Below are the results from the survey of HMS spectrometer August 3\textsuperscript{rd}, 2017. The HMS fiducial points were observed from the beam left side of the spectrometer.

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.

\begin{verbatim}
RESULTS

The central ray of the spectrometer is at 40.01308 degrees
The central ray is missing the defined target center by 3.29 [mm] Upstream
and -0.94 mm lower than the target

Par A posteriori value : 0.57 (mm)

Sketch for the HMS survey is shown on the next page.
\end{verbatim}
angles: delta: 40.01308 [degrees]
    beam: -142.48325 [degrees]
    spectrometer: 177.60367 [degrees]

perpendicular distance: 3.291 [mm]
target - intersect dis: 5.119 [mm]
found target - intersect dis: 4.684 [mm]
Spectrometer is -0.94 lower than ideal target [mm]