

# Cycle 14 HST Time Allocation

Hubble science program

Hubble's future

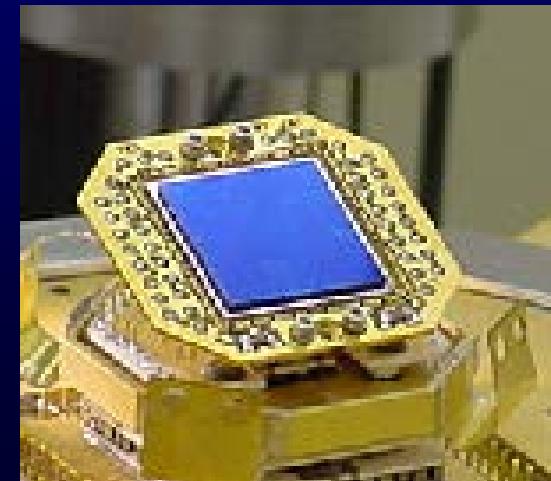
TAC assignment

Steven Beckwith

# Hubble Program Highlights

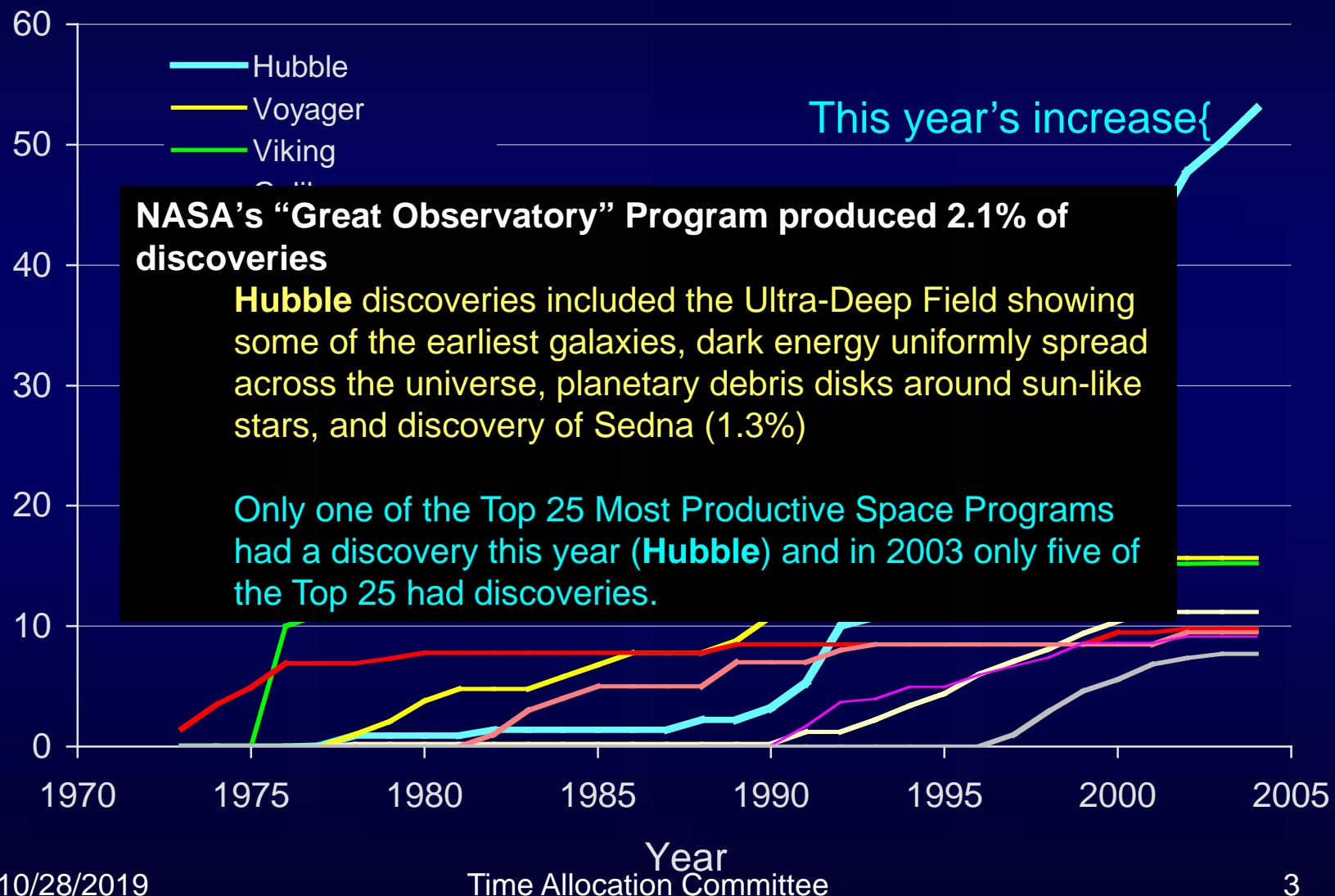
- Hubble tops list in 2004 performance metrics
- Current science program robust
  - Most massive stars, SN Ia, M51 release, planet searches
- ACS, NICMOS, WFC3 FGS performing well
- STIS failure at beginning of Cycle 13
- Demand is good but dropped off after loss of STIS
  - Cycle 14 oversubscription: 4.7 (Cycle 13 was 5.7)
  - Consistent with loss of STIS (30% in Cycle 13)
- 2-gyro mode tests show impact only on scheduling
  - Jitter is well below expectations: **no** impact on images
  - Major impact is on scheduling restrictions
  - All STScI work done for scheduling and support
- Preparing for early entry to 2-gyro mode at start of Cycle 14
  - Should extend science operations by ~9 months

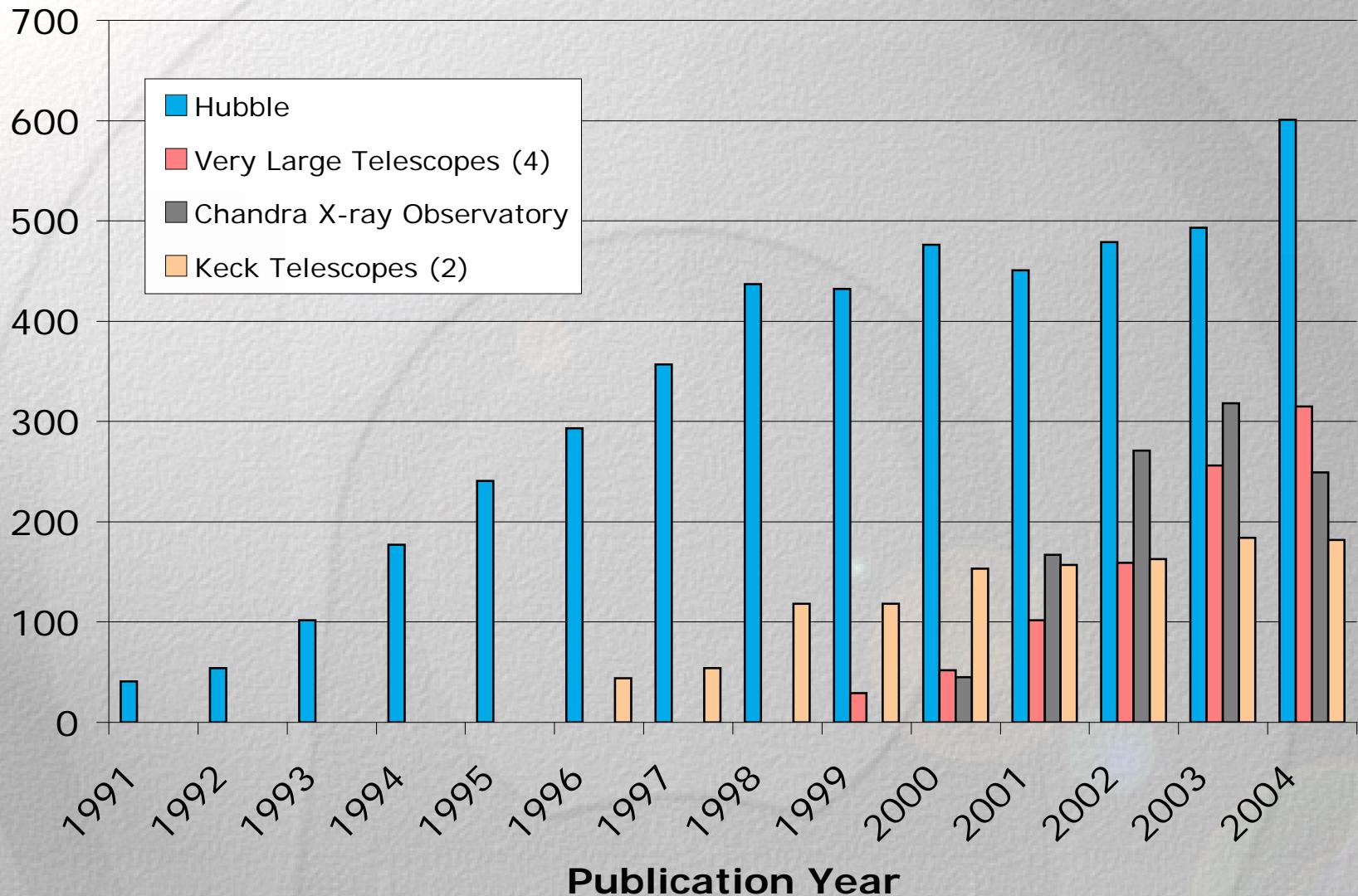
2-gyro guiding tests good



# “Davidson Science News Metric” for 2004

## Cumulative Contributions of NASA's 10 Most Productive Programs



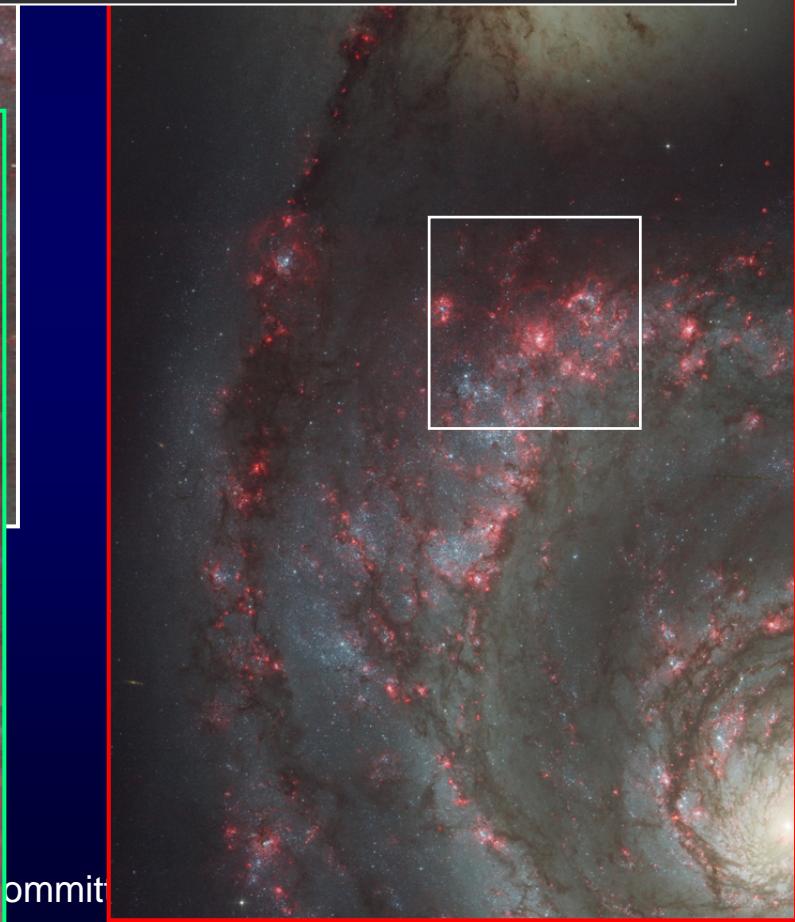
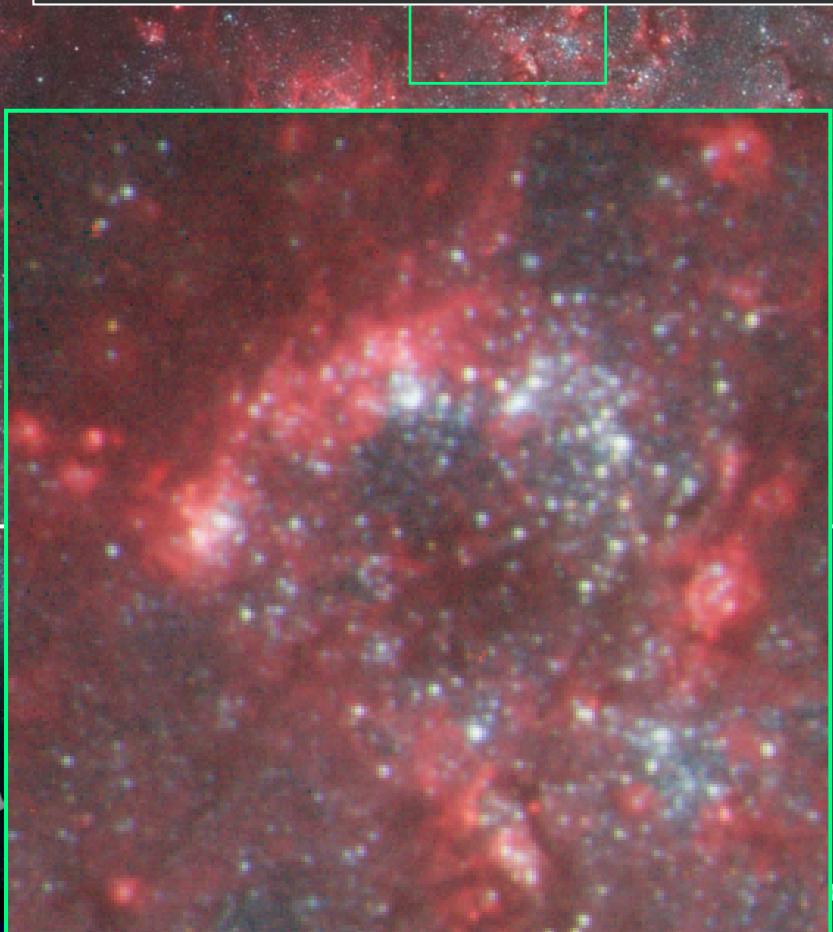


M  
51  
on

Red: enhanced H<sub>α</sub>

There were 19 Cycle 14 proposals to follow-up M51 data:

- 9 AR programs
- 6 GO programs for additional data



# Future of Hubble: Technical

- Battery lifetime tests suggest batteries should last to ~2009-2010 (worst cast scenario is end of '08)
- Four working gyros: 3 operating, 1 in reserve, 2 dead
  - Gyros are now beginning to exceed expected failure times (good news)
  - 2-gyro mode will work with minor science impact
  - 1-gyro mode is possible and may work with minor science impact
- Avionics operating nominally; all other subsystems performing well; FGS bearing wear by ~2009
- We foresee no major technical issues for Cycle 14

# Future of Hubble: Politics

- Lanzerotti report endorses Hubble servicing with shuttle
- AAS & APS endorse Lanzerotti recommendations
- OMB FY'06 request has no support for Hubble servicing
- House and Senate have been favorable to Hubble
  - Sen. Mikulski vowed publicly to fight for Hubble
  - Rep. Hoyer (MD) & Mollohan (Wva) request NASA maintain HST servicing
- Sean O'Keefe has left NASA
- Mike Griffin slated to be new administrator (physicist, thought to be pro-Hubble)
- Press has been strongly pro-Hubble servicing



**White House Cuts Hubble Servicing Mission from 2006 Budget Request**

By Brian Berger  
Space News Staff Writer  
posted: 21 January 2005  
01:49 pm ET

WASHINGTON – The White House has eliminated funding for a mission to service the Hubble Space Telescope from its 2006 budget request and directed NASA to focus solely on de-orbiting the popular spacecraft at the end of its life, according to government and industry sources.

# The New York Times

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## Death Sentence for the Hubble?

Sean O'Keefe, the departing administrator of the National Aeronautics and Space Administration, has marked the agency's most important scientific instrument of life support. His refusal to budge any funds to service and upgrade the Hubble Space Telescope looks like the petulant final act of an administrator who made a foolish decision and then refused to back down in the face of withering criticism from experts. The only uncertainty is whether the decision to let the Hubble die prematurely was solely Mr. O'Keefe's or reflects the judgment of higher-ups in the administration that servicing the Hubble would be a diversion from the president's long-range program of space exploration.

The Hubble by all accounts has been one of the most productive instruments in the history of science, largely because periodic servicing missions by shuttle astronauts have extended its life and upgraded its instruments. A fifth servicing mission had been planned and the new instruments already built, when the Columbia disaster grounded the three remaining shuttles for repairs. In any warning, Mr. O'Keefe shocked sci-

ence by assembling a panel of experts assembled by the academy concluded that there was little chance the robotic mission favored by Mr. O'Keefe could be mounted in time. The panel urged instead that astronauts be sent to the rescue. It judged such a flight only marginally more risky than a flight to the International Space Station.

Undeterred, Mr. O'Keefe is now blaming the academy for sealing the Hubble's doom. He still insists that a shuttle flight would be too risky, mostly because there would be no place to take refuge should problems arise, and now he complains that a robotic mission would be impractical as well because the academy dismissed its prospects for success. So he has wiped the budget clean of all rescue funds except for a future robotic mission to ensure that Hubble falls out of orbit safely.

Congress, which declared in a conference report last year that servicing the Hubble should be one of NASA's highest priorities, needs to order NASA to keep planning for a rescue mission. Some legislators may wonder if a servicing mission is

That bookkeeping issue is a diversion. The refurbished shuttles will eventually return to flight, and the marginal cost for sending one to the Hubble would not be prohibitive. Upgrading the Hubble is probably the most important contribution today's astronauts could make.

# Cycle 14 TAC

- ❖ Select Science program as usual, but tell us potential impacts of early 2-gyro mode
  - Cycle 14
    - 2 or 3 gyros
  - Cycle 15
    - 2-gyro mode for full cycle
  - Cycle 16
    - Chance of Hubble servicing (let's hope)
- ❖ Give us advice on AR funding
  - AR requests have increased with loss of STIS; GO requests have decreased
  - Should we rebalance the funding portfolio?