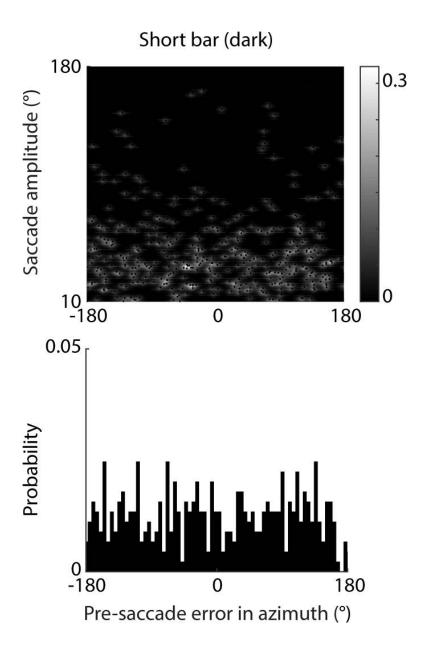


**Figure S1.** Raw data traces for a subset of tall (blue) and short (green) motion-defined bar trials. The open-loop stimulus oscillated at 1 Hz and moved 22.5° in each direction from its starting position at  $\pm 45^{\circ}$  from visual midline (angular speed =  $90^{\circ}$ s<sup>-1</sup>). Tall bar and short bar height were 120 and 30°, respectively, and width was kept constant at 30°. For each fly, we show the average response for an object for 12 trials on the fly's right (thick line), in addition to a subset of raw traces (thin lines)



**Figure S2.** Top: Colormap of pre-saccade error in azimuth vs. saccade amplitude for a short, dark bar.  $0^{\circ}$  is the fly's visual midline. Bottom: Probability histogram of pre-saccade error angles. n = 5 animals, 80 trials total.