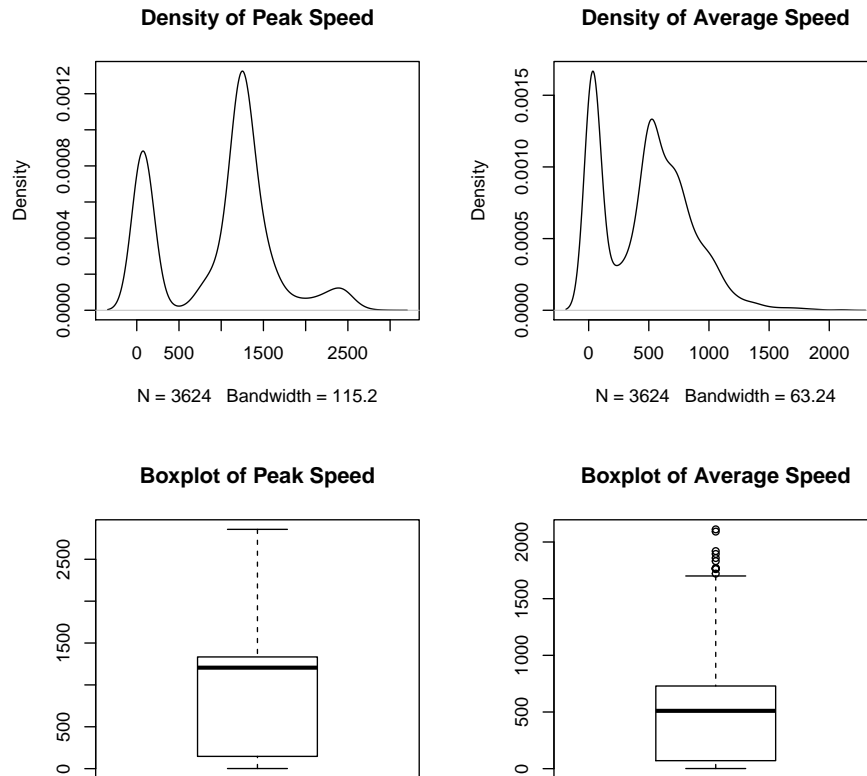


# Saccades in Sleep Deprivation

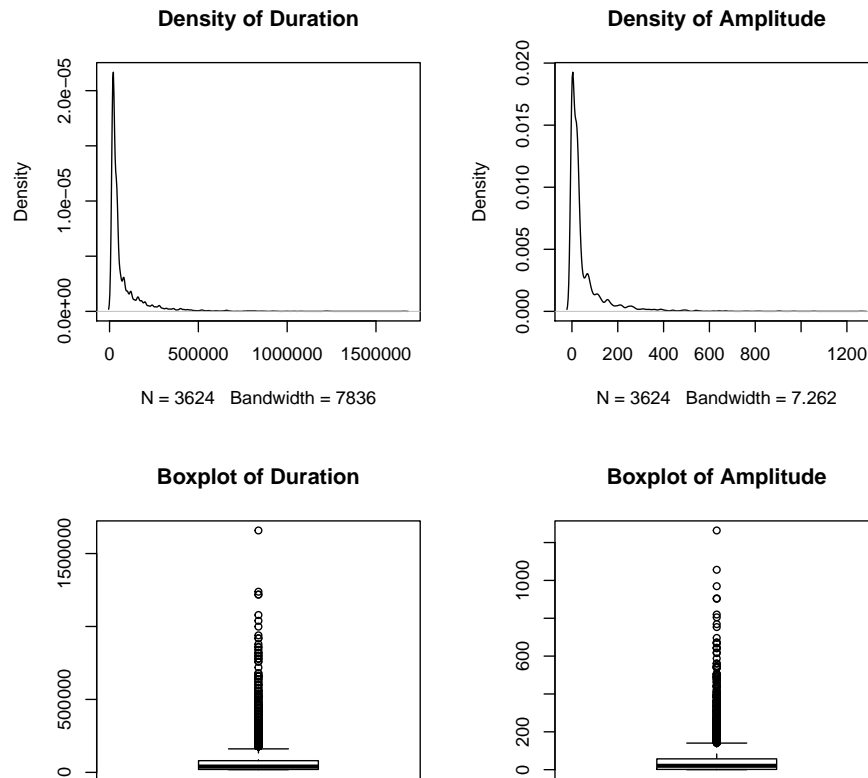
Brook Tight

September 14, 2014

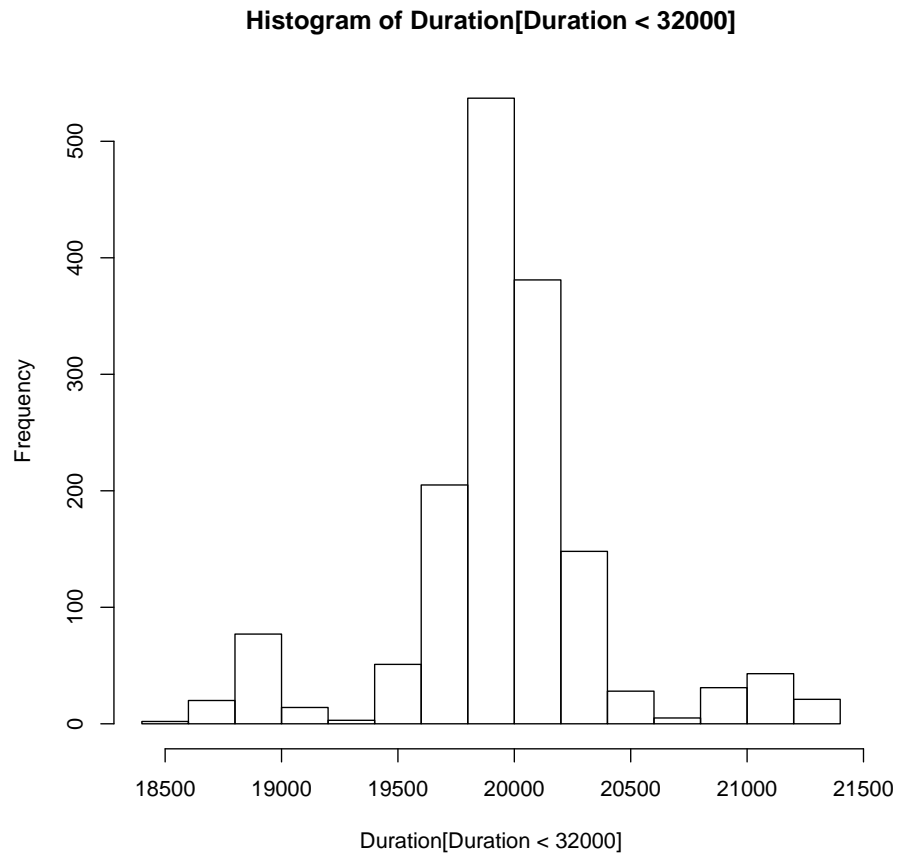
The speed data from the first participant shows a bimodal distribution. As it appears in both the peak and average speed data, I would guess it is real rather than a recording artifact.



```
## Error: invalid number of 'breaks'
```

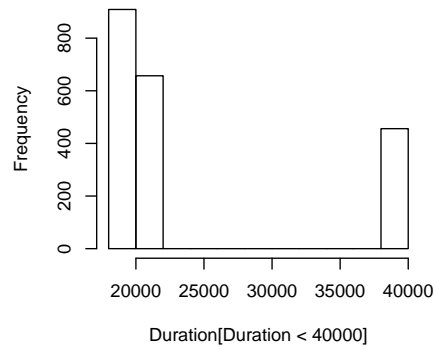


I look at the minimum value of Duration and see 18484. I think there was probably a minimum threshold set for registering as a saccade. That's reasonable but you might want to report that information. Is there a settings file in the data or can the people at the Austin let you know what that lower threshold is? It might be in the manual for the recording device. The distribution of values up to 22000 seem fairly evenly distributed.

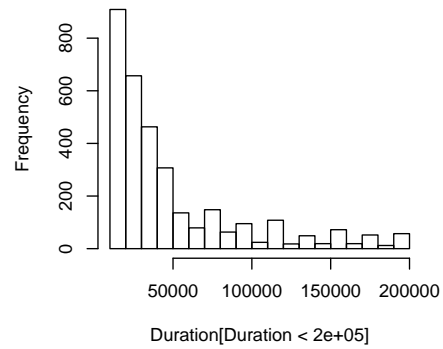


But then there is a second group of values.

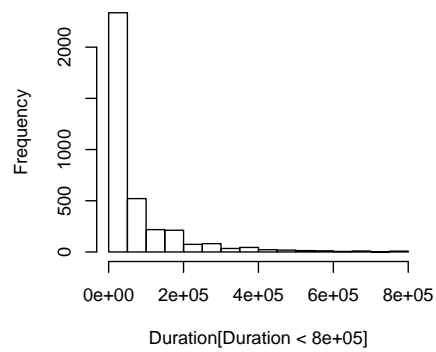
**Histogram of Duration[Duration < 40000]**



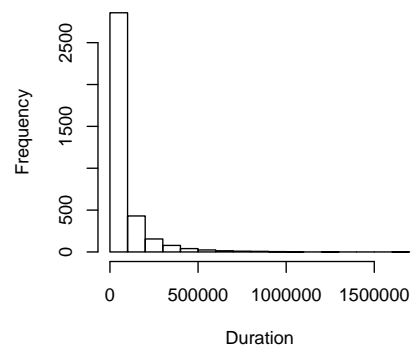
**Histogram of Duration[Duration < 2e+05]**



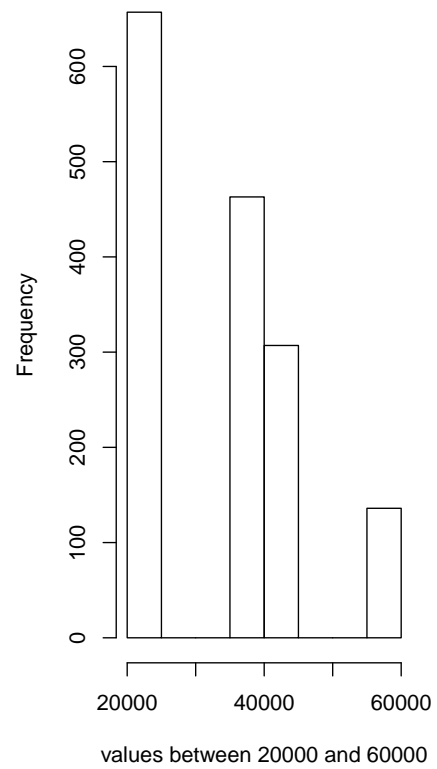
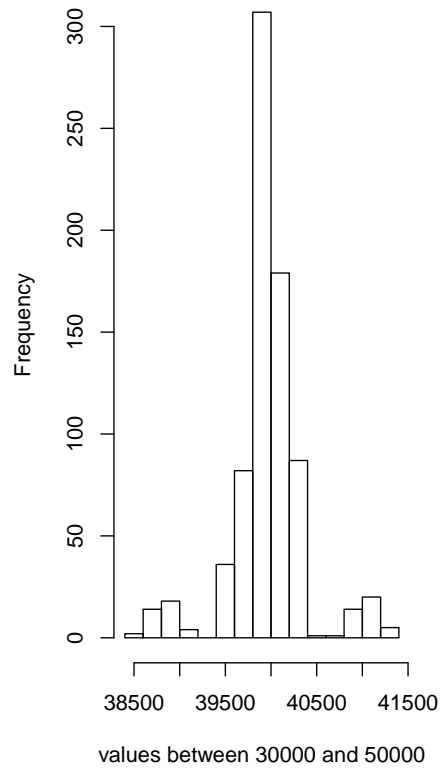
**Histogram of Duration[Duration < 8e+05]**



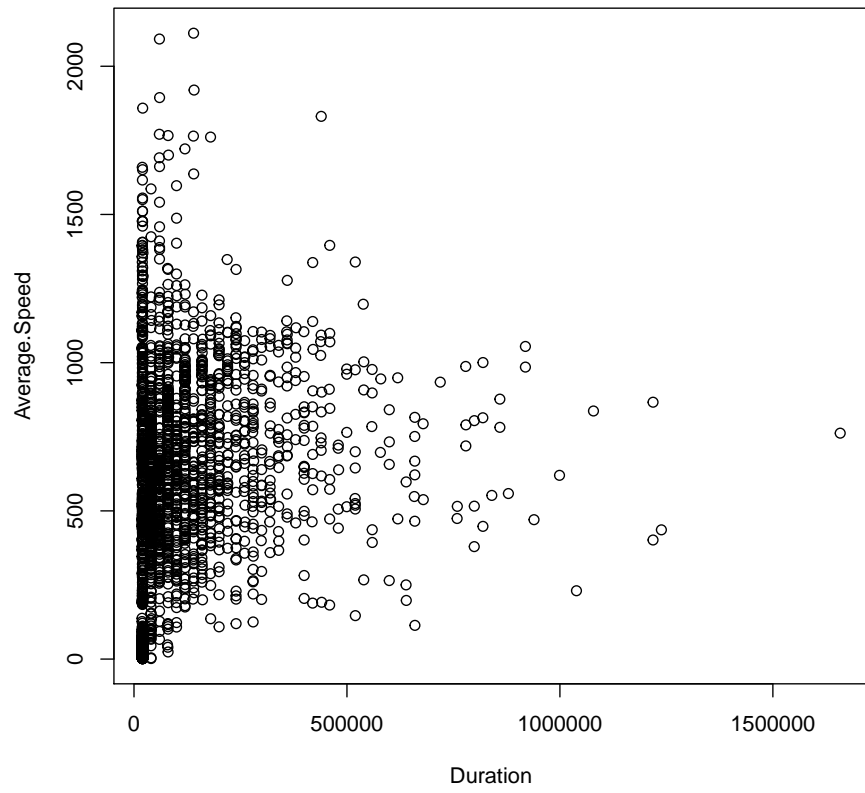
**Histogram of Duration**

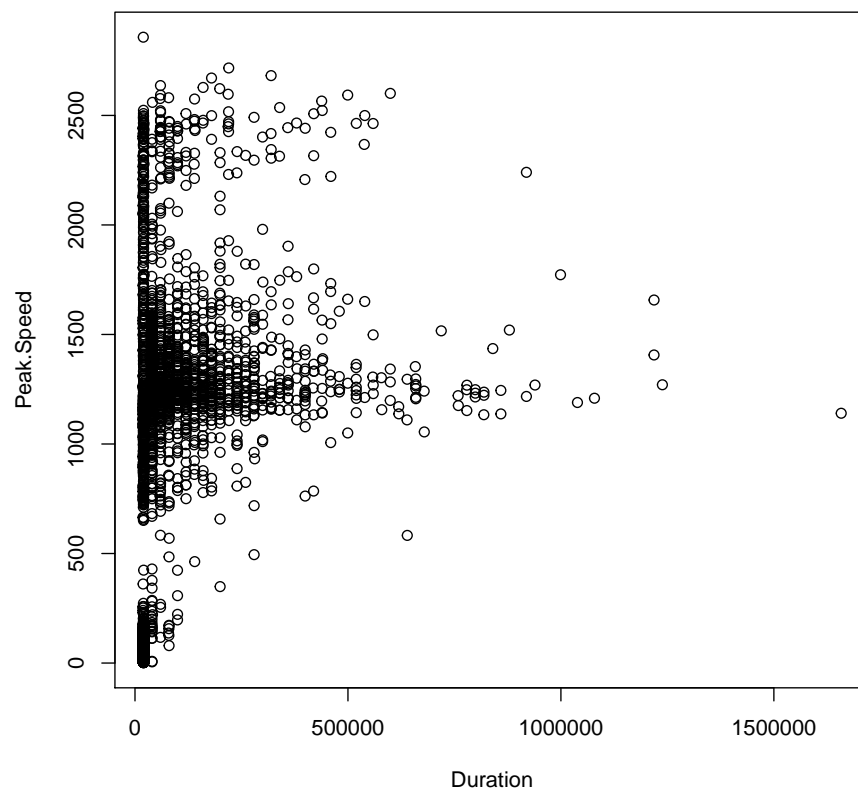


To show this more clearly, I will just show a small range of values around the region of interest.



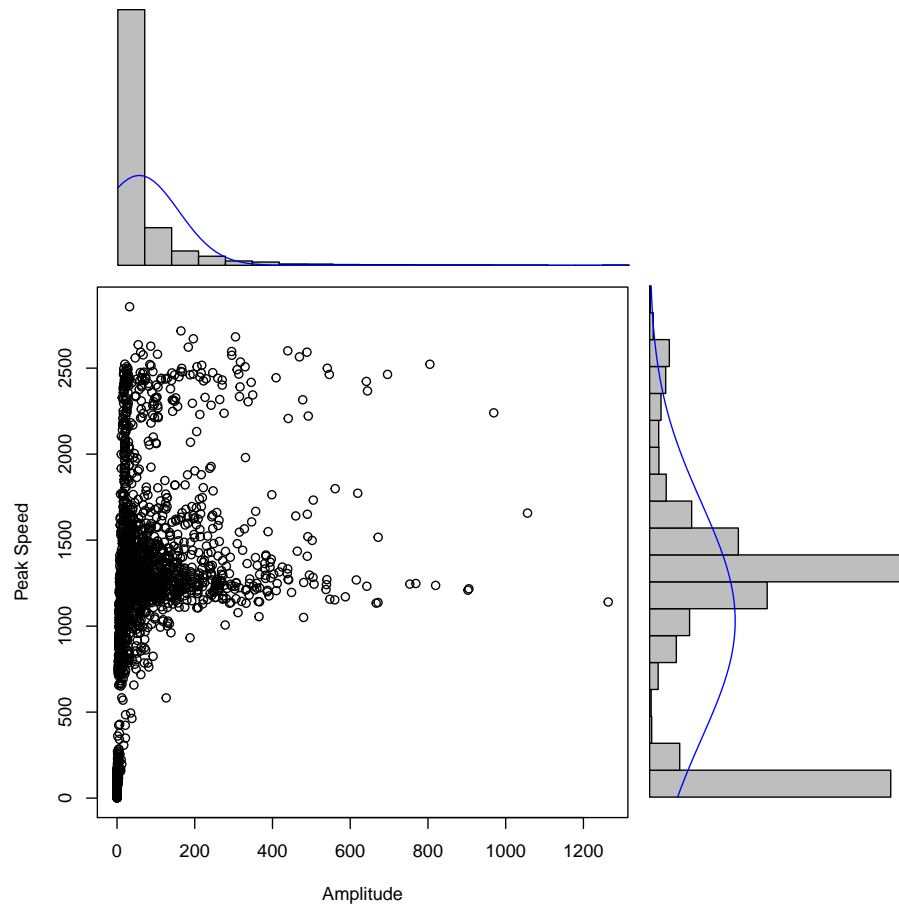
I am thinking that a longer duration might be related to a slower speed?





Just showing off now. This isn't my code BTW. I did a search and found this on StackOverflow.

```
## Loading required package: mvtnorm
```



## 1 Creating minute bins

The idea of creating a continuous average using a window might be difficult as we have uneven time events. The saccades do not happen at regular intervals. Using the “Conversion for ocular events.docx” document as a guide, the Start time column can be used to generate a column of “factors” (an R data type) to identify the time bin that each saccade occurred in. The factors can then be used to calculate minute averages.

In the STATA file, the start time in  $\mu$ seconds