



## Swedish Institute of Space Physics, Uppsala

Date: December 16, 2020

Subject: Reference for Audrey Chatain,

To Whom it may concern,

If I had funding, I would immediately commit to hire Audrey Chatain for post-doctoral work at IRF-Uppsala. It would be a shame if a young female outstanding researcher interested in outer planetary research would be hampered in her progress. It is of outmost importance to keep her around for the future!

Audrey Chatain, on her initiative, contacted me in 2017. At that time she was doing her PhD work at LATMOS on organic chemistry laboratory experiments with the aim to mimic Titan's upper atmosphere. Her supervisor is Nathalie Carrasco. She showed a very enthusiastic interest in our Cassini RPWS Langmuir probe data from the moon Titan, and we agreed upon that she visited our group a few times at the IRF-Uppsala lab to investigate the electron temperature in Titan's ionosphere. The electron temperature is a very important parameter for recombination of organic ions as well as electron attachment/detachment to aerosols and resulting organic synthesis. A very good complement to her organic aerosol studies in the laboratory at home.

Audrey is a very efficient and committed researcher, but also have a positive manner and is fun to work with. After only a few weeks she not only could analyse correctly the Langmuir probe data, but also do a novel analysis leading to a study of the thermal electron distributions in Titan's ionosphere. She organised the large amount of resulting temperature data and lay forward a suggestion for how the electron heating occurred. She has recently submitted two manuscripts to JGR, and these are of high science standard. I judge they will be published in this peer reviewed journal in the near future.

I am the head of the IRF Cassini efforts, where we have contributed with a Langmuir probe sensor part to the RPWS. I am also the Principal Investigator of the Radio & Plasma Wave Investigation (RPWI) for JUICE. My judgement is that Audrey Chatain is a top producing young researcher that will become a leading scientist in the community within a few years' time.

Sincerely,

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