

```
>> TM_Set_Dis
```

```
Running time = 682 + 535 + 533 = 1750
```

```
Running time = 682 + 535 + 533 = 1750
```

```
>> main_Discrimination_task
```

```
PTB-INF0: Multi-display setup in explicit multi-display mode detected. Using the following mapping:
```

```
PTB-INF0: Screen 0 corresponds to the full Windows desktop area. Useful for stereo presentations in stereomode=4 ... ✓
```

```
PTB-INF0: Screen 1 corresponds to the display area of the monitor with the Windows-internal name WWDISPLAY1 ... ✓
```

```
PTB-INF0: Screen 2 corresponds to the display area of the monitor with the Windows-internal name WWDISPLAY2 ... ✓
```

```
PTB-INF0: Your version of Matlab 64-Bit is global system DPI aware. On Windows-8 or later, fullscreen onscreen windows will only work ✓
```

```
PTB-INF0: properly timing-wise when displayed on displays with the same pixel density as your systems primary display monitor. ✓
```

```
PTB-INF0: For your multi-display setup the stimulus display monitor must have a DPI of (96, 96), matching that of ✓
```

```
PTB-INF0: your primary display monitor. Ideally you will only display on the primary display in the first place. ✓
```

```
PTB-INF0: Displaying on anything with a different DPI will cause mysterious visual timing problems, sync failures etc. ✓
```

```
PTB-INF0: Read 'help RetinaDisplay' for more info on this topic.
```

```
PTB-INF0: This is Psychtoolbox-3 for Microsoft Windows, under Matlab 64-Bit (Version 3.0.16 - Build date: Dec 3 2019). ✓
```

```
PTB-INF0: OS support status: Windows 10 (Version 10.0) supported and tested to some limited degree.
```

```
PTB-INF0: Type 'PsychtoolboxVersion' for more detailed version information.
```

```
PTB-INF0: Most parts of the Psychtoolbox distribution are licensed to you under terms of the MIT License, with ✓
```

```
PTB-INF0: some restrictions. See file 'License.txt' in the Psychtoolbox root folder for the exact licensing conditions. ✓
```

```
PTB-WARNING: Call to PsychAvSetMmMaxThreadCharacteristics() for Vista-MMCSS scheduling failed for threadhandle 00007FFFF82189A0. Setting thread priority to HIGHEST as a work-around... ✓
```

```
PTB-INF0: The detected endline of the vertical blank interval is equal or lower than the startline. This indicates ✓
```

```
PTB-INF0: that i couldn't detect the duration of the vertical blank interval and won't be able to correct timestamps ✓
```

```
PTB-INF0: for it. This will introduce a very small and constant offset (typically << 1 msec). Read 'help BeampositionQueries' ✓
```

```
PTB-INF0: for how to correct this, should you really require that last few microseconds of precision.
```

```
PTB-INF0: Btw. this can also mean that your systems beamposition queries are slightly broken. It may help timing precision to ✓
```

```
PTB-INF0: enable the beamposition workaround, as explained in 'help ConserveVRAMSettings', section 'kPsychUseBeampositionQueryWorkaround'. ✓
```

```
PTB-WARNING: Call to PsychAvSetMmMaxThreadCharacteristics() for Vista-MMCSS scheduling failed for threadhandle 00007FFFF82189A0. Setting thread priority to HIGHEST as a work-around... ✓
```

PTB-INFO: OpenGL-Renderer is Intel :: Intel(R) UHD Graphics 620 :: 4.5.0 - Build 25.20.100.6577

PTB-INFO: VBL startline = 1080 , VBL Endline = 1080

PTB-INFO: Measured monitor refresh interval from beamposition = 16.673129 ms [59.976746 Hz].

PTB-INFO: Will use beamposition query for accurate Flip time stamping.

PTB-INFO: Measured monitor refresh interval from VBLsync = 16.680812 ms [59.949120 Hz]. (50 valid samples taken, stddev=0.109985 ms.)

PTB-INFO: Reported monitor refresh interval from operating system = 16.666667 ms [60.000000 Hz].

PTB-INFO: Small deviations between reported values are normal and no reason to worry.

PTB-INFO:

PTB-INFO: WINDOWS DWM DESKTOP COMPOSITOR IS ACTIVE. On this Windows-10 or later system, Psychtoolbox can no longer reliably detect if

PTB-INFO: this will cause trouble for timing and integrity of visual stimuli or not. You might be just fine, or you could be in trouble.

PTB-INFO: Use external measurement equipment and independent procedures to verify reliability of timing if you care about proper timing.

PTB-INFO:

WARNING: This session of your experiment was run by you with the setting Screen('Preference', 'SkipSyncTests', 1).

WARNING: This means that some internal self-tests and calibrations were skipped. Your stimulus presentation timing

WARNING: may have been wrong. This is fine for development and debugging of your experiment, but for running the real

WARNING: study, please make sure to set Screen('Preference', 'SkipSyncTests', 0) for maximum accuracy and reliability.

PTB-INFO: Multi-display setup in explicit multi-display mode detected. Using the following mapping:

PTB-INFO: Screen 0 corresponds to the full Windows desktop area. Useful for stereo presentations in stereomode=4 ...

PTB-INFO: Screen 1 corresponds to the display area of the monitor with the Windows-internal name WWDISPLAY1 ...

PTB-INFO: Screen 2 corresponds to the display area of the monitor with the Windows-internal name WWDISPLAY2 ...

PTB-INFO: Your version of Matlab 64-Bit is global system DPI aware. On Windows-8 or later, fullscreen onscreen windows will only work

PTB-INFO: properly timing-wise when displayed on displays with the same pixel density as your systems primary display monitor.

PTB-INFO: For your multi-display setup the stimulus display monitor must have a DPI of (96, 96), matching that of

PTB-INFO: your primary display monitor. Ideally you will only display on the primary display in the first place.

PTB-INFO: Displaying on anything with a different DPI will cause mysterious visual timing problems, sync failures etc.

PTB-INFO: Read 'help RetinaDisplay' for more info on this topic.

PTB-INFO: This is Psychtoolbox-3 for Microsoft Windows, under Matlab 64-Bit (Version 3.0.16 - Build date: Dec 3 2019).

PTB-INFO: OS support status: Windows 10 (Version 10.0) supported and tested to some limited degree.

PTB-INFO: Type 'PsychtoolboxVersion' for more detailed version information.

PTB-INFO: Most parts of the Psychtoolbox distribution are licensed to you under terms of the MIT License, with

PTB-INFO: some restrictions. See file 'License.txt' in the Psychtoolbox root folder for the exact licensing conditions.

PTB-WARNING: Call to PsychAvSetMmMaxThreadCharacteristics() for Vista-MMCSS scheduling failed for threadhandle 00007FFFF82189A0. Setting thread priority to HIGHEST as a work-around...

PTB-INFO: The detected endline of the vertical blank interval is equal or lower than the startline. This indicates

PTB-INFO: that i couldn't detect the duration of the vertical blank interval and won't be able to correct timestamps

PTB-INFO: for it. This will introduce a very small and constant offset (typically << 1 msec). Read 'help BeampositionQueries'

PTB-INFO: for how to correct this, should you really require that last few microseconds of precision.

PTB-INFO: Btw. this can also mean that your systems beamposition queries are slightly broken. It may help timing precision to

PTB-INFO: enable the beamposition workaround, as explained in 'help ConserveVRAMSettings', section 'kPsychUseBeampositionQueryWorkaround'.

PTB-WARNING: Call to PsychAvSetMmMaxThreadCharacteristics() for Vista-MMCSS scheduling failed for threadhandle 00007FFFF82189A0. Setting thread priority to HIGHEST as a work-around...

PTB-INFO: OpenGL-Renderer is Intel :: Intel(R) UHD Graphics 620 :: 4.5.0 - Build 25.20.100.6577

PTB-INFO: VBL startline = 1080 , VBL Endline = 1080

PTB-INFO: Measured monitor refresh interval from beamposition = 16.666716 ms [59.999821 Hz].

PTB-INFO: Will use beamposition query for accurate Flip time stamping.

PTB-INFO: Measured monitor refresh interval from VBLsync = 16.680538 ms [59.950105 Hz]. (50 valid samples taken, stddev=0.303517 ms.)

PTB-INFO: Reported monitor refresh interval from operating system = 16.666667 ms [60.000000 Hz].

PTB-INFO: Small deviations between reported values are normal and no reason to worry.

PTB-INFO:

PTB-INFO: WINDOWS DWM DESKTOP COMPOSITOR IS ACTIVE. On this Windows-10 or later system, Psychtoolbox can no longer reliably detect if

PTB-INFO: this will cause trouble for timing and integrity of visual stimuli or not. You might be just fine, or you could be in trouble.

PTB-INFO: Use external measurement equipment and independent procedures to verify reliability of timing if you care about proper timing.

PTB-INFO:

WARNING: Couldn't compute a reliable estimate of monitor refresh interval! Trouble with VBL syncing!?

----- ! PTB - ERROR: SYNCHRONIZATION FAILURE ! -----

One or more internal checks (see Warnings above) indicate that synchronization of Psychtoolbox to the vertical retrace (VBL) is not working on your setup.

This will seriously impair proper stimulus presentation and stimulus presentation timing!  
Please read 'help SyncTrouble' for information about how to solve or work-around the problem.  
You can force Psychtoolbox to continue, despite the severe problems, by adding the command  
Screen('Preference', 'SkipSyncTests', 1); at the top of your script, if you really know what you are doing. ✓

PTB-ERROR: Screen('Flip'); beamposition timestamping computed an \*impossible stimulus onset value\* of ✓  
417034.017471 secs, which would indicate that  
PTB-ERROR: stimulus onset happened \*before\* it was actually requested! (Earliest theoretically possible ✓  
417034.021608 secs).

PTB-ERROR: Some more diagnostic values (only for experts): rawTimestamp = 417034.031449, scanline = 904  
PTB-ERROR: Some more diagnostic values (only for experts): line\_pre\_swaprequest = 242, ✓  
line\_post\_swaprequest = 803, time\_post\_swaprequest = 417034.029955  
PTB-ERROR: Some more diagnostic values (only for experts): preflip\_vblcount = 0, preflip\_vbltimestamp = ✓  
-1.000000  
PTB-ERROR: Some more diagnostic values (only for experts): postflip\_vblcount = 0, postflip\_vbltimestamp ✓  
= -1.000000, vbltimestampquery\_retrycount = 0

PTB-ERROR: This error can be due to either of the following causes:  
PTB-ERROR: Very unlikely: Something is broken in your systems beamposition timestamping. I've disabled ✓  
high precision  
PTB-ERROR: timestamping for now. Returned timestamps will be less robust and accurate.

PTB-ERROR: The most likely cause would be that Synchronization of stimulus onset (buffer swap) to the  
PTB-ERROR: vertical blank interval VBL is not working properly, or swap completion signalling to PTB is ✓  
broken.  
PTB-ERROR: Please run the script PerceptualVBLSyncTest to check this. With non-working sync to VBL, all ✓  
stimulus timing  
PTB-ERROR: is futile. Also run OSXCompositorIdiocyTest on macOS. Also read 'help SyncTrouble' !  
PTB-WARNING: Call to PsychAvSetMmMaxThreadCharacteristics() for Vista-MMCSS scheduling failed for ✓  
threadhandle 00007FFFF82189A0. Setting thread priority to HIGHEST as a work-around...

경과 시간은 0.000367초입니다.

Run1	1	15	13	before	1
Run1	2	15	18	after	1
Run1	3	15	14	before	1
Run1	4	15	10	before	1
Run1	5	19	15	before	1
Run1	6	12	15	after	1
Run1	7	17	15	before	1

```
Run1      8   20  15 before  1
Run1      9   15  16 after   1
Run1     10   11  15 after   1
Run1     11   15  19 after   1
Run1     12   15  17 before  0
Run1     13   10  15 after   1
Run1     14   12  15 after   1
Run1     15   14  15 after   1
Run1     16   15  18 after   1
Run1     17   20  15 before  1
Run1     18   15  11 before  1
Run1     19   16  15 before  1
Run1     20   13  15 after   1
Run1     21   15  19 after   1
Run1     22   15  12 before  1
Run1     23   15  11 before  1
Run1     24   15  17 after   1
Run1     25   15  13 before  1
Run1     26   14  15 after   1
Run1     27   16  15 before  1
Run1     28   10  15 after   1
Run1     29   15  20 after   1
Run1     30   15  18 after   1
Run1     31   11  15 after   1
Run1     32   15  10 before  1
Run1     33   18  15 before  1
Run1     34   20  15 before  1
Run1     35   13  15 after   1
Run1     36   14  15 after   1
Run1     37   15  12 before  1
Run1     38   16  15 after   0
Run1     39   19  15 before  1
Run1     40   17  15 before  1
경과 시간은 683.528426초입니다.
Run2     41   15  20 after   1
Run2     42   12  15 after   1
Run2     43   18  15 before  1
Run2     44   15  19 after   1
Run2     45   15  16 before  0
Run2     46   15  14 after   0
Run2     47   13  15 after   1
Run2     48   15  11 before  1
Run2     49   10  15 after   1
Run2     50   15  17 after   1
Run2     51   12  15 after   1
Run2     52   15  19 after   1
Run2     53   17  15 before  1
Run2     54   14  15 before  0
Run2     55   13  15 after   1
Run2     56   15  11 before  1
```

```

Run2    57  16  15  before  1
Run2    58  15  18  after   1
Run2    59  10  15  after   1
Run2    60  15  20  after   1
Run2    61  15  13  before  1
Run2    62  11  15  after   1
Run2    63  15  12  before  1
Run2    64  15  10  before  1
Run2    65  17  15  before  1
Run2    66  14  15  after   1
Run2    67  15  16  after   1
Run2    68  15  19  after   1
Run2    69  15  18  after   1
Run2    70  15  20  after   1
경과 시간은 536.503134초입니다.
Run3    71  16  15  before  1
Run3    72  15  13  before  1
Run3    73  15  12  before  1
Run3    74  20  15  before  1
Run3    75  15  17  after   1
Run3    76  18  15  before  1
Run3    77  15  14  before  1
Run3    78  19  15  before  1
Run3    79  15  10  before  1
Run3    80  11  15  after   1
Run3    81  19  15  before  1
Run3    82  15  16  before  0
Run3    83  18  15  before  1
Run3    84  15  14  after   0
Run3    85  15  10  before  1
Run3    86  13  15  after   1
Run3    87  17  15  before  1
Run3    88  11  15  after   1
Run3    89  15  12  before  1
Run3    90  15  20  after   1
Run3    91  20  15  before  1
Run3    92  10  15  after   1
Run3    93  15  13  before  1
Run3    94  15  16  before  0
Run3    95  19  15  before  1
Run3    96  15  11  before  1
Run3    97  15  17  before  0
Run3    98  12  15  after   1
Run3    99  18  15  before  1
Run3   100  15  14  before  1
경과 시간은 534.501816초입니다.

```

INFO: PTB's Screen('Flip', 10) command seems to have missed the requested stimulus presentation deadline ✓

INFO: a total of 2 times out of a total of 510 flips during this session.

INFO: This number is fairly accurate (and indicative of real timing problems in your own code or your system)

INFO: if you provided requested stimulus onset times with the 'when' argument of Screen('Flip', window[, when]);

INFO: If you called Screen('Flip', window); without the 'when' argument, this count is more of a 'mild' indicator

INFO: of timing behaviour than a hard reliable measurement. Large numbers may indicate problems and should at least

INFO: deserve your closer attention. Cfe. 'help SyncTrouble', the FAQ section at [www.psychtoolbox.org](http://www.psychtoolbox.org) and the

INFO: examples in the PDF presentation in PsychDocumentation/Psychtoolbox3-Slides.pdf for more info and timing tips.

WARNING: This session of your experiment was run by you with the setting Screen('Preference', 'SkipSyncTests', 1).

WARNING: This means that some internal self-tests and calibrations were skipped. Your stimulus presentation timing

WARNING: may have been wrong. This is fine for development and debugging of your experiment, but for running the real

WARNING: study, please make sure to set Screen('Preference', 'SkipSyncTests', 0) for maximum accuracy and reliability.

>> clear all

>> TM\_Set\_HT

>> main\_HiddenTarget\_Freq

PTB-INFO: Multi-display setup in explicit multi-display mode detected. Using the following mapping:

PTB-INFO: Screen 0 corresponds to the full Windows desktop area. Useful for stereo presentations in stereomode=4 ...

PTB-INFO: Screen 1 corresponds to the display area of the monitor with the Windows-internal name WWDISPLAY1 ...

PTB-INFO: Screen 2 corresponds to the display area of the monitor with the Windows-internal name WWDISPLAY2 ...

PTB-INFO: Your version of Matlab 64-Bit is global system DPI aware. On Windows-8 or later, fullscreen onscreen windows will only work

PTB-INFO: properly timing-wise when displayed on displays with the same pixel density as your systems primary display monitor.

PTB-INFO: For your multi-display setup the stimulus display monitor must have a DPI of (96, 96), matching that of

PTB-INFO: your primary display monitor. Ideally you will only display on the primary display in the first place.

PTB-INFO: Displaying on anything with a different DPI will cause mysterious visual timing problems, sync failures etc.

PTB-INFO: Read 'help RetinaDisplay' for more info on this topic.

PTB-INFO: This is Psychtoolbox-3 for Microsoft Windows, under Matlab 64-Bit (Version 3.0.16 - Build

date: Dec 3 2019).

PTB-INFO: OS support status: Windows 10 (Version 10.0) supported and tested to some limited degree.

PTB-INFO: Type 'PsychtoolboxVersion' for more detailed version information.

PTB-INFO: Most parts of the Psychtoolbox distribution are licensed to you under terms of the MIT License, with

PTB-INFO: some restrictions. See file 'License.txt' in the Psychtoolbox root folder for the exact licensing conditions.

PTB-WARNING: Call to PsychAvSetMmMaxThreadCharacteristics() for Vista-MMCSS scheduling failed for threadhandle 00007FFFFA9689A0. Setting thread priority to HIGHEST as a work-around...

PTB-INFO: The detected endline of the vertical blank interval is equal or lower than the startline. This indicates

PTB-INFO: that i couldn't detect the duration of the vertical blank interval and won't be able to correct timestamps

PTB-INFO: for it. This will introduce a very small and constant offset (typically << 1 msec). Read 'help BeampositionQueries'

PTB-INFO: for how to correct this, should you really require that last few microseconds of precision.

PTB-INFO: Btw. this can also mean that your systems beamposition queries are slightly broken. It may help timing precision to

PTB-INFO: enable the beamposition workaround, as explained in 'help ConserveVRAMSettings', section 'kPsychUseBeampositionQueryWorkaround'.

PTB-WARNING: Call to PsychAvSetMmMaxThreadCharacteristics() for Vista-MMCSS scheduling failed for threadhandle 00007FFFFA9689A0. Setting thread priority to HIGHEST as a work-around...

PTB-INFO: OpenGL-Renderer is Intel :: Intel(R) UHD Graphics 620 :: 4.5.0 - Build 25.20.100.6577

PTB-INFO: VBL startline = 1080 , VBL Endline = 1080

PTB-INFO: Measured monitor refresh interval from beamposition = 16.670924 ms [59.984676 Hz].

PTB-INFO: Will use beamposition query for accurate Flip time stamping.

PTB-INFO: Measured monitor refresh interval from VBLsync = 16.681944 ms [59.945052 Hz]. (50 valid samples taken, stddev=0.108223 ms.)

PTB-INFO: Reported monitor refresh interval from operating system = 16.666667 ms [60.000000 Hz].

PTB-INFO: Small deviations between reported values are normal and no reason to worry.

PTB-INFO:

PTB-INFO: WINDOWS DWM DESKTOP COMPOSITOR IS ACTIVE. On this Windows-10 or later system, Psychtoolbox can no longer reliably detect if

PTB-INFO: this will cause trouble for timing and integrity of visual stimuli or not. You might be just fine, or you could be in trouble.

PTB-INFO: Use external measurement equipment and independent procedures to verify reliability of timing if you care about proper timing.

PTB-INFO:

WARNING: This session of your experiment was run by you with the setting Screen('Preference', 'SkipSyncTests', 1).

WARNING: This means that some internal self-tests and calibrations were skipped. Your stimulus



presentation timing

WARNING: may have been wrong. This is fine for development and debugging of your experiment, but for running the real

WARNING: study, please make sure to set `Screen('Preference', 'SkipSyncTests', 0)` for maximum accuracy and reliability.

PTB-INF0: Multi-display setup in explicit multi-display mode detected. Using the following mapping:

PTB-INF0: Screen 0 corresponds to the full Windows desktop area. Useful for stereo presentations in stereomode=4 ...

PTB-INF0: Screen 1 corresponds to the display area of the monitor with the Windows-internal name `WWDISPLAY1` ...

PTB-INF0: Screen 2 corresponds to the display area of the monitor with the Windows-internal name `WWDISPLAY2` ...

PTB-INF0: Your version of Matlab 64-Bit is global system DPI aware. On Windows-8 or later, fullscreen onscreen windows will only work

PTB-INF0: properly timing-wise when displayed on displays with the same pixel density as your systems primary display monitor.

PTB-INF0: For your multi-display setup the stimulus display monitor must have a DPI of (96, 96), matching that of

PTB-INF0: your primary display monitor. Ideally you will only display on the primary display in the first place.

PTB-INF0: Displaying on anything with a different DPI will cause mysterious visual timing problems, sync failures etc.

PTB-INF0: Read 'help RetinaDisplay' for more info on this topic.

PTB-INF0: This is Psychtoolbox-3 for Microsoft Windows, under Matlab 64-Bit (Version 3.0.16 - Build date: Dec 3 2019).

PTB-INF0: OS support status: Windows 10 (Version 10.0) supported and tested to some limited degree.

PTB-INF0: Type 'PsychtoolboxVersion' for more detailed version information.

PTB-INF0: Most parts of the Psychtoolbox distribution are licensed to you under terms of the MIT License, with

PTB-INF0: some restrictions. See file 'License.txt' in the Psychtoolbox root folder for the exact licensing conditions.

PTB-WARNING: Call to `PsychAvSetMmMaxThreadCharacteristics()` for Vista-MMCSS scheduling failed for threadhandle 00007FFFFA9689A0. Setting thread priority to HIGHEST as a work-around...

PTB-INF0: The detected endline of the vertical blank interval is equal or lower than the startline. This indicates

PTB-INF0: that i couldn't detect the duration of the vertical blank interval and won't be able to correct timestamps

PTB-INF0: for it. This will introduce a very small and constant offset (typically  $\ll 1$  msec). Read 'help BeampositionQueries'

PTB-INF0: for how to correct this, should you really require that last few microseconds of precision.

PTB-INF0: Btw. this can also mean that your systems beamposition queries are slightly broken. It may help timing precision to

PTB-INF0: enable the beamposition workaround, as explained in 'help ConserveVRAMSettings', section 'kPsychUseBeampositionQueryWorkaround'.

PTB-WARNING: Call to `PsychAvSetMmMaxThreadCharacteristics()` for Vista-MMCSS scheduling failed for threadhandle 00007FFFFA9689A0. Setting thread priority to HIGHEST as a work-around...

PTB-INFO: OpenGL-Renderer is Intel :: Intel(R) UHD Graphics 620 :: 4.5.0 - Build 25.20.100.6577

PTB-INFO: VBL startline = 1080 , VBL Endline = 1080

PTB-INFO: Measured monitor refresh interval from beamposition = 16.666645 ms [60.000078 Hz].

PTB-INFO: Will use beamposition query for accurate Flip time stamping.

PTB-INFO: Measured monitor refresh interval from VBLsync = 16.685464 ms [59.932406 Hz]. (50 valid samples taken, stddev=0.254010 ms.)

PTB-INFO: Reported monitor refresh interval from operating system = 16.666667 ms [60.000000 Hz].

PTB-INFO: Small deviations between reported values are normal and no reason to worry.

PTB-INFO: ✓

=====✓

=====

PTB-INFO: WINDOWS DWM DESKTOP COMPOSITOR IS ACTIVE. On this Windows-10 or later system, Psychtoolbox can no longer reliably detect if

PTB-INFO: this will cause trouble for timing and integrity of visual stimuli or not. You might be just fine, or you could be in trouble. ✓

PTB-INFO: Use external measurement equipment and independent procedures to verify reliability of timing if you care about proper timing. ✓

PTB-INFO: ✓

=====✓

=====

WARNING: Couldn't compute a reliable estimate of monitor refresh interval! Trouble with VBL syncing?!?

----- ! PTB - ERROR: SYNCHRONIZATION FAILURE ! -----

One or more internal checks (see Warnings above) indicate that synchronization of Psychtoolbox to the vertical retrace (VBL) is not working on your setup.

This will seriously impair proper stimulus presentation and stimulus presentation timing!

Please read 'help SyncTrouble' for information about how to solve or work-around the problem.

You can force Psychtoolbox to continue, despite the severe problems, by adding the command

Screen('Preference', 'SkipSyncTests', 1); at the top of your script, if you really know what you are doing. ✓

PTB-ERROR: Screen('Flip'); beamposition timestamping computed an \*impossible stimulus onset value\* of 420038.753079 secs, which would indicate that

PTB-ERROR: stimulus onset happened \*before\* it was actually requested! (Earliest theoretically possible 420038.756984 secs). ✓

PTB-ERROR: Some more diagnostic values (only for experts): rawTimestamp = 420038.767555, scanline = 936

PTB-ERROR: Some more diagnostic values (only for experts): line\_pre\_swaprequest = 224, ✓

line\_post\_swaprequest = 834, time\_post\_swaprequest = 420038.766056

PTB-ERROR: Some more diagnostic values (only for experts): preflip\_vblcount = 0, preflip\_vbltimestamp = -1.000000 ✓

PTB-ERROR: Some more diagnostic values (only for experts): postflip\_vblcount = 0, postflip\_vbltimestamp = -1.000000, vbltimestampquery\_retrycount = 0

PTB-ERROR: This error can be due to either of the following causes:

PTB-ERROR: Very unlikely: Something is broken in your systems beamposition timestamping. I've disabled high precision

PTB-ERROR: timestamping for now. Returned timestamps will be less robust and accurate.

PTB-ERROR: The most likely cause would be that Synchronization of stimulus onset (buffer swap) to the

PTB-ERROR: vertical blank interval VBL is not working properly, or swap completion signalling to PTB is broken.

PTB-ERROR: Please run the script PerceptualVBLSyncTest to check this. With non-working sync to VBL, all stimulus timing

PTB-ERROR: is futile. Also run OSXCompositorIdiocyTest on macOS. Also read 'help SyncTrouble' !

경과 시간은 0.000174초입니다.

Run1	1	39.375	64.008
Run1	2	39.375	130.014
Run1	3	39.375	49.024
Run1	4	39.375	NaN
Run1	5	39.375	53.267
Run1	6	39.375	51.688
Run1	7	39.375	67.102
Run1	8	39.375	67.837
Run1	9	39.375	84.068
Run1	10	39.375	63.700
Run1	11	39.375	72.547
Run1	12	39.375	83.163
Run1	13	39.375	94.875
Run1	14	39.375	70.349
Run1	15	39.375	65.301
Run1	16	16.875	NaN
Run1	17	16.875	54.888
Run1	18	16.875	133.249
Run1	19	16.875	NaN
Run1	20	16.875	53.308
Run1	21	16.875	NaN
Run1	22	16.875	36.148
Run1	23	16.875	36.491
Run1	24	16.875	27.784
Run1	25	16.875	NaN
Run1	26	16.875	68.833
Run1	27	16.875	35.417
Run1	28	16.875	29.652
Run1	29	16.875	NaN
Run1	30	16.875	NaN
Run1	31	129.375	NaN
Run1	32	129.375	52.396
Run1	33	129.375	145.006
Run1	34	129.375	146.961
Run1	35	129.375	169.643

```
Run1      36  129.375 162.193
Run1      37  129.375 139.894
Run1      38  129.375 122.073
Run1      39  129.375 128.103
Run1      40  129.375 119.104
Run1      41  129.375 109.370
Run1      42  129.375 105.403
Run1      43  129.375 145.116
Run1      44  129.375 136.001
Run1      45  129.375 152.052
Run1      46  140.625 119.381
Run1      47  140.625 61.410
Run1      48  140.625 145.006
Run1      49  140.625 146.202
Run1      50  140.625 175.091
Run1      51  140.625 163.503
Run1      52  140.625 NaN
Run1      53  140.625 37.071
Run1      54  140.625 151.219
Run1      55  140.625 175.462
Run1      56  140.625 173.778
Run1      57  140.625 132.337
Run1      58  140.625 129.963
Run1      59  140.625 112.568
Run1      60  140.625 146.110
Run1      61  118.125 NaN
Run1      62  118.125 57.663
Run1      63  118.125 136.661
Run1      64  118.125 174.173
Run1      65  118.125 113.090
Run1      66  118.125 94.135
Run1      67  118.125 141.621
Run1      68  118.125 134.923
Run1      69  118.125 134.098
Run1      70  118.125 158.122
Run1      71  118.125 144.583
Run1      72  118.125 120.086
Run1      73  118.125 149.689
Run1      74  118.125 140.972
Run1      75  118.125 114.150
Run1      76  163.125 NaN
Run1      77  163.125 46.287
Run1      78  163.125 141.024
Run1      79  163.125 91.429
Run1      80  163.125 163.308
Run1      81  163.125 157.626
Run1      82  163.125 177.732
Run1      83  163.125 114.422
Run1      84  163.125 156.505
Run1      85  163.125 171.206
```

```
Run1      86  163.125 178.959
Run1      87  163.125 166.634
Run1      88  163.125 167.581
Run1      89  163.125 166.619
Run1      90  163.125 180.000
Run1      91  151.875 52.164
Run1      92  151.875 140.617
Run1      93  151.875 114.040
Run1      94  151.875 87.082
Run1      95  151.875 155.377
Run1      96  151.875 140.494
Run1      97  151.875 156.146
Run1      98  151.875 NaN
Run1      99  151.875 174.088
Run1     100  151.875 165.650
Run1     101  151.875 164.920
Run1     102  151.875 157.259
Run1     103  151.875 153.286
Run1     104  151.875 144.507
Run1     105  151.875 137.005
Run1     106  84.375  47.454
Run1     107  84.375  140.054
Run1     108  84.375  97.096
Run1     109  84.375  78.613
Run1     110  84.375  93.675
Run1     111  84.375 128.131
Run1     112  84.375 100.132
Run1     113  84.375  95.867
Run1     114  84.375  78.808
Run1     115  84.375  67.053
Run1     116  84.375  74.404
Run1     117  84.375  88.095
Run1     118  84.375  88.690
Run1     119  84.375  91.323
Run1     120  84.375  90.853
경과 시간은 811.922072초입니다.
Run2     121  50.625  56.192
Run2     122  50.625 126.548
Run2     123  50.625  88.627
Run2     124  50.625  67.029
Run2     125  50.625 114.794
Run2     126  50.625 157.798
Run2     127  50.625 153.330
Run2     128  50.625 NaN
Run2     129  50.625  38.108
Run2     130  50.625  47.106
Run2     131  50.625 NaN
Run2     132  50.625  43.611
Run2     133  50.625  28.187
Run2     134  50.625  28.768
```

Run2	135	50.625	NaN
Run2	136	61.875	73.204
Run2	137	61.875	23.635
Run2	138	61.875	105.633
Run2	139	61.875	151.340
Run2	140	61.875	92.614
Run2	141	61.875	72.021
Run2	142	61.875	55.156
Run2	143	61.875	67.750
Run2	144	61.875	76.424
Run2	145	61.875	102.045
Run2	146	61.875	48.013
Run2	147	61.875	83.706
Run2	148	61.875	59.527
Run2	149	61.875	33.373
Run2	150	61.875	97.809
Run2	151	95.625	61.981
Run2	152	95.625	120.698
Run2	153	95.625	141.849
Run2	154	95.625	89.609
Run2	155	95.625	98.895
Run2	156	95.625	81.628
Run2	157	95.625	95.501
Run2	158	95.625	74.650
Run2	159	95.625	79.900
Run2	160	95.625	84.198
Run2	161	95.625	82.853
Run2	162	95.625	81.432
Run2	163	95.625	97.404
Run2	164	95.625	109.153
Run2	165	95.625	83.000
Run2	166	5.625	71.125
Run2	167	5.625	145.967
Run2	168	5.625	25.165
Run2	169	5.625	34.261
Run2	170	5.625	46.162
Run2	171	5.625	7.825
Run2	172	5.625	7.909
Run2	173	5.625	15.932
Run2	174	5.625	NaN
Run2	175	5.625	NaN
Run2	176	5.625	NaN
Run2	177	5.625	39.006
Run2	178	5.625	NaN
Run2	179	5.625	42.755
Run2	180	5.625	NaN
Run2	181	73.125	53.398
Run2	182	73.125	125.764
Run2	183	73.125	87.356
Run2	184	73.125	80.226

```
Run2      185 73.125 102.227
Run2      186 73.125 44.732
Run2      187 73.125 64.081
Run2      188 73.125 84.274
Run2      189 73.125 110.089
Run2      190 73.125 NaN
Run2      191 73.125 85.135
Run2      192 73.125 94.611
Run2      193 73.125 79.918
Run2      194 73.125 87.413
Run2      195 73.125 70.255
Run2      196 28.125 77.980
Run2      197 28.125 32.057
Run2      198 28.125 51.944
Run2      199 28.125 126.618
Run2      200 28.125 68.656
Run2      201 28.125 86.929
Run2      202 28.125 NaN
Run2      203 28.125 51.512
Run2      204 28.125 44.437
Run2      205 28.125 44.048
Run2      206 28.125 43.635
Run2      207 28.125 NaN
Run2      208 28.125 27.166
Run2      209 28.125 19.946
Run2      210 28.125 6.164
Run2      211 106.875 64.470
Run2      212 106.875 117.602
Run2      213 106.875 100.503
Run2      214 106.875 90.995
Run2      215 106.875 72.547
Run2      216 106.875 117.952
Run2      217 106.875 100.727
Run2      218 106.875 69.124
Run2      219 106.875 NaN
Run2      220 106.875 150.727
Run2      221 106.875 133.838
Run2      222 106.875 111.986
Run2      223 106.875 90.866
Run2      224 106.875 75.913
Run2      225 106.875 108.899
Run2      226 174.375 66.065
Run2      227 174.375 147.240
Run2      228 174.375 118.960
Run2      229 174.375 146.479
Run2      230 174.375 109.462
Run2      231 174.375 180.000
Run2      232 174.375 149.890
Run2      233 174.375 144.390
Run2      234 174.375 117.863
```

```
Run2    235 174.375 27.592
Run2    236 174.375 178.980
Run2    237 174.375 166.650
Run2    238 174.375 142.197
Run2    239 174.375 166.558
Run2    240 174.375 NaN
경과 시간은 811.886554초입니다.
```

INFO: PTB's Screen('Flip', 10) command seems to have missed the requested stimulus presentation deadline

INFO: a total of 12 times out of a total of 1216 flips during this session.

INFO: This number is fairly accurate (and indicative of real timing problems in your own code or your system)

INFO: if you provided requested stimulus onset times with the 'when' argument of Screen('Flip', window[, when]);

INFO: If you called Screen('Flip', window); without the 'when' argument, this count is more of a 'mild' indicator

INFO: of timing behaviour than a hard reliable measurement. Large numbers may indicate problems and should at least

INFO: deserve your closer attention. Cfe. 'help SyncTrouble', the FAQ section at [www.psychtoolbox.org](http://www.psychtoolbox.org) and the

INFO: examples in the PDF presentation in PsychDocumentation/Psychtoolbox3-Slides.pdf for more info and timing tips.

WARNING: This session of your experiment was run by you with the setting Screen('Preference', 'SkipSyncTests', 1).

WARNING: This means that some internal self-tests and calibrations were skipped. Your stimulus presentation timing

WARNING: may have been wrong. This is fine for development and debugging of your experiment, but for running the real

WARNING: study, please make sure to set Screen('Preference', 'SkipSyncTests', 0) for maximum accuracy and reliability.

```
>> clear all
```

```
>>
```