

Director's Log

Chandra Date: 550108804

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It is now a year since my transition to Director of the *Chandra* X-ray Center on 20 April 2014, following founding Director, Dr. Harvey Tananbaum's retirement (http://chandra.harvard.edu/press/14_releases/press_031914.html). During this past year, I have visited our various local sites as well as the MSFC Project Office and NASA HQ, and have met with managers, team leads, and many individual staff. I have very much enjoyed getting to know the team in more depth. The more I learn, the more impressed I am by the talent, professionalism, dedication, in-depth knowledge, and sheer hard work of all the members of the *Chandra* team, many of whom have been with the Program since well before launch.

A number of exciting events have taken place in the past year. ***Chandra* celebrated 15 years of ground-breaking science in 2014!** Our talented Public Communications team arranged a number of on-line and live events, including a press release to mark the launch anniversary (http://chandra.harvard.edu/press/14_releases/press_072214.html). Cake and ice cream were consumed to celebrate other key anniversaries: e.g., launch on 23 July, first light on 19 Aug, along with many reminiscences and well-deserved pats-on-the-back.

The crowning event of the year was the "15 Years of *Chandra* Science" Symposium at the historic Park Plaza Hotel in downtown Boston in November (see article by Schwartz and Siemiginowska in this issue) at which four of the five Columbia astronauts (Fig. 1) joined us to celebrate and recall the exciting start of the mission. The breadth and importance of the science results from *Chandra* was clear from the many and varied presentations during the meeting, as is the potential for many more years of exciting, high-impact science.

An invited review article highlighting *Chandra* science was published in Reports on Progress in Physics: "Highlights and Discoveries from the *Chandra* X-ray Observatory", Tananbaum et al., with an oral introduction by Project Scientist Martin Weisskopf (<http://iopscience.iop.org/ezp-prod1.hul.harvard.edu/0034-4885/77/6/066902/>).

Looking forward to the next 10+ years, we were very pleased with the results of a detailed engineering study of the *Chandra* satellite and systems carried out by prime contractor Northrop Grumman entitled "*Chandra* 25 Year Mission Extension Analysis." The report found no show-stoppers to 10 more years of operation. The predominance of blue and green in Fig. 2 shows the number of subsystems still operating with full or near-full capability and demonstrates *Chandra*'s continued health. Our excellent engineering team is tracking and monitoring the spacecraft, handling unexpected events admirably and preparing contingencies for possible future failures. We encourage all scientists to plan for the continued, long-term availability of *Chandra*'s unique high-resolution X-ray data when planning their future research programs.

Chandra took part in the biennial NASA Senior Review of Operating Missions, culminating in a site visit by the panel in March 2014. This new process allowed the panel to tour the *Chandra* Operations Control Center, meet with many more staff, and have more in depth discussions than was possible during previous reviews held in Washington, DC. The Committee's report was very positive and recommended continued



Fig. 1 — From right to left: Cady Coleman (*Chandra* Mission Specialist), Eileen Collins (Commander), Michel Tognini, and Steve Hawley in front of a display booth showing some of *Chandra*'s beautiful images.

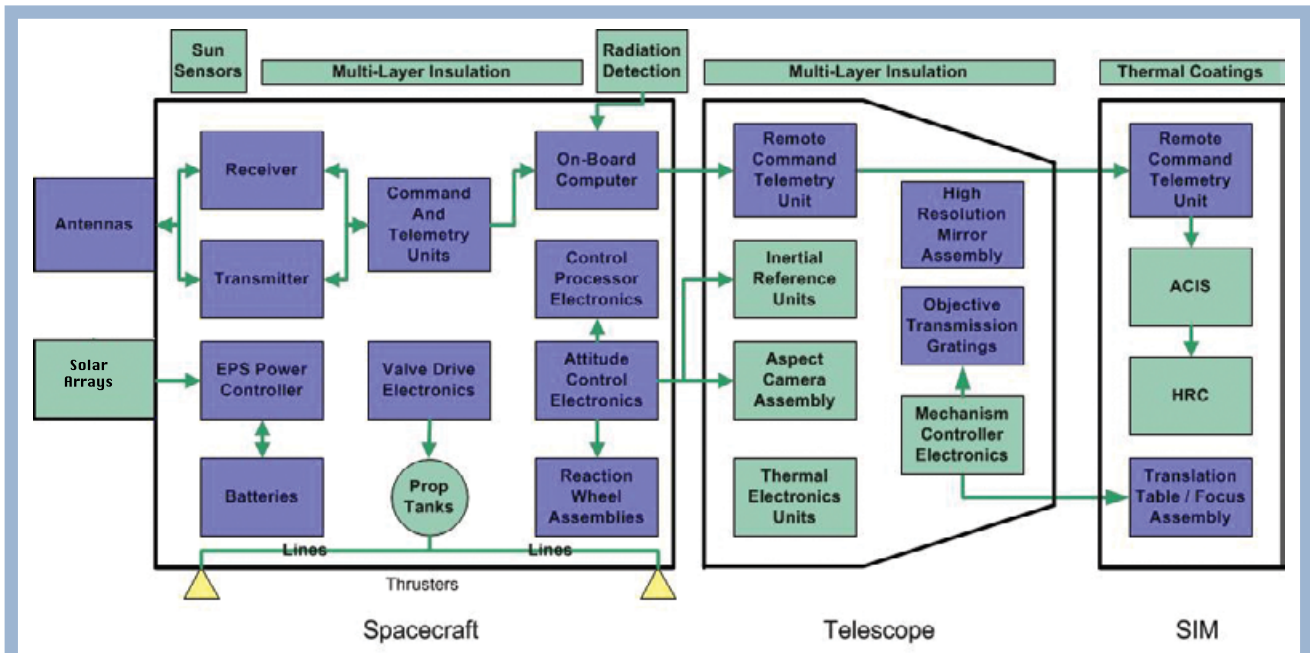


Fig. 2 — Chandra Spacecraft subsystem status block diagram showing the continued health of Chandra's systems as confirmed by the 15 year lifetime engineering review. Blue: no known problems; Green: minor problem but meeting all requirements. Yellow: moderate problem with manageable performance effects.

funding at the level of the in-guide budget, the maximum level available to them. We are working to follow up on the recommendations from the report, including conducting an operations review, and discussing with NASA budget planning for inflation in the out-years to ensure continued mission performance.