Figure 4:

For all four subplots the 532 nm beam displacement is measured using a quadrant photodiode which has a calibration of 2.9 mV/um. Reported errors are calculated from the standard deviation of the measured values.

Figure 4a: Temperature vs. horizontal 532 nm beam displacement.

Fig4a\_Cs.csv contains the measured Cs temperature vs beam displacement data for Fig. 4a.

Fig4a\_Yb.csv contains the measured Yb temperature vs beam displacement data for Fig. 4a.

QPD Voltage is the measured horizontal quadrant photodiode voltage corresponding to the horizontal 532 nm beam displacement, given in units of mV.

Error QPD V is the error in the horizontal quadrant photodiode voltage, given in units of mV.

Cs Temperature is the measured temperature of the Cs atoms in units of nK.

Error Cs T is the error in the Cs temperature, in units of nK.

QPD y position is the horizontal displacement of the 532 nm beam at the position of the atoms calculated from the QPD voltages using a calibration of 2.9 mV/um. QPD y position has units of um.

Yb Temperature is the temperature of the Yb atoms in units of nK.

Error Yb T is the error in the Yb temperature, in units of nK.

Figure 4b: Temperature vs. vertical 532 nm beam displacement.

Fig4b\_Cs.csv contains the measured Cs temperature vs beam displacement data for Fig. 4b.

Fig4b\_Yb.csv contains the measured Yb temperature vs beam displacement data for Fig. 4b.

QPD Voltage is the measured vertical quadrant photodiode voltage corresponding to the vertical 532 nm beam displacement, given in units of mV.

Error QPD V is the error in the vertical quadrant photodiode voltage, given in units of mV.

Cs Temperature is the measured temperature of the Cs atoms in units of nK.

Error Cs T is the error in the Cs temperature, in units of nK.

QPD z position is the vertical displacement of the 532 nm beam at the position of the atoms calculated from the QPD voltages using a calibration of 2.9 mV/um. QPD z position has units of um.

Yb Temperature is the temperature of the Yb atoms in units of nK.

Error Yb T is the error in the Cs temperature, in units of nK.

Figure 4c: Atom number vs. horizontal 532 nm beam displacement.

Fig4c\_Cs.csv contains the measured Cs atom number vs beam displacement data for Fig. 4c.

Fig4c\_Yb.csv contains the measured Yb atom number vs beam displacement data for Fig. 4c.

QPD Voltage is the horizontal quadrant photodiode voltage corresponding to the horizontal 532 nm beam displacement, given in units of mV.

Error QPD V is the error in the horizontal quadrant photodiode voltage, given in units of mV.

Cs Number is the measured number of Cs atoms.

Error Cs N is the error in the Cs atom number.

QPD y position is the horizontal displacement of the 532 nm beam at the position of the atoms calculated from the QPD voltages using a calibration of 2.9 mV/um. QPD y position has units of um.

Yb Number is the measured number of Yb atoms.

Error Yb N is the error in the Yb atom number.

Figure 4d: Atom number vs. vertical 532 nm beam displacement.

Fig4d\_Cs.csv contains the measured Cs atom number vs beam displacement data for Fig. 4d.

Fig4d\_Yb.csv contains the measured Yb atom number vs beam displacement data for Fig. 4d.

QPD Voltage is the vertical quadrant photodiode voltage corresponding to the vertical 532 nm beam displacement, given in units of mV.

Error QPD V is the error in the vertical quadrant photodiode voltage, given in units of mV.

Cs Number is the measured number of Cs atoms.

Error Cs N is the error in the Cs atom number.

QPD z position is the vertical displacement of the 532 nm beam at the position of the atoms calculated from the QPD voltages using a calibration of 2.9 mV/um. QPD z position has units of um.

Yb Number is the measured number of Yb atoms.

Error Yb N is the error in the Yb atom number.