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Subject: BAG: 11-BM news



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Angus, John & Jim,

I'd like to pass on a bit of beamline news.

1) We have been getting pushed hard internally to open for on-site use of 11-BM. We discussed my reluctance, I think, to opening the instrument to users until we had software that allowed users to program their data collection (rather than launch each scan manually) and we protected the instrument against collisions that could put the instrument out of commission for months. Bob has written a GUI that allows users to control all the user-appropriate data collection features (robot, cryostream,...) and thus do run/robot/temperature scheduling. Matt has also written a very nice MEDM status panel for users that prevents access to all the dangerous bits. We have not completed testing of all this, but that should come soon. After that we will then work on a data-merging system for on-site users that will enter manually-collected data files into the sample database for web-based retrieval. We have had a small number of on-site users this cycle, even before this software was completed, and will look to expand this in the coming cycle.

2) A hot air blower (200-1000 C) is on order and should arrive in September. We do not plan to use this with the robot, lest we damage the xyz stage, so it will be available for on-site use only. We are still thinking about how to handle very low temperature operations. My current thinking is a He blower for >20 K and a cryostat for ~4K operation. We are waiting to see how the device Yang Ren bought works out.

3) A spare bender (2nd monochromator crystal) is funded and the procurement is in the approval process. We plan to switch to that bender and then look at virtual leak problems & possible twist in the existing bender. Before we make the switch, we will do some beamline commissioning work with a flat crystal. At present we have problems with lateral beam movement that prevents tuning below ~15 KeV, which we would like to better understand.

4) During the last shutdown, a number of upgrades & fixes were made, including addition of a new beamline flag, installation of 2D motion on the beamstop and installation of three remotely-read digital dial indicators on the 2nd mirror. The flag, which allows the beam to be viewed in the minihutch just before it enters the B hutch and a beam camera at the detector position that can be rotated into the direct beam really ease the task of alignment. The dial indicators (which don't actually have dials) are effectively a low-cost linear encoder. With this, we can now reposition the mirror reproducibly. This approach will not work for the 1st mirror, alas, where the jacks are not strong enough to move the mirror without jamming.

During this cycle we have done a lot of commissioning work and resolved a number of problems. As I write, Matt and Lynn are resolving a long-standing problem with the scintillation detector positions. They were not designed to be aligned individually AFAIC.

5) There are some discussions with the mirror mount supplier for an upgrade to address the previous problem and others. This is being led by Mohan. The vendor proposes to split the cost for this with the APS. The outcome of these discussions is not clear; it is quite possible that such an upgrade will be a prerequisite for low E operation.

6) Matt's position is being upgraded from term to permanent staff. Hurrah!

7) Jennifer Doeblbler is now Jennifer Strauss. Congratulations to Mr. and Dr. Strauss! She will be leaving us in late August when the soon-to-be other Dr. Strauss starts his postdoc at Stanford and CERN. We don't expect to have a replacement for her or Sytle.

8) An entry-level beamline staff position for 1-BM has been approved and we hope to see that posted in the next 3-6 months, once we have filled a number of other beamline staff lines that are currently in progress.

9) We have started outreach work to publicize 11-BM mail-in service and are seeing many more proposals. We had 10 rapid access proposals in June and 8 so far in July, so word is getting out, but we still have considerable capacity before we become oversubscribed. On a similar vein, we hit a new record with one very motivated ANL user, where the delay between initial contact and return of data was cut to one week. In this case, the proposal and ESAF were submitted over the 4th of July weekend and one sample was still being annealed <48 hours before data were collected. It is good to know this can be achieved, but this level of response will not be the routine.

Well, I thought this would be short, but in fact there was more here to cover than I realized. I am not sure there are any active issues for discussion, but if any of you have anything I can arrange a conference call or we can converse by e-mail. Your input and advice is most welcome.

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