



Chandra Users' Committee

CXC Manager's Status Report

For the period October 06 – March 07

Edward Mattison
CXC Deputy Manager

25 April 2007



Topics

- Program Level Status
 - Program Management
 - Spacecraft
 - Mission Planning
 - Science Instruments and Calibration
 - OCC
 - Data Processing
 - CXCDS
 - CDO
 - Education and Outreach
 - Special Topic: Foreign Scientist Travel Policy
- Mission Metrics
- Chandra Grant Awards



Program Level Status

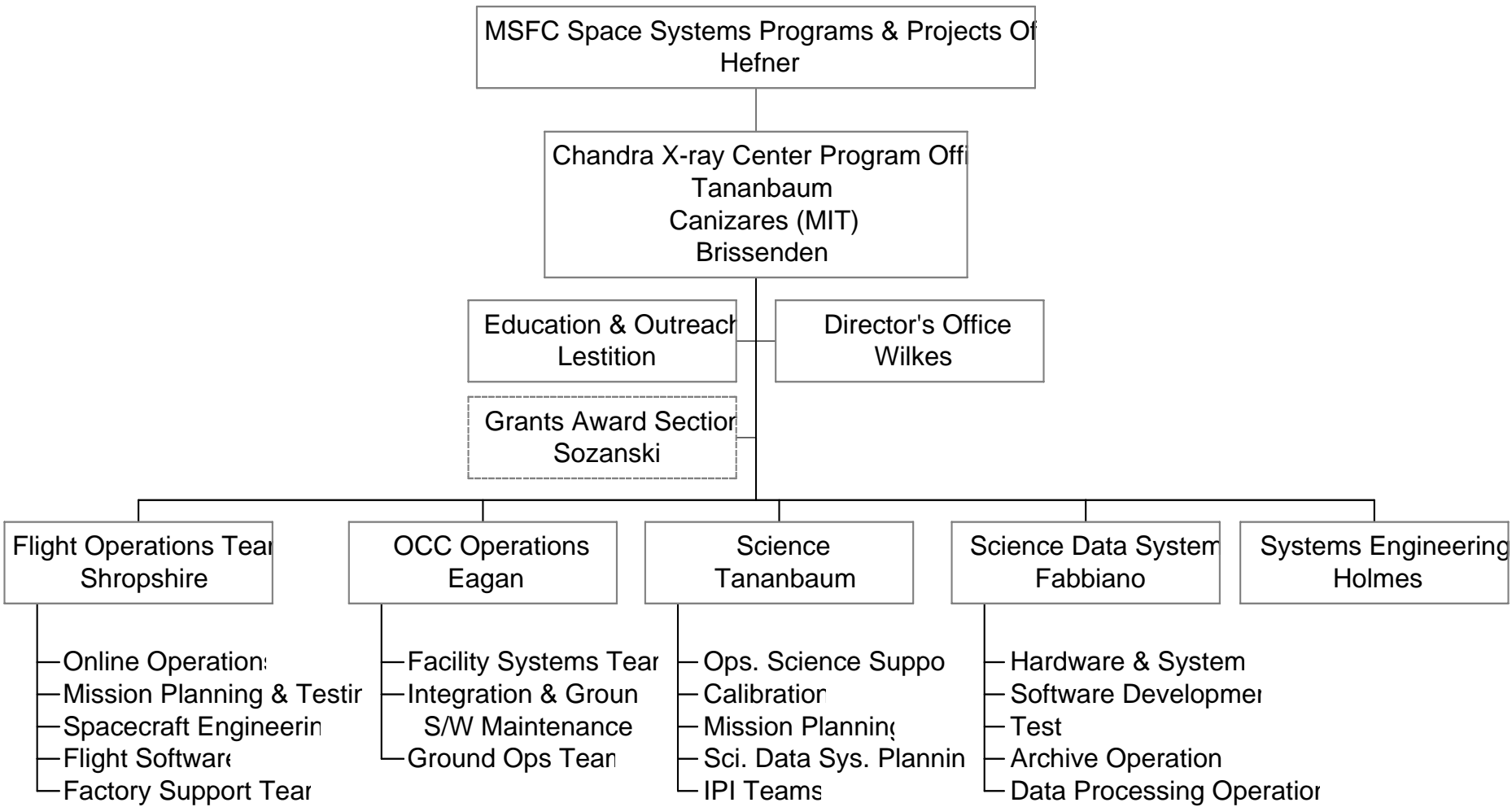
- Program Management
 - **Budget:** Recently NASA reduced FY07 Chandra program funding by \$2.5M (\$2.3M of which is from CXC). We are assessing options for absorbing the reduction without seriously impacting CXC operations.
 - Candidate approaches include using previous subcontractor underruns, delaying filling open staff slots, eliminating a small number of positions and deferring some activities and procurements to FY08.
 - We plan to discuss FY08 funding levels with NASA as part of the current Program Operating Plan cycle.

 - **Staffing:** Staff numbers remain near FY06 levels, as planned.

 - **Facilities:** A backup version of the OCC's computer system is being purchased for installation in the CfA facility at Cambridge Discovery Park.



CXC Organization





Program Level Status

- **Spacecraft**
 - Continues to operate extremely well overall
 - No spacecraft anomalies during this period
 - Nominal passages through the winter eclipse season (6 eclipses, 12/29–1/11) and through two lunar eclipses (10/21, 3/18)
 - Cooling the aspect camera to -19°C resulted in an expected decrease in the number of warm pixels
 - The 1000th Chandra orbit was completed on 11/3/06
- **Mission Planning**
 - Several solar radiation interruptions to observing occurred in December
 - 3 fast load-interrupt TOOs:

<u>Accepted</u>	<u>Target</u>	<u>Days</u>
10/21/06	GRB061021	1
01/07/07	4U014+61	2
04/02/07	AXP 1E 1048.1-5937	3



Program Level Status

- Science Instruments
 - Instruments are operating extremely well.
 - We have implemented the ability to reduce the number of ACIS chips used in observations, to reduce power supply heating when needed.
 - 3 ACIS front-end processors appeared to reset during an observation on 4/7/07; no science data were lost, and subsequent observations were nominal. A single-event upset is suspected.
- OCC
 - The OCC upgraded its administrative network with new hardware to ensure continued manufacturer support and increased redundancy and fault tolerance.
 - The OCC has been participating since September in a NASA external security audit of the OCC's computer systems, based on a new NIST computer IT security standard. Nearly 200 individual controls have been documented. The audit, which is a requirement for the OCC to receive a NASA Authority to Process (data), is expected to be complete in May.



Program Level Status

- Data Processing
 - Automatic processing is current; time from end of observation to delivery to user remains at about one day.
 - Data reprocessing (Repro 3) continues, incorporating the most recent algorithms and calibrations. 72% of eligible obsids have been reprocessed; data from year 2000 remain. Completion is expected summer 07.

- CXC Data System Releases

<u>Version</u>	<u>Date</u>	<u>Main contents</u>
DS7.6.9.1	12/15/06	Cycle 9: RPS, ObsVis, Pimms
DS7.6.10	1/09/07	Std data proc: CTI upgrade, V&V enhancements
DS7.6.10.1	1/23/07	Pimms update due to GSFC bug fix
DS7.6.10.2	2/15/07	Proposal update supports grids for DDTs & TOOs
DS7.6.10.3	3/26/07	Archive web server release
CIAO 3.4	12/19/06	Cycle 9 CTI & toolkit upgrades
CIAO 3.4.1	1/29/07	Mac PPC 10.4 compatibility patch
CIAO 3.4.1.1	1/29/07	Mac Intel & Rosetta compatibility patch



Program Level Status

- CXC Data System Planned Releases

<u>Version</u>	<u>Date(07)</u>	<u>Main contents</u>
DS7.6.10.4	May	Cycle 10 peer review: web reports & other support
DS7.6.11	Jun	DS infrastructure release & bugfixes
CIAO 4Beta1	May	Tools, ahelp, Prism
CIAO 4Beta2	Aug	New ChIPS application; Prism with ChIPS
CIAO 4Beta3	Oct	New Sherpa application
CIAO 4.0	Dec	Full CIAO package & 3 standalone components

- Calibration Database (CalDB) Releases

CalDB 3.2.4	11/6/06	ACIS time-dependent gain corrections
CalDB 3.3.0	12/18/06	Major upgrade: ACIS BI response & CTI correction, QE uniformity & order sorting tables; mkacismf input; HRC-I time dependent gain correction
CalDB 3.3.0.1	2/2/07	Patch to correct mkrmf input



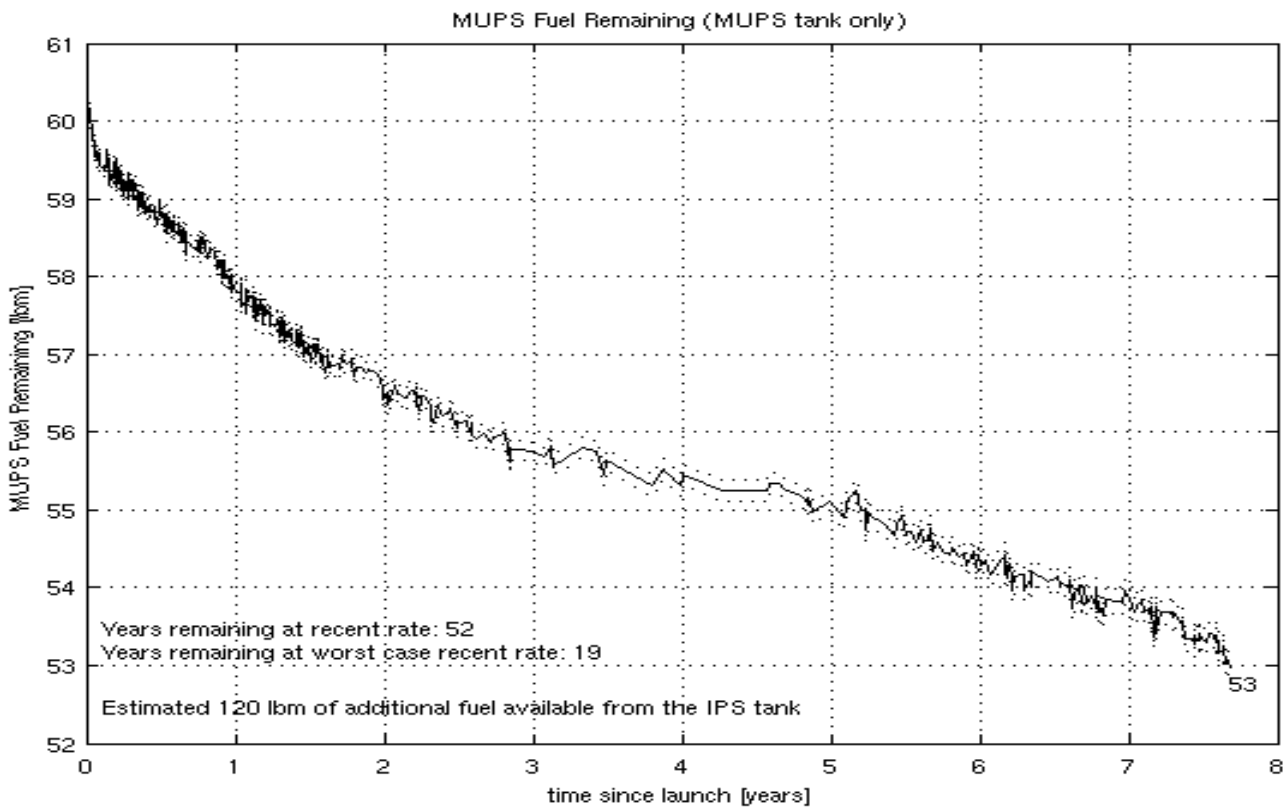
Program Level Status

- **GO Program**
 - Cycle 9 Call for Proposals was released 12/15/06; proposal deadline 3/15/07
 - 666 proposals were received; factor of 5 oversubscription for observing time
 - Peer review is scheduled for 19-22 June 07
 - Grant issuance has been delayed due to NASA funding delays in Oct-Dec and Feb-Mar. All theory & archive grants have been issued; ~35 GO grants remain (~2 months). The backlog should be cleared by ~ mid-May.
- **Chandra Fellows program**
 - Annual Fellows symposium was held at CfA 10/13/06
 - Fellows applications deadline was 11/2/06; a record 104 were received
 - Selection committee met on 1/17/07 to determine new Fellows
- **Education and Public Outreach**
 - 17 press activities (2 press conferences, 5 press releases, 10 image releases)
 - 81 print articles (incl. NY Times, Wash. Post, USA Today); 589 web articles
 - 3 TV broadcasts (Nova, Science Channel, 1 radio (NPR))
 - Bullet cluster-dark matter story was cited in several lists of top science stories
 - 40 workshops (35 educator, 1 amateur astronomer [AAVSO], 4 student)
 - 6 Chandra podcasts released (see <http://chandra.harvard.edu/resources/podcasts>)
 - Team won Pirelli InterNETional award for first podcast



Mission Metrics

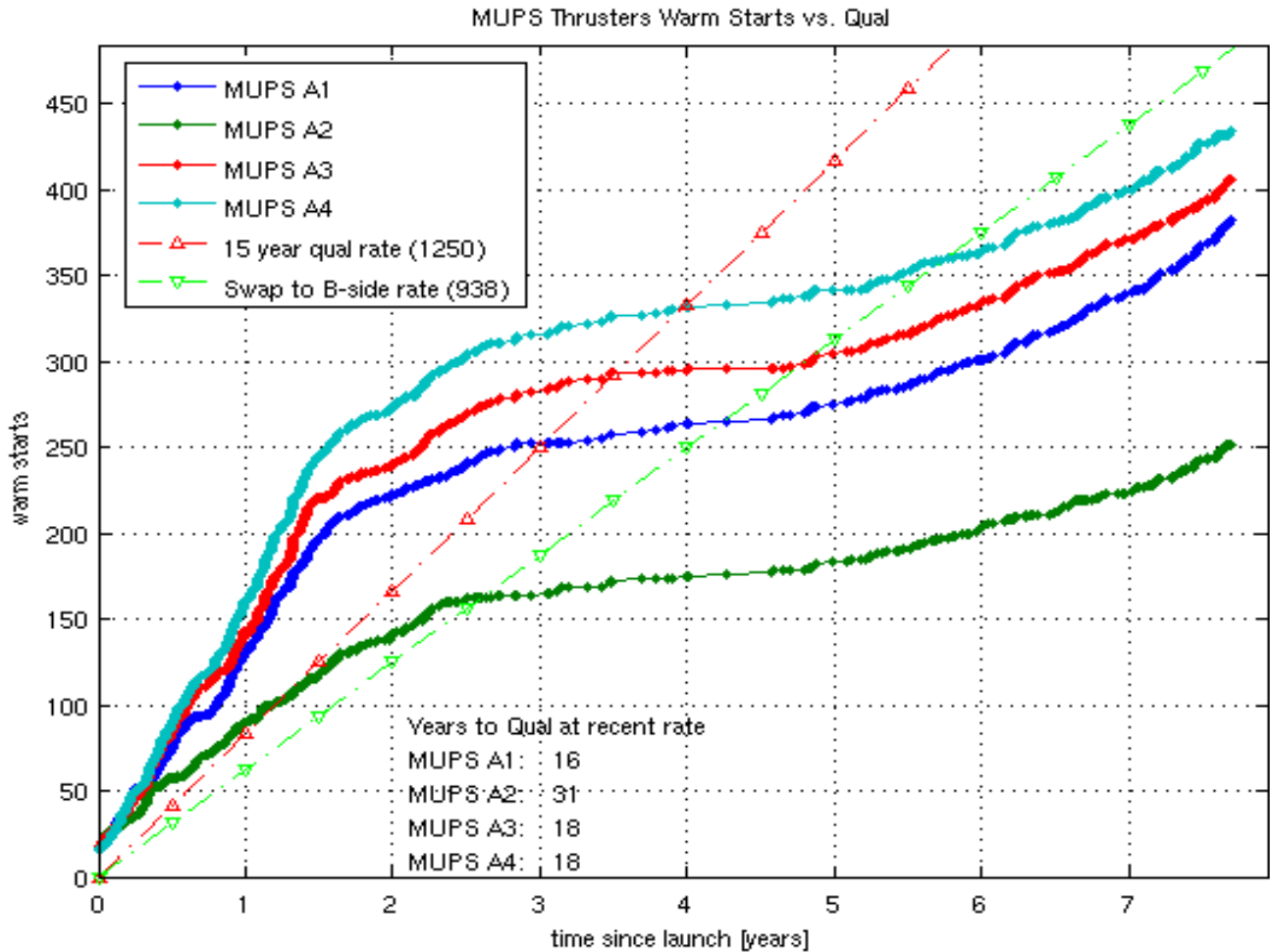
MUPS Fuel Usage





Mission Metrics

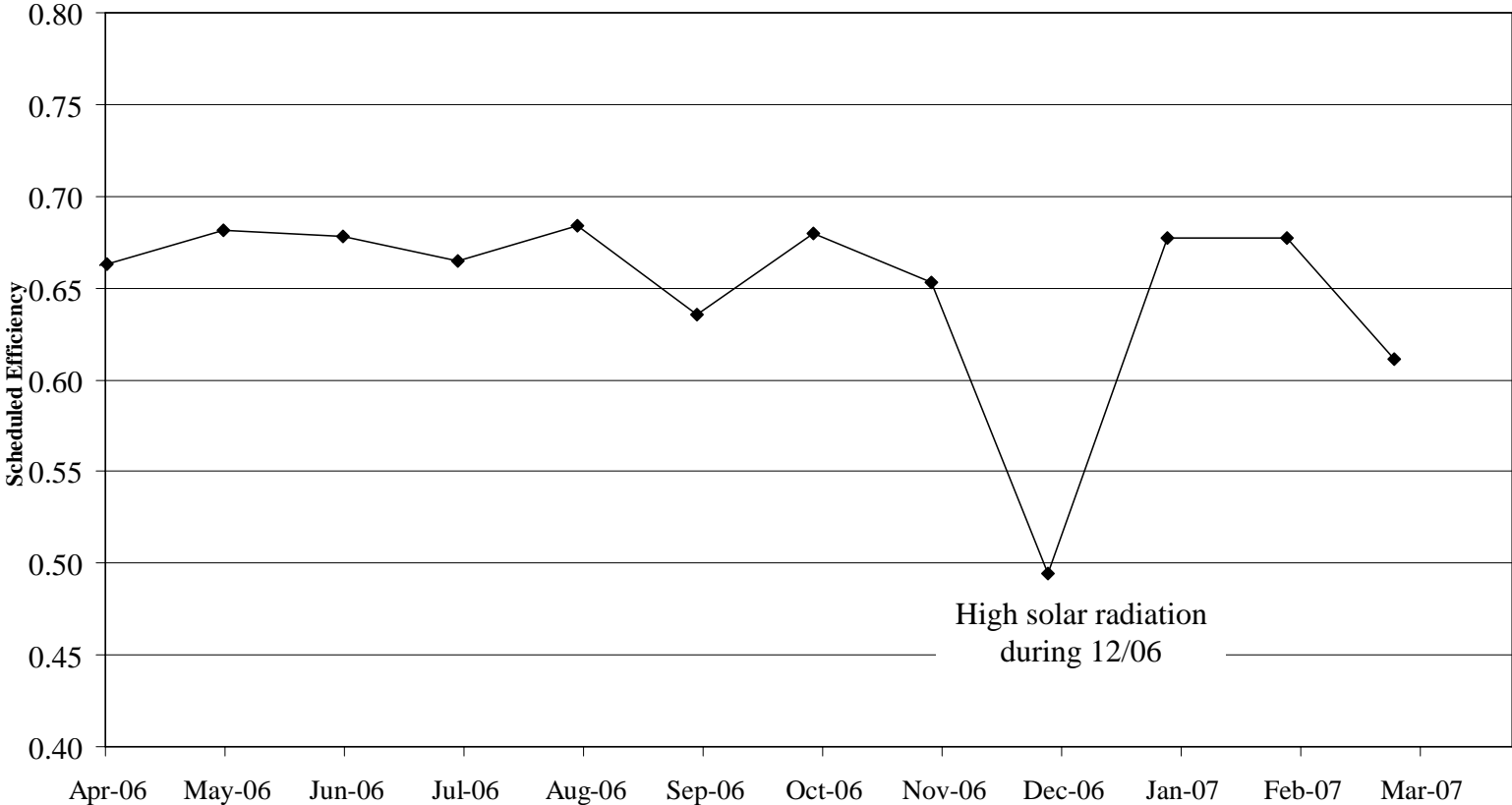
Thruster Warm Starts





Mission Metrics

Observing Efficiency





Data Delivery Effectiveness

As of middle of following month						As of 4/11/07			
<u>Month</u>	<u>Number of Obs</u>	<u>Days to Data Delivery</u>			<u>Number Deliv</u>	<u>Number Outstanding</u>	<u>Number Deliv</u>	<u>Number Outstanding</u>	<u>Comments</u>
		<u>Min</u>	<u>Avg</u>	<u>Max</u>					
Apr-06	63	0	1	10	63	0	63	0	
May-06	65	0	3	47	65	0	65	0	
Jun-06	71	0	1	12	71	0	71	0	
Jul-06	60	0	1	6	60	0	60	0	
Aug-06	69	0	1	5	69	0	69	0	
Sep-06	59	0	1	7	59	0	59	0	
Oct-06	57	0	1	11	57	0	57	0	
Nov-06	67	0	1	15	67	0	67	0	
Dec-06	59	0	1	9	59	0	59	0	
Jan-07	52	0	1	2	52	0	52	0	
Feb-07	71	0	1	5	71	0	71	0	
Mar-07	84	0	1	5	84	0	84	0	



Grant Award Effectiveness

Month of Data Delivery	Federal Grants (1)	SAO Grants (2)						
		<u>As of middle of following month</u>				<u>As of 4/11/07</u>		
		Non-Federal Grants (3)	No. Grants Awarded	No. Outstanding	Avg days to award (4)	No. Grants Awarded	No. Outstanding	Outstanding Awards Proposal no, Comments
Apr-06	1	14	11	3	10	14	0	
May-06	1	8	8	0	9	8	0	
Jun-06	0	20	20	0	12	20	0	
Jul-06	0	16	16	0	10	16	0	
Aug-06	1	9	9	0	8	9	0	
Sep-06	2	10	10	0	13	10	0	
Oct-06	0	10	0	10	n/a	10	0	Grant awards suspended pending receipt of CXC funding from NASA
Nov-06	0	11	0	11	n/a	11	0	Grant awards suspended pending receipt of CXC funding from NASA
Dec-06	0	64	57	7	15	63	1	8700193
Jan-07	2	42	27	15	20	32	10	8200759, 8500693, 8620086, 8620555, 8700463, 8700540, 8700723 (A&B), 8701043, 8910231
Feb-07	2	16	0	16	n/a	1	15	7200603, 7500699, 7800391, 8300667, 8400113, 8500333 (A,B,C,D), 8500626, 8501014, 8610643, 8900784, 8700160, 8900380
Mar-07	0	14	1	13	9	1	13	8200589 (A&B), 8200704, 8300601, 8400682, 8610215, 8610309, 8610492, 8700135, 8700512, 8700618, 8800885 (A&B)

Grants awarded to scientists at Federal institutions as interagency transfers through MSFC.
 Grants awarded to scientists at non-Federal institutions through SAO Contracts and Grants Department.
 Number of grants eligible for award, for which data were delivered to the observer in the month.
 Average days from data delivery to grant award to observer.
 NASA resumed funding on 12/8/06.
 Dec-06 includes one cycle 7 award and 59 cycle 8 awards.
 Amounts adjusted for Dec-Feb to include Archive & Theory awards
 Grant backlog, Dec through Feb due to temporary unavailability of staff in grant awards section.