array3 boom angles

I just shot angles for all sonics. I'll enter into the cal_files after lunch.

P.S. These are now entered (subtracting 131.7) and statsproc restarted.

Note0: that some of the times I entered as 29 jul and some as 31 jul, depending on when the sonic was last moved.

NOTE1: Sonic U5 s/n 712's upper arm was bent / misaligned with the lower claw when checked on 8/6/08.   The value shown is for the lower arm alignment. jwm

Note2: On 8/6/08 beginning at 10:20PDT, JohnMilitzer, took a second set of readings as noted '2'. These were completed by 14:30PDT. In the middle of the afternoon, it was optically more difficult to see the alignment angle.   I also took repeated readings and noticed some variance in those, but used the common value.   The large difference between our readings is disturbing, although I verified that the data-scope still has a deviation setting of 0.0
Note3: On 8/7/08, SteveO and I returned to the site and tried once more, performing a calibration of the data-scope and doing a spot check.   We noticed that the cell phones, as well as metal do cause errors on the scope.   Before and after the cal, my spot check on U3 showed 137.2 vs 137.7 after cal.   On the profile tower my post-cal readings for the lowest 3 were within .2.

Note4: Procedurally there are problems with the approach and our ability to hold the scope plumb on the camera tripod.   Tilt-angle is extremely important and can introduce many degrees of error between level and ~20deg tilt for the 7 and 8m sonics.   We can establish plumb optically using the verticle

RECOMMENDATION: reconsider putting a high quality electronic compass mounted under the theadolite on our surveyor's tripod instead of using the data-scope.   That would allow us to setup a quick and reliable level, and eliminate the tilt-angle issue of the data-scope when looking aloft.

	b	b2	cal (b2)		b-b2		t	t2	cal (t2)		t-t2		u	u2	cal (u2)		u-u2	
1	134.7	130.4	-1.3		4.3													
2	137.0	133.7	2.0		3.3													
3	136.0	132.4	0.7		3.6		137.1	133.6	1.9		3.5		141.0	137.2	5.5		3.8	
4	136.3	132.7	1.0		3.6		135.9	132.7	1.0		3.2		139.0	135.2	3.5		3.8	
5	135.2	132.7	1.0		2.5		134.4	128.1	-3.6		6.3		139.2	135.3	3.6		3.9	
6	134.6	131.1	-0.6		3.5		134.3	130.3	-1.4		4.0		141.4	138.3	6.6		3.1	
7	135.5	131.6	-0.1		3.9		136.6	132.0	0.3		4.6		134.6	131.4	-0.3		3.2	
8	136.8	133.5	1.8		3.3		138.3	135.1	3.4		3.2		136.5	132.4	0.7		4.1	
9	135.3	131.7	0.0		3.6		137.9	133.0	1.3		4.9		141.0	138.3	6.6		2.7	
10	134.7	132.4	0.7		2.3		135.9	132.6	0.9		3.3		135.8	132.7	1.0		3.1	
11	136.7	133.4	1.7		3.3		137.0	133.2	1.5		3.8		134.5	131.2	-0.5		3.3	
12	137.2	133.4	1.7		3.8													
13	(4.8's)																	

	profile	profile2	cal (p2)	p-p2
1.5	135.1	132.4	0.7	2.7
3.3	137.0	134.2	2.5	2.8
4.8	136.1	132.5	0.8	3.7
5.8	138.2	134.8	3.1	3.4
7.0	136.2	134.4	2.7	1.8
8.0	137.0	133.0	1.3	4.0

cal: azimuth entered in cal_file; measured magnetic azimuth - 131.7