

Theia – Observing the Universe in Motion

Brief description : The *Theia* mission will explore the Universe at unprecedented astrometric precision of $0.3\mu\text{as}$ over a field of about 1 degree. *Theia* is the divinity of sight and daughter of Gaia. Similarly, the instrument concept carries on the heritage of HIPPARCOS and Gaia missions combined to latest developments in precision metrology control. While giant telescopes and other observatories will do wonders in spectroscopy, imaging, photometry, etc *Theia* will enable science cases unique to μas astrometry, a precision that will reveal the Universe in motion like Earth-like planets orbiting around our immediate stellar neighbors, the activity of the most extreme objects known (black holes and neutron stars) and unveil the local sub-structure of the dark matter halo in which the Milky Way resides. Conceived as an open observatory class mission, *Theia* will bring ultra-precise astrometry to the broader community, including target-of-opportunity science in the era of Extremely Large Telescopes.

Meeting objectives : The goal of the meeting is to share discussion on the *Theia* proposal including the science cases, the instrumental part, the mission and to define a roadmap to submit the proposal on 15 January

Practical information:

Location : salle Danjon (#8 on the map below), Observatoire de Paris, 77 rue de l'Observatoire, 75014 Paris (metro station : Denfert-Rochereau).

Date : 8 October 2014 from 9 :00 to 18 :00 CET

Host : Jacques Laskar (jacques.laskar@imcce.fr, +33 1 40 51 21 14)

Meeting agenda :

- 09:00 Welcome
- 09:15 Introduction to the ESA call for M Mission (F. Malbet)
- 09:30-11:30 science cases (A. Léger)
- 11:30-13:00 mission configuration (F. Malbet)
- 13:00-13:55 Lunch
- 14:00-16:30 results of the NEAT Double Blind Test (G. Anglada)
- 16:30-18:00 Conclusions and distribution of work

