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* Introduction

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Plots

MBA asteroids plot

Parallax angle plot

Gaia image star catalogue

Residual Plot

DeltaP/P plot x5

Table for the definitions of orbital parameters or diagram

Error on orbital parameters plot?

Jacknifing plots

Orbits plot \*\*\*

Observational logs

Table of the orbital parameters used in the ideal plot

Monte carlo plot

Table oRbital elements vs JPL results w percentage difference w plot showing the standard error w each orbital parameter one over the other

Either same objects vs orbital paramteers or same parameters vs objects

Table of orbital element, jpl value, jack knife value, spread

Plot of year vs standard error/ arcsec

Graph of dec vs RA, what happens in sky over time for all asteroids on all days w individual graphs for each path r

Residual graph, 6 obs to 14obs show factor of improvement by increasing no of obs to show we’ve done enough

Residual of range, eg 50 days residual over 2 weeks

Plot of Differneces in position for one object for JPL vs our result

Plot of observing log in appendix

Are they accurately determined and consistent with jPL

Outline



Monte carlo method

* Can be used to calculate impact probability
* <https://machinelearningmastery.com/monte-carlo-sampling-for-probability/#:~:text=We%20can%20make%20Monte%20Carlo,random%20samples%20from%20this%20distribution>.
* <https://www.investopedia.com/terms/m/montecarlosimulation.asp#:~:text=a%20given%20trajectory.-,Monte%20Carlo%20Simulation%20Results%20Explained,will%20be%20higher%20or%20lower>.

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how find orb works

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