REGISTRATION FORM
MASTER RESEARCH PROJECT ASTRONOMY

Universiteit Leiden

Sterrewacht Leiden

STUDENTDATA

Studentname	Patrick Costa
Studentnumber	s4199510
Specialisation	**Research in Astronomy**
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MASTER PROJECT

Project type	First (30 EC)		
Starting date	07/10/2024	Final deadline	01/08/2024
Supervisor(s)	Aline Vidotto		
Working title	Escaping atmospheres in habitable zone planets		

Description

Atmospheric escape plays a key role in planetary evolution, planetary population, and habitability. Substantial atmospheric escape can take place in planets orbiting close to their host stars, or orbiting stars that are young and active. This is because these planets receive an intense flux of high-energy stellar irradiation, which heats planetary atmospheres, causing them to inflate and more likely to outflow through a mechanism known as photoevaporation.
The goal of this project is to evaluate atmospheric escape in planets orbiting inside the habitable zone of their host stars. The habitable-zone planets receive enough (bolometric) energy to support liquid water at their surfaces. As the star evolves, the habitable zone also evolves. Nevertheless, when one considers escaping atmospheres, it is not the bolometric energy of the star that is relevant, but the high-energy radiation emitted by the star.
The aims of this project are: (1) derive the stellar high-energy flux incident at the habitable zones for stars with different spectral types and ages; (2) use the derived fluxes to compute atmospheric evaporation properties of putative planets; and (3) apply the model to known habitable zone planets

AGREEMENT

	Name:	**Signature:**
Student	Patrick Costa :	
Supervisor 1	Aline Vidotto :	
Supervisor 2	:	
Studyadvisor	Wouter Schrier :	

TO DO

1) The student fills in the form together with his/her supervisor(s).
2) The student digitally hands in the filled in and signed form to the studyadvisor for approval: studyadvisor@strw.leidenuniv.nl
3) After approval, the studyadvisor sends a digital copy of the form to the student, supervisor(s) and the programme coordinator.
4) Upon completing the research project a grading form has to be filled in by the supervisor(s), this form can be found on http://www.strw.leidenuniv.nl/education/currentyear/Researchproject_Grading_form_Stk.pdf

APPENDIX REGISTRATION FORM
MASTER RESEARCH PROJECT ASTRONOMY

RESEARCH PROJECTS

The student is expected to spend 30EC = 30 * 28 = 840 hours (1 EC equals 28 hours of work) on both the First Research Project and the Master's Research Project. Both Research Projects conclude with a thesis. For the Master's Research Project, the total credit includes a 4 EC Master's Thesis as well as a 1 EC public presentation (the Student Colloquium). The First and Master's Research Projects must be on different topics. The Master's Research Project can be started only after succesful completion of the First Research Project.

COLLOQUIUM
You have to make your own reservation for the colloquium on the designated webpage: Sterrewacht homepage -> Local Pages -> Master Colloquium
Note: The colloquium can only be given on certain dates. The reservation is your own responsibility!

DEADLINES
The maximum duration of any Research Project is 9 months.

First Research Project
The deadline for the First Master Project is extended to **August 1** for students who started the programme in September, if the First Research Project is started before November 1 of the first year. For students who started the programme in February this deadline is extended to **January 1** if the First Research Project is started before April 1 of the first year.

Master Research Project
For the Master Research Project the deadline is **July 1** for students who started the programme in September and **December 1** for students who started the programme in February

For all Research Projects, it is **not** possible to obtain a grade higher than 6 if the deadline is exceeded, unless the studyadvisor deems the delay to be caused by circumstances outside the control of the student.

GRADING

A master's thesis will be evaluated both by the supervisor(s) of the project and by another staff member not directly connected to the same research project (the second reader). Both the supervisor(s) and the second reader have to be approved staff members. The project will be evaluated on three points:

1. The quality and depth of the research
2. The dedication and initiative shown by the student
3. The quality of the thesis (and presentation)

PROGRESSION

To monitor the progression of the Research Projects you will receive periodic emails at so-called **milestones**. These milestones occur at the start of the project and at 25%, 50%, 75% and 100% of the allotted duration of the project. These emails contain information about the remaining time until the end date (at 100%). If the project has not been completed by the final date (100%), a grade will be given based on the available material. Student and supervisor should monitor progress with this schedule in mind. Problems or delays should be reported to the studyadvisor, who will also monitor progress.
The finished thesis has to be send to the supervisor(s), the programme coordinator (eduster@strw.leidenuniv.nl) and the study advisor on the day of the final deadline at the latest!

ISSUES

Should personal problems, problems with your project or problems with your supervisor occur which you would prefer to discuss confidentially you can contact the studyadvisor Wouter Schrier (Oort 568), studyadvisor@strw.leidenuniv.nl