

# Jefferson Lab Alignment Group

## DATA TRANSMITTAL

**TO:** Mike Seely, Dave Meekins

**DATE:** 12 October 2000

**FROM:** Richard Schwartz, Chris Gould

**Checked:** # : DT\_C635

### DETAILS:

Listed below are the as-found calculated coordinates for each of the Hall C cryogenic targets and the Y locations on the optics ladder using foil 7 and the Beryllium target while positioned in beam line. All coordinates in this transmittal are in millimeters with the origin at the Hall C ideal target location. The right hand coordinate system is beam following with +Z being downstream of the target center; +X being beam left of target center and +Y being above target center. The Yaw and pitch angles are in decimal degrees and based on a right hand coordinate system with the pitch being negative when the element is tipped downward from the upstream to the downstream end.

Location	Encoder	Target Location			Yaw	Pitch
		Z	X	Y		
Cell 1 Top	4502105	1.36	2.24	0.89	+0.064	-0.135
Cell 1 Bott	3786841	1.18	2.37	0.74	+0.103	-0.169
Cell 2 Top	3071577	0.96	1.99	0.93	-0.076	-0.085
Cell 2 Bott	2356322	0.89	2.46	0.86	+0.037	-0.079
Cell 3 Top	1641055	0.75	2.71	0.69	+0.025	-0.154
Cell 3 Bott	925784	0.63	3.11	0.71	+0.048	-0.108
Optics ladder with Foil 7 in beam line				7.55		
Optics ladder with Beryllium target in beam line				58.25		

Included below are distances along beam from the ideal target location to the upstream and downstream face of each of the 7 foil targets on the optics ladder with foil 1 being further most upstream.

	Upstream Z	Downstream Z	Average Z
Foil Target 1	-74.92	- 73.74	-74.33
Foil Target 2	-40.41	-37.95	-39.18
Foil Target 3	-19.17	-18.17	-18.68
Foil Target 4	1.12	2.21	1.59
Foil Target 5	20.55	21.56	21.06
Foil Target 6	41.10	42.06	41.58
Foil Target 7	75.99	77.02	76.51

Coordinate accuracy is estimated to be  $\pm 0.36$ mm (rms.) based on error contributions as follows:

Faro	= $\pm .150$ mm
S2AA survey	= $\pm .150$ mm
Monuments	= $\pm .290$ mm (largest component being Y (elevation)).

For your benefit coordinates are shown to 2 decimal places.