Multi-Cycle Treasury Programs

STUC
10 April 2008

Rationale

SM4 is the last shuttle servicing mission to HST

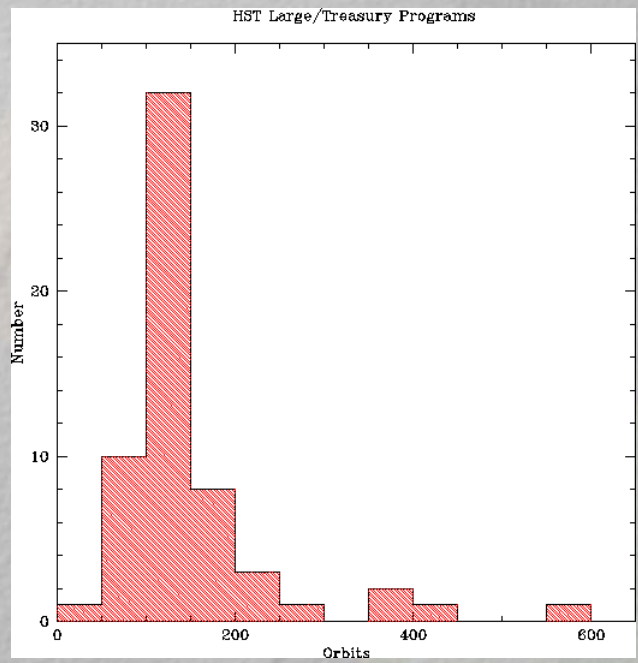
- A successful SM4 will give HST its most powerful suite of instrumentation
- Instruments don't last forever → <4 years per string? [ACS & STIS will be single-string instruments]

→ We need to ensure that we maximise the scientific impact of the new HST

Past Large/Treasury programs

- Median size ~130 orbits
- 4 programs > 300 orbits

Are there science programs that **require** larger allocations?



Multi-cycle Treasury Programs

Call for white papers issued in early October

- 3-page descriptions of HST science programs that require >400 orbits
- No restrictions on type of program – spectroscopic, photometric, astrometric
- Deadline: 30 November - 22 submissions received
- Confidential assessment by small committee: Brad Peterson, Malcolm Longair, Bob Williams, INR
- Recommendation made to Director on January 10 2008
- Result announced to the community on January 17 2008 (well before Cycle 17 deadline)

Selection process to be finalised through discussions with HST community

Assessment process

White paper submissions

1. 22 in total
   - 19 advocating science programs
   - 2 with concerns (do UV instead, protect solar system)
   - 1 concerning the allocation process (Stocke)
2. Programs reviewed by panel (Longair, Peterson, Reid, Williams)
   - Submissions fall within six broad areas:
     - Exoplanets,
     - Stellar populations in nearby galaxies,
     - ISM & IGM,
     - Galaxy evolution,
     - The high redshift universe (z>7),
     - Cosmology & dark energy
3. Panel consulted *via* e-mail and telecon
   - Unanimous agreement that there are sufficient grounds to entertain proposals
   - Recommendation communicated to Director in early January 2008; Director accepts recommendation
   - Community informed *via* Cycle 17 Announcement web page

Multi-Cycle programs in Cycle 17

MCT Programs will be implemented post-SM4

Cycle 17 Call for Proposals allows for "standard" multi-cycle proposals

How do we deal with these in Cycle 17? 3 options:

1. **Explicitly encourage programs**
   - **Adverse impact on "normal" programs?**
   - **Smaller range of program topics?**
2. **Formally exclude large programs**
   - **Contradicts guidelines in Call for Proposals**
3. **Leave it up to the TAC**
   - **If it's the best science, we should do it as soon as possible**

We will adopt option #3 and instruct the TAC accordingly

Where do the orbits come from?

Baseline plan – mainly affects Large & Treasury programs

1. **Large & Treasury Programs**
   - Typically 1,200 orbits per cycle
     - Corresponds to 5-8 separate programs
   - Conceptually most similar to MCT Programs
   - Anticipate re-allocating ~500 orbits/cycle
2. **Small & Medium Programs**
   - Typically 2,000-2,100 orbits/cycle cycle
     - ~1,700 directly to panels, 300-400 in central pool
   - Scale back by ~10% → re-allocate ~200 to MCTP
3. **DD Time**
   - Up to ~350 orbits per cycle, at Director's discretion
   - Leverage science impact of potential programs

In principle, 1,400 to 2,000 orbits could be available for MCT Programs in Cycles 18 & 19

Baseline MCTP Allocation Process

STAGE 0: Preparations

- **NOIs submitted in advance of deadline**
  - Allows selection of unconflicted TAC members
- **MCT Call for Proposals**
  - Limited to MCT specific information
  - Cycle 17 CP as reference for standard procedures, e.g. limitations on parallels, etc
- **Science-based MCT Workshop in late-autumn 2008**
  - Encourage collaborative proposals
  - Broad discussion of possible science topics cf. ACS workshop

Baseline MCTP Allocation Process

Two stage process assessment process

STAGE 1: Written proposals submitted via APT

- **Extended Treasury format**
  - **Longer science justification – 8 pages vs. 6?**
  - **Add Scientific Impact section?**
- **Assessed by panel of respected international generalists**
  - **Representation from Cycle 17 TAC**
  - **Representation from STUC**
  - **Representation from STScI (Director, Williams)**
- **Additional written reviews by external specialist referees**
- **TAC reviews and ranks proposals**

Baseline MCTP Allocation Process

Stage 2: Presentations

- Select a subset of the top-ranked proposals
  - PIs invited to STScI to give presentations
- Smaller review panel – subset of main panel
  - Balance by science topic
  - Panel could recommend marrying proposals

Stage 3: Related community programs

Archival research

- Allow opportunity for associated AR programs to be submitted *via* the standard Calls for Proposals for Cycles 18 & 19
- Need to select programs in advance of the Cycle 18 deadline

Possible Cycle 18/MCTP schedule

Cycle 18 key dates

- **SM4 – August 2008**
- **SMOV ends – November 1 2008**
- **TAC Selection starts – January 2009**
- **CP18 release – early April 2009**
- **Cycle 18 Phase I deadline – mid-July 2009**
- **HST TAC meets – mid-September 2009**
- **Phase II deadline – mid-October 2009**
- **Cycle 18 starts 1 January 2010**

MCTP draft schedule

- **MCTP NOI submission – July 2008**
- **TAC Selection starts – September 2008**
- **MCTP CP – early-November 2008**
- **MCTP Workshop – mid-November 2008**
- **Phase I deadline – early-February 2009**
- **Circulate to reviewers – mid-February 09**
- **MCTP TAC meets – late-March 2009**
- **MCTP PI Presentations – late April 2009**
- **MCTP Proposal selection – early May 2009**
- **MCTP AR Announcement – early May 2009**
- **MCTP AR proposals – with Cycle 18**