



# Jefferson Lab Alignment Group

## Data Transmittal

**TO:** D.Higinbotham,J. Butler

**DATE:** 02/28/2017

**FROM:** Steve Hardisty

**Checked:** [kjt]

**# :** A1775

### DETAILS:

Below are the results from the surveys of the left and right spectrometers on February 28<sup>nd</sup>, 2017. The horizontal pointing value shows how much the central axis of the spectrometer misses the ideal target. This value is perpendicular to the spectrometer axis, not along the beam line. For the vertical pointing, a positive value indicates that the spectrometer is pointing above the target.

A graphical sketch is shown after each of the three results.

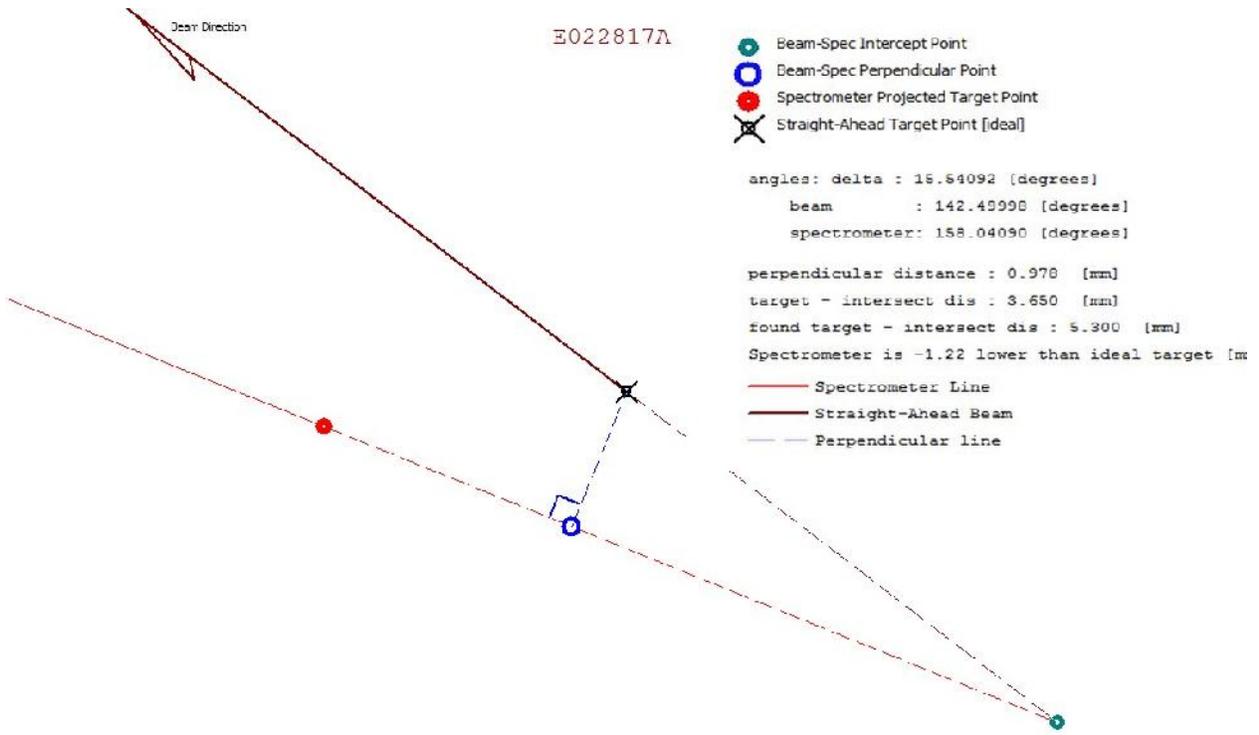
### ===== RESULTS ===== E022817A

The central ray of the spectrometer is at -15.541 degrees  
The central ray is missing the defined target center by -0.98 [mm] Upstream  
and -1.22 mm vertically [positive value is up]

If the offset is corrected by secondary alignment, the spectrometer will be at -15.548 degrees

To achieve this optimal setting  
make the following adjustments:  
spectrometer will be at -15.548 degrees  
Horizontal corrections:  
Move rear jacks along tangent -1.00 mm Upstream

9 Par Aposter Val : 0.13 (mm)  
No 3DD output file available to report std. dev



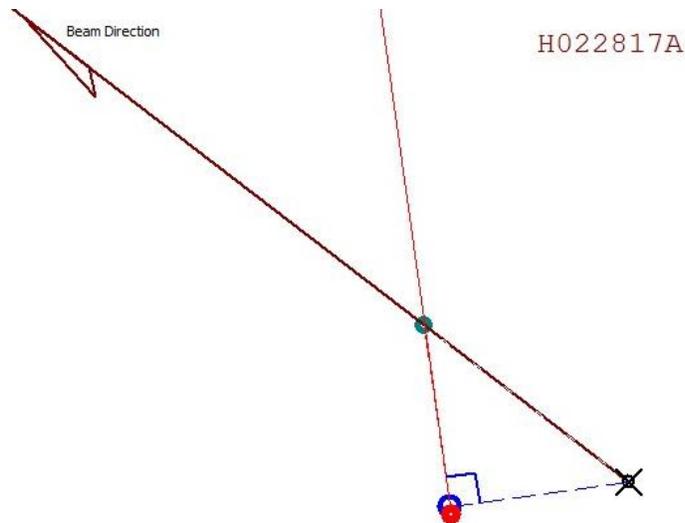
===== RESULTS ===== H022817A

The central ray of the spectrometer is at 44.505 degrees  
 The central ray is missing the defined target center by -0.86 [mm] Upstream  
 and -1.82 mm vertically [positive value is up]

If the offset is corrected by secondary alignment, the spectrometer will be at 44.499 degrees

To achieve this optimal setting  
 make the following adjustments:  
 spectrometer will be at 44.499 degrees  
 Horizontal corrections:  
 Move rear jacks along tangent -0.87 mm Upstream

9 Par Aposter Val : 0.24 (mm)  
 No 3DD output file available to report std. dev



● Beam-Spec Intercept Point  
 ○ Beam-Spec Perpendicular Point  
 ● Spectrometer Projected Target Point  
 ✕ Straight-Ahead Target Point [ideal]

angles: delta : 44.50486 [degrees]  
       beam : 142.49998 [degrees]  
       spectrometer: 97.99512 [degrees]

perpendicular distance : 0.854 [mm]  
 target - intersect dis : 1.218 [mm]  
 found target - intersect dis : 0.911 [mm]  
 Spectrometer is -1.82 lower than ideal target [m]

— Spectrometer Line  
 — Straight-Ahead Beam  
 — Perpendicular line

===== RESULTS ===== H022817B

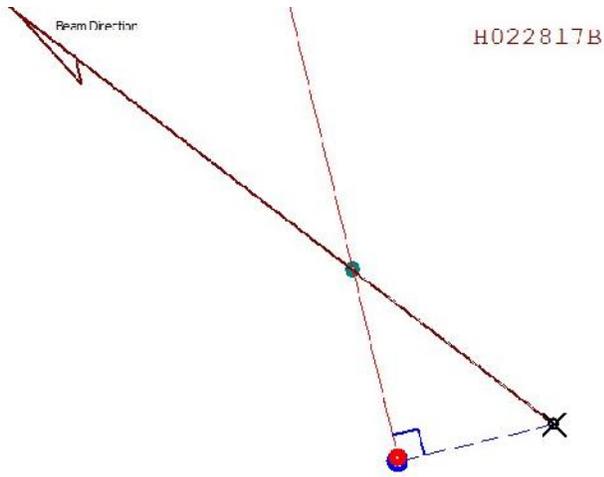
The central ray of the spectrometer is at 39.026 degrees  
 The central ray is missing the defined target center by -3.46 [mm] Upstream  
 and -1.93 mm vertically [positive value is up]

If the offset is corrected by secondary alignment, the  
 spectrometer will be at 39.003 degrees

To achieve this optimal setting  
 make the following adjustments:  
 spectrometer will be at 39.003 degrees  
 Horizontal corrections:

Move rear jacks along tangent -3.53 mm Upstream

9 Par Aposter Val : 0.24 (mm)  
 No 3DD output file available to report std. dev



H022817B

- Beam-Spec Intercept Point
- Beam-Spec Perpendicular Point
- Spectrometer Projected Target Point
- ✕ Straight-Ahead Target Point [Ideal]

angles: delta : 39.02596 [degrees]  
 beam : 142.49998 [degrees]  
 spectrometer: 103.47402 [degrees]

perpendicular distance : 3.462 [mm]  
 target - intersect dis : 5.498 [mm]  
 found target - intersect dis : 4.213 [mm]  
 Spectrometer is -1.93 lower than ideal target [m]

- Spectrometer Line
- Straight-Ahead Beam
- - Perpendicular line