

S7 operation update

Eric Dufresne, TRR group meeting, Nov. 21, 2006

- On the week of Nov 7, our staff research period was converted into commissioning. DW and DA opened the Kohzu monochromator and added an ion pump to the top of the chamber for faster pumping. The chamber can now be pumped in a few hours. With Tim Graber from 15ID, we inspected the 2nd diamond crystal mount. The crystal was simply remounted, and upon testing with x-rays was found to be strain free afterwards (see end of talk for pictures).
- EL with Marc Erdmann and Danny Notcher commissioned two new pilar posts for laser delivery between the 7ID-E and 7ID-D hutches. They should improve the laser stability.
- DA programmed a new web server that can easily plot 1D scans saved by the scan record. The only tool needed is a web browser. The server can fit data as well.

Operation update (cont.)

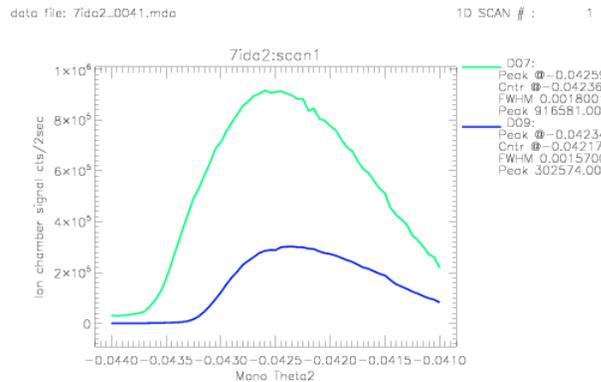
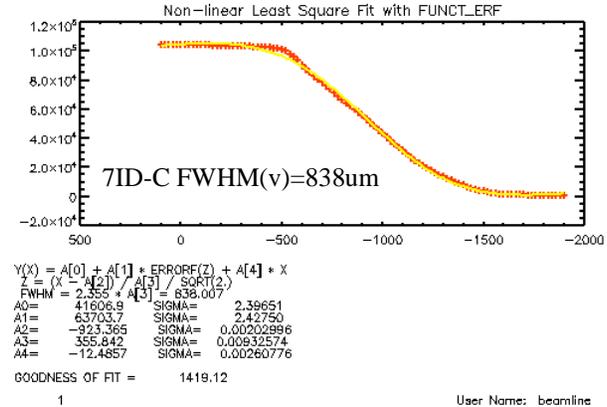
- Two sets of ADC slits were commissioned on Oct 25 for the 7ID-D Huber 4 circle diffractometer. DA developed the driver box (small-current half-step drivers) and DW designed the mechanical supports. The slit worked well.
- During the week of Nov 7, several shifts were used to look at the beam stability and beam profile. EL took several measurements of the beam stability while scanning the energy, and preliminary analysis seems to indicate the beam was stable.

7ID R&D

- EL and collaborators wrote a Partner User proposal under review for developing the instrumentation and first experiments of the new ps-source to start by the end of 2007 on 7ID.
- ED attended a nice workshop on on fs-laser science and techniques at the UofM CUOS Center on Oct. 25. Some nice work by the group of Roy Clarke (imaging in 7ID-C) was presented.
- Jin Wang presented a budget proposal on Nov. 10 for the instrumentation required on 7ID to fully utilized the new ps-source.
- DW with a group from Toledo commissioned the x-ray oven in the 7ID-D doing annealing studies. The oven developed a water leak during the experiment and will be repaired.
- During the commissioning week, BA commissioned the APS streak camera in 324 bunch mode and measured its sensitivity.

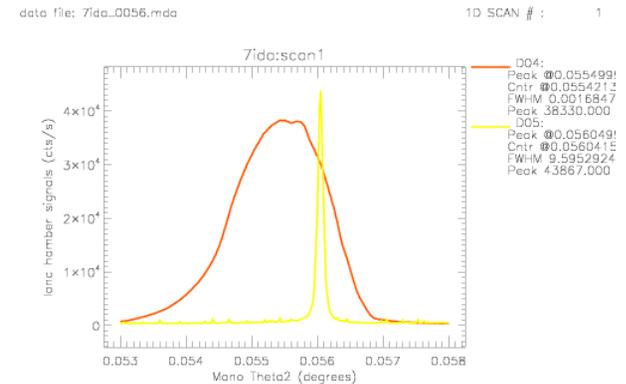
Strain from theta2 with 4.75mm thick Al foil filter.

After intervention, beam size (V) now as high as expected and 3rd harmonic is narrow.



Oct 11, 2006 11:40:23.122561474
comment: D07 is lo (main beam) D09 is filtered with 4.75mm of Al

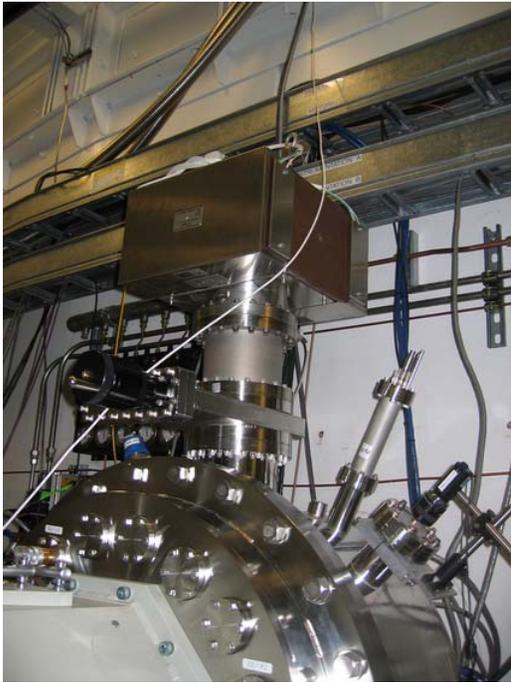
After Nov 7 intervention.



Nov 09, 2006 14:02:53.946425922
comment: D04 (111) at ~14.3 keV, D05 (333) at 4.3 keV filtered with 6 mm Al

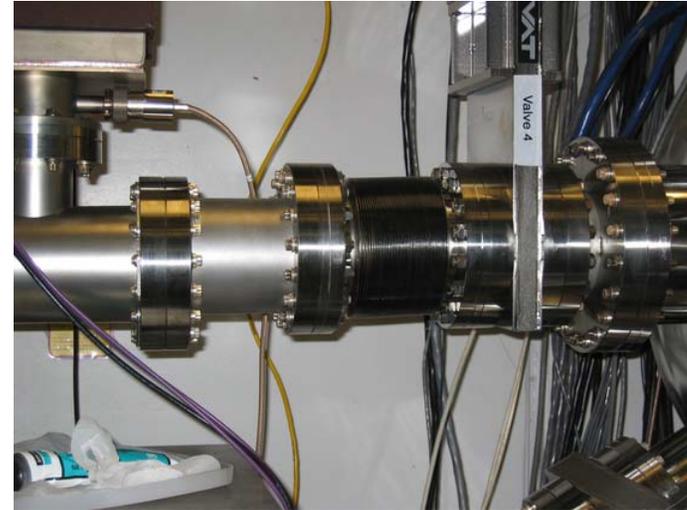
Before in early October
(beam in D was ~100μm high).

Nov 7 intervention in 7ID-A

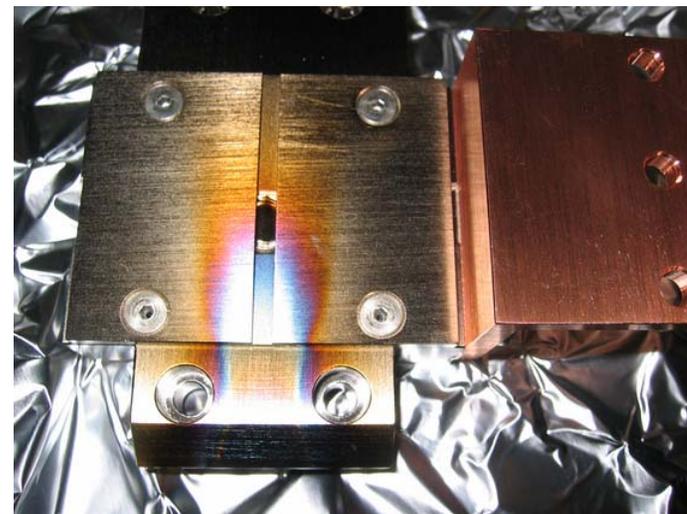


New ion pump

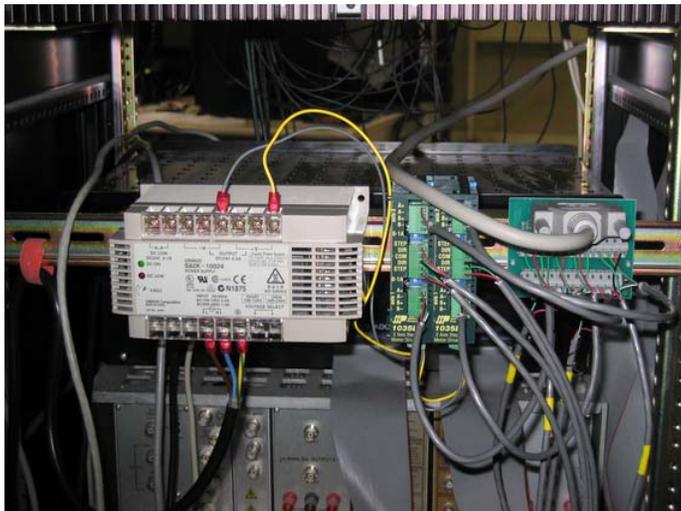
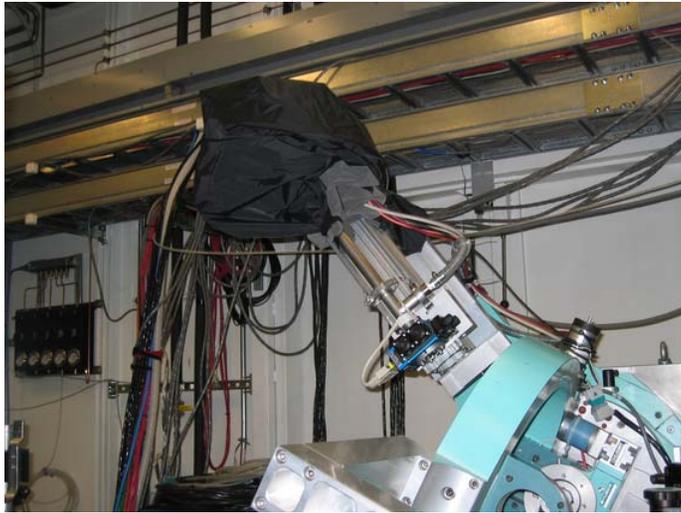
New offset
nipple



2nd crystal
assembly



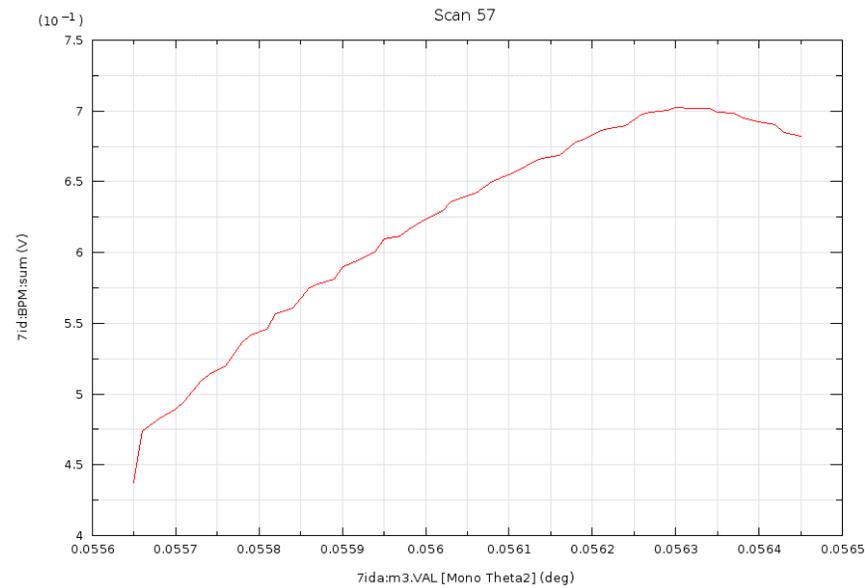
New ADC slits in 7ID-D



New post 7ID-D

New drivers for ADC slits

New mdaviewer by D. Arms



Random data set above