Cycle 1 DD program summary

- As discussed in March, each JWST cycle includes only one Financial Review Committee meeting
  - Cycle 1 DDs would therefore need to wait until the Cycle 2 FRC to receive funding
  - ~$800K reserved for those programs from the Cycle 1 budget

- To expedite funding for DD programs, PIs were offered two options
  - Submit a budget for up to $50K and receive funding immediately, following a compliance review, or
  - Submit a full budget and wait until the Cycle 2 FRC review, recognizing that the funds may not be available
  - Currently this is a manual process – workflow still needs to be incorporated in STGMS

- Sixteen DDs were approved in Cycle 1
  - 15 opted for up to $50K funding for a total of ~$700K
  - 1 submitted a full budget for FRC review
  - Residual Cycle 1 funding, ~$100K

- We are continuing this process in Cycle 2
  - Additional funding will be reserved for joint programs

Cycle 2 Grants preparations

- Steps have been taken to improve the transparency of the Grants process to the average JWST user
  - Improved and updated websites. The STScI Budget Proposer Guide
    - https://www.stsci.edu/scientific-community/grants-administration/stsci-budget-proposer-guide
  - STGMS User Guide
    - https://www.stsci.edu/scientific-community/grants-administration/stgms-user-guide#section-2bd01099-209d-4e4d-a973-ad63495d60da
    - Includes example reports
  - Grants webinar with Q&A session held on June 6
    - 144 attendees & 43 questions answered

- Budget deadline 6/22/23 (8/29/23 for additional proposals)
  - Survey programs were capped at $125K, pure parallels at $400K
  - PIs were given guidelines on the usual funding levels for travel and publications
  - Funding available, $60 million; ~$1.5 million reserved for DDs & joint programs
  - Total budget request, ~$72 million

- Cycle 2 FRC met September 12-15

- Budget notifications are anticipated in mid-November

Looking forward – FRC or formula?

JWST follows HST in using a Financial Review Committee to assess budget proposals for each program; this process has pros and cons:

- Pros
    - Enables teams to ask for what they need
    - Takes account of who is doing the work (junior/senior), foreign investigator contributions
    - Clear explanation of the work being done, justifying the overall funding level

- Cons
    - Higher workload on PIs and teams to prepare budgets
    - Higher workload on FRC members to review budget justifications
    - Workload on PIs and teams to prepare revised budgets

Developing a formula is the alternative approach

- Pros
    - Simpler for the community to understand
    - Less work for the community to review the budget submission
    - Potentially faster turnaround to approve budgets

- Cons
    - A formula has limited ability to take into account particular circumstances (personnel etc)
    - A budget still needs to be prepared and reviewed for allowability & to ensure work is in scope with original proposal
    - Less clear explanation of the work being done, and less justification for the overall mission grant funding level

A hybrid system likely triples the work, will make no-one happy and is not currently being considered

Developing and testing a formula for JWST

- Funding requests for Cycle 1 greatly exceeded the available funding
  - Strict limits and cuts were imposed
  - We do not have a good training set to help develop a realistic formula

- Cycle 2 total funding requests are closer to the HST experience
  - ~20% above the available funding (~$58.5 million)
  - We will be asking the FRC for suggestions on additional guidance/restrictions for Cycle 3 budgets, such as page limits, budget caps, etc

- We propose to recruit a working group to analyse the Cycle 2 budget allocations, and explore and test options for a formulaic approach
  - The working group will consider GO, Survey and AR proposals
  - The WG should consider the key factors for the budget process
    - Transparency? Equality? Equity? What constitutes a fair share?
  - Community involvement is crucial
    - WG membership will include STScI staff (SMO, Grants, JWSTMO) and community members, both with and without FRC experience
    - We request participation from 1-2 JSTUC members

Possible factors in a formula

- Technical considerations
  - Instrument mode
  - Number of targets/pointings
  - Total science time
  - Degree of difficulty/X-factor

- Personnel
  - Number of investigators and individual contribution to the project
  - Level of seniority
  - Proportion of non-US-based investigators

- Ancillary science
  - Ground-based observations, laboratory work
  - Citizen science support

- Outcomes
  - Level of enhanced data products
  - Software tools

Note that any calculation is going to be contingent on the total funding available and the formulaic results for all other programs in a cycle.

Can we implement a formula in Cycle 3?

- This presents a very challenging timeline
  - Changes to the budget process will need to be advertised and socialized prior to the call for budget submissions for Cycle 3
  - Cycle 3 TAC results are released in early February
  - Adjustments to the budget process should be advertised at the 2024 winter AAS meeting
  - Likely requires developing, testing and implementing software tools for a formula, and associated software to collect community input, by mid-December
  - Any implementation must allow for multi-mission use i.e. STGMS is an integral part of the HST Grants process
    - One option is to give each PI a "not-to-exceed" value, submit the budget via STGMS and review only for compliance and being in scope
    - Need to develop appropriate workflow for GRA oversight
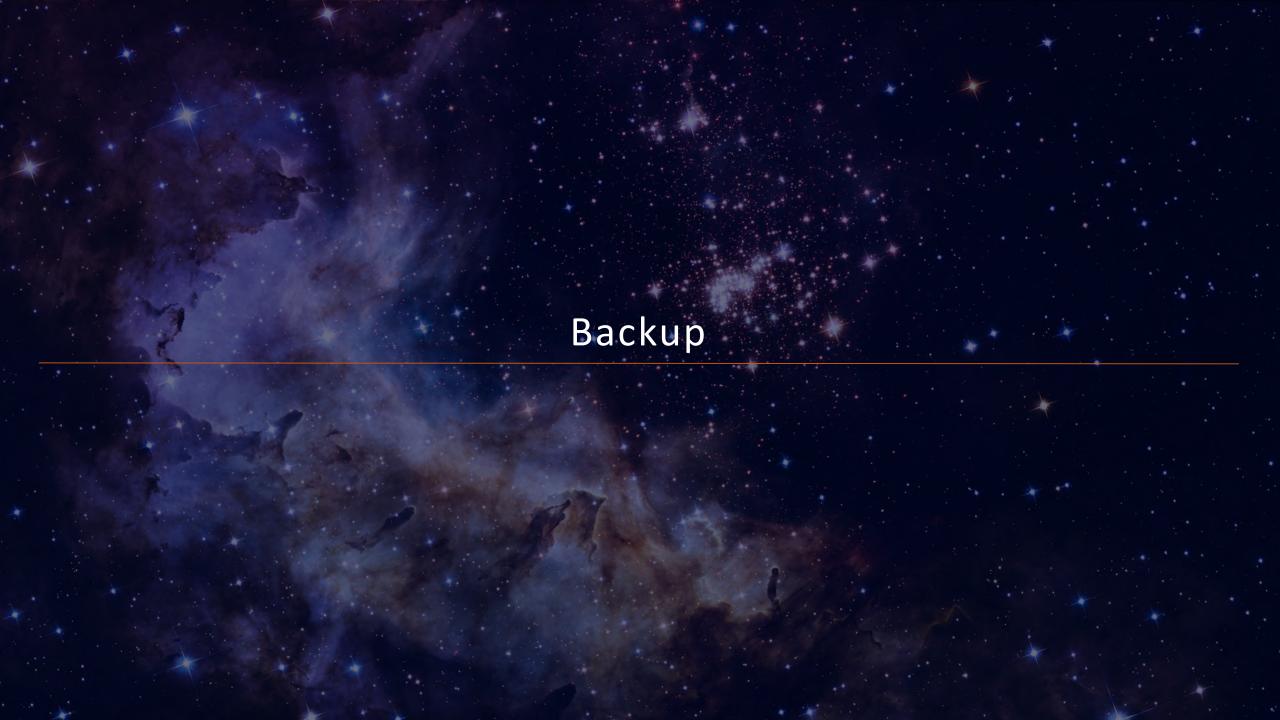   - This can only be implemented as a manual process for Cycle 3

Alternative timeline for Cycle 4 implementation

- Recruit the Working Group by the end of October

- Kickoff meeting in early December
    - Review Cycle 2 budget allocations and identify key parameters
    - Anticipate homework for WG members

- Second meeting in February/March timeframe
    - Identify a handful of candidate formulae
    - In parallel, determine what modifications/additions are required for STGMS software,
        - Both short-term development and long-term maintenance and support

- Possible third meeting in late April, if needed
    - Anticipate all meetings as virtual, ~5 hour maximum

- FRC Cycle 3 meeting in June 2024
    - Anticipate budget allocations approved by late July

- Test possible formulae against the Cycle 3 FRC results

- WG compiles summary report for Director by August 2024
    - Decision on whether/how to implement for Cycle 4

Summary

- Streamlined DD process is running smoothly
  - Propose to continue in Cycle 2

- Additional resources put in place to help Cycle 2 grant proposers
  - Included a well-attended webinar

- Some constraints put in place for Cycle 2 budget proposals
  - Caps for Survey and Pure Parallel programs
  - Guidelines for travel and publications

- Process and timeline developed to explore a transition to formula for Grants
  - STScI/community working group to develop and investigate formulae
  - Timeline to implement in Cycle 3 is very challenging; Cycle 4 is tractable
  - We ask the JSTUC to endorse this plan and to nominate one or two members for the working group

Backup

Chandra "fair-share" formula

Chandra invites a subset of programs to submit a cost proposal

Target budgets are set for each program using the following factors

- Exposure time

- Number of targets

- Level of difficulty (easy, medium, difficulty) assessed by TAC
  - We asked the Cycle 1 TAC members to rank "complexity" and saw little agreement in their assessments of individual programs

- Factor based on Regular vs Large proposal

Total Chandra grants budget: $10 million for ~150 programs per cycle
  - Average grant ~$70K