Comparison between transgenic and AAV-PHP.eB mediated expression of GCaMP6s using in vivo wide field functional imaging of brain activity.

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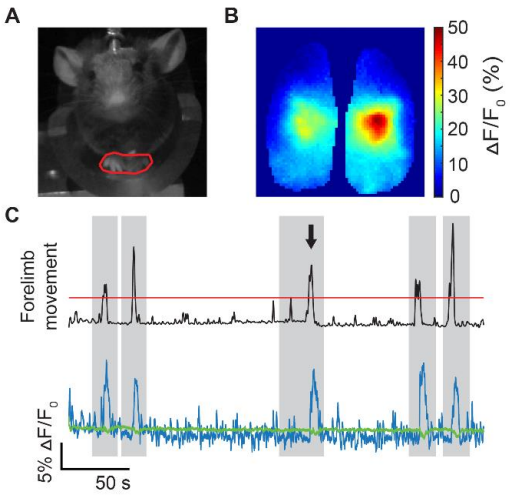
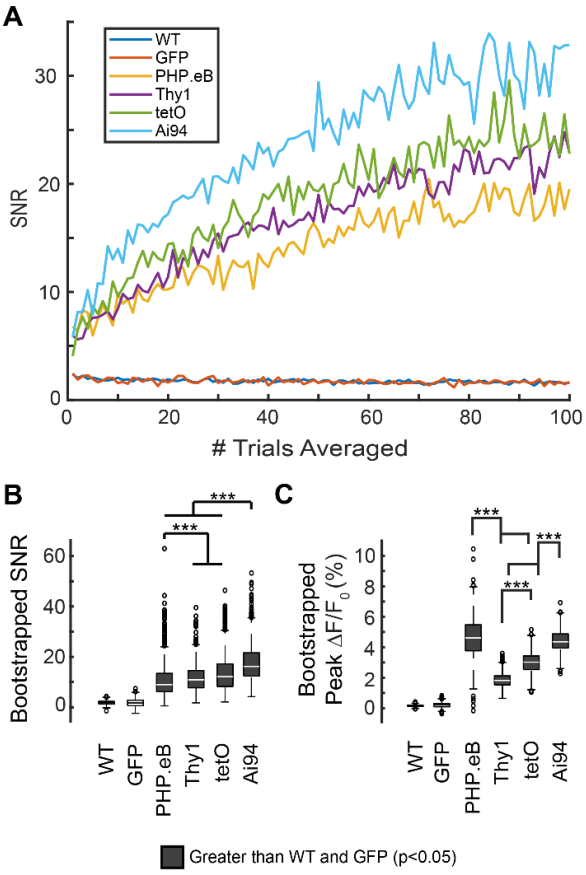
Supplemental Figure S1.



Supplemental Figure 1: Motion detection and removal. (a) A region of interest is placed over the forepaw area in the behavioral video. **(b)** Movement of the paws corresponded to large activation in corresponding sensory areas. **(c)** Paw movements were detected by calculating the average temporal difference of the video frames within the region of interest in (a). The temporal gradient was smoothed and a threshold (top, red line) was established to identify periods of movement. Movements correspond with large changes in cortical activity (bottom). Averaged fluorescence (blue) and reflectance (green) signals over the entire bilateral ROI are shown as a function of time. Arrow indicates the time at which (b) was calculated. Gray shading indicates data that were removed from analysis. Example from an AAV-PHP.eB-GCaMP6s mouse.

Supplemental Figure S2



Supplemental Figure 2: Bootstrapped estimation of visual response performance. (a) In accordance with signal averaging theory, SNR of an averaged visual response increases as a function of the number of trials used to compute the average. Trials were randomly sampled with replacement from all trials across mice. **(b)** SNR computed on a 20-trial averaged signal (randomly sampled with replacement), repeated for 1000 iterations. Bars denote median +/- 95% confidence interval. **(c)** Peak $\Delta F/F_0$ for 20-trial averaged signal (same procedure as in (b)). (*** $p<0.001$; Kruskal-Wallis with post-hoc Bonferroni correction).