

HPCAT NEWSLETTER – APRIL 2025

Dear HPCAT community, as you may have noticed our monthly newsletter has turned into a quarterly newsletter. After receiving feedback from the community, the feeling is that most of the information we send out can be covered in quarterly updates rather than monthly updates and, in turn, also helping reduce email spam. Going forward we will keep this as quarterly update and, in case urgent information needs to be shared, we will email those updates as appropriate. In this quarterly issue we are providing some critical updates on APS and HPCAT status, as well as sharing broader news from HPCAT. Please also note that HPCAT is currently advertising a postdoc position opening and please share with others (see below for further details).

APS and HPCAT Status

HPCAT status overall

Experimental Station	Current Status	Planned full user resumption
16-ID-B (GP and LH table)	<ul style="list-style-type: none"> Commissioning completed and moved into regular operations Currently open to users for 2025-1 cycle Starting to schedule for 2025-2 cycle, which runs ~early-June through first week in August <ul style="list-style-type: none"> 16ID-B will start with Laser Heating and Plans to Switch to GP table on July 8th Please note that resistive heating is not allowed on the LH table Final schedule and announcements coming ~April 23 	<ul style="list-style-type: none"> General User (GU) proposals ongoing – announcements on GU sent via APS email distribution. Next call for 2025-3 cycle will be coming up, Proposal Submission deadline June 25, 2025
16-BM-B (Paris-Edinburgh Station)	<ul style="list-style-type: none"> Final installation of major components completed First beam delivered in December 2024 Commissioning has started and continuing in 2025-1 and 2025-2 cycles 	<ul style="list-style-type: none"> Planned resumption with users in mid/late 2025-2 and full user access planned for 2025-3
16-BM-D (dedicated DAC station with Mono and White beam setup)	<ul style="list-style-type: none"> Commissioning started March 17, 2025 	<ul style="list-style-type: none"> Planned resumption with GU in late 2025-2 and full user access planned for 2025-3
16-ID-D (Spectroscopy and Inelastic setup)	<ul style="list-style-type: none"> New Double Crystal Monochromator and new Double Multilayer Monochromator expected to arrive and be installed in July-August 2025 – this has been delayed from projected March install timeline ID-D planning to start technical commissioning by October (2025-3 cycle) 	<ul style="list-style-type: none"> Resumption by late 2025-3 and into 2026
16-ID-E (Planned setup for x-ray microscopy)	<ul style="list-style-type: none"> In development and install phase currently. Completion projected by end of 2025 (tentative) 	<ul style="list-style-type: none"> Projected early-2026

We hope to see you at HPCAT soon, and please reach out to HPCAT staff if any questions – beamline contacts are listed under APS directory <https://www.aps.anl.gov/Beamlines/Directory> or HPCAT website <https://hpcat.aps.anl.gov/hpcat-group-members>.

APS status overall

APS is making great progress and nearing completion of upgrade, with full completion in target goals by end of the fiscal year (Sept. 30, 2025). Some recent accomplishments and status include:

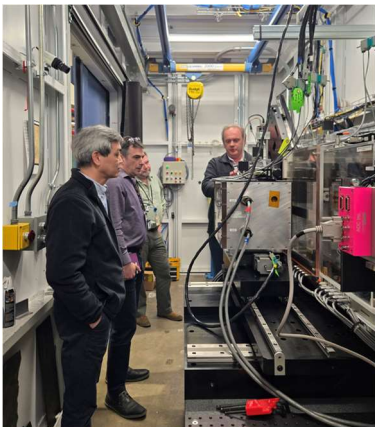
- Reached target current of 200 mA
- Continuous top-off and multi-bunch swap-out injection accomplished. Beam is steady, with occasional troubleshooting, but overall continuous beam operations are ongoing
- APS storage ring will run in two modes, referred to as timing and brightness modes. Plan for 2025-2:
 - 162 bunch mode at ~200 mA – 101 Shifts – June 3rd to July 3rd
 - 48 bunch mode at ~120 mA – 53 Shifts – July 8th to Aug 5th
 - Total User Shifts offered: **154 Shifts**
- Please see APS website for Machine Status and Schedule <https://www.aps.anl.gov/Machine-Status>
- The following cycle, 2025-3, will be longer with ~230 shifts and running mid-September to late-December 2025

News and Highlights

As APS and HPCAT resume operations, it has been great to see more users coming back onsite. APS is currently working on bringing more beamlines back online and currently has completed restart on ~50 out of 75 stations. As the beamlines come up, you can check on operations status and capabilities available across APS at <https://www.aps.anl.gov/Beamlines/Directory>.

APS Director Laurent Chapon visits HPCAT

On March 21st APS Director visited HPCAT for discussion of operations and followed by a tour of all HPCAT facilities. It was a great opportunity to share our overall upgrade effort, progress, and resumption status. APS management is committed to bringing beam to all stations as early as possible and resuming full facility operations by end of the fiscal year.



Please note some opportunities to visit APS and HPCAT

2025 APS Users Meeting May 5-9

- May 5-9, 2025 at APS
- Registration deadline is April 21, 2025, at 4:59 p.m. CT
- To register and view additional information about agenda and workshops please visit <https://www.aps.anl.gov/Users-Information/User-Community/Users-Meetings>

2025 NNSA Stewardship Science Academic Program (SSAP) Symposium

- June 10-12, 2025 in Chicago
- Registration and agenda <https://web.cvent.com/event/ffe4e2e8-20c4-4718-9258-af281d081b6b/summary>
- A tour of HPCAT and DCS facilities at APS is planned on June 12 – registration required by May 23, 2025

2025 National X-ray School (NXS)

- July 27-Aug 4, 2025 at Argonne National Laboratory
- Application deadline: April 7, 2025 - visit [NXS Program Link](#)
- Geared towards graduate students who are just beginning their research projects in fields such as physics, chemistry, materials science, geosciences, engineering, or related areas

Job postings and various opportunities

- **Sandia National Laboratories** - Postdoctoral Appointee (posted March 2025)
[Job description and application information](#)
- **The University of Texas at Austin**, Department of Earth and Planetary Sciences (EPS), seeks to hire a Research Staff member in the broadly defined areas of Earth and planetary interiors. The emphases of the research areas include experimental mineral physics, physics and chemistry of planetary interiors, and high-pressure earth materials science. Candidates must hold a Ph.D. in Earth Science or a related field. Please apply by 1/1/2025 for best consideration. For more information, see
https://utaustin.wd1.myworkdayjobs.com/en-US/UTstaff/details/Research-Associate_R_00036551?q=R_00036551+Research+Associate
- **Department of Earth and Planetary Sciences (EPS) and the Institute of Meteoritics (IOM) at the University of New Mexico** invites applications for an Open Rank tenure track faculty position (full, associate, assistant) in the field of Earth and Planetary Materials to begin in August 2025. Please apply by 12/16/2024 for best consideration. The position will remain open until filled
<https://unm.csod.com/ux/ats/careersite/18/home/requisition/31368?c=unm>
- **The Department of Geology and Geophysics at the University of Utah** invites applications for an open-rank faculty position (Assistant/Associate/Full Professor) in the area geomechanics, with emphasis on rock and fracture mechanics, fracture networks, and/or fracture characterization and modeling. We seek applicants whose research complements and grows departmental strengths in areas such as Tectonic Processes, Earth Resources and Energy Transitions, Petrology and Volcanology, Experimental Mineral Physics, Seismology and Geodesy, Geological Engineering, Earth Surface Processes, and Geologic Hazards. Research approaches might include field data generation or exploration of field analogs, numerical modeling, computational methods such as machine learning and AI, and/or laboratory experiments. Position to begin July 2025. <https://utah.peopleadmin.com/postings/168605>
- **Post-doctoral position at Iowa State University** is available in [Dr. Valery Levitas' group](#) starting in the Spring of 2025 to perform experimental research on coupled plastic flow, phase transformations, and microstructure evolution under high-pressure and torsion of a sample in static and dynamic rotational diamond anvil cells. Experience with *in situ* high-pressure experimentation and/or x-ray characterization of stresses and structural changes in materials at the micron scale is desired. Close collaboration with theoretical/computational collaborators and Argonne National Laboratory of DoE is expected. Please email your application to Prof. Valery Levitas vlevitas@iastate.edu.

Upcoming events

April 30, 2025	2025-1 Beamtime run ends
May 5-9	APS / CNM User Meeting https://aps.anl.gov/Users-Information/User-Community/Users-Meetings
May 7	HPCAT EC quarterly meeting
June 10-12 (Registration deadline May 19)	NNSA-SSAP symposium in Chicago area and Visit to APS and HPCAT on 12 th https://web.cvent.com/event/ffe4e2e8-20c4-4718-9258-af281d081b6b/summary
Jun 22–27	2025 American Physical Society Science of Compression in Condensed Matter (SCCM) conference in Washington DC https://engage.aps.org/gccm/meetings/biennial-2025
July 6-11	Goldschmidt conference 2025 in Prague, Czech Republic. Includes high-pressure sessions https://conf.goldschmidt.info/goldschmidt/2025/meetingapp.cgi/Home/0
July 21-23	DESY Workshop "Two decades of rapid compression Diamond Anvil Cell research: Present and future developments" https://indico.desy.de/event/48422/
Aug 31 – Sep. 05	European High Pressure Research Group EHPRG 62nd Meeting, Manchester, UK. https://www.ehprg.org/meetings.php
Sep. 15-19 (abstract deadline May 2)	Conference on Mechanical Engineering Design of Synchrotron Radiation Equipment and Instrumentation, Lund, Sweden https://www.meds2025.com/
Sept. 28-Oct. 03	29th AIRAPT Intl. Conference on High Pressure Science and Technology, Matsuyama, Japan, 2025 https://smartconf.jp/content/airapt29/