**Supplementary file 1.** P-values for permutation test comparison of average fluorescence trace before and after eye convergence in experienced fish for different brain regions (Figure 2H).

**Brain region p-Value**

Telencephalon 0.027

Habenula 0.003

Pretectum (contra) < 0.001

Pretectum (ipsi) 0.697

Tectal neuropil (contra) 0.011

Tectal neuropil (ipsi) 0.018

Tectal PVN < 0.001

Cerebellum < 0.001

Crista cerebellaris 0.001

Hindbrain < 0.001