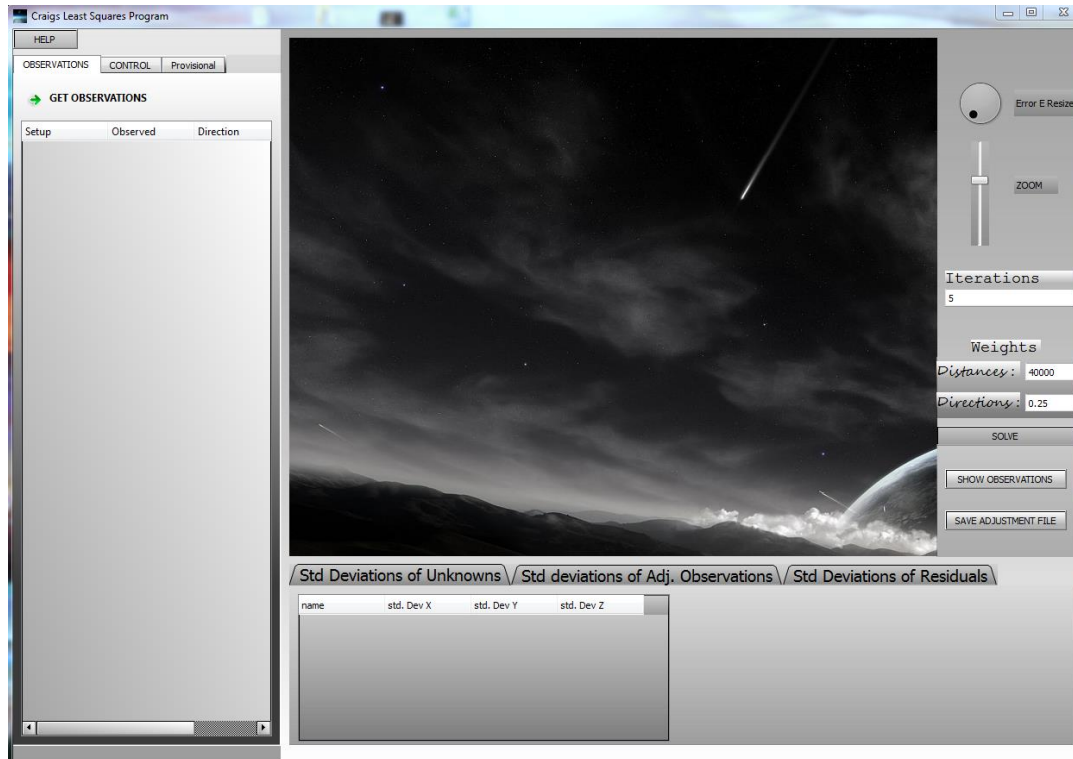


Craigs Least Squares Program Help File

In order of procedure:

1) Welcome to the interface

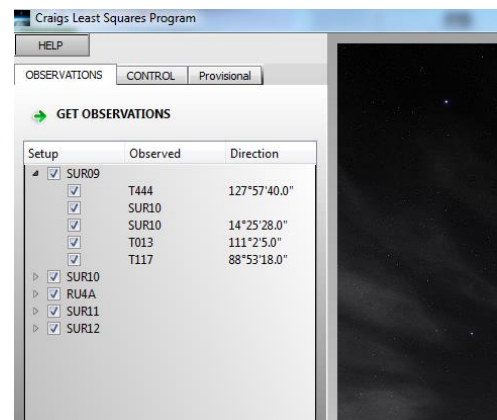


2) Open Observations file (make sure it's in the format specified)

1	Code	Station	Target	Observation direction	distance
2	0	SUR09			
3	2		SUR10		229.598
4	1		SUR10	14.42444	
5	1		T117	88.88833	
6	1		T013	111.0347	
7	1		T444	127.9611	
8	0	SUR10			
9	1		SUR09	194.4378	
10	1		T040	316.5225	
11	1		RU4A	7.247222	
12	2		RU4A		159.918
13	1		T013	121.3967	
14	0	RU4A			
15	1		SUR10	187.2494	
16	1		T040	310.3356	
17	1		SUR11	14.64889	
18	2		SUR11		180.52
19	1		T117	99.55417	
20	0	SUR11			
21	1		RU4A	194.6481	
22	1		T040	301.6831	
23	1		SUR12	51.55417	
24	2		SUR12		247.223
25	0	SUR12			
26	1		SUR11	231.5561	
27	1		T040	290.4064	
28	1		T115	47.74667	
29					
30					

HELP
Code: 0: setup
1: direction
2: distance
Station: station name
Target: target name
Direction: in Decimal Degrees
Distance: in Meters

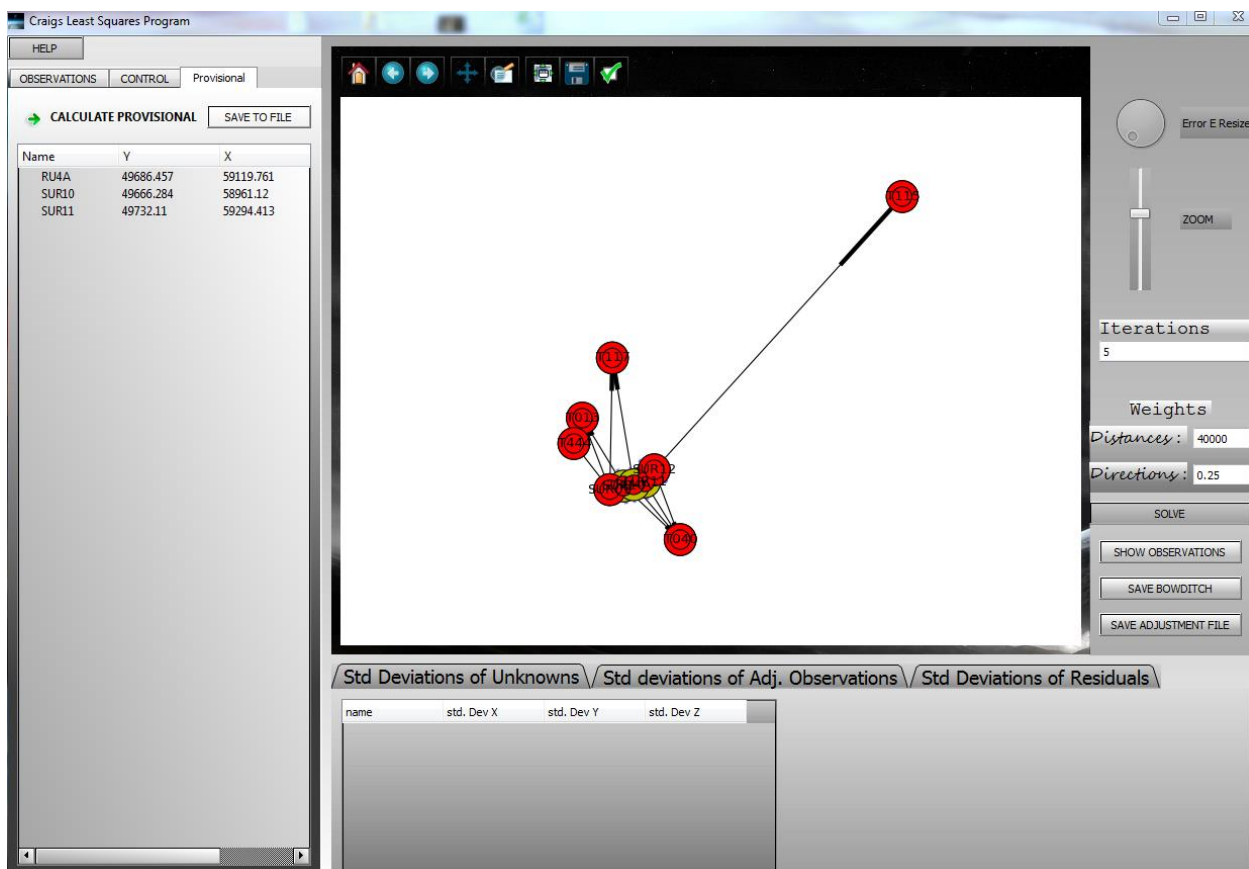
You should see a tree of Data:



- 3) Do the same for control file (take note of the format below, and the column of “knowns” = 1)

	A	B	C	D	E	F	G
1	Name	Y	X	H		known	
2	T117	51711.35	58779.23	0		1	
3	T013	50750.11	58299.8	0		1	
4	T115	54285.72	63409.75	0		1	
5	T040	48811.38	59862.58	0		1	
6	T444	50345.4	58164.13	0		1	
7	SUR09	49609.09	58738.76	0		1	
8	SUR12	49925.71	59448.14	0		1	
9	T119	52951.68	60807.08	0		1	
10	T381	49125.53	58438.66	0		1	
11							

- 4) You can now click Provisional tab and click “calculate the provisional”. This will bring up the preview screen, where you have a visual representation of the data files you selected.



5) Weights:

Change weights to Taste (remember: using the inverse square of the precisions).

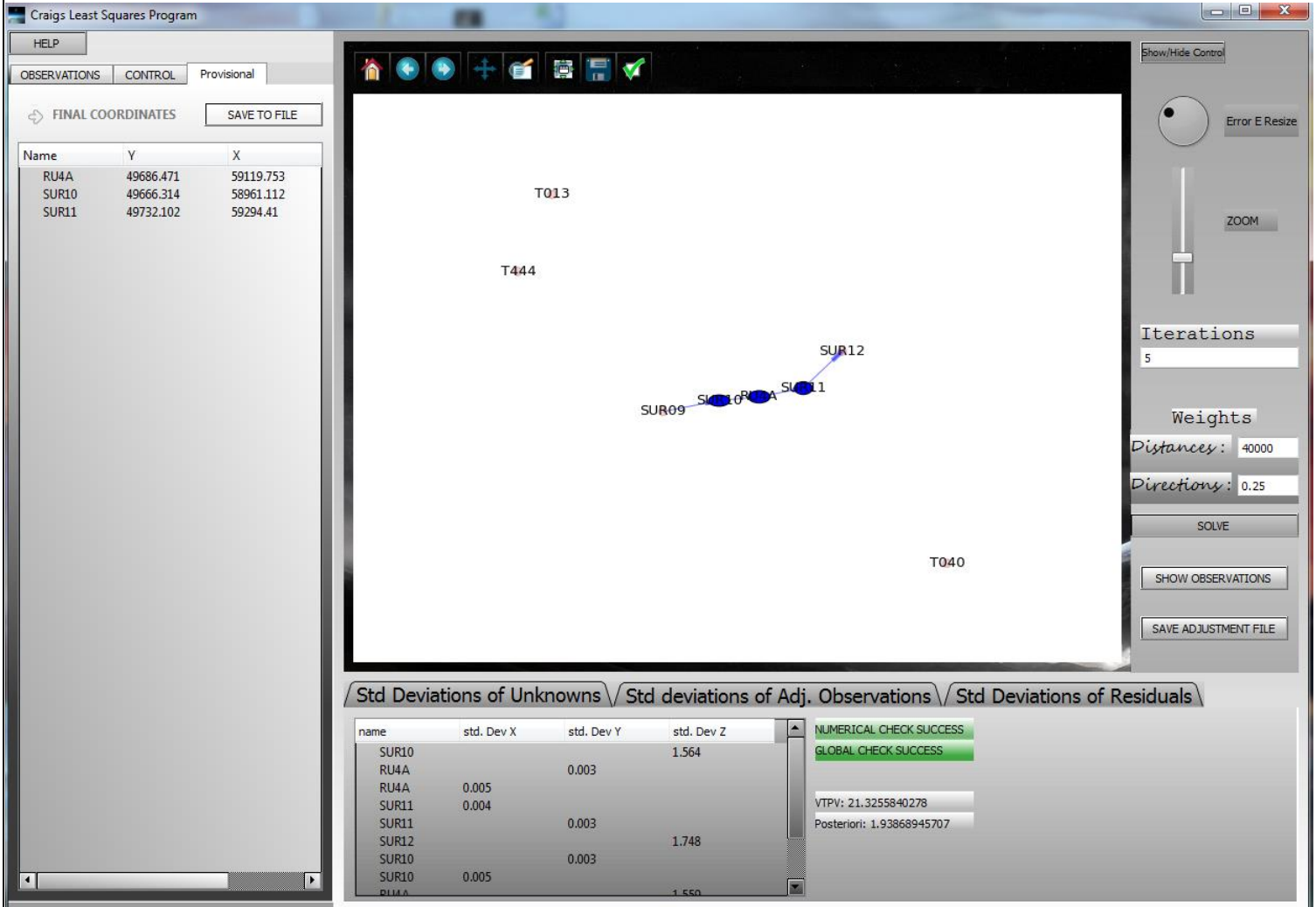
Defaults values are set to use the estimated precision for the orienting directions as 2" (The corresponding weights are 0.25) and for the distances, the estimated precision is 5mm, which corresponds to a weight of 40000.

Iterations:

Set as much iteration as you like, and be sure to watch the VTPV value for the specific iteration you choose. This will be handled effectively in a future update.

Solve:

Click solve and you are presented with your unknowns positions, and the error ellipse corresponding to the std. dev in x and y



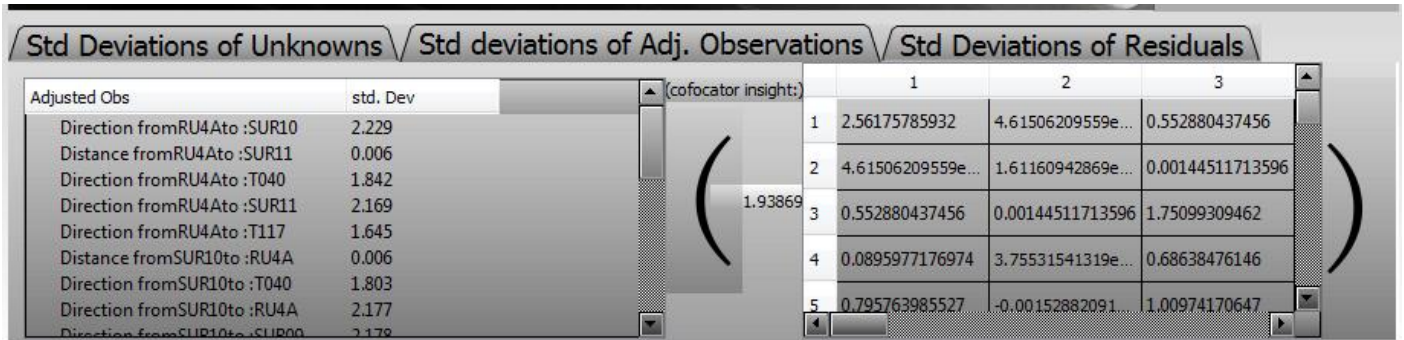
6) Std. Deviations Tabs

These tabs give insight into precisions of unknowns, std. dev. of observations, and precisions of observations respectively.

Distances are in (m) units

Directions are in seconds (")

The Cofactor Matrix is presented on the right, with the posteriori outside the matrix as a constant.



7) Click “Show Observations”

You are now free to deselect observations as they are automatically updated in the provisional view tab.

Once you are happy with the chosen observations, click “solve” again, and the adjustment will be recalculated using only the new chosen observations.

