CLS(REIXS) Beamtime, Nov 28 - Dec 4, 2017

Main Samples:

1. Luca bismuthates
    - STO38: STO(100)/BaBiO3/YBiO3/Al2O3
    - STO39: STO(100)/BaBiO3/YBiO3/Al2O3
    - STOKit: STO(100)/BaBiO3/Al2O3
    - STO27: STO(100)/BaBiO3/Al2O3

2. Jaap titanate/cobaltate
    - #17: Nb-STO(100)/LaAlO3/LaTiO3/LaCoO3/LaTiO3/LaNiO3
    - #13: LaAlO3(100)/LaTiO3/LaCoO3/LaTiO3/LaNiO3
    - Extras:
    - #9: LAO(100)/LTO/LCO/LNO
    - #7: LAO(100)/LTO/LNO
    - #5: LAO(100)/LNO

3. Pim LMO/STO
    - a. Nb-STO(100)/LMO (4uc)
    - b. Nb-STO(100)/LMO (7uc)
    - c. Nb-STO(100)/LMO (10uc)

Preliminary Schedule:

Tues overnight: Jaap #13
Wed daytime: STO39
Wed overnight: Jaap #17
Thurs daytime: STOKit
Thurs overnight/Fri Morning: Pim 10uc
Fri afternoon: Magnetism Pim 10uc

Fri overnight: Pim 4uc
Sat morning: Magnetism Pim 4uc
Sat afternoon: STO38
Sat overnight: Pim 7uc
Sun morning: Magnetism Pim 7uc
Sun afternoon: Jaap #7
Sun overnight:

Tuesday, Nov 28, 16:00

Starting beamtime
Load Jaap #13 on post sample holder

Sample: Jaap #13

Use 10um slit, 2mm aperture
Signal a little weak, so using 4mm aperture
Coating=Silicon ; Grating=Au HEG ; Harmonics=1st order

#1-10: Align z,y,x,2theta,theta,chi
#11-13: Quick scans on Ti, Co, La/Ni to determine scan regions

#14: P=lv-; E=400; a2scan (seems like rough surface)
#15/17: P=lv-/lh; A=60/30; Ti rscan
#16: P=lv-; E=779.4; a2scan (checking that enough points at high E)
#18/20: P=lv-/lh; A=60/30; Co rscan
#19/21: P=lv-/lh; A=60/30; LaNi rscan

#22: P=lv-; E=500; a2scan
#23/24: P=lv-/lh; A=50/25; Ti rscan
#25/27: P=lv-/lh; A=50/25; Co rscan

#26/28: P=lv-/lh; A=50/25; LaNi rscan

#29: P=lv-; E=600; a2scan
#30/31: P=lv-/lh; A=70/35; Ti rscan
#32/34: P=lv-/lh; A=70/35; Co rscan
#33/35: P=lv-/lh; A=70/35; LaNi rscan

#36: P=lv-; E=700; a2scan
#37/38: P=lv-/lh; A=40/20; Ti rscan
#39/41: P=lv-/lh; A=40/20; Co rscan
#40/42: P=lv-/lh; A=40/20; LaNi rscan

#43: P=lv-; E=800; a2scan
#44/45: P=lv-/lh; A=80/40; Ti rscan
(not doing Co,La,Ni at 80/40 b/c too noisy)

#46: P=lv-; E=900; a2scan
#47/48: P=lv-/lh; A=30/15; Ti rscan
#49/51: P=lv-/lh; A=30/15; Co rscan
#50/52: P=lv-/lh; A=30/15; LaNi rscan

#53/54: P=lv-/lh; E=456.00; a2scan

#55/56: P=lv-/lh; A=90/45; Ti rscan
(not doing Co,La,Ni at 90/45 b/c too noisy)

#57/58: P=lv-/lh; E=460.00; a2scan

#59/60: P=lv-/lh; A=20/10; Ti rscan
#61/63: P=lv-/lh; A=20/10; Co rscan
#62/64: P=lv-/lh; A=20/10; LaNi rscan

#65/66: P=lv-/lh; E=779.40; a2scan (compare #65 with #16)

#67/68: P=lv-/lh; E=780.80; a2scan

#69/70: P=lv-/lh; A=10/5; Ti rscan
#71/73: P=lv-/lh; A=10/5; Co rscan
#72/74: P=lv-/lh; A=10/5; LaNi rscan
#75: P=lv-; E=834.20; a2scan
#76: P=lv-; E=836.40; a2scan

#77/78: P=lv-/lh; E=853.90; a2scan

#79/80: P=lv-/lh; A=10/5; Ox rscan
#81/82: P=lv-/lh; A=40/20; Ox rscan

#83/84: P=lv-/lh; E=871.20; a2scan

#85: P=lv-; A=30/15; Co rscan (compare with #49, stability looks good)
#86: P=lv-; A=30/15; Ni rscan (beam lost)

#87: P=lv-/lh; E=500.00; a2scan (compare with #22, stability is acceptable)

Wednesday, Nov 29, 10:00

Load samples Luca STO38 + STO39

Sample: Luca STO39

Use 25um slit (unless mentioned), 4mm aperture
Coating=Silicon ; Grating=Au HEG ; Harmonics=1st order

#1-17: Alignment
#18: Cancelled

#19: P=lv-; E=466; a2scan
#20: P=lv-; A=60/30; Escan=400-900, 2000, 1; wide energy scan

#21: P=lv-; E=783.6 (Ba Res); a2scan

#22: P=lv-; E=500 (Off Res); a2scan

#23/24: P=lv-/lh; A=60/30; Ox rscan

Coating=Gold ; Grating=Au HEG; Harmonics=5th order
#25: P=lv-; A=60/30; Slit=100um; Y rscan L3-edge
#26: P=lh; A=60/30; Slit=100um; Y rscan L3-edge (accurate)
#27: P=lh; A=60/30; Slit=100um; Y rscan L2-edge
#28: P=lh; A=120/30; Slit=100um; Y rscan L2-edge (accurate)
#29: P=lh; A=120/30; Slit=100um; Y rscan L2-edge (accurate), finish off

Coating=Silicon ; Grating=Ni LEG; Harmonics=1st order
#30: P=lh; A=120/30; Slit=100um; Y rscan M-edge
#31: Cancelled (new beam injection)
#32: P=lh; A=120/30; Slit=100um; Y rscan M-edge (accurate)

Coating=Silicon ; Grating=Au HEG ; Harmonics=1st order
#33: P=lh; A=55/30; Ox rscan
#34: P=lh; A=140/30; Ox rscan
#35: P=lh; A=42/20; Ox rscan
#36: P=lh; A=4/20; Ox rscan
#37: P=lh; A=20/30; Ox rscan

Wednesday, Nov 29, 19:00

Load sample Jaap #17

Sample: Jaap #17

Use 10um slit, 4mm aperture
Coating=Silicon ; Grating=Au HEG ; Harmonics=1st order

#1-11: Align z,y,x,2theta,theta,chi

#12: P=lv-; E=400; a2scan
#13: P=lv-; E=834.2; a2scan

#14/15: P=lv-/lh; A=60/30; Ti rscan
#16/18: P=lv-/lh; A=60/30; Co rscan
#17/19: P=lv-/lh; A=60/30; LaNi rscan

#20: P=lv-; E=500; a2scan
#21/22: P=lv-/lh; A=50/25; Ti rscan
#23/25: P=lv-/lh; A=50/25; Co rscan
#24/26: P=lv-/lh; A=50/25; LaNi rscan

#27: P=lv-; E=600; a2scan
#28/29: P=lv-/lh; A=70/35; Ti rscan
#30/32: P=lv-/lh; A=70/35; Co rscan
#31/33: P=lv-/lh; A=70/35; LaNi rscan

#34: P=lv-; E=700; a2scan
#35/36: P=lv-/lh; A=40/20; Ti rscan
#37/39: P=lv-/lh; A=40/20; Co rscan
#38/40: P=lv-/lh; A=40/20; LaNi rscan

#41: P=lv-; E=800; a2scan
#42/43: P=lv-/lh; A=80/40; Ti rscan
#44/46: P=lv-/lh; A=80/40; Co rscan

#45/47: P=lv-/lh; A=80/40; LaNi rscan

#48: P=lv-; E=900; a2scan
#49/50: P=lv-/lh; A=30/15; Ti rscan
#51/53: P=lv-/lh; A=30/15; Co rscan
#52/54: P=lv-/lh; A=30/15; LaNi rscan

#55/56: P=lv-/lh; E=456.00; a2scan

#57/58: P=lv-/lh; A=90/45; Ti rscan
#59/61: P=lv-/lh; A=90/45; Co rscan
#60/62: P=lv-/lh; A=90/45; LaNi rscan

#63/64: P=lv-/lh; E=460.00; a2scan

#65/66: P=lv-/lh; A=20/10; Ti rscan
#67/69: P=lv-/lh; A=20/10; Co rscan
#68/70: P=lv-/lh; A=20/10; LaNi rscan

#71/72: P=lv-/lh; E=779.40; a2scan

#73/74: P=lv-/lh; A=100/50; Ti rscan
#75/76: P=lv-/lh; E=780.80; a2scan

#77: Scan aborted

#78/79: P=lv-/lh; A=10/5; Ti rscan
#80/82: P=lv-/lh; A=10/5; Co rscan
#81/83: P=lv-/lh; A=10/5; LaNi rscan

#84: P=lv-; E=834.20; a2scan
#85: P=lv-; E=836.40; a2scan

#86/87: P=lv-/lh; E=853.90; a2scan

#88/89: P=lv-/lh; A=10/5; Ox rscan
#90/91: P=lv-/lh; A=40/20; Ox rscan

#92/93: P=lv-/lh; E=871.20; a2scan

Measure direct beam

#94: P=lv-; Direct Beam Scan (10um slit, 4mm aperture, Au HEG /Si mirror)
#95: P=lh; Direct Beam Scan
#96: P=cl; Direct Beam Scan
#97: P=cr; Direct Beam Scan

Thursday, Nov 30, 15:00

Load samples Luca STOKit

Sample: Luca STOKit

Use 25um slit (unless mentioned), 4mm aperture
Coating=Silicon ; Grating=Au HEG ; Harmonics=1st order

#1-8: Alignment

#9: P=lv-; E=466 (Ti Res); a2scan
#10: Beam Injection

#11: P=lv-; E=466 (Ti Res); a2scan (accurate)

#12: P=lv-; E=785 (Ba Res); a2scan
#13: P=lv-; E=785 (Ba Res); a2scan (accurate)
#14: P=lv-; A=50/25; Ba rscan

#15: P=lv-; E=500; a2scan

#16: P=lh; A=55/30; Ox rscan
#17: P=lh; A=20/30; Ox rscan

Thursday, Nov 30, 19:00

Load samples Pim 10uc

Sample: Pim 10uc

Use 10um slit (unless mentioned), 4mm aperture
Coating=Silicon ; Grating=Au HEG ; Harmonics=1st order

#1-6: Alignment

#7: P=lv-; A=50/25; Mn rscan

#8: Alignment x

#9: P=lv-; E=400; a2scan
#10/11: P=lv-/lh; A=60/30; Ti rscan
#12/13: P=lv-/lh; A=60/30; Mn rscan

#14: P=lv-; E=500; a2scan

#15/16: P=lv-/lh; A=50/25; Ti rscan
#17/18: P=lv-/lh; A=50/25; Mn rscan

#19: P=lv-; E=600; a2scan
#20/21: P=lv-/lh; A=70/35; Ti rscan
#22/23: P=lv-/lh; A=70/35; Mn rscan

#24: P=lv-; E=700; a2scan
#25/26: P=lv-/lh; A=40/20; Ti rscan (at 10pm, Nov 30th, everything is fine)
#27/28: P=lv-/lh; A=40/20; Mn rscan

#29: P=lv-; E=800; a2scan
#30/31: P=lv-/lh; A=80/40; Ti rscan
#32/33: P=lv-/lh; A=80/40; Mn rscan

#34: P=lv-; E=900; a2scan
#35/36: P=lv-/lh; A=30/15; Ti rscan
#37/38: P=lv-/lh; A=30/15; Mn rscan

#39/40: P=lv-/lh; E=456.00; a2scan

#41/42: P=lv-/lh; A=90/45; Ti rscan
#43/44: P=lv-/lh; A=90/45; Mn rscan

#45/46: P=lv-/lh; E=460.00; a2scan

#47/48: P=lv-/lh; A=20/10; Ti rscan
#49/50: P=lv-/lh; A=20/10; Mn rscan

#51/52: P=lv-/lh; E=640; a2scan

#53/54: P=lv-/lh; A=100/50; Ti rscan
#55/56: P=lv-/lh; A=100/50; Mn rscan

#57/58: P=lv-/lh; E=642; a2scan

#59/60: P=lv-/lh; A=10/5; Ti rscan
#61/62: P=lv-/lh; A=10/5; Mn rscan

#63: P=lv-; E=834.00; a2scan
#64: P=lv-; E=836.20; a2scan

#65/66: P=lv-/lh; A=110/55; Ti rscan
#67/68: P=lv-/lh; A=110/55; Mn rscan

#69: P=lv-; A=20/10; La rscan
#70: P=lv-; A=50/25; La rscan

#71/72: P=lv-/lh; A=10/5; Ox rscan
#73/74: P=lv-/lh; A=40/20; Ox rscan

Magnetic Measurements

#75/76: P=cl/cr; A=60/30; Mn rscan
#77/78: P=cl/cr; A=50/25; Mn rscan

#79/80: P=cl/cr; E=640.00; a2scan

#81/82: P=cl/cr; A=70/35; Mn rscan
#83/84: P=cl/cr; A=40/20; Mn rscan

#85/86: P=cl/cr; E=642.00; a2scan

#87/88: P=cl/cr; A=80/40; Mn rscan
#89/90: P=cl/cr; A=30/15; Mn rscan
#91/92: P=cl/cr; A=90/45; Mn rscan

#93/94: P=cl/cr; A=20/10; Mn rscan
#94/95: P=cl/cr; A=10/5; Mn rscan

Changed count time for th/2th from 4.5 to 4 seconds. Change sleep after moving to -2 -1 before scan from 60 to 120 seconds. Removed sleep of 280 seconds after many of the th/2th scans.

Magnetic Measurements at 20K
FieldStrength=0.6T, FieldDirection=in-plane (horizontal)

#96-105: Alignment

#106: P=lv-; E=800; a2scan

#107/108: P=cl/cr; A=60/30; Mn rscan
#109/110: P=cl/cr; A=50/25; Mn rscan

#111/112: P=cl/cr; E=640.00; a2scan

#113/114: P=cl/cr; A=70/35; Mn rscan
#115/116: P=cl/cr; A=40/20; Mn rscan

#117/118: P=cl/cr; E=642.00; a2scan

#129/120: P=cl/cr; A=80/40; Mn rscan
#121/122: P=cl/cr; A=30/15; Mn rscan
#123/124: P=cl/cr; A=90/45; Mn rscan
#125/126: P=cl/cr; A=20/10; Mn rscan
#127/128: P=cl/cr; A=10/5; Mn rscan

#129: P=lv-; E=800; a2scan
Friday, Dec 1, 19:00

Sample: Pim 4uc

Use 10um slit (unless mentioned), 4mm aperture
Coating=Silicon ; Grating=Au HEG ; Harmonics=1st order

Changed count time for th/2th from 4.5 to 4 seconds. Change sleep after moving to -2 -1 before scan from 60 to 120 seconds. Removed sleep of 280 seconds after many of the th/2th scans.

#1-8: Alignment

#9: P=lv-; E=400; a2scan
#10/11: P=lv-/lh; A=60/30; Ti rscan
#12/13: P=lv-/lh; A=60/30; Mn rscan

#14: P=lv-; E=500; a2scan
#15/16: P=lv-/lh; A=50/25; Ti rscan
#17/18: P=lv-/lh; A=50/25; Mn rscan

#19: P=lv-; E=600; a2scan
#20/21: P=lv-/lh; A=70/35; Ti rscan
#22/23: P=lv-/lh; A=70/35; Mn rscan

#24: P=lv-; E=700; a2scan (at 10pm, Dec 1st, motors 55/55, all good)
#25/26: P=lv-/lh; A=40/20; Ti rscan
#27/28: P=lv-/lh; A=40/20; Mn rscan

#29: P=lv-; E=800; a2scan
#30/31: P=lv-/lh; A=80/40; Ti rscan
#32/33: P=lv-/lh; A=80/40; Mn rscan

#34: P=lv-; E=900; a2scan

#35/36: P=lv-/lh; A=30/15; Ti rscan
#37/38: P=lv-/lh; A=30/15; Mn rscan

#39/40: P=lv-/lh; E=456.00; a2scan

#41/42: P=lv-/lh; A=90/45; Ti rscan
#43/44: P=lv-/lh; A=90/45; Mn rscan

#45/46: P=lv-/lh; E=460.00; a2scan

#47/48: P=lv-/lh; A=20/10; Ti rscan
#49/50: P=lv-/lh; A=20/10; Mn rscan

#51/52: P=lv-/lh; E=640; a2scan

#53/54: P=lv-/lh; A=100/50; Ti rscan
#55/56: P=lv-/lh; A=100/50; Mn rscan

#57/58: P=lv-/lh; E=642; a2scan

#59/60: P=lv-/lh; A=10/5; Ti rscan
#61/62: P=lv-/lh; A=10/5; Mn rscan

#63: P=lv-; E=834.00; a2scan
#64: P=lv-; E=836.20; a2scan

#65/66: P=lv-/lh; A=110/55; Ti rscan
#67/68: P=lv-/lh; A=110/55; Mn rscan

#69: P=lv-; A=20/10; La rscan
#70: P=lv-; A=50/25; La rscan

#71/72: P=lv-/lh; A=10/5; Ox rscan

#73: Stopped because of injection

#74/75: P=lv-/lh; A=40/20; Ox rscan

Magnetic Measurements

#76/77: P=cl/cr; A=60/30; Mn rscan
#78/79: P=cl/cr; A=50/25; Mn rscan

#80/81: P=cl/cr; E=640.00; a2scan

#82/83: P=cl/cr; A=70/35; Mn rscan
#84/85: P=cl/cr; A=40/20; Mn rscan

#86/87: P=cl/cr; E=642.00; a2scan

#88/89: P=cl/cr; A=80/40; Mn rscan
#90/91: P=cl/cr; A=30/15; Mn rscan
#92/93: P=cl/cr; A=90/45; Mn rscan
#94/95: P=cl/cr; A=20/10; Mn rscan
#96/97: P=cl/cr; A=10/5; Mn rscan

#98: P=lv-; E=800; a2scan

Magnetic Measurements at 20K
FieldStrength=0.6T, FieldDirection=in-plane (horizontal)

#99-106: Alignment

#107: P=lv-; E=800; a2scan

#108/109: P=cl/cr; A=60/30; Mn rscan
#110/111: P=cl/cr; A=50/25; Mn rscan

#112/113: P=cl/cr; E=640.00; a2scan

#114/115: P=cl/cr; A=70/35; Mn rscan
#116/117: P=cl/cr; A=40/20; Mn rscan

#118/119: P=cl/cr; E=642.00; a2scan

#120/121: P=cl/cr; A=80/40; Mn rscan
#122/123: P=cl/cr; A=30/15; Mn rscan
#124/125: P=cl/cr; A=90/45; Mn rscan
#126/127: P=cl/cr; A=20/10; Mn rscan
#128/129: P=cl/cr; A=10/5; Mn rscan

#130: P=lv-; E=800; a2scan

Saturday, Dec 2, 18:00

Sample: Pim 7uc

Use 10um slit (unless mentioned), 4mm aperture
Coating=Silicon ; Grating=Au HEG ; Harmonics=1st order

Changed count time for th/2th from 4.0 to 3.5 seconds.

#1-7: Alignment

#8: P=lv-; E=400; a2scan
#9/10: P=lv-/lh; A=60/30; Ti rscan
#11/12: P=lv-/lh; A=60/30; Mn rscan

#13: P=lv-; E=500; a2scan

#14/15: P=lv-/lh; A=50/25; Ti rscan
#16/17: P=lv-/lh; A=50/25; Mn rscan

#18: P=lv-; E=600; a2scan
#19/20: P=lv-/lh; A=70/35; Ti rscan
#21/22: P=lv-/lh; A=70/35; Mn rscan

#23: P=lv-; E=700; a2scan
#24/25: P=lv-/lh; A=40/20; Ti rscan
#26/27: P=lv-/lh; A=40/20; Mn rscan

#28: P=lv-; E=800; a2scan
#29/30: P=lv-/lh; A=80/40; Ti rscan (at 10pm, Dec 2nd, all good)
#31/32: P=lv-/lh; A=80/40; Mn rscan

#33: P=lv-; E=900; a2scan
#34/35: P=lv-/lh; A=30/15; Ti rscan
#36/37: P=lv-/lh; A=30/15; Mn rscan

#38/39: P=lv-/lh; E=456.00; a2scan

#40: P=lv-; A=90/45; Ti rscan
#41: P=lv-; A=90/45; Mn rscan

#42/43: P=lv-/lh; E=460.00; a2scan

#44/45: P=lv-/lh; A=20/10; Ti rscan
#46/47: P=lv-/lh; A=20/10; Mn rscan

#48/49: P=lv-/lh; E=640; a2scan

#50: P=lv-; A=100/50; Ti rscan
#51: P=lv-; A=100/50; Mn rscan

#52/53: P=lv-/lh; E=642; a2scan

#54/55: P=lv-/lh; A=10/5; Ti rscan
#56/57: P=lv-/lh; A=10/5; Mn rscan

#58: P=lv-; E=834.00; a2scan
#59: P=lv-; E=836.20; a2scan

#60: P=lv-; A=110/55; Ti rscan
#61: P=lv-; A=110/55; Mn rscan

#62: P=lv-; A=20/10; La rscan
#63: P=lv-; A=50/25; La rscan

#64/65: P=lv-/lh; A=10/5; Ox rscan
#66/67: P=lv-/lh; A=40/20; Ox rscan

Magnetic Measurements (300K, no magnet)

#68/69: P=cl/cr; A=60/30; Mn rscan
#70/71: P=cl/cr; A=50/25; Mn rscan

#72/73: P=cl/cr; E=640.00; a2scan

#74/75: P=cl/cr; A=70/35; Mn rscan
#76/77: P=cl/cr; A=40/20; Mn rscan

#78/79: P=cl/cr; E=642.00; a2scan

#80/81: P=cl/cr; A=80/40; Mn rscan
#82/83: P=cl/cr; A=30/15; Mn rscan
#84/85: P=cl/cr; A=90/45; Mn rscan

#86/87: P=cl/cr; A=20/10; Mn rscan
#88/89: P=cl/cr; A=10/5; Mn rscan

Magnetic Measurements at 20K
FieldStrength=0.6T, FieldDirection=in-plane (horizontal)

#90-98: Alignment

#99: P=lv-; E=800; a2scan

#100/101: P=cl/cr; A=60/30; Mn rscan
#102/103: P=cl/cr; A=50/25; Mn rscan

#104/105: P=cl/cr; E=640.00; a2scan

#106/107: P=cl/cr; A=70/35; Mn rscan
#108/109: P=cl/cr; A=40/20; Mn rscan

#110/111: P=cl/cr; E=642.00; a2scan

#112/113: P=cl/cr; A=80/40; Mn rscan
#114/115: P=cl/cr; A=30/15; Mn rscan
#116/117: P=cl/cr; A=90/45; Mn rscan
#118/119: P=cl/cr; A=20/10; Mn rscan
#120/121: P=cl/cr; A=10/5; Mn rscan

Sunday, Dec 3, 15:00

Sample: Luca STO38

Use 10um slit (unless mentioned), 4mm aperture

Coating=Silicon ; Grating=Au HEG ; Harmonics=1st order

#1-10: Alignment

Change slit to 25um

#11: P=lv-; E=466; a2scan
#12: P=lv-; E=466; a2scan (accurate)

#13: P=lv-; A=51.1/25.55; Escan (775 - 790)
#14: P=lv-; E=783.6 (Ba Res); a2scan
#15: P=lv-; E=783.6 (Ba Res); a2scan (accurate)

#16: Cancelled

#17: P=lh; A=55/30; Ox rscan
#18: P=lh; A=20/30; Ox rscan

#19: P=lv-; E=500; a2scan
#20: P=lv-; E=500; a2scan (accurate)

#21: P=lv-; A=60/30; Escan=500-900; wide energy scan

Sunday, Dec 3, 18:30

Sample: Jaap #7

Use 10um slit, 4mm aperture
Coating=Silicon ; Grating=Au HEG ; Harmonics=1st order

#1-7: Align z,y,x,2theta,theta,chi

#8: P=lv-; E=400; a2scan

#9/10: P=lv-/lh; A=60/30; Ti rscan
#11/12: P=lv-/lh; A=60/30; LaNi rscan

#13: P=lv-; E=500; a2scan
#14/15: P=lv-/lh; A=50/25; Ti rscan
#16/17: P=lv-/lh; A=50/25; LaNi rscan

#18: P=lv-; E=600; a2scan
#19/20: P=lv-/lh; A=70/35; Ti rscan
#21/22: P=lv-/lh; A=70/35; LaNi rscan (at 9.30pm, Dec 2nd, all good)

#23: P=lv-; E=700; a2scan
#24/25: P=lv-/lh; A=40/20; Ti rscan
#26/27: P=lv-/lh; A=40/20; LaNi rscan

#28: P=lv-; E=800; a2scan
#29/30: P=lv-/lh; A=80/40; Ti rscan
#31: P=lv-; A=80/40; LaNi rscan

#32: P=lv-; E=871.20; a2scan (beam injection, redone at the end)

#33: P=lh; E=871.20; a2scan
#34/35: P=lv-/lh; A=30/15; Ti rscan
#36/37: P=lv-/lh; A=30/15; LaNi rscan

#38/39: P=lv-/lh; E=456.00; a2scan
#40/41: P=lv-/lh; A=90/45; Ti rscan

#42/43: P=lv-/lh; E=460.00; a2scan
#44/45: P=lv-/lh; A=20/10; Ti rscan

#46/47: P=lv-/lh; A=20/10; LaNi rscan

#48: P=lv-; E=834.20; a2scan
#49: P=lv-; E=836.40; a2scan

#50/51: P=lv-/lh; A=10/5; Ti rscan
#52/53: P=lv-/lh; A=10/5; LaNi rscan

#54: P=lv-; E=900; a2scan

#55/56: P=lv-/lh; A=10/5; Ox rscan
#57/58: P=lv-/lh; A=40/20; Ox rscan

#59/60: P=lv-/lh; E=853.90; a2scan

#61: P=lv-; E=871.20; a2scan