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The JWST Early Release Science Program for Directly Imaging Exoplanetary Systems

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Abstract

To prepare for the upcoming launch of JWST, a broad range of proposals have been selected by the Space Telescope Science Institute under the Director's Discretionary Early Release Science Program (ERS). Our accepted 52-hour JWST ERS program will directly characterize two recently-discovered, directly imaged planetary mass companions over their full spectral range from 2-28 microns using photometry and spectroscopy. Ours will be among the first-ever observations of bona fide exoplanets at these wavelengths, and will be crucial test cases for atmospheric modelling that has mostly operated in the visible and near-infrared. Further, our program will demonstrate the degree to which atmospheric abundance analysis can be obtained from JWST spectroscopy, possibly providing clues to the planet formation process. As a bonus, our program will also perform deep, near-infrared, Sparse Aperture Masking on an exoplanet host star, as well as imaging of a debris disc out to 15 μm sampling the 3 μm water ice feature. Within the first few months of JWST operations, our program will rapidly produce publicly-available datasets in modes to be commonly used by the exoplanet direct imaging communities. In addition, I will describe how our team of 120 investigators will deliver science enabling products to empower a broad user base to develop successful future JWST investigations dedicated to direct-imaging surveys for low-mass exoplanets (e.g. Saturn mass) in Cycle 2 and beyond.

1. Equations

Below, you will find examples of two equations. You should use an equation editor of your word-processing program in order to include your equation(s). The equation number should be placed at the right side of the column and all equations should be consecutively numbered.

$$a^2 + b^2 = c^2 \qquad (1)$$

$$E = m \cdot c^2 \qquad (2)$$

2. Summary and Conclusions

After having finished your paper in your word-processing program, please create a respective pdf file out of the document. The correct page settings of 237 (height) x 180 (width) mm are included in the template document. **Please make sure that the generated pdf file actually has a page size of 237 x 180 mm.** This is the only way to guarantee the proper inclusion of your paper in the Copernicus Office database. Please note that you are asked to upload a pdf file during the abstract submission in Copernicus Office. No other file type than .pdf is accepted for the file upload. The actual citation header will be added automatically!

Acknowledgements

References

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[2] Author, D. and Author, E.: Second example of a cited book, Example Publishing House, 2000.

[3] Author, F.: Third example of a cited conference paper, The Great Science Conference, 1–7 February 2001, Sciencetown, Sciencecountry, 2001.