

A photograph of the Hubble Space Telescope in orbit above Earth. The telescope's large solar panel arrays are visible on the left, and the main body of the telescope is on the right. The Earth's blue and white clouds are in the background. The sun is visible as a bright light source, creating a lens flare effect.

TAC – May 11, 2020

Claus Leitherer

# Cycle 28 Orientation

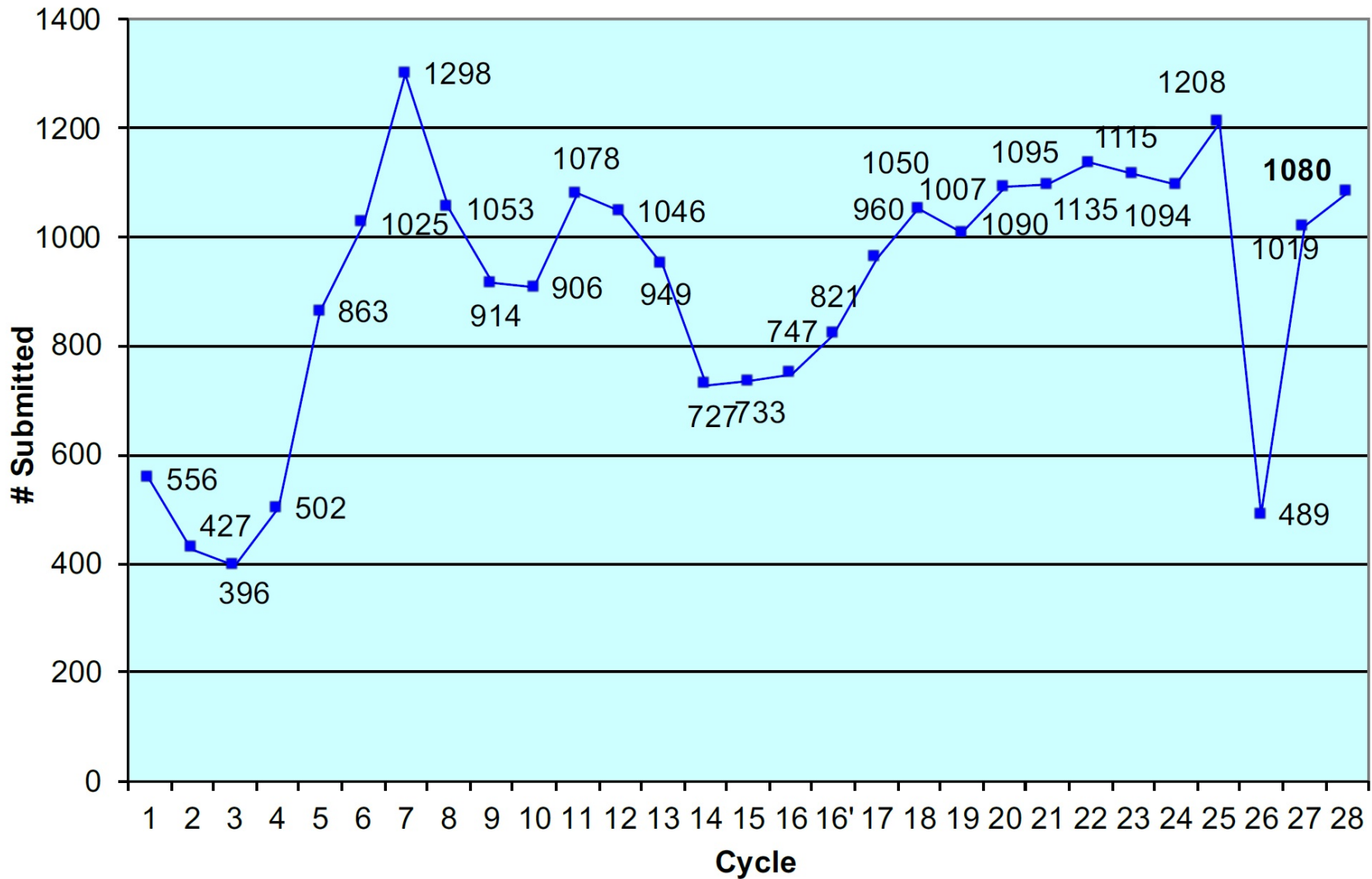
5/11/2020

HST TAC Process

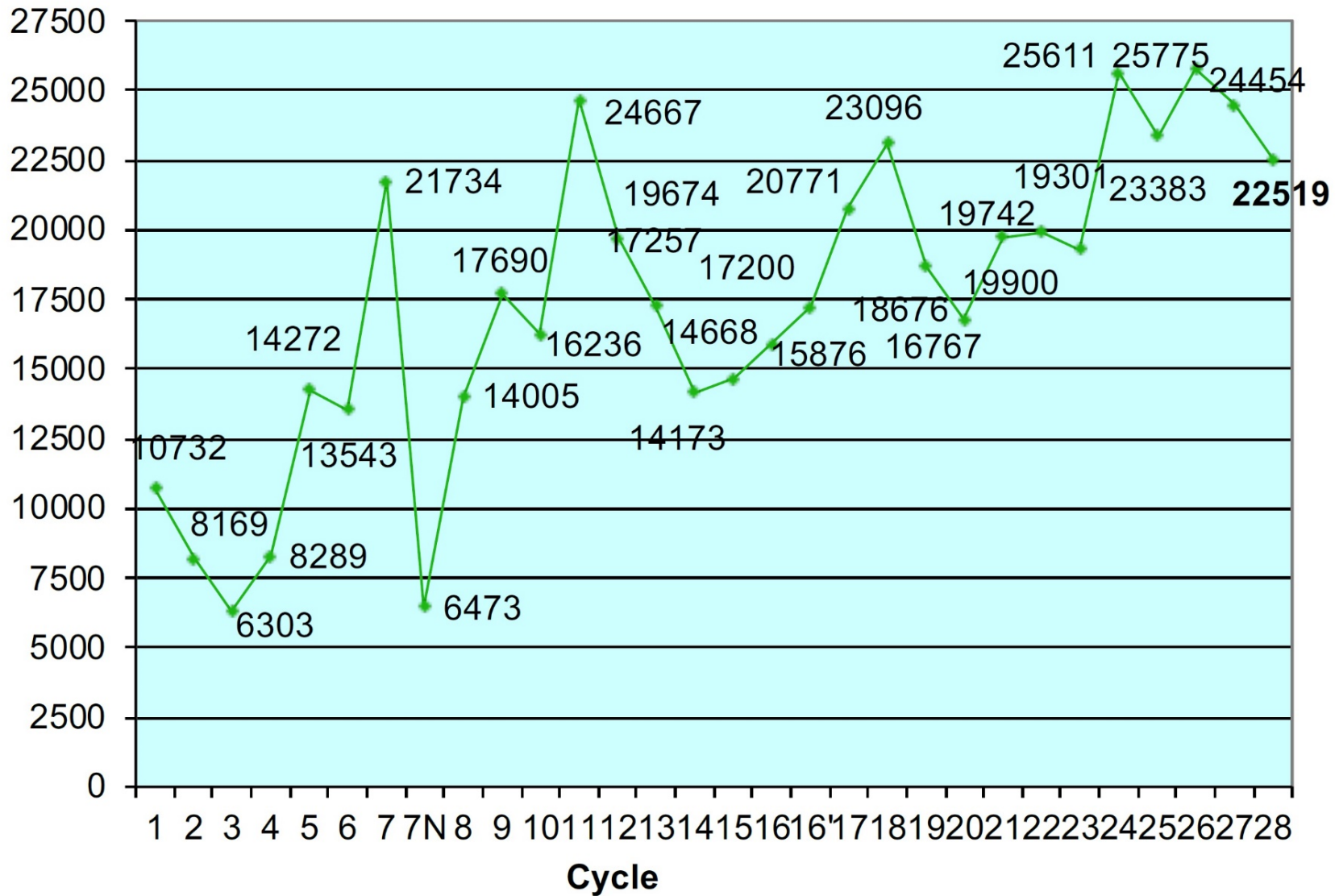
# Phase I Schedule for Cycle 28

- **December 2** CP release
- **March 6** Phase I deadline
- **March 30** Download available for panelists
- **April 29** Preliminary grades due
- **May 11 - 13** C28 virtual panels meet
- **May 13 - 15** C28 virtual TAC meets
- **May 21** Director's Review
- **End of May** Notifications

# Proposals by Cycle



# Orbits by Cycle



# Summary Statistics

- 1080 Proposals in Cycle 28 (1019 in Cycle 27)
  - 823 NASA, 213 ESA, 44 Other Countries
- 865 (838) GO for 22,519 (24,454) orbits
  - 22 (26) Treasury for 2886 (3428) orbits
  - 39 (54) Large for 4033 (5147) orbits
  - 130 (167) Medium for 6259 (8025) orbits
- 41 (32) SNAPSHOT proposals for 6160 (3622) targets
- 174 (172) Archival proposals
- 8 (9) Pure Parallel programs for 2195 (2146) orbits

# Revised TAC Process in Cycle 28 (1)

- Hybrid approach: dividing proposals between external review and on-site discussion.
- **External panelists** provide the assessment and grading of a subset of Small GO proposals (1 – 15 orbits) including Snapshot and Archival proposals.
  - **These proposals are ranked using the grades of the external panelists.**
- **Virtual panels** review the remaining Small GO, Medium, Archival Legacy, Large and Treasury proposals. Group panelists interact virtually by video-conference.
  - **These proposals are ranked after the discussion and grading in the group panels.**
- Exception – all Solar System proposals will be reviewed by the virtual group panel (due to the small proposal pool)
- **You are a virtual panelist.**

# Revised Process (2)

Proposals reviewed by external panelists:

- Proposals are categorized by science topic and sent to seven panels which host external panelists who are experts on this topic.
  - Reviewers grade on an absolute system (excellent → poor)
  - Grades are collected, averaged and ranked list compiled for that topic
  - Orbit allocation by topic based on proposal/orbit pressure
- The highest ranked proposals are marked as recommended for acceptance
  - “Recommended” proposals made available to panel chairs prior to the virtual panel meetings
  - The panel chairs will use this information to monitor the programmatic balance of the recommended list of proposals reviewed by individual and group panelists.

# Revised Process (3)

## Virtual panels (you!):

- There are eight virtual panels, with 9 members, including Chair and Vice-Chair. The panelists participate via video-conference.
- Each panel is allocated a specific number of slots for Medium proposals and an orbit allocation for Small proposals based on the proportional proposal/orbit pressure.
- After completing their review, virtual panels can cross-reference against the proposals recommended by the external panelists to check for duplication/science balance
  - Panel chairs/STScI staff have forewarning on potential conflicts
- The virtual panel Chairs and Vice-Chairs, together with the TAC Chair and three At-Large members, constitute the super-TAC that reviews Large/Treasury/Legacy proposals.
- The super-TAC meets by video-conference as well.



# Review schedule

- Virtual panels meet Monday through Wednesday by video-conference.
- Eight panels review broad science areas.
- Virtual panels review
  - Small GO proposals with 16 – 34 orbits (1 – 34 orbits for the Solar System panel)
  - Medium GO proposals with 35 – 74 orbits
- Panelists advise panel chair on Large/Treasury/AR Legacy proposals
  - Past Large/Treasury programs: <http://archive.stsci.edu/hst/tall.html>
- TAC meets virtually Wednesday until Friday, with a possible additional session on Monday, May 18.
- TAC reviews
  - Large GO ( $\geq 75$  orbits) & Large Snapshot proposals
  - Treasury GO proposals
  - AR Legacy Proposals

# Policy Issues

# Conflict of Interest

Our goal is informed, unbiased discussion of each proposal

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

Anonymizing proposal simplifies conflicts

- We only consider personal conflicts
  - Direct involvement in the proposal
  - Involvement of close collaborators/competitors/family members based on names supplied by individual panelists
- Institutional conflicts are **not** considered
- Panelists may flag additional conflicts during the meeting
  - Please raise any such concerns with SPG members
  - **Do not identify the potential cause to other panelists**

# Conflict of interest: procedures

- Panelists complete the Conflicts of Interest Disclosure form
- Chair (aided by PSS) is responsible for checking conflicts.
- Do not try to guess the names of the investigators on the proposal.
- In almost all cases conflicts are already recorded in our database.
- Note conflicts before discussing each proposal.
- Do **not** state the nature of the conflict (e.g., “I am a co-I on this proposal”)

**Conflicted panelists disconnect from the virtual meeting room and do not vote.**

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

# General guidance for Cycle 28

- Panel members should assume that all instruments will be performing nominally in Cycle 28
- 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 28

- Eight panels with these science categories:
  - Solar System: all bodies in our solar system
  - Planets and Planet Formation: exoplanets, planet formation, debris disks
  - Stellar Physics: cool+hot stars, late stages, low-mass stars, star formation
  - Stellar Populations: Galactic structure, star clusters, resolved stellar populations in galaxies, ISM in local galaxies
  - Galaxies: stellar content of galaxies, ISM in galaxies, dynamics, galaxy evolution
  - Circum- and Intergalactic Medium: outflows, galaxy halos, IGM, QSO absorption lines
  - Supermassive Black Holes: AGN, QSO, SMBH, jets, galaxy/BH co-evolution
  - Large-scale Structure: cosmology, lensing, galaxy clusters, surveys, deep fields

# Panel Review: Logistics

- Panel Chair runs meeting
  - Vice-Chair runs the meeting if Chair has to leave for conflict
  - No Vice-Chair on the Solar System panel
- 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)



# Proposals for Review

- All proposals in the group panels were ranked prior to the virtual meeting based on the preliminary grades.
- The top 50% of the proposals have been advanced for further review in each panel (40% for the TAC).
- The preliminary grades are erased prior to the discussion.
- Each non-conflicted panelist may suggest one (1) proposal from the triage for inclusion in the review. A strong justification must be provided.
- This process is necessary in order to limit the number of proposals for discussion.
  - Spend time discussing the best proposals
  - Avoid discussing proposals that are less likely to be approved

# Review Criteria

- 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.

**Reviewers must ensure that the comments address some or all of these primary criteria**

# Detailed Procedures

1. Panelists with conflicts disconnect from the virtual meeting room. This includes STScI staff and Observers
2. The Chair manages the process and may participate in the discussion, but does not vote.
3. The 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, exclusive access period, duplication justification.
6. Vote on proposal via Web-Reviewer System. **EVERYONE EXCEPT THE CHAIR MUST VOTE – NO ABSTENTIONS**
7. The primary reviewer is responsible for collating all relevant comments, and recording those comments via the Web-Reviewer System.

# Panel Review: overview

- Each panel has a specific allocation of **N orbits for Small proposals**
- **Medium** proposals have a **separate number allocation**
- 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
- The proposals receive (polite) comments
- Panelists comment on a subset of the TAC proposals

# 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 proposals may be recommended for acceptance if they are 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 mediums proposals.
- Depending on proposal pressure in each panel, panels can recommend between one and three Medium proposals at no orbit charge.
- Additional Medium proposals may be recommended by using the Small orbit pool of the panel.
- A summary of the recommended Medium proposals will be provided by the Chairs and Vice-Chairs at the beginning of the TAC meeting.

# TAC proposals

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

- Proposals are assigned to appropriate sets of panels considering topic and proposal load
- All TAC proposals have also been sent to external reviewers for comments. These comments are made available to the TAC members assigned to each proposal
- This process 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

# ULLYSES: Hubble UV Legacy Library of Young Stars as Essential Standards

- Up to 1000 orbits of Director's Discretionary time made available for an HST UV Legacy program on star formation and associated stellar physics.
- The program details have been finalized (including observing modes and targets).
- This call gives an opportunity to the community to propose complementary GO and AR programs, particularly pure parallel programs.
- As always, judge on the science – no special treatment of ULLYSES-related programs (positive or negative).

# Possible panel schedule

- Panels have up to 40 proposals to discuss (after triage)
- Discuss and grade non-triaged proposals
- Discuss and grade any resurrected triage proposals
  - Some panels prefer to group proposals by subject and intersperse the resurrected proposals
- Finalize ranking of Small and Medium proposals and define “do not award” lower limit (usually the  $2 \times N$  line).
  - Panels should consider the scientific balance
  - Panels re-rank proposals without changing the grades
- Discuss TAC proposals



# Team Expertise

- After the ranking has been finalized and is frozen, the panels will review the Team Expertise description for each recommended proposal.
- If necessary, the panel may express concerns about insufficient expertise, which will be recorded and communicated to the Director.
- Any concerns will not change the ranking of the proposals in the panel but may affect the Director's decision to accept a particular proposal.

# Proposal Comments

- Comments are required for all **rejected** proposals (including triaged proposals).
- Final comments may be entered after the meeting finishes.
- **The deadline for entering comments is May 14, 2020.**
- 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. 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

- Produce a final ranked list that combines both proposals categories. Use the same grading scale for all 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/Vice-Chair writes 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.
- As a video-conference panelist, make sure nobody besides yourself can follow the panel discussion.

# Orbit Allocations

# Cycle 28 Allocations

- 2700 orbits for GO (Large + Medium + Small)
  - 1400 for Small proposals (1 – 34 orbits)
  - 700 for Medium proposals (35 – 74 orbits)
  - 600 for Large/Treasury programs (TAC)
- TAC may recommend adjustments to the Small/Medium/Large split
- Orbit oversubscription is 5.4×, 11.5× and 11.5× for Small, Medium, and TAC, respectively.
- SNAP: ~ 1000 targets available across panels
  - (~6.2× oversubscription)
- AR: no budget required in Phase 1

# Orbit Allocation

**Orbits are based on a combination of orbit and proposal pressure for proposals requesting 16 – 34 orbits**

Panel	Small GO proposals submitted	Small GO orbits requested	Orbit allocation	Medium GO proposals submitted	Medium proposal allocation
Solar System	45	413	78	4	1
Planets	52	1156	247	19	2
Stellar Physics	55	1269	341	21	2
Stellar Populations	27	625	153	13	1
Galaxies	45	1080	216	26	3
CGM & IGM	33	898	132	20	2
Supermassive BH	26	646	147	12	1
Large-Scale Structure	15	368	88	15	1
<b>TAC</b>	<b>61</b>	<b>6919</b>			<b>600</b>



# After the TAC

- As usual, we welcome feedback on the TAC process
  - How did the virtual meeting work?
  - Can we improve it?
  - What were the main shortcomings?
- We will send email to all TAC and Panel members requesting your views of the process

# THANK YOU!!!!

- The TAC review is supported by 76 virtual panelists
- 19 panelists from ESA member states
- Continuing partnership with ESA

# Personnel & Logistics

# Key STScI Staff

- Director's Office
  - **Ken Sembach** – Director
  - **Nancy Levenson** – Deputy Director
  - **Neill Reid** – Assoc. Director for Science
- Science Mission Office
  - **Alessandra Aloisi** – SMO Mission Head
  - **Claus Leitherer** – Head of Science Policies Group
  - **Andy Fruchter, Molly Peeples, Laura Watkins** – SPG Astronomers
  - **Brett Blacker** – SPG Technical Manager
  - **Kimberly Oyler** – SMO Administrative Lead
  - **Martha Devaud, Sherita Hanna, Flory Hill** – SPG Administrative Staff
  - **Karen Sealover** – ESA Administrative Staff
- Hubble Mission Office
  - **Tom Brown** – HST Mission Office Head
  - **Carol Christian, Helmut Jenkner, John MacKenty, Rachel Osten** – Mission Office Scientists
- Operations & Engineering Division
  - **Bill Januszewski** – Operation Planning Branch

# Virtual Observers

These officials may drop in and observe the review at various times:

**Megan Ansdell** – NASA

**Ken Carpenter** – NASA

**Doris Daou** – NASA

**Mike Garcia** – NASA

**Stefanie Johnson** – Univ. of Colorado

**Jessica Kirk** – Univ. of Memphis

**Antonella Nota** – ESA

**Delia Santiago-Materese** – NASA

**Jennifer Wiseman** – NASA

# Backup

# Types of Proposals

Standard proposals	
GO	Small/Joint (1-34 orbits); Medium (35-74); Large ( $\geq 75$ )
AR	Legacy
Special categories	
Long-term	allocate time in C28 – C30 if justified <u>scientifically</u>
ToO	ultra-fast (<2 d) ToO: up to 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	$\geq 75$ 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)
HST-TESS	Up to 100 TESS targets

# Close collaborators

## Who qualifies as a close collaborator?

- Active collaborator on a current research program (including Cycle 28 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**



# 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.

STScI instrument scientists will check accepted proposals for duplications