TAS SCAN MAPPER

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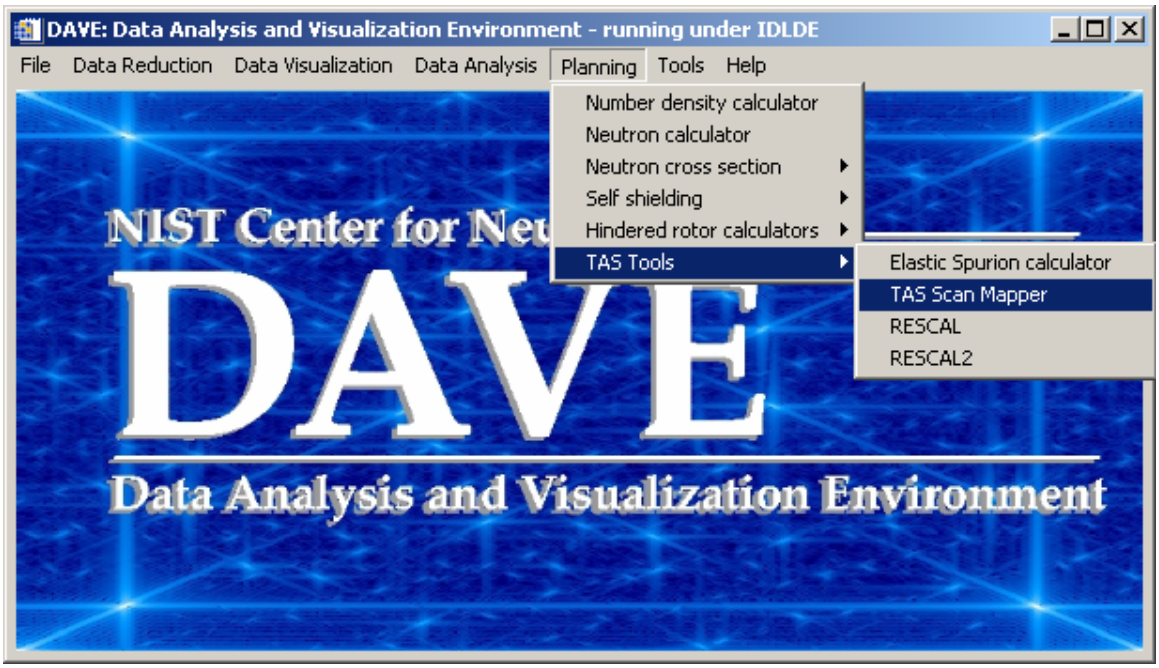
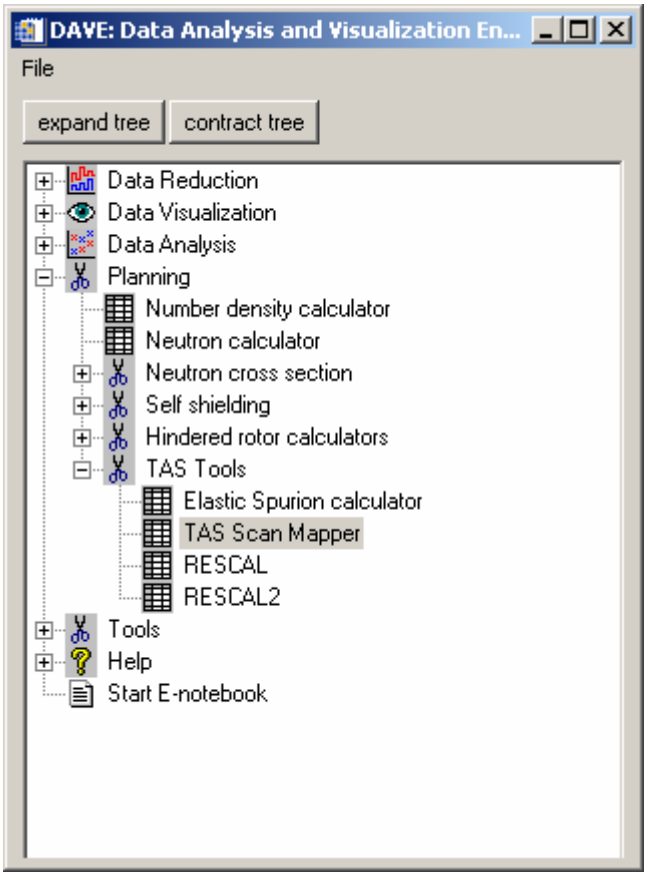
1/4/07

QUICKSTART

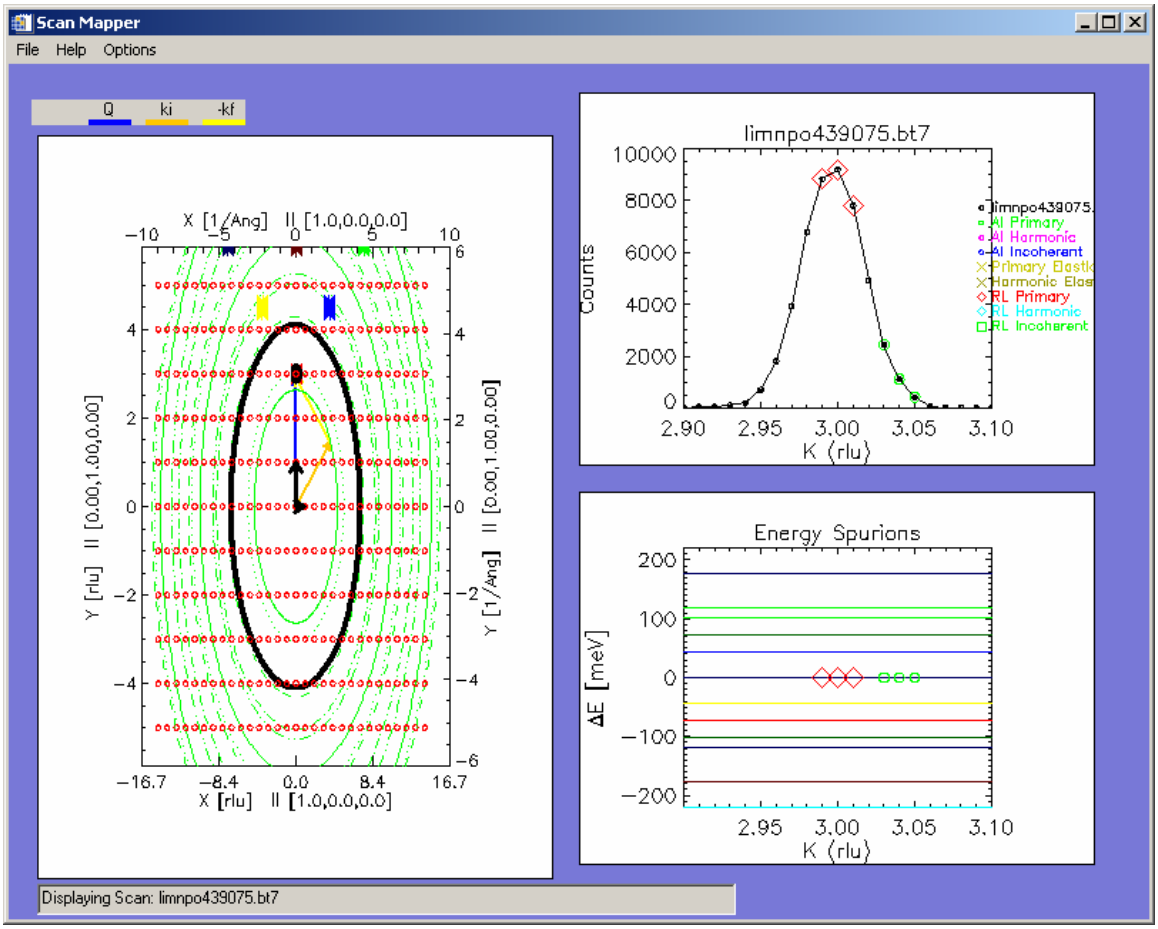
TAS Scan Mapper displays the position in reciprocal space of the points in your scan and the location of possible spurious features in your triple axis scan. To begin open DAVE and select Planning->TAS Tools->TAS Scan Mapper



or

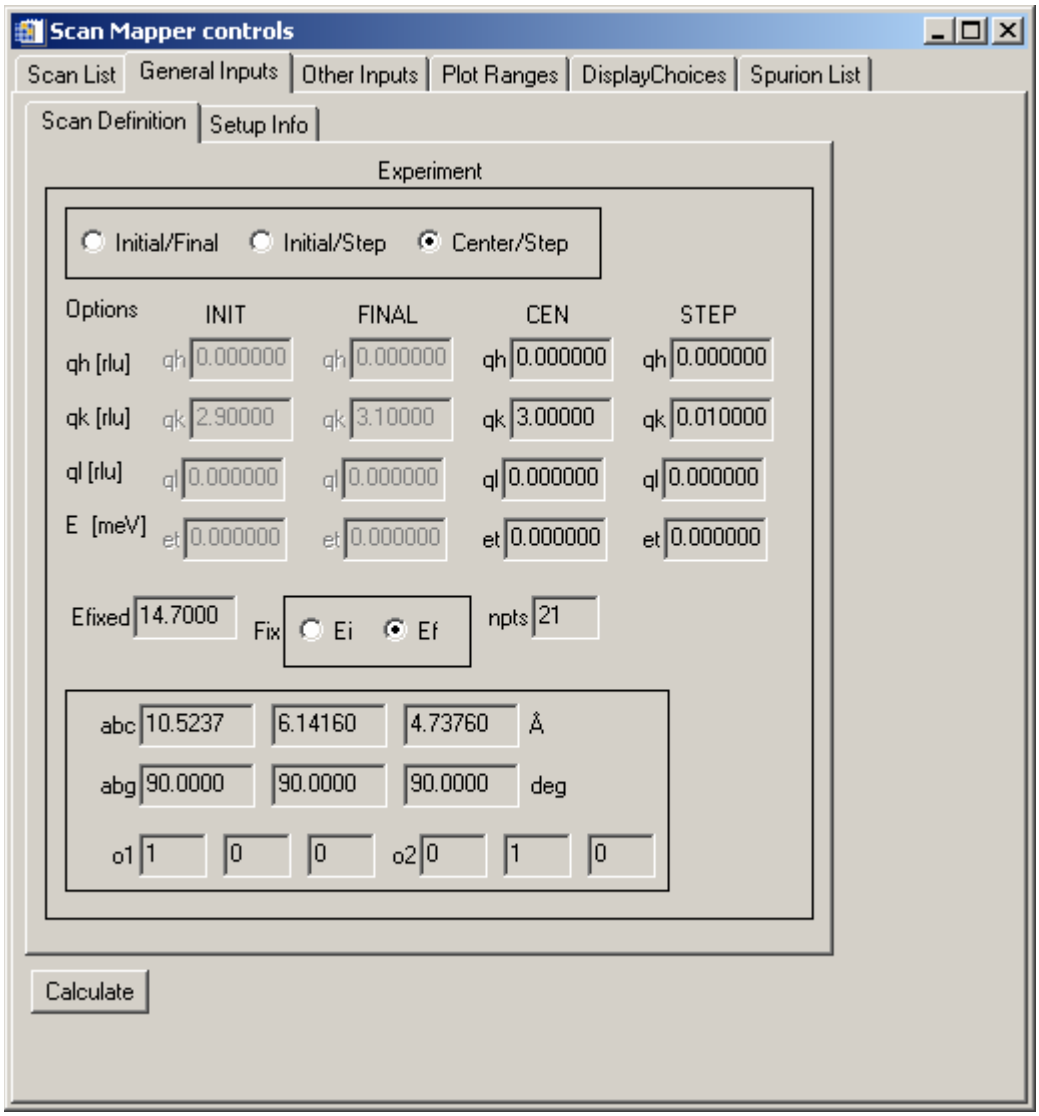


Two windows will appear, Scan Mapper and Scan Mapper Controls. The Scan Mapper window contains 3 plots. There is a plot of features in the scattering plane, a plot of the current scan, and a plot of the energy transfer measured. The scattering plane and the energy plot both label the scan points and all of the harmonics. The color coding is consistent between the two plots. The different harmonics can be selected for display by using the color-coded checkbox controls under the “Display Choices” tab (see below.)



The controls for the application are on a floating control base. If you delete the controls, you can restore them under the “Options” menu at the top of the main window.

The General Inputs tab contains two sub-tabs. The “Scan Definition” tab is currently implemented, however the “Setup Info” tab is implemented but its inputs are not currently used. The Setup Info tab inputs information for the resolution function, which will be implemented at a later time.


Scan Mapper controls
Scan List
General Inputs
Other Inputs
Plot Ranges
DisplayChoices
Spurion List
Scan Definition
Setup Info
Experiment
Initial/Final
Initial/Step
Center/Step
Options
INIT
FINAL
CEN
STEP
qh [rlu]
qk [rlu]
ql [rlu]
E [meV]
qh 0.000000
qh 0.000000
qh 0.000000
qh 0.000000
qk 2.90000
qk 3.10000
qk 3.00000
qk 0.010000
ql 0.000000
ql 0.000000
ql 0.000000
ql 0.000000
et 0.000000
et 0.000000
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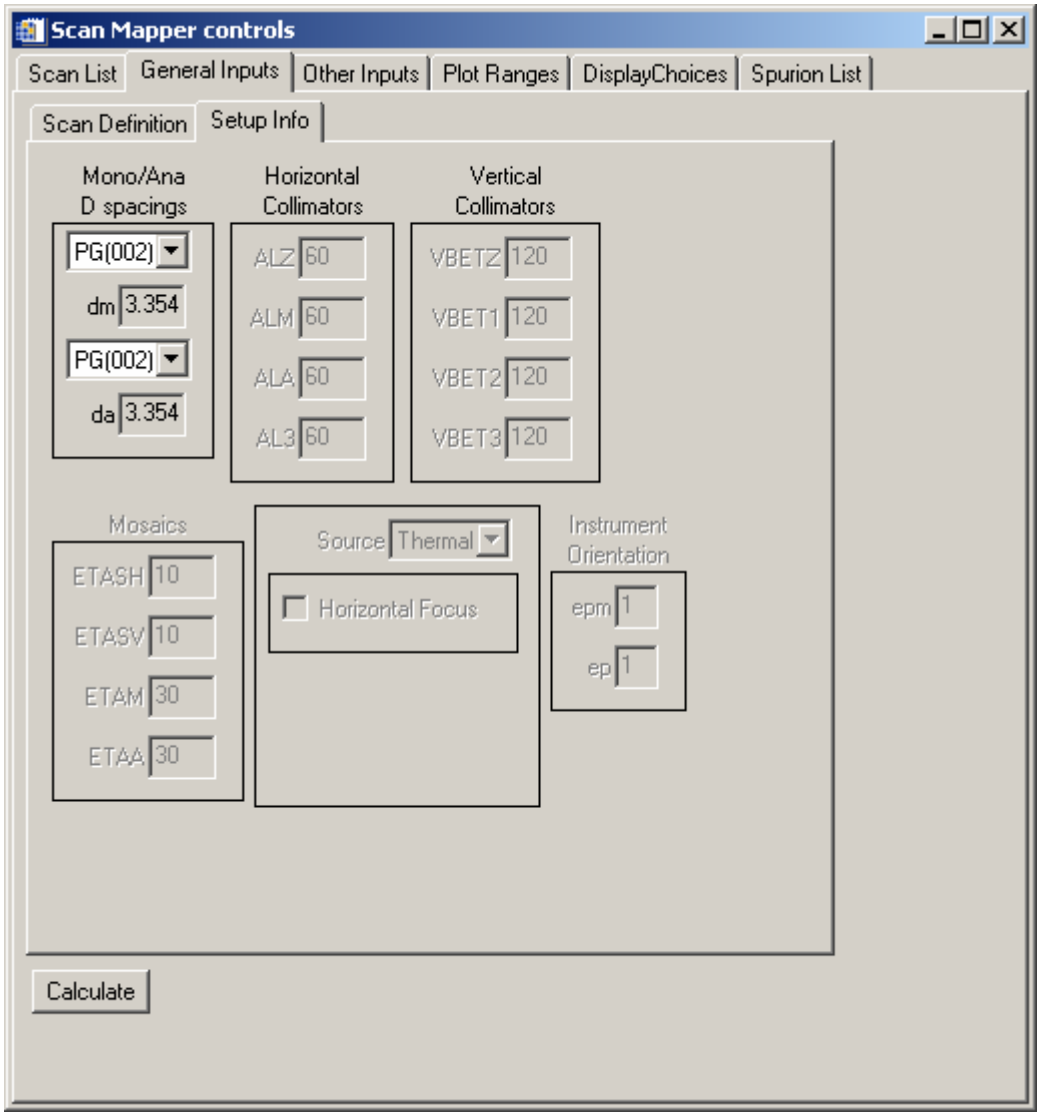
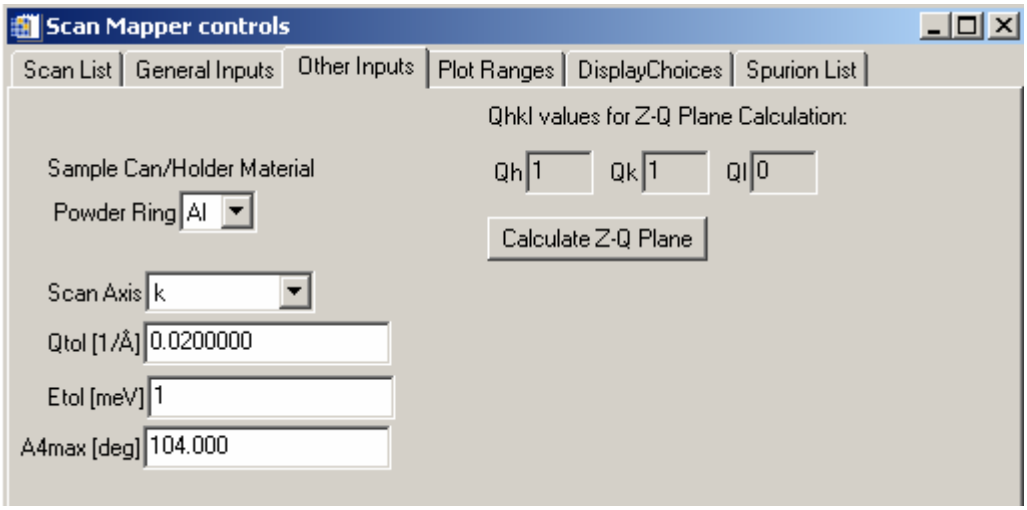
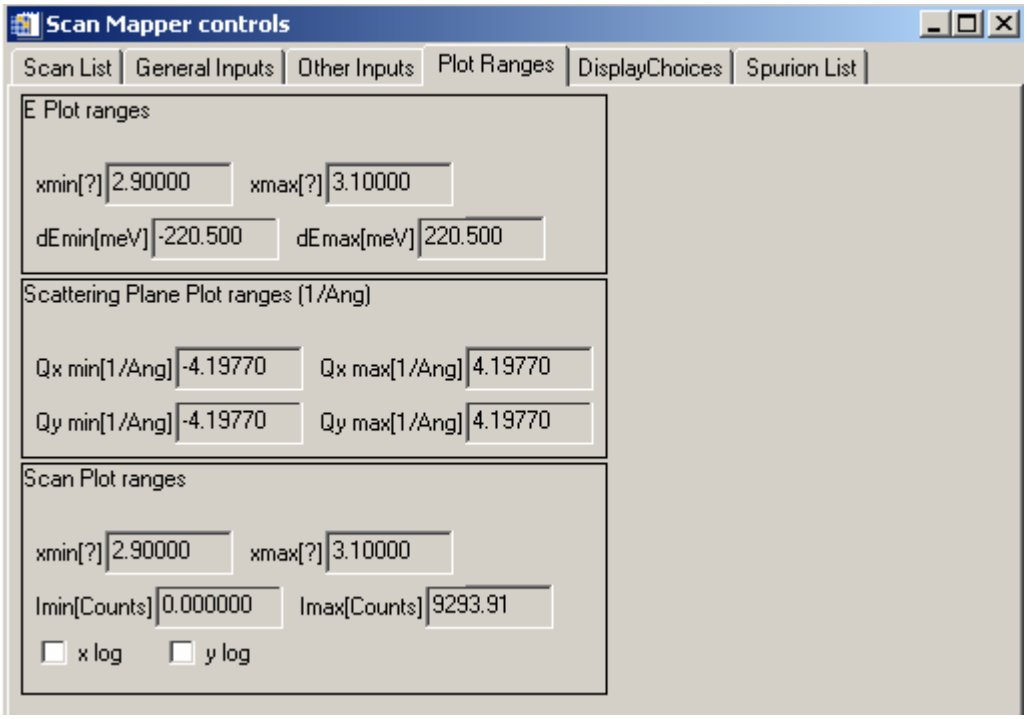
et 0.000000
Efixed 14.7000
Fix
Ei
Ef
npts 21
abc 10.5237 6.14160 4.73760 Å
abg 90.0000 90.0000 90.0000 deg
o1 1 0 0
o2 0 1 0
Calculate


Scan Mapper controls
Scan List
General Inputs
Other Inputs
Plot Ranges
DisplayChoices
Spurion List
Scan Definition
Setup Info
Mono/Ana
D spacings
PG(002)
dm
3.354
PG(002)
da
3.354
Horizontal
Collimators
ALZ
60
ALM
60
ALA
60
AL3
60
Vertical
Collimators
VBETZ
120
VBET1
120
VBET2
120
VBET3
120
Mosaics
ETASH
10
ETASV
10
ETAM
30
ETAA
30
Source
Thermal
Horizontal Focus
Instrument
Orientation
epm
1
ep
1
Calculate

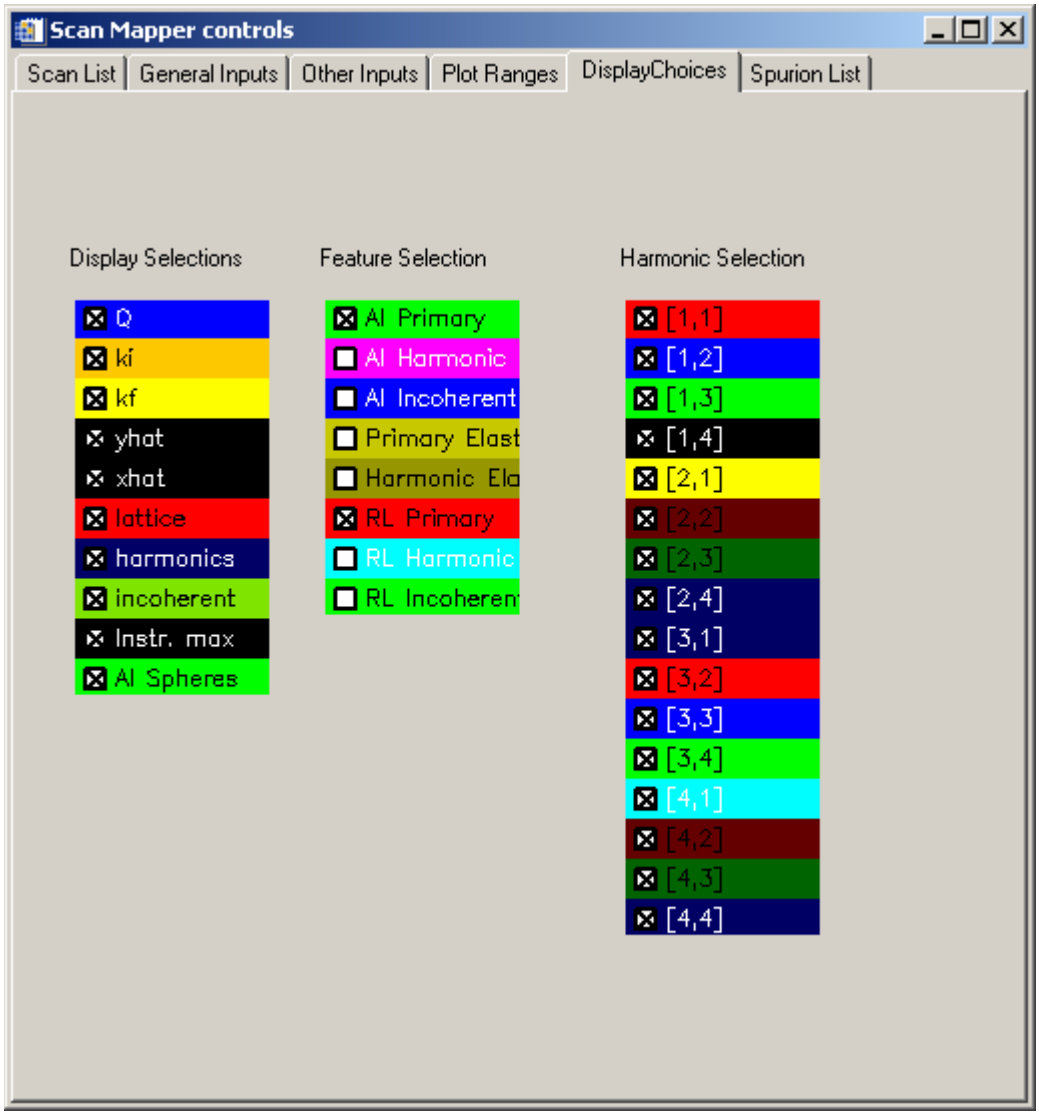
The “Other Inputs” tab contains some important input values. Notably, the sample can material, the axis to use for the scan and energy plots, the tolerances for determining whether points in the scan are likely to give rise to spurious data, and the maximum 2-theta angle available for the spectrometer.



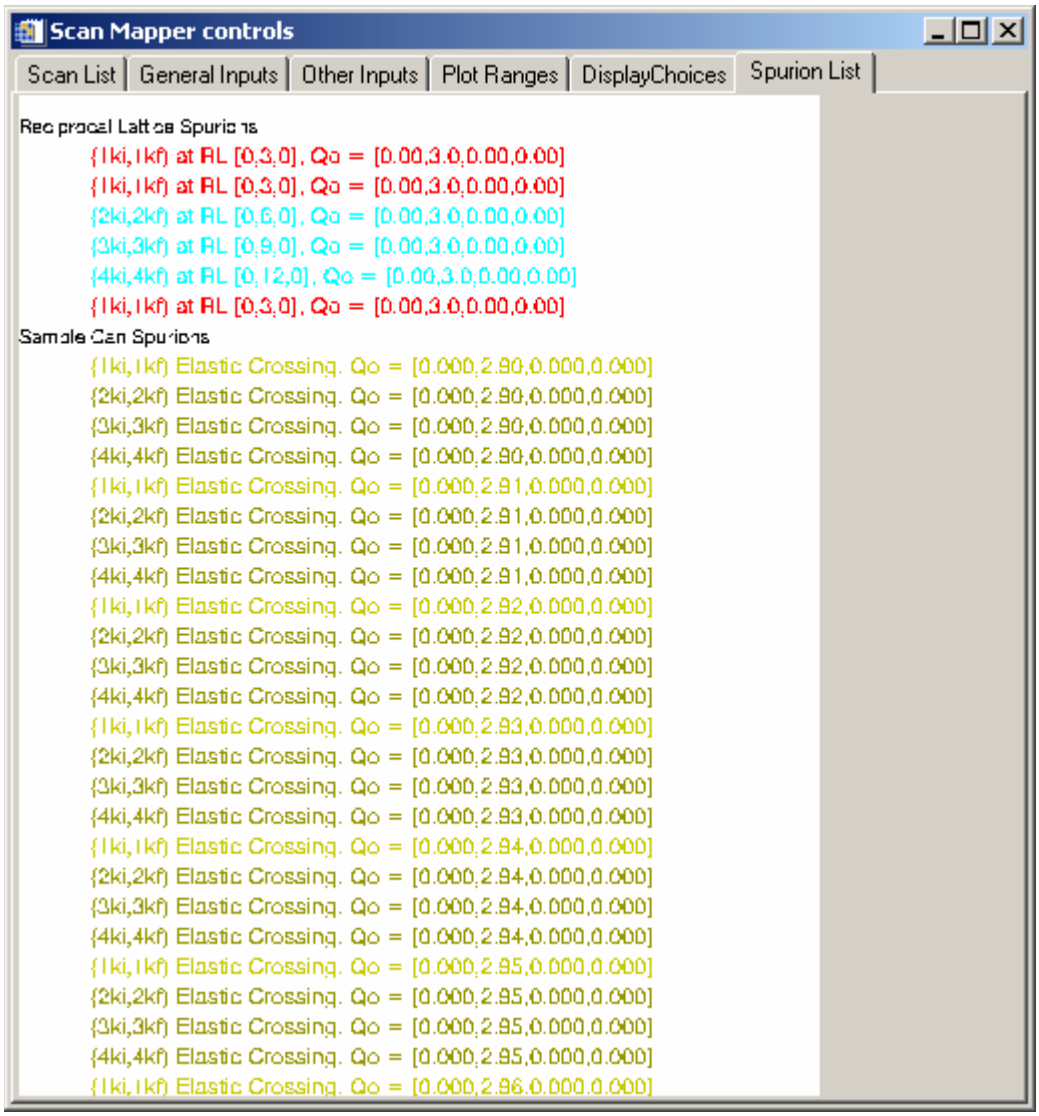
The “Plot Ranges” tab gives the user control over the ranges in the three plots. The plot ranges also can be controlled directly in the plots using rubber-band box zooming.



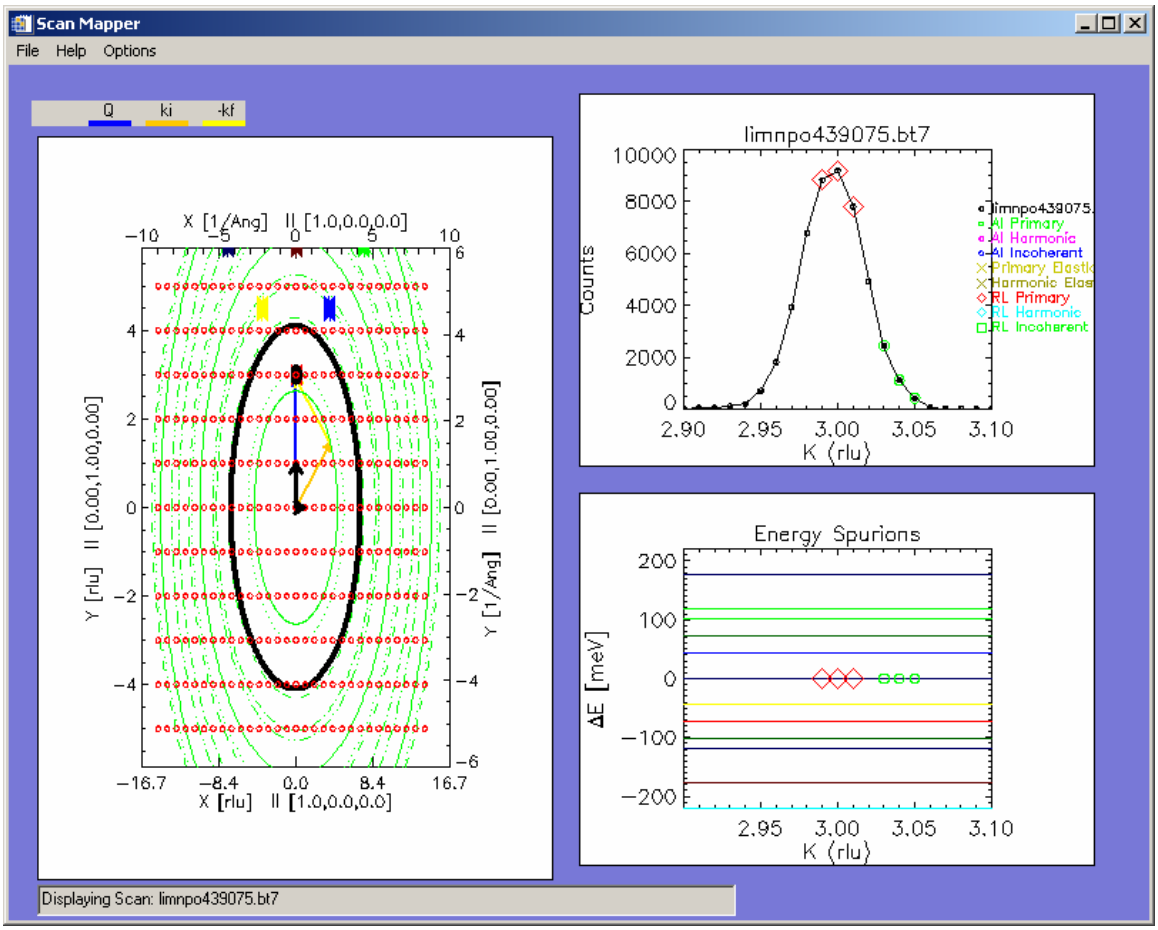
The “Display Choices” tab provides checkboxes so that the user can decide which features to display in the plots. The first set chooses Q vector display, incoherent, data display, sample can spheres, etc. The second set of checkboxes determines which types of spurions to show in the scan and energy plots. The final set of checkboxes determines which harmonics to include in the scattering plane and energy plots.

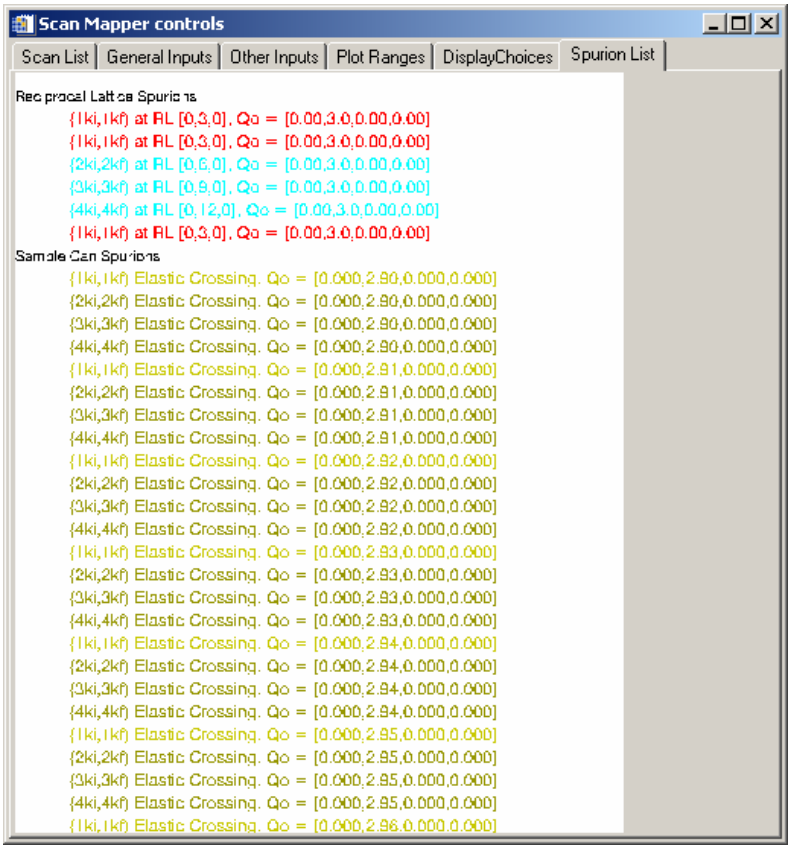


The final tab in the controls panel lists the set of spurious features along with their sources.

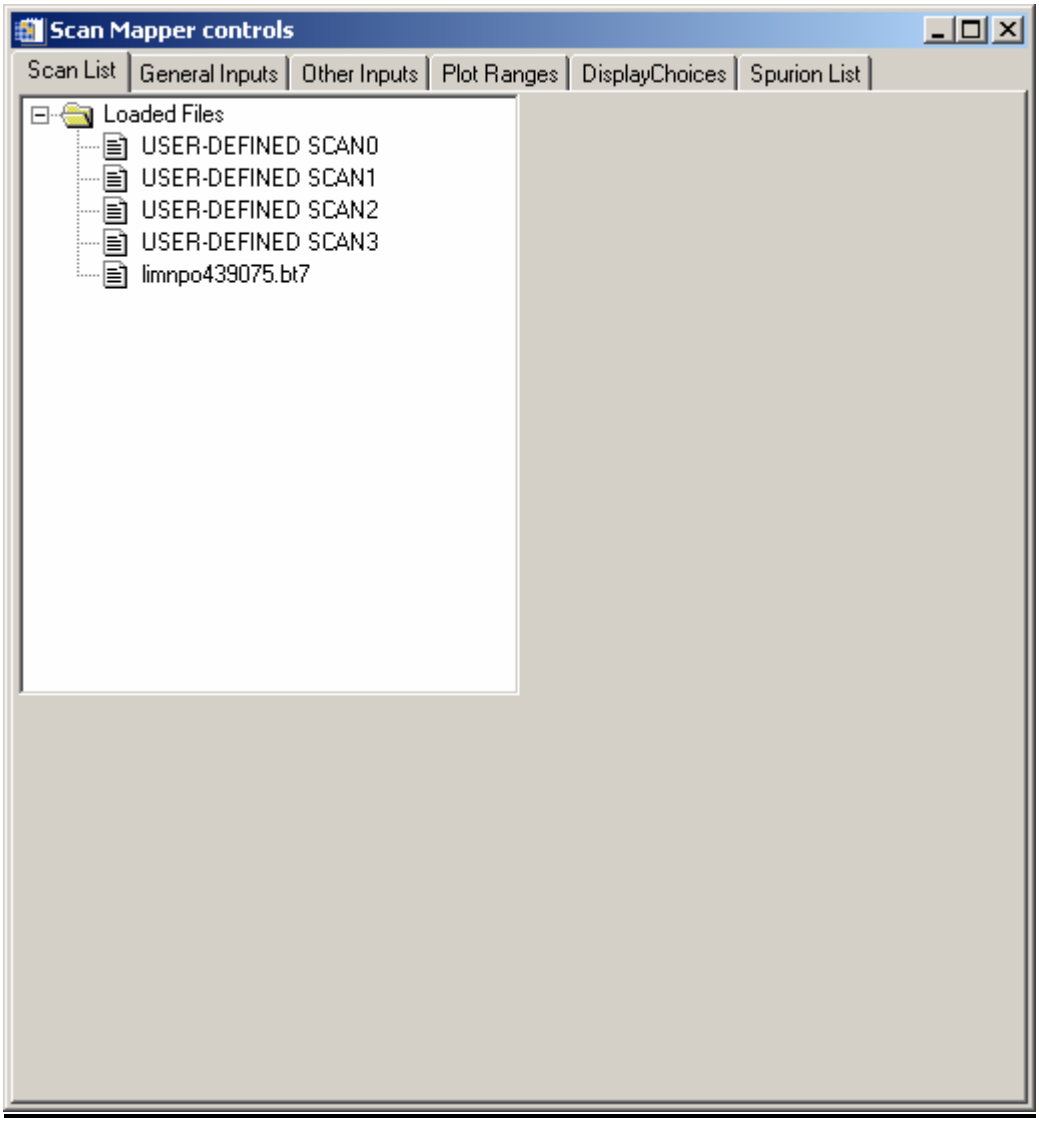


To define a scan you can either enter it manually via the scan definition tab in the controls or you can read in a data file. If you read in a data file, the data in the file will be displayed in the scan plot with possibly spurious features highlighted with the symbols indicating their respective sources. A text listing or the spurions will be in the spurion list tab.





All of the scans entered by the user or read in from file will appear in the Scan list in the Scan Mapper controls. Any of the scans in the list can be re-displayed by clicking on its item in the scan tree. The session can be saved by going to File->Save. This will save your work in a .spu file. Saved sessions can be recovered by selecting File->Restore Session. Note that this will restore the previous file and remove your current scans, so be sure to save your scans before restoring old work.



Finally, you can save any of the plots in either a .jpg or .ps file.

Future Features

Calculated scan of resolution-limited feature.

Resolution Ellipsoid calculations (for display and determination of spurious data)

Reciprocal Lattice calculator (Allow user input of unit cell information)

Auxiliary 3d view of reciprocal space

Output features as requested and defined by users