

Optimal Exoplanet Imagers Workshop

2023 Feb 20-24 @ Lorentz Center

Organisers: Leboulleux, Carlotti, Jensen-Clem, Kenworthy, N'Diaye



The “W-305” Optimal Exoplanet Imagers workshop at the Lorentz Center was a tremendous success, bringing together 46 international researchers at all career levels together to discuss new concepts and approaches for the direct detection and characterisation of terrestrial exoplanets around nearby stars.

Five reviews featuring 8 talks, all of which were given by junior researchers in the fields of coronagraphy, NCPA correction, algorithms, testbed software and biomarker signatures (5 women, 5 men and 1 non-binary researcher), set the scene for the discussions in the next three days. After brainstorming over a dozen possible breakout group topics, five groups were established: “Chasing rainbows with the Habitable Worlds Observatory”, “Visible extreme adaptive optics on extremely large telescopes: Towards detecting oxygen in Proxima b and analogs”, “Emerging technologies for high-contrast imaging from space”, “Harvesting lost photons in stellar coronagraphs”, and “Telemetry use in data post-processing”. The goal was to start writing white papers and SPIE Conference proceedings on these topics.

Notably, a refereed paper with the title “Observing rainbows with the Habitable Worlds Observer” is currently being written with an open science workflow:

<https://github.com/mkenworthy/HWObows>.

Three other SPIE papers were being proposed for follow up after the workshop with submissions of abstracts for the next SPIE conference (SPIE Optics & Photonics, San Diego, California, USA, 20-24 August 2023).

In addition, the fifth group has been building up a data challenge dedicated to students (master and PhD) with data that will be released by the Subaru telescope in Hawaii (USA).

All these deliverables have students as first authors and all participants as co-authors.

At the requests of the participants (in particular junior researchers), the workshop also touched on how to encourage diversity in the field, which has been predominantly white and male, and discussed strategies to encourage and grow our field in the next decade.