Jefferson Lab Alignment Group

Data Transmittal

TO: D. Carman, B. Miller, C. Wiggins | **DATE:** 12/06/2017

FROM: Kelly Tremblay | **Checked:** TPS III | **# :** B1835

DETAILS:

data : step2a\hallb\ctof\171024a

The central time of flights (CTOFs) were measured on October 24th, 2017. Using the calculated line edges (see memo B1824) the planes for the forty seven CTOFs were calculated. The results are shown below. The origin is the design center of the Solenoid with +z along the beamline; +y vertical from the beamline; +x transverse, beam left from the beamline. Scintillator 23 was not installed.

Det #	Coordinates [mm]			Vector values			Radius[mm]	Rotations [deg]		
	x	y	z	i	j	k	r	Rx from Y	Ry from Z	Rz from X
01	-20.2	-250.6	-87.2	0.06236	0.99805	0.00096	251.42	0.0553	89.1151	86.4250
02	-52.8	-245.7	-87.2	0.19426	0.98095	-0.00092	251.20	359.9465	90.2704	78.7988
03	-84.3	-236.4	-87.2	0.31436	0.94930	-0.00025	250.91	359.9847	90.0462	71.6778
04	-114.8	-224.2	-87.2	0.43616	0.89987	0.00050	251.83	0.0318	89.9344	64.1408
05	-142.8	-207.0	-87.2	0.55088	0.83458	-0.00257	251.20	359.8233	90.2677	56.5727
06	-168.6	-186.6	-87.2	0.65881	0.75231	-0.00241	251.23	359.8161	90.2100	48.7911
07	-192.0	-163.4	-87.2	0.73218	0.68110	-0.00228	251.66	359.8080	90.1786	42.9300
08	-212.9	-137.7	-87.2	0.83755	0.54636	-0.00129	253.45	359.8644	90.0885	33.1176
09	-228.8	-108.7	-87.2	0.89568	0.44469	-0.00257	253.01	359.6686	90.1646	26.4038
10	-241.1	-77.9	-87.2	0.94187	0.33596	-0.00196	253.10	359.6663	90.1190	19.6310
11	-248.9	-45.7	-87.2	0.97914	0.20320	-0.00085	252.93	359.7617	90.0495	11.7243
12	-251.9	-12.8	-87.2	0.99858	0.05321	0.00030	252.21	0.3217	89.9829	3.0504
13	-249.7	20.1	-87.2	0.99733	-0.07297	-0.00117	250.39	180.9190	90.0672	355.8154
14	-246.3	52.7	-87.2	0.98540	-0.17027	0.00052	251.68	179.8264	89.9700	350.1964
15	-237.6	84.5	-87.2	0.94995	-0.31242	-0.00082	252.03	180.1506	90.0495	341.7950
16	-224.3	114.7	-87.2	0.90234	-0.43103	0.00138	251.99	179.8167	89.9124	334.4668
17	-207.6	143.1	-87.2	0.83302	-0.55325	-0.00053	252.08	180.0548	90.0364	326.4098
18	-187.9	169.7	-87.2	0.74372	-0.66849	0.00117	253.25	179.8999	89.9100	318.0491
19	-162.9	192.0	-87.2	0.64683	-0.76264	0.00034	251.80	179.9742	89.9696	310.3027
20	-137.1	211.6	-87.2	0.56335	-0.82621	0.00417	252.42	179.7111	89.5763	304.2882
21	-108.8	228.7	-87.2	0.44736	-0.89435	0.00241	253.41	179.8459	89.6919	296.5742
22	-77.8	240.7	-87.2	0.32884	-0.94438	0.00164	253.02	179.9004	89.7139	289.1984
24	-19.9	251.9	-87.3	0.06540	-0.99785	0.00462	253.02	179.7350	85.9634	273.7501
25	13.2	252.5	-87.2	-0.07398	-0.99726	0.00250	252.99	179.8565	271.9335	265.7576
26	46.0	248.5	-87.2	-0.19234	-0.98132	0.00358	253.07	179.7909	271.0668	258.9108
27	78.1	240.1	-87.2	-0.32043	-0.94727	0.00273	252.72	179.8347	270.4888	251.3110
28	108.3	227.0	-87.2	-0.42366	-0.90582	0.00291	251.75	179.8163	270.3928	244.9339
29	137.8	211.9	-87.2	-0.55617	-0.83107	-0.00056	252.67	180.0387	269.9421	236.2084
30	163.8	191.6	-87.2	-0.65404	-0.75646	0.00117	252.15	179.9114	270.1025	229.1533
31	188.4	169.3	-87.2	-0.74907	-0.66249	0.00037	253.34	179.9682	270.0281	221.4900

32	208.6	143.0	-87.2	-0.83431	-0.55130	-0.00013	252.86	180.0130	269.9914	213.4560
33	224.9	114.2	-87.2	-0.90215	-0.43143	0.00262	252.43	179.6526	270.1661	205.5581
34	238.6	84.1	-87.2	-0.94423	-0.32929	0.00082	253.10	179.8582	270.0495	199.2256
35	248.0	52.3	-87.2	-0.97847	-0.20641	0.00158	253.62	179.5622	270.0924	191.9119
36	252.6	19.4	-87.2	-0.99773	-0.06734	-0.00034	253.29	180.2885	269.9805	183.8612
37	253.6	-13.8	-87.2	-0.99753	0.07027	0.00112	254.06	0.9091	270.0640	175.9703
38	249.0	-46.7	-87.2	-0.98200	0.18886	0.00069	253.43	0.2089	270.0402	169.1137
39	241.1	-79.0	-87.2	-0.94467	0.32803	0.00126	253.74	0.2204	270.0765	160.8506
40	228.2	-109.6	-87.2	-0.89505	0.44597	0.00214	253.32	0.2751	270.1371	153.5147
41	212.3	-138.7	-87.2	-0.84008	0.54246	0.00092	253.69	0.0969	270.0626	147.1488
42	192.2	-165.1	-87.2	-0.75309	0.65792	-0.00016	253.40	359.9859	269.9877	138.8584
43	167.2	-186.9	-87.2	-0.68259	0.73080	-0.00158	250.57	359.8760	269.8672	133.0467
44	141.9	-207.9	-87.2	-0.56915	0.82223	0.00068	251.79	0.0475	270.0686	124.6912
45	113.6	-224.9	-87.2	-0.44963	0.89321	-0.00062	251.88	359.9605	269.9216	116.7201
46	83.3	-238.0	-87.2	-0.32925	0.94424	0.00048	252.21	0.0291	270.0835	109.2229
47	51.2	-245.2	-87.2	-0.19003	0.98178	-0.00098	250.33	359.9426	269.7033	100.9544
48	18.7	-249.7	-87.2	-0.07771	0.99697	-0.00259	250.16	359.8511	268.0900	94.4571