Science Policies Update

STUC Meeting

10 April 2008

Outline

- Cycle 16 Update – see HST MO presentation
- Cycle 17 Proposal Submission
- HST Lunar Initiative

Cycle 17 Proposal Submission

Schedule

SM4 is scheduled for August 28 2008

- SM4 complete by early September 2008
- SMOV during September/October 2008
- HST available for observations October-November 2008

Cycle 17 schedule

- CP17 release – 3 December 2007
- Proposal deadline – 7 March 2008 (2 weeks before Chandra)
- HST TAC meets @ STScI/JHU – May 12-16 2008
- Notification May 28 2008
- Phase II reviews – July/August 2008 (pre-SM4)
- Observations start – late-September/October 2008
  - Phased implementation by instrument
- Cycle 17 ends December 31 2009

Cycle 17 TAC - preparations

Cycle 17 will offer a broad instrumental suite

- WFC3, COS, ACS (all cameras), STIS, NICMOS, FGS
- Spectroscopy will become possible again with HST

We anticipated more proposals → several steps to deal with this:

- Add extra panel by combing Solar System with Exoplanets, Circumstellar Material and Star Formation → mirror panels for Solar system programs for the first time (12 panels in total)
- 1 extra week for panelists reviews
- Panelists asked to provide preliminary grades for 2/3rds proposals

Contingencies

- ACS & STIS repairs are on best effort basis; proposals to use either instrument must provide contingency plans for non-availability → TAC/panels will advise on ranking
- HST TAC/panels will be asked to rank deeper than normal

Phase I Schedule

- Dec 3 — CP Release
- Jan 17 — APT Release
- Mar 7 — Phase I Deadline
- Mar 25 — Ship CDs to Panelists
- Mar 26 - May 12 — Review Preparations
- May 8 — Preliminary grades
- May 12-14 — Panels meet
- May 14-16 — TAC meets
- May 24 - 26 — Memorial Day Weekend
- May 27 — Director's Review
- May 28 — Notifications start

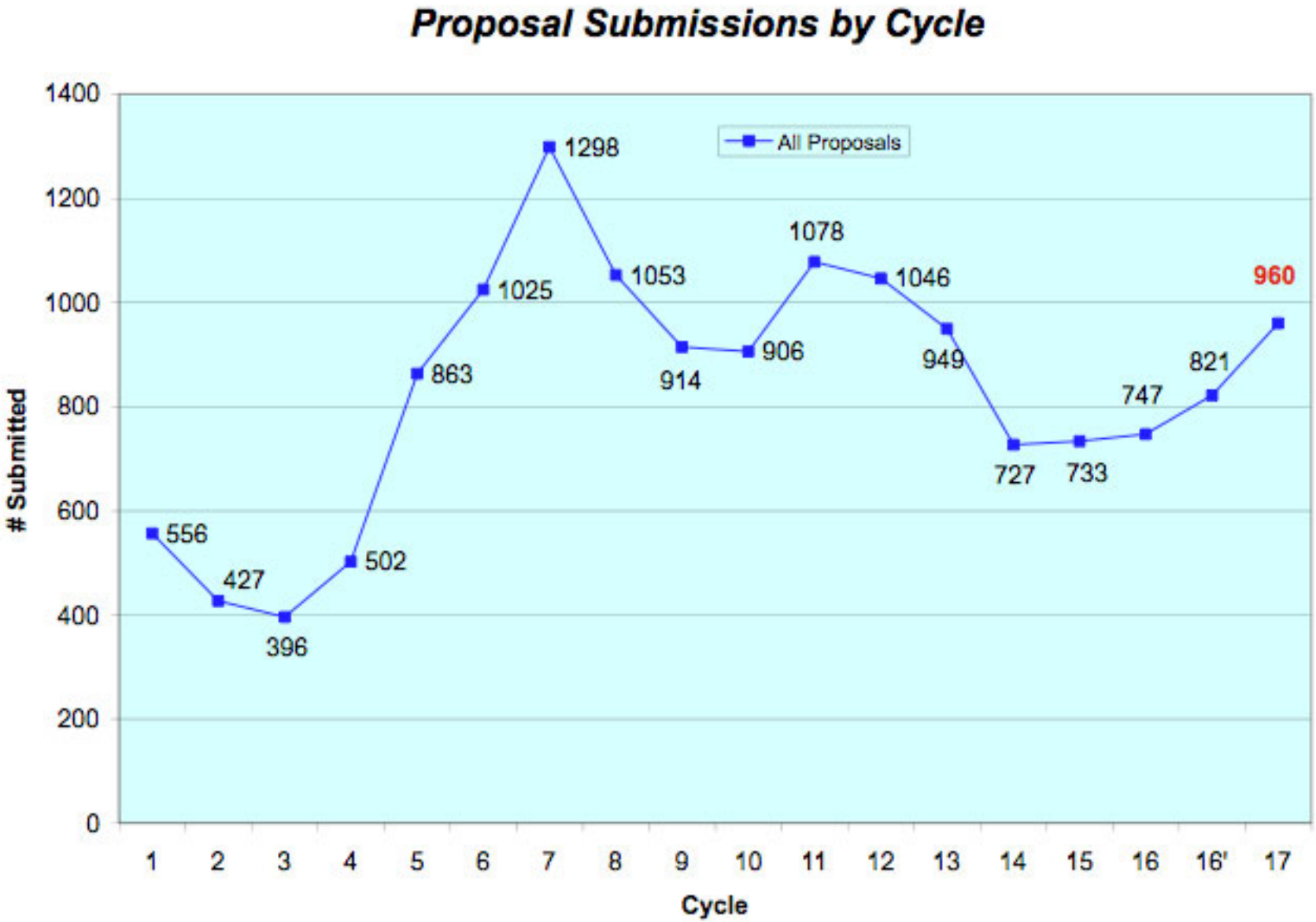
Submission Statistics

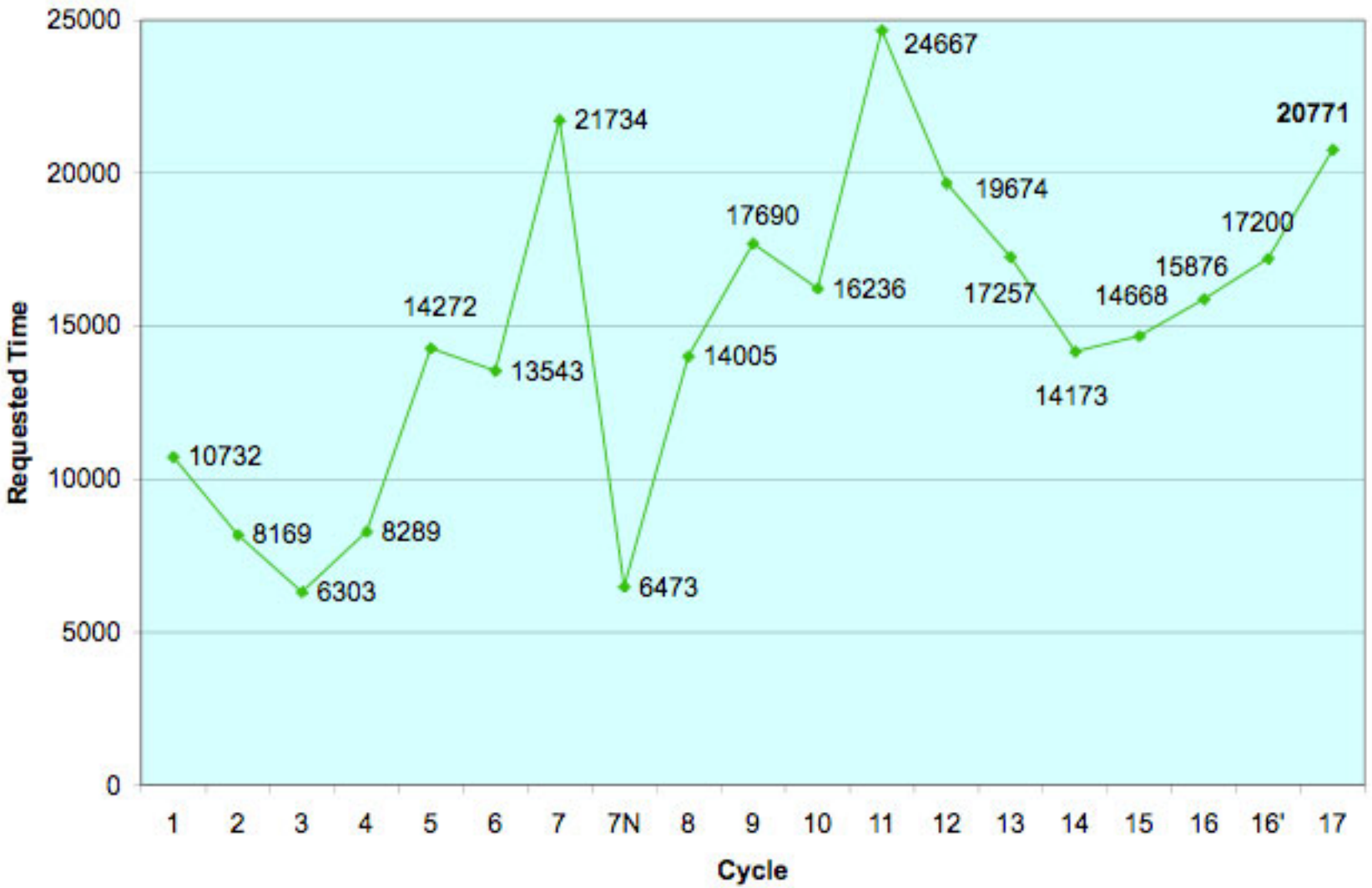
- 960 Proposals requesting almost 21000 orbits:
  - 753 GO (583 last cycle)
  - 41 Snaps (39 last cycle)
  - 21 Surveys (26 last cycle)
  - 145 Archival Research (173 last cycle)
  - 6 Pure Parallels for 1361 orbits
- 181 proposals submitted from ESA PIs
  - 172 GOs for 4066 orbits
  - 8 Snaps for 892 targets
  - 1 Survey for 8 orbits

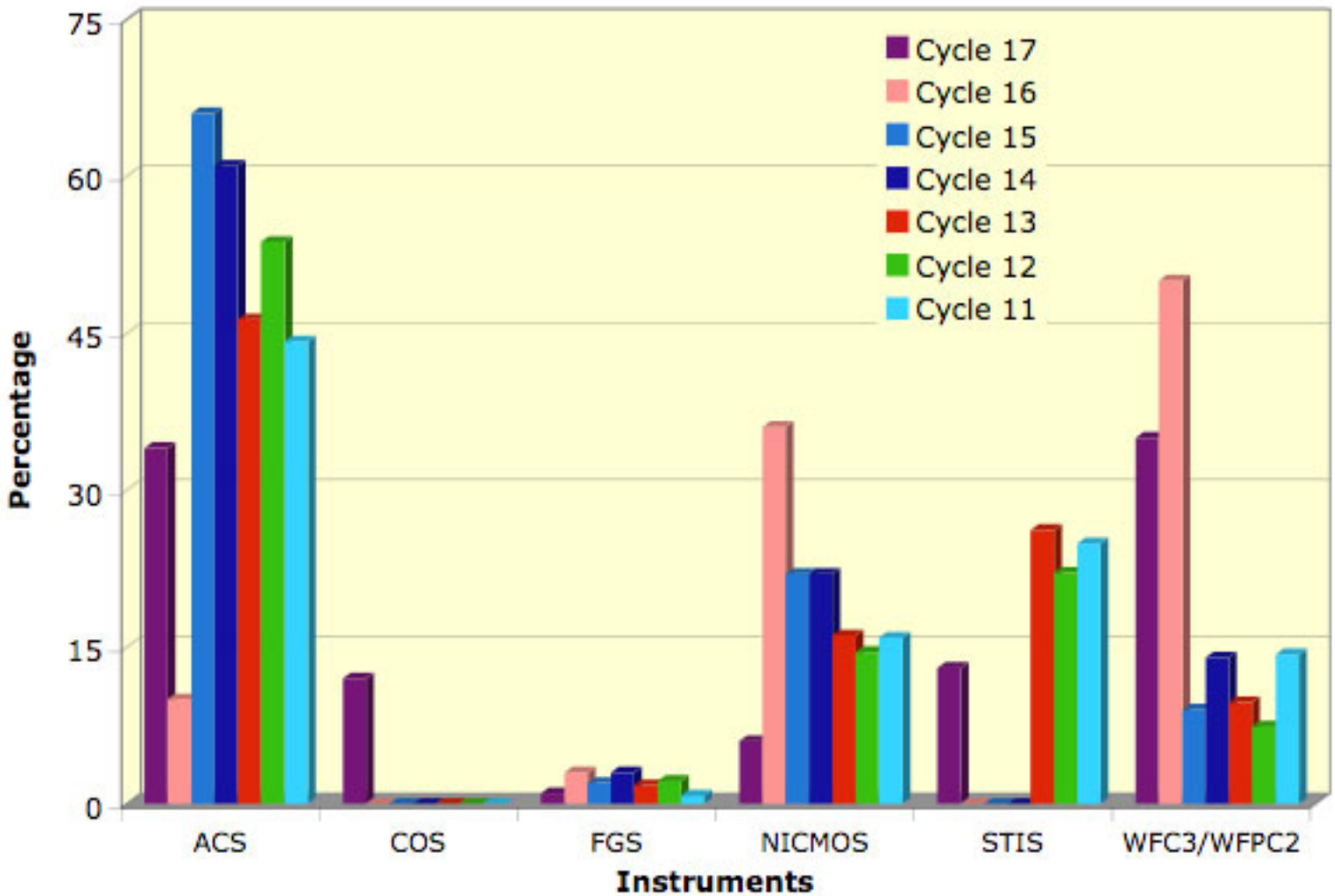
Key Points

- Largest orbit request for TAC proposals since Cycle 11
- 3rd Largest Orbit Request (behind only Cycles 7 & 11)
- Future Cycle requests on par with previous years
- Chandra requests down; NOAO the same; no Spitzer
- Calibrations: 4 GO and 2 AR
- Archival Research requests slightly down
- Largest number of Investigators ever
- Relatively low interest in Survey programs (still)
- 6 Lunar programs submitted – all technically feasible

(Statistics compiled by Brett Blacker)


Proposal Submissions by Cycle
All Proposals
Submitted
Cycle
1400
1200
1000
800
600
400
200
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 16' 17
556
427
396
502
863
1025
1298
1053
914
906
1078
1046
949
727
733
747
821
960


Orbits/Hours Requested by Cycle
Requested Time
25000
20000
15000
10000
5000
0
10732
8169
6303
8289
14272
13543
21734
6473
14005
17690
16236
24667
19674
17257
14173
14668
15876
17200
20771
1
2
3
4
5
6
7
7N
8
9
10
11
12
13
14
15
16
16'
17
Cycle

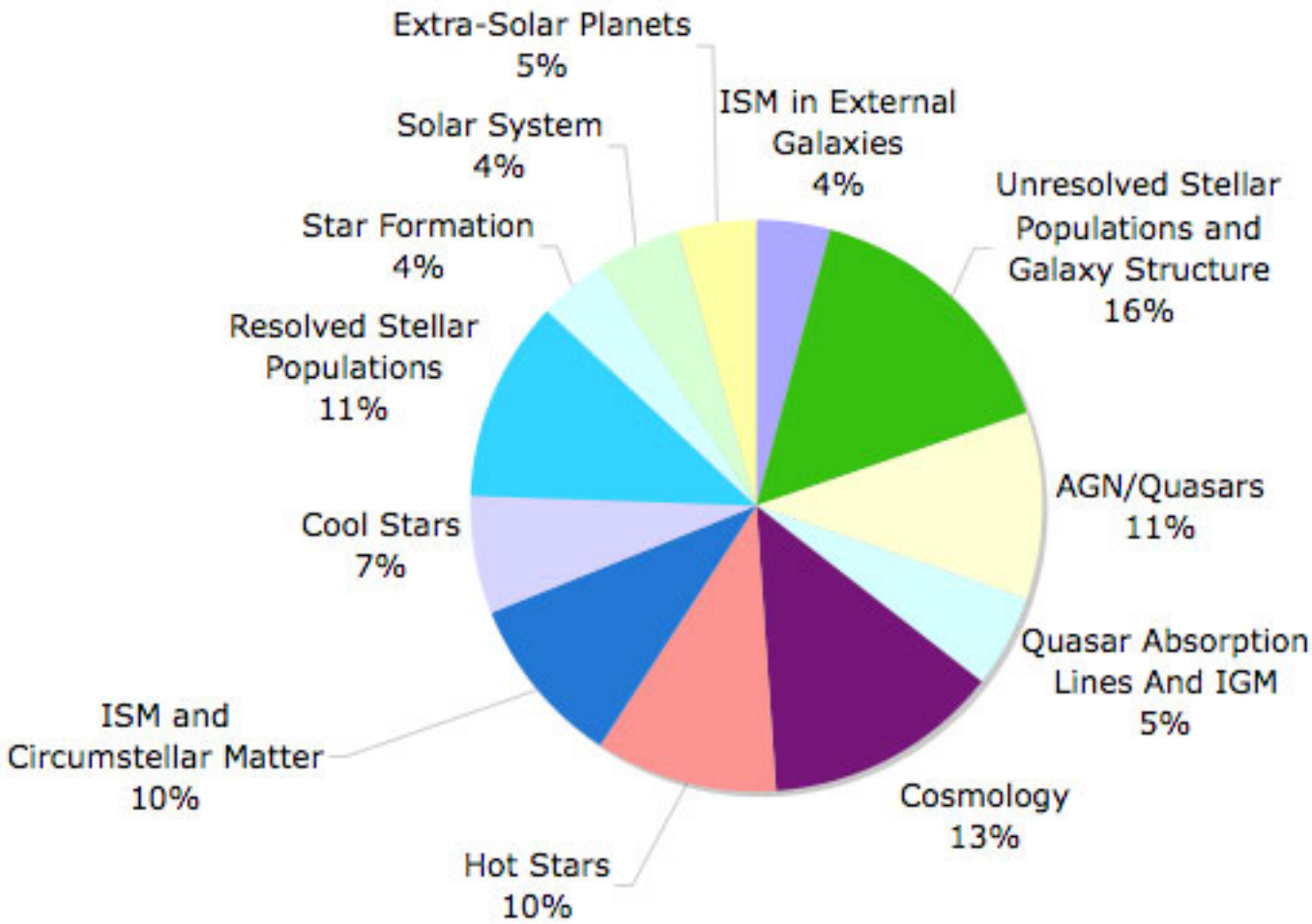

GO Requested Instruments
75
60
45
30
15
0
Percentage
Cycle 17
Cycle 16
Cycle 15
Cycle 14
Cycle 13
Cycle 12
Cycle 11
ACS
COS
FGS
NICMOS
STIS
WFC3/WFPC2
Instruments

Cycle 17 Instrument Configuration/Modes

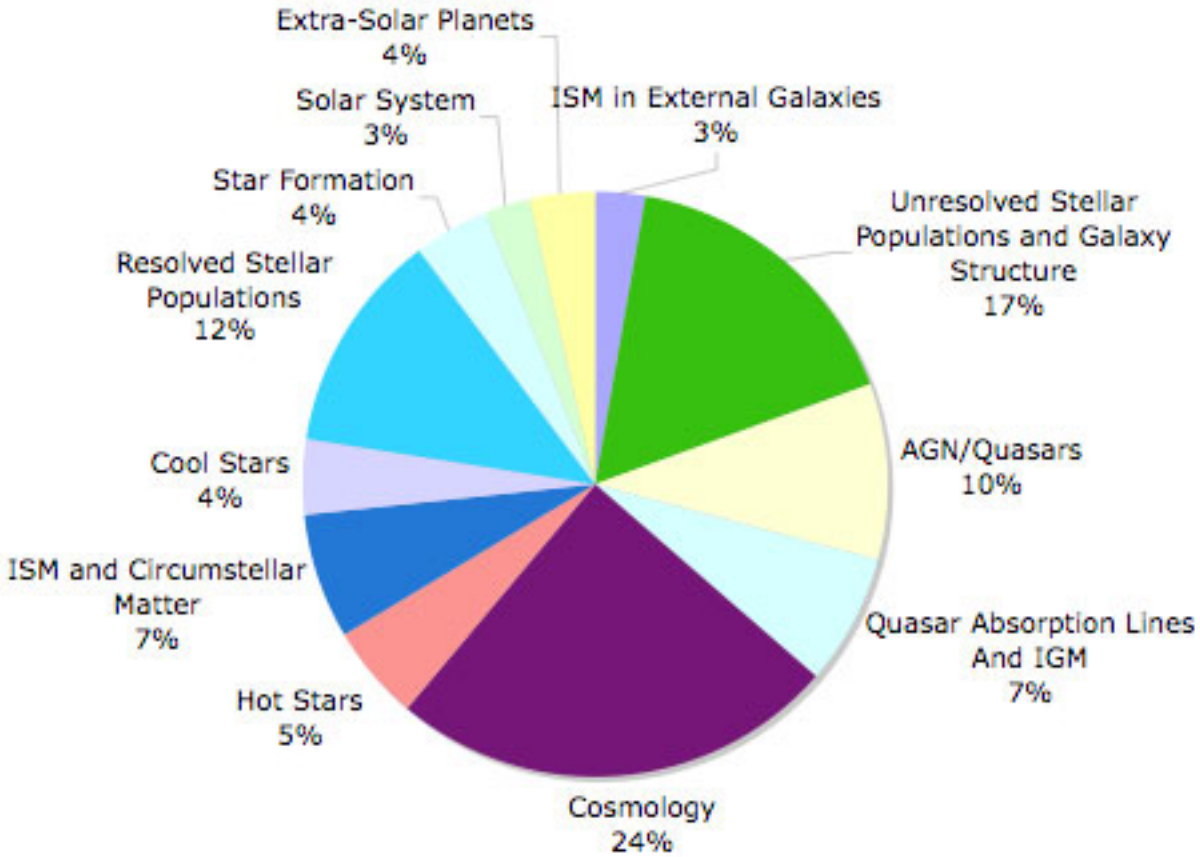
Instrument	Configuration	Mode	Orbits	Usage	
ACS	HRC	Imaging	937	**3.01%**	
		Rampfilter	21	**0.07%**	**3.5%**
		Spectroscopy	131	**0.42%**	
	SBC	Imaging	389	**1.25%**	**1.3%**
		Spectroscopy	7	**0.02%**	
	WFC	Imaging	7914	**25.41%**	
		Rampfilter	134	**0.43%**	**26.7%**
		Spectroscopy	280	**0.90%**	
COS	FUV	Spectroscopy	2486	**7.98%**	**8.0%**
	NUV	Imaging	89	**0.29%**	**1.4%**
		Spectroscopy	351	**1.13%**	
FGS		POS	460	**1.48%**	**1.5%**
		TRANS	13	**0.04%**	**0.0%**
NICMOS	NIC1	Imaging	221	**0.71%**	**0.7%**
	NIC2	Imaging	995	**3.19%**	**3.2%**
	NIC3	Imaging	2672	**8.58%**	**8.9%**
		Spectroscopy	91	**0.29%**	
STIS	CCD	Imaging	100	**0.32%**	**2.2%**
		Spectroscopy	586	**1.88%**	
	FUV	Imaging	3	**0.01%**	**3.3%**
		Spectroscopy	1011	**3.25%**	
	NUV	Imaging	5	**0.02%**	**1.9%**
		Spectroscopy	573	**1.84%**	
WFC3	IR	Imaging	5707	**18.32%**	**20.0%**
		Spectroscopy	535	**1.72%**	
	UVIS	Imaging	5389	**17.30%**	**17.5%**
		Spectroscopy	46	**0.15%**	

Imaging	**Spectroscopy**	**FGS**
78.91%	19.58%	1.5%

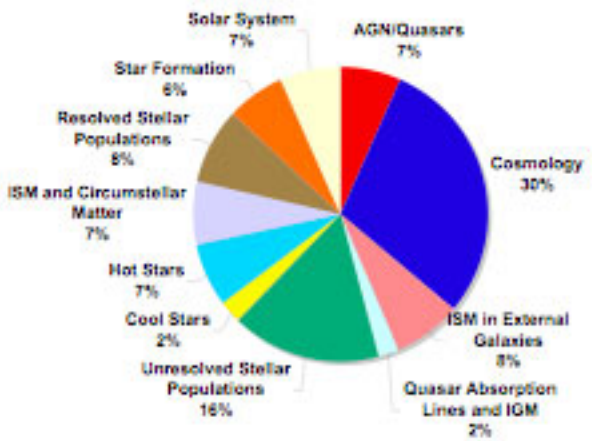
Science Categories by Proposals



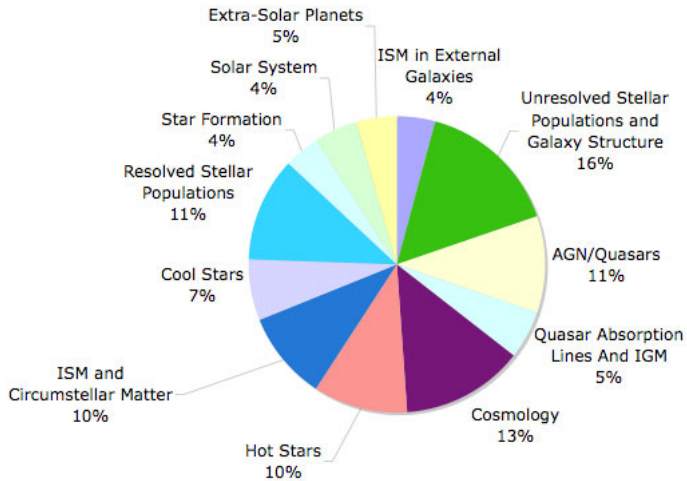
Science Categories by Orbits



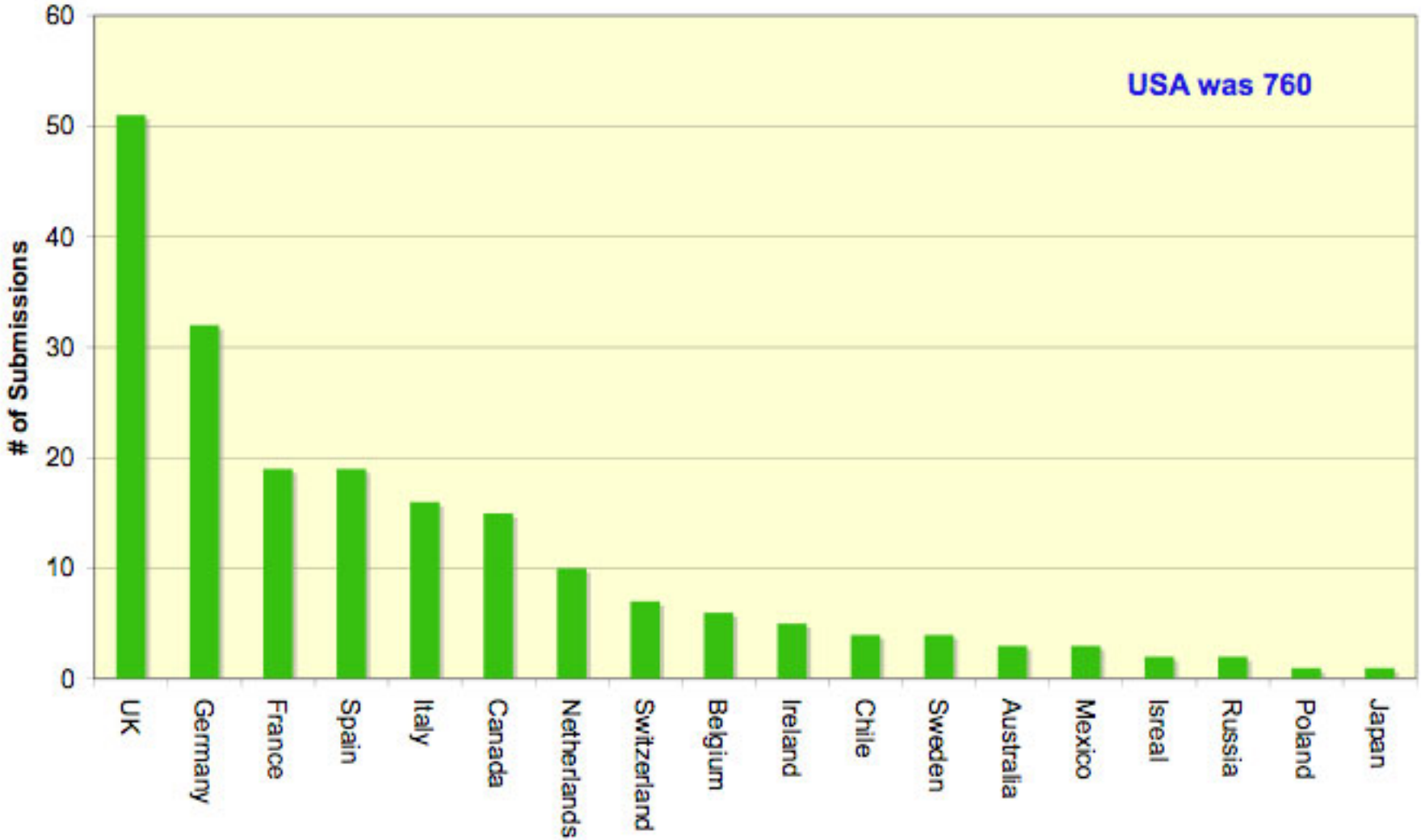
Approved Orbits by Science Category

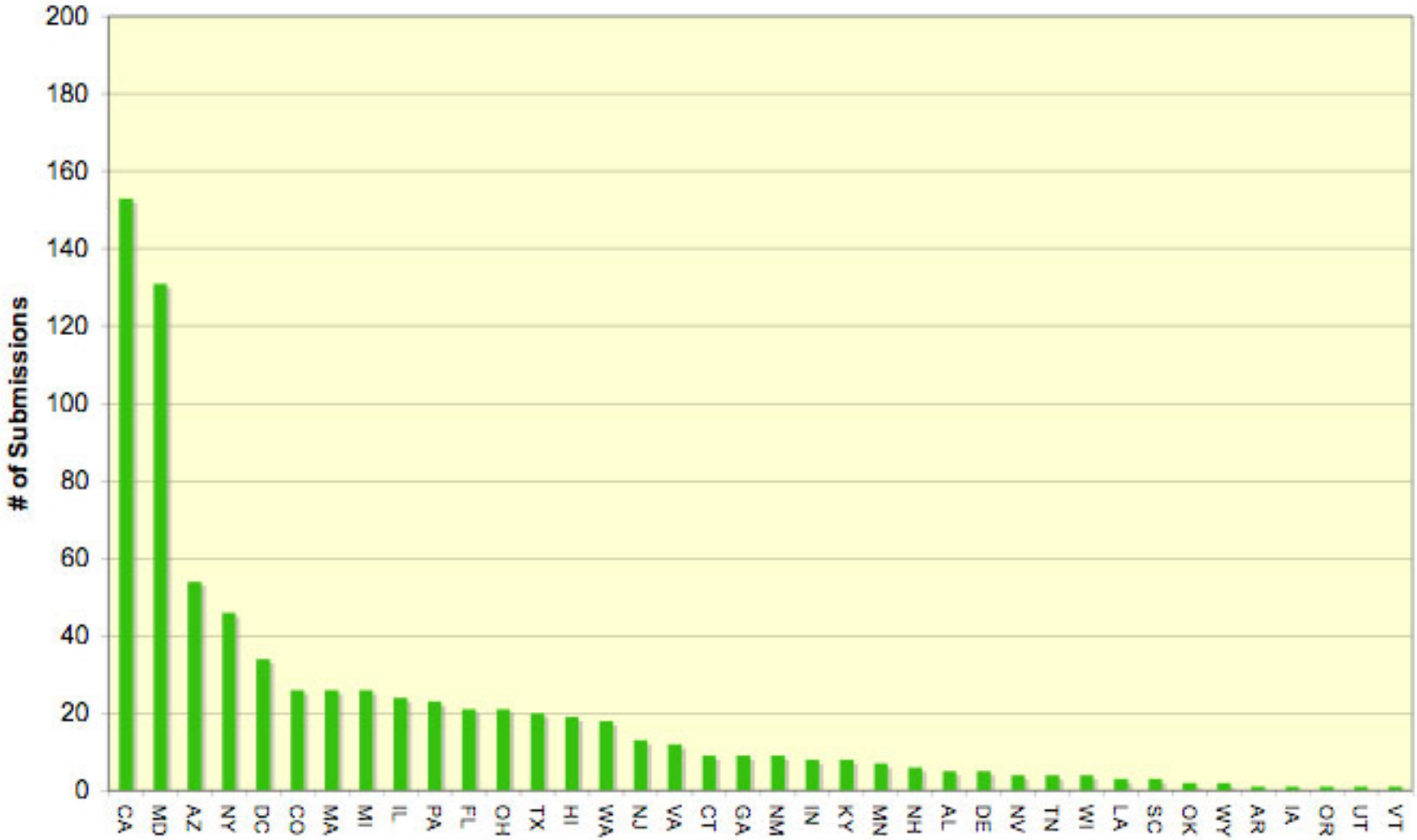


Science Categories by Proposals

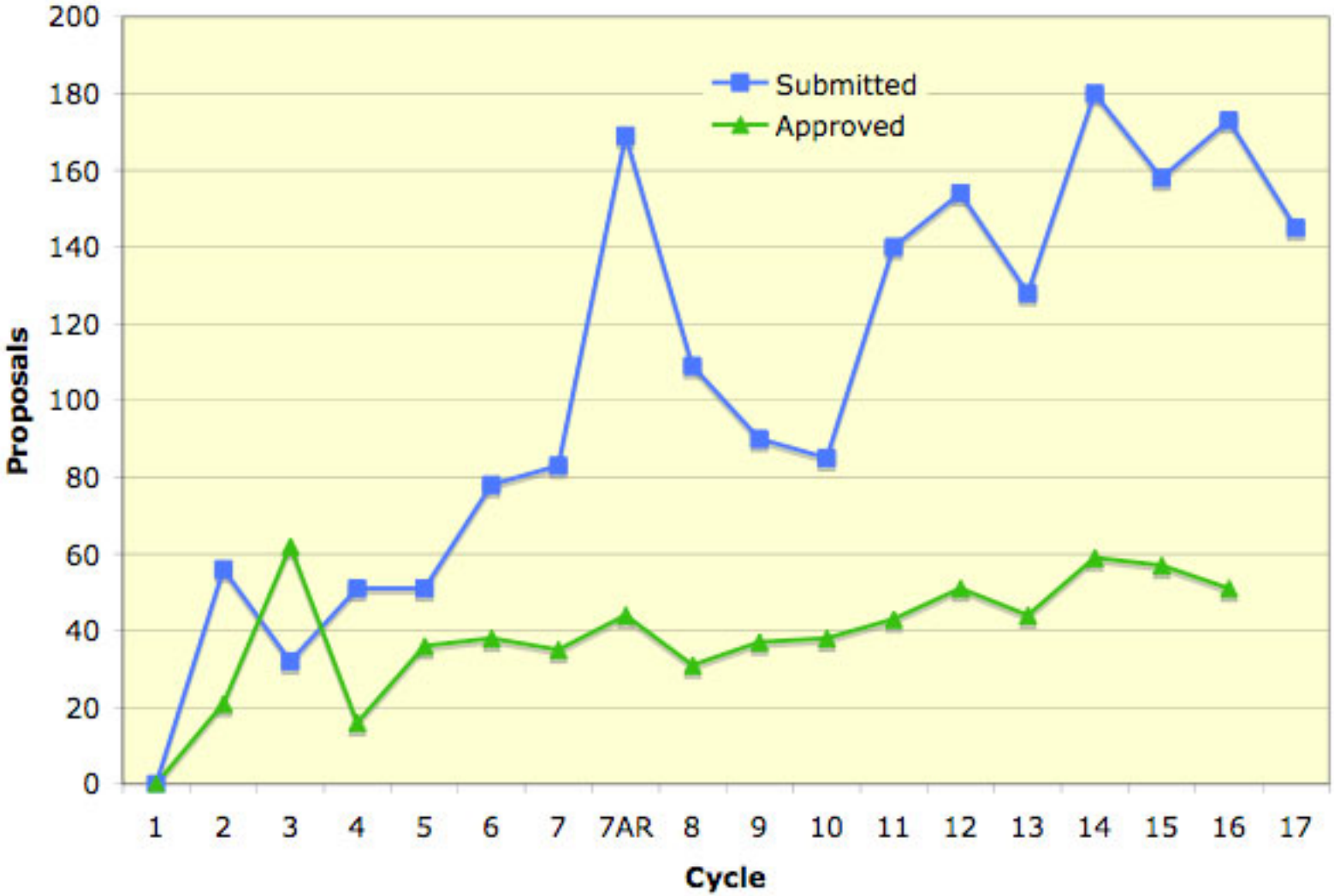


Proposal Submissions by Country (w/out USA)

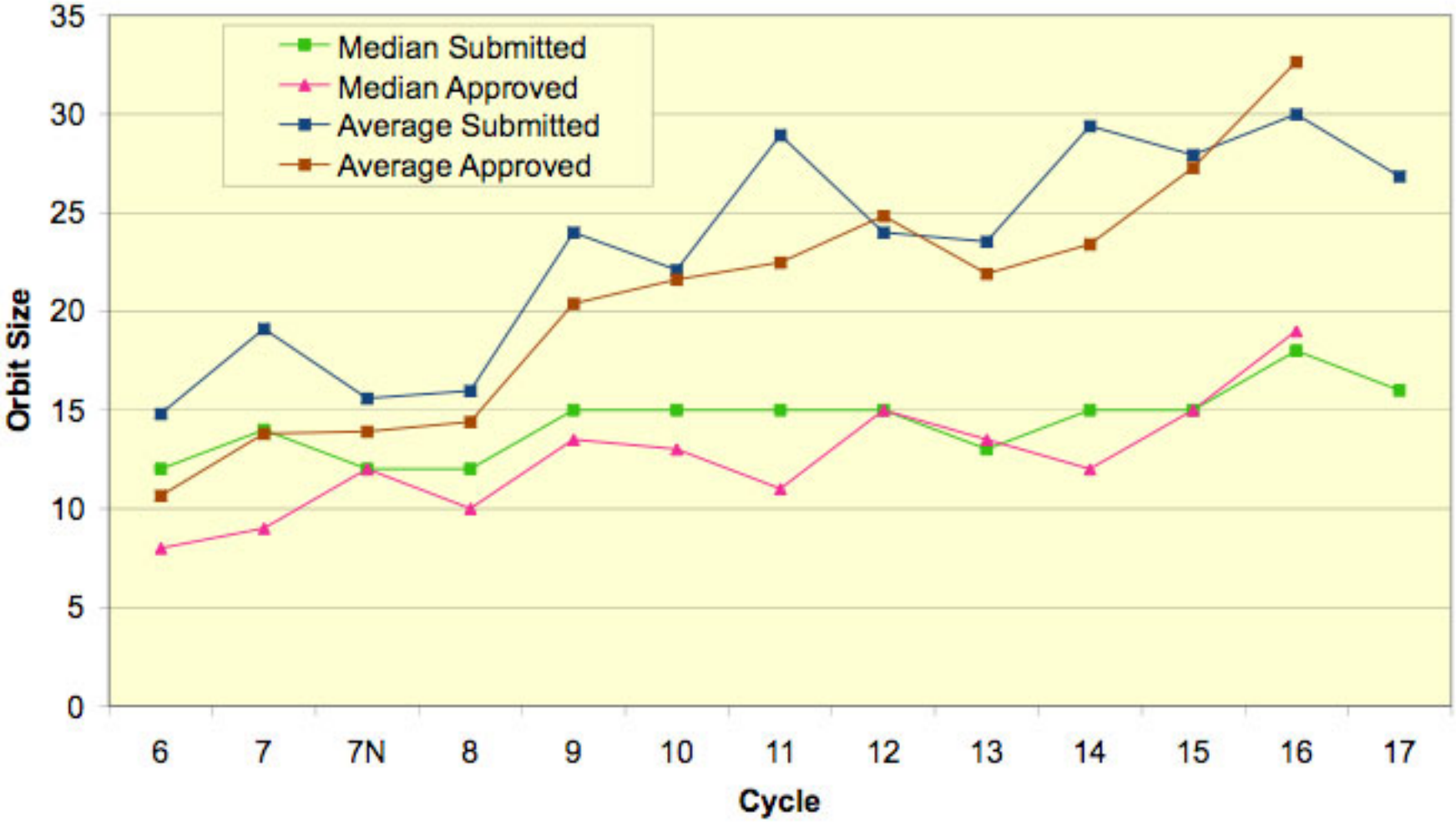



Proposals Submitted by US State
# of Submissions
200
180
160
140
120
100
80
60
40
20
0
CA
MD
AZ
NY
DC
CO
MA
MI
IL
PA
FL
OH
TX
HI
WA
NJ
VA
CT
GA
NM
IN
KY
MN
NH
AL
DE
NV
TN
WI
LA
SC
OK
WY
AR
IA
OR
UT
VT

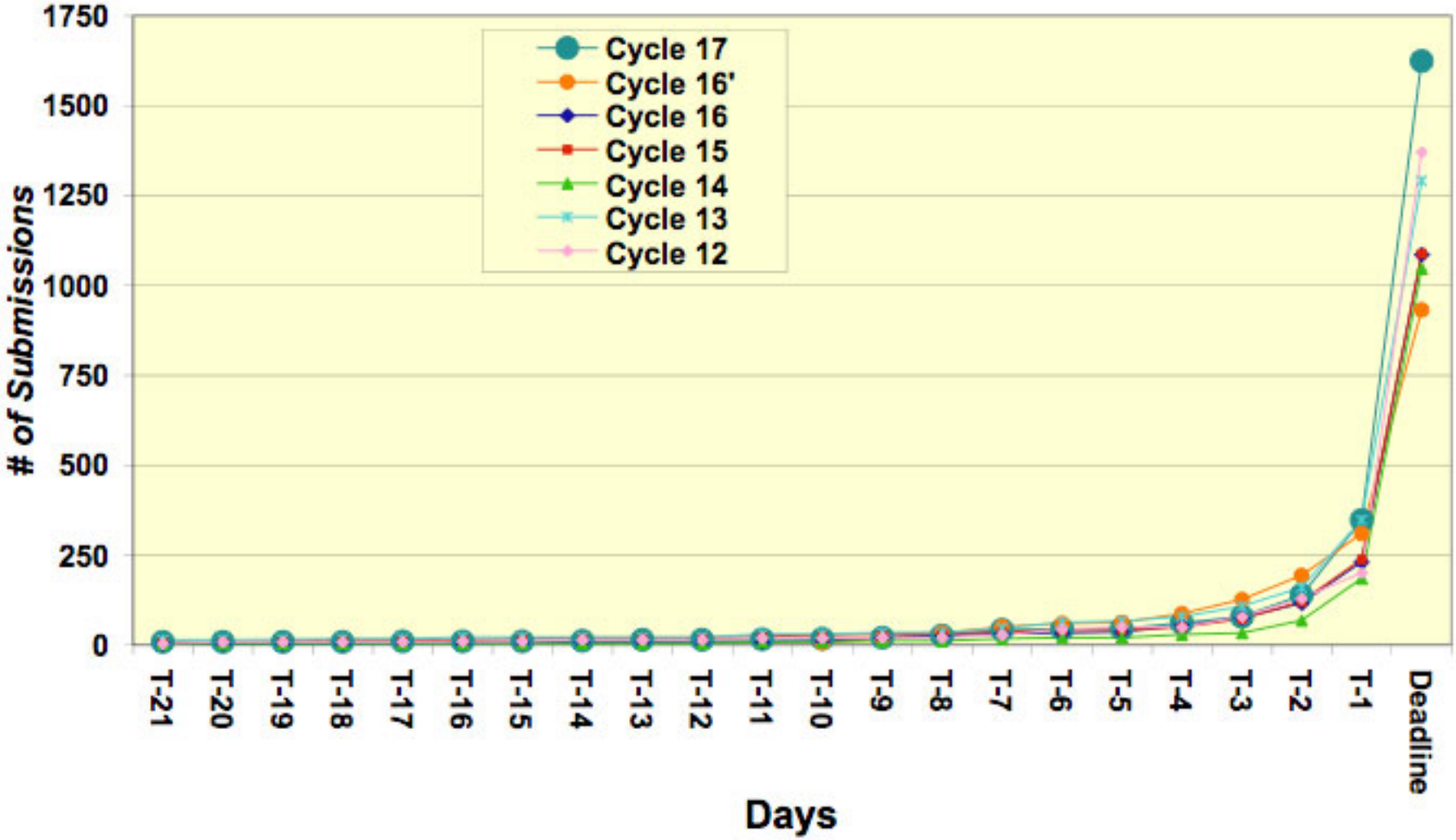
Archival Research Proposals



Orbit Size by Cycle



Proposal Submissions/Resubmissons



Proposal distribution by panel

Panel	GO props	GO orbits	Survey	SNAP	AR	Total
Exgal1	62	1276	4	4	16	86
Exgal2	63	1138	1	4	18	86
Exgal3	66	1404	2	5	14	87
Exgal4	65	1791	2	6	18	91
Exgal5	56	1632	3	4	20	83
Galac1	62	644	3	3	9	77
Galac2	72	752	0	4	6	82
Galac3	45	864	1	3	16	64
Galac4	58	1014	1	2	6	66
Galac5	47	853	1	6	8	62
Planetary 1	50	862	1	2	4	57
Planetary 2	51	603	1	0	6	58
TAC	55	6913	2	0	4	61

Panels with >80 proposals ➔ assign 7 reviewers to each proposal

Panels with <80 proposals ➔ each panelist reviews all (unconflicted) proposals

Panel Allocations from Cycle 16

based on a combination of orbit and proposal pressure

Panel	GO props	GO orbits	Allocation
Exgal1	53	1619	**195**
Exgal2	55	1615	**195**
Exgal3	47	1722	**200**
Exgal4	58	1789	**210**
Exgal5	62	1857	**215**
Galac1	52	767	**105**
Galac2	53	601	**95**
Galac3	54	1128	**145**
Galac4	59	1174	**150**
Galac5	51	957	**120**
Solar Sys	27	281	**75**

3000 orbits total allocation: 1700 panels, 300 subsidy, 1000 TAC

1700 orbits distributed among 11 panels; Solar System assigned “bonus” orbits

Instructions to the TAC

- SM4 is scheduled for 28 August 2008
  - Install new instruments, WFC3 (replacing WFPC2) & COS (COSTAR)
  - Repair existing instruments, ACS & COS
  - NICMOS & FGS also available
- **TAC/panels should assume that all instruments are available and working nominally**
  - But, ACS & STIS repairs are on a best effort basis
  - Proposals requesting those instruments should provide alternate strategy should either not be available in Cycle 17 (more on this later)
- Simple selection criteria for Cycle 17

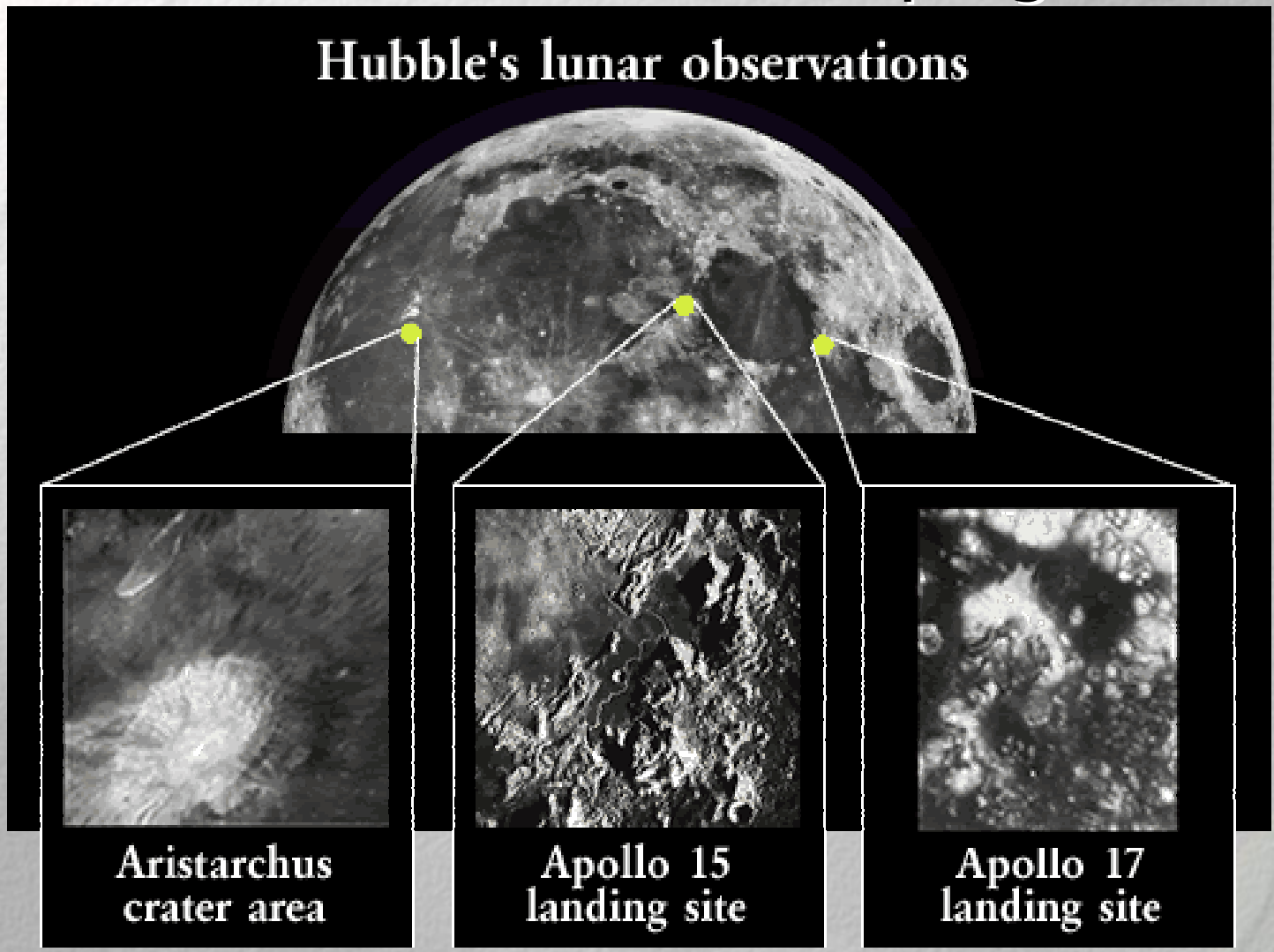
Pick the best science

A question for the STUC

- HST proposal format
  - Call for Proposals currently specifies required sections and lists specific page limits for each, e.g. for a Large Program
    - PDF limited to 11 pages
    - Sections: Scientific Justification, Description of Observations, Special Requirements (GO), Coordinated Observations (GO), Duplications, Analysis plan (AR & Theory), Budget Narrative (AR & Theory)
    - Scientific Justification no more than 6 pages
    - Figures & references after Scientific Justification
    - No changes to format
  - Should we list assigned sections (for AR or GO) plus a total page limit, and let the PI adjust to fit?
    - Allow format changes, but specific 12 pt. type except for reference
    - Allow figures within the text

HST Lunar Initiative

HST and the Moon – Garvin program



HST Lunar Initiative

STScI was asked by SMD to support NASA's Vision for Space Exploration *via* the lunar science community

- HST observations in support of LCROSS (January 2009)
- GO proposals to observe the Moon enabled in Cycle 17 call for Proposals → User Information Report on "Observing the Moon" available from Nov 1st to aid proposers
- DD allocation of ~25 orbits to Grunsfeld et al

Lunar initiative for exploratory science

- Call for white papers on lunar science – deadline 31/1/2008
- *6 white papers submitted by the deadline – several have also been submitted for consideration in Cycle 17*
- Technical assessment by STScI HST MO – most are feasible with current HST 3-gyro operations
- Scientific review by Lunar Advisory Group (external)
- Recommendation to Director by June 2008
- Approximately 30 orbits of DD time potentially available for exploratory lunar programs in Cycle 18

Lunar Initiative Timeline

- 10-Oct-2007: Call for white papers issued
  - Day after A. Stern's DPS announcement
  - HST website updated accordingly
- 31-Jan-2008: White paper deadline
  - Lunar Advisory Group (LAG) reviews and ranks white papers
  - LAG members: Paul Lucey (Hawaii) & Diane Wooden (Ames)
- 30-Apr-2008: LAG report to STScI Director
- 01-June-2008: Technical report to STScI Director
  - STScI and HSTP preliminary technical assessment
- 05-Sep-2008: SM4 begins
- Late Oct/Nov-2008: Cycle 17 begins
- 04-July-2009: Cycle 18 Phase I deadline
- 01-Sep-2009: Call for lunar science proposals issued
- 15-Oct-2009: Lunar science proposal deadlinesubmissions
- 01-Jan-2010: Cycle 18 begins
- Jan-2010: Lunar science proposal review
- Feb-2010: Proposers notified of review results
- Apr-2010: Phase II submission

LCROSS

- LCROSS (Lunar Crater Observation and Sensing Satellite)
  - Goal is to determine whether water ice exists in permanently shadowed regions - polar crater site
  - Scheduled for lunar impact in January 2009
  - Uses Earth-departure upper rocket stage to impact lunar surface
    - Impact creates an ejecta plume subject to solar UV radiation
    - Plume to be observed by LCROSS and Earth-based telescopes
    - LCROSS passes through plume and also impacts surface 10-15 minutes later

- HST observations – DD program, PI A. Colaprete (LCROSS)
  - Goal is to observe OH 3085A emission and possibly hydrocarbons
  - Observing strategy similar to 1999 Lunar Prospector program
    - Orbit 1 timed to observe impact (STIS slit)
    - Orbits 2-5 to observe transient OH exophere
  - Execution will depend on successful completion of SM4 & SMOV