STScI | SPACE TELESCOPE SCIENCE INSTITUTE

EXPANDING THE FRONTIERS OF SPACE ASTRONOMY

HST Mid-Cycle Proposal Summary

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HST Mid-cycle proposal – origin & rationale

Goal: to provide a mechanism for the HST community to react to new discoveries on a shorter timescale than the standard annual review

- Builds on Gemini's experience with 'rapid response" proposals

Introduced in Cycle 23 (2015/2016):

- Proposals may be submitted at any time
- Proposals are rolled up for review twice a year
  - Typically late October and late-February/March
  - Community tends to tends to treat these dates as deadlines

What's the difference between mid-cycle proposals and DD proposals?

- DD proposals are generally targeted at unpredicted transient phenomena (comets, novae, supernovae, LIGO counterparts etc.) that won't be available next cycle
- Mid-cycle proposals can target new discoveries that will be available next cycle, but merit more rapid observation

HST mid-cycles- constraints

- Proposals are required to meet the following criteria:
  - Could not have been submitted in the most recent standard call; justifications include
    - Newly discovered celestial objects
    - Theoretical advances in interpretation
    - Access to new observations or new theoretical simulations
  - Scientifically urgent
- In addition,
  - Proposals are limited to requesting no more than 10 orbits
    - Part resource availability, part implementation concerns
  - Observations should have minimal constraints to maximize scheduling flexibility
    - Implementation concerns
  - Observations taken for accepted programs will have a proprietary period of no more than 3 months
    - Rapid community access to interesting datasets
  - Proposers may apply for all available instruments. Proposals must be compliant with the technical restrictions described in the Call for Proposals for the current cycle.
- Proposals are reviewed for compliance by SMO Science Policy Group

HST mid-cycles – review process

Reviewers drawn primarily from recent HST TACs

- Candidate reviewers identified and contacted prior to appropriate deadline
- Four reviewers per proposal
- No more than 4 proposals per reviewer

Standard format for review

Please answer the following questions. Grades should be assigned on a scale of 1 to 5 (integer values only), where

1 = Excellent 2 = Very Good 3 = Good 4 = Fair 5 = Poor

What is your assessment of the scientific merit of the proposed and its potential contribution to the advancement of scientific knowledge

- Grade:

What is your assessment of the program's overall importance to astronomy?

- Grade:

What is you assessment of the scientific urgency of the observations?

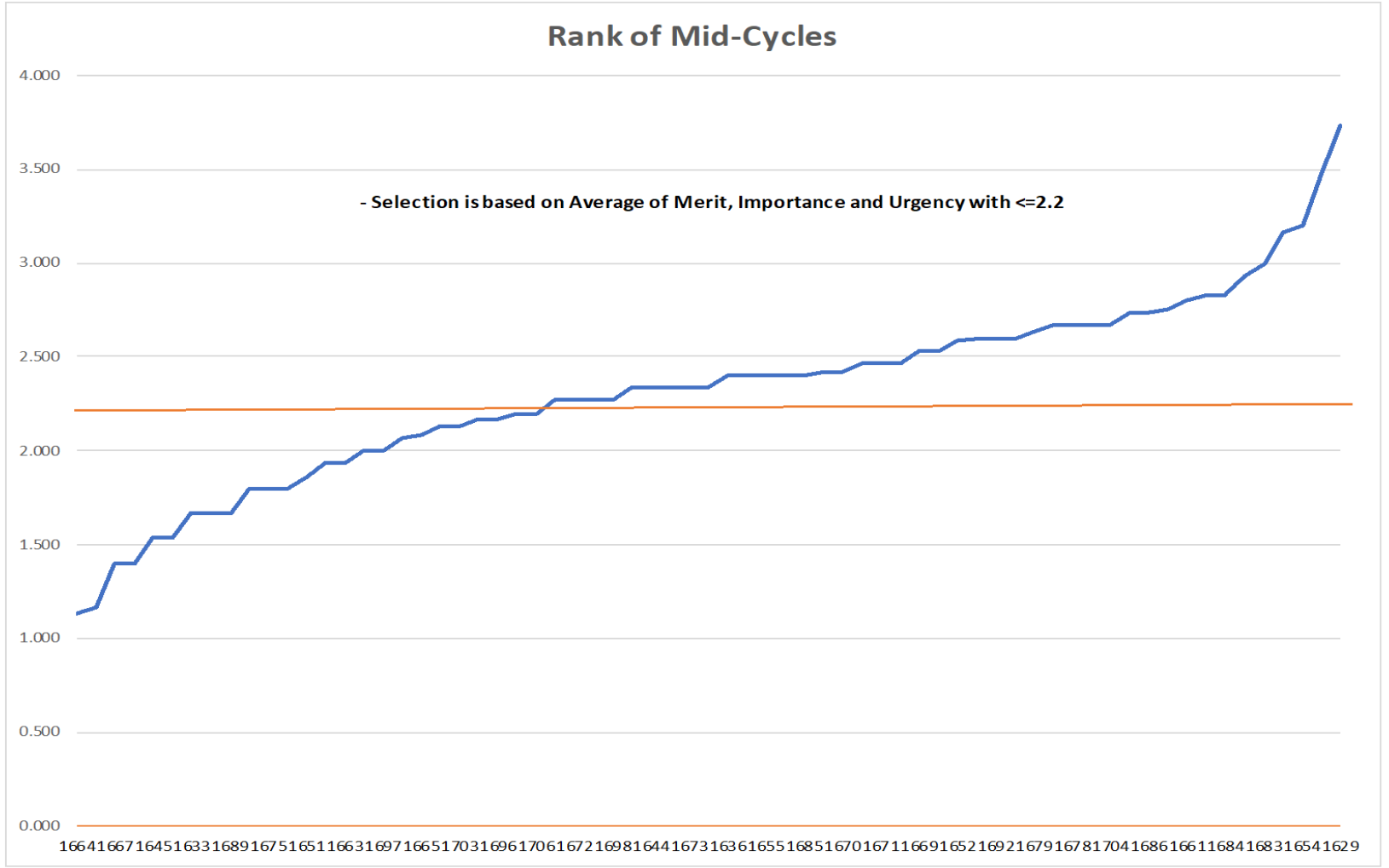
- Grade:

Can the program science goals be achieved only through observations with Hubble Space Telescope?

- Yes/No
- If No, please specify the alternative source of observations.

Please provide brief feedback on the main factors of the proposal that support the grades selected above:

Selection criterion – absolute grading scale



STUC: November 13 2018

HST mid-cycles – submission/approval statistics

- Results from six reviews
  - Cycle 23 autumn & winter
  - Cycle 24 autumn & winter
  - Cycle 25 spring & winter
- Selection criteria – average grades ≤ 2.0-2.2

Cycle	Submitted	Orbits	Approved	Orbits	Comments
23 autumn	45	175	13	52	≤ 5 orbits
23 winter	29	122	9	34	≤ 5 orbits
24 autumn	49	275	16	93	≤ 10 orbits
24 winter	37	221	11	70	≤ 10 orbits
25 autumn	61	367	21	110	≤ 10 orbits
25 winter	68	446	23	136	≤ 10 orbits

HST mid-cycles – subject areas (1)

Mid-cycle proposals have been approved in all science areas

	AGN	COS	CS	DEB	EXO	HS	IEG	ISM	RSF	QAL	RSP	SS	USP
23/a subm	5	6	1	1	11	2	3	0	2	0	1	3	3
23/a app	1	1	1	0	5	1	1	0	2	0	0	1	0
23/w subm	3	2	0	0	4	1	2	0	2	2	0	5	7
23/w app	0	1	0	0	1	0	1	0	1	1	0	3	1
Subm	8	8	1	1	15	3	5	0	4	2	1	8	10
app	1	2	1	0	6	1	2	0	3	1	0	4	1

HST mid-cycles – subject areas (2)

Mid-cycle proposals have been approved in all science areas

	BH	EXO	GAL*	COS*	Solar system	Stellar physics	Stellar pops
24/a subm	11	6	12	3	4	11	2
24/a/app	2	4	4	0	2	4	0
24/w subm	5	11	8	1	1	8	3
24/w app	2	6	1	1	0	2	0
25/a subm	1	14	17	4	6	15	8
25/a app	1	4	7	1	5	4	2
25/w subm	6	23	15	7	2	9	6
25/w app	0	7	9	2	2	3	1
Subm	23	54	52	15	13	43	19
App	5	21	21	4	9	13	3

* COS includes IGM in Cycle 24
GAL includes IGM in Cycle 25

HST mid-cycles – subject areas (3)

Mid-cycle proposals have been approved in all science areas (orbits)

	AGN	COS	CS	DEB	EXO	HS	IEG	QAL	RSF	RSP	SS	USP
23/a app	3	2	2	0	21	5	5	0	10	0	4	0
23/w app	0	3	0	0	4	0	5	5	3	0	10	4
app	3	5	2	0	25	5	10	5	13	0	14	4

	BH	EXO	GAL*	COS*	Solar system	Stellar physics	Stellar pops
24/a/app	9	39	19	0	10	16	0
24/w app	7	35	7	5	0	16	0
25/a app	3	42	23	7	12	21	9
25/w app	0	36	43	13	6	23	5
App	19	152	92	25	28	76	14

* COS includes IGM in Cycle 24
GAL includes IGM in Cycle 25

HST mid-cycles – gender statistics

	M submitted	M approved	F submitted	F approved	F/M sub	M app	F app
23a	33	11	5	2	15%	33%	40%
23b	25	8	4	1	16%	32%	25%
24a	35	14	14	2	40%	14%	14%
24b	27	7	10	4	37%	40%	40%
25a	49	19	16	5	33%	39%	31%
25b	49	16	19	7	39%	33%	37%

Summary of mid-cycle characteristics

- HST mid-cycle proposals provide an opportunity for the community to capitalise rapidly on post-cycle-deadline discoveries
  - Where “discoveries” has a broad definition encompassing observations, theory and analysis
- Mid-cycle proposals have been submitted and accepted in all science categories
- Gender ratios & gender-based success rates have improved in recent cycles
  - Future submissions will be anonymous
- Number of proposal submissions over one cycle corresponds to ~10% of the number at a regular call

Thought for the day

The main goal for all scientists, particularly astronomers, should be to **not** be an impediment to progress.

[..Please get out of the way if you can't lend a hand….

Dylan, B., 1964]