

Max Goldberg

CONTACT INFORMATION	Laboratoire Lagrange, Observatoire de la Côte d’Azur Boulevard de l’Observatoire 06304 Nice Cedex 4, France	max.goldberg@oca.eu maxgoldberg.me
ACADEMIC APPOINTMENTS	Postdoctoral Researcher CNRS, Laboratoire Lagrange, Observatoire de la Côte d’Azur, Nice, France Supervisor: Alessandro Morbidelli	2024 –
EDUCATION	California Institute of Technology , Pasadena, USA Ph.D. , Astrophysics (2024) M.S. , Astrophysics (2022) Thesis: <i>Early Dynamics and Evolution of Extrasolar Planetary Systems</i> Advisor: Konstantin Batygin University of Chicago , Chicago, USA B.S. (with honors) , Astrophysics B.S. , Mathematics Thesis: <i>Dynamical Detection of Singly-Transiting Circumbinary Planets</i> Advisor: Daniel Fabrycky	2019 – 2024 2015 – 2019
AWARDS AND HONORS	Raynor L. Duncombe Student Research Prize David and Barbara Groce Travel Fund Origins of Life Summer Undergraduate Research Prize Award UCISTEM Summer Research Grant	2021 2021 2018 2017
FIRST AUTHOR PUBLICATIONS	Goldberg, M. and Petit, A. C. “Close-in compact super-Earth systems emerging from resonant chains: slow destabilization by unseen remnants of formation.” In review at <i>Astronomy & Astrophysics</i> . Goldberg, M. , Nesvorný, D., and Morbidelli, A. “Two-source terrestrial planet formation with a sweeping secular resonance.” <i>Astronomical Journal</i> , in press. Goldberg, M. and Batygin, K. “Nutation-orbit resonances: The origin of the chaotic rotation of Hyperion and the barrel instability.” <i>Astronomy & Astrophysics</i> , 692, (2024). Goldberg, M. and Batygin, K. “Chaotic tides as a solution to the Hyperion problem.” <i>Icarus</i> , 413, (2024). Goldberg, M. , Fabrycky, D., Martin, D. V., Albrecht, S., Deeg, H., and Nowak, G. “A $5M_{\text{Jup}}$ Coplanar Circumbinary Planet Around Kepler-1660AB.” <i>Monthly Notices of the Royal Astronomical Society</i> , 525.3, (2023). Goldberg, M. and Batygin, K. “Dynamics and Origins of the Near-Resonant Kepler Planets.” <i>The Astrophysical Journal</i> , 948, (2023). Goldberg, M. , Batygin, K., and Morbidelli, A. “A Criterion for the Stability of Resonant Chains.” <i>Icarus</i> , 388, (2022). Goldberg, M. and Batygin, K. “Architectures of Compact Super-Earth Systems Shaped by Instabilities.” <i>The Astronomical Journal</i> , 163.5, (2022). Goldberg, M. and Batygin, K. “A Tidal Origin for a Three-body Resonance in Kepler-221.” <i>The Astronomical Journal</i> , 162.1, (2021). Goldberg, M. , Hadden, S., Payne, M. J., and Holman, M. J. “Prospects for Refining Kepler TTV Masses Using TESS Observations.” <i>The Astronomical Journal</i> , 157.4, (2019).	

CO-AUTHORED PUBLICATIONS	<p>Wang, M., Dai, F., Liu H., Chen, H., Hu, Z., Petigura, E., Giacalone, S., Lee, E., Goldberg, M., et al. “An Adolescent, Near-Resonant Planetary System Near the End of Photoevaporation.” Accepted to <i>Nature Astronomy</i>.</p> <p>Wang, M., Dai, F., Liu H., Masuda, K., Howard, A. W., Halverson S., Isaacson H., Zhang, E. Y., Goldberg, M., et al. “TOI-4495: A Pair of Aligned, Near-Resonant Sub-Neptunes that Likely Experienced Overstable Migration.” Accepted to <i>AJ</i>.</p> <p>Hu, Z., Dai, F., Zhu, W., Wang, M., Goldberg, M., Lammers, C., and Masuda, K. “Unexpected Near-Resonant and Metastable States of Young Multi-Planet Systems.” <i>The Astrophysical Journal</i>, 995, (2025).</p> <p>Nesvorný, D., Morbidelli, A., Bottke, W., Deienno, R., and Goldberg, M. “Terrestrial Planet Formation from Two Source Reservoirs.” <i>The Astronomical Journal</i>, 170.3, (2025).</p> <p>Petit, A. C., Pichierri, G., Goldberg, M., and Morbidelli, A. “Dynamical Evolution of Planetary Systems.” <i>Handbook of Exoplanets</i>, 2nd ed. (2025).</p> <p>Dai, F., Goldberg, M., Batygin, K., van Saders, J., Chiang, E., Choksi, N., Li, R., Petigura, E.A., Gilbert, G.J., Millholland, S.C., Dai, Y.Z., Bouma, L., Weiss, L.M., and Winn, J.N. “The Prevalence of Resonance Among Young, Close-in Planets.” <i>The Astronomical Journal</i>, 168.6, (2024).</p> <p>Nagpal, V., Goldberg, M., and Batygin, K. “Breaking Giant Chains: Early-Stage Instabilities in Long-Period Giant Planet Systems.” <i>The Astrophysical Journal</i>, 969, (2024).</p> <p>Dai, F., Masuda, K., Beard, C., Robertson, P., Goldberg, M., et al. “TOI-1136 is a Young, Coplanar, Aligned Planetary System in a Pristine Resonant Chain.” <i>The Astronomical Journal</i>, 165.2, (2023).</p>										
TEACHING ASSISTANTSHIPS	<table border="0"> <tbody> <tr> <td>Ay/Ge 133: Formation and Evolution of Planetary Systems, <i>Caltech</i></td> <td style="text-align: right;">Fall 2021</td> </tr> <tr> <td>Ph 1c: Electromagnetism, <i>Caltech</i></td> <td style="text-align: right;">Spring 2021</td> </tr> <tr> <td>Ay/Ge 133: Formation and Evolution of Planetary Systems, <i>Caltech</i></td> <td style="text-align: right;">Winter 2021</td> </tr> <tr> <td>Ph 1a: Classical Mechanics, <i>Caltech</i></td> <td style="text-align: right;">Fall 2020</td> </tr> <tr> <td>BPRO 28800: From Fossils to Fermi’s Paradox, <i>UChicago</i></td> <td style="text-align: right;">Winter 2019</td> </tr> </tbody> </table>	Ay/Ge 133: Formation and Evolution of Planetary Systems, <i>Caltech</i>	Fall 2021	Ph 1c: Electromagnetism, <i>Caltech</i>	Spring 2021	Ay/Ge 133: Formation and Evolution of Planetary Systems, <i>Caltech</i>	Winter 2021	Ph 1a: Classical Mechanics, <i>Caltech</i>	Fall 2020	BPRO 28800: From Fossils to Fermi’s Paradox, <i>UChicago</i>	Winter 2019
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MENTORING	<p>Vighnesh Nagpal, <i>Summer Undergraduate Research Fellowship (SURF), Caltech</i> 2022 – 2024 <i>Summer Undergraduate Research Fellow (SURF) at Caltech. Published a refereed article under my supervision, now a graduate student at the University of Chicago.</i></p> <p>Anton Perez, Jonah Goldstein, William Zhao 2021 Local high school students as part of the <i>Summer Research Connection</i> program at Caltech.</p>										
PUBLIC OUTREACH	<table border="0"> <tbody> <tr> <td>Caltech Astronomy Outreach Volunteer</td> <td style="text-align: right;">2019 – 2024</td> </tr> <tr> <td colspan="2"><i>Astronomy on Tap Speaker</i></td> </tr> <tr> <td colspan="2"><i>Led public telescope observations of planets and the transit of Mercury</i></td> </tr> <tr> <td colspan="2"><i>Assisted in Planet Finder Academy, program for high school students to learn about astronomy and exoplanet detection</i></td> </tr> </tbody> </table>	Caltech Astronomy Outreach Volunteer	2019 – 2024	<i>Astronomy on Tap Speaker</i>		<i>Led public telescope observations of planets and the transit of Mercury</i>		<i>Assisted in Planet Finder Academy, program for high school students to learn about astronomy and exoplanet detection</i>			
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PROFESSIONAL SERVICE	<p>Journal Referee for <i>Monthly Notices of the Royal Astronomical Society</i>, <i>Astronomical Journal</i>, <i>Astronomy & Astrophysics</i></p> <p>Science Topic Coordinator at Geneva Resonant State Workshop (2025)</p>										

INVITED RESEARCH TALKS	Univeristy of Hawaii Institute for Astronomy Colloquium	2025
	University of Geneva Exoplanet Seminar	2024
	Observatoire de la Côte d'Azur Planet Seminar	2024
	Princeton Extrasolar Planet Discussion Group Seminar	2024
	JPL Virtual Exoplanet Lecture	2024
	Observatoire de la Côte d'Azur Planet Seminar	2023
	Southwest Research Institute Colloquium	2022
	Princeton Extrasolar Planet Discussion Group Seminar	2019
SELECTED RESEARCH TALKS AND POSTERS	EPSC-DPS Joint Meeting	2025
	Theories of the Three-body System Conference	2024
	Exoplanets V Meeting	2024
	AAS Division of Dynamical Astronomy Meeting	2024
	The Inner Disk of Young Stars Conference	2023
	Protostars and Planets VII	2023
	AAS Division for Planetary Sciences Meeting	2022
	AAS Summer Meeting	2022
	AAS Division of Dynamical Astronomy Meeting	2022
	Exoplanets IV Meeting	2022
	Caltech Center for Comparative Planetary Evolution 101 Series	2022
	AAS Division for Planetary Sciences Meeting	2021
	AAS Division of Dynamical Astronomy Meeting	2021
	ExSoCal Meeting	2020
	National Collegiate Research Conference	2018