

A detailed 3D rendering of the Hubble Space Telescope in orbit above Earth. The telescope is shown from a perspective that highlights its long 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. The text 'USA' and the ESA logo are visible on the side of the telescope's main body.

TAC – June 11, 2017

Claus Leitherer

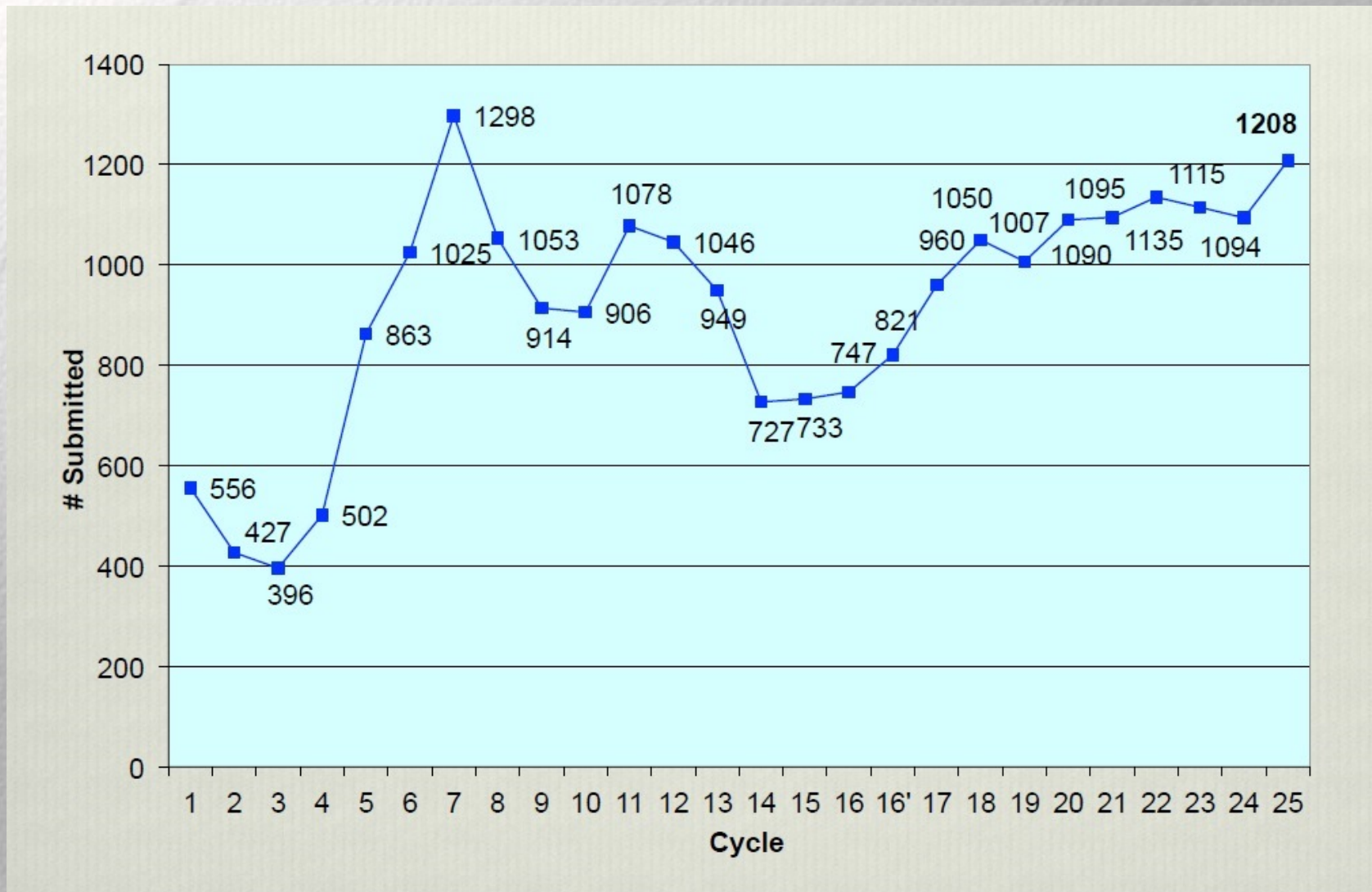
Cycle 25 Orientation

<http://www.stsci.edu/hst/proposing/panel/CYCLE25Orientation.pdf>

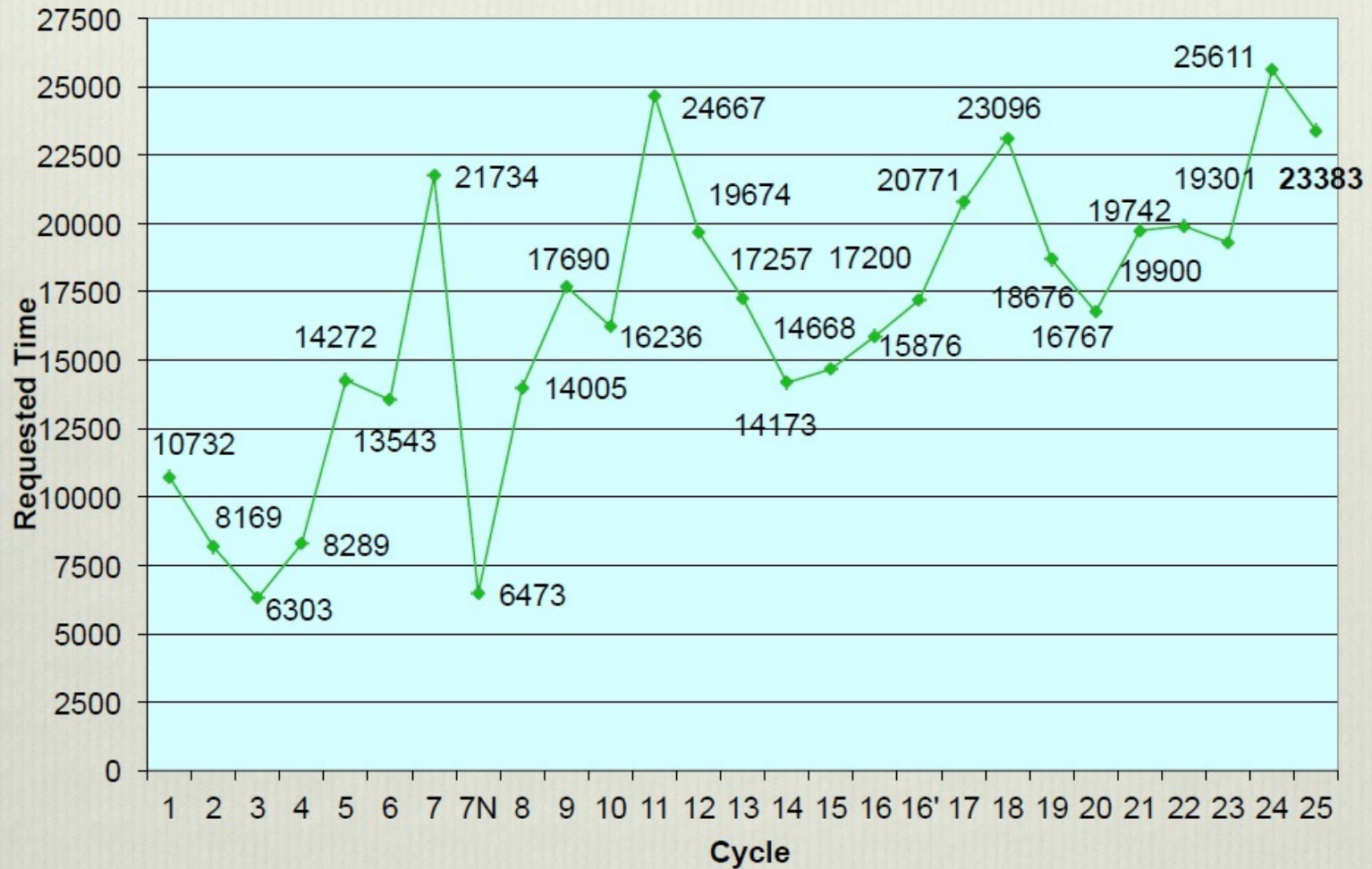
Phase I Schedule for Cycle 25

- **Jan 13** CP release
- **April 7** Phase I deadline
- **April 29** Download available for panelists
- **May 31** Preliminary grades
- **June 12 – 14** Panels meet
- **June 14 - 16** TAC meets
- **June 23** Director's Review
- **Early July** Notifications

Proposals by Cycle



Orbits by Cycle



Summary Statistics

- 1208 Proposals in Cycle 25 (1094 in Cycle 24)
 - 881 NASA, 273 ESA, 54 Other Countries
- 974 (891) GO for 23,383 (25,611) orbits
 - 23 (28) Treasury for 4281 (9073) orbits
 - 40 (30) Large for 4333 (3090) orbits
 - 87 (93) Medium for 4240 (4493) orbits
- 52 (36) SNAPSHOT proposals for 5316 (3718) targets
- 182 (167) Archival proposals
- 3 (2) Pure Parallel programs for 1525 (1080) orbits

Review schedule

- Panels meet Monday morning → noon Wednesday
- Panels review broad science areas
- “Mirror” panels minimize conflicts (except for Solar System)
- Panels review
 - Regular (Small and Medium) GO proposals (1-74 orbits)
 - Snapshot proposals (<250 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 (≥ 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 (≥ 75)
SNAP	Targets; no guarantees; <45 mins; 2-year viability
Special categories	
Long-term	allocate time in C25 - C27 if justified <u>scientifically</u>
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
Reg. HST-Chandra	< 75 HST, up to 400 ksec Chandra, < 15% time-constrained
Large HST-Chandra	≥ 75 HST, up to 600 ksec Chandra, < 15% time-constrained
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 consider devoting **at least 40%** of its orbit allocation to UV-specific science.
- The **TAC** should consider devoting **at least 50%** of its orbit allocation to UV-specific science.
- **These percentages are recommendations, 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 397 GO’s for 9539 orbits and 44 AR’s.

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 25 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

- To maximize observing efficiency, later-cycle GO programs may not duplicate observations in current or past GO programs; duplicate targets will be disallowed or embargoed unless justified scientifically
- Duplications are defined as *same target or field, same instrument and 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, 2nd/3rd days).

STScI instrument scientists will check accepted proposals for duplications

General guidance for Cycle 25

- Panel members should assume that all instruments will be performing nominally in Cycle 25
- Panel members should not (yet) make comparisons with JWST capabilities
- 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 25

- 16 panels with these science categories:
 - Solar System: all bodies in our solar system
 - Planets and Planet Formation 1/2: exoplanets, planet formation, debris disks
 - Stellar Physics 1/2/3: cool+hot stars, late stages, low-mass stars, star formation, local ISM
 - Stellar Populations 1/2: Galactic structure, resolved stellar populations in galaxies
 - Galaxies 1/2/3/4: stellar content of galaxies, ISM in galaxies, dynamics, galaxy evolution, circumgalactic medium, IGM, QSO absorption lines
 - Black Holes and Hosts 1/2: AGN, QSO, SMBH, jets, galaxy/BH co-evolution
 - Cosmology 1/2: cosmology, lensing, galaxy clusters, surveys, deep fields

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
- 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
- N is defined by the orbits of **Small** proposals
- 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 are reviewed solely in their assigned panel.
- Each panel ranks the Medium proposals together with all other proposals.
- The top-ranked Medium proposal may be recommended for acceptance if it is above the $1 \times N$ line. **Panels should not artificially move a Medium proposal above the line.**
- There is no orbit charge to the panel for the top-ranked medium proposal.
- Additional Medium proposals may be recommended by using the orbit pool of the panel.
- The Chairs of mirror panels will discuss the ranking in their panels during breakfast and will provide a summary at the beginning of the TAC meeting.

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 may be assigned similar proposals due to in-panel conflicts
- After initial ranking, Chairs meet to identify, discuss and, if necessary, resolve overlapping Small and Medium proposals
- If additional expertise is necessary, Chairs can ask for input from (subsets) of other mirror panels or at-large members

Possible panel schedule

- Panels have ~75 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/Small+Medium, 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 25 Duration

- Cycle 25 will start on October 1, 2017 and end on September 30, 2018
- → Nominal 12 month cycle.
- STScI will pre-allocate 1200 orbits for Small proposals in Cycle 26 during the Cycle 25 TAC to reduce some anticipated pressure in the time allocation of the first cycle of JWST.

Cycle 25 Allocations

- 4750 orbits for GO (Large + Medium + Small)
 - 3000 for Small proposals (panels); C25 + C26 pre-allocation
 - 650 for Medium proposals (panels)
 - 1100 for Large/Treasury programs (TAC)
- TAC may recommend adjustments to the Small/Medium/Large split
- Orbit oversubscription is $\sim 3.5:1$, $6.5:1$ and $7.8:1$ for Small, Medium, and TAC, respectively.
- SNAP: ~ 1000 targets available across panels
 - ($\sim 1:5$ 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
Sol. System	38	294	1	111
Planets 1	62	825	6	231
Planets 2	55	707	5	201
Stars 1	67	662	7	216
Stars 2	71	679	7	226
Stars 3	74	703	7	235
St. Pop. 1	48	701	5	187
St. Pop. 2	51	707	5	194
Galaxies 1	44	690	5	179
Galaxies 2	46	672	6	180
Galaxies 3	45	741	5	188
Galaxies 4	49	793	5	202
Blackholes1	52	642	6	186
Blackholes2	57	731	5	208
Cosmology1	31	455	6	121
Cosmology2	33	523	6	135
TAC	62	8612		1100

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 162 panelists
- 26 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
 - **Ken Sembach** – Director
 - **Nancy Levenson** – Deputy Director
- Science Mission Office.
 - **Neill Reid** – SMO Head
 - **Alessandra Aloisi** – SMO Deputy Head
 - **Claus Leitherer** – Head of Science Policies Group
 - **Andy Fruchter, Molly Peeples, Brian Williams** – SPG Astronomers
 - **Brett Blacker** – SPG Technical Manager
 - **Alisa Meizlish** – SMO Administrative Lead
 - **Martha Devaud** – SPG Administrative Staff
 - **Sherita Hanna** – SPG Administrative Staff
 - **Flory Hill** – SPG Administrative Staff
 - **Karen Sealover** – ESA Administrative Staff
- Hubble Mission Office
 - **Tom Brown** – HST Mission Office Head
 - **John MacKenty, Rachel Osten, Brad Whitmore** – Mission Office Scientists
- Operations & Engineering Division
 - **Denise Taylor** – Operation Planning Branch

Observers

- **Ken Carpenter** – NASA
- **Pierre Ferruit** – ESA
- **Mike Garcia** – NASA
- **Kevin Hartnett** – NASA
- **Jim Jeletic** – NASA
- **Stefanie Johnson** - U. Colorado
- **Antonella Nota** – ESA
- **Osterbrock Fellows** – UC Santa Cruz