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Dynamics of the Oort cloud and formation of interstellar comets

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Dynamics of the Oort cloud & Formation of Interstellar Comets

Propositions

1. The origin of 'Oumuamua is more likely the consequence of a star and planet formation process rather than of expulsion from an exo-Oort cloud (*Chapter 1*).
2. The cumulative effect of stellar encounters and the Galactic tidal field disturbs the outer regions of the Oort cloud, leading to the formation of (transitional)-interstellar comets (*Chapter 2*).
3. The formation of the Oort cloud was triggered by planet-disk interactions and the cumulative effect of stellar encounters in the Sun's birth cluster (*Chapter 3*).
4. The formation of the extreme trans-Neptunian objects such as Sedna is not only the product of planet-disk interactions in the early solar system but also the result of cumulative stellar encounters (*Chapter 3*).
5. The Sun and its neighbour stars share comets (*Chapter 4*).
6. An interstellar cloud of objects (asteroids/comets) exist (*Chapter 1–4*).
7. Machine learning does not solve all scientific problems.
8. If there is a code that solves a scientific problem, use it, do not try to re-do it.
9. Journals should make all scientific articles freely accessible for anyone who wishes to read them.
10. Creativity and curiosity are the bridge between Science and Art.
11. Life is chaotic and unique. We should maximise the joy of living it.
12. If I waited for perfection, I would never write a word.
Margaret Atwood

Santiago Torres
Leiden, February 2020