

## Using Gaia for cometary science

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In 2012 we published a paper (Rickman et al. 2012), where we used Oort Cloud simulations including Galactic tides and stellar encounters to study the influence of stellar perturbations during the last revolution of new comets on making them observable. Most such comets proved to need the intervention of a star in order to reach the observable orbit with perihelion distance  $< 5$  au. We found that the culprit stars are generally unidentifiable using current Hipparcos-based star catalogues but that this situation may be overturned by Gaia. The identification will not be easy, and the chances will be discussed and evaluated. We also discuss these results in the framework of new findings about comet injection obtained from simulations including planetary perturbations.

**References:** Rickman, H., Fouchard, M., Froeschlé, Ch., Valsecchi, G.B. 2012, Gaia and the new comets from the Oort Cloud, *Planet. Space Sci.* 73, 124–129.