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Supplemental Information

**State-Dependent Subnetworks
of Parvalbumin-Expressing Interneurons
in Neocortex**

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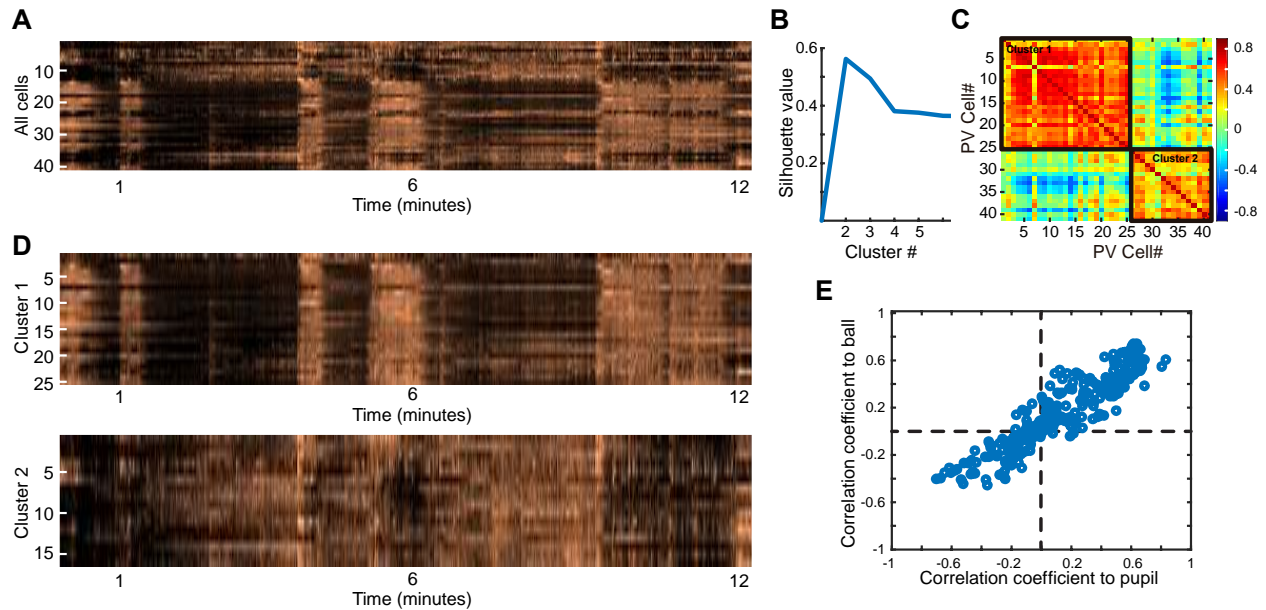


Figure S1. Two functional groups of PV cells in primary visual cortex. Related to Figure 1

- A. An example of GCaMP6s fluorescent changes imaged across 41 PV cells in primary visual cortex over 12 minutes in an alert, head-fixed mouse. Color map as in Figure 1.
- B. Plot of silhouette value versus cluster number following k-means cluster analysis, identifying 2 major functional clusters of PV cells.
- C. Plot of correlation coefficient of the activity of each cell in panel (A) to all other cells. Note the emergence of two groups, labeled Cluster 1 and Cluster 2.
- D. Time series of GCaMP6 responses for cells in Cluster 1 in panel C (top), and Cluster 2 in panel C (bottom). Note the negative correlation in the responses of these two groups.
- E. Plot of each cell's correlation coefficient to pupil diameter (abscissa) and to locomotion (ordinate). 6 mice, 6 fields of view, 289 PV cells (195 PVp, 94 PVn).

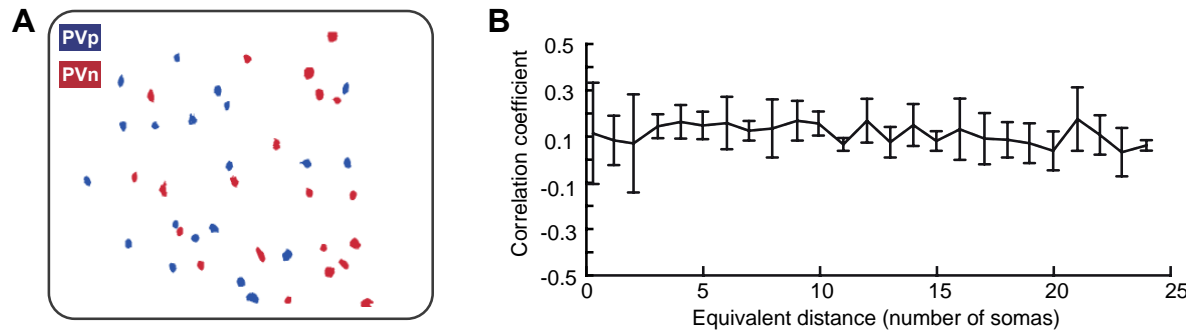


Figure S2. PVp and PVn cells are not spatially clustered. Related to Figure 1

- A. Example of the relative positions of 21 PVn and 20 PVp cells in a single field of view. Image is 800um by 500um.
- B. Mean and standard deviation of the correlation coefficients of responses for all PV cells imaged in ALM across all mice plotted as a function of distance. Note the absence of slope in this plot. 11 mice, 21 fields of view, 747 PV cells (344 PVp, 403 PVn).