Dynamical structure of asteroid belt and NEO provenance

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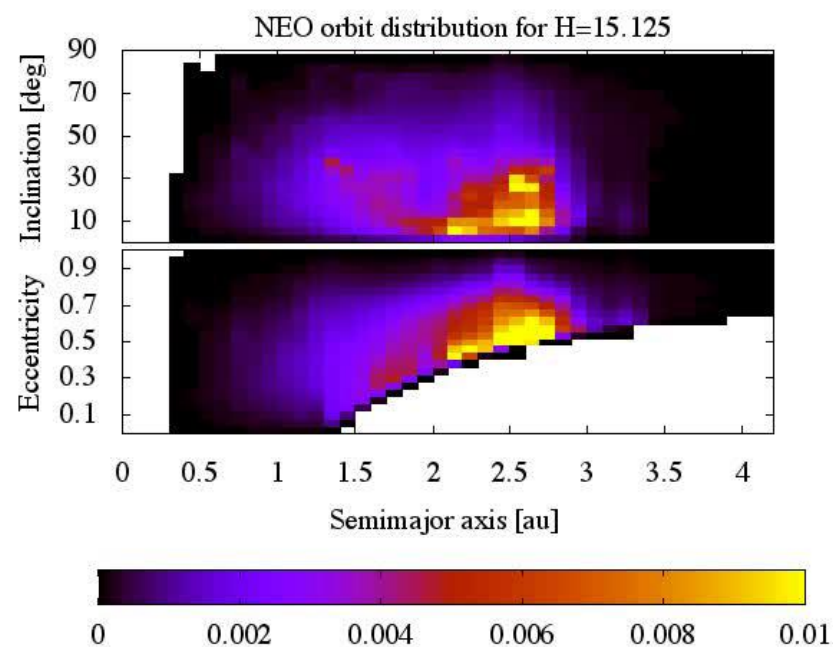
Some questions…

- Are main belt asteroids important to Near Earth Object (NEO) hazard or resources?

- Why should we care about NEOs rather than virtual impactors or potentially hazardous objects?

Some questions…

- Is the current Granvik et al. NEO model good enough for the next 20 years?

- If not, what do we need to do to improve it?

Orbital distribution of the NEO model

NEO populations may be generated in a random fashion (with parameter value range constraints) or based on a scientifically validated NEO model. NEOPOP is able to create populations based on the outdated Bottke model and the recently developed one by Granvik et al. 2018.

The new NEO model is based on the Catalina Sky Survey observations in the years 2006-2011 and comprises more than 4000 NEO discoveries or redetections. It accurately models the NEOs' orbits as well as their absolute magnitudes and albedos. The model is calibrated from an absolute magnitude of H=15 up to H=25 and allows extrapolation to fainter H using two different parameter sets. As the NEO population for H<15 is assumed to be completely known, known NEOs are used for this H range.

Source: Granvik et al. 2018