



**PATRICK TISSERAND**

*From France to Sweden*



Project: **The merging process of helium and CO white dwarfs**

Research topic: **Astrophysics**

Swedish Institution: **Uppsala University**

French Institution: **Astrophysics Institute of Paris / Sorbonne University**

Dates of mobility: **12/11/2015 to 22/11/2015**

Program: **SFVE-A (ex-TOR)**



## PRESENTATION

[Patrick Tisserand](#) is an Astronomer at the [Paris Astrophysics Institute](#) of [Sorbonne University](#). He obtained his PhD in Astrophysics from the [CEA Saclay](#) in 2004. His main ongoing research targets the product in the intermediary mass range, corresponding to the fusion of a helium and a CO white dwarf (yellow area, total mass lower than 1.44 solar masses).

## ACTIVITIES IN SWEDEN

Tisserand's mobility to the [Department of Physics and Astronomy](#) of [Uppsala University](#) allowed him to work mainly with [Prof. Kjell Eriksson](#) and [Dr. Bengt Edvardsson](#), both specialists of stellar atmosphere models, having specifically created the [MARC models](#). They constructed new models together for the rare case of stars whose atmospheres are almost absent of hydrogen, similar to the ones observed and named "R Coronae Borealis" (RCB). The writing of an article on the spectral identification of RCB stars was pursued during the visit. He discovered a useful software programme called [SME](#) (Spectroscopy Made Easy) constructed by [Prof. Nikolai Piskunov](#), with whom he met at the [Ångström Laboratory](#) during his mobility. It needed adaptation to these particular parameters of a weak hydrogen incidence and Tisserand managed to make the necessary modifications with Prof. Piskunov and [Julien Lambert](#), a French post doc at Uppsala University.

He also met with [Prof. Bengt Gustafsson](#), one of the pioneers of these rare stars, and Prof. Gustafsson introduced Tisserand to [Prof. David Lambert](#) ([University of Texas](#)), another specialist on the subject. Tisserand attended two weekly seminars and was invited to, in the future, use the Nordic Optical Telescope ([NOT](#)) located on the Canary Islands.