

Proposal Cycle: Updates and Plans

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- Highlights of CDO activities
- Report on Cycle 17
- Plans for Cycle 18
- Move LP boundary to 400 ks?
- Preliminary results from study of the science impact of XVP-sized programs.



Highlights

Cycle 17 Peer Review

- 22-26 June 2015, Hilton, Logan Airport
- Target List posted 16th July
- E-letters, including reports and budget allocation mailed 12th Aug
- Cost proposal deadline: 17th Sept 2015

Annual Chandra Science Workshop:

- The Universe in High Resolution Spectra, held 19-21 Aug 2015

IAU General Assembly, 3-14 August, Hawaii

Einstein Fellows

- Symposia to be held CfA, 27-28 Oct 2015
- 2016 competition: Deadline: 5 Nov 2015

New hire for CDO



Cycle 17 Proposal Statistics

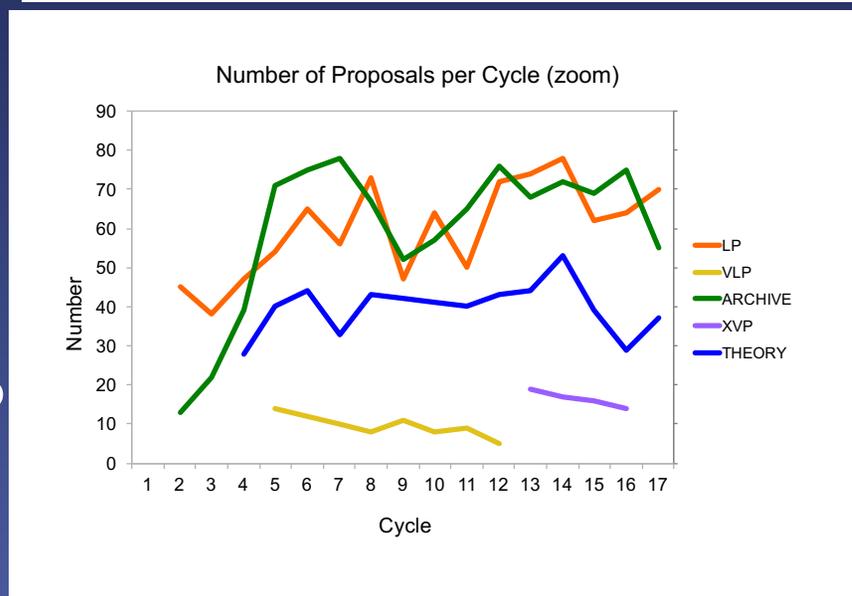
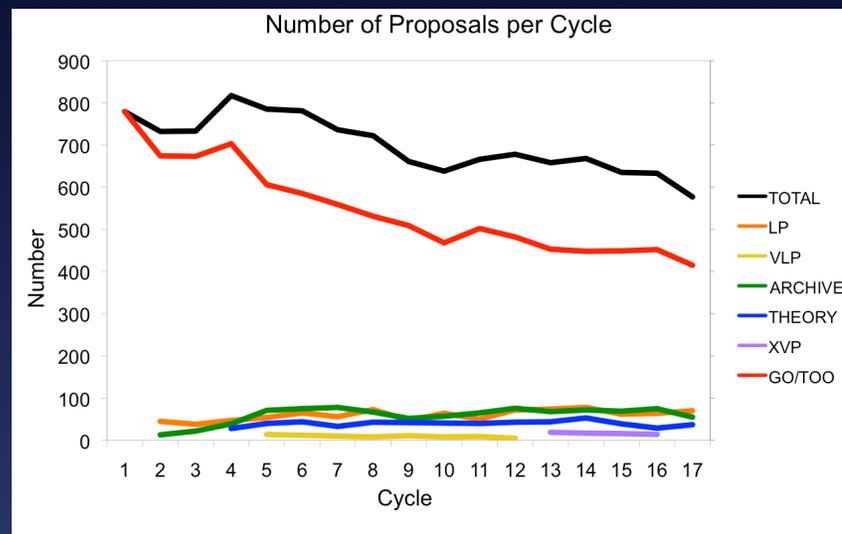
577 proposals submitted:

- GO 413 (inc. TOO)
- LP 72
- Archive 55 (75, Cyc 16)
- Theory 37 (29, Cyc 16)

175 approved

Oversubscription (time): 4.9

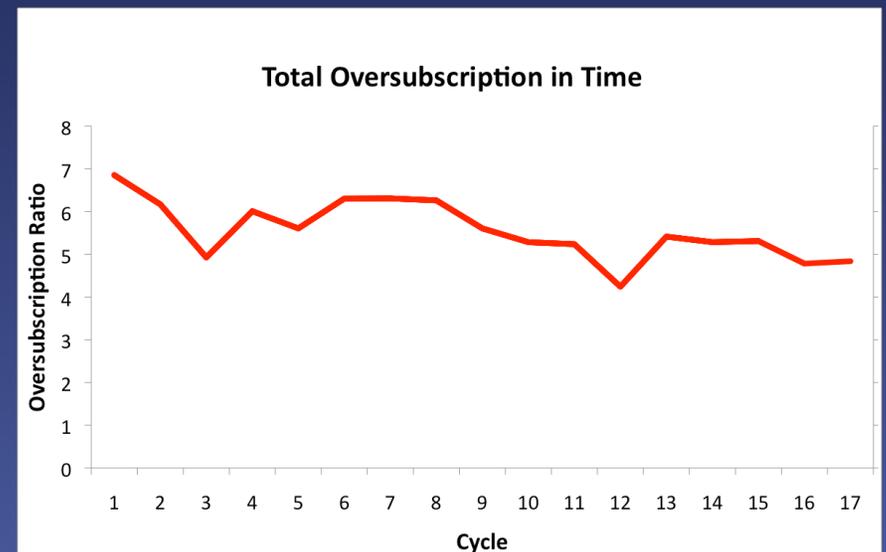
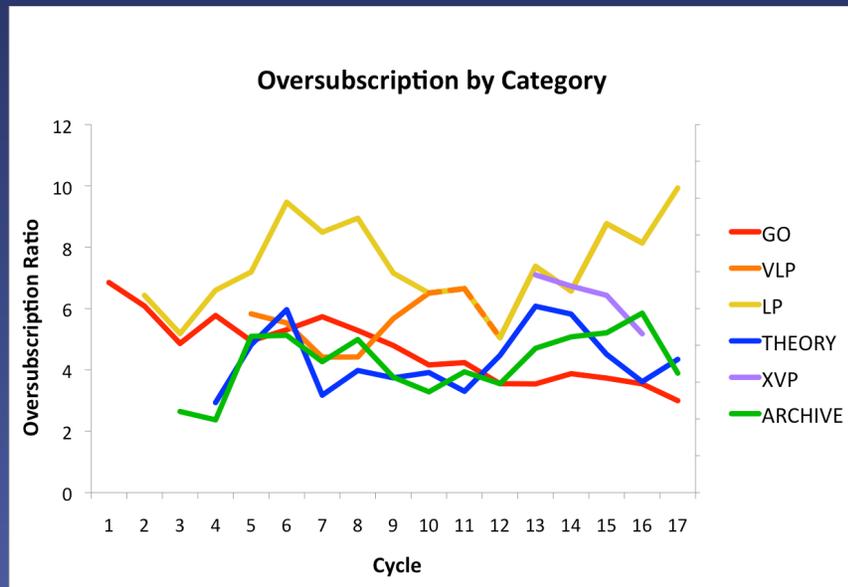
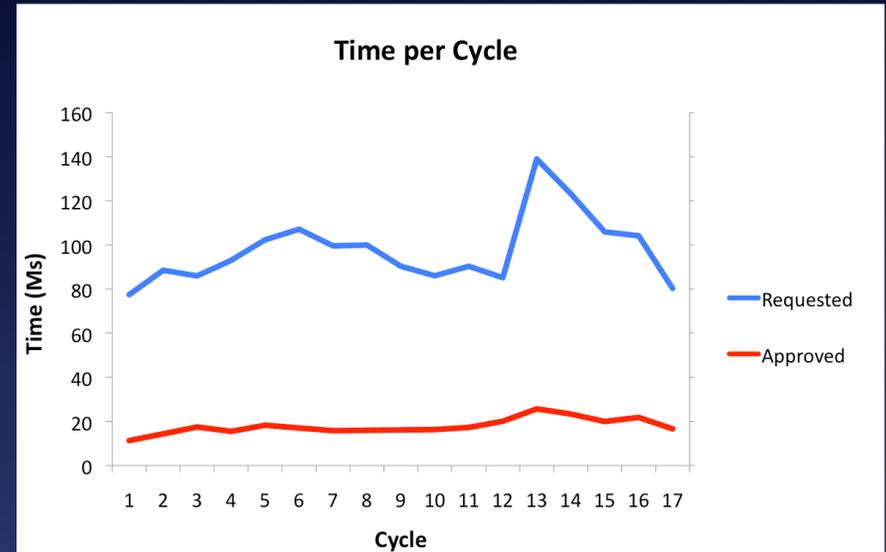
Time allocation: 16 Ms, 2 Ms
already allocated Cycle 16 for XVP
call



Cycle 17 Proposal Statistics

Time allocation:

- Total Time: 16 Ms
(2 Ms allocated in Cycle 16 for XVPs)
- LP: initially 4.0 Ms, increased to 6 Ms.



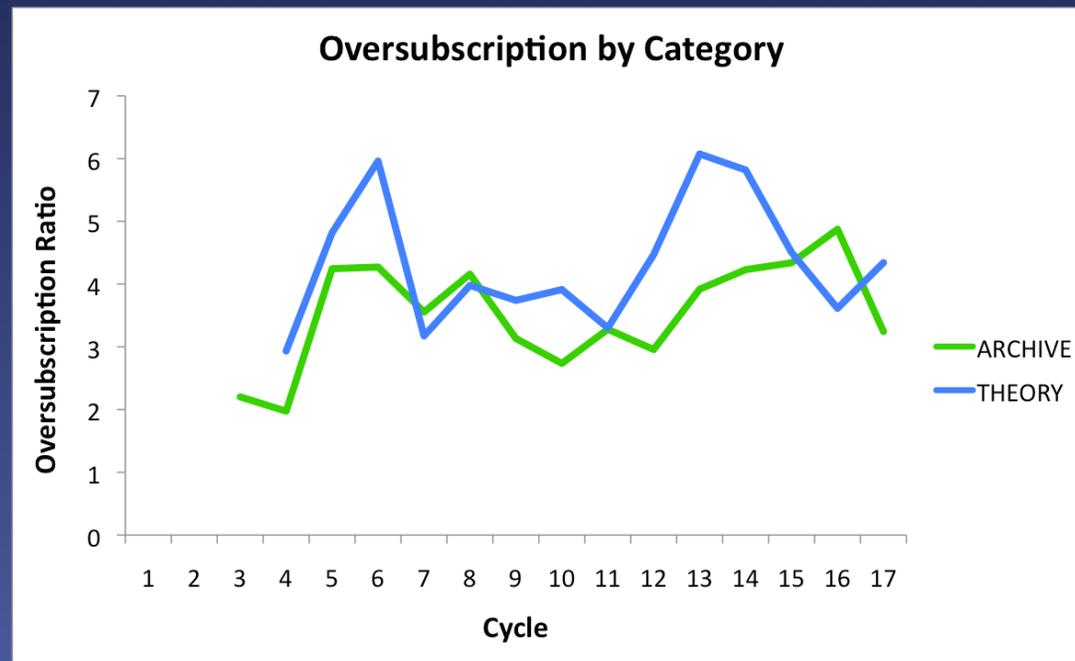
Cycle 17 Proposal Statistics

Archive:

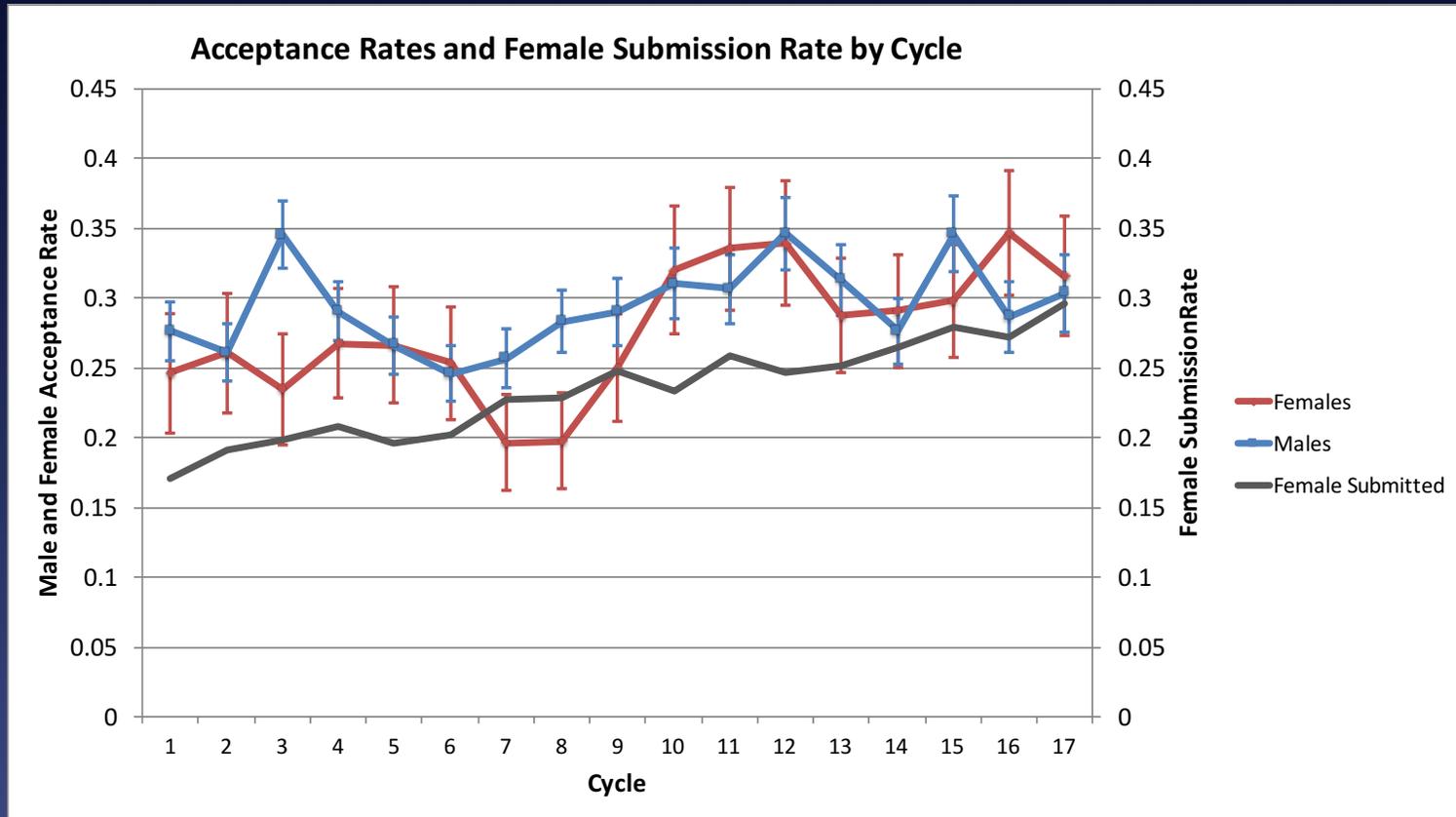
- Budget: \$1050K
- Allocated \$1075K (18)
- Over-subscription: 3.1

Theory:

- Budget: \$600K
- Allocated: \$676K (10)
- Over-subscription: 3.8



Cycle 17 Gender Statistics



Proportion of female proposers continues to rise, Cycle 17 acceptance rates for males and females identical.



Plans for Cycle 18

Schedule:

- Call for Proposals and associated software and documentation 15th Dec 2015
- GO Proposal Deadline, 15th March 2016
- Peer Review 27th June - 1st July 2016
- Target list week of 18th July 2016
- E-letters week of 15th Aug 2016
- Cost Proposal deadline 22nd Sept 2016

Joint Programs:

- No change: HST, Spitzer, XMM-Newton, NOAO, NRAO & NuStar



Move Large Project Boundary to 400 ks?

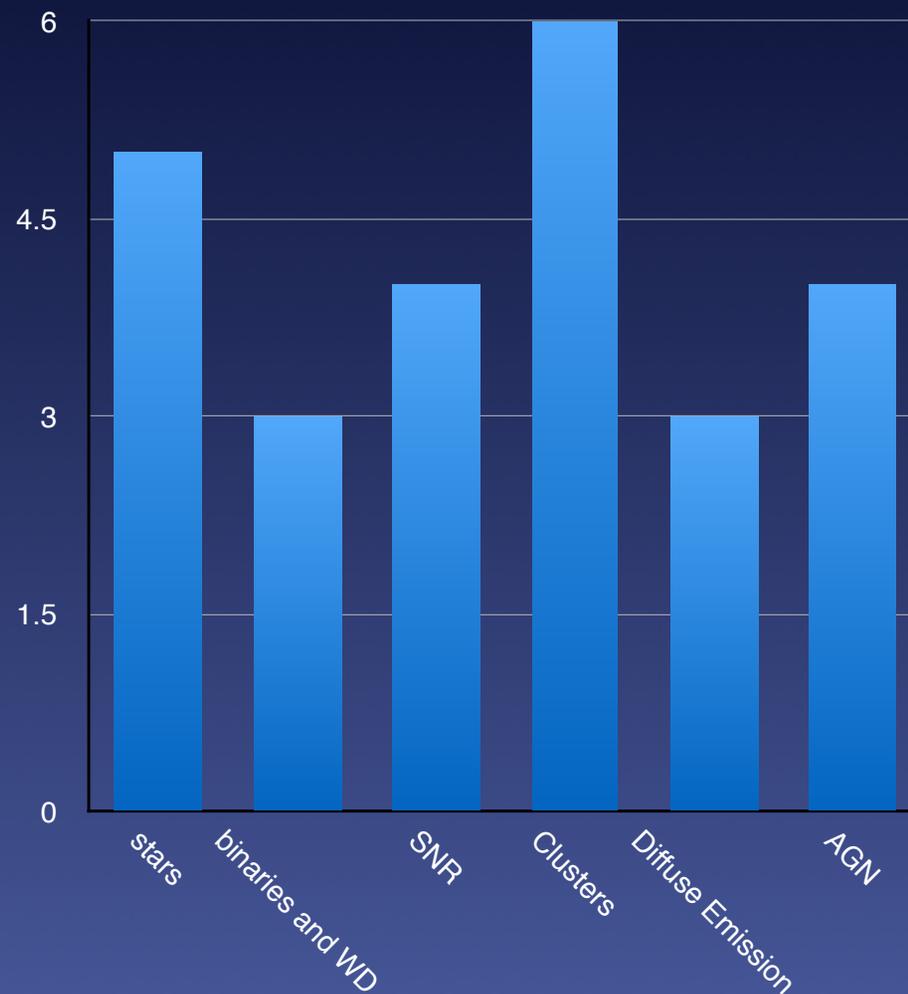
Large Projects instituted in Cycle 2 for programs >300 ks. Because they ask for a large chunk of time they are reviewed very carefully: evaluated in two topical panels and the Big Project Panel. Why change?

- As the mission matures, pressure is for larger projects, 300 ks is now “medium”!
- Shifting proposals 300-400 ks into the Topical Panels will naturally reduce the LP oversubscription
- Reduces the load on the Big Project Panelists
- Reduces the load on the Topical Panels
- Will make recruiting panel chairs easier!



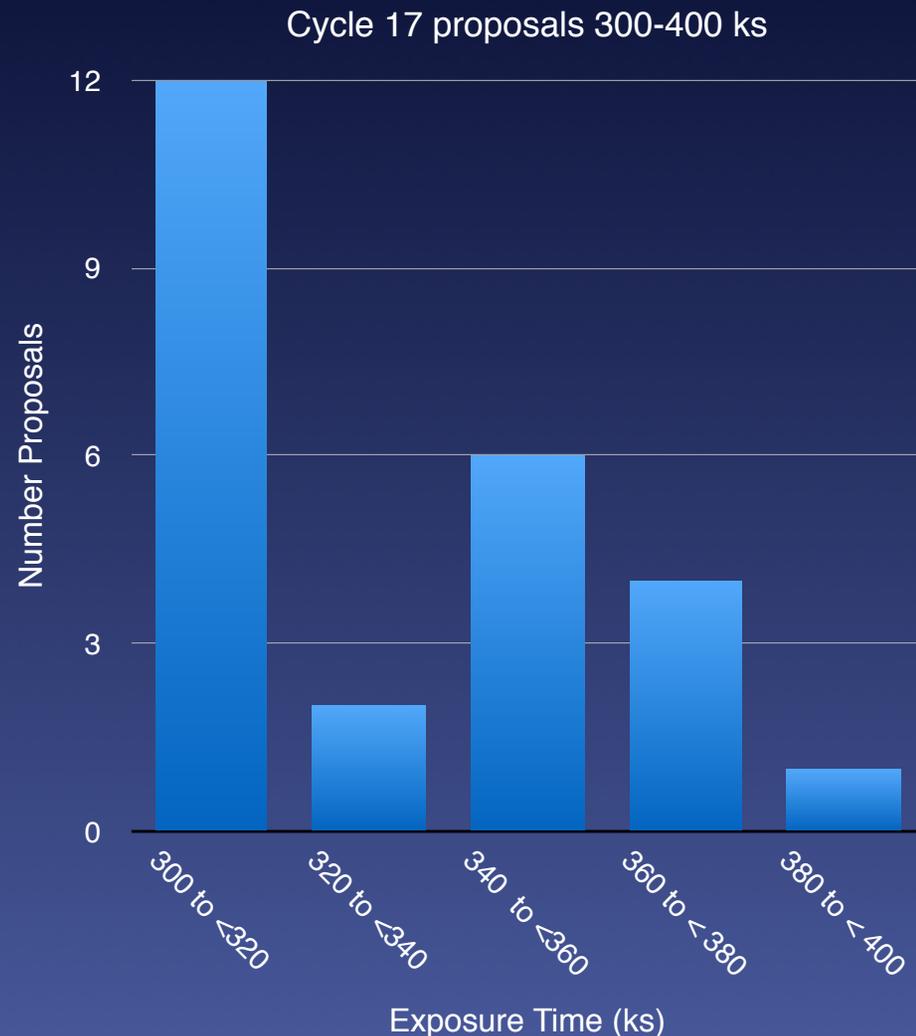
Cycle 17 statistics if 300-400 ks Proposals moved to GO Category

- In Cycle 17, 25 LPs between 300-400 ks were submitted for a total 8.7 Msec. Move these to the topical panels:
- N_{GO} 347 \rightarrow 372
- N_{LP} 72 \rightarrow 47
- LP oversubscription 10.0 \rightarrow 7.8
- GO oversubscription 2.9 \rightarrow 3.9



Consequences of moving the LP Boundary

- Proposers “engineer” requested exposure to
 1. fall into the LP category
 - OR
 2. not to request $> 25\%$ of panel allocation
- Likely see decrease in proposals in the 350-400 ks category
- Pileup > 400 ks



XVP Plans for Cycle 19 and Beyond

- X-ray Visionary Projects:
 - An XVP proposal should describe a major, coherent science program to address key, high-impact, scientific question(s) in current astrophysics
 - We envision that XVPs will result in data sets of lasting value to the astronomical community.
- Thirteen XVPs approved Cycle 13-16, no XVPs in Cycle 17.
- Your recommendation last year was not to start XVPs in Cycle 18: this is our default assumption



XVP Plans for Cycle 19 and Beyond

- Decision on when/whether to issue an XVP call in Cycle 19 does not need to be made now, but we need to start thinking about it!
- Preliminary results from an in-depth study of publication and citation statistics of projects of different sizes for Cycles 1-13.
- The publication/citation statistics for XVPs are not available yet, but past large surveys (some spanning several cycles or involving GTO and/or DDT) can provide a guide.
- Preliminaries: need to define
 - Aggregates
 - Weighted Publication Rate



Aggregates

- In the archive, Chandra Science Papers (CSPs) are associated with a given observation, but
 1. Individual observations form proposals
 2. Proposals grouped together form larger projects, which often span different proposal types (e.g. CDF used DDT, GO, GTO time to accumulate the final exposure)
- AGGREGATES are groups of observations that form a coherent whole. This may be a proposal, or multiple proposals. These have been identified through the literature, asking people, and Obscat.
- Examples: CDFS (4 Msec), DEEP2 (3.7 Msec) , M101 (1.1 Msec)



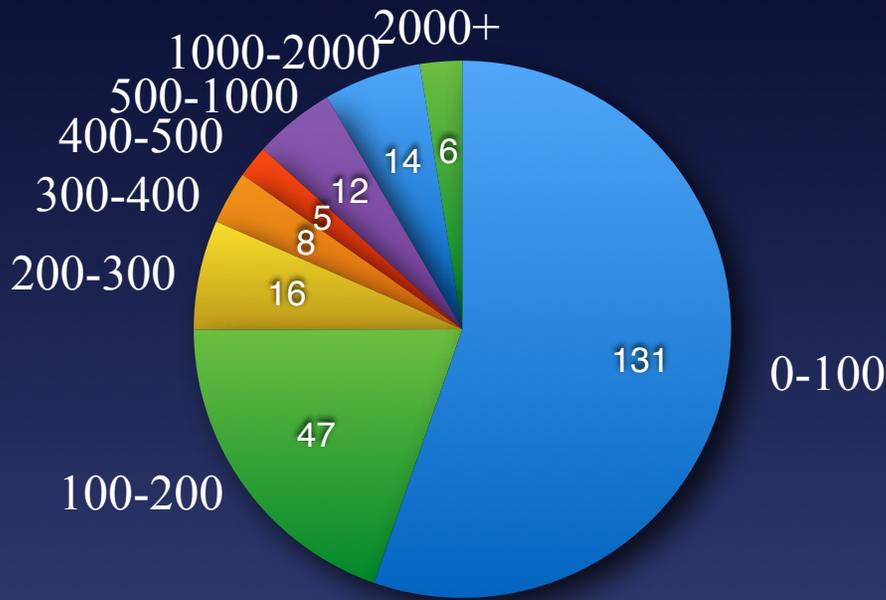
Weighted Publication Rate

For each aggregate:

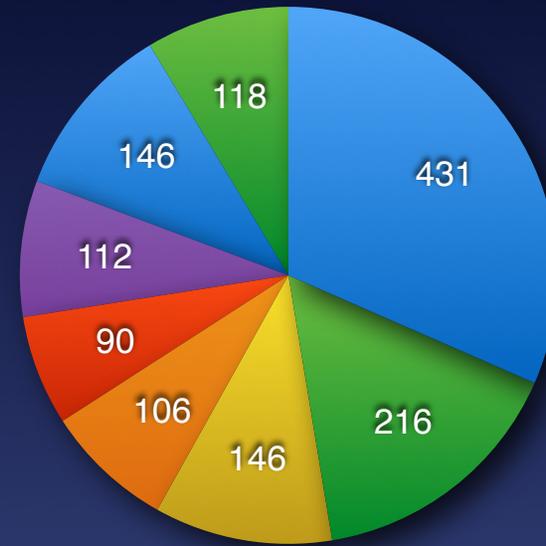
- Collect all CSPs which used data from the aggregate. Weight the paper by:
 - Percentage of time in paper attributed to the aggregate (to account for papers which use data from multiple aggregates)
 - Percentage of time in aggregate attributed to paper (to account for papers which do not use the entire aggregate)
- Determine the weighted publication RATE as
 - $(\text{sum of weighted CSPs}) / (\text{age of aggregate})$
- Use of publication RATE for each aggregate allows aggregates of different ages to be combined in a bin (e.g 0-100 ks, 200-300 ks etc).
 - appropriate for the Chandra archive: publication statistics indicate that the entire archive is still being used (i.e. the oldest data in the archive are still being published).



Effectiveness of LPs and XVPs: Publication statistics



Weighted publication rate as a function of aggregate size:
many more smaller aggregates!

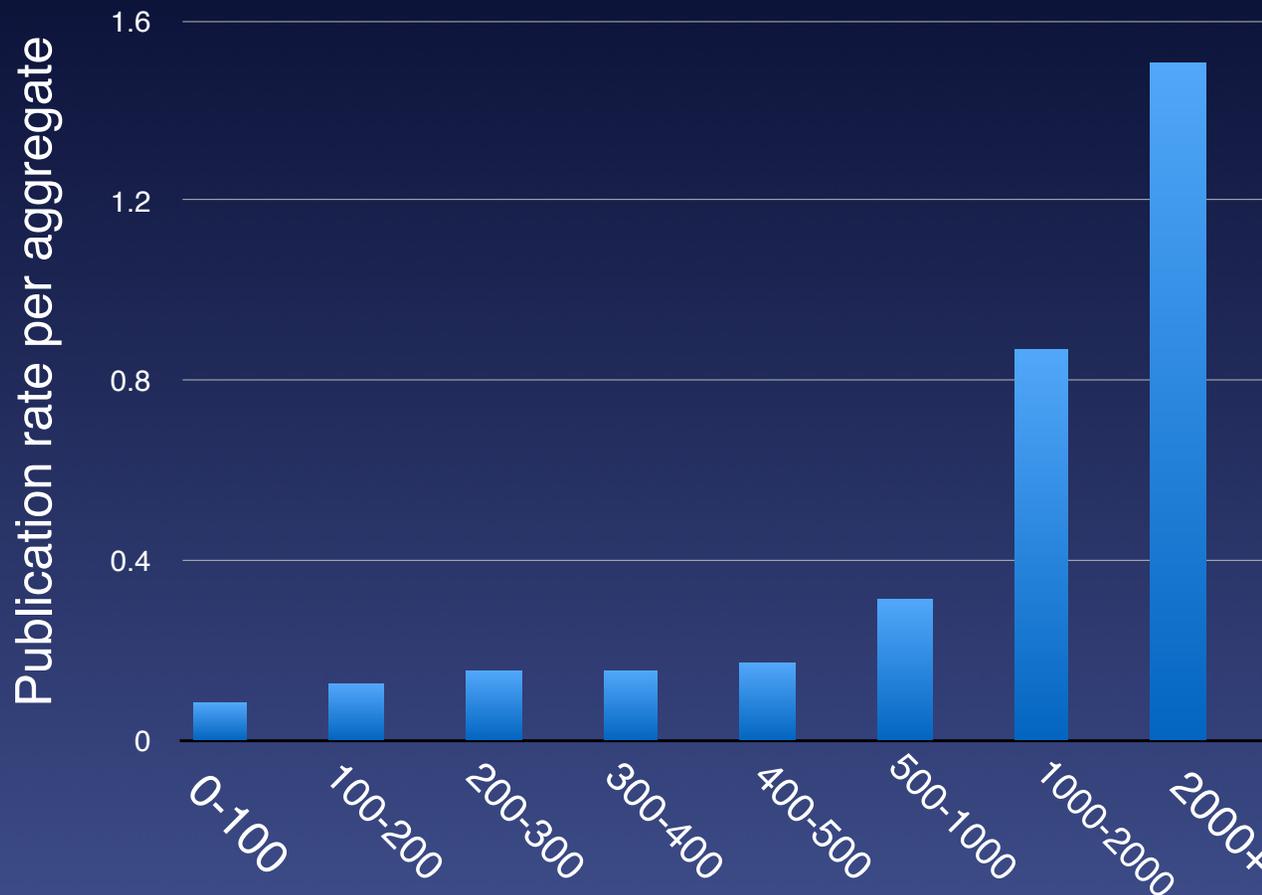


Weighted publication rate as a function of aggregate size, normalizing by total time. Slices would be same size if publication rate was independent of aggregate size.

As expected, XVPs have publication rates lower than the smallest aggregates, but comparable when normalized by time.



Effectiveness of LPs and XVPs: Publication statistics

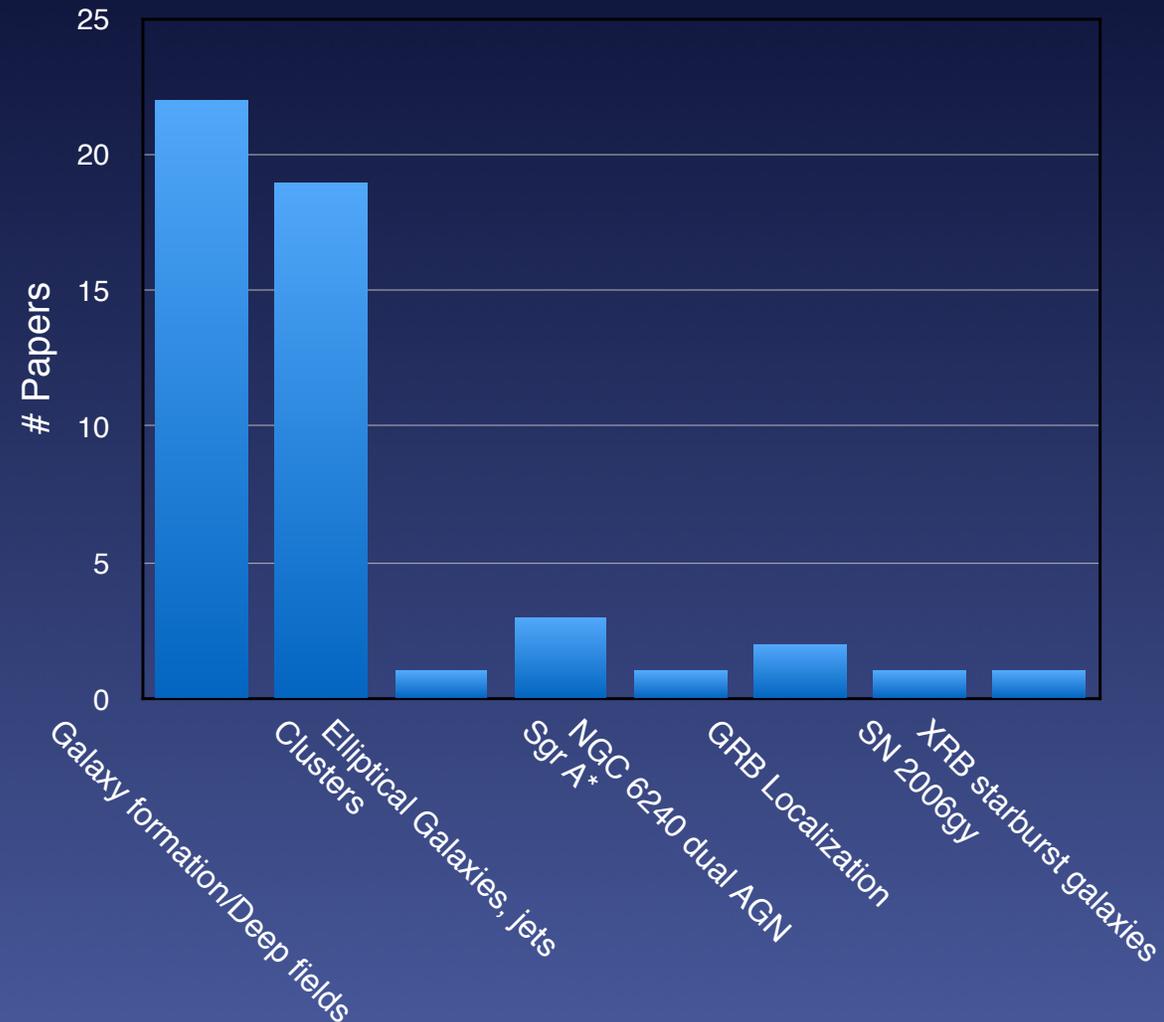


Publication rate per aggregate as a function of bin size. Major caveat: most “Type 2” Chandra science papers have not been tied back to the original data sets. These numbers will increase when this analysis is complete (especially the XVPs?).



Effectiveness of LPs and XVPs: highest impact papers

- Top 50 cited CSPs (no weighting!)
- spans years 2000-2010
- top paper has 803 citations, published in 2006
- 22 of the top 50 are galaxy formation/deep fields, with roots in one of the deep surveys
- 19 are cluster related science, 3 of which are cosmology papers from the 400d survey (others include shocks, cold fronts, cooling flows and the Bullet Cluster)
- Conclude: 50% of top 50 papers associated with XVP-sized aggregates!



Summary

- XVP-proxies earlier in the mission contribute a relatively small fraction of the absolute numbers of Chandra publications
- XVP-proxies have much higher publication rates than smaller aggregates: they produce a steady stream of publications. Actual numbers of papers definitely underestimated since not all CSPs Type 2 have been linked back to the original dataset.
- XVP-proxies feature prominently in the Top 50 CSP list.
- No XVPs for Cycle 18, but re-start in Cycle 19?

