Two Observatories (and a robot)

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Drexel University

14 May 2008
The Sloan Digital Sky Survey (SDSS)
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What I should be working on right now.
Apache Point observatory in Sunspot New Mexico.
The Camera: 30 2k x 2k CCDs cooled to -80°C in 5 colors, 3° FOV
First Light image stripe with builders.
DR6 imaging coverage (~20% of the whole sky)
Fitting the plug plates (bottom end attaches to telescope)
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The scale of the SDSS

Zoom out from M51 to the whole SDSS sky.
Identifying Active Galaxies

1. z~2.1 quasar – ~10Gy ago
2. z~0.35 quasar – ~3Gy ago
3. z~0.4 passive galaxy (in a cluster?)
4. z~0.14 star forming galaxy (spiral!)
Identifying Active Galaxies

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2. $z \approx 0.35$ quasar – ~3Gy ago
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For more information

SDSS website: educational projects
Sky in Google Earth
Google Sky online
galaxyzoo.org: citizen science – need help with mergers!
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Google Sky online
galaxyzoo.org: citizen science – need help with mergers!
For more information

- [http://www.sdss.org](http://www.sdss.org)
- [http://earth.google.com/sky](http://earth.google.com/sky)
- [http://www.google.com/sky](http://www.google.com/sky)
- [http://galaxyzoo.org](http://galaxyzoo.org)

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The Joseph R. Lynch Observatory
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Where I’d like to spend more time at night.
First Wednesday of each month

http://www.physics.drexel.edu/observatory

2 April 2008 open house
Roof of main building.
Drexel University Messier Project

The “Dumbbell” planetary nebula
M27 R band, 6x10 seconds
Drexel University Messier Project

open cluster M67 - 5R, 7G, 12B (3s each)

Goal: submit data to the AAVSO for bright stars.
Our Equipment

- 16” Meade LX200GPS
- SBIG ST9 CCD w/ UBVRI filters
- Coronado Solar Max 60mm
- 10” Orion Dobsonian
- Edmund Scientific Astroscan
- 5” Celestron Nextstar SCT
Cassini/Huygens
Cassini/Huygens

Yes, there is life before grad school.
Look for the arrows!
1/3 mockup of Cassini/Huygens
Look for the arrows!
1/3 mockup of Cassini/Huygens
Cassini
It's just a model!

Look for the arrows!
1/3 mockup of Cassini/Huygens
Me!

Look for the arrows!

1/3 mockup of Cassini/Huygens

Cassini
It's just a model!

Huygens
Now on Titan
INMS
Cassini’s nose

Cassini
It’s just a model!

Huygens
Now on Titan

Look for the arrows!
1/3 mockup of Cassini/Huygens
INMS
Cassini’s nose

Imaging Sub-System
Who cares about stupid pictures anyway?

Cassini
It’s just a model!

Me!

Huygens
Now on Titan

Look for the arrows!
1/3 mockup of Cassini/Huygens
Schoolbus sized.  
In the clean room, prepping for launch. 
Launched on 15 October 1997.
SOI burn: 90 minutes
SOI burn: 90 minutes
A: fine structure (much finer than Voyager had seen).
B: braids.
C: braids and density waves.
The Mystery Moon

Never seen the surface.
Our modeling worked!
Enceladus plume
Passing through the plume.
Us!

Don’t forget galaxyzoo.org!

http://saturn.jpl.nasa.gov

http://ciclops.org