

Science planning

STUC

13 November 2008



1. Cycle 16 Supplemental Call
2. Cycle 17 TAC results
3. Cycle 18 schedule
4. Multi-Cycle Treasury program schedule

1. An extended Cycle 16

SM4 is currently expected to occur no earlier than April 2009 (per NASA press conference, 30 October)

- HST has sufficient programs in hand to maintain an observing schedule to 2/09
 - ◆ Cycle 16 WFPC2, ACS/SBC, NICMOS & FGS
 - ◆ Supplemented with FGS DD proposals
 - ◆ Cycle 17 ACS/SBC, NICMOS & FGS
- HST will need additional programs
 - ◆ If NICMOS cooling system does not restart (~400 orbits)
 - ◆ To cover launch slip beyond February 2009: 75-80 orbits/week → at least 1,000 orbits
- We are developing a supplementary call to deal with this issue

Designing a Supplementary Call

We need to balance several considerations

- HST requires a substantial complement of new programs
 - ◆ Likely need to allocate at ~1,200 orbits to allow scheduling of ~1,000 orbits
- HST is running with a well-trying instrumental suite
 - ◆ We need to encourage the community to explore innovative ways of using these instruments
- We don't have much time
 - ◆ Phase II proposals need to be in hand by early February 2009
 - ◆ PIs need to be notified by mid-January
 - ◆ Phase I proposals need to be submitted, processed and distributed to the review panelists by early December
 - ◆ We need to recruit external review panelists over the next 4 weeks

Logistically, we are not in a position to deal with the number of proposals that might be submitted *via* a standard Call

Supplementary call schedule

We propose the following scheme:

- Issue Call for Supplementary Proposals on Nov 17th
 - ◆ Limit to Large programs (> 150 [?] orbits) *or* innovative high science risk/high science return programs
 - ◆ No duplication of Cycle 17 science programs
 - ◆ GO or SNAPSHOT submissions; standard 12 month proprietary period
 - ◆ Allow DD submissions for small, high-priority programs
- Phase I deadline December 8th
 - ◆ Programs reviewed by TAC panel
 - ◆ If necessary, only a subset of the panel will review each proposal
 - ◆ Initial grades submitted to STScI by Christmas
 - ◆ Telecon discussion to finalise highly ranked programs in early January
- Notify PIs by ~January 13th
 - ◆ Allows for winter AAS Meeting, January 4 - 8
- Phase II deadline ~January 28th

Accepted programs will receive funding at levels comparable to standard cycle programs, to the extent that NASA funding permits.

The review panel

Supplementary programs will be funded → external review panel

- We need to recruit 15-20 panelists for the TAC
 - ◆ Broad distribution of scientific expertise
 - ◆ Previous experience on HST TAC
 - ◆ Cycle 16 & 17 TAC/panel members
 - ◆ STUC members
- Individual proposals will be reviewed by a subset of the TAC
 - ◆ Exact number depends on how many proposals are received
- TAC grades and comments will be submitted *via* the web-based TAC tool by December 19th
 - ◆ We, at STScI, will compile and circulate preliminary rankings
 - ◆ If there are obvious winners, we will ask the TAC to confirm the results (by e-mail) and, if confirmed, notify the PIs
- Telecon to discuss final rankings
 - ◆ Either 30 December 2008 or immediately following AAS meeting
- Director makes final selection

2. Cycle 17 TAC Meeting

The Cycle 17 TAC was held at STScI/JHU from May 12-16 2009

- ◆ TAC Chair: Rob Kennicutt IOA/Arizona
- ◆ 124 astronomers in 12 panels + TAC
 - ◆ Five Extragalactic panels (2 AGN/QSOs, Cosmology, IGM; 3 Unresolved stellar pops, Galaxies)
 - ◆ Five Galactic (2 Hot stars & ISM; 3 Cool stars, Circumstellar material – evolved stars, Star formation)
 - ◆ Two Planetary System panels (Solar System, Exoplanets, Circumstellar disks, Planet formation)

Post-TAC survey indicates a strong preference for holding the TAC at this venue

Orbit Allocations per panel

giving equal weight to $N(\text{orbits})$ and $N(\text{proposals})$

| Panel | GO props | GO orbits | Allocation |
|-------------|----------|-----------|------------|
| Exgal1 | 62 | 1276 | 188 |
| Exgal2 | 63 | 1138 | 179 |
| Exgal3 | 66 | 1404 | 204 |
| Exgal4 | 65 | 1791 | 233 |
| Exgal5 | 56 | 1632 | 208 |
| Galac1 | 62 | 644 | 139 |
| Galac2 | 72 | 752 | 162 |
| Galac3 | 45 | 864 | 132 |
| Galac4 | 58 | 1014 | 162 |
| Galac5 | 47 | 853 | 134 |
| Planetary 1 | 50 | 862 | 139 |
| Planetary 2 | 51 | 603 | 120 |
| TAC | 55 | 6913 | 1100 |

TAC Results: Executive Summary

- GO Acceptance Rate: ~1/4.3 for proposals and ~1/6.1 for orbits
- SNAP Acceptance rate: ~1/2.5 for proposals and ~1/3.1 for targets
- Regular AR Acceptance rate: ~1/3.4 for proposals and 1/4.5 for \$
- Theory Acceptance rate: ~1/4.4 for proposals and ~1/4.2 for \$
- AR Legacy Acceptance rate: 1/4 for proposals and 1/5.5 for \$
- Acceptance rate declines for “medium-large” programs
 - ◆ Dip in the 41 - 99 orbit bins
- 31% of program awarded to Large/Treasury Programs.
- Instrument breakdown for GO Programs (Prime and Parallel): ACS (25%), COS (18%), FGS (2%), NICMOS (1%), STIS (9%), WFC3 (45%)

Executive Summary Continued

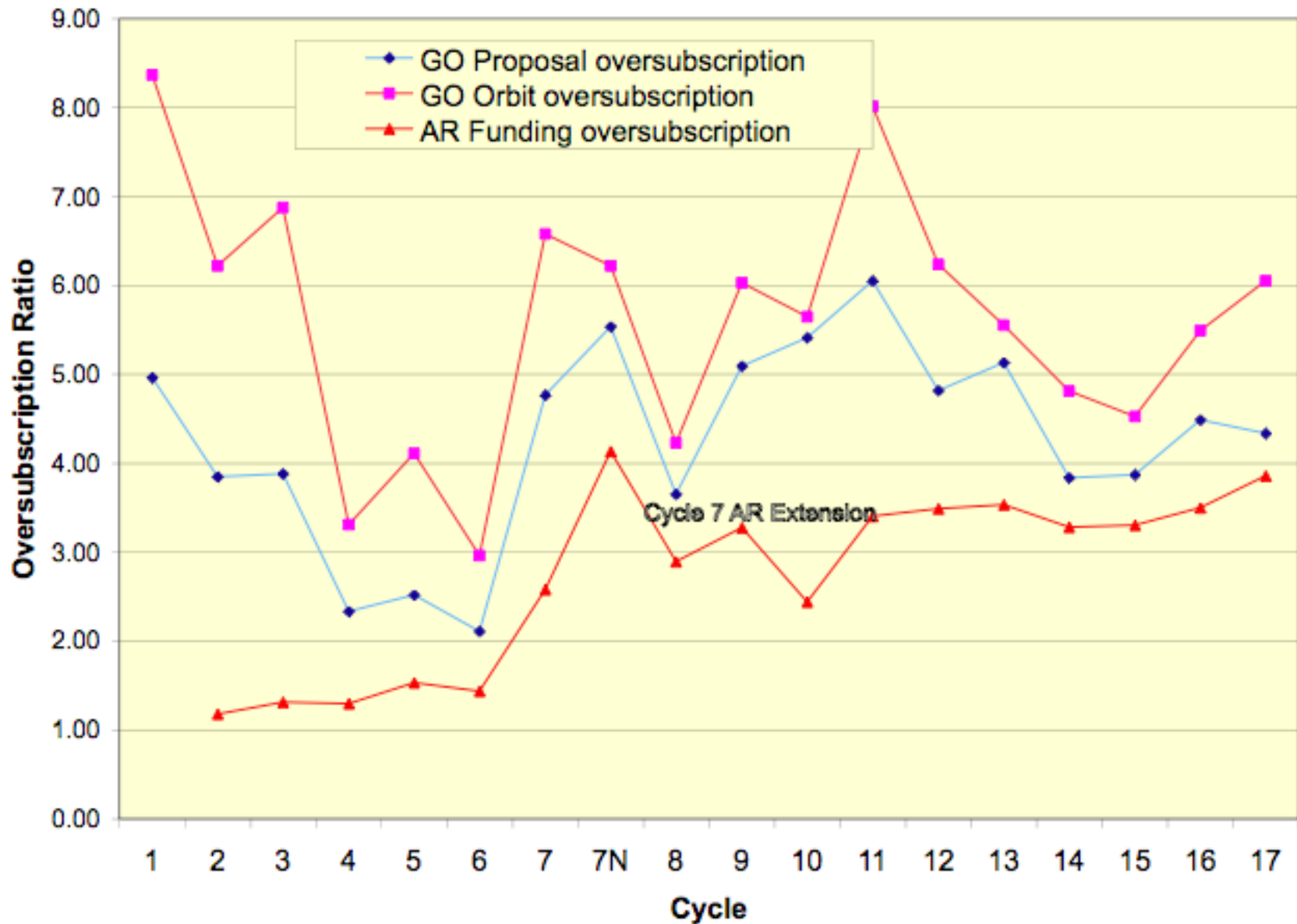
- ESA acceptance fraction:
 - ◆ PIs 15.4% for proposals and 15.6% for orbits
 - ◆ CoIs 38.5% for proposals and 61% for orbits (at least 1 CoI)
- Proposal acceptance fraction similar for panelists and non-panelists
- Proposal acceptance fraction for STScI staff consistent with overall
- Chandra: 2 out of 6 proposals, or 110 ksecs out of 543 submitted
- NOAO: 3 out of 8 proposals, or 5.6 nights out of 24.6 submitted
 - ◆ First NOAO allocations for 3 cycles
- No joint Spitzer-HST programs
- ToO's: 40 fast (< 2 week) + 5 other activations
- Three Pure Parallel programs awarded time
- No Survey programs awarded time
 - ◆ Despite higher subsidy in the panels

Summary Results

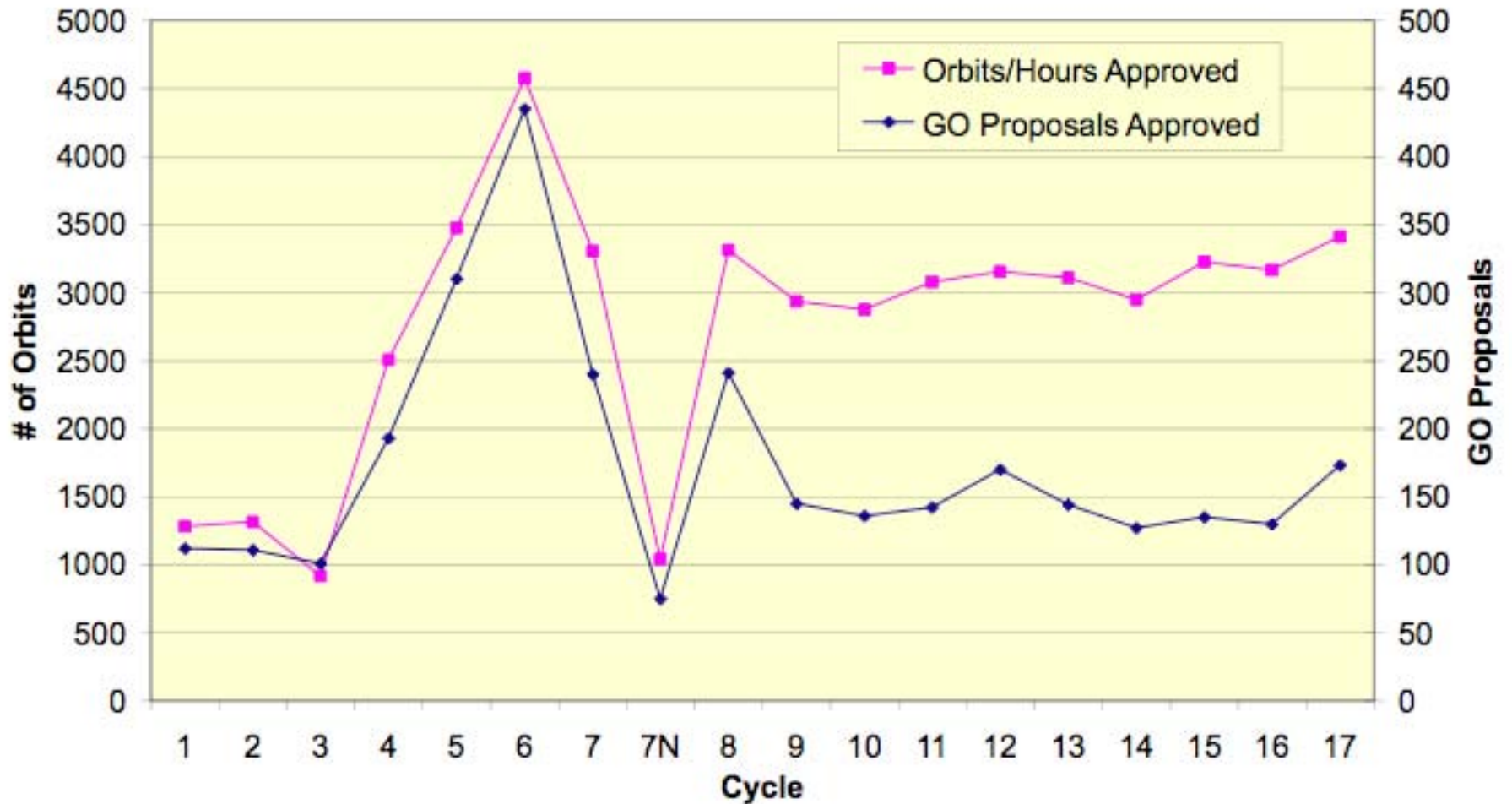
| <u>Proposals</u> | <u>Requested</u> | <u>Approved</u> | <u>% Accepted</u> | <u>ESA</u> <u>Accepted</u> | <u>ESA %</u> <u>Total</u> |
|--------------------------------|------------------|-----------------|-------------------|-------------------------------|------------------------------|
| General Observer | 750 | 173 | 23.1% | 34 | 19.7% |
| Snapshot | 41 | 16 | 39.0% | 1 | 6.3% |
| Survey Archival Research | 22 | 0 | 0.0% | 0 | |
| 88 | 26 | 29.5% | 0 | | |
| AR Legacy | 4 | 1 | 25.0% | 0 | |
| Theory | 53 | 12 | 22.6% | 0 | |
| <u>Total</u> | <u>958</u> | <u>228</u> | <u>23.8%</u> | <u>35</u> | <u>15.4%</u> |
| Primary Orbits | 20630 | 3411 | 16.5% | 531 | 15.6% |

3411 Approved does not include 16 Calibration orbits

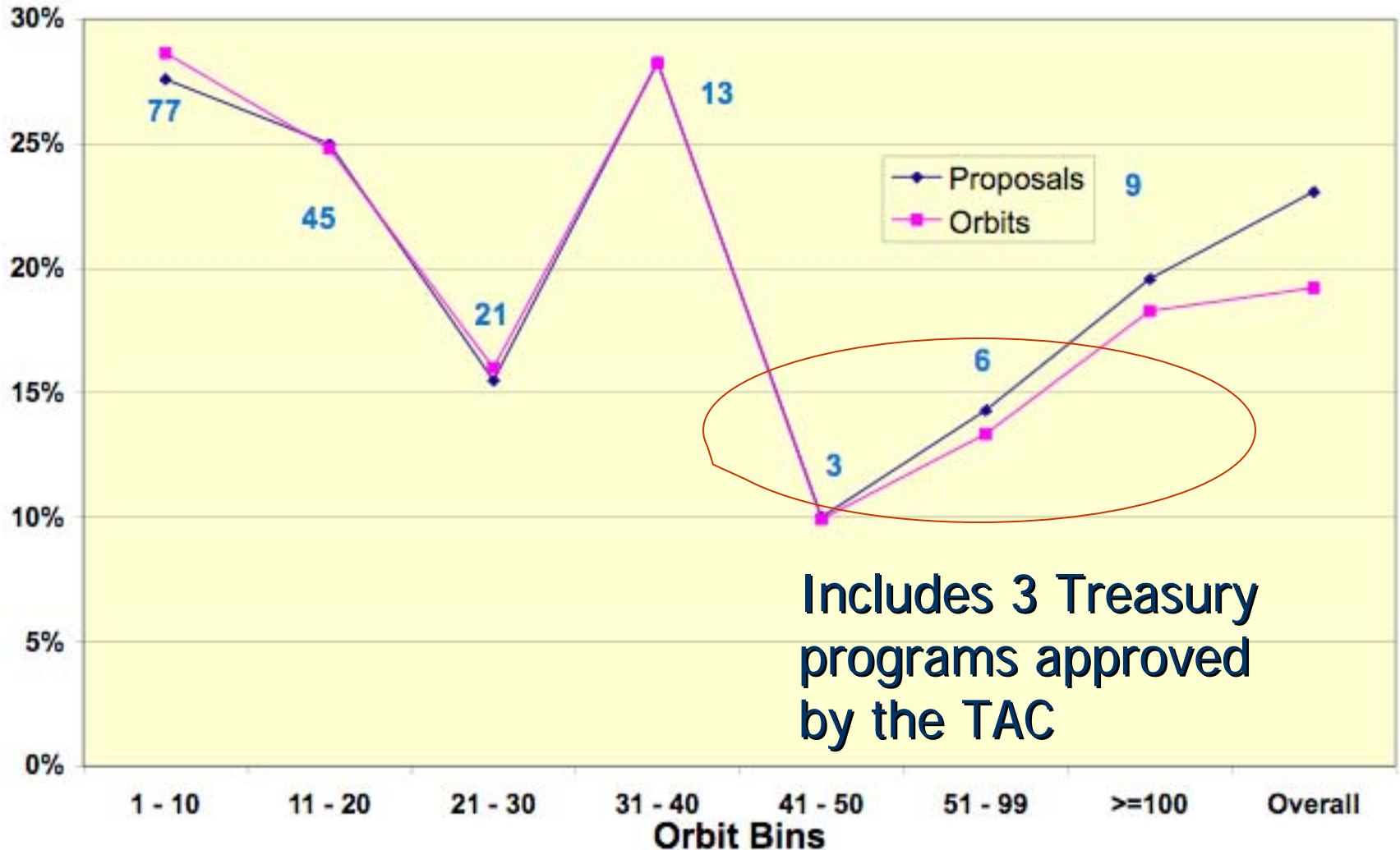
Over-subscription by Cycle



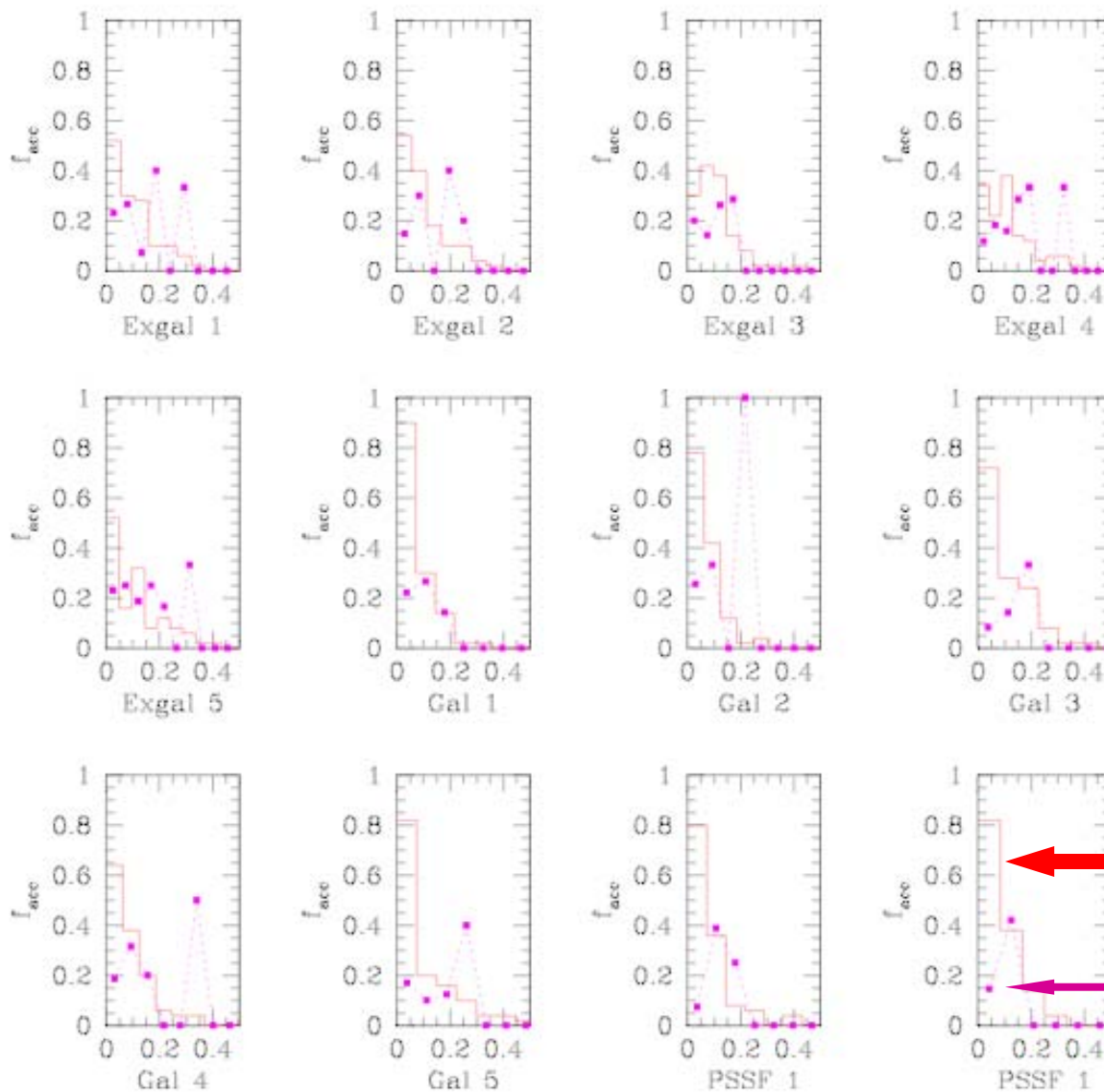
Approved Orbits and Proposals by Cycle



Acceptance Fraction by Size



Acceptance fraction by size - panels

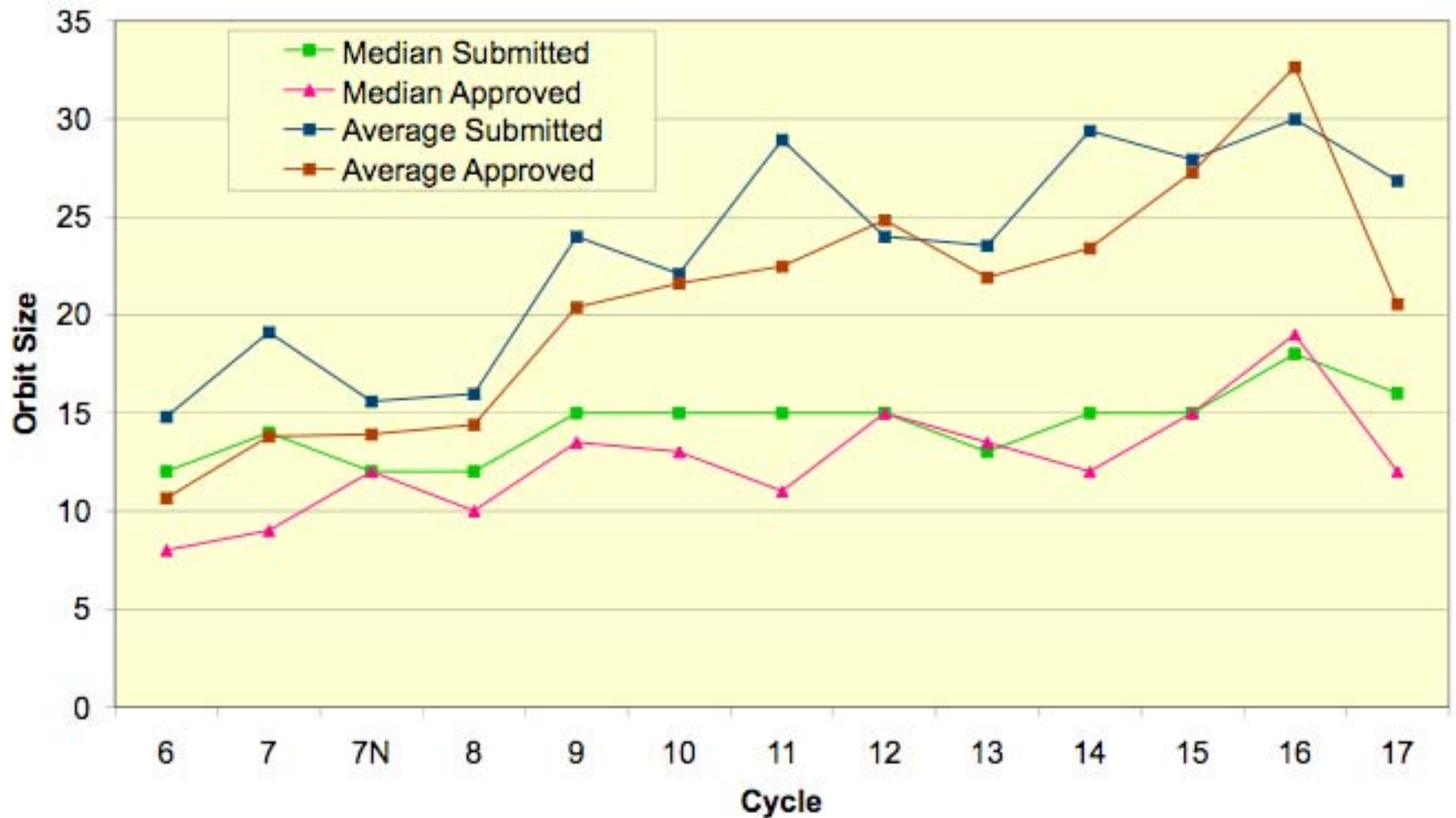


Panels don't like allocating more than ~20% of their total allocation to one program

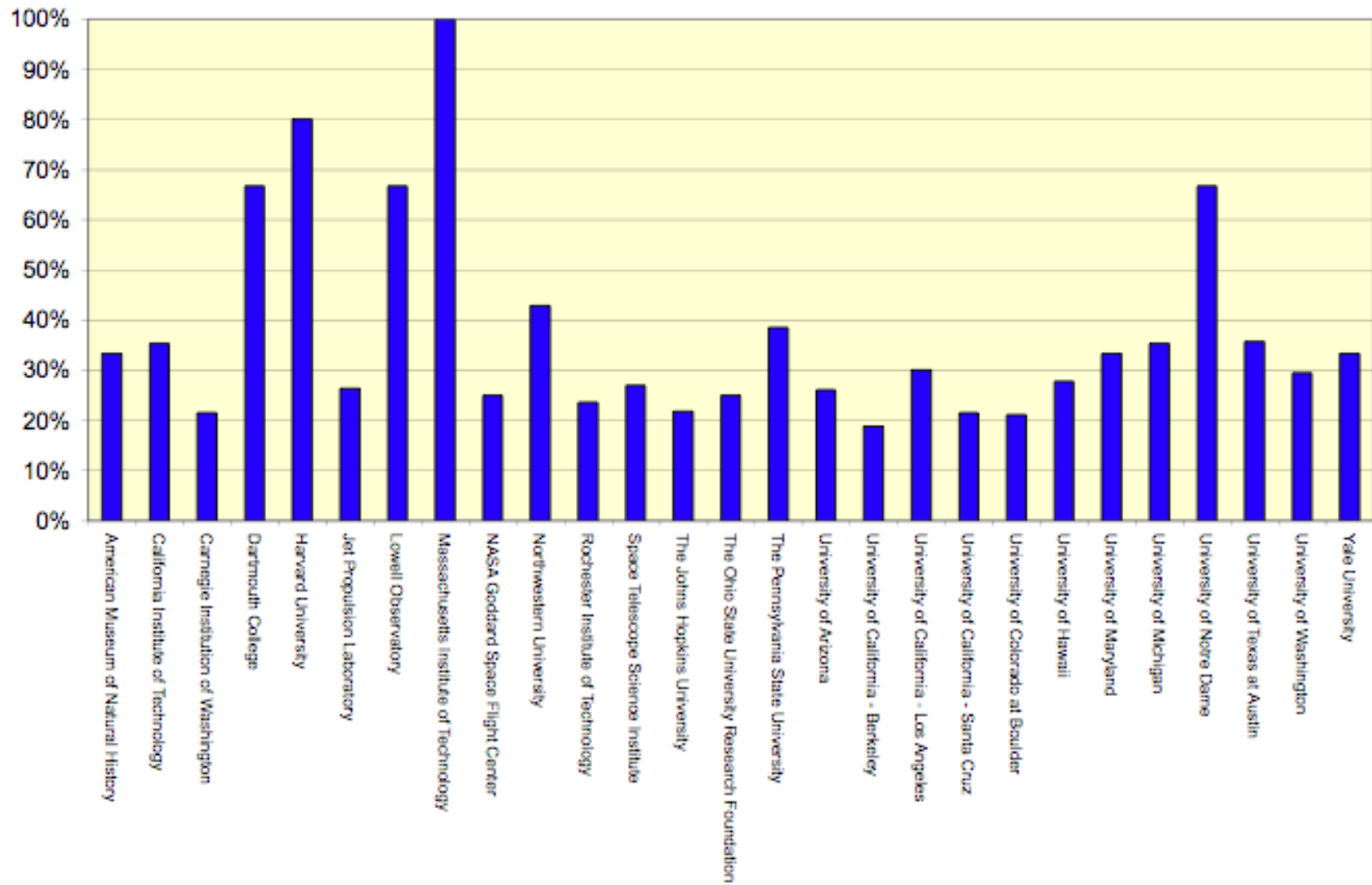
Submitted proposals

Fraction accepted

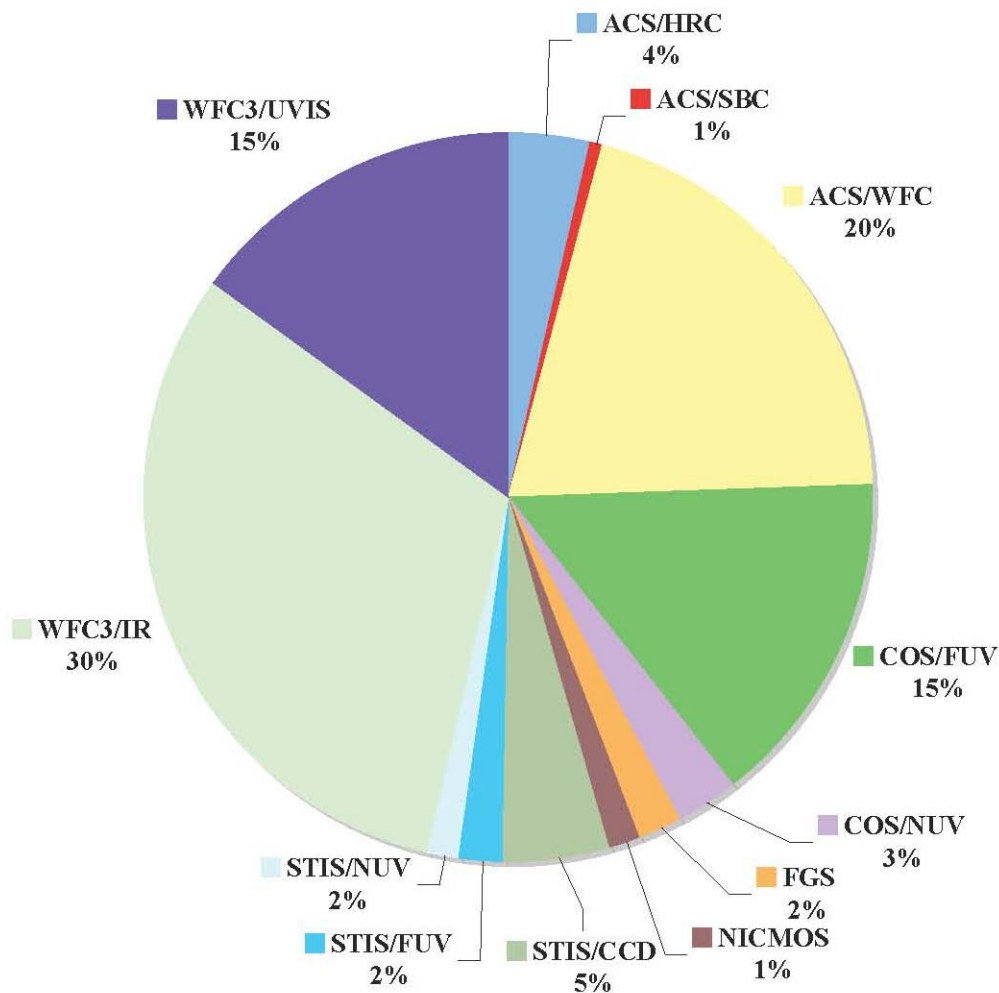
Orbit Size by Cycle



Proposal Institutional Acceptance Fraction



Cycle 17 GO Instrument Summary



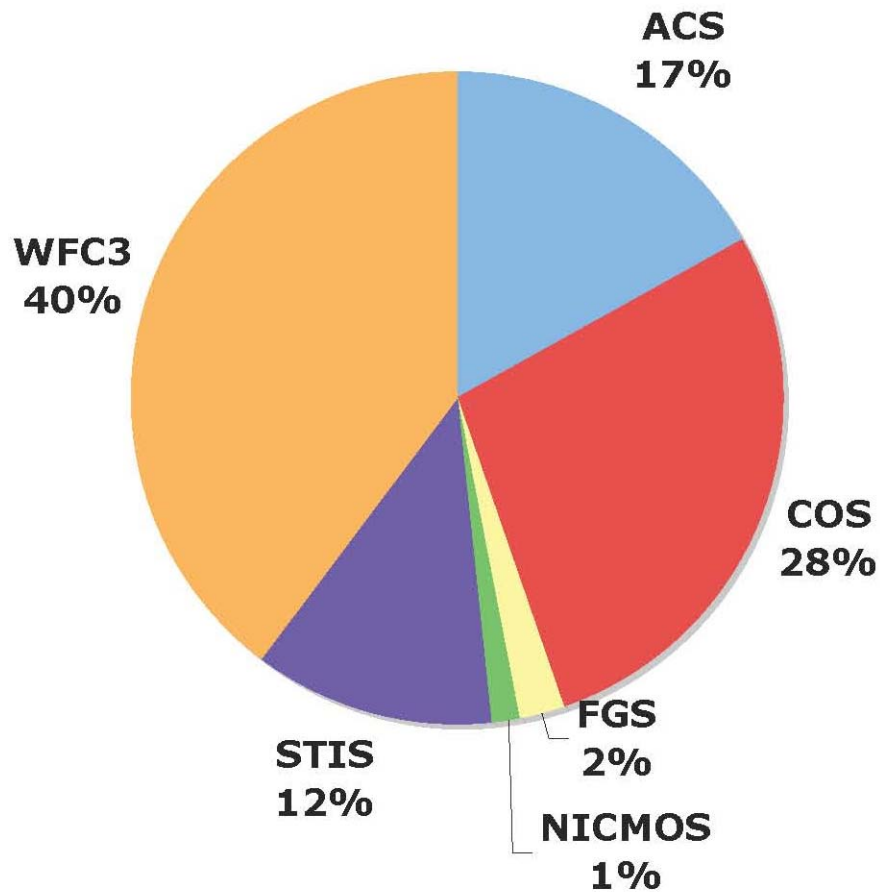
GO programs only,
including both
coordinated and pure
parallel programs

No GTO

No WFC3 ERS

No SNAPs

Cycle 17 Prime Programs



GO + GTO +
WFC3 ERS program

No parallels
No SNAPs

Snapshot Instrument Summary

| <u>Instrument</u> | <u>Configuration</u> | <u>Mode</u> | <u>Approved</u> | <u>Fraction</u> |
|--------------------------|-----------------------------|--------------------|------------------------|------------------------|
| ACS | HRC | Imaging | 148 | 9.8% |
| | WFC | Imaging | 518 | 34.4% |
| COS | FUV | Spectroscopy | 40 | 2.7% |
| NICMOS | NIC1 | Imaging | 45 | 3.0% |
| STIS | CCD | Spectroscopy | 50 | 3.3% |
| | NUV | Spectroscopy | 90 | 6.0% |
| WFC3 | IR | Imaging | 62 | 4.1% |
| | UVIS | Imaging | 552 | 36.7% |
| | | | 1505 | |

88 Coordinated Parallel orbits included

Cycle 17 schedule

Cycle 17 has a full schedule

- ◆ 3411 orbits for GO programs
- ◆ 304 orbits for GTO programs
- ◆ 214 orbits for WFC3 ERS program
- ◆ 190 orbits for long-term programs

Revised dates for SM4 do not imply a shortened Cycle 17

- ◆ Original plan, with October SM4, envisaged Cycle 17/18 transition on 31 December 2009
- ◆ April/May SM4 implies that Cycle 17 extends from mid-July '09 to August '10

3. Cycle 18 – likely changes

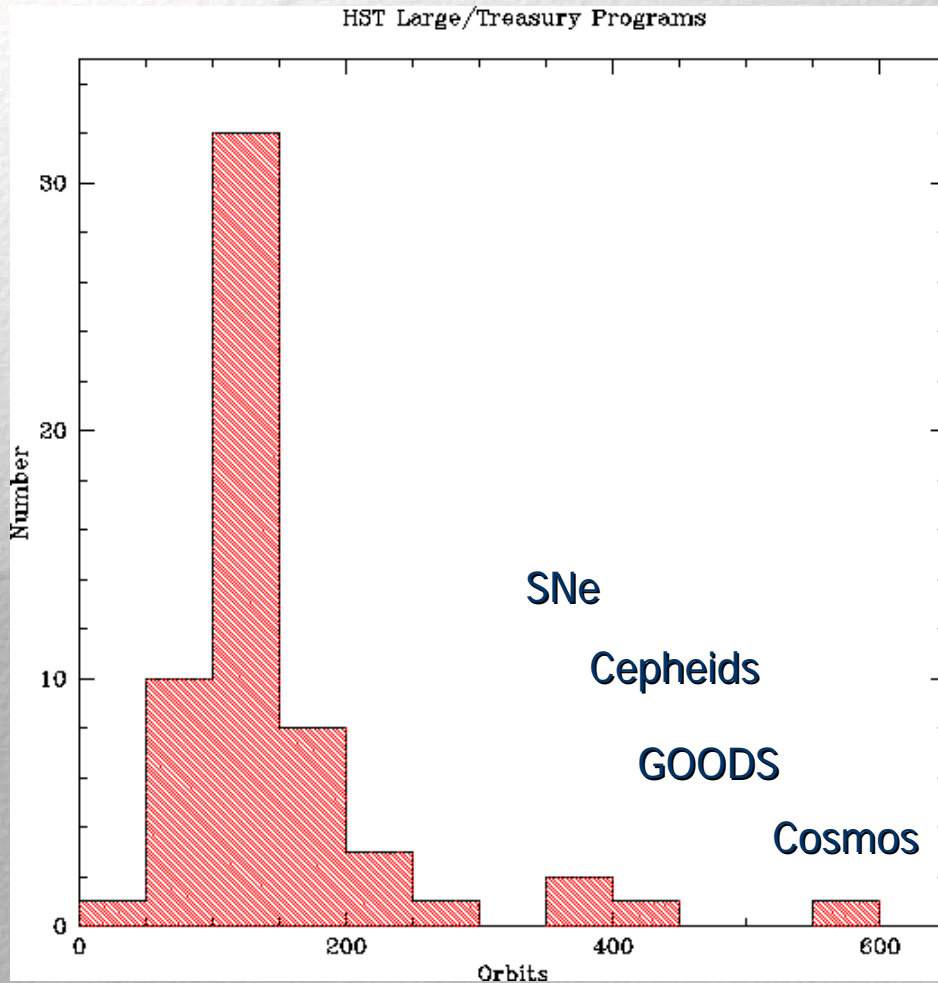
- Personnel change
 - ◆ Claus Leitherer is now Head of the Science Policies Group, and will be responsible for HST policy issues, Cycle 18 preparations and organising the TAC
- Eliminate Survey programs
- Revise Panel structure to balance portfolios
 - ◆ Add one extragalactic panel
 - ◆ 2 each for AGN/QSO, Cosmology/IGM, Galaxies/Unresolved SP
 - ◆ Adjust Galactic/planetary topics
 - ◆ 2 x Solar System/Exoplanet/Circumstellar disks
 - ◆ 2 x Cool stars & Star formation
 - ◆ 3 x Hot stars, ISM, Stellar populations
 - ◆ Aim for 7-8 panelists + Chair per panel
 - ◆ Maintain TAC+panel complement at ~120 astronomers
- Adjust the boundary between Large/Medium from 100 orbits to 75 orbits
 - ◆ Takes account of multi-cycle programs

Cycle 18 schedule

Cycle 18 TAC was originally to be held in mid-September 2009

- ◆ Dates need to slip with SM4
- For a April/May SM4, Phase II proposals will be needed by September 2010
 - ◆ Adopt the Cycle 17 schedule
 - ◆ Phase I deadline in March 2010
 - ◆ TAC meets at STSci/JHU in mid-May 2010
 - ◆ Phase II deadline in mid-July 2010

4. Multi-Cycle Treasury Programs



Even the TAC follows the 20% rule:

Past Large/Treasury programs

- ◆ Median size ~ 130 orbits
- ◆ 4 programs > 300 orbits

Multi-Cycle treasury programs provide an opportunity for science programs that require larger allocations.

MCT Program outline

1. **Delay Call for Programs until after SM4**
 - ◆ **Need to know instrument complement**
2. **Combine GO orbits and DD time**
 - ◆ **~500 orbits/cycle from Large/Treasury**
 - ◆ **~300 orbits/cycle from DD time**
3. **Notice of Intent from prospective PIs**
 - ◆ **Aid TAC selection**
 - ◆ **Invite PIs to preparatory workshop at STScI**
4. **Two-stage review process**
 - ◆ **Standard Phase I proposal**
 - ◆ **Panel review for downselect**
5. **Programs selected prior to Cycle 18 Phase I deadline**
 - ◆ **Allow opportunity for associated archival programs**

In principle, 1,400 to 1,600 orbits could be available for MCT Programs in Cycles 18 & 19

Revised Cycle 18/MCTP schedules

Cycle 18 key dates

- SM4 – mid-May 2009
- SMOV ends – July/August 2009
- TAC Selection starts – September 2009
- CP18 release – early December 2009
- Cycle 18 Phase I deadline – March 2010
- HST TAC meets – mid-May 2010
- Phase II deadline – July 2010
- Cycle 18 starts 1 August 2010

MCTP draft schedule

- MCTP NOI submission – June 2009
- TAC Selection starts – July 2009
- MCTP CP – August 2009
- MCTP Workshop – late-September 2009
- Phase I deadline – November 2009
- Circulate to reviewers – mid-November 09
- MCTP TAC meets – January 2010
- MCTP PI Presentations – February 2010
- MCTP Proposal selection – late Feb 2010
- MCTP AR Announcement – late Feb 2010
- MCTP AR proposals – with Cycle 18