

Training Opportunity for Luxembourgish Trainees

Reference	Title	Duty Station
LU-2021-OPS-S2)	Planetary Defence - Space Safety	ESOC or ESTEC or ESRIN
<p><u>Overview of the mission:</u></p> <p>The Planetary Defence Office is dealing with the threat natural objects in space pose, to assets of or on our planet. These objects are called near-Earth objects, or NEOs. The office is structured into three 'pillars': Observations – the detection of NEOs, mainly with optical telescopes on the ground; information provision – to compute their orbits 100 years into the future and determine any impact possibilities with our planet; to maintain a web portal, and databases related to NEO data, including information on fireballs; mitigation – to set up mechanisms and interfaces with emergency response agencies and political entities, informing them of possible threats and their resulting consequences.</p>		
<p><u>Overview of the field of activity proposed:</u></p> <p>With this traineeship, we plan to establish a closer link between the planetary defence (PD)-related aspects of our asteroid work and the in-situ research utilization (ISRU) community. In both areas, a good knowledge of the physical properties of the object (size, composition, surface properties) is needed. Depending on the background of the applicant, the trainee could look at the following questions:</p> <ul style="list-style-type: none"> - Which physical properties relevant for both areas (PD and ISRU) can be determined from the ground – with telescopic observations and also from fireball and meteorite analyses - For those which cannot be determined from ground – what kind of instrumentation is needed to do this from a CubeSat mission, which measurements require larger spacecraft? - How to best achieve complementarity with detection surveys like the US-developed NEO Survey Mission? - In which other areas can synergies be exploited? <p>After this initial work, further studies which go into details of the analyzed topic should be expected. The aim is to set up a concrete collaboration example, based on the studied topics.</p> <p>You will be fully integrated into the work of the Planetary Defence Office. Dedicated training sessions at the beginning of the stay will be foreseen to introduce you to the work of the Office.</p>		
<p><u>Required education and skills:</u></p> <ul style="list-style-type: none"> • Master's degree in a technical or scientific discipline • Good interpersonal and communication skills • Ability to work in a multi-cultural environment, both independently and as part of a team • Fluency in English and/or French, the working languages of the Agency 		