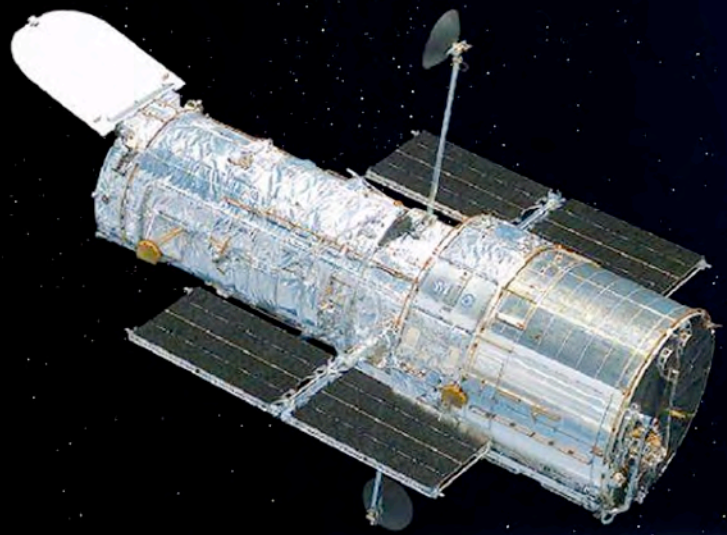
Space Telescope Science Institute

Director's Report
October 2007



- STUC Issues
- Science and highlights
- *The Challenges*
  - *SM4*
  - *Budget and Staffing*
- Multi-cycle treasury programs
- Lunar Science initiative

STUC Issues

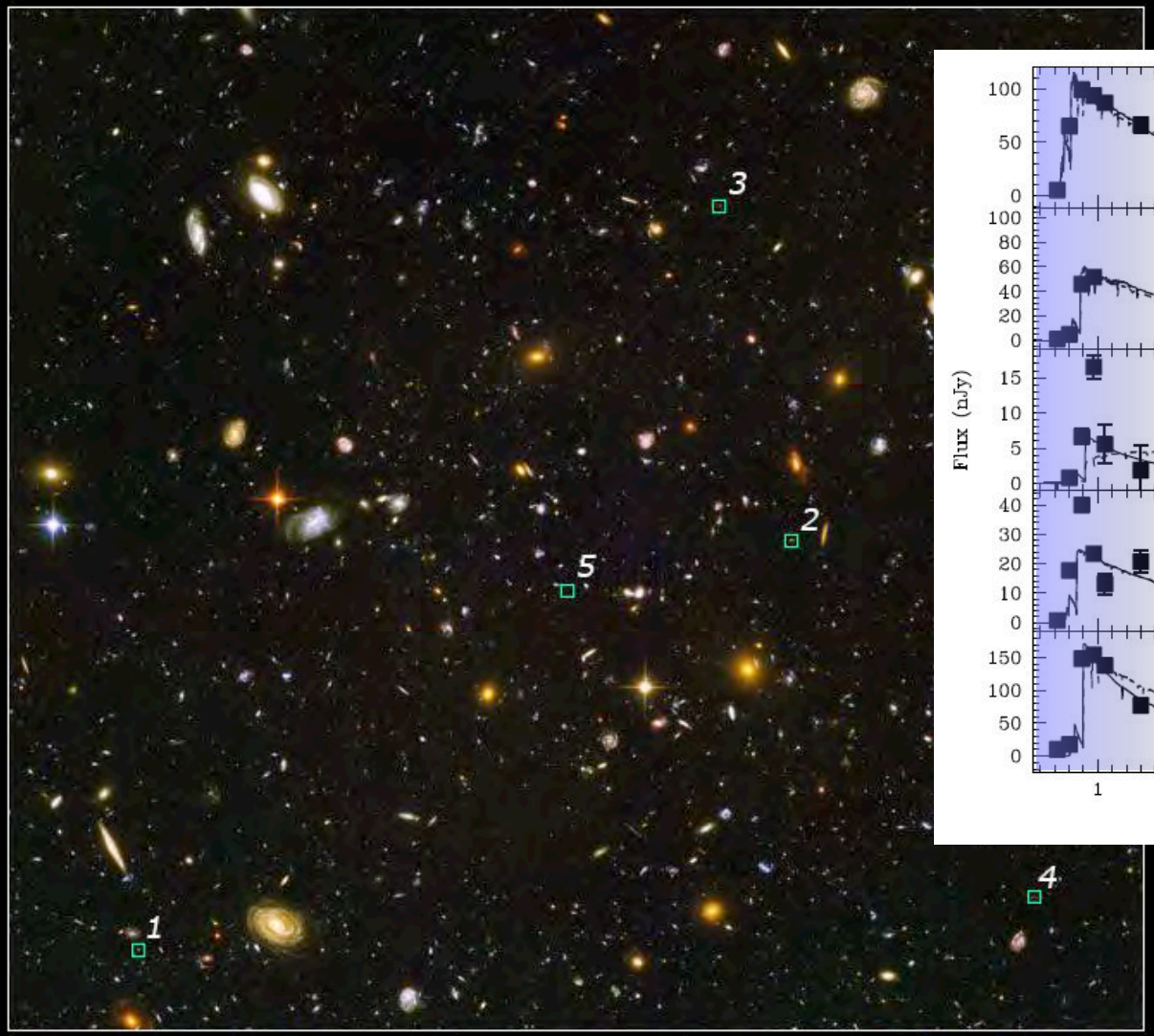
- HST & SM4
  - August 7, 2008 is the new STS 125 launch date
  - EVA priorities “look ok”

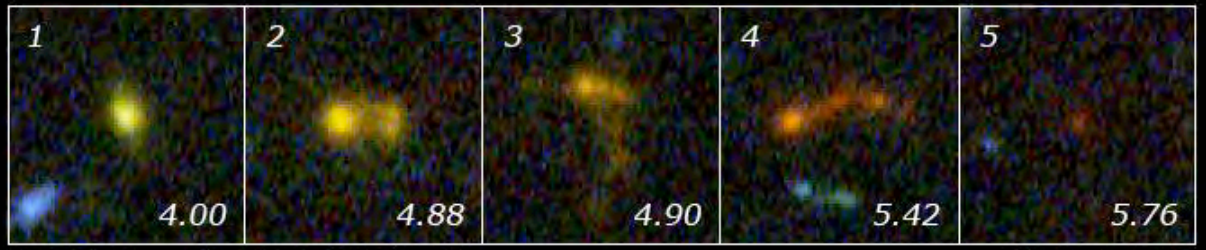
    “Thank the STUC on behalf of the division and SMD for their efforts at looking into the SM-4instrument repair prioritization. We appreciate the hard work and the strong scientific cases that were made for both STIS and ACS.”

    Jon Morse
  - Budget
  - Hubble Legacy Archive (HLA)
  - Early Release Science - the process
  - New initiatives
    - Multi-cycle Treasury Programs
    - Lunar Science “pump priming”

Galaxy Building Blocks in the Hubble Ultra Deep Field

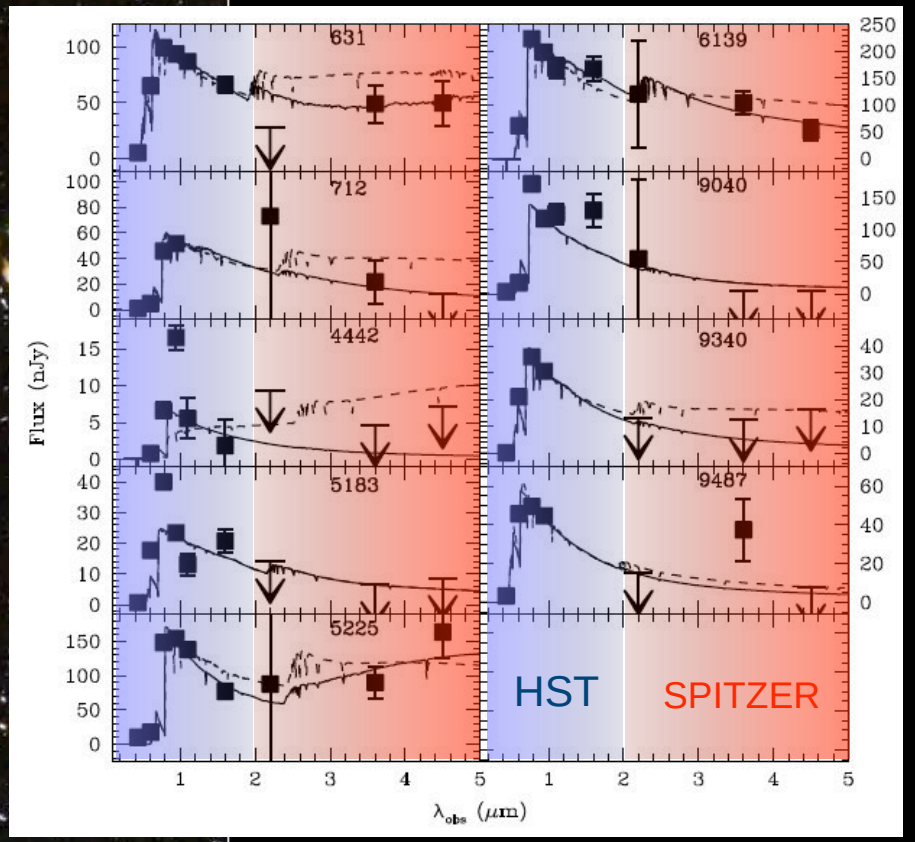
HST • ACS/WFC





NASA, ESA, and N. Pirzkal (STScI/ESA)

STScI-PRC07-31



Mass in stars ~ 10^6 - 10^8 M_{sun}

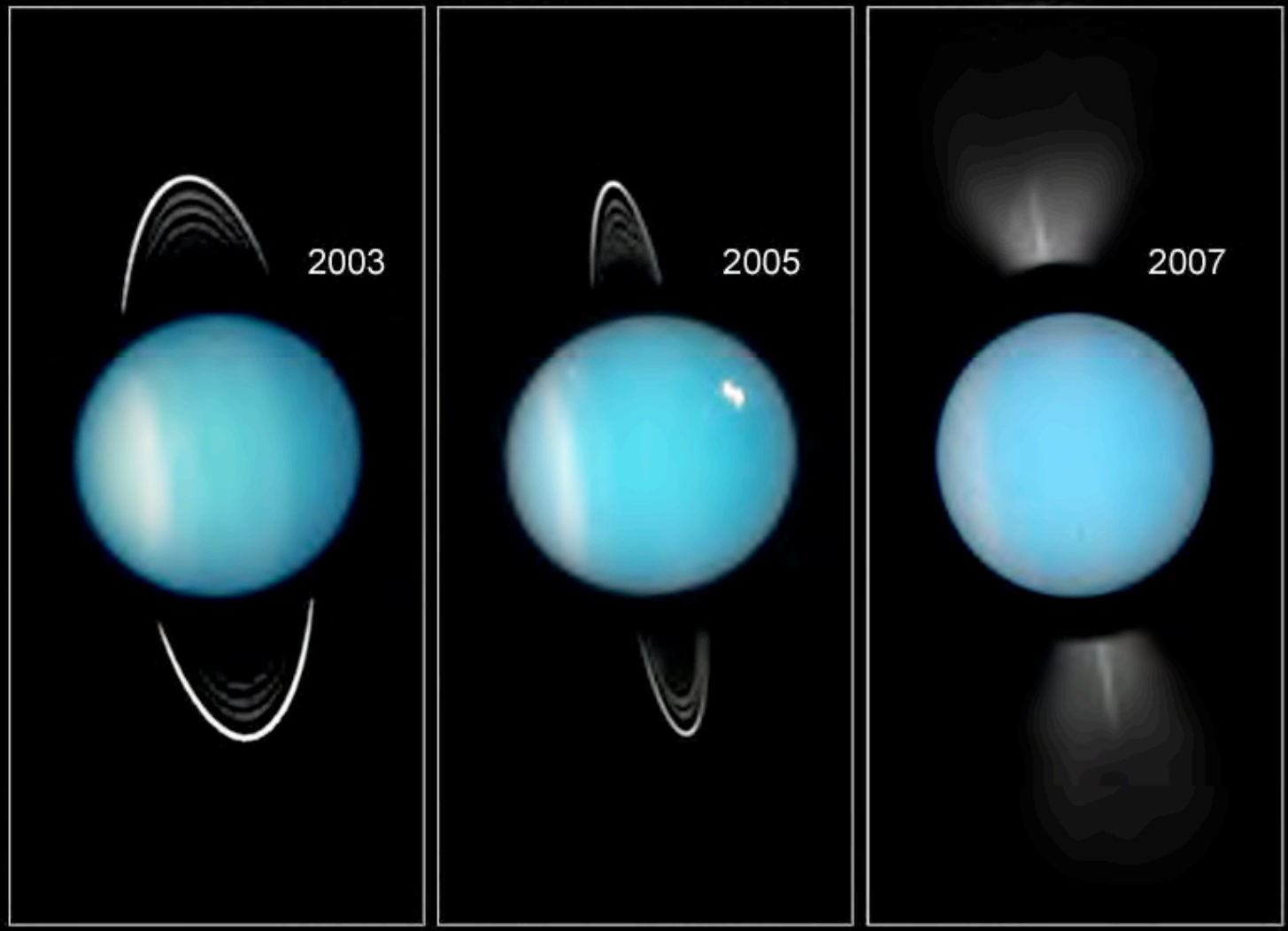
Size ~ 1kpc (c.f. 30kpc for our galaxy)

Age < 2 x 10^6 yr

"They are likely to be some of the least massive high redshift galaxies observed to date"

Norbert Pirzkal (ESA-STScI)

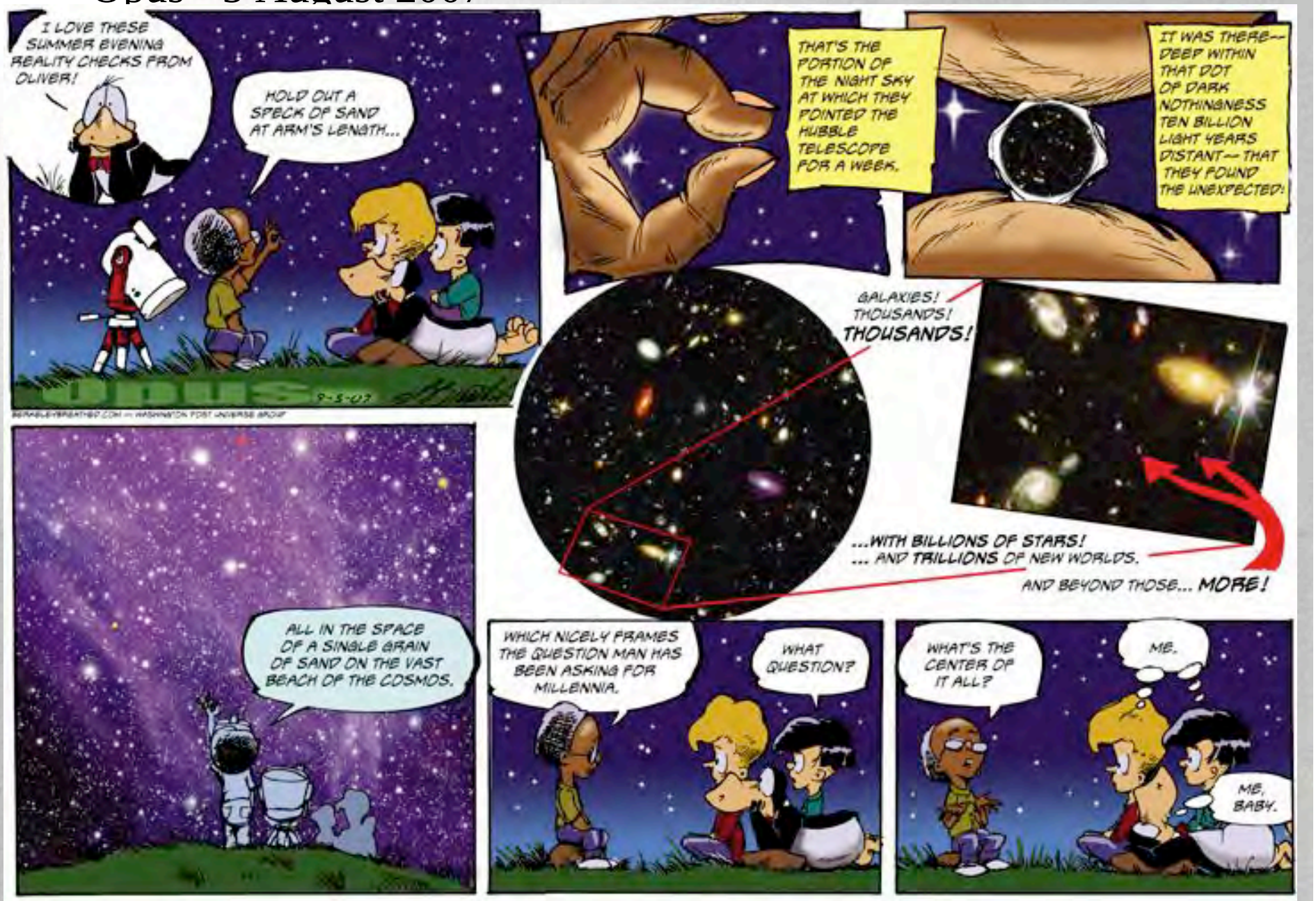
Uranus ▪ *Hubble Space Telescope* ACS/HRC WFPC2



NASA, ESA, and M. Showalter (SETI Institute) ▪ STScI-PRC07-32


Planetary Nebulae
Hubble Heritage
NASA, ESA, and The Hubble Heritage Team (STScI/AURA) • *Hubble Space Telescope* WFPC2 • STScI-PRC07-33b

Opus - 5 August 2007



YET ANOTHER REASON TO GET GOOGLE EARTH

Hubble Teams With Google to Bring The Cosmos Down to Earth

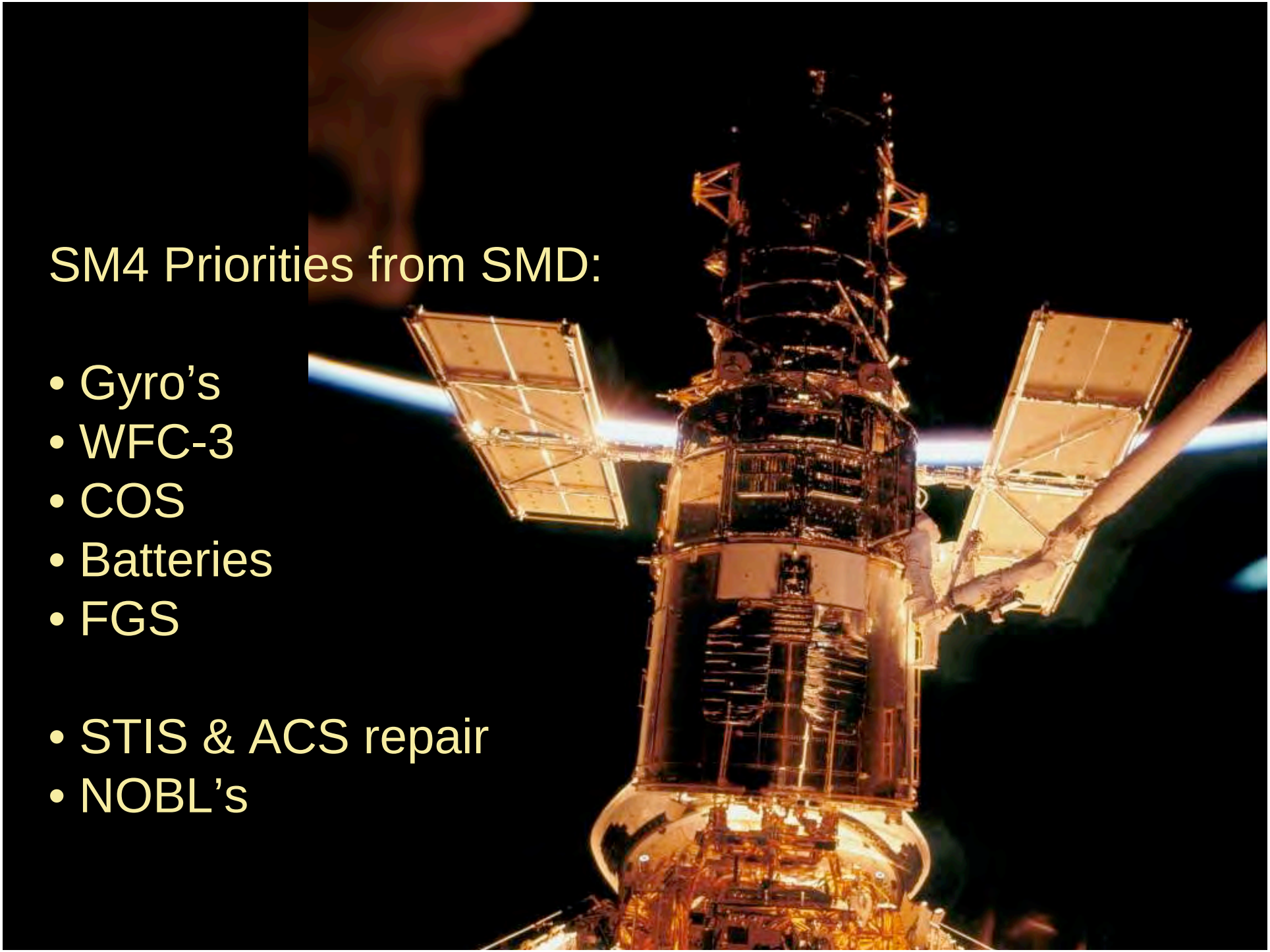
"Imagine cruising the heavens from your desktop and seeing all the spectacular images from NASA's Hubble Space Telescope. Exploding stars and faraway galaxies are just a mouse click away through Sky in Google Earth. Sky in Google Earth is produced by Google, the company that hosts the popular Internet search engine, through a partnership with the Space Telescope Science Institute in Baltimore, the science operations center for Hubble. To access the new feature, users will need to download the newest version of Google Earth, available free of charge."

launched 22August 2007

A Workshop to raise awareness in Europe on the expanded scientific capabilities of Hubble after Servicing Mission 4

29-31 January 2008
Bologna, Italy

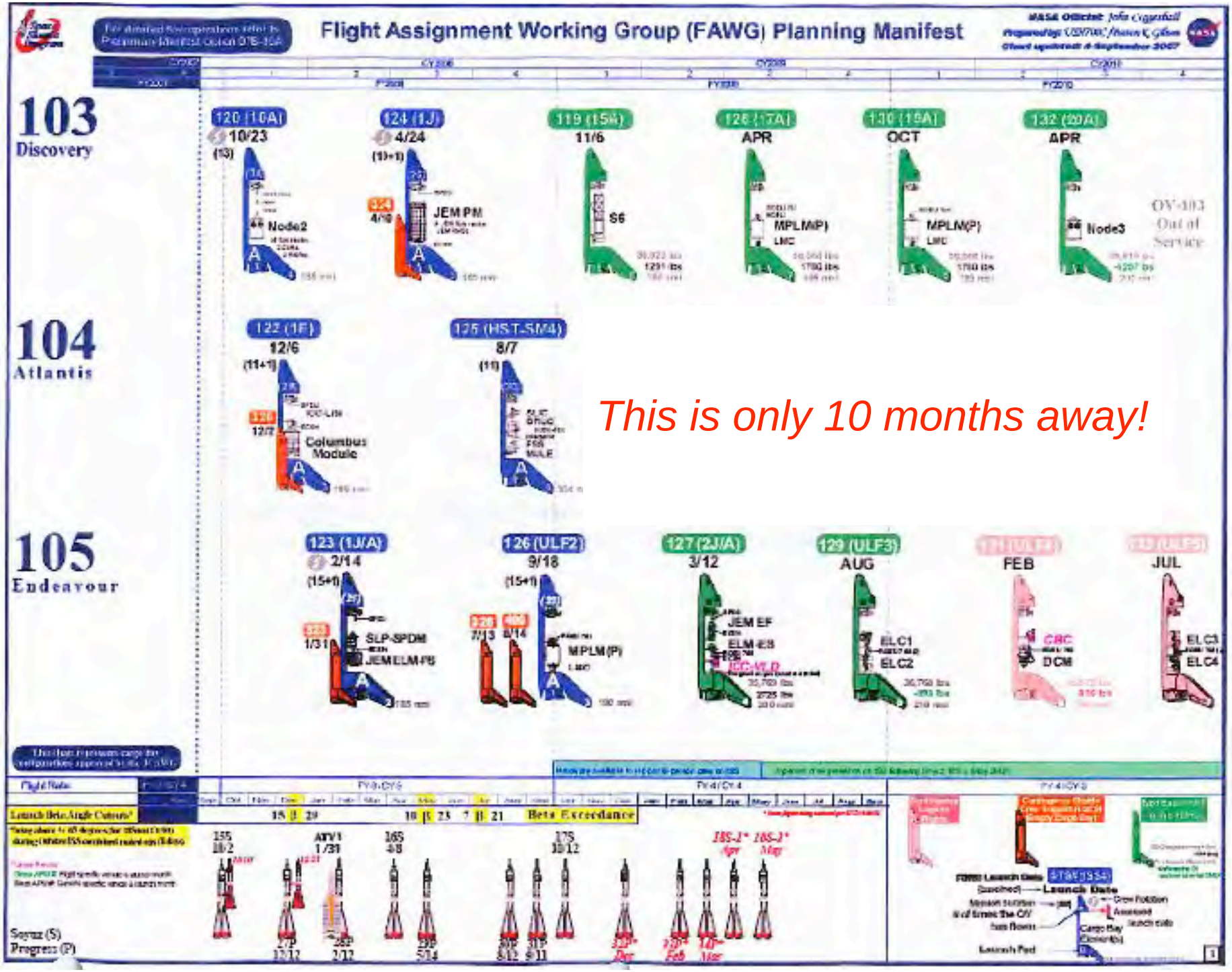

Space Telescope Science Institute
The Challenges



SM4 Priorities from SMD:

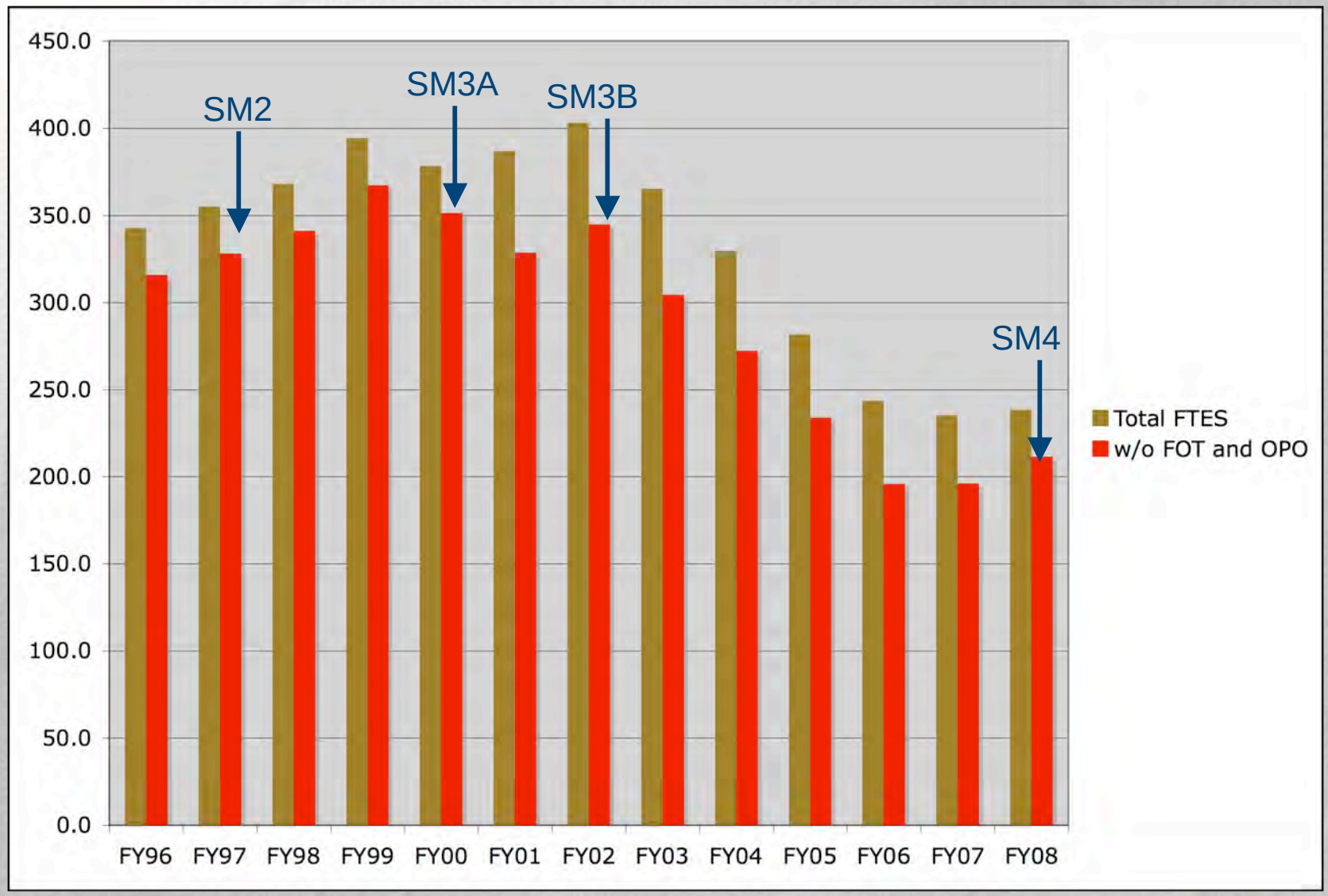
- Gyro’s
- WFC-3
- COS
- Batteries
- FGS

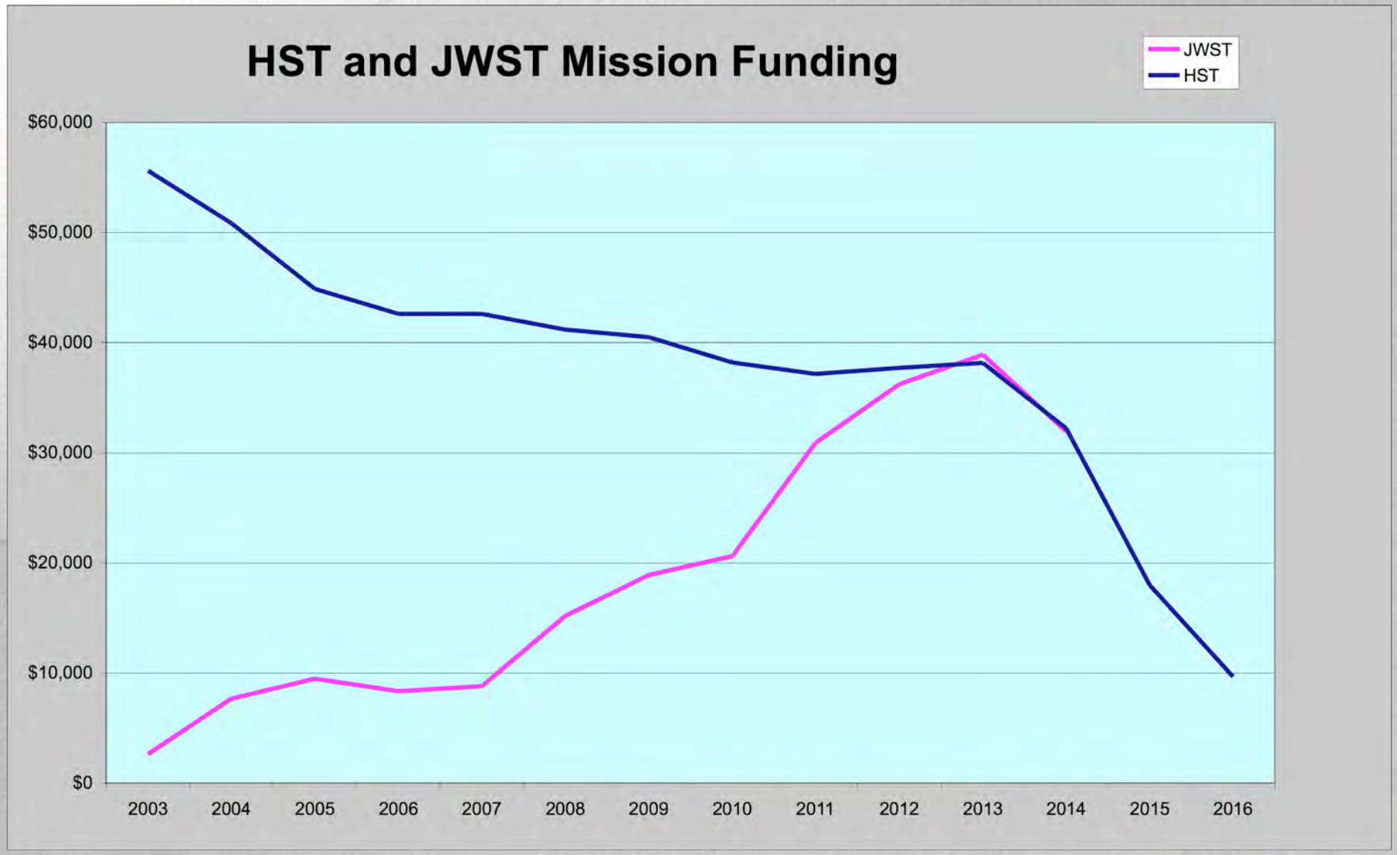
- STIS & ACS repair
- NOBL’s


Flight Assignment Working Group (FAWG) Planning Manifest
103
Discovery
120 (10A)
10/23
Node2
124 (1J)
4/24
JEM PM
119 (15A)
11/6
S6
126 (17A)
APR
MPLM(P)
130 (19A)
OCT
MPLM(P)
132 (20A)
APR
Node3
OV-103
Out of
Service
104
Atlantis
122 (1E)
12/6
Columbus
Module
125 (HST-SM4)
8/7
This is only 10 months away!
105
Endeavour
123 (1J/A)
2/14
SLP-SPDM
JEM ELM-PS
126 (ULF2)
9/18
MPLM(P)
127 (2J/A)
3/12
JEM EF
ELM-ES
ELC1
ELC2
129 (ULF3)
AUG
FEB
CRC
DCM
JUL
ELC3
ELC4
Launch Date
Launch Pad

Budgets and Staffing

Staffing Trend

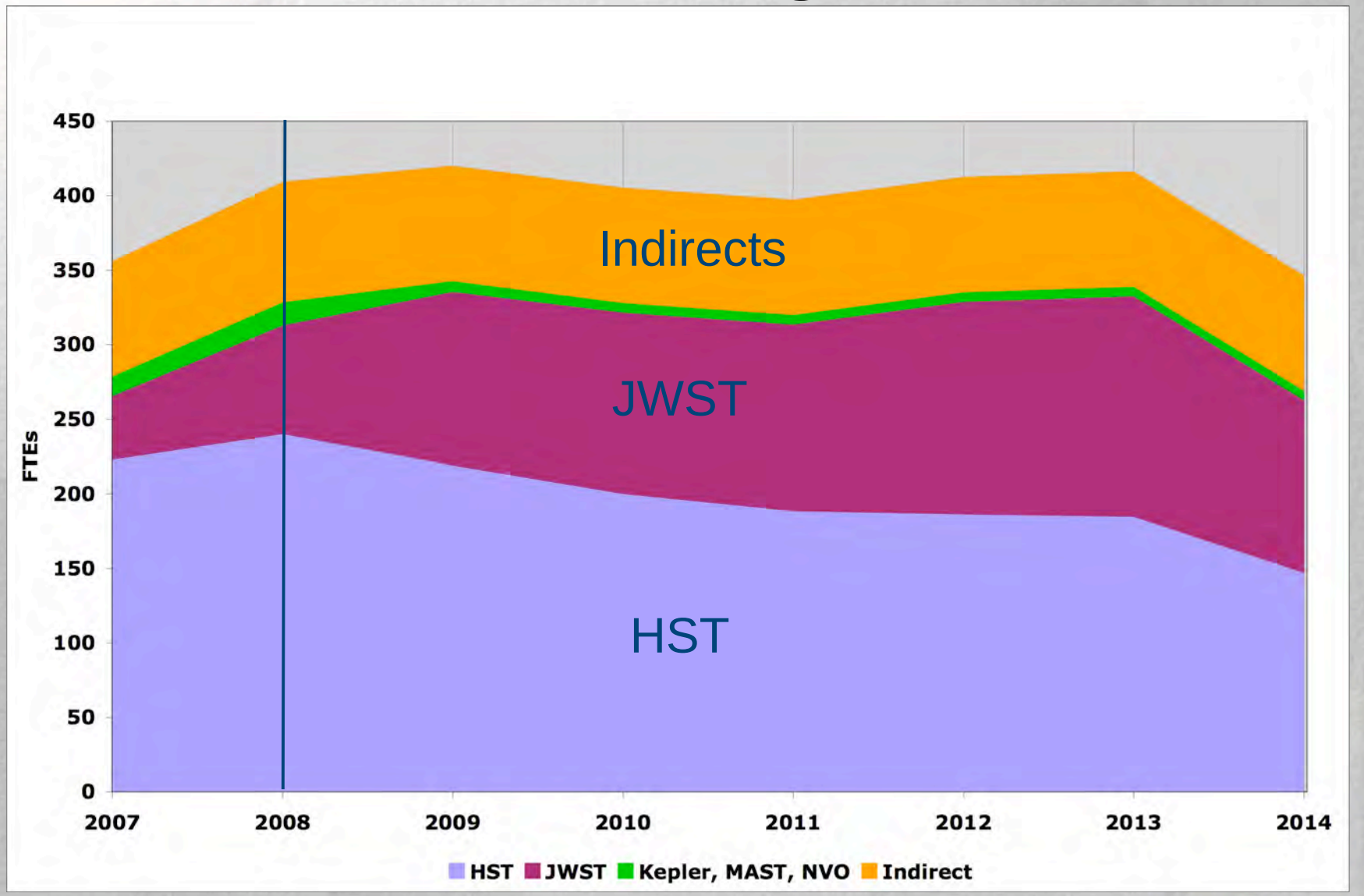



HST and JWST Mission Funding
JWST
HST
$60,000
$50,000
$40,000
$30,000
$20,000
$10,000
$0
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016

STScI Mission Operating Budgets

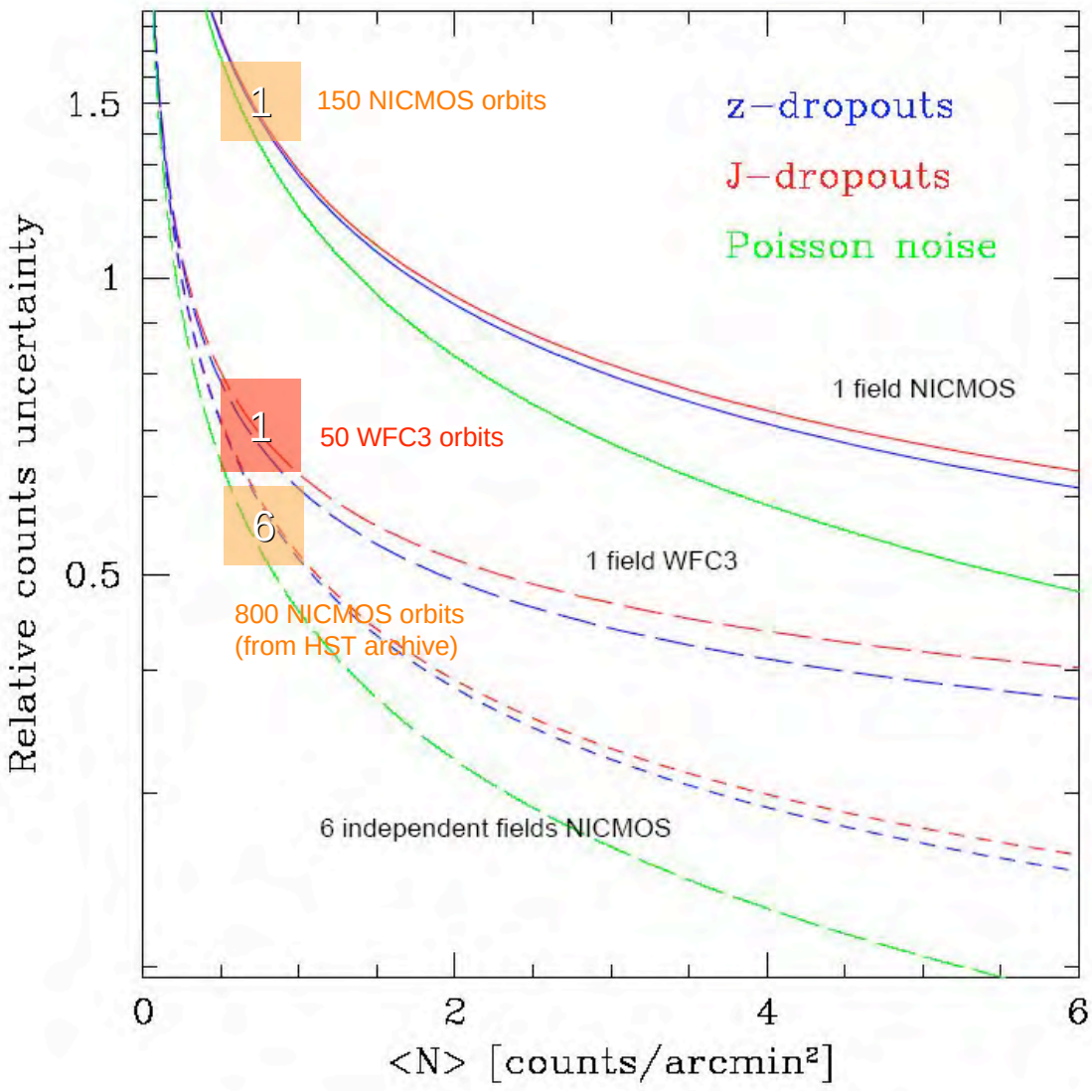
	2005	2006	2007	2008
HST	$44.9M	$42.6M	$44.5M (incl. I/F upgrades)	$42.6M (inc. HLA)
JWST	$9.4M	$8.4M	$8.5M	$15.2M
Other Missions	$1.9M	$3.0M	$3.0M	$2.9M
Total	$57.4M	$54.0M	$56.0M	$60.7M

STScI Staffing Profile

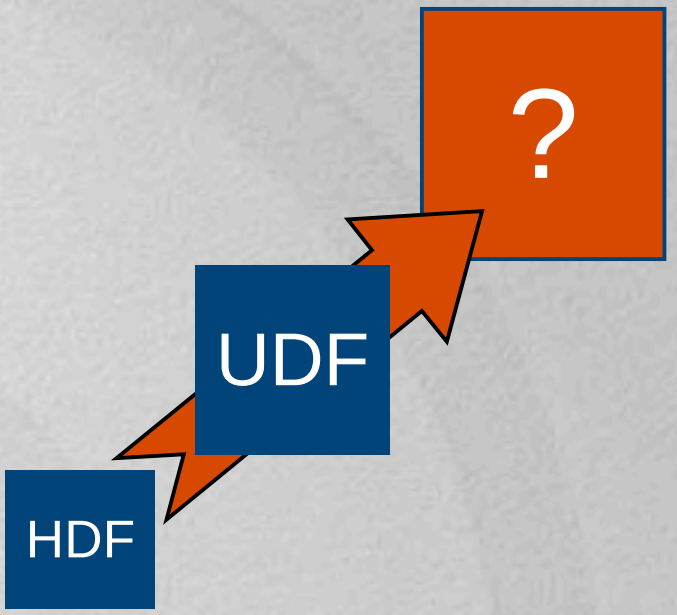


Multi-cycle treasury programs

From Trenti & Stiavelli (2007)



The effect of comic variance on high-redshift galaxy counts observed with HST

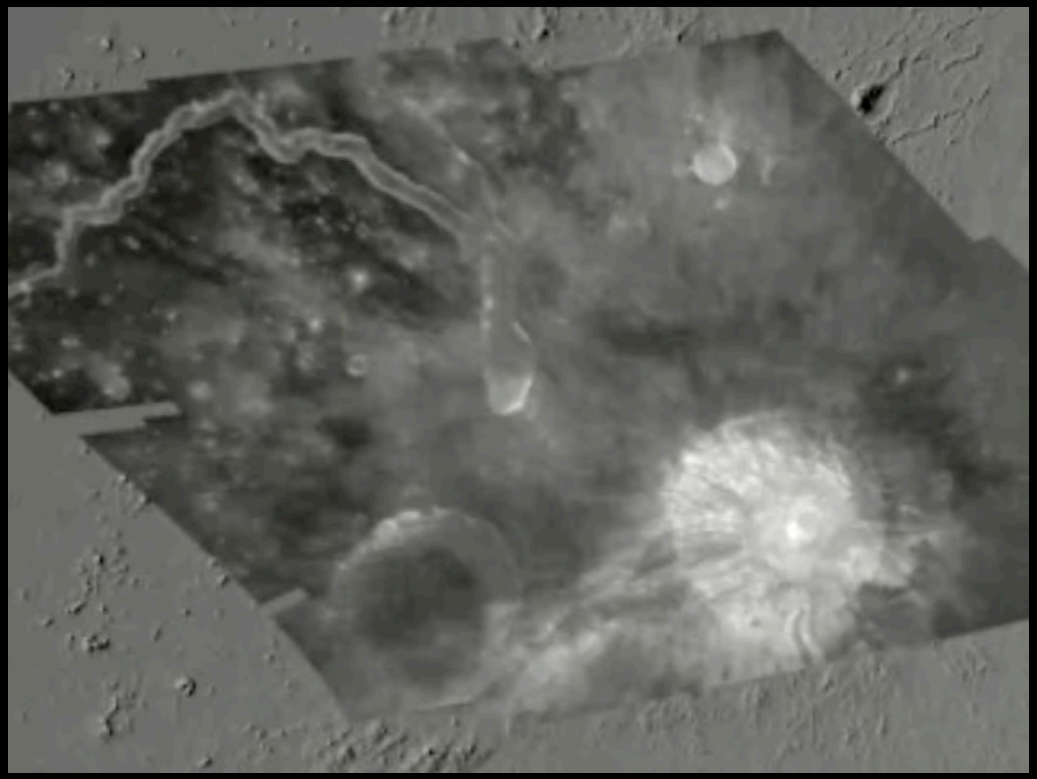


Time to break the cycle:

"and now for something completely different"

- solicit direct community input
- use the TAC
- leverage the best ideas with DDT

http://www.stsci.edu/institute/org/spd/HST-multi-cycle-treasury



Is there a Lunar Science community we are not serving?

- Issue call for White Papers
- Allocate ~30 orbits DDT in Cycle 18
- NASA SMD will cover additional costs (scheduling, visiting scientist)

"Hubble's exquisite resolution and sensitivity to ultraviolet light, which is reflected off the Moon have enabled the search for minerals that may be critical for the establishment of sustained human presence on the Moon"

- Garvin et al 2005