
Project Scientist's Report

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In its 14th year of operation, *Chandra* continues to facilitate outstanding science. *Chandra*'s ongoing success was validated in the most recent (2012) Senior Review of Operating Missions in Astrophysics, which rated *Chandra* highly in all categories. In particular, the Senior Review stated, "Both of these missions [*Chandra* and *Hubble*] continue to have the ability to make landmark scientific discoveries for many classes of astronomical objects. These are the two most important missions in this Senior Review." For the full report, visit <http://science.nasa.gov/astrophysics/2012-senior-review/>.

A major highlight this past year was the first set of observations under the new proposal category "X-ray Visionary Projects (XVPs)", to address key astrophysical questions that require 1-6 Ms observing time. During this past year, evolution of the *Chandra* orbit allowed us to repeat this process, selecting four proposals: "The Small Magellanic Cloud - A Case Study of X-ray Populations at Low Metallicity" (1.1 Ms); "A Legacy Study of the Relativistic Shocks of PWNe" (1.3 Ms); "A *Chandra-Planck* Legacy Program for Massive Clusters of Galaxies" (1 Ms); and "The COSMOS Legacy Survey" (2.8 Ms). Visit the CXC's web site (<http://cxc.harvard.edu/>) for details of these exciting proposals. Overall, the Cycle 14 Peer Review approved 185 of 672 proposals, which had requested 123 Ms observing time, a factor of 5.3 oversubscription of the time available to be awarded. (See Belinda Wilkes' article for details.)

The current solar cycle (#24) is predicted to reach maximum during 2013. During 2012, *Chandra* has stopped science runs 10 times through autonomous shutdowns based upon onboard measurements of hard protons, or through manual shutdowns based upon monitoring real-time measurements of soft protons by NASA's Advanced Composition Explorer (ACE). Because the soft (weakly penetrating) protons damage the ACIS front-illuminated CCDs, real-time ACE data, distributed by NOAA's Space Weather Prediction Center (SWPC), are important to radiation protection of the CCDs. Although ACE is expected to operate for several more years, NOAA plans to discontinue acquisition and distribution of ACE real-time data in 2015, after the Deep Space Climate Observa-

tory (DSCOVR) becomes operational. Consequently, Project Science is leading an assessment of the potential impact upon *Chandra* of the loss of real-time ACE data and an exploration of alternatives, to ensure we keep *Chandra* observing safely and efficiently for years to come.