 AM Lecture IV: Hunt for Dark Matter (Juan Collar)

10:30 AM - 11:00 PM Break-out Session/Coffee

11:00 - 12:30 PM Lecture V: Dark Matter & The Formation Of Structures In The Universe (Andrey Kravtsov)

12:30-1:30 PM  Lunch

1:30 - 3:00 PM Lecture VI: Cosmic Acceleration & Dark Energy (Josh Frieman)

3:00 - 3:30 PM  Coffee Q & A

3:30 - 4:30 PM KICP VIZ STUFF AND GOOGLE SKY LABS (Andrey Kravtsov)

4:30 - 6:30 PM Google Sky Labs in KPTC 311 (Louis Abramson, Jennifer Helbsy)

7:00 PM  Dinner/Social (LASR 152)

“The Dark Universe” Introduction - Landsberg 9/24/2010
Sunday Sept. 26, 2010
(ends 2:30 pm)

8:30- 9:00 AM Coffee Q & A Session

9:00 - 10:30 AM Lecture VII: Modified Gravity vs The Dark Sector (Scott Dodelson)

10:30- 11:00 AM Coffee Q & A Session

11:00 AM - 12:30 PM Lecture VIII: Dark Side Summary and Challenges (Mike Turner)

12:30 - 2:30 PM Lunch; Informal Q & A; Close-out (Dan Hooper, Josh Frieman, & Co.)
Logistics

- **Locations**
  - UC/LASR 152 (Conference)
    - Fri PM - Adler Planetarium
    - Sat Labs in KPTC (4:30-6:30PM)
- **Lecture Slides Will Be Provided**
  - electronically
  - [http://cfcpwork.uchicago.edu/universe](http://cfcpwork.uchicago.edu/universe)
  - universe/universe
- **Wireless “UNIVERSE”**
- **Meals Provided**
- **Transportation Provided to/from Adler/Socials**
- **Post-Course**
  - Aimee will coordinate travel to airports (Sign-up sheet)
  - Travel Reimbursement - Aimee
  - Evaluation - web based (survey monkey)
Quick Introductions
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