



# Jefferson Lab Alignment Group Data Transmittal

TO: J. Gomez

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Checked:

# : A1826

**DETAILS:**

data : aalign\hadron\2017\H102617a-e

Below are the results from five different pointing surveys of the right spectrometer on October 26<sup>th</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 result.

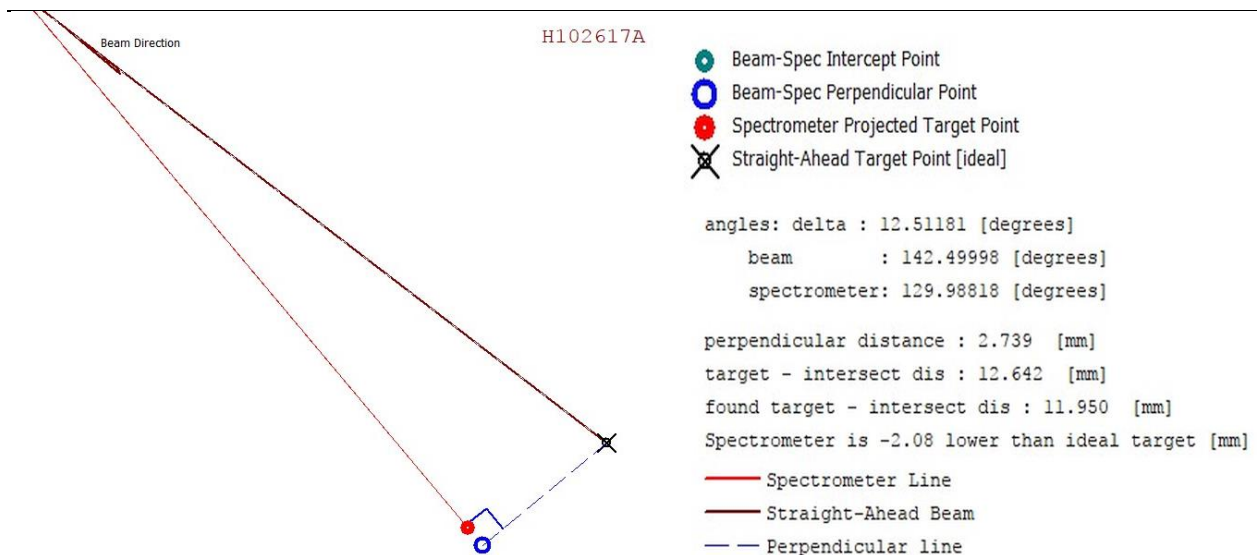
===== RESULTS ===== H102617A

The central ray of the spectrometer is at 12.512 degrees  
The central ray is missing the defined target center by 2.75 [mm] Downstream  
and -2.08 mm vertically [positive value is up]

If the offset is corrected by secondary alignment, the spectrometer will be at 12.493 degrees

To achieve this optimal setting  
make the following adjustments:  
spectrometer will be at 12.493 degrees  
Horizontal corrections:  
Move rear jacks along tangent -2.79 mm Downstream

9 Par A posteriori value : 0.60 (mm)



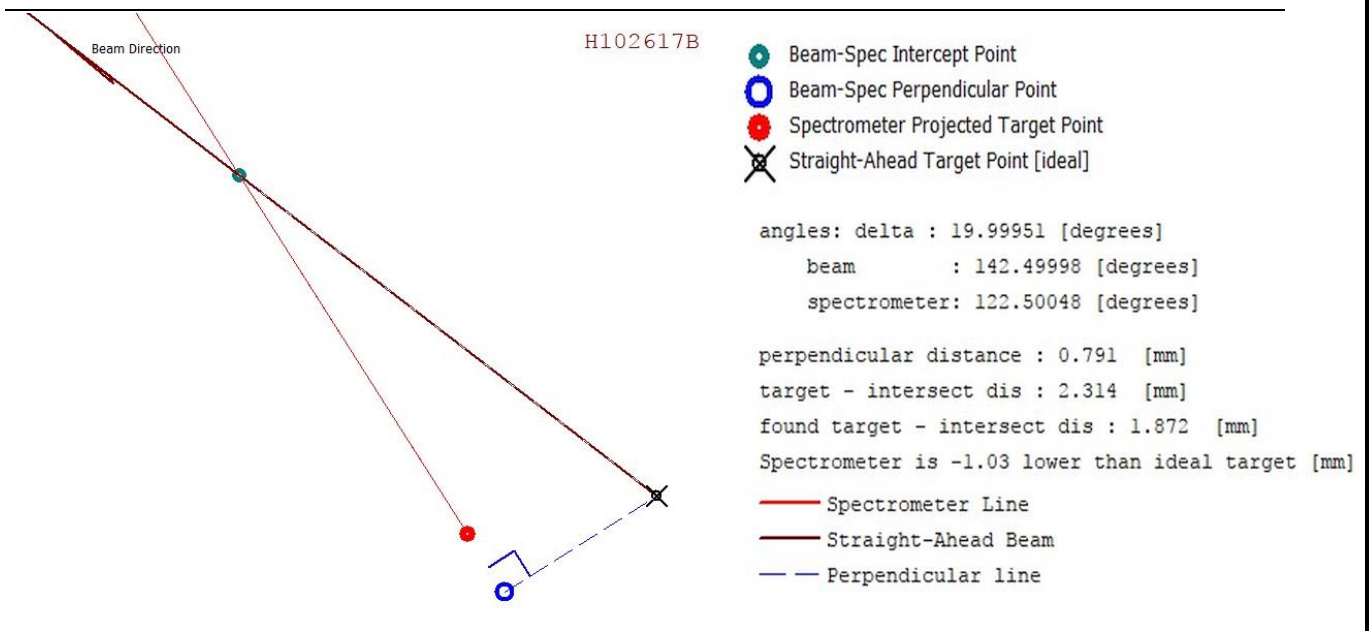
===== RESULTS ===== H102617B

The central ray of the spectrometer is at 20.000 degrees  
The central ray is missing the defined target center by 0.79 [mm] Downstream  
and -1.03 mm vertically [positive value is up]

If the offset is corrected by secondary alignment, the spectrometer will be at 19.994 degrees

To achieve this optimal setting  
make the following adjustments:  
spectrometer will be at 19.994 degrees  
Horizontal corrections:  
Move rear jacks along tangent -0.80 mm Downstream

9 Par A posteriori value : 0.55 (mm)



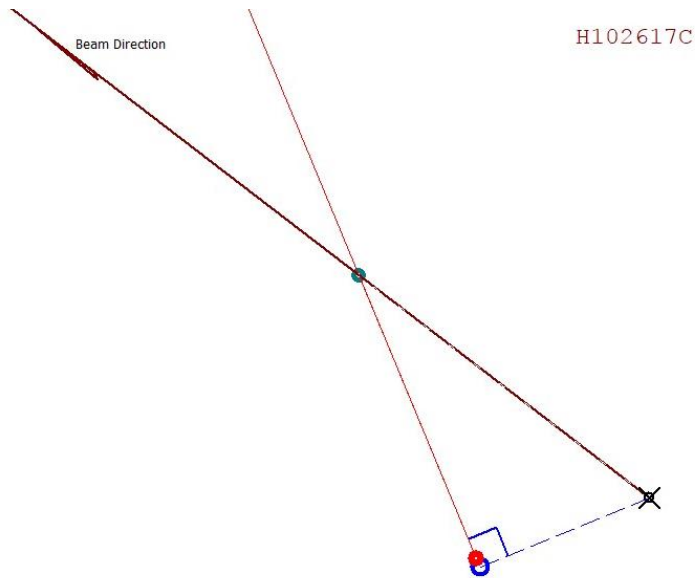
===== RESULTS ===== H102617C

The central ray of the spectrometer is at 29.998 degrees  
The central ray is missing the defined target center by 0.60 [mm] Downstream  
and -2.01 mm vertically [positive value is up]

If the offset is corrected by secondary alignment, the spectrometer will be at 29.994 degrees

To achieve this optimal setting  
make the following adjustments:  
spectrometer will be at 29.994 degrees  
Horizontal corrections:  
Move rear jacks along tangent -0.61 mm Downstream

9 Par A posteriori value : 0.38 (mm)



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

angles: delta : 29.99846 [degrees]  
 beam : 142.49998 [degrees]  
 spectrometer: 112.50152 [degrees]

perpendicular distance : 0.594 [mm]  
 target - intersect dis : 1.188 [mm]  
 found target - intersect dis : 0.999 [mm]  
 Spectrometer is -2.01 lower than ideal target [mm]

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

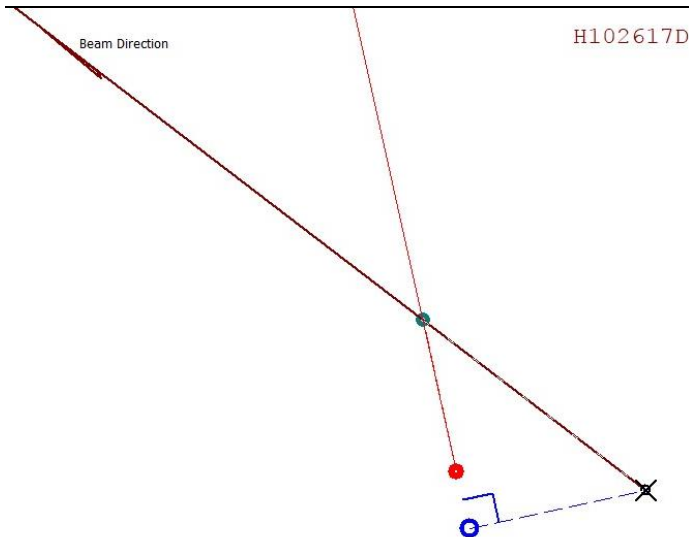
===== RESULTS ===== H102617D

The central ray of the spectrometer is at 40.004 degrees  
 The central ray is missing the defined target center by 0.81 [mm] Downstream  
 and -1.93 mm vertically [positive value is up]

If the offset is corrected by secondary alignment, the  
 spectrometer will be at 39.999 degrees

To achieve this optimal setting  
 make the following adjustments:  
 spectrometer will be at 39.999 degrees  
 Horizontal corrections:  
 Move rear jacks along tangent -0.83 mm Downstream

9 Par A posteriori value : 0.25 (mm)



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

angles: delta : 40.00421 [degrees]  
 beam : 142.49998 [degrees]  
 spectrometer: 102.49577 [degrees]

perpendicular distance : 0.813 [mm]  
 target - intersect dis : 1.264 [mm]  
 found target - intersect dis : 0.706 [mm]  
 Spectrometer is -1.93 lower than ideal target [mm]

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

===== RESULTS ===== H102617E

The central ray of the spectrometer is at 17.013 degrees  
The central ray is missing the defined target center by 2.86 [mm] Downstream  
and -2.07 mm vertically [positive value is up]

If the offset is corrected by secondary alignment, the  
spectrometer will be at 16.994 degrees

To achieve this optimal setting  
make the following adjustments:  
spectrometer will be at 16.994 degrees  
Horizontal corrections:  
Move rear jacks along tangent -2.91 mm Downstream

9 Par A posteriori value : 0.24 (mm)

