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4<sup>th</sup> September 2023

To the selection committee,

Please find enclosed my application and proposal for the ESA Fellowship Post-Doctoral position. My name is David O’Ryan and I am currently a 4<sup>th</sup> year PhD student at Lancaster University in the UK. My current research is focused on the study of galaxy evolution in the context of galactic interaction and merging, under the supervision of Dr Brooke Simmons and I expect to submit my thesis in Q1 of 2023.

My project proposal for the ESA Post Doctoral position, entitled “Towards a Statistical Understanding of Galaxy Evolution”, would involve combining the *Hubble Space Telescope (HST)* and JWST science archives with ESA Datalabs and Euclid to create the largest catalogue of galaxy morphology and ancillary data available anywhere once the combination activity is complete. I am also proposing that four separate papers will be released as a result of this project along with two additional deliverables. These deliverables focus on the development and deployment of a large repository of 3-colour images of every source in the *HST* and JWST archives. See my research proposal for more details.

I believe my current PhD work makes me an eminently suitable candidate for the ESA Fellowship Post-Doctoral position as the work outlined in my proposal is in many respects a continuation of internship activity I undertook at the European Space Astronomy Centre (ESAC) in 2022. During my internship I regularly used ESA Datalabs - for which I still have an active account - and *Zoobot*. This internship experience will substantially reduce the ramp up time that I consider would otherwise be required for this project.

Due to this work's intense use of the science archives, *HST*, JWST and Euclid data, and ESA Datalabs and Euclid, I propose the following as potential mentors for this project: Bruno Altieri (Euclid), Guido de Marchi (Data Archives), Sandor Kruk (galaxy evolution & data science) and Bruno Merin (ML techniques). I would also propose conducting this project at ESAC, Madrid.

For detailed proposition information, including the proposed timeline and information on how this project links to my previous research experience, please see my proposal documentation. In addition, please find enclosed my CV and a full list of my current publications. My CV contains links to my contact information and personal [website](#). Finally, the following people have agreed to send reference letters on request: [Brooke Simmons](#), [Bruno Merin](#) and [Chris Lintott](#).

Thank you very much for taking the time to review my proposal. I am tremendously excited by this opportunity and would relish being part of the ESA team. I would be delighted to answer any questions you may have regarding my application and I look forward to hearing from you in due course.

Sincerely,

David O’Ryan