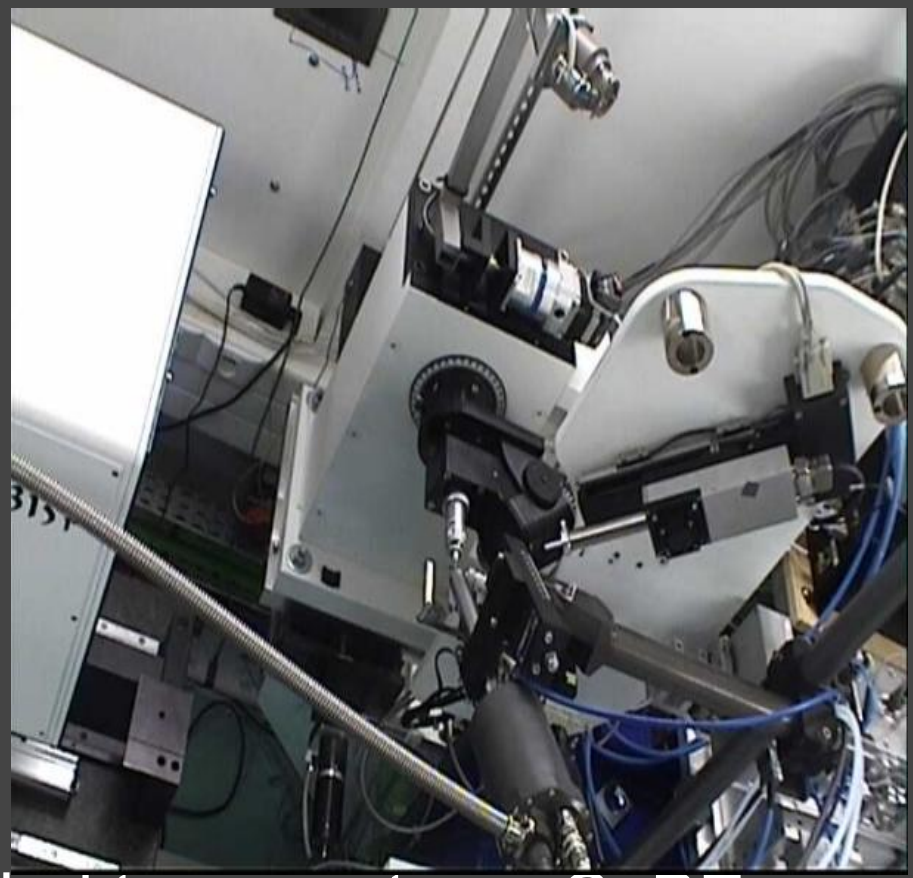
BlissFramwork and mxCuBE usage on PROXIMA1

mxCuBE meeting SOLEIL Jan 2012

Whate we had before mxCuBE

Proprietary Hardware + Software solution from MSC-Rigagus

- Kappa goniometer
- Camera + zoom + light
- Motorized beamstop
- Motorized fluo det.
- Actor Robot
- JDirector/MSCserver
- Cameraman



ADSC 315r detector

2008: After a long discussions
including our users we have decided to move to mxCuBE

Whate we have now

Standard SOLEIL Hardware + new PX1 tango collect Server

- Kappa goniometer
- Camera + zoom + light
- Motorized beamstop
- Motorized fluo det.
- Actor Robot
- 4 mxCuBE apps
- Cameraman for microglide
- save/load queues

PILATUS 6M detector

Fix centring application bugs

Lack of manpower

mxCuBE work is progressing slowly

PX1 Expirience

Gain:

- Ergonomy uniformity: Users don't have to be trained, they know how to use it.
- Clean MVC design
- Bricks encapsulate a lot of logic
- Hardware Objects used as templates
- Relatively easy to modify and develop (thanks to python)
- Robust

Constraints

- Hardware/control: Not using spec, no MD2...
- No support from our computing group for mxCuBE
- No Tango events at SOLEIL: polling slow down responsiveness and GUI reactivity

CENTRING

File Help

Expert mode

Sample centering

Manual 3-click

Computer automatic

User confirms

Centre | Accept | Snapshot

Light: 7.0 | 10.0 | Zoom: Zoom 1

Goniometer

Motors: phi 0.0 | 2

phi: 0.000 kappa: 0.000 omega: 0.000

Commands: Load | Center

MicroGlide

Motors: X 390.0 | 0.1

X: 390 Y: -73 Z: -433

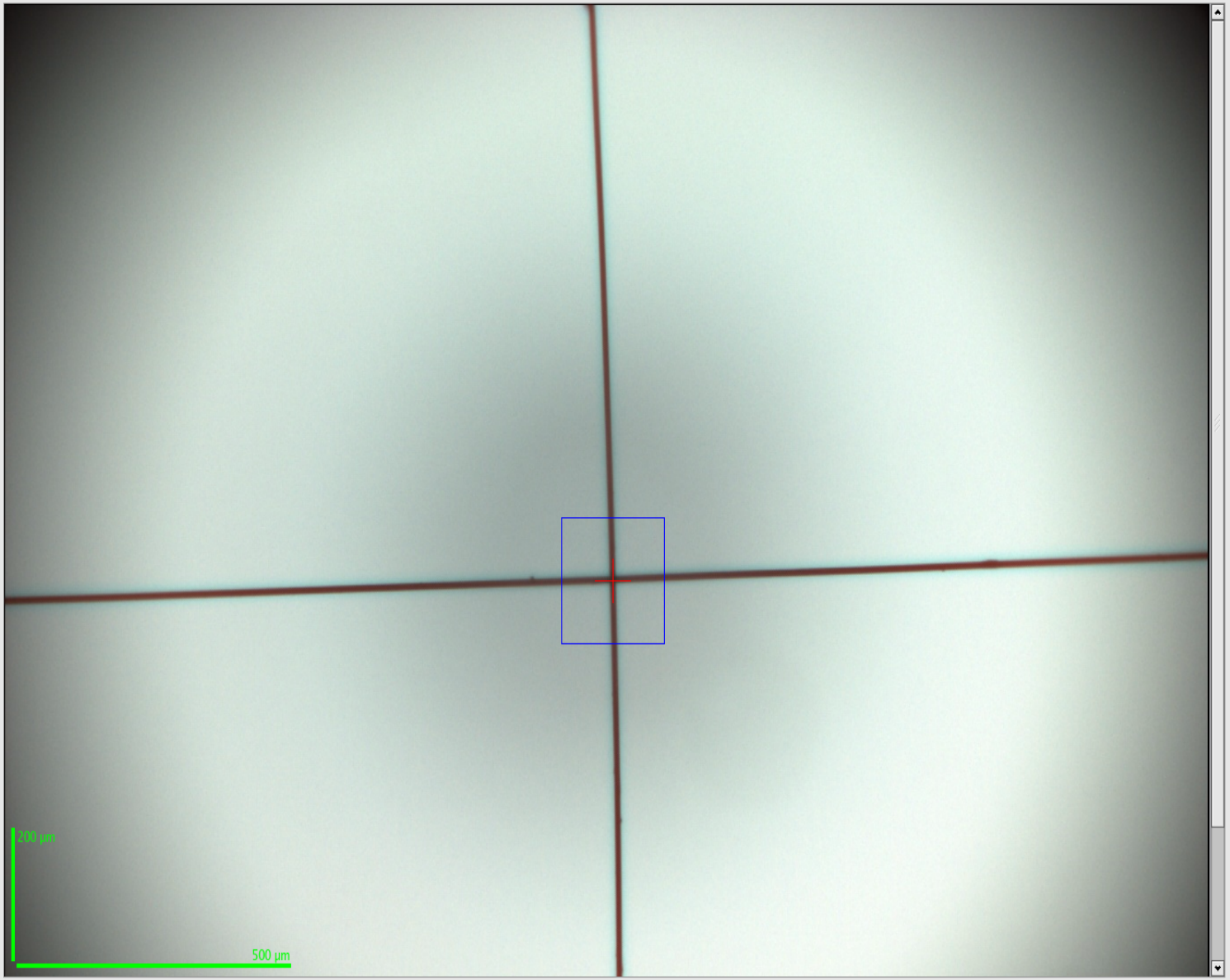
Commands: Home

Beam size

Hor: 0.19 | 0.1 Ver: 0.19 | 0.1 Move: Offsets

Beamstop

out



X: 510 Y: 8

Gain: 1.0 | 1.0

Exposure in s: 0.05 | 0.001

2010-03-10 10:34:38 TangoMotor.move to absolute position: 7.000
2010-03-10 10:34:38 /light: TangoMotor.getState, ON
2010-03-10 10:34:38 /light: TangoMotor.motorStateChanged, 2
2010-03-10 10:34:38 /light: TangoMotor.isReady
2010-03-10 10:34:38 TangoMotor.getLimits: 0.0000 100.0000
2010-03-10 10:34:38 /light: TangoMotor.positionChanged, : 20.000
2010-03-10 10:34:39 /light: TangoMotor.positionChanged, : 7.000

TEST PX1

File Help

Expert mode

Energy

Current: 6.6400 keV 1.867 Å

Move to: keV +

Resolution

Current: 7.409 Å 610.00 mm

Move to: Å

Parameters

Prefix: test Directory: /tmp Browse

Energy scan

Start scan

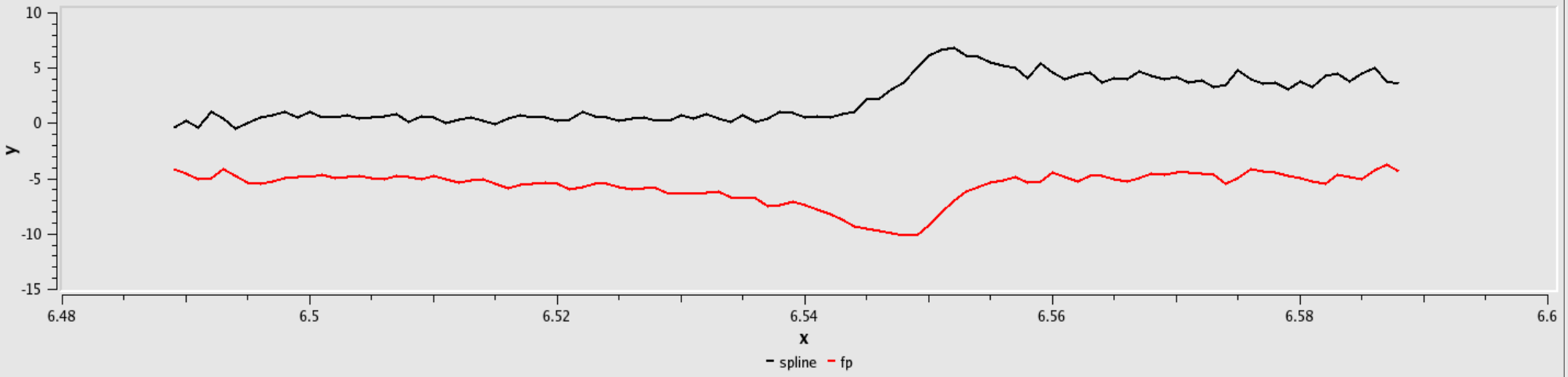
Mn - K

Peak: (keV) 6.5520 Inflection: (keV) 6.5480 Remote: (keV) 6.6020 2nd Remote: (keV)

Accept

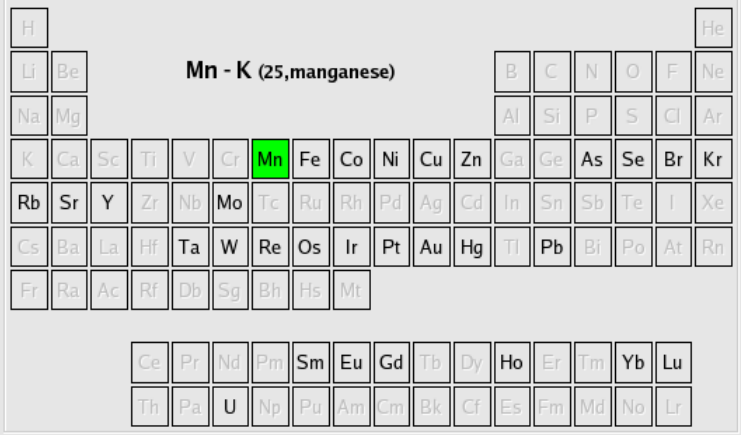
Reset

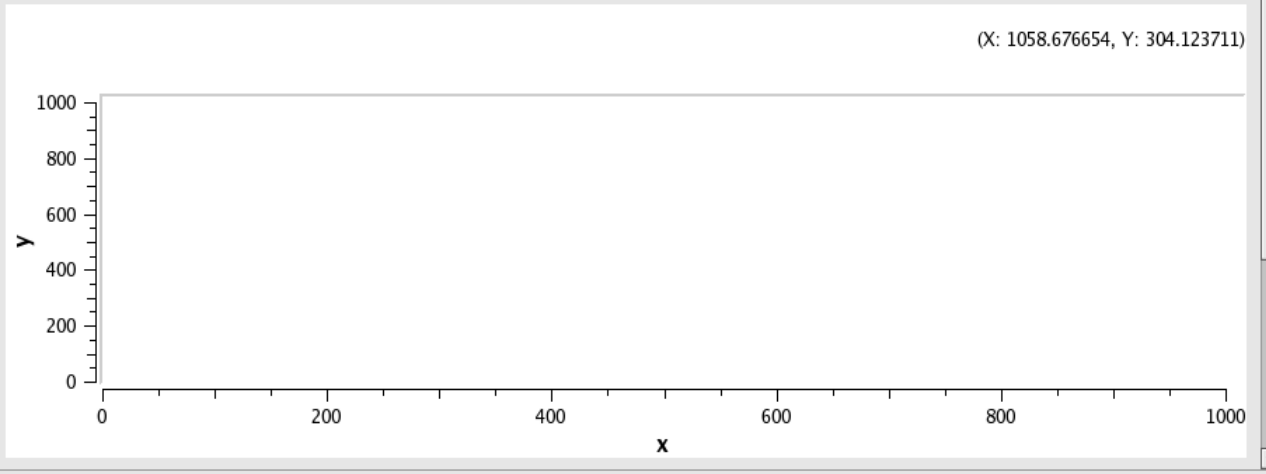
energy	f'	f''
6.55199696318	-6.94	6.82
6.54799696385	-10.15	3.75

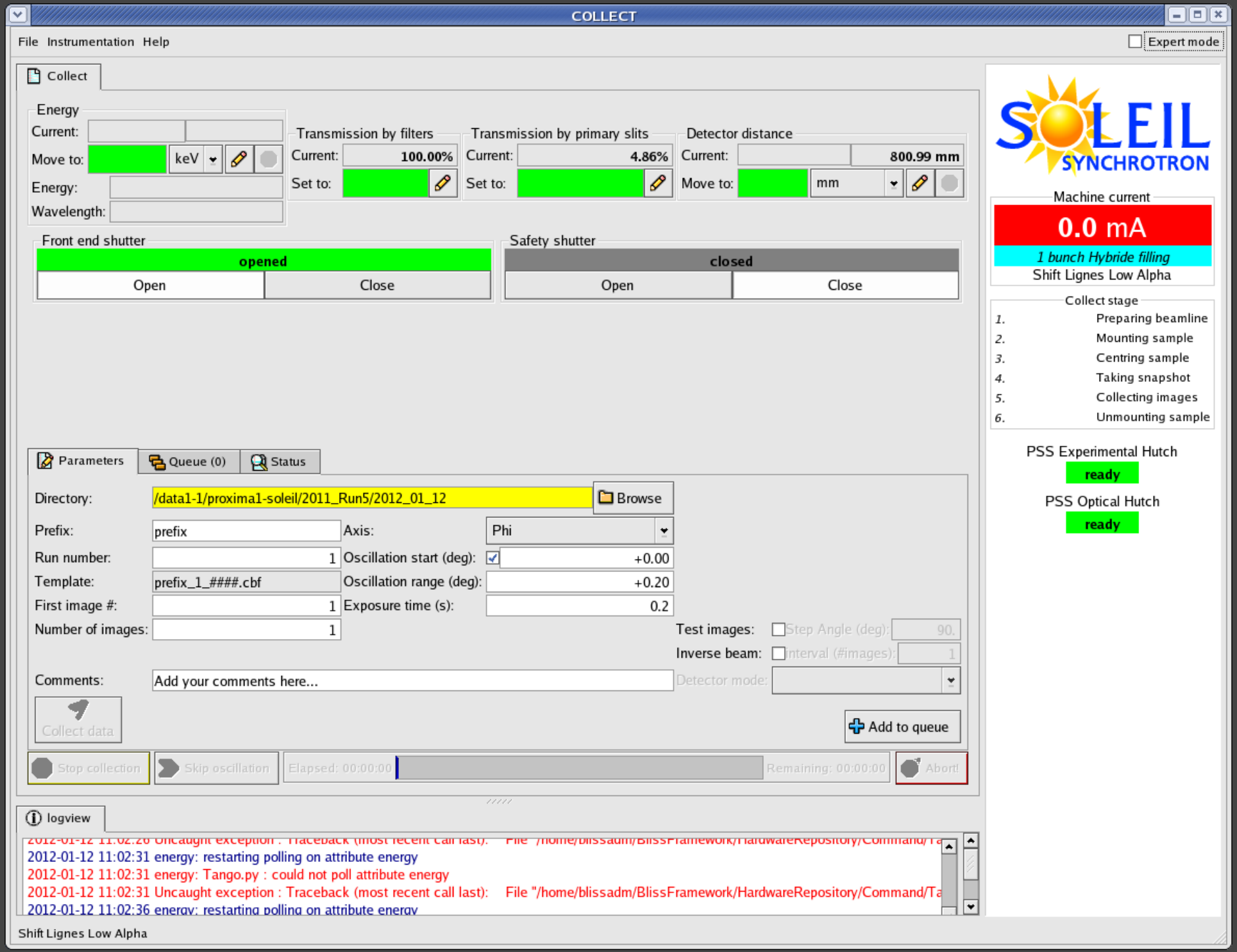


Available elements

Mn - K (25,manganese)






COLLECT
File Instrumentation Help
Expert mode
Collect
Energy
Current:
Move to:
keV
Energy:
Wavelength:
Transmission by filters
Current: 100.00%
Set to:
Transmission by primary slits
Current: 4.86%
Set to:
Detector distance
Current: 800.99 mm
Move to:
mm
Front end shutter
opened
Open
Close
Safety shutter
closed
Open
Close
SOLEIL
SYNCHROTRON
Machine current
0.0 mA
1 bunch Hybride filling
Shift Lignes Low Alpha
Collect stage
1. Preparing beamline
2. Mounting sample
3. Centring sample
4. Taking snapshot
5. Collecting images
6. Unmounting sample
PSS Experimental Hutch
ready
PSS Optical Hutch
ready
Parameters
Queue (0)
Status
Directory: /data1-1/proxima1-soleil/2011_Run5/2012_01_12
Browse
Prefix: prefix
Axis: Phi
Run number: 1
Oscillation start (deg): +0.00
Template: prefix_1_####.cbf
Oscillation range (deg): +0.20
First image #: 1
Exposure time (s): 0.2
Number of images: 1
Test images:
Step Angle (deg): 90.
Inverse beam:
Interval (#images): 1
Comments: Add your comments here...
Detector mode:
Collect data
Add to queue
Stop collection
Skip oscillation
Elapsed: 00:00:00
Remaining: 00:00:00
Abort!
logview
2012-01-12 11:02:31 energy: restarting polling on attribute energy
2012-01-12 11:02:31 energy: Tango.py : could not poll attribute energy
2012-01-12 11:02:31 Uncaught exception : Traceback (most recent call last): File "/home/blissadm/BlissFramework/HardwareRepository/Command/Ta
2012-01-12 11:02:36 energy: restarting polling on attribute energy
Shift Lignes Low Alpha

Conclusion / Perspectives

Events problem: Solution in BlissFramework4 with Pyro

We still have a lot of work to do to integrate all the capabilities of mxCuBE and EDNA, ISPyB...

We and our users are pleased by the adoption of mxCuBE on PX1.

We are still willing to collaborate on the development of future work on mxCuBE.

Work done mainly by P. Gourhant and P. Legrand with help from the PX1 beamline team.

+= 1 developer on PX2A Martin Savko