

## Description of Additional Supplementary Files

**File name: Supplementary Movie 1**

**Description: Spontaneous cortical activity in occipital and parietal areas.** A movie of spontaneous cortical activity in FOV shown in **Fig. 1b-d**. Note that no high-pass filtering is used.

**File name: Supplementary Movie 2**

**Description: Spontaneous cortical activity in V1 and V2.** A movie of spontaneous cortical activity in FOV shown in **Supplementary Fig. 2d-f**. Note that no high-pass filtering is used. Note that no high-pass filtering is used.

**File name: Supplementary Movie 3**

**Description: Spontaneous cortical activity in temporal areas.** A movie of spontaneous cortical activity in FOV shown in **Fig. 1e-g**. Note that no high-pass filtering is used. Note that no high-pass filtering is used.

**File name: Supplementary Movie 4**

**Description: Another example of spontaneous cortical activity in occipital and parietal areas.** Movie of spontaneous cortical activity (not filtered) in FOV shown in **Supplementary Fig. 1b-d**. Note that GCaMP6f was used in this example.