

Cycle 21 Results and Cycle 22 Preparations

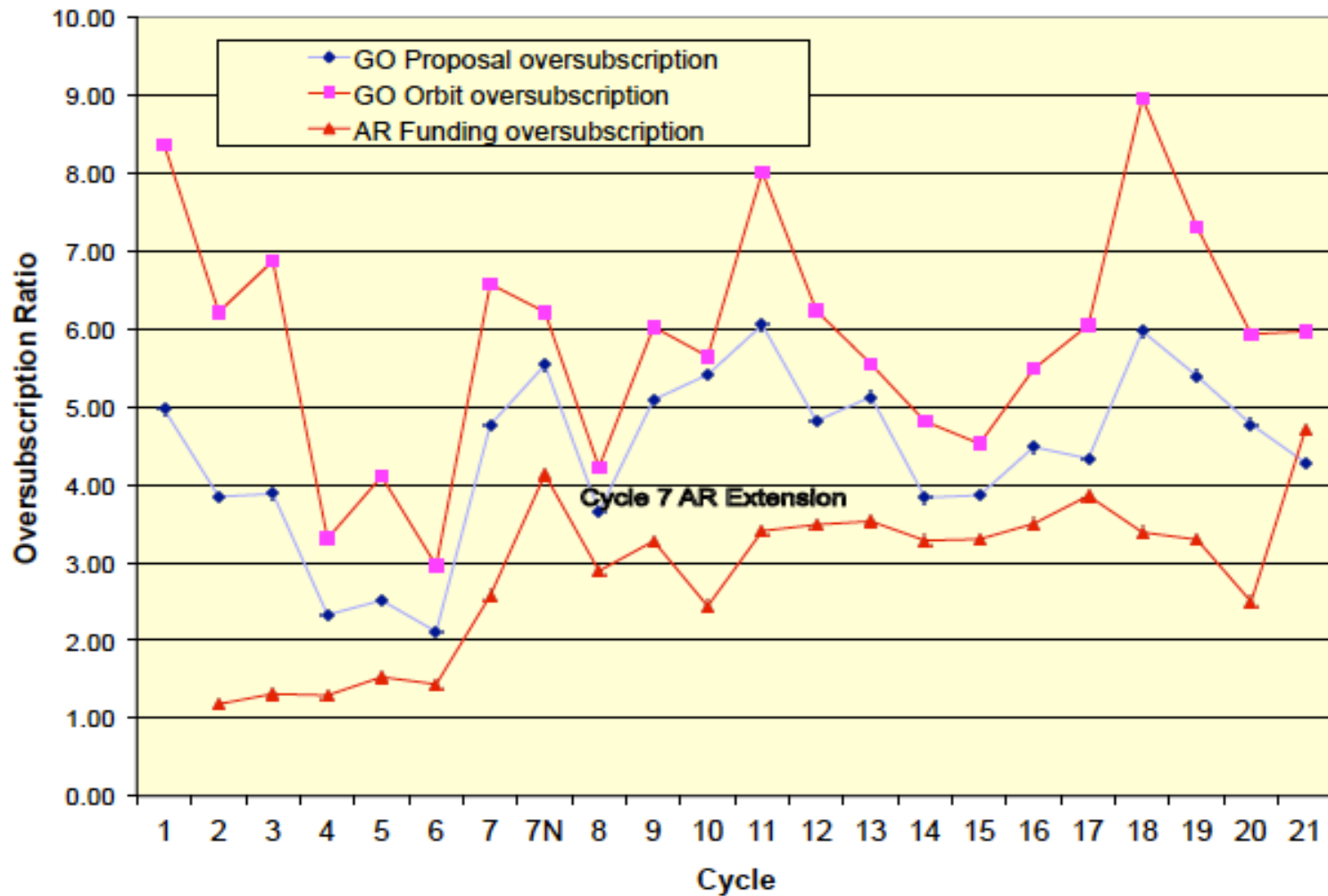
Andrew Fox, for the Science Policies Group
STUC meeting, 18 October 2013

Cycle 21

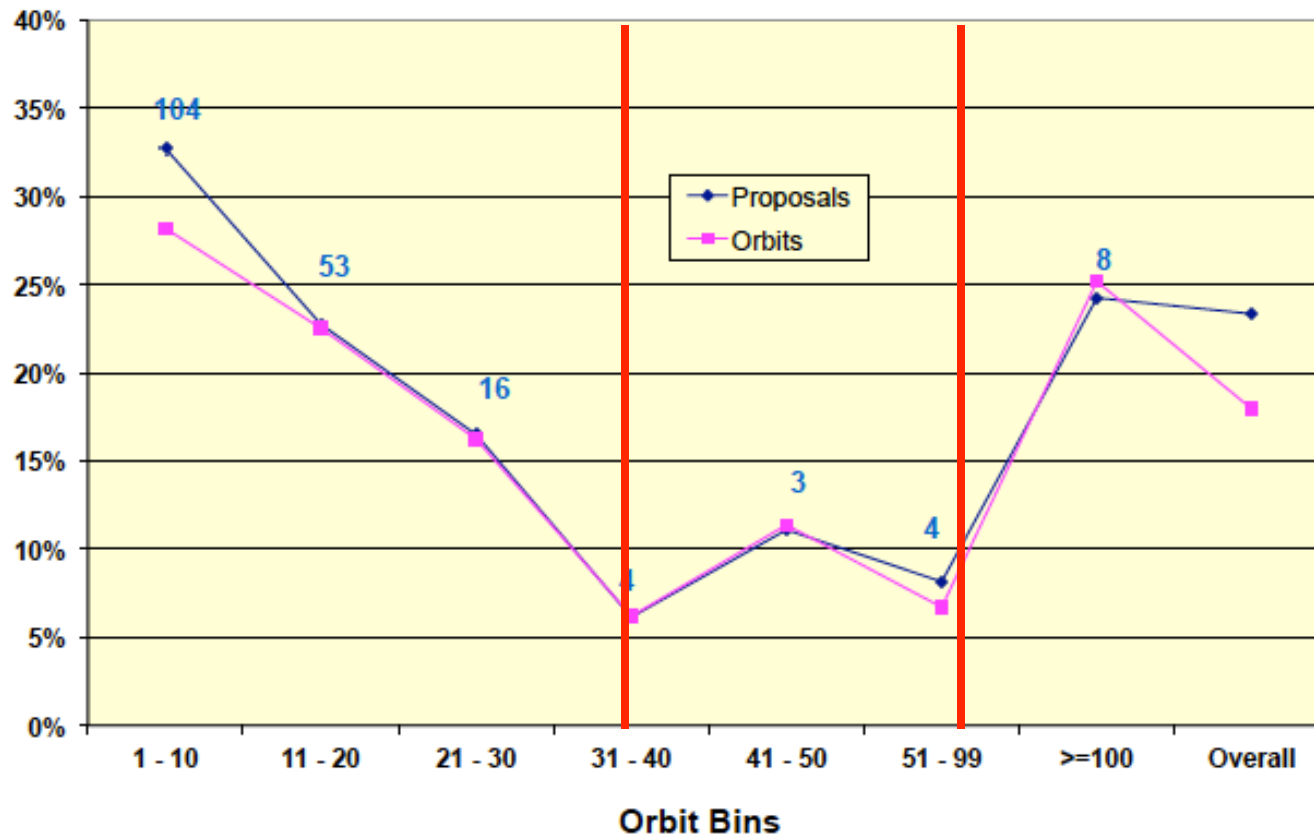
Summary Results

<u>Proposals</u>	<u>Requested</u>	<u>Approved</u>	<u>% Accepted</u>	<u>ESA</u> <u>Accepted</u>	<u>ESA %</u> <u>Total</u>
General Observer	822	192	23.4%	44	22.9%
Snapshot Archival Research	55	9	16.4%	2	22.2%
AR Legacy	142	35	24.6%	0	
Theory	13	2	15.4%	0	
	63	11	17.5%	1	9.1%
<u>Total</u>	<u>1094</u>	<u>249</u>	<u>22.8%</u>	<u>47</u>	22.9%
Primary Orbits	19742	3308	16.8%	587	17.7%

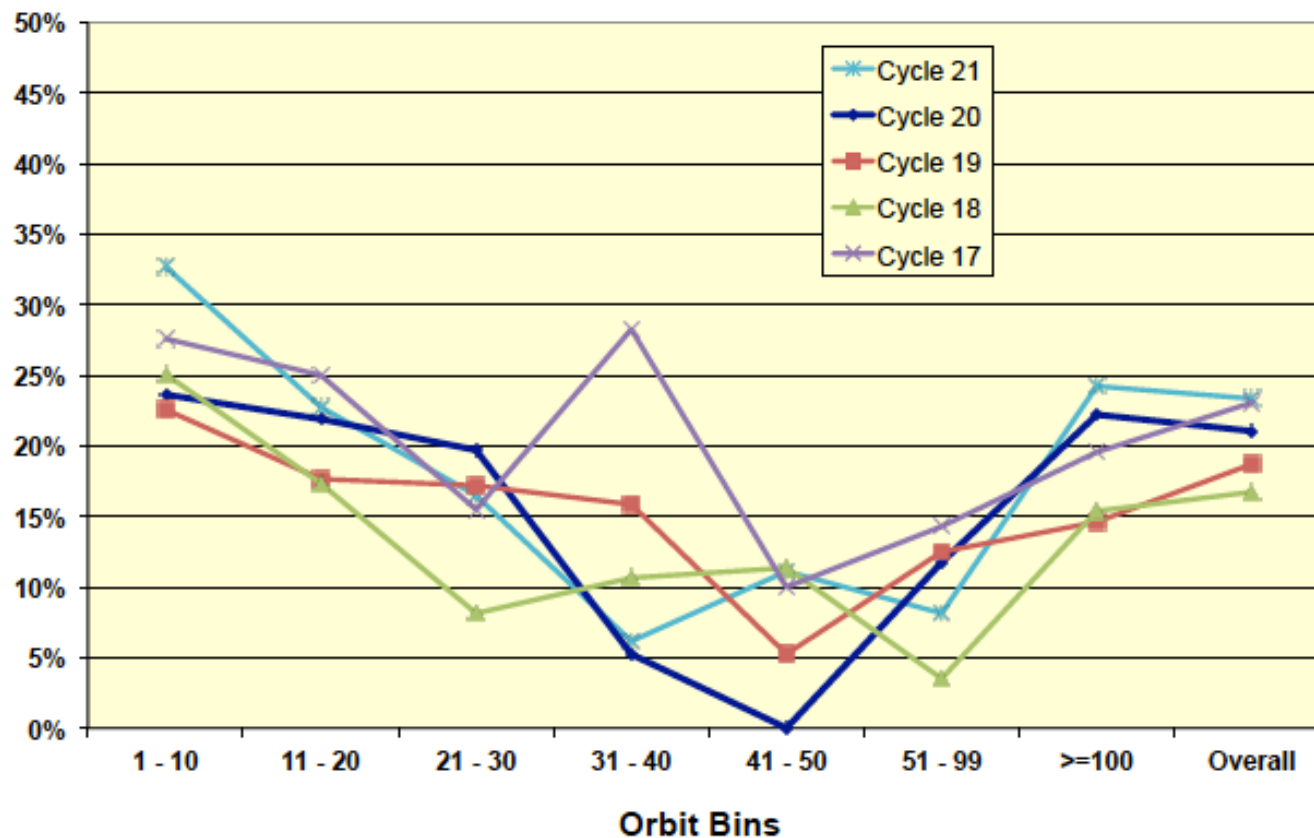
Over-subscription by Cycle



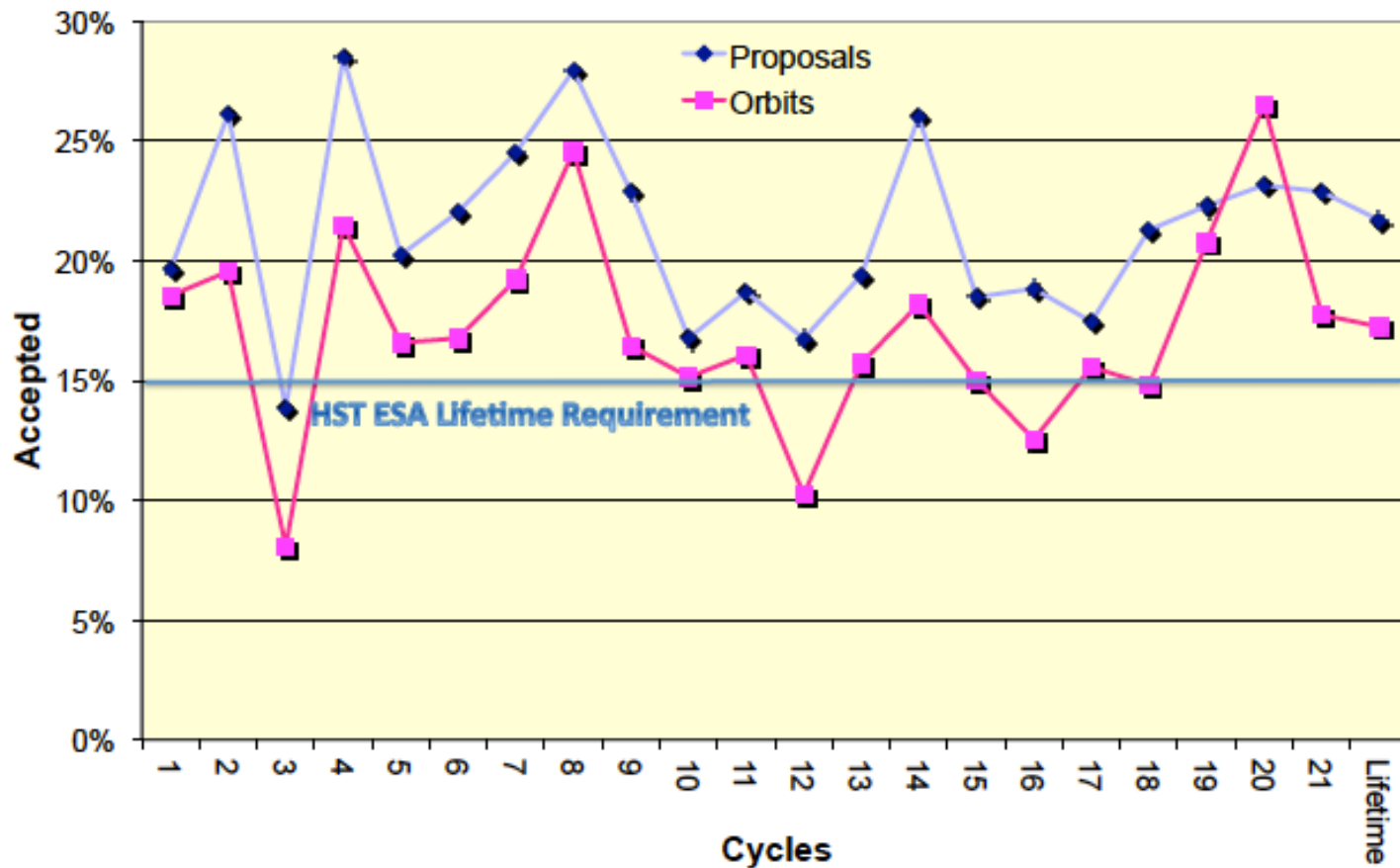
Acceptance Fraction by Size



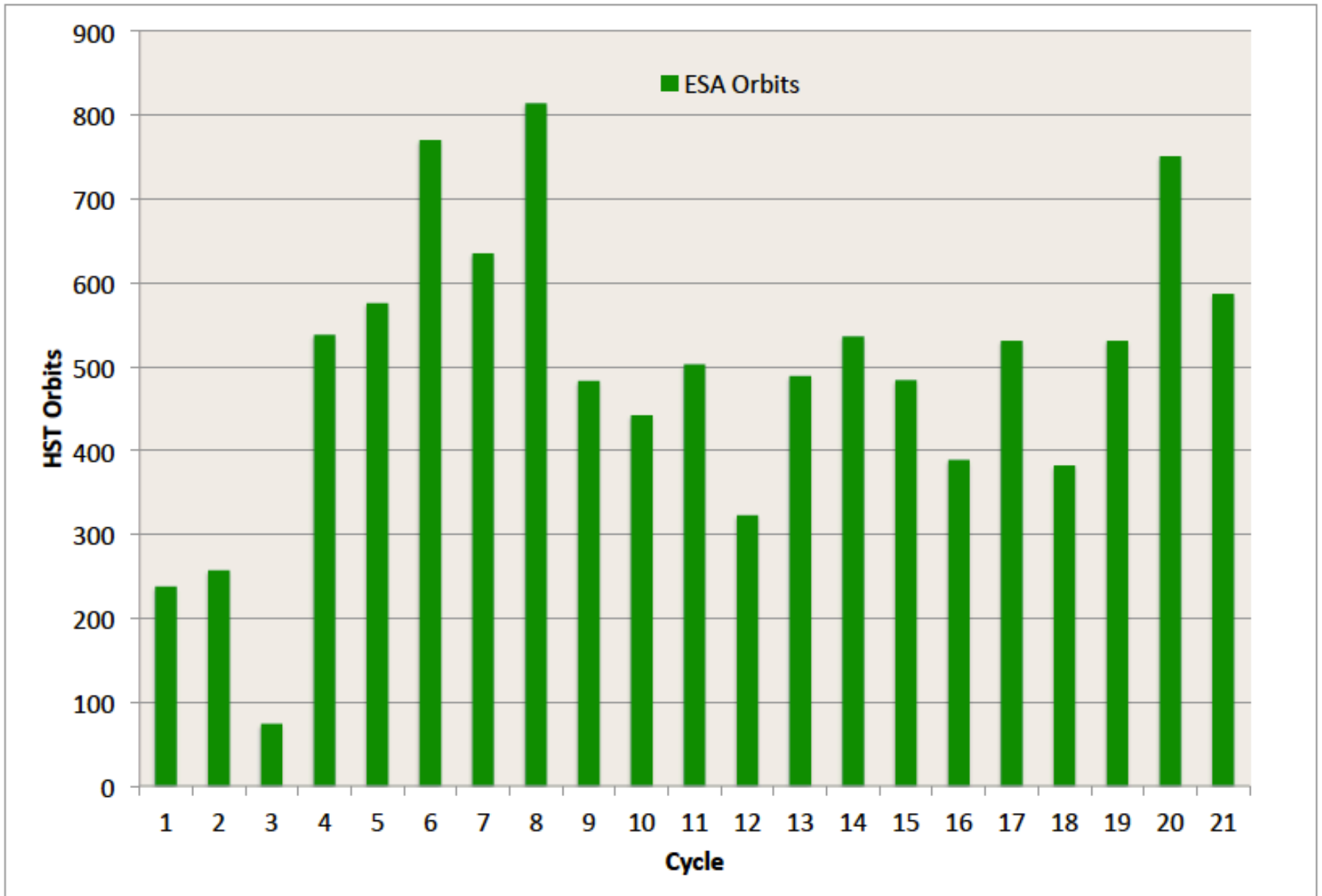
Acceptance Fraction by Size over Cycles 17-21



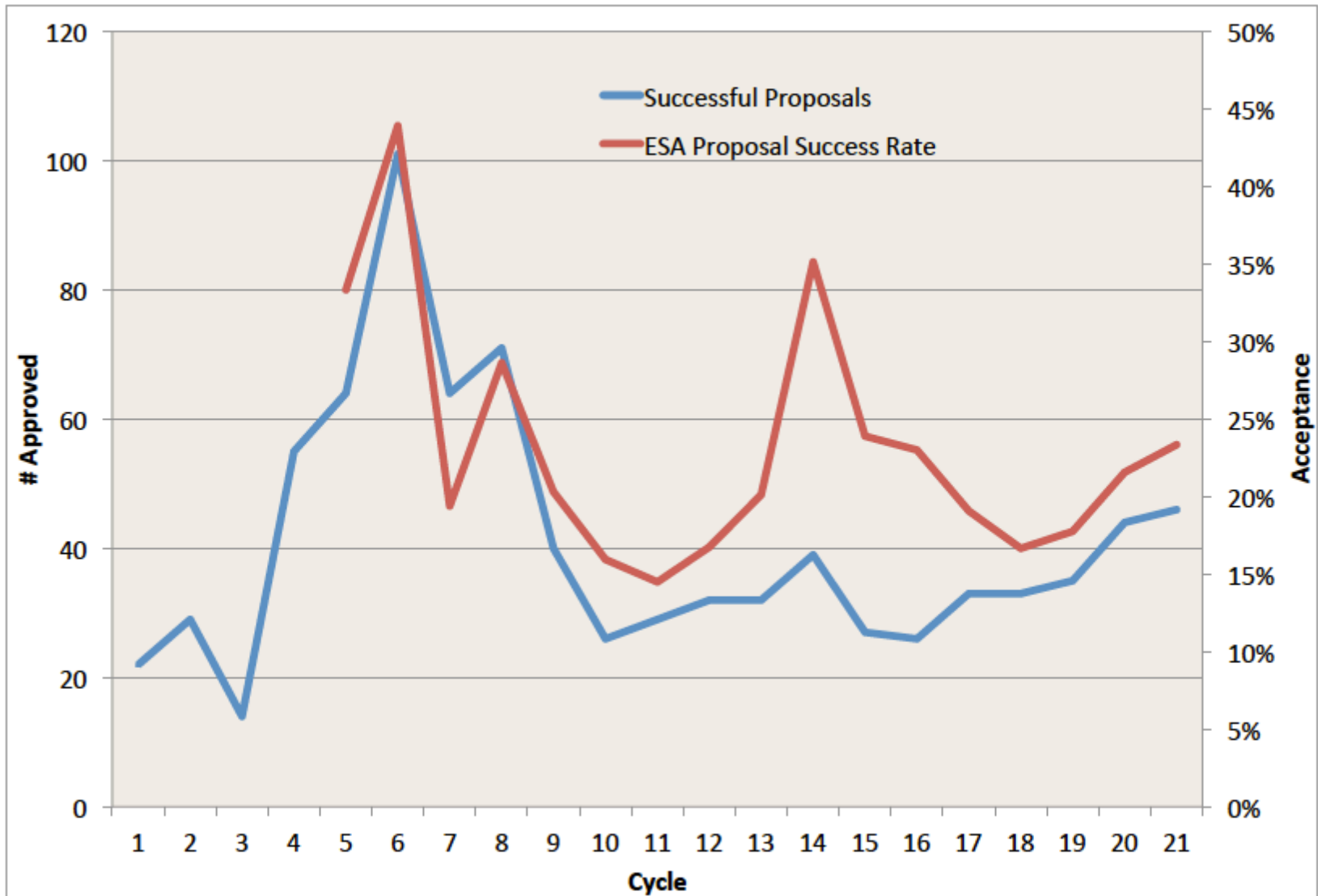
ESA Acceptance Fraction



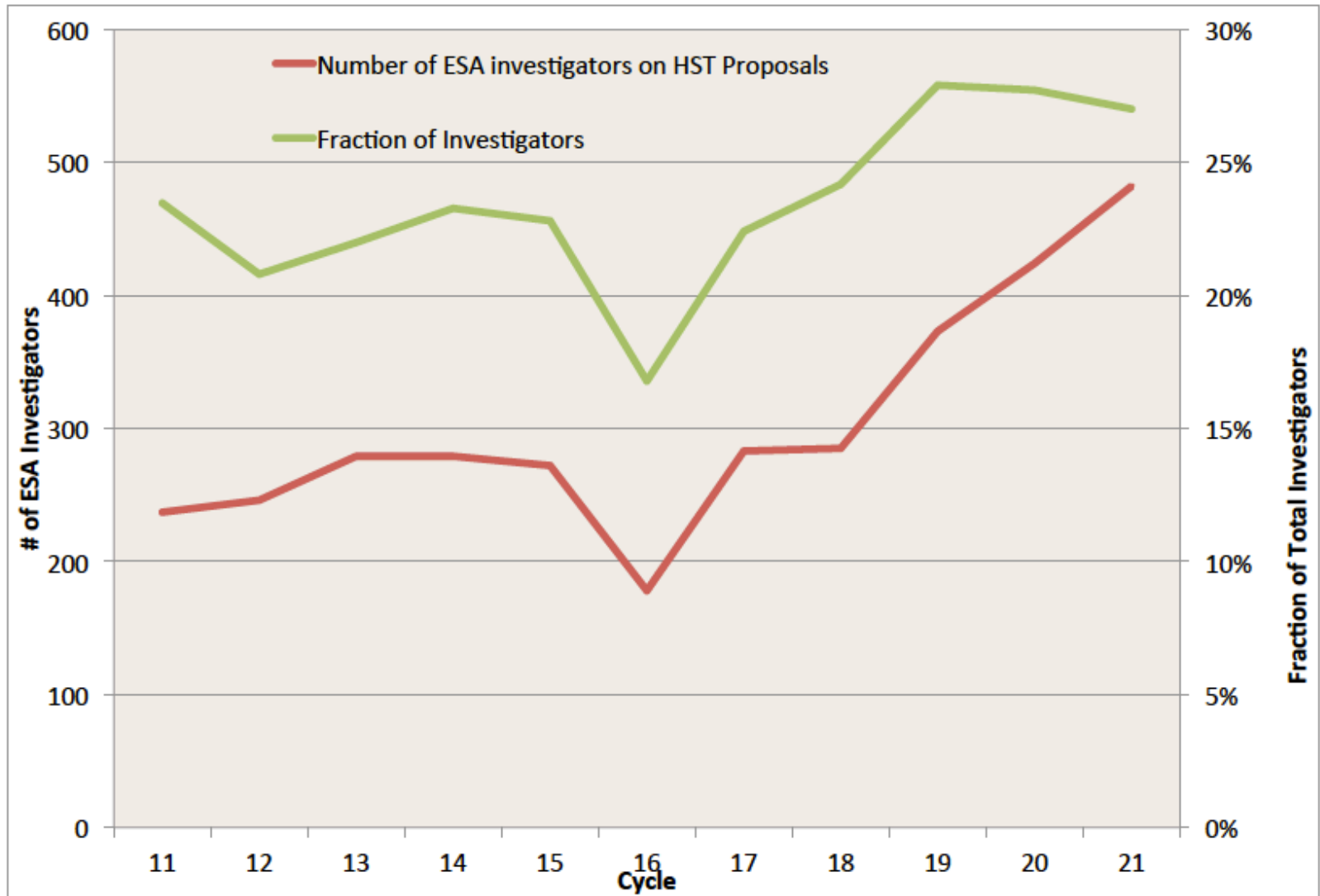
ESA Approved Orbits



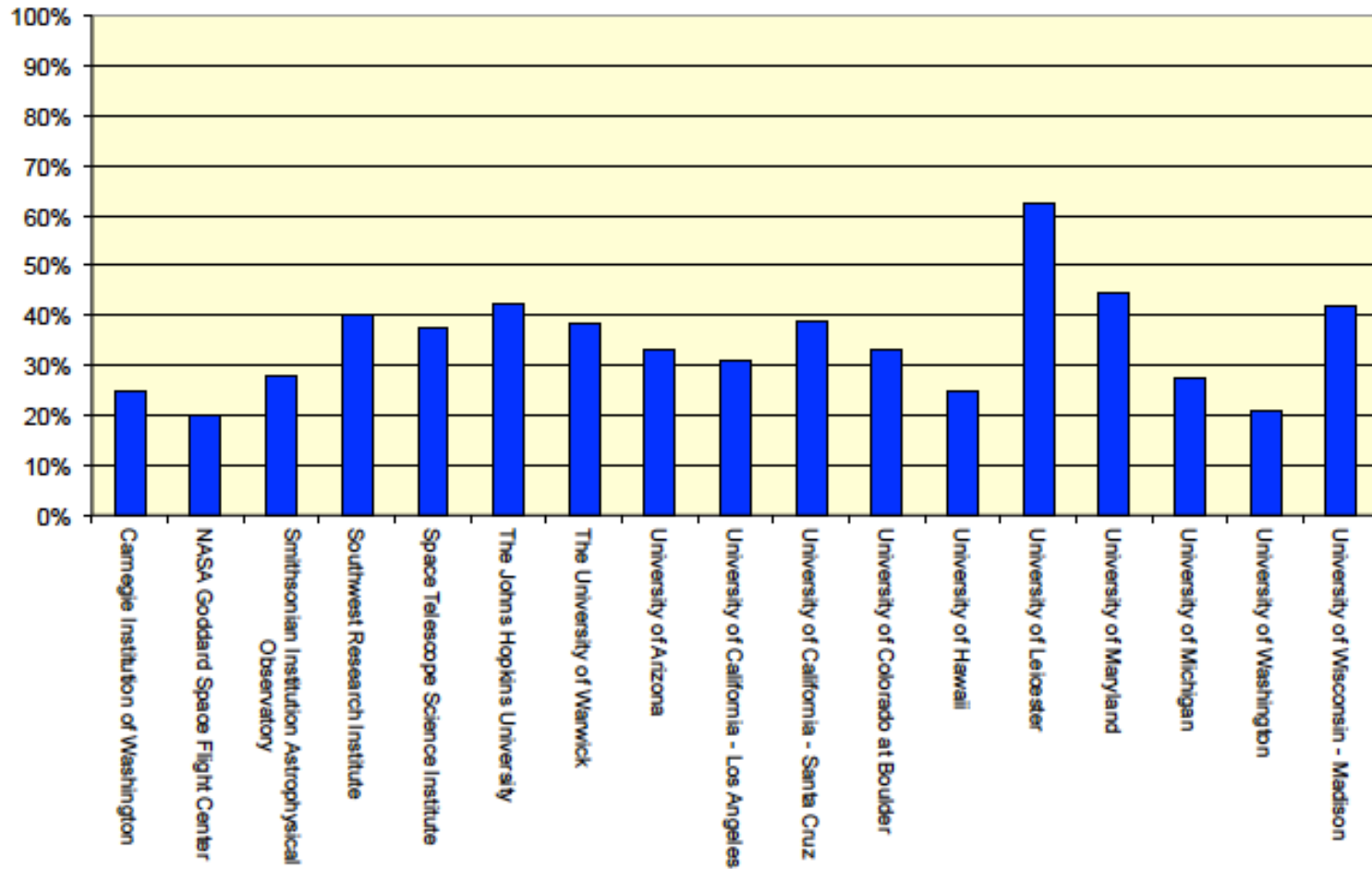
ESA Accepted Proposals



ESA Investigators



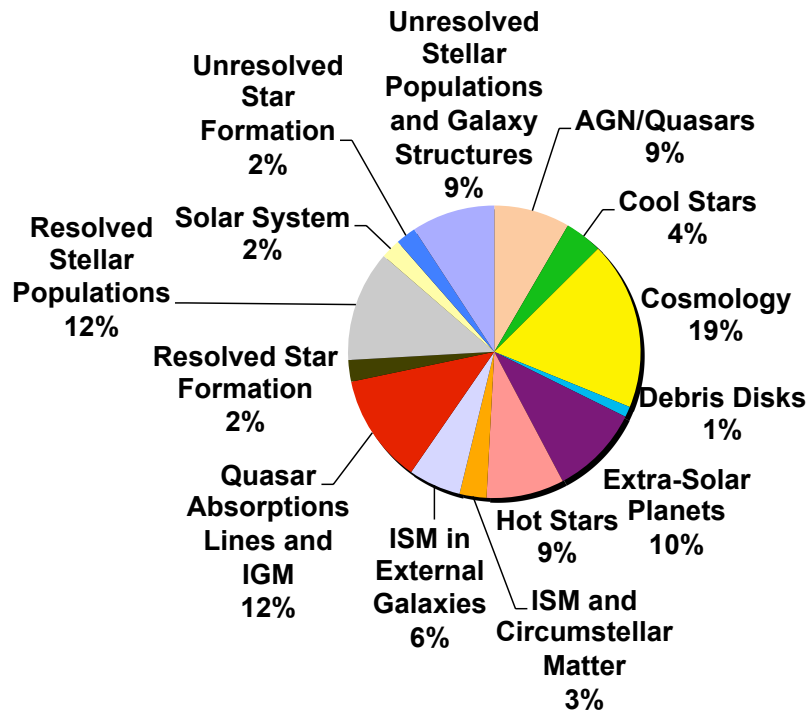
Proposal Institutional Acceptance Fraction



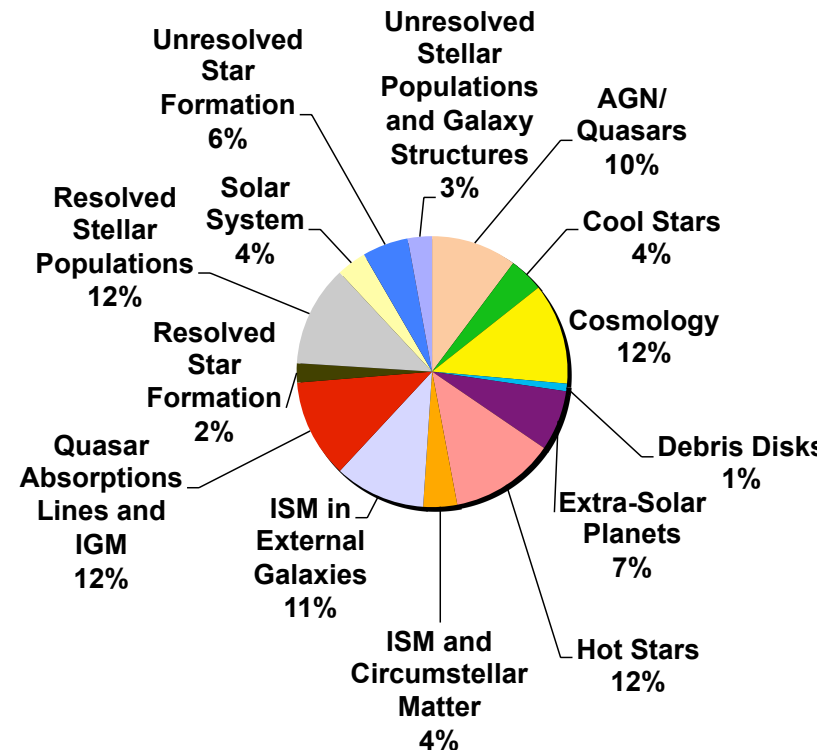
Only shows Institutions that have ≥ 4 Proposals approved

Distribution of Science Categories

Submitted Orbits by Science Category



Approved Orbits by Science Category



Instrument Usage

Configurat.	Mode	Prime %	Coordinate d Parallel %	Total	Instrument Prime Usage	Instrument Prime + Parallel Usage	Pure Parallel Usage	Snap Usage
ACS/SBC	Imaging	1.6%	0.0%	1.2%			0.0%	0.0%
ACS/SBC	Spectroscopy	0.029%	0.0%	0.0%			0.0%	0.0%
ACS/WFC	Imaging	10.4%	29.3%	14.7%			0.0%	37.5%
ACS/WFC	Ramp Filter	1.1%	0.0%	0.9%	13.1%	16.8%	0.0%	0.0%
ACS/WFC	Spectroscopy	0.0%	0.0%	0.0%			0.0%	0.0%
COS/FUV	Spectroscopy	23.7%	0.0%	18.3%			0.0%	4.6%
COS/NUV	Imaging	1.4%	0.0%	1.1%	28.5%	22.0%	0.0%	0.0%
COS/NUV	Spectroscopy	3.4%	0.0%	2.6%			0.0%	0.0%
FGS	POS	0.2%	0.0%	0.2%	0.2%	0.2%	0.0%	0.0%
FGS	TRANS	0.0%	0.0%	0.0%			0.0%	0.0%
STIS/CCD	Imaging	0.9%	1.6%	1.0%			0.0%	0.0%
STIS/CCD	Spectroscopy	2.8%	0.0%	2.2%			0.0%	0.0%
STIS/FUV	Imaging	0.5%	0.0%	0.4%	16.3%	13.3%	0.0%	0.0%
STIS/FUV	Spectroscopy	5.2%	1.6%	4.4%			0.0%	10.9%
STIS/NUV	Imaging	6.9%	0.0%	5.3%			0.0%	0.0%
STIS/NUV	Spectroscopy	0.0%	0.0%	0.0%			0.0%	10.6%
WFC3/IR	Imaging	10.6%	13.7%	11.3%			0.0%	6.8%
WFC3/IR	Spectroscopy	10.4%	9.5%	10.2%	41.8%	47.7%	60.0%	0.0%
WFC3/UVIS	Imaging	20.8%	44.2%	26.2%			40.0%	29.6%
WFC3/UVIS	Spectroscopy	0.0%	0.0%	0.0%			0.0%	0.0%
		100%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Approved TAC Proposals

(7 Large/1 Pure Parallel/2 AR Legacy)

ID	Last Name	First Name	Resources	Institution	Title
1178.	Ayres	Thomas	230	University of Colorado at Boulder	Advanced Spectral Library II: Hot Stars
1827.	Bean	Jacob	150	University of Chicago	Follow The Water: The Ultimate WFC3 Exoplanet Atmosphere Survey
1241.	Calzetti	Daniela	154	University of Massachusetts - Amherst	LEGUS: Legacy ExtraGalactic UV Survey
1777.	Churchill	Christopher	110	New Mexico State University	A Breakaway from Incremental Science: Full Characterization of the $z < 1$ CGM and Testing Galaxy Evolution Theory
1421.	Illingworth	Garth	AR Legacy	University of California - Santa Cruz	High level science products from deep ACS and WFC3/IR imaging over the CDF-S/GOODS-S region
1345.	Malkan	Matthew	375 Pure Parallel	University of California - Los Angeles	WFC3 Infrared Spectroscopic Parallel Survey WISP: A Survey of Star Formation Across Cosmic Time
1096.	Peterson	Brad	179	The Ohio State University	Mapping the AGN Broad Line Region by Reverberation
1484.	Piotto	Giampaolo	131	Universita degli Studi di Padova	The HST Legacy Survey of Galactic Globular Clusters: Shedding UV Light on Their Populations and Formation
1042.	Treu	Tommaso	140	University of California - Santa Barbara	The Grism Lens-Amplified Survey from Space (GLASS)
1226.	van der Marel	Roeland	AR Legacy	Space Telescope Science Institute	Proper Motions of Distant Halo Stars: New Clues to Milky Way Structure, Evolution and Mass

Medium Proposals (35-74 orbits)

Did they work?

- 400 orbits were available to TAC for Mediums in Cycle 21
- 109 Medium programs submitted, 13 approved (8:1 over-subscription) for 558 orbits.
- Compare 13 Mediums approved to 1 approved in Cycle 20
- Because the goal is to make proposal success rate ~independent of orbit request, for Cycle 22 we propose raising the Medium allotment from 400 to 600 orbit
- Feedback from TAC was positive: the Medium programs selected complemented the Large & Treasury programs selected in terms of science areas.

Medium Programs Recommended by TAC and Panels

ID	Last Name	First Name	Institution	Orbits	Title
1781.	Barro	Guillermo	University of California - Santa Cruz	56	The progenitors of quiescent galaxies at $z \sim 2$: precision ages and star-formation histories from WFC3/IR spectroscopy
1691.	Borthakur	Sanchayeeta	The Johns Hopkins University	51	Characterizing the Elusive Intragroup Medium and Its Role in Galaxy Evolution
1319.	Fesen	Robert	Dartmouth College	39	STIS Spectra of the Young SN Ia Remnant SN 1885 in M31
1995.	Foley	Ryan	Smithsonian Institution Astrophysical Observatory	36	Understanding the Progenitor Systems, Explosion Mechanisms, and Cosmological Utility of Type Ia Supernovae
1128.	Fox	Andrew	Space Telescope Science Institute - ESA	49	The Closest Galactic Wind: UV Properties of the Milky Way's Nuclear Outflow
1392.	Geha	Marla	Yale University	44	A Non-Universal Initial Mass Function in the Ultra-Faint Galaxy Coma Berenices
1764.	Kallivayalil	Nitya	Yale University	30 + 30 in Cycle 23	Proper Motion and Internal Kinematics of the SMC: are the Magellanic Clouds bound to one another?
2015.	Oestlin	Goeran	Stockholm University	54	eLARS - extending the Lyman Alpha Reference Sample
1788.	Rodney	Steven	The Johns Hopkins University	20 + 20 + 20 for 3 cycles	Frontier Field Supernova Search
1150.	Shull	J.	University of Colorado at Boulder	35	Deep COS Spectra of the Two Brightest Quasars that Probe the He II Post-Reionization Era
1430.	Siana	Brian	University of California - Riverside	48	The Ultraviolet Frontier: Completing the Census of Star Formation at Its Peak Epoch
1706.	Tripp	Todd	University of Massachusetts - Amherst	60	Directly Probing $>10^6$ K Gas in Lyman Limit Absorbers at $z > 2$
1237.	Wood	Brian	Naval Research Laboratory	36	Tracking the Winds of Red Giants from the Star to the ISM

The UV Initiative – did it work?

Reminder of motivation for UV Initiative:

- Hubble is the only current mission capable of undertaking detailed UV (900-3200 Å) observations.
- These capabilities have a limited lifetime.
- New NASA UV missions will not be launched in the near future.
- A special UV initiative was introduced in Cycle 21 to emphasize this unique HST resource.

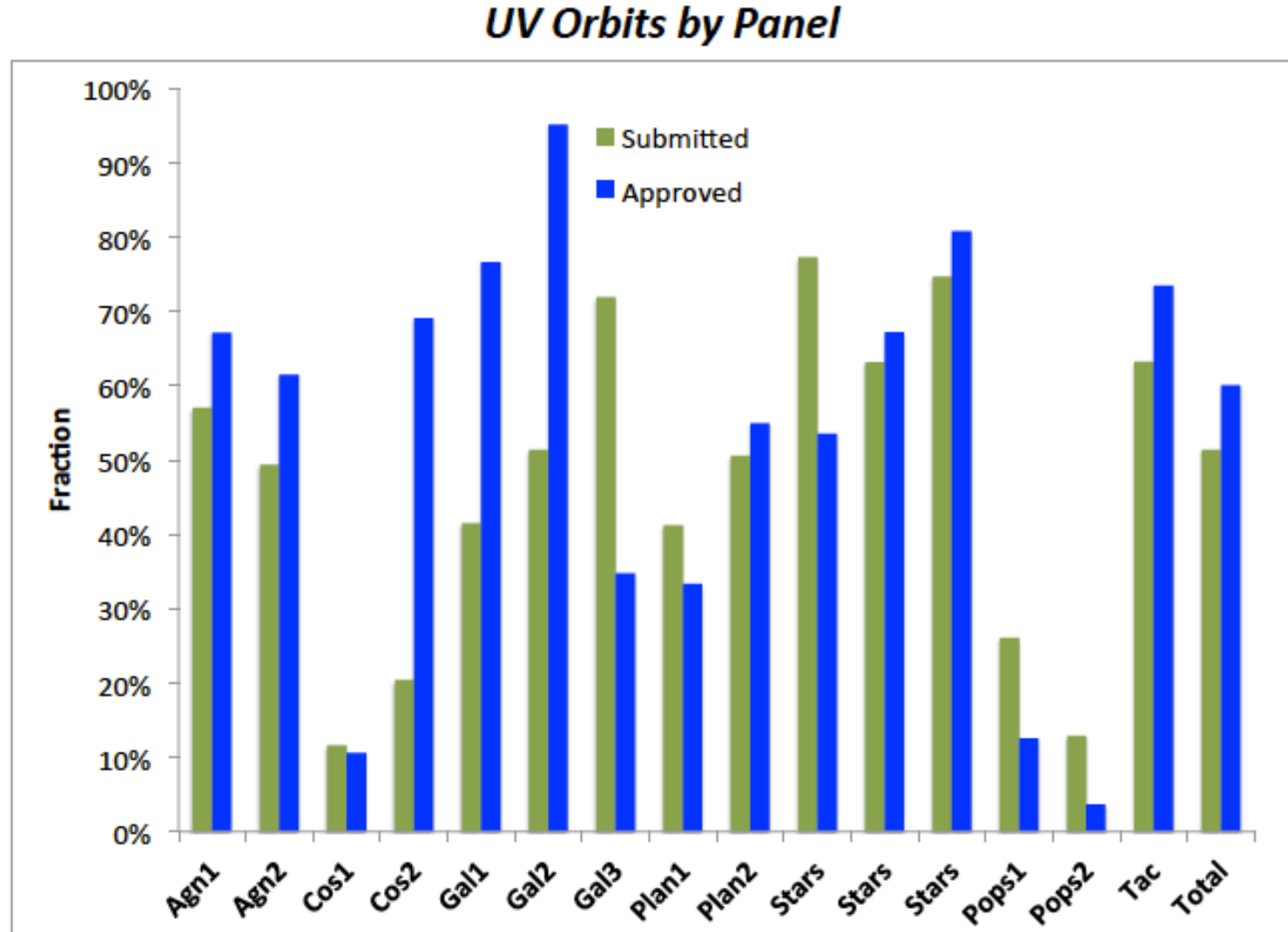
UV Initiative (cont.)

- In Cycle 21, each panel was asked to aim to devote at least **40%** of its orbit allocation to UV-specific science
- The TAC was asked to aim to devote at least **50%** of its orbit allocation to UV-specific science
- The Initiative also extended to **archival and theory** proposals, aimed at producing UV-specific high level data products and tools for the Hubble archive, and models for interpreting them.
- **These allocations were targets, not quotas.** UV-specific proposals recommended for acceptance had to meet the usual requirement of high scientific quality.

UV Initiative (cont.)

- Result 1: we received a large number of UV proposals:
25 Large, 50 Medium, 327 Small
- Result 2: 60% of prime GO orbits in Cycle 21 (1986 of 3316 orbits) and 43% of approved proposals were devoted to UV observations. This included WFC3 U-Band (F336W filter).
- UV Initiative reflected in COS & STIS instrument usage:
 - COS prime usage in C21: 18.9%; in C22: 28.5%
 - STIS prime usage in C21: 9.6% ; in C22: 16.3%
- Together COS and STIS accounted for 44.8% of C21 prime usage
- Overall spectroscopy percentage in C21: 38% (27% in C20)

UV Initiative was applied across all science categories



Targets of Opportunity

Following discussion with STUC last year, definition of disruptive ToO was changed in Cycle 21 from two to three weeks. Did that make any difference?

Cy 20 ToO Disruptive: 13 submitted/6 approved

Cy 20 ToO Non-disrup: 17 submitted/5 approved

Cy 21 ToO Disruptive: 12 submitted/5 approved

Cy 21 ToO Non-disrup: 27 submitted/9 approved

Number ToO proposals submitted and approved has gone up
More non-disruptive proposals submitted in C21

Director's Discretionary (DD) Proposals

- DD proposals are received throughout the year, reviewed by internal committee and by external reviewers.
- In Cycle 20 (last complete cycle), 22 DDs were submitted, **15 were approved for 103 orbits** (68% success rate)
 - 6 Solar System (of which 5 were on Comet ISON)
 - 2 Exoplanets
 - 3 GRB
 - 2 SN
 - 1 AGN
 - 1 ISM
- Successful DD proposals are listed immediately on public webpage (default is no proprietary time)

Joint Observatory Programs

- Proposers can request observations on both HST and Chandra/Spitzer/XMM-Newton/NOAO, to avoid double jeopardy of writing two proposals on same science
- **Chandra** allocates up to **100** HST orbits, in exchange for 400 ks of Chandra time
- **Spitzer** allocates up to **60** HST orbits, in exchange for 60 hours of Spitzer time
- **XMM-Newton** allocates up to **30** HST orbits, in exchange for 150 ks of XMM-Newton time.
- **NOAO** makes available up to 5% of its observing time to the HST TAC (one-way arrangement).
- **NRAO** is negotiating with us for a new joint HST/NRAO proposal category for Cycle 22 (30 orbits HST, up to 5% NRAO)

Joint Observatory Programs (cont.)

In general, the partner observatories give away (almost) all their available HST time, whereas we do not give away most of their time. E.g. the Cycle 21 HST TAC approved

- 20 ks of Chandra time (out of 400 ks available)
- 20.4 hours of Spitzer time (out of 60 hours available)
- 0 NOAO nights (out of 5% of their time available)
- 179 ks of XMM-Newton time (150 ks available), but 0 ks were approved in Cycle 20

CYCLE 22 PREPARATIONS

(see next talk from Neill Reid on policy changes)

Cycle 22 Proposal Review Schedule

- *1/8/14*: Call for Proposals release
- *4/11/14*: Phase I Proposal deadline (~6 weeks later than C21)
- *Early May 2014*: Proposals sent to reviewers
- *Early June 2014*: Preliminary grades due
- *8-13 June 2014*: Panels and TAC meet (at STScI/JHU)
- *6/25/14*: Notifications sent out
- *7/24/14*: Phase II and Budget deadlines
- *10/1/14*: Cycle 22 begins

Cycle 22 Features

- All five instruments will be offered:
ACS, COS, FGS, STIS, WFC3
- **Medium** category (35-74 orbits) will be continued
- The **UV Initiative** will be continued
- Joint HST/Spitzer proposals will be continued
contingent on the results of the NASA senior review
- Joint HST/NRAO proposals may be introduced

Cycle 22 Tentative Orbit Allocation

- ~**3400** orbits available for C22 GO Programs (up from 3200)
- Break-down: 1800 orbits for panels; 600 for Medium proposals; 1000 for the TAC (Large & Treasury)
- Additional orbits:
 - **190** for Chandra/Spitzer/XMM-Newton
 - **30** for NRAO (TBD)
 - **100** for routine DD
 - **270** for Frontier Fields
 - **250** for calibration
 - carry-over, continuation programs, and repeats
- Also 1000 SNAPs (150 maximum for COS + STIS)

Panel Structure

14 panels (unchanged)

- **Planets 1/2:** local and distant solar systems, exoplanets, debris disks
- **Stars 1/2/3:** cool and hot stars in any stellar evolutionary phase, star formation, IDM
- **Stellar Populations 1/2:** resolved stellar populations in the Galaxy and the nearby universe
- **Galaxies 1/2/3:** stellar content of galaxies, ISM in galaxies, dynamics, galaxy morphology, galaxy evolution
- **AGN & IGM 1/2:** QSOs, AGN, IGM, QSO absorption lines
- **Cosmology 1/2:** galaxy clusters, lensing, GRBs, deep surveys

Panel Structure (cont.)

- Expect ~**60-80** proposals per panel (Small/Medium/SNAP/Regular AR)
- Expect ~**60** in the TAC (Large/Treasury/Legacy AR)
- Chairs for all 14 panels are being contacted
- Panel Chairs and three At-Large members will form the TAC chaired by **Pat McCarthy (Carnegie)**
- Each panel will have 9 panelists plus the Chair
- Candidate panelists are currently being considered
- We pay particular attention to **subject balance, diversity, ESA representation**, and balance between **senior** and **junior** astronomers