

Astrophysics Research Programs

NASA Advisory Council Astrophysics Subcommittee

27 March 2014

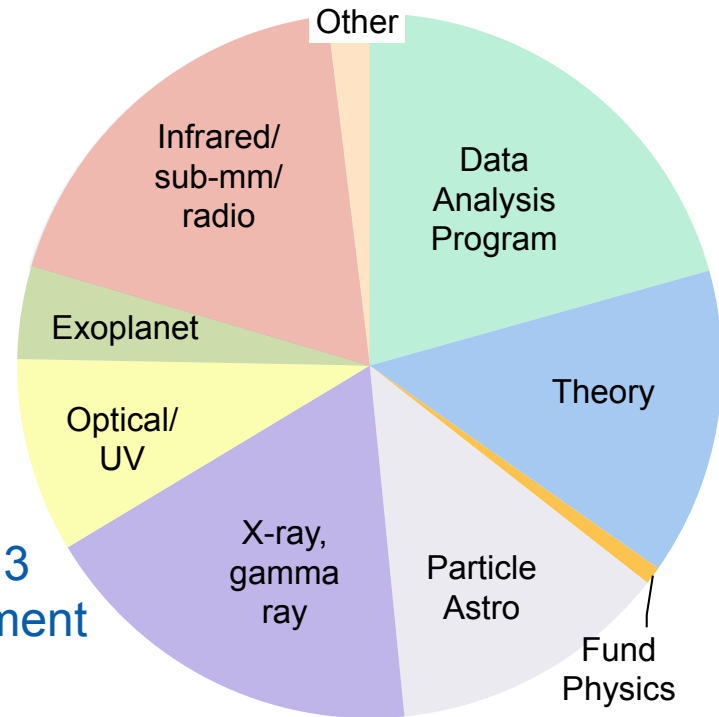
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Astrophysics Research Program Funding

Most recent year:

	Proposals Rec'd	Year-1 selected \$M	Success Rate	
RTF-12	12	0.6	2	17%
APRA-12	178	13.9	37	21%
SAT-12	38	5.2	9	24%
ADAP-13	276	4.5	44	16%
OSS-13	39	0.9	6	15%
ATP-13	181	3.9	27	15%



27 March 2014

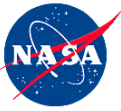
Astrophysics Research Program



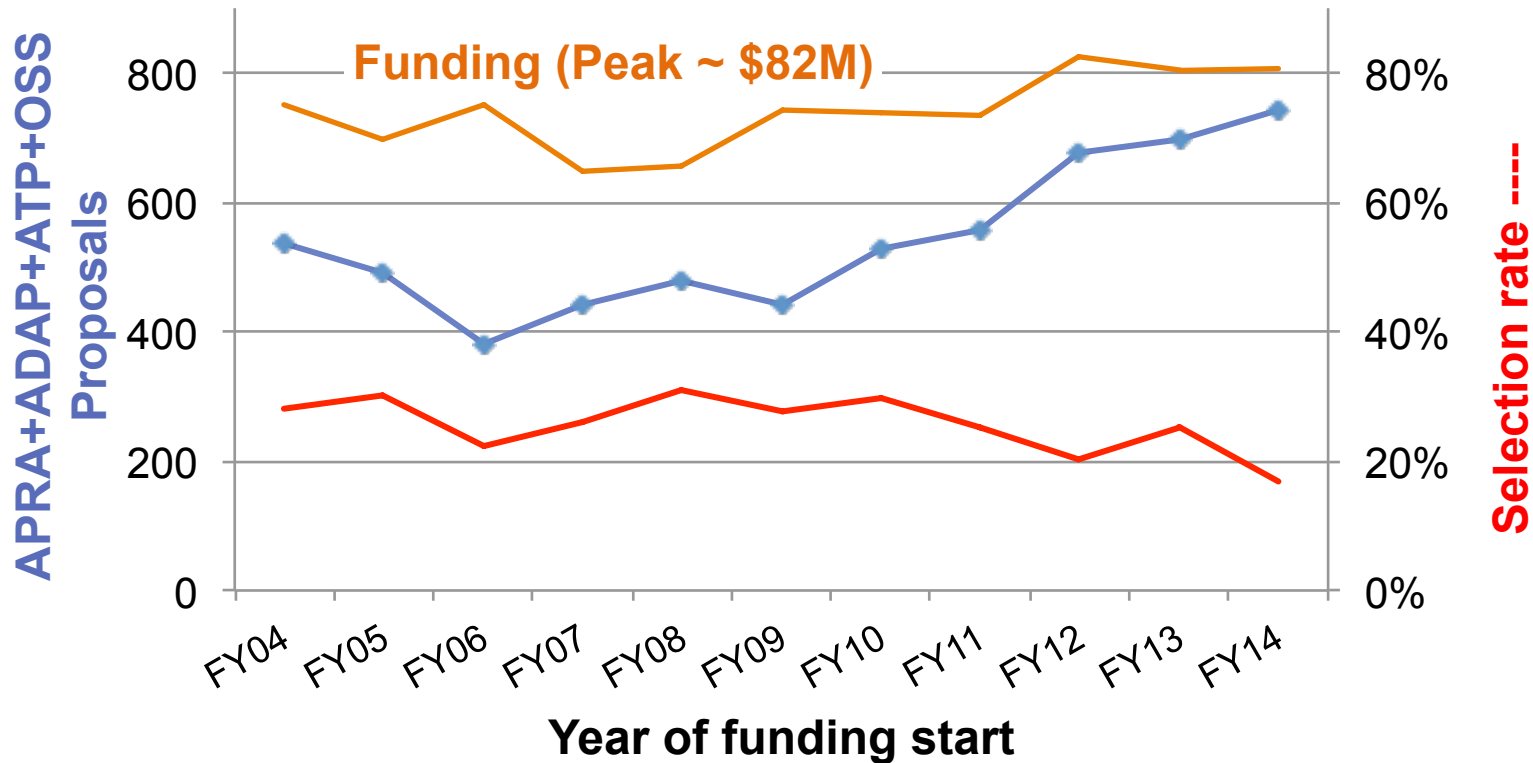
Astrophysics R&A budget keeps FY12 gains...

Amounts in \$k	FY07 Final	FY08 Final	FY09 Final	FY10 Final	FY11 Final	FY12 Final	FY13 Final	FY14 Op Plan	FY15 Request
Particle Astro	\$ 7,631	\$ 6,672	\$ 8,201	\$ 8,260	\$ 8,243	\$ 9,375	\$ 10,545	\$ 8,265	
High Energy	\$ 12,782	\$ 12,406	\$ 13,886	\$ 14,110	\$ 13,911	\$ 14,943	\$ 14,345	\$ 13,846	
UV/Opt/IR/ Sub-mm	\$ 17,442	\$ 19,094	\$ 22,353	\$ 21,534	\$ 21,295	\$ 23,378	\$ 21,939	\$ 21,781	
Other	\$ 394	\$ 594	\$ 670	\$ 673	\$ 641	\$ 2,018	\$ 1,591	\$ 2,123	
APRA Total	\$ 38,250	\$ 38,765	\$ 45,110	\$ 44,577	\$ 44,090	\$ 50,573	\$ 47,495	\$ 44,752	
Orig Solar Systems	\$ 3,673	\$ 2,965	\$ 3,000	\$ 2,807	\$ 2,944	\$ 3,244	\$ 3,500	\$ 3,700	
Astro Theory Program	\$ 10,227	\$ 11,696	\$ 11,890	\$ 12,262	\$ 12,148	\$ 11,816	\$ 11,557	\$ 12,500	
TCAN with NSF								\$ 1,500	
Tech Fellows						\$ 538	\$ 895	\$ 1,200	
R&A (399131)	\$ 52,150	\$ 53,426	\$ 60,000	\$ 59,646	\$ 59,611	\$ 66,172	\$ 65,038	\$ 63,275	\$ 66,030
ADAP/LTSA	\$ 12,641	\$ 12,013	\$ 14,384	\$ 13,258	\$ 14,132	\$ 16,365	\$ 16,929	\$ 17,008	\$ 16,983
Core R&A	\$ 64,791	\$ 65,439	\$ 74,384	\$ 72,904	\$ 73,743	\$ 82,537	\$ 81,967	\$ 82,783	\$ 83,013
ASMCS (399131)		\$ 3,452	\$ 442						
Fundamental Physics				\$ 968	\$ 613	\$ 860	\$ 666	\$ 859	
							WFIRST support	\$ 2,500	
							SR&T in FY10-11; now APRA		
TOTAL (\$M)	\$ 64.79	\$ 68.89	\$ 74.83	\$ 73.87	\$ 73.93	\$ 82.54	\$ 81.97	\$ 82.78	\$ 83.01
	15% cut from FY06	partial recovery	more R&A recovery	flat	flat	growth!		growth retained!	

Funding is up almost 30% since 2007... so why are ROSES selection rates falling?



...but proposal numbers grow faster than \$\$



Last year, the Astrophysics Research Program received twice as many proposals as in 2006.

Funding for the program has risen 25% since 2006, but it has not doubled; so the success rate has fallen.

Total funding per successful proposal has been steady at \$500k-\$600k – this is an average over theory investigations, flight payloads, etc.

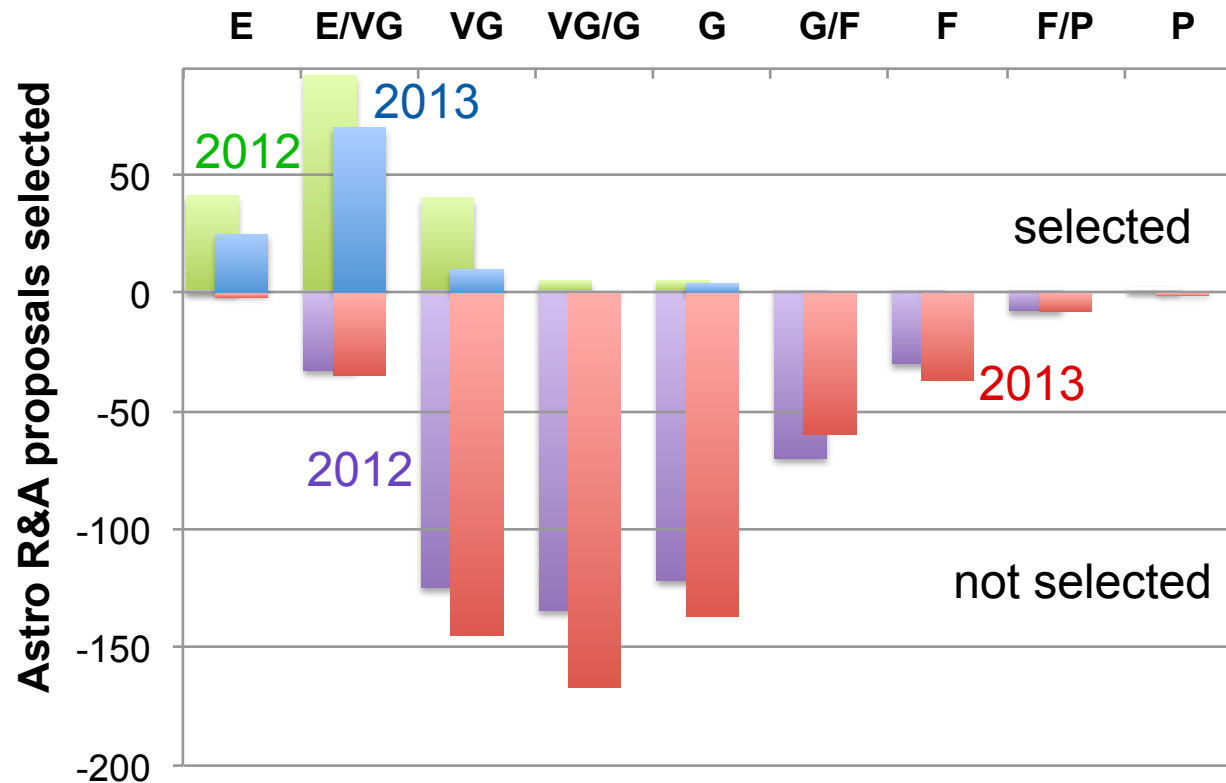


Astrophysics ROSES competitions

	Due Date	Notification	Days	Rec'd	Selected	Success	Year-1
		from due date					Award \$M
ROSES-2013							
Strategic Astrophysics Technology	21-Mar-14		6	18	↓		
Astrophysics Research and Analysis	21-Mar-14		6	177	→		
Elements with NEW STARTS IN FY15							
Roman Tech Fellowships: Stage 2	1-Feb-14		54	2			
Fermi Guest Investigator -- Cycle 6	31-Jan-14		55	224	→		
Swift Guest Investigator -- Cycle 10	26-Sep-13	18-Dec-13	83	175	↑	45	26% 1.2
Astrophysics Theory	12-Jul-13	9-Dec-13	150	181	→	27	15% 3.9
Origins of Solar Systems	23-May-13	7-Nov-13	168	39	→	7	18% 0.9
Astrophysics Data Analysis	17-May-13	30-Oct-13	166	276	→	44	16% 4.5
ROSES-2012							
Strategic Astrophysics Technology	22-Mar-13	13-Sep-13	175	38	↓	9	24% 5.2
Astrophysics Research and Analysis	22-Mar-13	11-Sep-13	173	178	↑	37	21% 13.9
Elements with NEW STARTS IN FY14	weighted mean =		148	887		169	19% 29.5
Kepler Participating Scientists	1-Mar-13	5-Jul-13	126	30	→	11	37% 1.0
Theory & Comp Networks (with NSF)	14-Feb-13	20-Jun-13	126	106		10	19% 1.5
Roman Tech Fellowships: Stage 2	1-Feb-13	29-May-13	117	3		2	67% 0.6
Fermi Guest Investigator -- Cycle 6	18-Jan-13	16-May-13	118	233	→	50	21% 3.8
...							
Elements with NEW STARTS IN FY13	weighted mean =		122	1341		331	25% 42.6



Astrophysics ROSES selections by rating

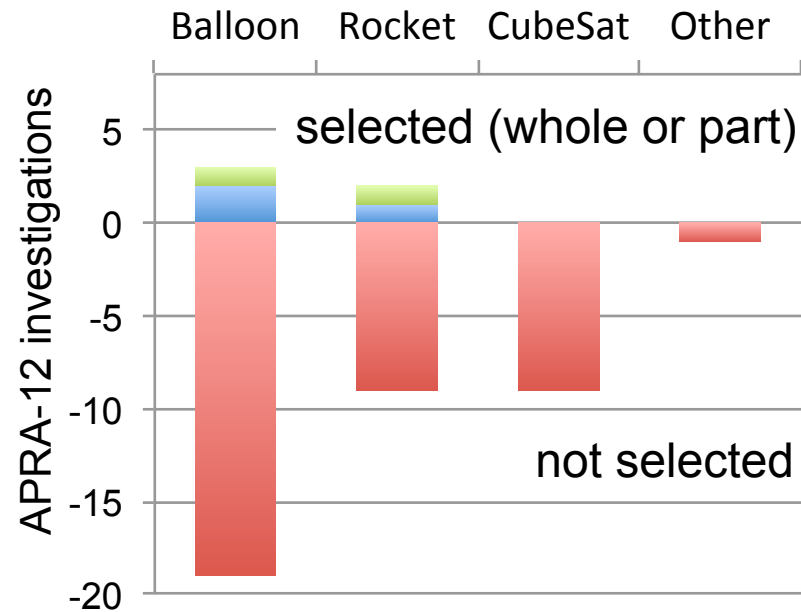
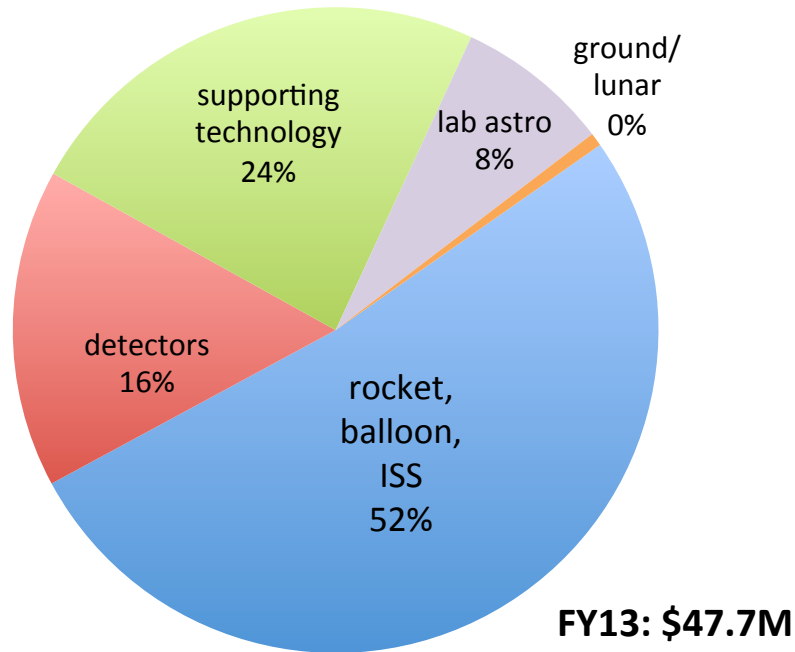


Of 726 proposals to the Astrophysics core R&A program (ADAP, APRA, SAT, ATP, OSS) in 2012, 25% were selected (green); 75% were declined (purple). Of 339 proposals rated VG or better, 51% were selected.

Of 713 proposals to these programs in 2013, 17% were selected (blue/red). Of 299 proposals rated VG or better, 39% were selected.



APRA (sub)orbital payloads

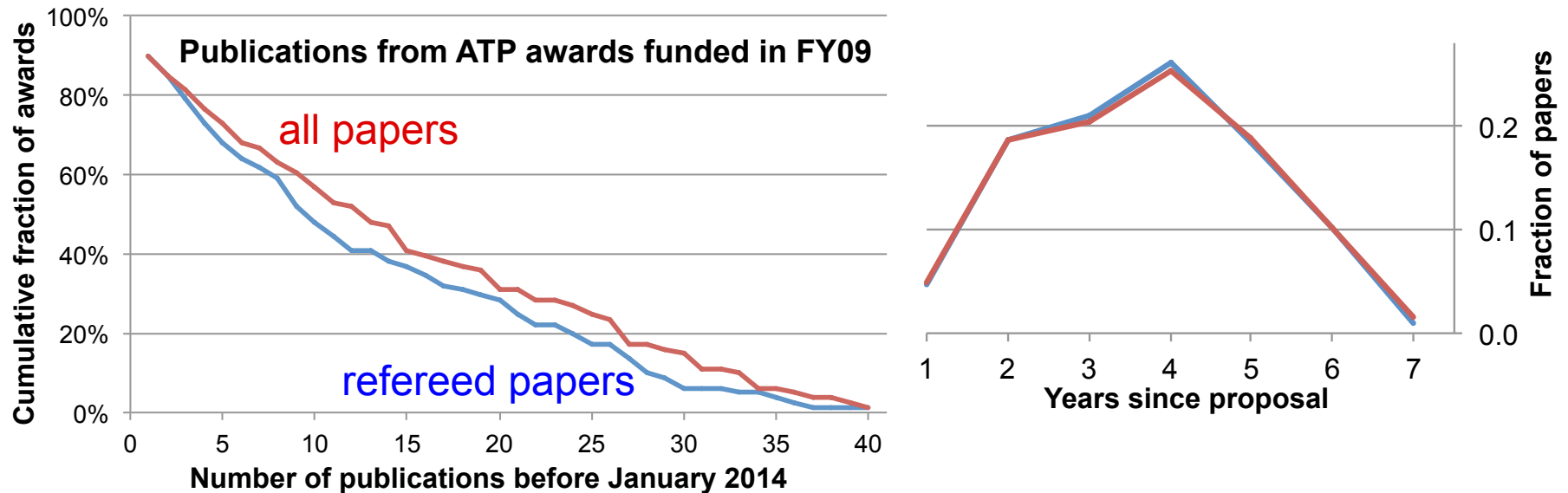


Roughly half of APRA funding is spent on suborbital-class payloads – no significant change over 5+ years.

In APRA-12, 44 investigations were proposed for suborbital-class payloads; 6 of these were selected for full or partial funding. 11 investigations were rated VG or better.



Papers from ROSES awards: an example



Tracking publications by grant or proposal number, through ADS:

10% of those who received ATP funding in FY 2009 failed to include the grant or proposal number in acknowledgment on any publication. **Please include this (required) information – help us show the value of these awards!**

About 1/3 of all papers that acknowledge an Astrophysics Theory Program award are published more than 4 years later – after the final report is due.