Post-doctoral fellowship opportunity at IMCCE/Paris Observatory

Gaia astrometry and physical properties of asteroids

Place of work: IMCCE/Paris observatory, Paris, France
Duration: 18month (renewable)
Application deadline: March 1st, 2017 (open until fulfilled, not later than June 1st)

We would like to announce the availability of an 18month postdoc position at IMCCE/Paris Observatory related to the scientific exploitation and validation of Gaia data on asteroids.

The ESA Gaia satellite has been scanning the sky since mid-2014, providing astrometry and photometry of celestial objects at an unprecedented accuracy level. Besides a 3D census of the Galaxy, Gaia will also measure the positions of about 350,000 asteroids and other Solar System Objects (SSO). Gaia’s sub-milli-arcsecond precision astrometry - delivered in an absolute and homogeneous reference frame - can be used to generate improved orbits, increase the detection level of binaries and foster the mass determination of asteroids. Moreover, the combination of Gaia observations with other astrophysical data (Herschel, OSSOS, …) will yield ground-breaking insights into the history and current state of the Solar System.

The successful candidate is expected to perform orbit determination and adjustment from the astrometric measurements, including statistical inversion with inference of physical and dynamical parameters. The main tasks will be focused on mass and density determination, analysis of binary or multiple systems, and of close encounters. Depending on the candidate’s interest, the research can extend into other fields such as TNOs, binary stars, ...

Formal requirements include a PhD degree or equivalent in astronomy, astrophysics or applied mathematics. The candidate shall participate in the Gaia data analysis and validation, he/she will be involved in the Gaia DR2 data release and subsequent catalogue releases. A tight collaboration with the Gaia team at IMCCE, the DPAC consortium, and the ACAV+ joint-laboratories framework is expected.

Experience in statistical inversion (Bayesian inference, MCMC), astrometry and orbit computation of SSOs is considered a plus. The Paris observatory is an equal opportunity employer, and female researchers are specially encouraged to apply.

The fellowship is intended for a period of 18months, with a possible extension subject to funding and performance. Applicants should submit a curriculum vitae, list of publications, and brief description of research interests, and arrange for two letters of recommendation to be emailed to daniel.hestroffer@obspm.fr by March 1st, 2017.

Contact: Daniel HESTROFFER hestro@imcce.fr

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1 Fellowship from DIM ACAV https://dimacav.obspm.fr/