

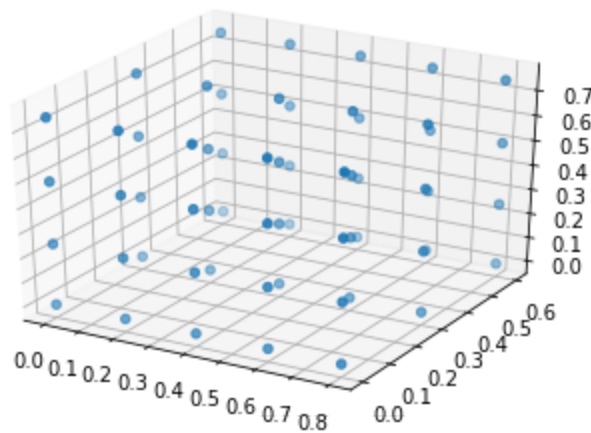
Gene Wang

Dr. Nelson

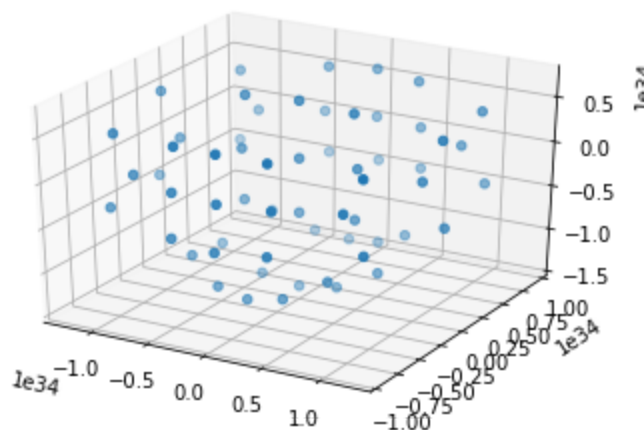
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ATCS: Numerical Methods: P7

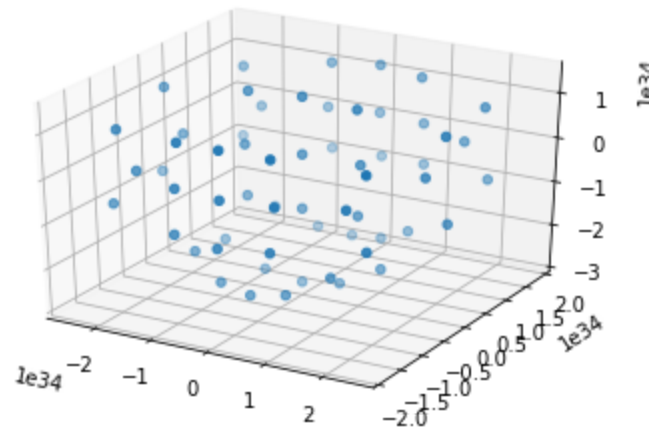
### N-Body Graphs



This first graph shows 60 Star objects spaced evenly in approximately a 1 cubic parsec volume. The objects are of alternating masses, half are 0.25 solar masses and half are 0.025 solar masses, all with no starting velocity.



The objects are allowed to evolve over an approximately 580 day time period ( $5 \times 10^7$  seconds). As we can see, the interactions between the stars causes them to push each other outwards, moving further apart and disordered.



Finally, after another approximately 580 days, the objects push even further outwards, with the lighter objects being the furthest on the perimeter and the heavier objects remaining closer to the center.