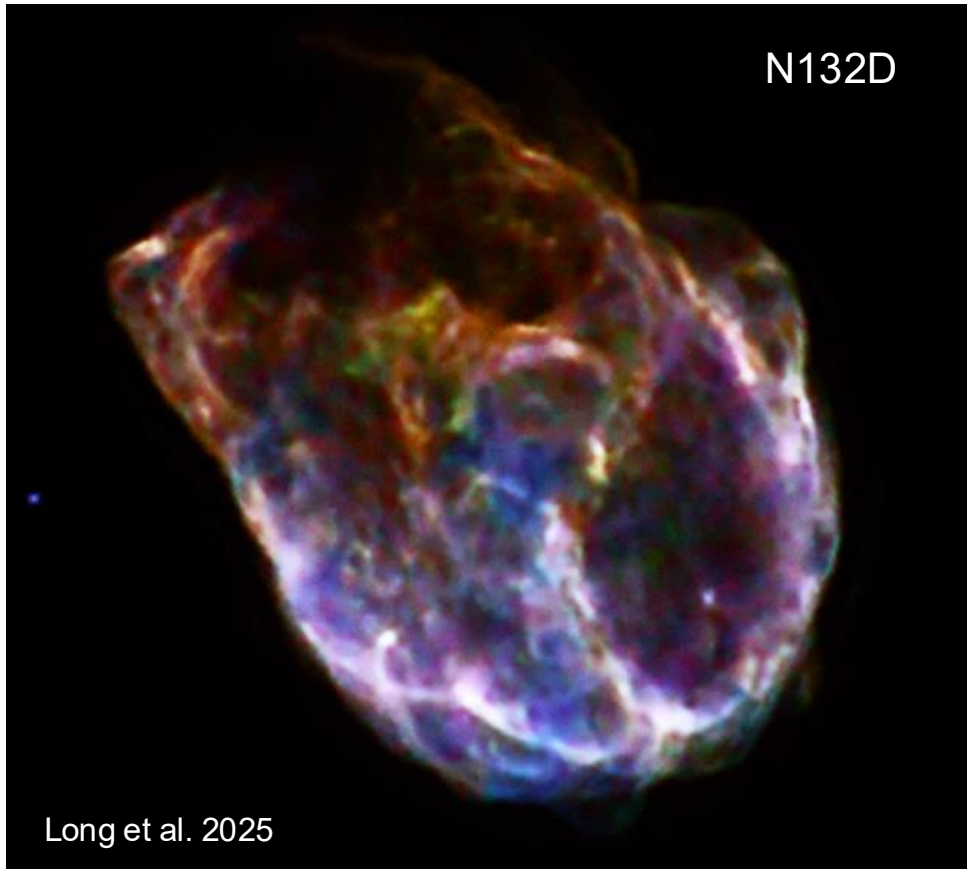


Director's Report



Quick Status

- Observatory functioning well. HRC-S is being returned to service under provisional guidelines.
- Data processing and delivery functioning nominally. TOO/DDT support continues on normal pace.
- Cycle 28 Peer Review completed successfully. Continued high oversubscription.
- Continued efforts on spacecraft management have maintained high observing efficiency.
- Budget plan for FY27 and beyond in place for Minimum Cost Mission. Transition planned in mid 2027.
- Joint programs established with NIRTF, XRISM, and IXPE.
- Summer Workshop on “Chandra’s Dynamic Universe” introduced/emphasized investigations in support of TDAMM initiatives (transient identification; community TOOs;)
- Legacy programs complete. New CCT whitepapers received. Source catalog update released.



Southern rim expansion: 0.10” ±0 .02” over ~14.5 yr baseline

AAS NOVA
Research highlights from the journals of the American Astronomical Society

HOME HIGHLIGHTS JOURNALS DIGEST

Looking Back on Astronomy in 2025 with AAS Nova

6. Chandra Spies a Supernova Shock Front Speeding Along

N132D is a 2,500-year-old supernova remnant that holds the distinction of being the most X-ray luminous supernova remnant in the Local Group. Xi Long and collaborators turned the sensitive instruments of the Chandra X-ray Observatory toward N132D to measure the velocity of its expanding shock. Using two sets of measurements separated by 14.5 years, the team directly measured the remnant’s expansion, obtaining a much more precise measurement than previous efforts have achieved with other methods like X-ray spectroscopy and revealing differences in the expansion velocity around the remnant.

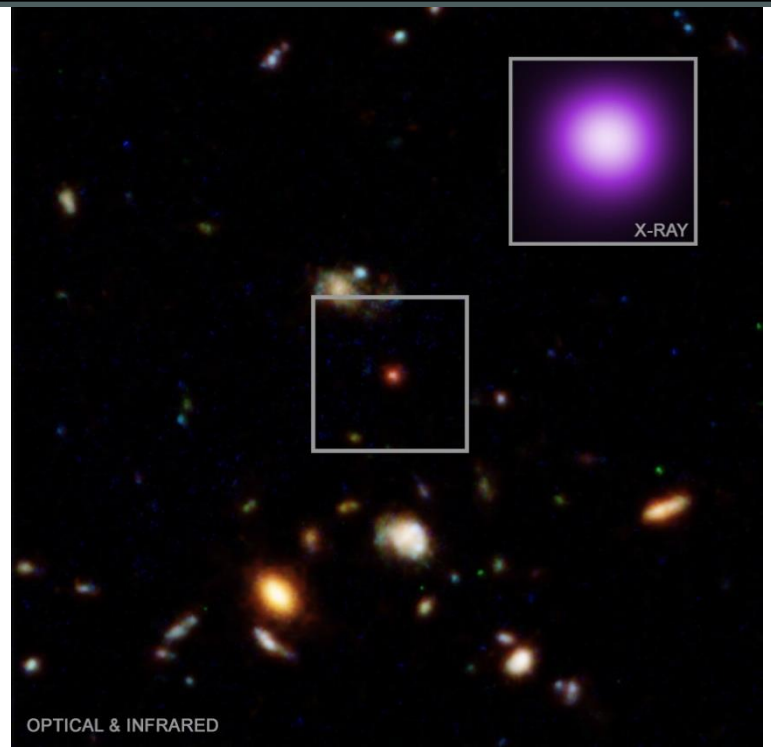
CHANDRA SCIENCE HIGHLIGHT: April 2026

NASA Connects Little Red Dots With Chandra, Webb

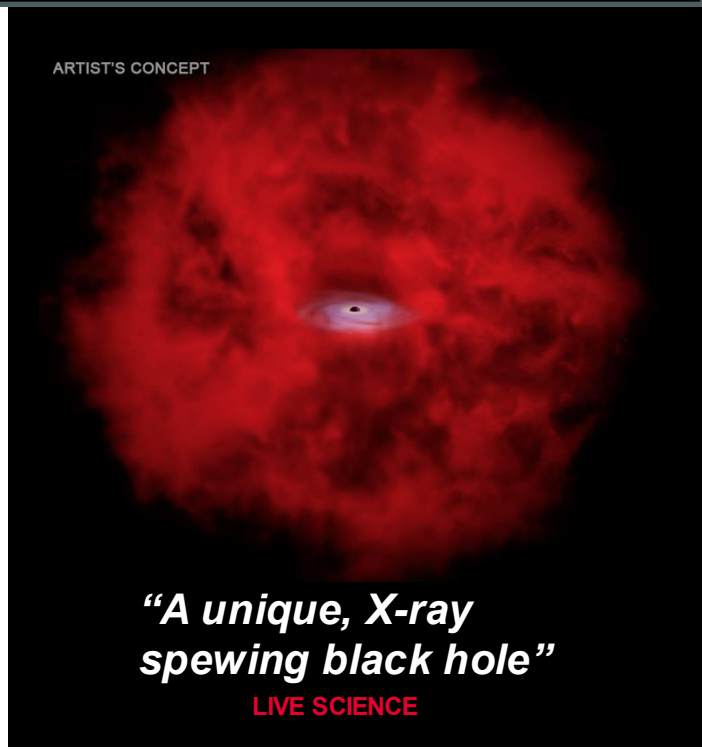
- NASA's Chandra X-ray Observatory has found a "little red dot" (LRD) — a class of small, red, distant objects — that is giving off bright X-rays, unlike others observed so far.
- This suggests that this so-called X-ray dot represents a previously unseen phase of supermassive black holes in the early Universe.
- In the proposed scenario, gas surrounding the growing black hole becomes patchy as the black hole consumes it.
- Over time X-rays from material falling onto the black hole are then able to pass through, which Chandra can detect.

Distance estimate: 11.8 billion light-years from Earth
Credit: X-ray: NASA/CXC/Max Plank Inst./R. Hviding et al.; Optical/IR; NASA/ESA/STScI/HST; Image Processing: NASA/CXC/SAO/N. Wolk
Instrument: ACIS
Reference: Hviding, R.E., et al., 2026, ApJL, 1000, L18

More information: The detailed caption and other material are here: https://chandra.si.edu/photo/2026/xraydot/



➢ *The large image is an optical and infrared composite image centered on the position of the X-ray dot and shows two of its key features as an LRD – small and red. Optical light from NASA's Hubble Space Telescope is colored blue and green and infrared light from Hubble is colored orange and red. The Chandra X-ray image of the X-ray dot (purple) is in the inset, showing the source is bright in X-rays.*



➢ *An artist's impression of the X-ray dot shows the research team's understanding of this newly-discovered object: a growing supermassive black hole at the center of a large sphere of gas. As the black hole in the little red dot has consumed gas surrounding it, patchy holes in the clouds of gas have appeared. This allows X-rays from material falling onto the black hole to pass through, which are observed by Chandra.*

CHANDRA SCIENCE HIGHLIGHT: May 2026

Galaxy Cluster Relaxed Now, but was Wild in the Past

- New data from NASA's Chandra X-ray Observatory suggests an event-filled past for the galaxy cluster Abell 2029.
- Known as one of the most relaxed clusters in the universe, the X-rays reveal evidence for a collision with a smaller cluster about four billion years ago.
- A sloshing spiral structure was formed when the smaller cluster made its first pass through Abell 2029, pulling its gas sideways.
- Galaxy clusters are the largest structures in the Universe held together by gravity and are bellwethers for cosmic growth.

Distance estimate: 1.0 billion light-years from Earth
Credit: X-ray: NASA/CXC/CfA/C. Watson et al.; Optical: PanSTARRS; Image Processing: NASA/CXC/SAO/N. Wolk and P. Edmonds
Instrument: ACIS
Reference: Watson, C.B., et al., 2026, ApJ, 996, 106.

More information: The detailed caption and other material are here: https://chandra.harvard.edu/photo/2026/a2029/



➢ *This new composite image shows evidence for Abell 2029's violent past in the nautilus-like shape in the Chandra data (blue). Optical light from stars and galaxies in the same field of view appears mainly white in an image from Pan-STARRS, a telescope in Hawaii. Researchers think the spiral shape in the hot gas formed when gas in the cluster sloshed to the side because of the gravitational effects of the cluster collision — similar to how wine moves in a wine glass.*

CHANDRA SCIENCE HIGHLIGHT: July 2026

NASA's Chandra Examines Milky Way at Arms' Length

- The two outer spiral arms of the Milky Way galaxy may be farther away than scientists previously thought, by about 10%.
- This discovery was made by measuring light echoes from distant gamma-ray bursts (GRBs) using NASA's Chandra and ESA's XMM-Newton.
- Even a small change in the distance to these arms has a significant impact on our understanding of the Milky Way's structure.
- While this technique is powerful, GRBs are rare so it may be difficult to use them to measure distances to other spiral arms in the future.

Distance estimate: 62,000 light-years from Earth
Credit: X-ray: NASA/CXC/INAF/B. Vaia et al.; Optical: Pan-STARRS; Image processing: NASA/CXC/SAO/N.Wolk & P.Edmonds; Illustration: NASA/CXC/SAO/M.Weiss
Instrument: ACIS
Reference: B. Vaia et al. 2026, A&A, 710, 196

More information: The detailed caption and other material are here: https://chandra.harvard.edu/photo/2026/arms/



***Left**: An artist's concept showing the Milky Way galaxy as seen from above, with the estimated positions of spiral arms based on previous data, in blue. Overlaid on this is an updated view of the Milky Way showing different positions (not drawn to scale) for the two outermost spiral arms, shown in red and bordered by dashed lines. Both arms may be more distant than previously thought, based on newly processed X-ray data from Chandra and XMM. **Right**: This image combines X-ray data from Chandra (blue) and optical data from Pan-STARRS (red, green and blue) showing X-ray rings. These rings were generated by light echoes when X-rays from a GRB struck dust clouds in different spiral arms of the Milky Way. The field of view of the Chandra image is shown by the angled white square.*

CHANDRA SCIENCE HIGHLIGHT: September 2026

NASA's Chandra Unveils Mysterious X-ray Objects

- Astronomers discovered a new class of objects in six galaxies using NASA's Chandra X-ray Observatory.
- They dubbed these "hypersoft X-ray sources" (HSS) because they give off very low-energy X-rays but are not seen in higher energy X-rays.
- Despite their stealth X-ray output, HSS may be emitting large amounts of ultraviolet radiation, revealing indirect information about a part of the spectrum that is difficult to explore.
- They lively involve accretion onto compact objects. The discovery may help scientists unravel mysteries around Type Ia supernovas and the interstellar medium.

Distance estimate: 21 million light-years from Earth
Credit:X-ray: NASA/CXC/Univ. of Alabama/M. Muhibullah et al.; Optical: NASA/ESA/STScI; Image Processing: NASA/CXC/SAO/N. Wolk
Instrument: ACIS
Reference: Muhibullah, M., Irwin, J.A., and Di Stefano, R., 2026, Nature Astronomy (available here)

More information: The detailed caption and other material are here: https://chandra.si.edu/photo/2026/m101/



The face-on spiral galaxy M101, also known as the Pinwheel, is one of six galaxies where a new type of object producing very soft X-rays was found. This new M101 composite image contains X-ray data from Chandra (purple) that have been combined with an optical image from the Hubble Space Telescope (red, green, and blue). The orange circles show the location of the seven newly-discovered objects in M101.



Yearly DDT Summary: 06 Nov 2025 - 01 Nov 2026

Submitted Proposals	Requested Time (ks)	Approved Proposals	Approved Time (ks)
43	1599	23	412

Notes:

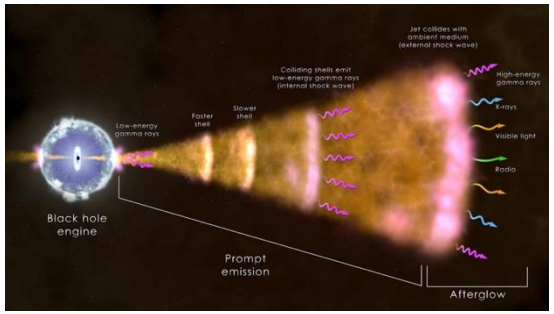
1: Two non-transient programs were approved since 06 Nov 2025 (out of two requested).
2: Cycle 27 DDT Program is at 50% of normal time allocation due to CLP contributions.

Since last CUC meeting (06 May 2026):

25 DDT requests for 785 ks (17 approved for 342 ks)
3 TOO triggers (4 observations) for 90 ks
0 radiation interrupts



Newly discovered millisecond pulsar detected in X-rays with Chandra HRC observations.



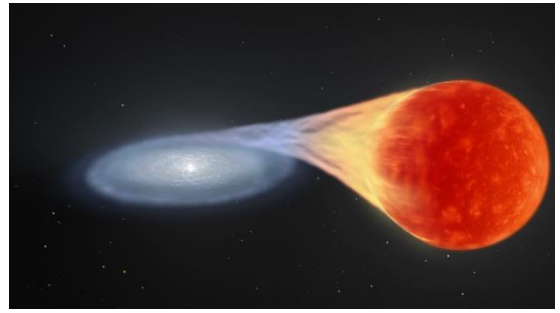
Chandra observations confirm re-brightening associated with afterglow of GRB260310A

Target	PI	T_r	T_a	SI	GRAT	P
AT2025aarm	Somalwar	25	15	ACIS-S	NONE	N
J0952+50	Main	20	20	ACIS-S	NONE	Y
AT2025aarm	Wichern	15	15	ACIS-S	NONE	N
PSR J1810-0623	Ho	5	5	HRC-I	NONE	Y
GRB260310A	Yang	5	5	ACIS-S	NONE	N
AT2026fgk	Jayaraman	60	10	ACIS-S	NONE	N
TDE2025abcr	Yao	20	20	ACIS-S	NONE	Y
TDE2025abcr	Eyles-Ferris	40	40	ACIS-S	NONE	Y
Cyg X-1	Yamada	10	10	ACIS-S	HETG	N
AT2026nik	Jayaraman	30	30	ACIS-S	NONE	Y
AT2026nhm	Freeburn	30	30	ACIS-S	NONE	N
SN2026obc	Jacobson-G	40	20	ACIS-S	NONE	N
AT2026fgk	Jayaraman	23	8	ACIS-S	NONE	N
EP260302a	Eyles-Ferris	70	15	ACIS-S	NONE	Y
GRB251129A	Yang	20	10	ACIS-S	NONE	Y
EP J223759.5+531421	Negro	40	40	ACIS-S	NONE	Y
AT2024dky	Yao	10	10	HRC-I	NONE	N
TDE 2025aarm	Baldini	15	15	ACIS-S	NONE	N
SRGA J174800.5-280826	Mereminskiy	2	2	ACIS-S	NONE	N
SN2026sqf	Milisavljevic	40	40	ACIS-S	NONE	N
5C 7.230	Park	60	30	ACIS-S	NONE	N
SN 2016coi	Patnaude	30	20	ACIS-S	NONE	N
GaiaDR3 23426	Soria	20	2	ACIS-S	NONE	N

t_r = requested (ks)

t_a = approved (ks)

P = proprietary
N=None
D=Default

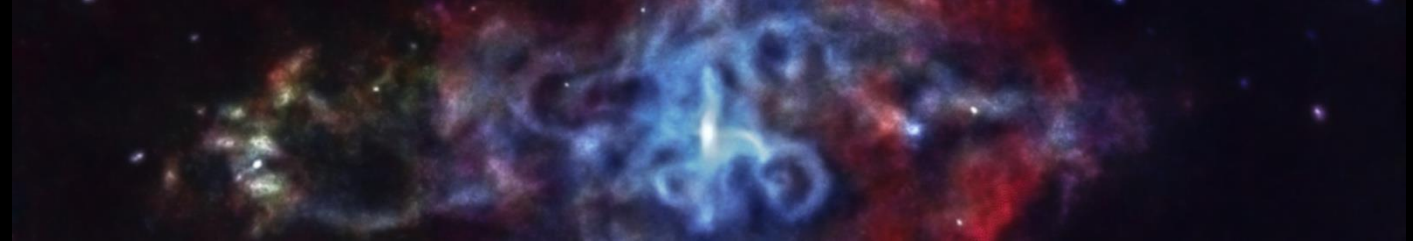


Chandra observations of SN2026sqf provide the earliest X-ray detection of a SN Ia-CSM, at 2 months post explosion



Other Programs

- Legacy Program
  - Treasury Survey of Baryon & Energy Cycle and X-ray Binary Evolution in Galaxies - **Completed**
  - Deep and Wide Imaging of the Cool Core of the Perseus Cluster - **Completed**
  - Time to consider another Legacy Program in upcoming Cycles?
- Chandra Cool Target Program
  - White Papers received, with large numbers of targets. Review being arranged. – See Rudy's presentation.
- Joint Observing Programs
  - Programs arranged with XRISM, IXPE, and NIRTF – to be announced in upcoming CfP. – See Rudy's presentation.



FY27 Budget Direction

- The annual Planning, Programming, Budgeting, and Execution (PPBE) process provided a positive outlook for continued Chandra operations over the next 5 years, though with some additional reductions.
  - Plans are nominally consistent with Minimum Cost Mission, as expected, but without COLA increases and with explicit direction to discontinue HRC.
  - HQ would like Senior Review to weigh in on continued operation of HRC and on maintaining capabilities for final Source Catalog run at end of mission. CXC will find a way to keep HRC and minimum CSC core in place through Senior Review.
- Transition to Minimum Cost Mission is underway.
  - Internal reorganization of tasks has already begun in cases of retirements or other attrition.
  - Reduction of support functions, and associated staffing levels, will be in place by September 2027.
  - Additional efficiency improvements, through restructuring and AI support, are being investigated in order to minimize lost science support.



Minimum-Cost Mission

- MCM reductions have been discussed in previous meetings. See table.
  - Impacts on ACIS calibration likely to result in reduce cadence of updates.
  - LETG/HETG calibration likely to be frozen at current values. This is quite stable.
  - No additional Cycles will be added to the Chandra Source Catalog.
    - ⇒ NASA HQ will use Senior Review to assess requests for additional funding to support final CSC run at end of mission.
    - ⇒ Maintaining core staff needed for CSC expertise is not currently included in MCM. Discussions underway with NASA to support core staff through Senior Review period.
- FY28+ guidelines also call for elimination of HRC.
  - Maintaining team through Senior Review planned in order to allow community assessment of cost/benefit to maintain HRC capabilities.

Table 4.1: Reductions to Reach Minimal-Cost Mission

- Remove HRC from use. Grating use available only with ACIS.
- Reduce rapid return-to-science support following anomalies.
- No *Chandra* conferences or newsletters.
- Reduce HelpDesk to minimal levels.
- Eliminate bibliography and other mission statistics tracking.
- No funding for archive or theory proposals.
- No new operating configurations for ACIS.
- Freeze HRC/LETG/HETG calibration.
- Minimize ACIS calibration.
- Minimize monitoring and trending of instruments.
- Eliminate Uplink Support for observations.
- Minimize Validation & Verification (V&V) and special processing efforts.
- Halt any further work on CSC and TGCAT.
- No new updates/algorithms/functionality to analysis software (CIAO, Sherpa, DS9, MARX, ChaRT, SAOTrace).
- Eliminate CIAO/Sherpa training workshops.
- Minimize new documentation/threads.
- No new updates to Data System software beyond mission-critical needs.



Suggestions from Summer Workshop

- The “Chandra’s Dynamic Universe” workshop was highly successful, and introduced several actions pertaining to TDAMM support:
  - Investigate detection of transients in Chandra data processing, for reporting to facilitate follow-up by other facilities.
  - Work with ACROSS team to facilitate communication about multi-mission programs, particularly regarding follow-up of transients.
  - Continue discussions on “Community TOOs.” Largely for “must do” programs (e.g. Galactic supernova) that should be in place in a coordinated manner to ensure efficient use of facilities. – ACROSS discussions are happening.

- Questions raised about what, if anything, Chandra can do to help compensate for loss of Swift.
  - Group will be formed to study this, with membership from Chandra Time Domain Committee, CUC, and CXC.
  - Joint Program w/ Einstein Probe? Seems impossible with Wolf Amendment.



CUC Report Questions

- Funding increments for institutions that bill infrequently.
  - Should be able to arrange to have full award made upon first observations. Details are being worked.
- DPR considerations – Rudy's presentation.
- CPS option to delete lists of targets – This is on the list for s/w updates, but will not make it into the next CPS release.
- Archiving at HEASARC vs. CXC
  - Plans for managing the final Chandra archive are still being worked.
  - HEASARC is actively working on establishing infrastructure, but CXC team involved with this has concentrated on completing CSC update this year.



Questions