

A detailed illustration of the Hubble Space Telescope in orbit above Earth. The telescope is shown from a three-quarter perspective, highlighting its cylindrical body, the large primary mirror at the front, and the two large rectangular solar panel arrays extending from the sides. The Earth's blue and white atmosphere is visible in the background, curving around the planet. The text 'NASA' and 'ESA' are visible on the side of the telescope's main structure.

**TAC - June 7, 2015**

Claus Leitherer

# **Cycle 23 Orientation**

<http://www.stsci.edu/hst/proposing/panel/CYCLE23Orientation.pdf>

# Phase I Schedule for Cycle 23

- **Jan 7** CP release
- **April 10** Phase I deadline
- **May 4** Download available for panelists
- **June 1** Preliminary grades
- **June 7 - 10** Panels meet
- **June 10 - 12** TAC meets
- **June 18** Director's Review
- **Early July** Notifications



# Summary Statistics

- 1115 Proposals in Cycle 23 (1135 in Cycle 22)
  - 803 NASA, 242 ESA, 70 Other Countries
- 891 (883) GO for 19,301 (19,990) orbits
  - 21 (16) Treasury for 2851 (2550) orbits
  - 30 (31) Large for 3138 (3737) orbits
  - 90 (99) Medium for 4349 (4661) orbits
- 42 (51) SNAPSHOT proposals for 4497 (5438) targets
- 182 (200) Archival proposals
- 2 (4) Pure Parallel programs for 720 (1050) orbits

# Review schedule

- Panels meet Monday morning → noon Wednesday
- Panels review broad science areas
- “Mirror” panels minimize conflicts
- Panels review
  - Regular (Small and Medium) GO proposals (1-74 orbits)
  - Snapshot proposals (<300 targets)
  - Regular Archive & Theory proposals
  - Calibration proposals
- Panelists advise panel chair on Large/Treasury proposals
  - Past Large/Treasury programs: <http://archive.stsci.edu/hst/tall.html>
- TAC meets Wednesday noon → 5pm Friday
- TAC reviews
  - Large GO ( $\geq 75$  orbits) & Large Snapshot proposals
  - Treasury GO proposals
  - AR Legacy Proposals



# Types of Proposals

Standard proposals	
GO	Small (1-34 orbits); Medium (35-74); Large ( $\geq 75$ )
SNAP	Targets; no guarantees; <45 mins; 2-year viability
Special categories	
Long-term	allocate time in C24, C25 if justified <b>scientifically</b>
ToO	ultra-fast (<2 d) ToO: 1 activation allowed; 2-21 d ToOs: 8 activations; >21 d: no limit
CVZ	no penalty to observer if executed as non-CVZ
Calibrations	Calibrate specific modes of HST observation
HST-Chandra	Up to 400 ksec, 60 ksec time constrained
HST-Spitzer	Up to 60 hours, 20 hours maximum per proposal
HST-XMM	Up to 150 ksec
HST-NOAO	Up to 15-20 nights available on most telescopes
HST-NRAO	Up to 3% of the available time (North America)

# UV Initiative

- A UV initiative is again supported to ensure the unique UV capabilities of HST are fully utilized while they still exist.
- The initiative uses **orbit allocation targets** to increase the share of primary GO observing time dedicated to UV observations.
- There is also a category of **UV archival proposals**, aimed at producing UV-specific high-level data products and tools for the Hubble archive, which will enable broader use of those datasets by the community.



# UV Initiative (cont.)

- Each **panel** should aim to devote **at least 40%** of its orbit allocation to UV-specific science.
- The **TAC** should aim to devote **at least 50%** of its orbit allocation to UV-specific science.
- **These allocations are targets, not quotas.** UV-specific proposals recommended for acceptance must meet the usual requirement of high scientific quality set for all successful Hubble proposals.
- Proposals in this category are flagged as “UV Initiative” in APT.
- We received 357 GO’s for 7705 orbits and 25 AR’s.

# Frontier Fields

- STScI is observing 6 galaxy clusters + parallel fields in the Frontier Fields project
  - STScI is producing drizzled, combined images for all of the clusters
  - STScI is **not** producing any object catalogues or any additional data products
- STScI has commissioned updated lensing models for the Year 1 clusters (Abell 2744, MACSJ0416-2403)
  - STScI has **not** commissioned lensing models for the other 4 clusters
- If you have questions about whether a particular proposal duplicates current or past effort, **please ask a Science Policy Group member for advice.**



# **Policy Issues**

# Conflict of Interest

Our goal is informed, unbiased discussion of each proposal

- Voting committee members should have neither direct nor indirect interest vested in the outcome of the review
- The subset of the review committee discussing the proposal should have sufficient knowledge to assess the science

We identify two types of conflict:

## Major conflicts

- Personal involvement (PI or Co-I)
- Recent former advisor/student of PI or Co-I
- Involvement in closely competing proposal (same targets or science)
- Close personal ties (family, etc.) with PI or Co-I

## Minor conflicts

- Institutional conflict, i.e. same department/institution as PI or Co-I
- Close collaborator with PI/Co-I on the proposal
- Any other reason for discomfort



# Close collaborators

## Who qualifies as a close collaborator?

- Active collaborator on a current research program (including Cycle 23 HST proposals)
- Active co-author on 3 or more papers in last 3 years
  - i.e. more than a participant in a large project (e.g. SDSS)
- Active collaborator on several recent programs
  - At least 3 projects completed in last 3 years

**Key question:** would my personal research benefit (or would there be an *appearance* of benefit) if this proposal is accepted?

If the answer is yes, then there is a conflict

# Conflict of interest

## Procedures

- Panelists sign Conflicts of Interest Disclosure form and return to PSS
- Chair (aided by PSS) is responsible for checking conflicts
- Note conflicts before discussing each proposal
- Minor conflicts (Institutional, Co-I collaborator):
  - Conflicted panelist(s) can choose to participate in the proposal discussion
- Major conflicts (all others):
  - Conflicted panelist(s) leaves the room during proposal discussion and during the vote

**In all cases, conflicted panelists do not vote**

**If in doubt, ask SMO/SPG for clarification.**



# Duplication policy

- NASA policy protects GTO programs and current GO programs against duplication by later-cycle GO programs; duplicate targets will be disallowed or embargoed
- Duplications are defined as *same target or field, same or similar instrument, similar mode, similar spectral range, similar exposure time. Consult SPG staff if in doubt.*
- The PI is responsible for noting duplications. Panels should approve duplications explicitly (in comments) or observations can be disallowed.
- Same-cycle duplications: avoid duplicate targets within and between panels. No “forced collaborations” allowed.
- Cross-panel duplications flagged by STScI staff and resolved by Chairs of “mirror” panels  
(@Breakfast meeting, 2<sup>nd</sup>/3<sup>rd</sup> days).

STScI instrument scientists will check accepted proposals for duplications

# General guidance for Cycle 23

- Panel members should assume that all instruments will be performing nominally in Cycle 23
- Panel members should not modify proposals unless there is a very strong scientific justification
- Panel members should *not* reject proposals based on technical considerations
  - All proposals are reviewed by STScI after Phase I. If technical questions arise during the panel review, please summon a relevant expert.
- Panel members should *not* take scheduling considerations into account in grading proposals.

**Concentrate on recommending the best science..**

**...but recognize that it may not be possible to schedule some highly ranked programs**



# Panel Procedures

# Panel Distribution in Cycle 23

- 14 panels with these science categories (no change from C22):
  - Planets 1/2: local and distant solar systems, exoplanets, debris disks
  - Stars 1/2/3: cool+hot stars, late stages, low-mass stars, star formation, local ISM
  - StPops 1/2: Galactic structure, resolved stellar populations in galaxies
  - Galaxies 1/2/3: stellar content of galaxies, ISM in galaxies, dynamics, galaxy evolution
  - AGN/IGM 1/2: AGN, QSO, IGM, QSO absorption lines
  - COS 1/2: cosmology, lensing, galaxy clusters, surveys



# Panel Review: Logistics

- Panel Chair runs meeting
  - Select a co-Chair to run the meeting if Chair has to leave for conflict and to assist with review of comments on day 3
- PSS maintains database, produces ranked lists, answer questions or summon STScI staff experts, as needed.
- Technical and Policy support is available from STScI staff:
  - SPG (policy)
  - INS (instrument expertise)
  - OED (scheduling and implementation)
- Contact list by phone in each meeting room

# Proposals for triage

Lowest 40% of panel/TAC proposals are marked for triage based on preliminary grades from panelists

Why do we do this?

- Time constraints
  - 80 proposals@15 mins = 1200 mins = 20 hours
  - 48 proposals@15 mins = 720 mins = 12 hours
- Optimization & efficiency
  - Spend time discussing the best proposals
  - Avoid discussing proposals that are very unlikely to be approved
- Fairness
  - Triaged proposals can be resurrected by non-conflicted panelists but...
  - Previously triaged proposals have rarely been approved



# **Review Criteria** *(posted in each meeting room)*

- The scientific merit of the program and its potential contribution to the advancement of scientific knowledge
- The program's importance to astronomy in general
- The extent to which the proposal demonstrates sufficient understanding to assure a thorough analysis of the data
- A demonstration that the unique capabilities of HST are required to achieve the science goals of the program
- A demonstration of timely publication of the results of any previous HST programs
- Evidence for a coordinated effort to maximize the scientific return.
- **Reviewers should ensure that the comments address some or all of these primary criteria**

# Panel Review: overview

- Each panel has a specific allocation of **N orbits for Small proposals**
- **Medium** proposals have a **separate orbit allocation**
- Snapshot & Archive/Theory allocations are drawn from a central pool
- Calibration proposals are drawn from a separate pool of orbits
- Panelists review and grade the proposals assigned to their panel, and produce a **ranked list of Small and Medium programs** that encompasses at least  $2 \times N$  orbits
- All proposals receive (polite) comments
- Panelists comment on a subset of the TAC proposals



# Detailed Procedures

1. Panelists with major conflicts of interest leave the room. STScI staff leave if PI or Co-I.
2. The Chair manages the process, may participate in the discussion but does not vote.
3. Primary reviewer summarizes and reviews proposal. Secondary reviewer adds supplementary comments.
4. Discussion among panelists.
5. Specify resource allocation: primary orbits, coordinated or pure parallel, proprietary period, targets (SNAP) or budget size (AR).
6. Vote on proposal via Web-Reviewer System. **Those with minor conflicts may participate in discussion but do not vote. EVERYONE ELSE IN THE ROOM (EXCEPT FOR THE CHAIR) MUST VOTE – NO ABSTENTIONS**
7. Primary Reviewer is responsible for collating all relevant comments, and recording those comments via Web-Reviewer System.

# Medium Proposals

- Medium proposals were reviewed as a 2-stage process in cycles 21 & 22
  - Initial ranking by the panels with regular proposals
  - Highly ranked proposals were reviewed by the TAC
- This procedure has proven to have some disadvantages
  - Prior to the meeting, TAC members only see medium proposals assigned to their panels
  - There is insufficient time during the meeting for TAC members to familiarize themselves with highly-ranked proposals from other panels
- We have revised the review procedure to place the decision with the panels
  - The panelists have the appropriate specialist expertise



# Medium Proposals - process

- Medium proposals will be reviewed by the panels and ranked together scientifically with the Small proposals
- Medium proposals are drawn from a separate pool of orbits, i.e., no charge to panels.
- Each mirror panel has a formal medium proposal allocation based on proposal pressure

Mirror panels	Proposal allocation
AGN & IGM	2
Cosmology	3
Galaxies	2
Planets	2
Stars	2
Stellar Populations	2
	13

# Medium Proposals - process

- Highly-ranked medium proposals (typically those above the panel cut-off line) are identified for further discussion. Given the mirror-panel allocations, no more than about 1/3<sup>rd</sup> of the Medium proposals in the panel should be put forward.
- The candidate Medium proposals will form a combined master list, which will be circulated to the mirror panels on Tuesday evening.
- On Wednesday morning each panel will discuss and grade the candidate Medium proposals put forward by the other mirror panels. Panelists who are PIs or co-Is on those proposals may not participate in these discussions. Unconflicted panelists should grade those proposals using the same scale they used for their previous deliberations.
- The ranked master lists from each set of mirror panels will be merged and an averaged list will be created.
- The panels can adjust their own rankings if they want to support any Medium proposals that did not make the cut.
- The TAC will get a report of the accepted Medium proposals before it ranks the Large & Treasury programs.
- The TAC may consider whether to add or subtract medium proposals when it reviews the overall program balance.



# Medium Proposals – a worked example

- AGN/IGM panels I and II complete their review of Small and Medium proposals by Tuesday evening
  - AGN/IGM panel I grades medium proposals 2001 & 2195 above the cutoff, with grades 1.32 & 1.75
  - AGN/IGM panel II grades medium proposals 2704 & 2456 above the cutoff with grades 1.42 and 1.95
- AGN/IGM panels I & II receive copies of the medium proposals from the mirror panel
  - Proposals 2704 & 2456 to panel AGN/IGM I
  - Proposals 2001 & 2195 to panel AGN/IGM II
- Conflicts:
  - Two panelists on AGM/IGM I are co-Is on 2704, one panelist is a co-I on 2456
  - Two panelists on AGM/IGM II are co-Is on 2001, one panelists is a co-I on 2195
  - Those panelists are conflicted and do not participate in the discussions or vote

# Medium Proposals – a worked example

- Wednesday morning, unconflicted AGN/IGM panelists review and grade the mirror panel proposals
  - Discuss the proposals one at a time and use the same scale
  - AGN/IGM panel I grades proposals 2704 & 2456 at 1.45 & 2.15
  - AGN/IGM panel II grades proposals 2001 & 2195 at 1.72 and 1.80

Proposal	Panel I grade	Panel I rank	Panel II grade	Panel II rank	Overall rank
2001	1.32	1	1.72	2	1.5
2195	1.75	3	1.80	3	3
2456	2.15	4	1.95	4	4
2704	1.45	2	1.42	1	1.5

- Averaging the rankings, proposals 2001 and 2704 are the highest ranked mediums from AGN/IGM
- Panel I may choose to support #2195 from the panel orbit allocation
- The TAC might choose to promote #2195 or #2704 based on the overall program<sup>26</sup> balance



# TAC proposals & cross-panel overlap

Panelists are asked to comment on a subset of the TAC proposals

- Proposals are assigned to appropriate sets of mirror panels considering topic and proposal load
- This allows more scope for specialist commentary, informing the chairs and aiding discussion in the TAC meeting
- Consider overlap between TAC and panel programs and consider the ranking relative to the panel proposals
- Same rules apply for conflict of interest as with panel proposals
- Panelists are *not required* to vote on TAC proposals, but may choose to do so, at the panel chair's discretion, as a guide to relative rankings

Cross-panel issues

- Mirror panels can get similar proposals due to in-panel conflicts
- After initial ranking, Chairs meet to identify, discuss and, if necessary, resolve overlapping proposals
- Chairs discuss and resolve Medium proposals across mirror panels
- If additional expertise is necessary, Chairs can ask for input from (subsets) of other mirror panels

# Possible panel schedule

- Panels have ~70-90 proposals to discuss
- Discuss triage *process* at the outset
  - Flag proposals that could be resurrected
- Discuss and grade non-triaged proposals (~14 hrs)
- Discuss and grade any resurrected triage proposals (~1 hr)
  - Some panels prefer to group proposals by subject and intersperse the resurrected proposals
- Finalize ranking of Small, Medium, Snapshot, and Archival proposals and define “do not award” lower limit
  - Panels should consider the scientific balance
  - Panels re-rank proposals without changing the grades
- Discuss TAC proposals
- Write final report and review comments
- Total ~ 20 hours

~5 hours



# Proposal Comments

- Comments are required for all proposals (including triaged proposals); these are entered via the Web-Reviewer tool.
- Primary reviewer is responsible for writing the comments; add any comments arising from the discussion to produce a final set of comments for each proposal.
- Don't make up reasons for rejection – if a proposal was good, but just didn't quite make the cut, then say so. Be particularly careful near the allocation boundaries, and remember that highly ranked proposals may not be schedulable.
- Use *Mandatory* comments only to exclude targets [e.g. duplications] or to reduce observing time allocation.
- All other comments are *advisory*.

# **Grading the proposals: some suggestions**



# Grading process & panel responsibilities

- Keep all proposal types (GO, SNAP, AR) together and organize the discussion along science themes
- Maintain one panel score sheet with all proposals included. This ensures that the grading is done in a uniform way
- Produce a final ranked list that combines GO (Small+Medium), SNAP, and AR proposals. Use the same grading scale for all three types:
  - Rank at least twice as many proposals as there are above cut-off line
  - Set a “do not award” lower limit
  - No need to rank carefully those proposals that clearly will not get accepted.
- Panel Chair [and Co-Chair] write a short summary, documenting the primary decisions of the panel, the reasoning that went into those decisions and the manner in which contentious issues were resolved .
  - The summary should capture the logic and rationale of the panel’s conclusions in sufficient detail so that it can be recalled and understood later by the STSci Director and/or the TAC

# Confidentiality

- Remember that you should not discuss the outcome of the panel evaluations, now or in the future.
- Many panel members (and STScI and JHU staff) are also proposers; don't discuss results during breaks.
- If the panel wants to send a particularly important message to a proposer, use the comments.



# Orbit allocations

# Cycle 23 Duration

- Cycle 23 will start on October 1, 2015 and end on September 30, 2016
- → Nominal 12 month cycle.



# Cycle 23 Allocations

- 3400 orbits for GO (Large + Medium + Small)
  - 1,800 for Small proposals (panels)
  - 600 for Medium proposals reviewed by panels
  - 1000 for Large/Treasury programs (TAC)
  - **TAC may choose to re-balance Small/Medium/Large split**
- Orbit oversubscription is ~5:1, 7:1 and 6:1 for Small, Medium, and TAC, respectively
- SNAP: ~ 1000 targets available across panels
  - (~1:5 of targets proposed)
- AR: no budget required in Phase 1

# Orbit Allocation

*based on a combination of orbit and proposal pressure*

Panel	Small GO props	Small GO orbits	Medium GO props	Allocation
PLAN1	58	556	8	124
PLAN2	55	605	8	125
STARS1	77	608	4	152
STARS2	75	769	5	166
STARS3	73	821	3	168
STPOP1	34	490	12	89
STPOP2	48	607	5	117
GAL1	48	722	3	129
GAL2	45	588	6	112
GAL3	43	641	5	115
AGN/IGM1	65	908	7	167
AGN/IGM2	69	1052	8	186
COS1	32	378	9	76
COS2	28	416	7	74
<b>TAC</b>	<b>51</b>	<b>5989</b>		<b>1800</b>



# Questions????

- Please refer ALL policy questions to SPG staff!!!

# After the TAC

- As usual, we welcome feedback on the TAC process
  - Can we improve it
  - What were the main shortcomings
  - Can we make it “faster”, “cheaper”, ”better”?
- We will send email to all TAC and Panel members requesting your views of the process



# THANK YOU!!!!

- The TAC review is supported by 144 panelists
- 27 panelists from ESA member states
- ESA provides full funding for participation of ESA panelists
- Continuing partnership with ESA

# Personnel & Logistics



# Key STScI Staff

- Director's Office
  - **Kathy Flanagan** – Interim Director
  - **Ken Sembach** – Deputy Director
- Science Mission Office.
  - **Iain Neill Reid** – SMO Head
  - **Claus Leitherer** – Head of Science Policies Group
  - **Andy Fruchter, Janice Lee, Jennifer Lotz, Amaya Moro-Martin, Lou Strolger** – SPG Astronomers
  - **Brett Blacker** – SPG Technical Manager
  - **Sherita Hanna** – SPG Administrative Staff
  - **Martha Devaud** – SPG Administrative Staff
  - **Loretta Willers** – ESA Administrative Staff
- Hubble Mission Office
  - **Helmut Jenkner** – Acting HST Mission Office Head
  - **John MacKenty, Rachel Osten, Brad Whitmore** – Mission Office Scientists
- Operations & Engineering Division
  - **Denise Taylor** – Operation Planning Branch

# Observers

- **Antonella Nota** – ESA
- **Ken Carpenter** – NASA
- **Mike Garcia** - NASA
- **Kevin Harnett** - NASA
- **Martin Still** – NASA
- **Jennifer Wiseman** – NASA



# Creating more proposal opportunities

- A “rolling TAC” – a mechanism for allowing proposers to submit in-cycle proposals for timely, but not time-critical, programs
  - Analogous to Gemini “Fast response” program
  - Discussed originally with the STUC in May 2014
- General parameters
  - Orbits drawn from the GO pool
    - Limited total allocation for the cycle (~200 orbits)
  - Specific criteria for compliance:
    - Proposals could not have been submitted to the standard call
    - Individual proposals limited to less than 5 orbits
      - Generally scheduled at a single epoch
    - Proposals should be for “static” sources
      - Time-dependent phenomena are reserved for DD proposals
    - Observations should have minimal constraints to enable easy scheduling
    - Programs may request a limited proprietary period
      - Up to 2 months

# Rapid Response proposals

- We will run a pilot implementation of this program in Cycle 23
  - Call to be issued in June 2015
    - Proposals to be submitted as standard GO *via* APT
  - Proposals will be assessed for compliance by STScI staff
    - Non-compliant proposals will not be sent for review
  - Compliant proposals will be distributed for review to recent TAC members in October 2015 & January/February 2016.
  - Reviewers will complete a standard review form. Criteria will include:
    - Science is timely & justifies execution prior to the standard cycle
    - Science is comparable in quality with recent TAC-approved proposals
  - Successful proposals will be scheduled as rapidly as possible once Phase IIs are submitted
    - Those proposals will be eligible for funding, budget-permitting
  - Unsuccessful proposals may be submitted in response to the Call for Proposals for the next cycle