

## Is there such thing as lunar trigger?

Tidal triggering of earthquakes – the idea that tidal forces in the crust or due to hydrostatic loading can trigger already stressed rocks to the point of fracturing has been examined as a possibility in past literature (e.g. Sottili et. al. , 2007; Tamrazyan, 1967, 1968; Thomas et. al., 2009; Wilcock, 2009, and others). To our knowledge, conclusive evidence has not yet been discovered leaving this as a speculative possibility. We propose to examine the data using techniques of artificial intelligence and machine learning to determine if the signature of a tidal trigger exists in various datasets.

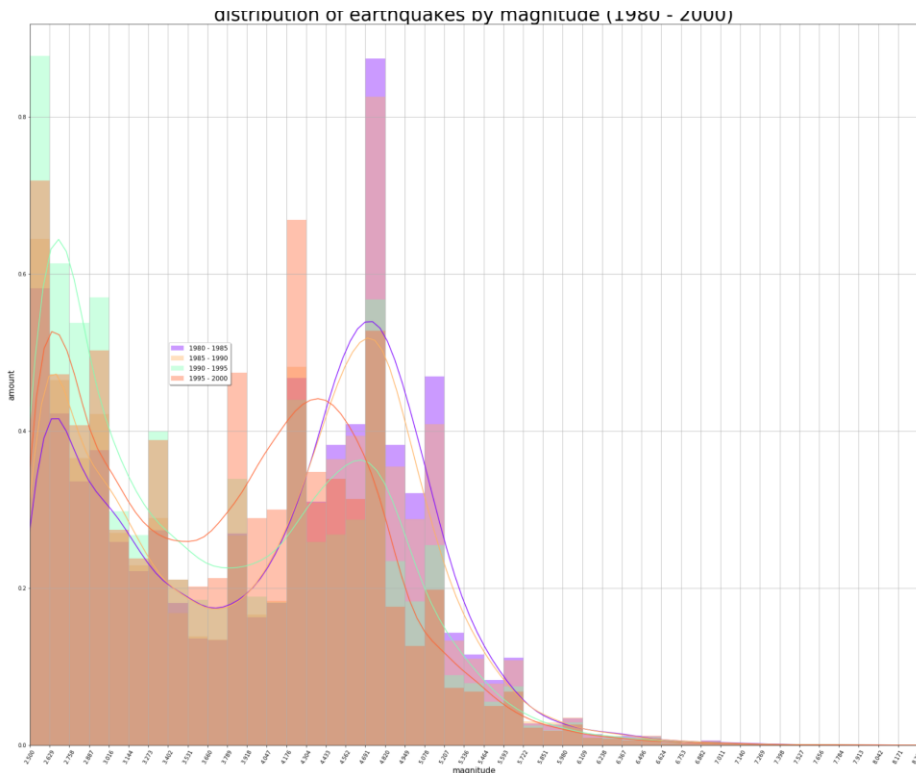
## Our research

In our research, the first finding that surprised us was **Earthquake Binning:** We plotted Magnitude vs. frequency from 1980 to 2000. In a deviation from the Gutenberg-Richter Law, we found a second peak.

One at 2.6, and a second at 4.7 on Richter's scale.

3.6 is a valley between two peaks.

The 4.8 peak is higher than the 2.6 peak.



Why is that so?

Could there be a different trigger for the earthquakes?

Should we continue our lunar trigger research with only the stronger earthquakes? Or with all...?

This is yet to be explored...

The second big data analysis we did was to see if planetary alignments have an influence on earthquake occurrence.

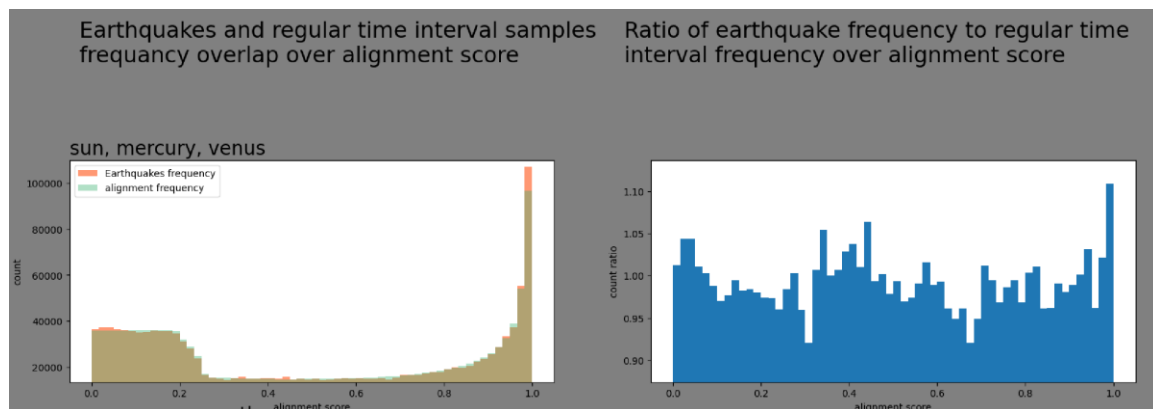
We took 3 solar elements such as Earth, Sun and Jupiter, and for each earthquake time and date, drew a triangle of this triplet in space. Take the largest angle in that triangle to the X axis of a graph, and add 1 to that bin. That graph spans from 60 degrees, which is the smallest all the way up to 180 degrees - a straight line of these three.

We bin all earthquakes to that graph.

We understood that if there is no influence of the three solar elements on earthquakes on earth, then the quantity per bin would be very similar for any angle.

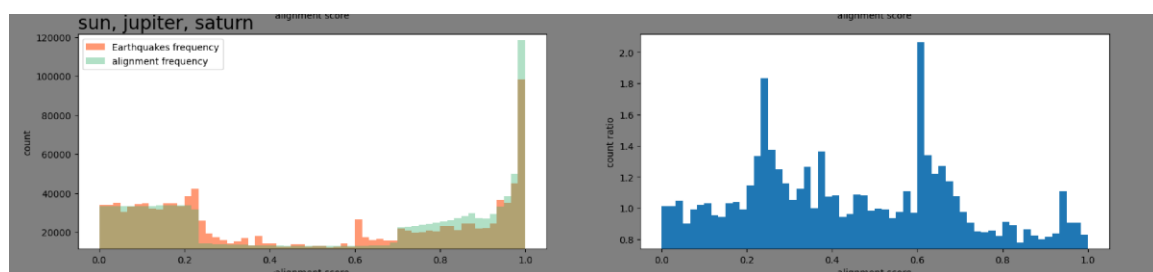
But it's not.

There are triplets such as these:

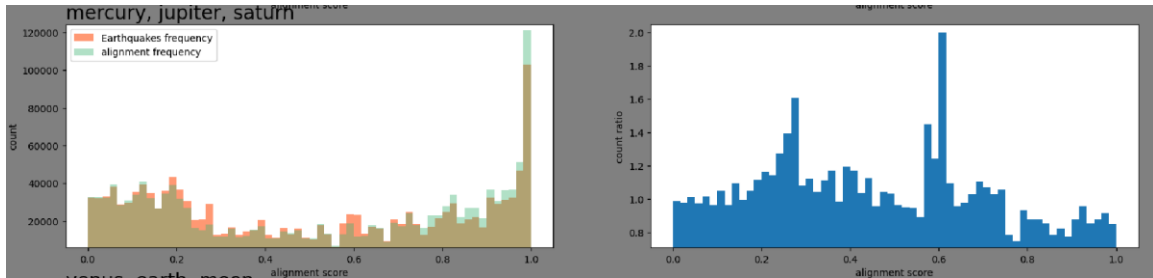


That no significant influence is found. On the right, the Y axis is the number of events, 100,000 per angle. On the left, those earthquakes in various angles fall between 0.92 to 1.1.

But, there are triplets such as these:



That have lots of influence at particular angles. At some angles of that triangle, there are twice as many earthquakes as for other angles.



Can it be a statistical error? Probably not as it was tested on tens of thousands of events.

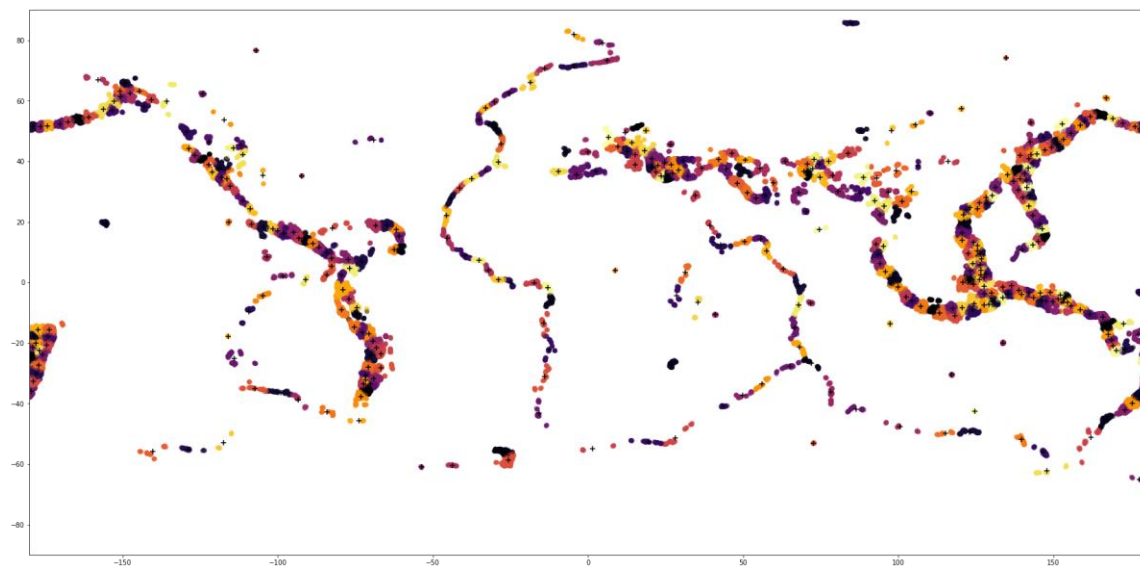
We created more than 50 graphs for various triplets, and most of them are indifferent to earthquakes, or vice versa, but a few triplets are influential, especially those that include Saturn and or Jupiter.

What happens when a few influential triplets occur at the same moment, and are aligned against us? ... This is yet to be explored...

This research examines not just a Lunar trigger, but planetary trigger as well ...

The next step we planned to proceed to was the orientation of these triplets with respect to earth. There are locations on earth that are vulnerable more than others. If a killer trigger points on our crust in one place, it might trigger an earthquake, but if it points to another location, nothing would happen.

So we mapped the earthquakes onto the globe, to get a picture of occurrence likelihood:



Which shows the plate boundaries on earth, and the likelihood of occurrence per geo-location. Sahara Desert is clean, but Indonesia seems vulnerable.

What we intended to do is to correlate between the solar alignment and earth orientation at the trigger moment. Such linkage would allow us to estimate the location of an earthquake backwards or forward in time, as a result of a destructive planetary alignment. This is yet to be explored...

We are seeking someone who is interested to continue this research to find more. The fruits of this research are beyond imagination!

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