**How does changing the tile and block sizes change performance? Why?**

I tested the project with 5000 planet, block size increase from 1 to 128. At the first few tests (block size 1 - 64) the performance increase significantly with the block size increase, but after that the performance did not change much when increase the block size. Obviously increasing the block size can improve the performance is because there are more thread can handle the operations at the same time. And I think the reason why after certain point this improvement become less oblivious is because there are more threads than we need.

**How does changing the number of planets change performance? Why?**

I tested the project with block size of 128 and planet number increase from 500 to 10000. The number of planets has linear influence on the fps after 1000. Increase planet number will slow down the fps. Apparently this is because the accelerate function need loop through all planet in the scene.

**Without running experiments, how would you expect the serial and GPU verions of matrix\_math to compare? Why?**

I think the GPU version of matrix\_math will run much faster than the serial version on large matrices because matrix operation are highly parallel. On GPU we can perform a large portion of these operations at the same time. But for this 5X5 small matrix case, I do not think the GPU version will run faster, maybe even slower, because it is not computationally intense and CUDA need extra operation on memory manipulation between host and device.