



# SMA Proposal Process, Time Allocation, and Project Tracking

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*with extra thanks to*

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# Outline

- The user perspective
- The SMA Observer Center
- Major initiative: comprehensive project tracking system
- Proposal/project process
- TAC process
- Proposal Statistics
- Publications
- Extras: Filler Program



## “the user perspective”

- Past two years has seen increasing emphasis on improving interface of the observatory with the “user”
- “users” include SMA operators, technical staff, science staff, the Scheduler, Directors, external PIs and other astronomers, TAC members, etc.
- Each have different (perhaps overlapping) needs



# The SMA Observer Center

<http://sma1.sma.hawaii.edu/smaoc.html>

## SMA Observer Center

- Home
- Proposing
- Preparing to Observe
- After Observing
- Tools
- Specs
- Contact Us
- Log In

The [Submillimeter Array \(SMA\)](#) is an 8-element radio interferometer located atop [Mauna Kea in Hawaii](#). Operating at frequencies from 180 GHz to 900 GHz, the 6m dishes may be arranged into configurations with baselines as long as 500m, producing a synthesized beam of sub-arcsecond width. Each element can observe with two receivers simultaneously, with 2 GHz bandwidth each. The digital correlator backend allows flexible allocation of thousands of spectral channels to each receiver. The Submillimeter Array is a joint venture of the [Smithsonian Astrophysical Observatory](#) and the [Academia Sinica Institute of Astronomy and Astrophysics](#).

[Call for SMA Science Observing Proposals](#)

<http://sma-www.cfa.harvard.edu/>

- Primary portal for SMA information & project status for both staff (“operations”) and PIs (“science”)
- Proposal info, preparation, and submission tools, ‘live’ observing logs, access to engineering and array data, documentation, real-time array monitor and countless other functions housed in one central location
- ‘everything but actual array control and data reduction’



# Major initiative: A comprehensive project tracking system

- New SMA project tracking system within the SMAOC website debuts with proposal submission for the current semester (2007A)
- Follows projects from proposal through observation, providing up-to-the-minute information
- Aims to bring all project information together in a single database, where all interested parties can access details they require
- See also August 10, 2007 SMA Newsletter



# The Proposal/Project Process

- PI Project account creation
- Proposal preparation and submission
- Time allocation
- Script generation and simulation
- Submission to scheduling queue
- Scheduling and execution of observations
- Status designation
- Project completion

*All managed within the new project tracking system*



# Proposal and Project Tools

- SMA provides several on-line tools (the Beam Calculator and Sensitivity Estimator, Passband Visualizer, Script Generator)
- These tools are integrated within the new project tracking system
- Tools help assure common assumptions, useful in the proposal review process
- In the works: correlator configuration tool...



# Time Allocation Committee

- Each partner runs own proposal evaluations. Time allocation ratios for CfA:ASIAA:IfA are 72:15:13; up to 30 percent of CfA time open to external PIs.
- SAO TAC: at least 3 SMA staff, a member of the larger CfA community, and 3 members of the external community (new chair for 2007B, Qizhou Zhang).
- Every proposal reviewed by minimum of 4 TAC members, with at least one a SMA staff member; (“Legacy” reviewed by all members); written evaluations and numerical grades submitted
- Proposals ranked, discussed and reevaluated at face-to-face meeting ~4 weeks after Call deadline





# Time Allocation Committee II

- TAC Chair uses rankings to determine rough configuration schedule to best accommodate highest ranked proposals (including partners).
- Taking into account TAC rankings, configuration schedule, and time available, proposals (or subsets, e.g. track requests) are rated by the TAC as
  - A: highest rating, executed on a best effort basis
  - B: middle rating, to be executed as time permits
  - C: lowest rating, will not be executed
- More B's allocated than can likely be done, to cover a wide variety of circumstances

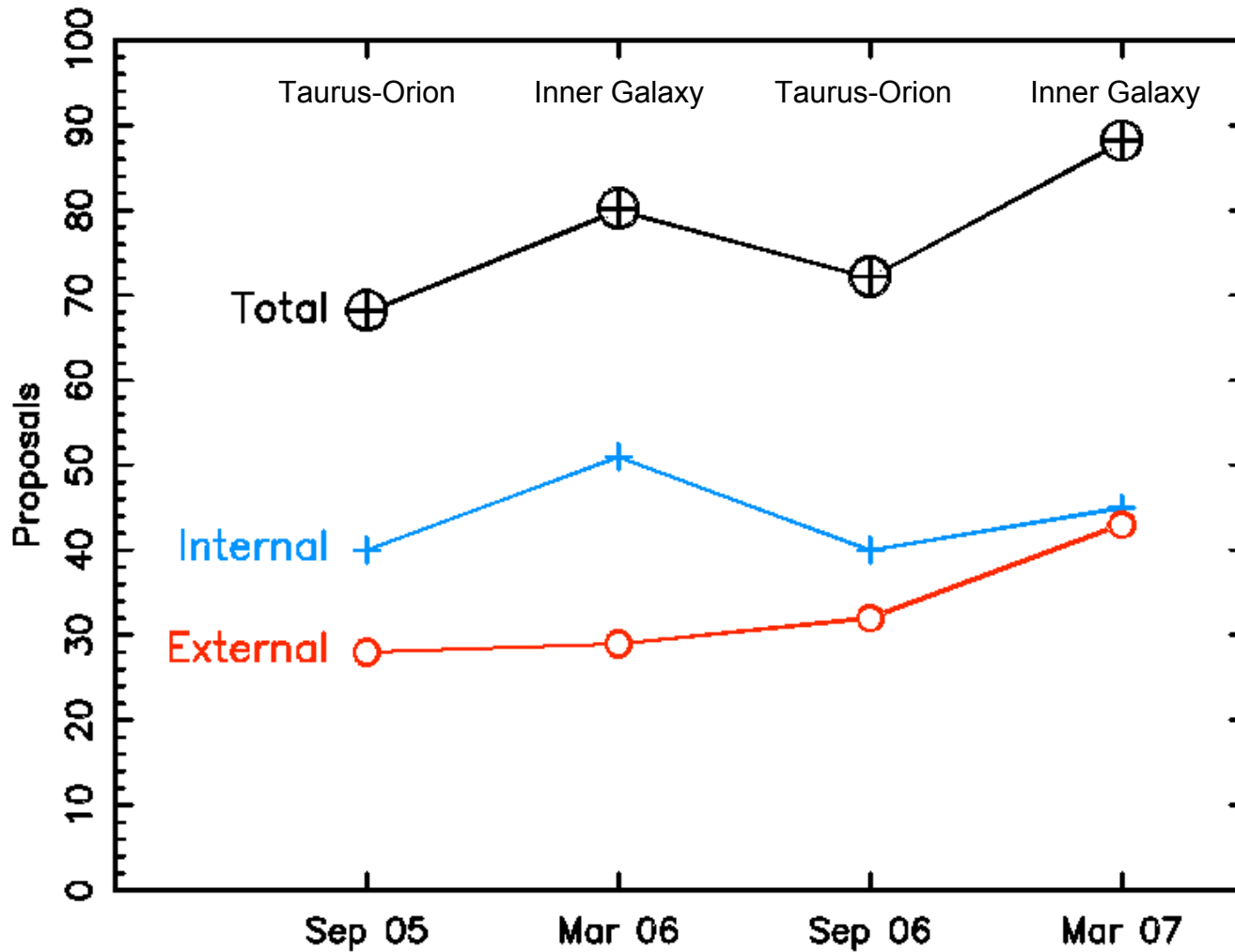


# Time Allocation Committee III

- Committee members write summary comments, combining written evaluations with substantive discussion from TAC meeting; goal to provide specific, concrete criticism and commentary on proposal, to assist the PI in understanding TAC recommendations and ratings
- ASIAA and SAO TAC Chairs enter final ratings, comments, and time (track) allocations into the online project tracking system and release results to PIs
- PIs can then commence script preparation!



# Proposal Statistics





# Proposal Statistics II

Oversubscription rates (past three calls):

Overall	2.8:1
<4 mm pr. H <sub>2</sub> O (“230”)	1.3:1
<2.5 mm pr. H <sub>2</sub> O (“345”)	4.1:1
<1 mm pr. H <sub>2</sub> O (“690”)	4.8:1



# Proposal Statistics III

	Total	Internal PI	External PI
# Proposals	308	176	132
Star Formation	52.6%	47.7%	59.1%
Extragalactic	28.9%	30.7%	26.5%
Stellar	9.7%	10.2%	9.1%
Galactic Center	4.2%	6.3%	1.5%
Solar System	2.7%	3.4%	1.5%
Other	1.9%	1.7%	2.3%



## Allocations and Overall Performance

294 SAO tracks allocated (126 A ranked) over last three completed semesters

	A Tracks	B Tracks
Sep 2005*	34 (~81%)	31 (~54%)
Mar 2006	41 (~98%)	23 (~40%)
Sep 2006	42 (~100%)	33 (~63%)

\*historically bad weather Jan-May 2006



# Allocations II

- Over past 4 semesters, external PIs garnered ~22% of A tracks and ~28% of all tracks awarded by SAO
- Over past 4 semesters, when “Legacy” projects were proposed they garnered ~15% of A tracks and 15% of all tracks awarded by SAO
  - Sep 2005: 5 prop., 28% of A’s, 17% of B’s
  - Mar 2006: 2 prop., no A’s, 19% of B’s
  - Sep 2006: 4 prop., 17% of A’s, 10% of B’s
  - Mar 2007: no legacy proposals



# Science Publications (Refereed)

	2004	2005	2006	2007*	Total
Star Formation	8	10	12	23	53
Extragalactic	4	1	4	7	16
Stellar	3	-	3	4	10
Galactic Center	-	-	2	1	3
Solar System	1	1	-	1	3
Other	2	-	1	-	3
Sums	18	12	22	36	88

SMA publications are ramping up as more (and longer term) programs are completed.

\*through August 23





# Extras: Filler Program

Filler projects: short observations executed during otherwise unallocated blocks of time around scheduled nightly observations. Generally utilize same correlator configuration and tuning as the standard observation(s) they abut. Limited to CfA, ASIAA, and UH affiliates.

Pilot program begun in 2007A semester. 18 proposals received (to date), with 5 short tracks observed.



## In Summary...

The SMA is highly-sought for science programs. Proposal submission and especially science publication rates continue to increase.

The SMA continues to grow, expanding efforts to improve TAC and scheduling efficiency, communication with principle investigators, and providing easy-to-use tools for utilizing the SMA.