



# Jefferson Lab Alignment Group

## Data Transmittal

**TO:** S. Malace, C. Munoz

**DATE:** 16 May 2023

**FROM:** Elena Balan

**Checked:**

**# :** C2069

**DETAILS:**

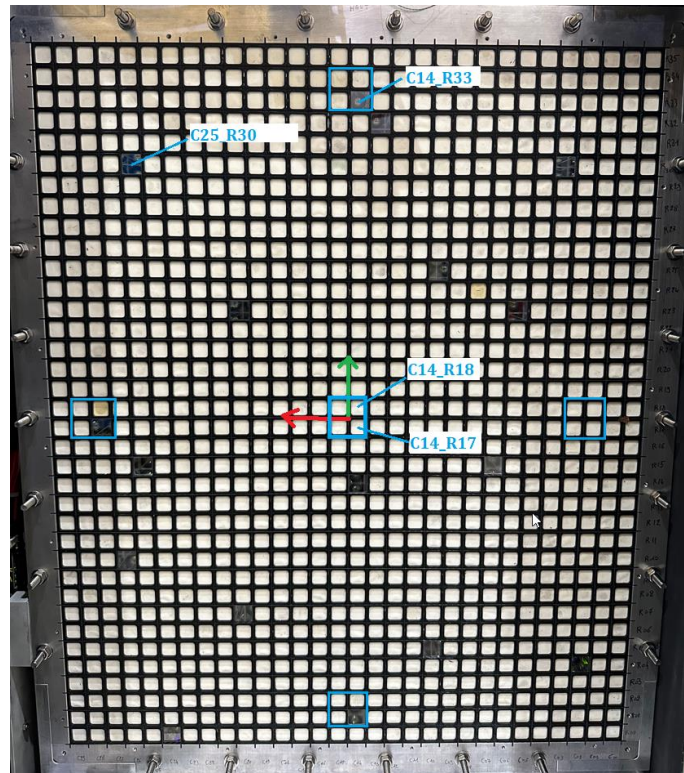
**Data:** M:\align\DATA\Fiduc\HallC\NPS\_DETECTOR\230516A

The NPS detector was surveyed on 15<sup>th</sup> May 2023. The coordinate system for the detector was built as requested:

- Principal axis, defined by the front face of the detector. The detector plane on the front face was built using the average middle point of each surveyed crystal cell.
- The origin was defined by the average point in the middle of the detector between the 14<sup>th</sup> and 15<sup>th</sup> columns and the 17<sup>th</sup> and 18<sup>th</sup> rows.
- The roll was defined by the two lines built on the average center points of the four crystal cells on top, on the bottom, on the beam right, and on the beam left.

In a Beam following coordinate system, +X is to the left, +Z is downstream, and +Y is up. Values are in millimeters and degrees.

	Beam following system		
	X(mm)	Y(mm)	Z(mm)
C13_R32	-32.63	311.98	0.20
C25_R30	225.58	269.12	0.19
C04_R30	-225.71	268.65	0.34
C10_R25	-96.59	161.09	0.04
C20_R23	118.29	118.18	0.08
C06_R23	-182.75	118.05	0.12
C25_R15	225.67	-53.73	0.20
C07_R15	-161.33	-53.82	0.10
C14_R14	-10.74	-75.21	0.07
C26_R10	247.29	-161.13	0.02
C20_R07	118.28	-225.64	0.03
C10_R05	-96.86	-268.56	-0.01
C02_R04	-268.91	-290.11	0.05
C24_R00	204.09	-375.89	0.30
C15_R33	10.91	333.26	0.18
C28_R17	290.32	-10.49	0.27
C15_R01	10.62	-354.21	0.29
C02_R17	-268.88	-10.96	0.15
C15_R34	10.80	354.75	0.10
C28_R18	290.32	10.79	0.04
C15_R02	10.82	-332.77	0.19



Beam following system			
	X(mm)	Y(mm)	Z(mm)
C02_R18	-268.81	10.64	0.15
C14_R34	-10.63	354.76	0.19
C27_R18	268.84	10.77	0.19
C14_R02	-10.78	-332.83	0.14
C03_R18	-247.34	10.61	0.28
C14_R33	-10.65	333.15	0.16
C27_R17	268.77	-10.79	0.14
C14_R01	-11.00	-354.24	0.32
C03_R17	-247.30	-10.95	0.15
C15_R17	10.82	-10.81	0.03
C15_R18	10.73	10.85	-0.01
C14_R18	-10.73	10.78	0.02
C14_R17	-10.82	-10.82	-0.05

These are the four center crystal cells.

Rail rotation angle

	Yaw[deg.]
BL_RAIL	0.1662
BR_RAIL	0.1632

