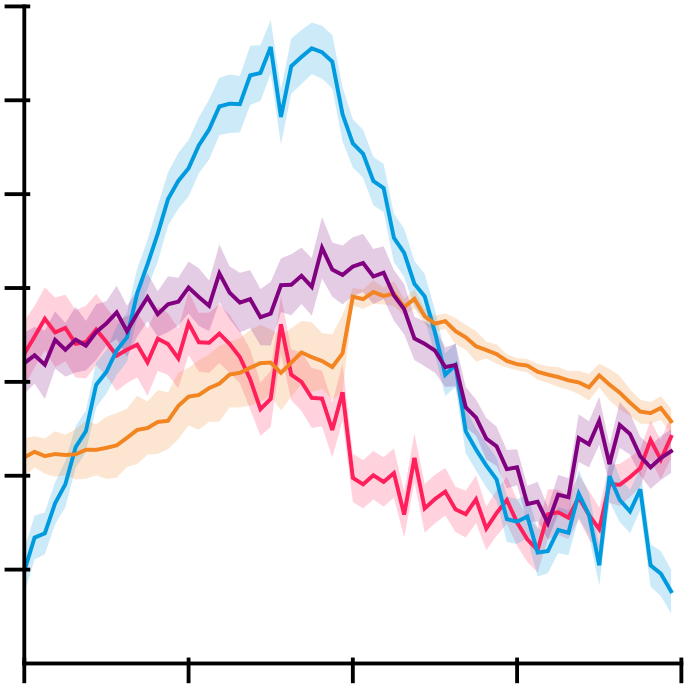
```
In[ ]:= v1Color = RGBColor["#ff1f5b"];

In[ ]:= lpColor = RGBColor["#009ade"];

In[ ]:= lmColor = RGBColor["#f28522"];

In[ ]:= v2mColor = Purple;

In[ ]:= (********************)

In[ ]:= dateMouseSessionListV2m = {{"030221", "Mouse23310", "Session1"},
          {"021721", "Mouse23338", "Session1"}, {"030221", "Mouse23338", "Session1"},
          {"031621", "Mouse23338", "Session1"}, {"031821", "Mouse23338", "Session2"},
          {"011721", "Mouse23390", "Session2"}, {"011821", "Mouse23390", "Session2"},
          {"022821", "Mouse23390", "Session1"}, {"021221", "Mouse23359", "Session2"},
          {"010321", "Mouse23382", "Session1"}, {"010621", "Mouse23382", "Session2"}};

In[ ]:= dateMouseSessionListV1toV2m =
         {{"020421", "Mouse23329", "Session1"}, {"021321", "Mouse23329", "Session1"},
          {"030121", "Mouse23329", "Session1"}, {"030621", "Mouse23329", "Session1"},
          {"020421", "Mouse23320", "Session1"}, {"121820", "Mouse23365", "Session1"},
          {"122020", "Mouse23365", "Session1"}, {"062622", "Mouse23007", "Session1"}};

In[ ]:= dateMouseSessionListLMtoV2m =
         {{"092421", "Mouse22422", "Session1"}, {"102221", "Mouse22422", "Session1"},
          {"101821", "Mouse22436", "Session1"}, {"081621", "Mouse22437", "Session1"},
          {"081921", "Mouse22437", "Session1"}, {"082821", "Mouse22437", "Session1"},
          {"102021", "Mouse22472", "Session1"}, {"102821", "Mouse22472", "Session2"},
          {"082021", "Mouse22491", "Session1"}, {"072022", "Mouse23025", "Session1"},
          {"071222", "Mouse23100", "Session1"}, {"071522", "Mouse23100", "Session1"},
          {"070922", "Mouse23014", "Session1"}, {"071422", "Mouse23014", "Session1"}};

In[ ]:= dateMouseSessionListLPtoV2m =
         {{"010721", "Mouse23339", "Session1"}, {"010821", "Mouse23339", "Session1"},
          {"011421", "Mouse23339", "Session2"}, {"011221", "Mouse23369", "Session1"},
          {"011521", "Mouse23369", "Session1"}, {"121620", "Mouse23381", "Session2"},
          {"121920", "Mouse23381", "Session1"}, {"120920", "Mouse23384", "Session1"},
          {"121320", "Mouse23384", "Session1"}, {"063022", "Mouse23067", "Session1"},
          {"063022", "Mouse23075", "Session1"}, {"071022", "Mouse23075", "Session1"}};

In[ ]:= (********************)

In[ ]:= (*********************************************)
        (*******Generate plots in Figure 3H***************)
        (*********************************************)

In[ ]:= meanDFFpupilPhaseV1toV2m = ToExpression /@
          Import["F:/FigureGeneration/Figure3/Fig3Data/Axons/V1toV2m/ValuesForPlotting/
            meanDFFpupilPhase_V1toV2m_nonDupROIs.txt", "List"];

In[ ]:= semDFFpupilPhaseV1toV2m = ToExpression /@
          Import["F:/FigureGeneration/Figure3/Fig3Data/Axons/V1toV2m/ValuesForPlotting/
            semDFFpupilPhase_V1toV2m_nonDupROIs.txt", "List"];
```

```
In[•]:= meanDFFpupilPhaseLPtoV2m = ToExpression /@
          Import["F:/FigureGeneration/Figure3/Fig3Data/Axons/LPtoV2m/ValuesForPlotting/
            meanDFFpupilPhase_LPtoV2m_nonDupROIs.txt", "List"];

In[•]:= semDFFpupilPhaseLPtoV2m = ToExpression /@
          Import["F:/FigureGeneration/Figure3/Fig3Data/Axons/LPtoV2m/ValuesForPlotting/
            semDFFpupilPhase_LPtoV2m_nonDupROIs.txt", "List"];

In[•]:= meanDFFpupilPhaseLMtoV2m = ToExpression /@
          Import["F:/FigureGeneration/Figure3/Fig3Data/Axons/LMtoV2m/ValuesForPlotting/
            meanDFFpupilPhase_LMtoV2m_nonDupROIs.txt", "List"];

In[•]:= semDFFpupilPhaseLMtoV2m = ToExpression /@
          Import["F:/FigureGeneration/Figure3/Fig3Data/Axons/LMtoV2m/ValuesForPlotting/
            semDFFpupilPhase_LMtoV2m_nonDupROIs.txt", "List"];

In[•]:= meanDFFpupilPhaseV2m = ToExpression /@
          Import["F:/FigureGeneration/Figure3/Fig3Data/CellBodies/V2m/ValuesForPlotting/
            meanDFFpupilPhase_V2m.txt", "List"];

In[•]:= semDFFpupilPhaseV2m = ToExpression /@
          Import["F:/FigureGeneration/Figure3/Fig3Data/CellBodies/V2m/ValuesForPlotting/
            semDFFpupilPhase_V2m.txt", "List"];

In[•]:= ListLinePlot[{Part[#, 2] & /@ meanDFFpupilPhaseV1toV2m,
          Part[#, 2] & /@ meanDFFpupilPhaseV1toV2m + (Part[#, 2] & /@ semDFFpupilPhaseV1toV2m),
          Part[#, 2] & /@ meanDFFpupilPhaseV1toV2m - (Part[#, 2] & /@ semDFFpupilPhaseV1toV2m),
          Part[#, 2] & /@ meanDFFpupilPhaseLPtoV2m,
          Part[#, 2] & /@ meanDFFpupilPhaseLPtoV2m + (Part[#, 2] & /@ semDFFpupilPhaseLPtoV2m),
          Part[#, 2] & /@ meanDFFpupilPhaseLPtoV2m - (Part[#, 2] & /@ semDFFpupilPhaseLPtoV2m),
          Part[#, 2] & /@ meanDFFpupilPhaseLMtoV2m,
          Part[#, 2] & /@ meanDFFpupilPhaseLMtoV2m + (Part[#, 2] & /@ semDFFpupilPhaseLMtoV2m),
          Part[#, 2] & /@ meanDFFpupilPhaseLMtoV2m - (Part[#, 2] & /@ semDFFpupilPhaseLMtoV2m),
          Part[#, 2] & /@ meanDFFpupilPhaseV2m,
          Part[#, 2] & /@ meanDFFpupilPhaseV2m + (Part[#, 2] & /@ semDFFpupilPhaseV2m),
          Part[#, 2] & /@ meanDFFpupilPhaseV2m - (Part[#, 2] & /@ semDFFpupilPhaseV2m)},
        Filling → {1 → {{2}, Directive[Opacity[0.2], v1Color]}, 1 →
            {{3}, Directive[Opacity[0.2], v1Color]}, 4 → {{5}, Directive[Opacity[0.2], lpColor]},
          4 → {{6}, Directive[Opacity[0.2], lpColor]}, 7 →
            {{8}, Directive[Opacity[0.2], lmColor]}, 7 → {{9}, Directive[Opacity[0.2], lmColor]},
          10 → {{11}, Directive[Opacity[0.2], v2mColor]},
          10 → {{12}, Directive[Opacity[0.2], v2mColor]}},
        PlotStyle → {{v1Color, Thickness[0.006]}, Transparent, Transparent,
          {lpColor, Thickness[0.006]}, Transparent, Transparent, {lmColor, Thickness[0.006]},
          Transparent, Transparent, {v2mColor, Thickness[0.006]}, Transparent, Transparent},
        DataRange → {-π, 31 π/32}, PlotRange → {{-π, π}, {-0.15, 0.20}}, FrameTicks →
          {{LinTicks[-0.15, 0.20, MajorTickLength → {0, .03}, MinorTickLength → {0, 0}], None},
            {LinTicks[-π, π, π/2, 4, TickLabelFunction → (Rationalize[# / π] * π &),
              MajorTickLength → {0, .03}, MinorTickLength → {0, 0}], None}}, Axes → False,
        TicksStyle → Thick, FrameStyle → Thick, Frame → {{True, None}, {True, None}},
        AspectRatio → 1, FrameTicksStyle -> Directive[FontOpacity -> 0, FontSize -> 0]]
```

Out[ ]=



In[ ]:=
```
(*********************************************)
(*******Generate plots in Figure 3G***************)
(*********************************************)
```

In[ ]:=
```
meanDFFpupilCCV1toV2m = ToExpression /@
    Import["F:/FigureGeneration/Figure3/Fig3Data/Axons/V1toV2m/ValuesForPlotting/
       meanDFFpupilCrossCorr_V1toV2m_nonDupROIs.txt", "List"];
```

In[ ]:=
```
semDFFpupilCCV1toV2m = ToExpression /@
    Import["F:/FigureGeneration/Figure3/Fig3Data/Axons/V1toV2m/ValuesForPlotting/
       semDFFpupilCrossCorr_V1toV2m_nonDupROIs.txt", "List"];
```

In[ ]:=
```
(*********)
```

In[ ]:=
```
meanDFFpupilCCLPtoV2m = ToExpression /@
    Import["F:/FigureGeneration/Figure3/Fig3Data/Axons/LPtoV2m/ValuesForPlotting/
       meanDFFpupilCrossCorr_LPtoV2m_nonDupROIs.txt", "List"];
```

In[ ]:=
```
semDFFpupilCCLPtoV2m = ToExpression /@
    Import["F:/FigureGeneration/Figure3/Fig3Data/Axons/LPtoV2m/ValuesForPlotting/
       semDFFpupilCrossCorr_LPtoV2m_nonDupROIs.txt", "List"];
```

In[ ]:=
```
(*********)
```

In[ ]:=
```
meanDFFpupilCCLMtoV2m = ToExpression /@
    Import["F:/FigureGeneration/Figure3/Fig3Data/Axons/LMtoV2m/ValuesForPlotting/
       meanDFFpupilCrossCorr_LMtoV2m_nonDupROIs.txt", "List"];
```

In[ ]:=
```
semDFFpupilCCLMtoV2m = ToExpression /@
    Import["F:/FigureGeneration/Figure3/Fig3Data/Axons/LMtoV2m/ValuesForPlotting/
       semDFFpupilCrossCorr_LMtoV2m_nonDupROIs.txt", "List"];
```

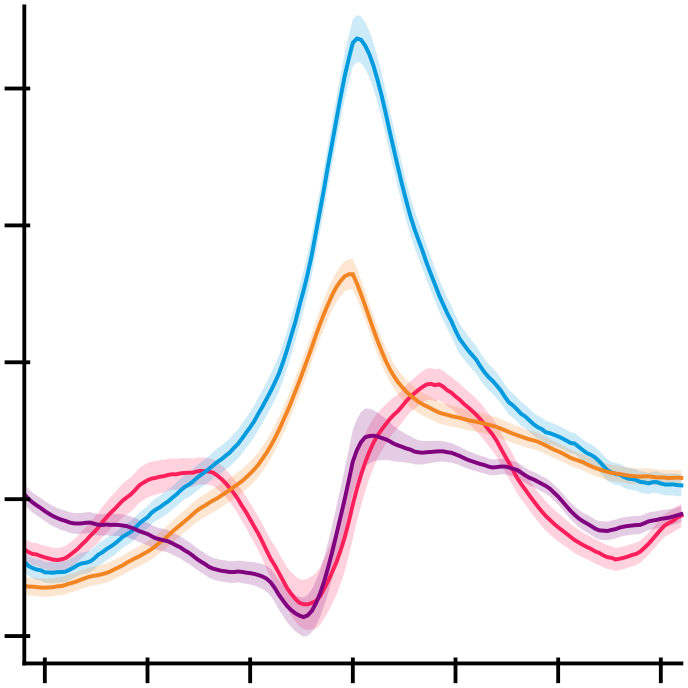
In[ ]:=
```
(*********)
```

In[ ]:=
```
meanDFFpupilCCV2m = ToExpression /@
    Import["F:/FigureGeneration/Figure3/Fig3Data/CellBodies/V2m/ValuesForPlotting/
       meanDFFpupilCrossCorr_V2m.txt", "List"];
```

In[ ]:=
```
semDFFpupilCCV2m = ToExpression /@
    Import["F:/FigureGeneration/Figure3/Fig3Data/CellBodies/V2m/ValuesForPlotting/
       semDFFpupilCrossCorr_V2m.txt", "List"];
```

In[ ]:=
```
ListLinePlot[{Part[#, 2] & /@ meanDFFpupilCCV1toV2m,
  Part[#, 2] & /@ meanDFFpupilCCV1toV2m + (Part[#, 2] & /@ semDFFpupilCCV1toV2m),
  Part[#, 2] & /@ meanDFFpupilCCV1toV2m - (Part[#, 2] & /@ semDFFpupilCCV1toV2m),
  Part[#, 2] & /@ meanDFFpupilCCLPtoV2m,
  Part[#, 2] & /@ meanDFFpupilCCLPtoV2m + (Part[#, 2] & /@ semDFFpupilCCLPtoV2m),
  Part[#, 2] & /@ meanDFFpupilCCLPtoV2m - (Part[#, 2] & /@ semDFFpupilCCLPtoV2m),
  Part[#, 2] & /@ meanDFFpupilCCLMtoV2m,
  Part[#, 2] & /@ meanDFFpupilCCLMtoV2m + (Part[#, 2] & /@ semDFFpupilCCLMtoV2m),
  Part[#, 2] & /@ meanDFFpupilCCLMtoV2m - (Part[#, 2] & /@ semDFFpupilCCLMtoV2m),
  Part[#, 2] & /@ meanDFFpupilCCV2m,
  Part[#, 2] & /@ meanDFFpupilCCV2m + (Part[#, 2] & /@ semDFFpupilCCV2m),
  Part[#, 2] & /@ meanDFFpupilCCV2m - (Part[#, 2] & /@ semDFFpupilCCV2m)},
 Filling → {1 → {{2}, Directive[Opacity[0.2], v1Color]}, 1 →
    {{3}, Directive[Opacity[0.2], v1Color]}, 4 → {{5}, Directive[Opacity[0.2], lpColor]},
   4 → {{6}, Directive[Opacity[0.2], lpColor]}, 7 →
    {{8}, Directive[Opacity[0.2], lmColor]}, 7 → {{9}, Directive[Opacity[0.2], lmColor]},
   10 → {{11}, Directive[Opacity[0.2], v2mColor]},
   10 → {{12}, Directive[Opacity[0.2], v2mColor]}},
 PlotStyle → {{v1Color, Thickness[0.006]}, Transparent, Transparent,
   {lpColor, Thickness[0.006]}, Transparent, Transparent, {lmColor, Thickness[0.006]},
   Transparent, Transparent, {v2mColor, Thickness[0.006]}, Transparent, Transparent},
 DataRange → {-8, 8}, PlotRange → {{-8, 8}, {-0.06, 0.18}}, FrameTicks →
  {{LinTicks[-0.06, 0.18, MajorTickLength → {0, .03}, MinorTickLength → {0, 0}], None},
   {LinTicks[-8, 8, MajorTickLength → {0, .03}, MinorTickLength → {0, 0}], None}},
 Axes → False, TicksStyle → Thick, FrameStyle → Thick,
 Frame → {{True, None}, {True, None}}, AspectRatio → 1,
 FrameTicksStyle -> Directive[FontOpacity -> 0, FontSize -> 0]]
```

Out[ ]=



In[ ]:=
```
(**********************)
```

```
In[•]:= (*********************************************)
        (*******Generate plots in Figure 3I***************)
        (*********************************************)

In[•]:= peakCCValsV1toV2m = ToExpression /@
          Import["F:/FigureGeneration/Figure3/Fig3Data/Axons/V1toV2m/ValuesForPlotting/
            peakDFFpupilCC_V1toV2m.txt", "List"];

In[•]:= peakCCValsLPtoV2m = ToExpression /@
          Import["F:/FigureGeneration/Figure3/Fig3Data/Axons/LPtoV2m/ValuesForPlotting/
            peakDFFpupilCC_LPtoV2m.txt", "List"];

In[•]:= peakCCValsLMtoV2m = ToExpression /@
          Import["F:/FigureGeneration/Figure3/Fig3Data/Axons/LMtoV2m/ValuesForPlotting/
            peakDFFpupilCC_LMtoV2m.txt", "List"];

In[•]:= peakCCValsV2m = ToExpression /@
          Import["F:/FigureGeneration/Figure3/Fig3Data/CellBodies/V2m/ValuesForPlotting/
            peakDFFpupilCC_V2m.txt", "List"];

In[•]:= (**********************)

In[•]:= v1AxonCharts = Show[
          BoxWhiskerChart[peakCCValsV1toV2m, {{"Whiskers", Directive[Darker@v1Color, Thick]},
            {"Fences", Directive[Darker@v1Color, Thick]}, {"MedianMarker",
             Directive[Darker@v1Color, Thickness[0.009]]}}, PlotRange → {All, {-0.07, 0.65}},
           ChartStyle → Directive[v1Color, Opacity[0.3]], Frame → False],
          DistributionChart[peakCCValsV1toV2m, PlotRange → {All, {-0.07, 0.65}},
           ChartStyle → Directive[EdgeForm[Transparent], Opacity[0.2], v1Color], Frame → False],
          FrameTicks → {{LinTicks[-0.07, 0.65, MajorTickLength → {0, .03},
              MinorTickLength → {0, 0}], None}, {None, None}}, Axes → False, TicksStyle → Thick,
          FrameStyle → Directive[Transparent, Thick], Frame → {{True, None}, {None, None}},
          FrameTicksStyle -> Directive[FontOpacity -> 0, FontSize -> 0]];

In[•]:= lmAxonCharts = Show[
          BoxWhiskerChart[peakCCValsLMtoV2m, {{"Whiskers", Directive[Darker@lmColor, Thick]},
            {"Fences", Directive[Darker@lmColor, Thick]}, {"MedianMarker",
             Directive[Darker@lmColor, Thickness[0.009]]}}, PlotRange → {All, {-0.07, 0.65}},
           ChartStyle → Directive[lmColor, Opacity[0.3]], Frame → False],
          DistributionChart[peakCCValsLMtoV2m, PlotRange → {All, {-0.07, 0.65}},
           ChartStyle → Directive[EdgeForm[Transparent], Opacity[0.2], lmColor], Frame → False],
          FrameTicks → {{LinTicks[-0.07, 0.65, MajorTickLength → {0, .03},
              MinorTickLength → {0, 0}], None}, {None, None}}, Axes → False, TicksStyle → Thick,
          FrameStyle → Directive[Transparent, Thick], Frame → {{True, None}, {None, None}},
          FrameTicksStyle -> Directive[FontOpacity -> 0, FontSize -> 0]];
```

In[ ]:=
```
lpAxonCharts = Show[
   BoxWhiskerChart[peakCCValsLPtoV2m, {{"Whiskers", Directive[Darker@lpColor, Thick]},
     {"Fences", Directive[Darker@lpColor, Thick]}, {"MedianMarker",
      Directive[Darker@lpColor, Thickness[0.009]]}}, PlotRange → {All, {-0.07, 0.65}},
    ChartStyle → Directive[lpColor, Opacity[0.3]], Frame → False],
   DistributionChart[peakCCValsLPtoV2m, PlotRange → {All, {-0.07, 0.65}},
    ChartStyle → Directive[EdgeForm[Transparent], Opacity[0.2], lpColor], Frame → False],
   FrameTicks → {{LinTicks[-0.07, 0.65, MajorTickLength → {0, .03},
       MinorTickLength → {0, 0}], None}, {None, None}}, Axes → False, TicksStyle → Thick,
   FrameStyle → Directive[Transparent, Thick], Frame → {{True, None}, {None, None}},
   FrameTicksStyle -> Directive[FontOpacity -> 0, FontSize -> 0]];
```

In[ ]:=
```
v2mAxonCharts =
  Show[BoxWhiskerChart[peakCCValsV2m, {{"Whiskers", Directive[Darker@v2mColor, Thick]},
     {"Fences", Directive[Darker@v2mColor, Thick]}, {"MedianMarker",
      Directive[Darker@v2mColor, Thickness[0.009]]}}, PlotRange → {All, {-0.07, 0.65}},
    ChartStyle → Directive[v2mColor, Opacity[0.3]], Frame → False],
   DistributionChart[peakCCValsV2m, PlotRange → {All, {-0.07, 0.65}},
    ChartStyle → Directive[EdgeForm[Transparent], Opacity[0.2], v2mColor], Frame → False],
   FrameTicks → {{LinTicks[-0.07, 0.65, MajorTickLength → {0, .03},
       MinorTickLength → {0, 0}], None}, {None, None}}, Axes → False, TicksStyle → Thick,
   FrameStyle → Directive[Transparent, Thick], Frame → {{True, None}, {None, None}},
   FrameTicksStyle -> Directive[FontOpacity -> 0, FontSize -> 0]];
```

In[ ]:=
```
transp =
  Show[BoxWhiskerChart[peakCCValsV2m, {{"Whiskers", Directive[Transparent, Thick]},
     {"Fences", Directive[Transparent, Thick]},
     {"MedianMarker", Directive[Transparent, Thickness[0.009]]}},
    PlotRange → {All, {-0.07, 0.65}}, ChartStyle → Transparent, Frame → False],
   DistributionChart[peakCCValsV2m, PlotRange → {All, {-0.07, 0.65}},
    ChartStyle → Directive[EdgeForm[Transparent], Opacity[0.2], Transparent],
    Frame → False], FrameTicks →
    {{LinTicks[-0.07, 0.65, MajorTickLength → {0, .03}, MinorTickLength → {0, 0}], None},
     {None, None}}, Axes → False, TicksStyle → Thick,
   FrameStyle → Directive[Black, Thick], Frame → {{True, None}, {None, None}},
   FrameTicksStyle -> Directive[FontOpacity -> 0, FontSize -> 0]];
```

In[ ]:=
```
GraphicsRow[{v1AxonCharts, lmAxonCharts, lpAxonCharts, v2mAxonCharts, transp},
 Spacings → {{-280, -280, -280, -280, -480}}]
```

Out[ ]=