

Dr. Valéry Lainey  
IMCCE-Paris Observatory  
77 Avenue Denfert-Rochereau  
75014 Paris, FRANCE  
[lainey@imcce.fr](mailto:lainey@imcce.fr)  
+33 1 40 51 22 69

Paris, 24<sup>th</sup> of May

To whom it may concern,

In the last decade, progress in astrometry and physical modelling of planetary systems have made possible the accurate estimation of tidal effects in natural moons and their planets. Relying on large spanning time of observation, the studies have provided important constraints on short and long term dynamics, up to formation processes (Lainey et al. 2012, Charnoz et al. 2011). The current project consists in extending our monitoring of tides in planetary systems to Neptune's system. In that respect, the venue of Mr Altair Junior, from 1<sup>st</sup> September 2016 up to 30<sup>th</sup> August 2017, will be a great opportunity for collaboration between IMCCE, UFRJ and ONB. The highly significant numbers of astrometric observations performed and reduced by Mr Altair Junior, and his expertise in the field, will largely contribute to improve our knowledge of tides in the system as well as assessing the real accuracy of Neptune's ephemeris. The candidate will also be introduced to the ENCELADE 2.0 International team, funded by the International Space Science Institute.

For all the reasons above, I am glad to support this proposal.

Best Regards,

Valéry Lainey  
Astronomer

