2025 Rubin Prize Winner - Samuel Hadden

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Dynamical Astronomy (DDA) is pleased to announce that the 2025 recipient of the Vera Rubin Early Career Award is Dr. Samuel Hadden of the University of Toronto, recognizing his term-by-term analysis of planetary dynamics, work that leads the field in both insight and usability.

During his Ph.D., Dr. Hadden used analytic perturbation theory to efficiently analyze the largest set of transit timing variations, leveraging data from NASA's Kepler mission. He validated classical theory against real systems and advanced models of planetary resonance, from the restricted case to general two-planet systems with arbitrary masses and eccentricities. By extending Hill's approximation beyond first-order resonances, he significantly improved our understanding of instability boundaries. This achievement addresses a longstanding challenge, tracing back to the

work of Laplace, in delineating the transition from orderly motion to chaos.

His successful co-development (with Dr. Daniel Tamayo) of open-source planetary dynamics codes, his excellent supervision of student research, and his service to the dynamical community are also being recognized by this award.

Dr. Hadden will be invited to give a lecture at the 57th annual DDA meeting, which will be held in Chicago in spring 2026.

Tags: award [1]
Rubin [2]
dynamical [3]
astronomy [4]
DDA [5]
AAS [6]

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Links
[1] https://dda.aas.org/taxonomy/term/6
[2] https://dda.aas.org/taxonomy/term/12
[3] https://dda.aas.org/taxonomy/term/8
[4] https://dda.aas.org/taxonomy/term/9
[5] https://dda.aas.org/taxonomy/term/10
[6] https://dda.aas.org/taxonomy/term/11