CURRICULUM VITAE

RENU MALHOTRA

APPOINTMENTS

2016 to present	Regents Professor & Louise Foucar Marshall Science Research Professor, The University of Arizona, Tucson, AZ
2024 to present	Distinguished Visiting Professor, Indian Institute of Technology, Kanpur, India
2022-2023	(on sabbatical leave from the UA) Visiting Professor, Canadian Institute for Theoretical Astrophysics, Toronto, Canada
2011-2016	Chair, Theoretical Astrophysics Program, The University of Arizona, Tucson, AZ
2010-2011	(on sabbatical leave from the UA) Visiting scholar: Institute for Advanced Study, Princeton NJ, Institute for Theory & Computation, Harvard University, Cambridge MA, Planetary Science Institute, Tucson, AZ
2004 to present	Professor, Department of Planetary Sciences, The University of Arizona, Tucson, AZ
2000 to 2004	Associate Professor, Department of Planetary Sciences, The University of Arizona, Tucson, AZ
1991 to 2000	Staff Scientist, Lunar and Planetary Institute, Houston, TX
1989 to 1991	Research Associate, Planetary Sciences, Caltech, Pasadena, CA
1988 to 1989	Research Associate, Astronomy Department, Cornell University
1983 to 1988	Graduate Assistant, Physics Department, Cornell University

EDUCATION

Ph.D., Physics, Cornell University, Ithaca, NY, August 1988.
M.S., Physics (5 year program), Indian Institute of Technology, Delhi, India, 1983.

HONORS and AWARDS

Lecar Prize, Harvard-Smithsonian Center for Astrophysics, 2018
Thomas Gold Lecturer, Cornell University, 2018
Appointed Regents' Professor in the Arizona state university system, 2016
Appointed Louise Foucar Marshall Science Research Professor, 2016
National Academy of Sciences, Elected Member 2015
American Academy of Arts and Sciences, Elected Fellow 2015
Galileo Circle Fellow, The University of Arizona, 2010
Distinguished Alumnus, Indian Institute of Technology, Delhi, India–2006
Kavli Frontiers of Science Fellow, National Academy of Sciences, 2000
Harold C. Urey Prize, American Astronomical Society–Division for Planetary Sciences, 1997
Asteroid 6698 named "Malhotra", International Astronomical Union, 1997
President's Gold Medal for Physics, IIT-Delhi, 1983

PUBLICATIONS

Matheson, I.C., Malhotra, R., On the forced orbital plane of the Hilda asteroids, *Icarus*, 449, 116959 (2026)

Castro-Cisneros, J.D., Malhotra, R., Rosengren, A.J., Analytical estimates for heliocentric escape of satellite ejecta, *Icarus*, 445, 116845 (2026)

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Malhotra, R., Ito, T., The doubly librating Plutinos, *ApJ*, 980:115 (2025)

Castro-Cisneros, J.D., Malhotra, R., Rosengren, A.J., The Sensitivity to initial conditions of the Co-orbital outcomes of Lunar Ejecta, *Icarus*, 429:116379 (2025)

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Ito, T., Malhotra, R., Libration of Pluto's argument of perihelion and the role of the major planets, *Cel. Mech. Dyn. Astron.*, 137, 19 (2025)

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Volk, K., Malhotra, R., Machine Learning Assisted Dynamical Classification of Trans-Neptunian Objects, a chapter in "Machine Learning for Small Solar System Bodies", Carruba, Smirnov and Oszkiewicz (eds.)(2024), doi: 10.1016/B978-0-44-324770-5.00012-X; arXiv:2405.05185

Wu, Y., Malhotra, R., Lithwick, Y., Repelling Planet Pairs by Ping-pong Scattering, *ApJ*, 971, 5 (2024)

Volk, K., Malhotra, R., Differences between Stable and Unstable Architectures of Compact Planetary Systems, *AJ*, 167, 271 (2024)

Dietrich, J., Malhotra, R., Apai, D., Statistical Distribution Function of Orbital Spacings in Planetary Systems, *AJ* 167, 46 (2024)

Jiao, Y., Cheng, B., ..., Malhotra, R., ..., Asteroid (469219) Kamoʻoalewa's Intriguing Journey from Lunar Crater Giordano Bruno to Earth 1:1 Resonance, *Nature Astronomy*, 8, 819-826 (2024)

Castro-Cisneros, J.D., Malhotra, R., Rosengren, A.J., Orbital pathways for a Lunar-Ejecta Origin of the Near-Earth Asteroid Kamoʻoalewa, *Communications Earth & Environment*, 4:372 (2023)

Malhotra, R., Roy, S., Modeling the Free Inclinations of the Classical Kuiper Belt with the von Mises–Fisher Distribution, *RNAAS* 7, 143 (2023)

Matheson, I., Malhotra, R., Keane, J.T., A von Mises–Fisher Distribution for the Orbital Poles of the Plutinos, *MNRAS* 522, 3298-3307 (2023)

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Malhotra, R., Chen, Z., Non-perturbative investigation of low eccentricity exterior mean motion resonances, *MNRAS*, 521(1), 1253-1263 (2023)

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Malhotra, R., Ito, T., Pluto on the Edge of Chaos, *PNAS*, 119(15) e2118692119 (2022)

Dietrich, J., Apai, D., Malhotra, R., An Integrative Analysis of the HD219134 Planetary System and the Inner Solar System: Extending DYNAMITE with Enhanced Orbital Dynamical Stability Criteria, *AJ*, 163(2), id.88 (2022)

Malhotra, R., New results on orbital resonances, Proceedings of the International Astronomical Union, 15 (S364), 85-101 (2022); ArXiv:2111.06372

Sharkey, B., Reddy, V., Malhotra, R., et al., Characterizing Earth Quasi-Satellite (469219) 2016 HO3 Kamoʻoalewa, *Communications Earth & Environment*, 2:231 (2021)

Zaveri, N., Malhotra, R., Pluto's Resonant Orbit Visualized in 4D, AAS Journals, *RNAAS*, 5, 235 (2021)

Reiland, N., Rosengren, A., Malhotra, R., Bombardelli, C., Assessing and Minimizing Collisions in Satellite Mega-Constellations, *Advances in Space Research*, 67(11):3755-3774 (2021)

Agol, E., et al., Refining the transit timing and photometric analysis of TRAPPIST-1: Masses, radii, densities, dynamics, and ephemerides, *PSJ*, 2, id. 1 (2021)

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Petrovich, C., Diego, J.M., Kratter, K.M., Malhotra, R., A disk-driven resonance as the origin of high inclinations of close-in planets, *ApJ Letters*, 902, id. L5 (2020)

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Amato, D., Malhotra, R., Sidorenko, V., Rosengren, A.J., Lunar close encounters compete with the circumterrestrial Lidov-Kozai effect, *Cel. Mech. Dyn. Astron.*, 132(6-7), id.35 (2020)

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Markwardt, L., Gerdes, D.W., Malhotra, R., Becker, J.C., Hamilton, S.J., Adams, F.C., 2020, Search for L5 Earth Trojans with DECam, *MNRAS*, 492(4), 6105-6119 (2020)

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Su, K.Y.L., Morrison, S., R. Malhotra, et al., 2014, Debris distribution in HD 95086: A young analog of HR 8799, *ApJ*, 799, id. 146 (2015).
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Su, K.Y.L., G.H. Rieke, K.R. Stapelfeldt, R. Malhotra, et al., 2009, The Debris Disk Around HR 8799, *ApJ*, 705:314-327.
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Malhotra, R., 1998, Orbital resonances and chaos in the Solar system, in *Solar System Formation and Evolution*, eds. D. Lazzaro, *et al.*, ASP Conference Series 149:37–63. Pub: Astronomical Society of the Pacific, San Francisco.

Malhotra, R. and J. Williams, 1997. The heliocentric motion of Pluto, in *Pluto and Charon*, D.J. Tholen and S.A. Stern, eds., Arizona Space Science Series, Univ. of Arizona Press, Tucson.

Malhotra, R., 1997, Implications of the Kuiper Belt for the Solar system, Planetary and Space Science, in press

Showman, A., D.J. Stevenson and R. Malhotra, 1997, Coupled orbital and thermal evolution of Ganymede, *Icarus* 129:367-383.

Showman, A. and R. Malhotra, 1997, Tidal evolution into the Laplace resonance and the resurfacing of Ganymede, *Icarus* 127:93-111.

Liou, J.C. and R. Malhotra, 1997, Depletion of the outer asteroid belt, *Science* 275:375-377.

Malhotra, R. 1996, The phase space structure near Neptune resonances in the Kuiper Belt, *Astron. J.* 111:504-516.

Malhotra, R. 1995, Dynamical model of pulsar-planet systems, in *Millisecond Pulsars – A Decade of Surprise*, M. Tavani, D. Backer & A. Fruchter, eds. Pub.: Astronomical Society of the Pacific. p. 399-410.

Malhotra, R. 1995, The origin of Pluto's orbit: implications for the Solar system beyond Neptune, *Astron. J.* 110:420-429.

Malhotra, R. 1994, Nonlinear Resonances in the Solar System, *Physica D*, 77:289-304 (special issue on 'Modelling the forces of Nature').

Malhotra, R. 1994, A mapping method for the gravitational few-body problem with dissipation, *Cel. Mech. & Dyn. Astron.* 60:373-385.

Malhotra, R. 1993, The origin of Pluto's peculiar orbit, *Nature* 365:819-821.

Malhotra, R. 1993, Orbital resonances in the Solar Nebula: strengths and weaknesses, *Icarus* 106:264-73. (Special issue on Planet Formation.)

Malhotra, R. 1993, Three-body effects in the planetary system of PSR1257+12, *Astrophys. J.* 407:266-275.

Malhotra, R. 1992, Orbital Dynamics of PSR1257+12 and its Two Planetary Companions, in *Planets Around Pulsars*, eds. J.A. Phillips, S.E. Thorsett, and S.R. Kulkarni, ASP Conference Series 72:399-410. Pub.: Astronomical Society of the Pacific, San Francisco.

Malhotra, R., D. Black, A. Eck and A. Jackson, 1992, Resonant orbital evolution of the putative planetary system of PSR1257+12, *Nature* 356:583-35.

Malhotra, R. 1991, Tidal origin of the Laplace resonance and the resurfacing of Ganymede, *Icarus* 94:399-412.

Malhotra, R. and S.F. Dermott, 1990, The role of secondary resonances in the orbital history of Miranda, *Icarus* 85:444–480.

Malhotra, R. 1990, Capture probabilities for secondary resonances, *Icarus* 87:249–264.

Dermott, S.F., P.D. Nicholson, R. Gomes and R. Malhotra, 1990, Modelling the IRAS Solar System dust bands, *Advances in Space Research* 10(3):171–180.

Malhotra, R., K. Fox, C.D. Murray and P.D. Nicholson, 1989, Secular perturbations of the Uranian satellites: Theory and practice, *Astron. & Astrophys.* 221:348–358.

Dermott, S.F., R. Malhotra and C.D. Murray, 1988, Dynamics of the Saturnian and Uranian satellites: A chaotic route to melting Miranda? *Icarus* 76:295–334.

INVITED CONFERENCE PRESENTATIONS

"Planetary and Lunar Science in Southern Arizona", National Workshop on Beginner's Astronomy, Indian Institute of Technology–Hyderabad, December, 2023

"Orbital resonance phenomena in the solar system and in exo-planetary systems", International Workshop on Celestial Mechanics and Dynamical Astronomy, Central University of Rajasthan–India, January 2023

"The mysteries of gaps and pile-ups at planetary resonances", Numbers & Nature: Honoring the Life and Legacy of Mitchell Feigenbaum, MIT, Cambridge MA, June 2022

"Some new results on interior first order mean motion resonances", Brazilian Colloquium on Orbital Dynamics XX, Sao Paolo Brazil (virtual), December 2021

"New results on orbital resonances", IAU Symposium 364 – Multi-scale (time and mass) dynamics of space objects, Iasi, Romania, October 2021

"Asteroid belt dynamics and statistics", AAS-Division for Dynamical Astronomy, August 2020

"Planet migration in the Solar system", Conference for Undergraduate Women in Physics, The University of Oklahoma, Norman OK, January 2020

"The case for a deep search for Earth's Trojan Asteroids", Earths in Solar Systems, Tucson AZ, Sep 2019

"The Solar System – Planets/Minor Planets/Seen/Unseen", Workshop on Planetary Science with CMB + Optical/IR Surveys", University of Pennsylvania, Philadelphia, April 2019

"Orbital dynamics and planetary habitability", Pop-Up Institute on Planetary Habitability at The University of Texas at Austin, June 2018

"Bombardment History of the Planets", Pop-Up Institute on Planetary Habitability at The University of Texas at Austin, June 2018

"Dynamics of Planetary Systems", Pop-Up Institute on Planetary Habitability at The University of Texas at Austin, June 2018

"Resonant Kuiper Belt Objects - a Review", Planetary Sciences Distinguished Lecture, AOGS Conference, Honolulu HI, June 2018

"Planet migration in the Solar system: a new paradigm and its LPI origins", LPI 50th Anniversary Science Symposium, Houston, TX, March 2018

"Prospects for Unseen Planets Beyond Neptune", Symposium: Serendipities in the Solar System and Beyond, IANCU-Taiwan, July 2017

"The mass function of planets", Inner Solar Systems meeting, American Astronomical Society, AAS Meeting #230, id.#111.01, June 2017

"Earth Trojan Asteroid Survey with the OSIRIS-REx Spacecraft–Science motivations, Science Team Meeting, Tucson AZ, April 2017

"A few points on the dynamical evolution of the young solar system", Planet Day, Center for Planetary Science, University of Toronto, March 2017

"The Solar System Beyond Neptune", Keynote talk for Workshop on Solar System Puzzles, IANCU-Taiwan, July 2016.

"The mass function of planets in the Galaxy", Earths in Other Solar Systems–All Hands Meeting, Tucson AZ, September 2015.

"The Galaxy is teeming with small planets", Lunar and Planetary Laboratory Conference, Tucson AZ, August 2015.

"A few points on the dynamical structure of planetary systems", SPF 1: Star and Planet Formation in the Southwest, March 2015, Biosphere 2 Center, AZ.

"The dynamical history of our solar system", 39th COSPAR Scientific Assembly, Mysore, India, July 2012

"The solar system in time", Women in Science and Technology, Indian Institute of Technology, New Delhi, India, March 8, 2011

"Planet migration", AOGS 2010 – 7th Annual Meeting, Hyderabad, India, July 5-9, 2010.

"Planet migration in the solar system", 'Putting our Solar System in Context', European Science Foundation Conference, Obergurgl, Austria, April 25-30, 2010.

"Planet migration in the solar system", 'Exoplanets Rising' – a conference at the Kavli Institute for Physics, Santa Barbara CA, Mar 29–April 2, 2010.

"Basics of planet migration theory", UCF Winter School 2010: Exoplanets for Planetary Scientists, Orlando FL, Jan 6-8, 2010.

"On the importance of a few dwarf planets", AAS meeting, June 8-11, 2009

"Finding order in Kuiper Belt chaos", Theoretical Institute for Advanced Research in Astrophysics, Hsinchu, Taiwan, December 12-16, 2008

"Planetary scattering and migration: lessons from Pluto", and "Dynamical clearing", Great Planet Debate: a Scientific conference and Educator workshop, Applied Physics Laboratory, MD, Aug 14-16, 2008

"Bombardment of the Terrestrial Planets and Migration history of the giant planets", Formation, Composition and Early Evolution of Outer Giant and Dwarf Planets and of their Satellites, conference at NASA-Ames, December 6-7, 2007

"Secular resonances in planetary systems", Annual Meeting of the AAS Division for Dynamical Astronomy–American Astronomical Society, Halifax, Nova Scotia, June 25-29, 2006.

"Planets in debris disks", May Symposium: A decade of extra-solar planets around normal stars, Space Telescope Science Institute, May 1-5, 2005.

"Exo-planetary debris disks", Planet Formation Conference, Aspen Institute for Physics, Aspen, CO, Feb 8-12, 2005.

"The Kuiper Belt", TPF/Darwin Conference, San Diego CA, July 26-29, 2004.

"Dynamics of exo-planetary systems", Astrophysics of Planetary Systems, Cambridge MA, May 17-20, 2004.

"Asteroids, KBOs and other debris in planetary systems", Planet Formation Conference, Kavli Institute for Theoretical Physics, UC–Santa Barbara, CA, March 15–19, 2004.

"Outer Solar System Science with the InterStellar Probe", *Exploring the Outer Heliosphere*, National Academies, Beckman Institute, UC-Irvine, 6–7 May 2003.

"Kuiper Belt Dust", *First Decadal Review of the Edgeworth-Kuiper Belt*, Antofagasta, Chile, March 10-14, 2003.

"Chaos and Stability in Planetary Systems", *American Physical Society – April 2002 Meeting*, Albuquerque, NM, April 20-23, 2002.

"Stability of Planetary Systems", *Gordon Research Conference on Origins of Solar Systems*, Connecticut College, New London, CT, June 17-22, 2001.

"Separatrix crossing phenomena in the Solar system", *Workshop on Nonlinear Astrophysics*, University of Florida, Gainesville, FL, 15-17 February 2001

"Chaos and stability in the Solar system", *Frontiers of Science*, National Academy of Sciences, Irvine, CA, 22-23 September 2000

"Kuiper Belt Dynamics", *Kuiper Belt Workshop*, 3-4 September 1998, Lowell Observatory, Flagstaff, AZ.

"Orbital Resonances and Chaos in the Solar System", *International Workshop on Planetary Sciences*, 3-6 November 1997 in Rio de Janiero, Brazil.

"The Kuiper Belt: a review", *23rd General Assembly of the International Astronomical Union*, 18-26 August 1997 in Kyoto, Japan.

"The Kuiper Belt: A window on the early Solar system", *Harold C. Urey Prize Lecture*, Annual Meeting of the Division for Planetary Sciences of the American Astronomical Society, July 28-August 1, 1997, Cambridge, MA.

"Dynamical structure in the Kuiper Belt", *28th Annual Meeting of the Division of Dynamical Astronomy*, 13–16 April 1997, Flagstaff, AZ.

"Implications of the Kuiper Belt for the Solar system", *Asteroids, Comets and Meteors Conference*, July 10 1996, Versailles, France.

"The Origin of Pluto's orbit and implications for the Kuiper Belt", *Kuiper Belt Workshop*, June 8 1996, Toronto, Canada.

"Orbital dynamics and tidal evolution of the Icy Galilean satellites", *Icy Galilean Satellites Conference*, Feb 1 1994, San Juan Capistrano, CA.

"Dynamical models for pulsar-planet systems", *Aspen Winter Conference on Astrophysics: Millisecond Pulsars*, Jan 3-7, 1994, Aspen, CO.

"Heliocentric motion of Pluto", *Pluto–Charon Conference*, July 5-9, 1993, Flagstaff, AZ.

"Orbital resonances and chaotic dynamics in the Solar System", *Marlar Graduate Lectures*, August 10-14, 1992, Department of Space Physics and Astronomy, Rice University.

"Tidal Evolution of the Galilean Resonances: Implications for the Ganymede-Callisto Dichotomy", *American Geophysical Union Spring Meeting*, May 11-16, 1992, Montreal

"Orbital Dynamics of PSR1257+12 and its Two Planetary Companions", *Workshop on Planets around Pulsars*, April 30-May 1, 1992, Caltech, Pasadena, CA.

COLLOQUIA/SEMINARS

Northwestern University, Evanston IL, October 2025

Indian Institute of Technology-Kanpur, India, November 2025

Indian Institute of Technology–Hyderabad, December 2023

International Workshop on Celestial Mechanics and Dynamical Astronomy, Central University of Rajasthan–India, January 2023

University of Arizona, Aerospace and Mechanical Engineering Seminar, October 2023

University of Arizona, Origins Seminar, December 2022
Associacao Laboratorio Interstitucional de e-Astronomia LineA, Rio de Janeiro - RJ - Brasil (webinar), October 2022
Canadian Institute for Theoretical Astrophysics, Toronto ON, September 2022
University of Colorado, Boulder CO, April 2022
Tsinghua University, Aerospace Engineering Seminar (virtual), December 2021
Indian Institute of Technology-Roorkee, India, May 2021
University of Arizona, Physics Department Colloquium, Tucson AZ, February 2020
University of Arizona, Aerospace Engineering Seminar, Tucson AZ, February 2020
Wittenberg University, IBM Lecture and Physics Colloquium, Springfield OH, September 2019
Northern Arizona University, Flagstaff AZ, April 2019
University of Houston, Physics Department Colloquium, Houston TX, November 2018
Harvard University and Smithsonian Institution, Center for Astronomy Colloquium and Lecar Prize Lecture, Cambridge MA, Sep 2018
Harvard University, Institute for Theory & Computation luncheon seminars, Cambridge MA, Sep 2018
The University of Arizona, Lunar and Planetary Laboratory Colloquium, Tucson AZ, August 2018
Cornell University, Thomas Gold Lecture, Ithaca NY, May 2018
Cornell University, Astronomy Lunch Seminar, Ithaca NY, May 2018
Cornell University, Joint Physics-Astronomy Colloquium, Ithaca NY, April 2018
Raman Research Institute, Bengaluru, India, January 2018
Herzberg Institute for Astronomy, Victoria BC, 25 April 2017
University of British Columbia, Astronomy, Vancouver BC, 24 April 2017
National Optical Astronomy Observatories, Tucson AZ, December 02, 2016
University of Chicago, Astronomy, February 24, 2016.
University of Florida, Astronomy, January 28, 2016.
UCLA iPLEX, Los Angeles CA, November 20, 2015.
SETI Institute, Mountain View CA, July 21, 2015.
Southwest Research Institute, Boulder CO, April 23, 2015.
University of California–Berkeley, March 17, 2015
University of California–Berkeley, March 15, 2015
Institute for Advanced Studies, Princeton NJ, April 8, 2014.
Colorado State University, Physics, Fort Collins CO, October 7, 2013.
Canadian Institute for Theoretical Astrophysics, April 22, 2013.
UNAM, Ensenada, Mexico, April 16-18, 2012, Lecture series on Solar System Dynamics.
The University of Arizona, Astrobiology, Oct 21, 2011.
Ohio State University, Columbus OH, Sep 22, 2011.
Institute for Theory & Computation, Harvard-Smithsonian Center for Astrophysics, Apr 7, 2011.
Tata Institute for Fundamental Research, Mumbai, India, March 9, 2011.
Southwest Research Institute, Boulder CO, Feb 15, 2011.
Rutgers University, New Brunswick NJ, Oct 8, 2010.
Institute for Advanced Study, Princeton NJ, Sep 23, 2010.
Joint NOAO-SO Colloquium, Tucson AZ, Nov 05, 2009.
Lunar and Planetary Institute, Houston TX, Dec 5, 2008.
Lowell Observatory, Flagstaff AZ, September 11, 2008.
LaPLace Center for Astrobiology, The University of Arizona, March 28, 2008.
Arizona State University, School for Earth and Space Exploration, August 29, 2007)
The University of Arizona, Theoretical Astrophysics (February 20, 2006).
Harvard University, Center for Astrophysics (September 15, 2005)
Harvard University, Institute for Theory and Computation (September 13, 2005)
Southwest Research Institute, Boulder CO (May 23, 2005)
Caltech, Pasadena CA (April 26, 2005)
University of California, Santa Cruz CA (April 8, 2005)
National Optical Astronomy Observatories, Tucson AZ (April 01, 2005)

Planetary Science Institute, Tucson AZ (2004)
The University of Arizona, Mathematics (2004)
University of California, Berkeley (2002)
The University of Arizona, Theoretical Astrophysics (2002)
Northwestern University, Evanston IL, (2002)
The University of Arizona, Mathematics (2002)
Ohio State University, Columbus OH (2002)
The University of Arizona, Dept. Mathematics (2001)
University of Colorado, Boulder CO (2001)
Carnegie Institution of Washington, Washington DC (2001)
Planetary Science Institute, Tucson AZ (2001)
National Optical Astronomy Observatories, Tucson AZ (2000)
University of Michigan, Ann Arbor MI (1999)
The University of Arizona, Tucson AZ (1999)
California Institute of Technology, Pasadena CA (1999)
University of Washington, Seattle WA (1997)
The University of Arizona, Tucson AZ (1997)
Massachussetts Institute of Technology, Cambridge MA (1997)
Institute for Astronomy, Honolulu HI (1996)
University of Colorado, Boulder CO (1996)
Lunar and Planetary Institute, Houston (1996)
University of Florida, Gainesville FL (1994)
Meudon Observatory, Meudon, France (1994)
Lunar and Planetary Institute, Houston TX (1994)
NASA-Ames Space Science Division, CA (1993)
Colorado State University, Fort Collins CO (1993)
Johnson Space Center, Houston TX (1993)
SouthWest Research Institute, San Antonio TX (1993)
Institute for Theoretical Physics, UC-Santa Barbara CA (1992)
University of Illinois, Urbana-Champaign IL (1992)
Lunar and Planetary Institute, Houston TX (1991)
University of Maryland, College Park MD (1991)
California Institute of Technology, Pasadena CA (1990)
California Institute of Technology, Pasadena CA (1989)
Cornell University, Ithaca NY (1989)
Cornell University, Ithaca NY (1988)

CONTRIBUTED CONFERENCE PRESENTATIONS/ABSTRACTS

Chandler, C.O., et al., Solar System Science with the NSF-DOE Vera C. Rubin Observatory: Overview and Results, Annual Meeting of the AGU (AGU25), December 2025

Matheson, I. and Malhotra, R.: On the forced planes of the Hilda asteroids and other resonant groups, EPSC-DPS Joint Meeting 2025, Helsinki, Finland, September 2025

Spencer, D., Volk, K., Bernadinelli, P., Trilling, D., Ragozzine, D., and Malhotra, R. and the DEEP Collaboration: Diving DEEP into the Kuiper Belt: Dynamical Analysis of Newly Discovered TNOs, EPSC-DPS Joint Meeting 2025, Helsinki, Finland, September 2025

Castro-Cisneros, J.D., Malhotra, R., Rosengren, A.J., Dynamics and Fate of Lunar Impact Ejecta, 16th Planetary Crater Consortium, id.1627, August 2025

Malhotra, R., Ito, T., The doubly resonant Plutinos, Annual Meeting of the AAS-DDA #56, id.402.04, May 2025

Volk, K., Malhotra, R., Spencer, D., Detailed Dynamical Classification of TNOs with Machine Learning, Annual Meeting of the AAS-DDA #56, id. 402.03, May 2025

Castro-Cisneros, J.D., Malhotra, R., Rosengren, A.J., Lunar fragments impacting Earth, Annual Meeting of the AAS-DDA #56, id.102.04, May 2025

Matheson, I., Malhotra, R., The forced orbit plane of the Hilda asteroids, Annual Meeting of the AAS-DDA #56, id.204.13, May 2025

Bergsten, G., et al., Bridging the Gap: Modeling Exoplanet Demographics Across Detection Methods, Meeting of the American Astronomical Society, id. 315.01D (2025)

Malhotra, R., Ito, T., On the dynamics of the doubly resonant Plutinos, Annual meeting of the AAS-DPS id.109.5, October 2024.

Castro-Cisneros, J.D., Malhotra, R., Rosengren, A.J., The influence of Earth's secular orbital variations on the pathways of Lunar Ejecta, Annual meeting of the AAS-DPS id.307.5, October 2024

Volk, K., Spencer, D., Malhotra, R., Ragozzine, The Small Bodies Dynamics Tool (SBDynT) - a python tool for easy dynamical characterization of solar system small bodies, Annual meeting of the AAS-DPS id.205.7, October 2024

Castro-Cisneros, J.D., Malhotra, R., Rosengren, A.J., Coorbital Pathways of Lunar Ejecta, COSPAR Scientific Assembly, July 2024

Brown, G., Rein, H., Malhotra, R., The effects of stellar flybys on the formation and stability of the Solar System, AAS-DDA annual meeting, May 2024

Castro-Cisneros, J.D., Malhotra, R., Rosengren, A.J., The Sensitivity to initial conditions of the Orbital Pathways of Lunar Ejecta, AAS-DDA annual meeting, May 2024

Spencer, D., Volk, K., Ragozzine, D., Malhotra, R., SBDynT: Real-Time Characterization of Small Body Dynamics Code for Solar System Surveys, AAS-DDA annual meeting, May 2024

Kate Su, Andras Gaspar, George Rieke, Renu Malhotra, Schuyler Wolff (University of Arizona) + JWST MIRI/NIRCam GTO team, "Debris Structure in the Vega System Revealed by JWST", Current and Future Trends in Debris Disc Science Series–Dust Devils Workshop, Tucson AZ, March 2024.

Jiao, Y., Cheng, B., Huang, Y., Asphaug, E. Gladman, B., Malhotra, R., Michel, P., Yu, Y., Baoyin, H., Dynamical Constraints Linking Earth Co-Orbital Asteroid Kamoʻoalewa to the Lunar Giordano Bruno Impact, 55th Lunar and Planetary Science Conference, LPI Contribution No. 3040, id.1973, March 2024

Castro-Cisneros, J.D., Malhotra, R., Rosengren, A.J., The possible origin of the Near-Earth Asteroid Kamo'oalewa (469219) as Lunar ejecta, Annual meeting of the AAS-DPS id. 321.08, BAAS Vol. 55, No. 8 e-id 2023n8i321p08, October 2023.

Spencer, D., Volk, K., Ragozzine, D., Malhotra, R., SBDynT: Real-Time Characterization of Small Body Dynamics, Annual meeting of the AAS-DPS id. 219.02, BAAS Vol. 55, No. 8 e-id 2023n8i219p02, October 2023.

Matheson, I., Malhotra, R., Orbital plane distribution of Plutinos, Annual meeting of the AAS-DPS id. 202.07, BAAS Vol. 55, No. 8 e-id 2023n8i202p07, October 2023.

Malhotra, R., "Solar system dynamical history and Lunar orbit evolution from the Lunar crater record", Endurance Science Workshop, Caltech, Pasadena CA. LPI Contribution No. 2985, id. 3034, August 2023

Malhotra, R., Ito, T., "A closer examination of the orbital distribution of Plutinos", Asteroids, Comets, Meteors Conference, Flagstaff, AZ. LPI Contribution No. 2851, id. 2311, June 2023

Ito, T., Malhotra, R., "The role of the major planets in the libration of Pluto's argument of perihelion", Asteroids, Comets, Meteors Conference, Flagstaff, AZ. LPI Contribution No. 2851, id. 2391, June 2023

Roy, S., Malhotra, R., "Modeling the Free Inclinations of the Classical Kuiper Belt with the von Mises–Fisher Distribution", Asteroids, Comets, Meteors Conference, Flagstaff, AZ. LPI Contribution No. 2851, id. 2467, June 2023

Castro-Cisneros, J.D., Malhotra, R., Rosengren, A.J., "The Near-Earth Asteroid Kamo'oalewa (469219) and its possible origin as Lunar-Ejecta", Asteroids, Comets, Meteors Conference, Flagstaff, AZ. LPI Contribution No. 2851, id. 2585, June 2023

Jiao, Y., Cheng, B., Huang, Y., Asphaug, E. Gladman, B., Malhotra, R., Michel, P., Yu, Y., Baoyin, H., "Exploring Asteroid (469219) Kamoʻoalewa's Possible Origin from Lunar Crater Giordano Bruno", Asteroids, Comets, Meteors Conference, Flagstaff, AZ. LPI Contribution No. 2851, id. 2195, June 2023

Volk, K., Spencer, D., Malhotra, R., Ragozzine, D., Spoto, F., Micheli, M., Hsieh, H., "Small Body Dynamics Tool (SBDynT): developing user-friendly open-source software for dynamical characterization of small solar system bodies", Asteroids, Comets, Meteors Conference, Flagstaff, AZ. LPI Contribution No. 2851, id. 2227, June 2023

Spencer, D., Volk, K., Ragozzine, D., Malhotra, R., SBDynT: Characterizing the Solar System Small Bodies by Proper Elements and Chaos, AAS–DDA meeting #54, id.203.02, May 2023

Castro-Cisneros, J.D., Malhotra, R., Rosengren, A., "The Dynamical Fate of Lunar Ejecta and the Possible Origin of Earth's Quasi-satellite Kamo'oalewa", AAS Division on Dynamical Astronomy meeting #54, id. 503.01, May 2023

Dietrich, J., Apai, D., R. Basant, Malhotra, R., An Integrated Analysis of Exoplanet Systems and Predicting Hidden Planets, AAS Meeting #241, id.344.03D, BAAS 55, 2, January 2023

Markwardt, L., Lin, H-W., Gerdes, D.W., Malhotra, R., Adams, F.C., Characterizing Trojan Asteroid Populations Throughout the Solar System, AAS Meeting #241, id.136.09, BAAS 55, 2, January 2023

Markwardt, L., Lin, H-W., Gerdes, D.W., Malhotra, R., Adams, F.C., Napier, K., Surfaces of Neptune Trojans as Revealed by JWST, AGU Fall Meeting (Chicago IL), id.P26A-03, December 2022

Malhotra, R., Ito, T., Pluto near the edge of chaos", Annual meeting of the AAS-DPS 511.03, Oct 2022.

Dietrich, J., Apai, D., R. Basant, Malhotra, R., "An Integrated Analysis of Multi-planet Systems and Predicting Hidden Planets", Annual AAS-DPS Meeting 201.07, October 2022

Castro-Cisneros, J.D., Malhotra, R., Rosengren, A., "Earth's quasi-satellite Kamo'oalewa's possible origin as lunar ejecta", 44th COSPAR Scientific Assembly 16-24 July, 2022. Abstract B1.1-0038-22.

Castro-Cisneros, J.D., Malhotra, R., Rosengren, A., "Earth's Quasi-satellite Kamo'oalewa's Possible Origin as Lunar Ejecta", AAS Division on Dynamical Astronomy meeting #53, id. 204.04, April 2022

Castro-Cisneros, J.D., Malhotra, R., Rosengren, A., "Kamo'oalewa and the possibility of Co-Orbital Dynamical Outcomes of Lunar Ejecta", International workshop on Co-orbital Motion: modeling, understanding and exploitation (Virtual), March 2022

Sharkey, B., Reddy, V., Malhotra, R., et al., "Earth's quasi-satellite (469219) Kamoʻoalewa may be a fragment of the Moon", 49th Lunar and Planetary Science Conference, The Woodlands, Texas. LPI Contribution No. 2678, id. 1620, March 2022

Malhotra, R., "Assessing the Origins of Earth Quasi-Satellite (469219) Kamoʻoalewa ", Alien Earths–All Hands Meeting, Tucson AZ, January 2022.

Malhotra, R., What really goes on in the chaotic zones of the planets, from Earth to Neptune, AAS-DDA annual meeting, 53:305.04, May 2021

Zaveri, N., Malhotra, R., 2021, Pluto's Resonant Orbit Visualized in 4D, AAS-DDA annual meeting, 53:107.02

Matheson, I., Malhotra, R., Rosengren, A., 2021, A measurement of the Kuiper Belt midplane from AI-classified objects, AAS-DDA annual meeting, 53:501.03

Castro-Cisneros, J.D., Malhotra, R., Rosengren, A., 2021, Near-Earth Asteroid Kamoʻoalewa as lunar ejecta, AAS-DDA annual meeting, 53:305.03

Pearce, L., Malhotra, R., 2021, An investigation of chaotic planetary dynamics induced by the wide stellar binary companion to Boyajian's star, AAS-DDA annual meeting, 53:204.05

Volk, K., Malhotra, R., Graham, S., 2021, Mapping Neptune's resonances into the distant solar system, AAS-DDA annual meeting 53:305.01

Markwardt, L., Gowman, G., Gerdes, D.W., Malhotra, R., Adams, F.C., 2021, Latest Results from DECam Search for L5 Earth Trojans, LPSC #2548, id.2538, March 2021

Malhotra, R., Volk, K., 2020, Corralling a distant unseen planet with orbital resonances–an update, AAS-DPS annual meeting #52, id. 304.05, October 2020

Volk, K., Malhotra, R., 2020, Characterizing and predicting dynamical instabilities in multiplanet systems, AAS-DPS annual meeting #52, id. 312.01, October 2020

Volk, K., Malhotra, R., 2020, Dynamical instabilities in systems of multiple short-period planets are likely driven by secular chaos: a case study of Kepler-102, AAS-DDA annual meeting #103.1, August 2020

Volk, K., Malhotra, R., 2020, Kepler-102: a case study for using dynamical constraints to characterize exoplanet systems, American Astronomical Society meeting #235, id. 249.04, Honolulu HI, Jan 2020

Markwardt, L., Gerdes, D.W., Malhotra, R., Becker, J.C., Hamilton, S.J., Adams, F.C., 2020, Searching for L5 Earth Trojans with DECam, American Astronomical Society meeting #235, id. 329.01, Honolulu HI, January 2020

Hendler, N., Malhotra, R., 2019, Observational completion limit of minor planets from the asteroid belt to Jupiter Trojans, Asteroid Science in the Age of Hayabusa2 and OSIRIS-REx, 2019, Tucson, AZ

Reiland, N., Rosengren, A., Malhotra, R., Bombardelli, C., 2019, Assessing and Minimizing Collisions in Satellite Mega-Constellations, Proceedings of the Advanced Maui Optical and Space Surveillance Technologies Conference, Wailea, Maui, Hawaii, 2019

Markwardt, L., Gerdes, D.W., Malhotra, R., Becker, J.C., Hamilton, S.J., Adams, F.C., 2019, Search for L5 Earth Trojans with DECam, EPSC-DPS Joint Meeting 2019, Geneva, Switzerland

JeongAhn, Y., Malhotra, R., Reyes-Ruis, M., 2019, Impact fluxes on 2014 MU69 and Pluto and their variations over secular timescales, EPSC-DPS Joint Meeting 2019, Geneva, Switzerland

Malhotra, R., 2019, Mean motion resonance widths at low and high eccentricity, American Astronomical Society, DDA meeting #50, id. #301.01

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TEACHING & MENTORING

PhD Dissertation advisees:
Ian Matheson (Aerospace Engineering, graduate student), 2020–present
Jose Daniel Castro-Cisneros (Physics, graduate student), PhD 2025
(currently Adjunct Professor, University of Sonora)
Youngmin JeongAhn - Planetary Sciences, PhD 2015
(currently Researcher, KASI, Korea)
Kathryn Volk - Planetary Sciences, PhD 2013
(currently Senior Scientist, Planetary Science Institute)
David A. Minton - Planetary Sciences, PhD 2009
(currently Professor, Purdue University)
Amaya Moro-Martin - Astronomy, PhD 2004
(currently Astronomer, Space Telescope Science Institute)
Matthew Tiscareno - Planetary Sciences, PhD 2004
(currently Senior Research Scientist, SETI Institute)

Post-docs
Kathryn Volk, 2015–2017
Stephen Kortenkamp, 2002-2004
Takashi Ito, 2002-2004
Joseph Hahn, 1997-2000

Other advisees/mentees
Garett Brown (Astronomy, graduate student at University of Toronto), 2022-
Larissa Markwardt (Astronomy, graduate student at University of Michigan), 2018-
Supriya Roy (high school student, Stanford Online High School), 2023
Jeremy Dietrich (Astronomy, graduate student), 2021-2023
Zherui Chen (undergraduate student, Tsinghua University, China), 2022
David Lomeli (Physics & Astronomy, undergraduate student), 2020-2022
Ilia Korgachin (Queens University-Canada, post baccalaureate student), 2020-2021
Nihaal Zaveri (UC-Santa Cruz, post baccalaureate student), 2020-2021
Hamish Hay (Planetary Sciences, graduate student), 2016-2020
Rachel Smullen (Astronomy, graduate student), 2016-2020
Nathan Reiland (Aerospace Engineering, graduate student), 2018-2020
Theodore Broeren (Applied Mathematics, graduate student), 2019
Jelena Spegar (Astronomy and Mathematics, undergraduate student), 2018
Michael Hammer (Astronomy, graduate student), 2018
Adam Sutherland (Astronomy, graduate student), 2018
Nan Zhang (visiting undergraduate student, Tsinghua University, China), 2018
Lei Lan (visiting graduate student, Tsinghua University, China), 2017–2018
Po-yen Liu (visiting graduate student, National Central University of Taiwan), 2017–2018
Nathaniel Hendler (Planetary Sciences, graduate student), 2017-2020

Saverio Cambioni (Planetary Sciences, graduate student), 2017-2018
Xianyu Wang (visiting graduate student from Tsinghua University, China), 2015–2016
Sonia Cornejo (Latin America Summer Program, undergraduate), 2016
Timothy Rodigas (Astronomy, graduate student), 2012-2013
Sarah Morrison (Planetary Sciences, graduate student), 2011-2015
Brenae Bailey (Applied Mathematics, graduate student), 2007-2009
Tatiana Michtchenko (University of Sao Paolo, Brazil), 2002-2003

Graduate courses:
Asteroids, Comets, Kuiper Belt Objects: graduate elective in planetary science, 3 credit units, Fall 2011, Fall 2013, Fall 2014, Fall 2016, Fall 2018
Solar System Dynamics: graduate elective in astronomy, core class in planetary science, 3 credit units, Fall 2003, Fall 2005, Fall 2009, Spring 2014, Spring 2016, Spring 2018, Spring 2020, Spring 2022, Spring 2024, Spring 2026
Advanced Solar System Dynamics: graduate elective in planetary science, 3 credit units, Spring 2021

Undergraduate courses:
Alien Earths: general education–tier 1, 3 credit units, enrollment ∼80; Spring 2025
The Universe and Humanity: general education–tier 1, 3 credit units, enrollment ∼40; Spring 2017, Spring 2019
Asteroids, Comets, Kuiper Belt Objects: upper level undergraduate elective in planetary science, 3 credit units, enrollment ∼5–10/semester; Fall 2011, Fall 2013, Fall 2014, Fall 2016, Fall 2018
Our Golden Age of Planetary Exploration: general education–tier II; 3 credit units, enrollment ∼150/semester; Spring 2010
Planet Earth: Evolution of a Habitable World: general education–tier I; 3 credit units, enrollment ∼150/semester; Fall 2001, Spring 2002, Fall 2002, Spring 2004, Fall 2004, Spring 2006, Spring 2007, Spring 2008
New Views of the Solar System: first year colloquium, 1 credit unit, enrollment ∼15–20/semester; Spring 2005

NATIONAL/INTERNATIONAL SERVICE

Scientific organizing committee – "Solar system in context" conference– NSF-NOIRLab, 2025
International Astronomical Union – elected Vice-President of Commission F2 (2024–)
Indian Institute of Technology-Delhi – Alumni Awards Selection Committee (2023)
NASA Early Career Awards (2023)
NASA Senior Review–New Horizons (2022)
NASA NEO-Surveyor Peer Review Board (2021-2022)
Universities Space Research Association, elected Chair of the Council of Institutions and Member of the Board of Trustees (2020–2022)
American Academy of Arts and Sciences – Class I Section 4 Membership Panel (2019-2020)
National Academy of Sciences – service on various committees (2018–)
American Astronomical Society-Division for Dynamical Astronomy, Vera Rubin Prize Committee, Chair (2018)
American Astronomical Society-Division for Planetary Sciences, Prize Sub-Committee (2017)
American Astronomical Society-Division for Dynamical Astronomy, Vera Rubin Prize Selection Committee (2017)
American Astronomical Society-Division for Dynamical Astronomy, Awards Review Committee (2016)
Morrison Planetarium of the California Academy of Sciences, Science Advisor (2015–2016)
Celestial Mechanics Institute, Elected Member (2014–)
LSST–Science Advisory Committee (2014–2018)
Harvard University – Ad Hoc Tenure Review Committee (2013)
Aspen Center for Physics, Winter Conference on Exoplanets in Multi-body Systems in the Kepler Era, Scientific Organizing Committee (2012-2013)
American Astronomical Society-Division for Planetary Sciences 2011 Scientific Organizing Committee (chair)
Kavli Prize nomination, 2009

International Astronomical Union – Commission 7 (elected member), 2006
NOAO Solar System Time Allocation Committee, 2006–2008
NASA Outer Planets Research Program Review Panel, 2006
IAU Symposium on Extrasolar Planets–2007, Suzhou, China: Scientific Organizing Committee, 2005–2007
Protostars & Planets V (International Conference in Hawaii in 2005, book 2006): Scientific Advisory Committee, 2002–2006
Interstellar Probe Science and Technology Definition Team, 1999–2004
LPSC Program Committee 1997–2000
NASA Origins of Solar Systems Research Program: Management Operations Working Group, 1998–2000
NASA Planetary Geophysics Research Program Review panel 1998–1999
Kuiper Belt Workshop, Toronto, 1996: co-organiser
Icy Galilean Satellites Conference, San Juan Capistrano, California: Scientific Organising Committee, 1994
LPSC Program Committee 1993–1994
Referee for 5–10 professional journal papers per year
Reviewer for 5–10 research grant proposals per year

UNIVERSITY/DEPARTMENT SERVICE

UA President's India Advisory Network, 2025-2026
LPL Curriculum Committee, 2025–2026
LPL Graduate Admissions and Advising Committee, 2025–2026
LPL Graduate Admissions and Advising Committee, 2024–2025
LPL Awards Committee, 2024-2025
LPL Awards Committee, Chair 2023-2024
LPL Promotion & Tenure Committee, 2023-2024
LPL Curriculum Committee, 2023-2024
LPL Promotion & Tenure Committee, Chair, 2021-2022
LPL Faculty Recruitment Committee, 2021-2022
LPL-KASI joint workshop on Apophis space mission, Chair, 2021
LPL Awards Committee, Chair 2019-2021
Invited research presentation to Steward Observatory Advisory Board, 2020
LPL Marketing & Branding Committee, Chair, 2019-2020
LPL Awards Committee, 2019-2020
LPL Buyout Committee (ad hoc), 2019-2020
University Representative to USRA, 2011–present
Steward Observatory Faculty Status (Promotion & Tenure Review) Committee, 2018-2019
College of Science Women's Leadership Steering Committee, 2018-2019
LPL Awards Committee, Chair, 2018-2019
LPL Computer Committee, 2018-2019
LPL Red Team reviewer, 2018
UA–Reviewer for Packard Fellowship Proposals, 2018-2019
LPL Faculty Status (Promotion & Tenure Review) Committee, Chair, 2016–2018
UA–Henry Koffler Prize Selection Committee, Chair, 2017
LPL Professor of Practice – Promotion & Tenure ad hoc Review Committee, 2016–2017
LPL Awards Committee, 2016–2018
Theoretical Astrophysics Program, Chair, 2011–2016
LPL Journal Club co-organizer, 2014-2015
College of Science Galileo Circle Fellows Selection Committee, 2014–2016
LPL Faculty Status (Promotion & Tenure Review) Committee, 2013–2015
Standing member, LPL Graduate Student Candidacy Examination Committees, 2013
College of Science Honors Convocation, Keynote speaker, Fall 2012
Lunar and Planetary Laboratory–Strategic Planning Committee, 2012
Lunar and Planetary Laboratory–Director Search Committee, 2011

Lunar and Planetary Laboratory–Strategic Planning Committee, 2011
Lunar and Planetary Laboratory–Strategic Planning Committee, Chair, 2009
Academic Program Review of UA Astronomy Department, 2009
Lunar and Planetary Laboratory–Faculty Peer Review Committee, 2009
Lunar and Planetary Laboratory–Faculty Peer Review Committee, Chair, 2008
Lunar and Planetary Laboratory–Computer Committee, 2008, 2009
Lunar and Planetary Laboratory–Library Committee, Chair, 2008
Blitzer Award Committee, UA, 2006–2008
Theoretical Astrophysics Program Steering Committee, UA, 2005–present
UA–Templeton Steering Committee, UA, 2005–2008
Lunar and Planetary Laboratory–Promotion and Tenure Committee, 2005, 2006, 2007
Academic Program Review of UA Planetary Sciences Department, 2006
Review Committee for LPL–Director, UA, 2005
Astrobiology Faculty Search Committee, UA, 2005
Astrobiology Graduate Student Bessey Award Committee, UA, 2004–2007
Pre-tenure Advising & Review planning committee, LPL, 2003
Centennial Awards Committee, UA, 2002–2004
Representative to Oral Comprehensive Examinations for Doctoral Candidacy, 2002–2005
Graduate Admissions & Advising Committee, LPL 2001–2002
Lunar and Planetary Laboratory Action Plan Committee, 2000
Computer Resources Committee, LPL 2000
Theoretical Astrophysics Colloquium Organizer, 2000-2001

PUBLIC OUTREACH

Migratory planets and chaos in the young Solar system, presentation to the Greater Phoenix Mensa Forum, March 2025
The mysteries of gaps and pile-ups at planetary resonances, presentation to the Indian Institute of Technology Alumni Club of Bengaluru, India, Dec 2024
Interview with Hannah Means, Physics Today, on Planet 9, September 2024
Conversation with Andy Ober, UA Communications, on the history of calendars, Nov 2024
On Planet 9 controversies – Interview with CNN, August 2024
On the Chang-e 6 space mission to the lunar farside – Radio interview with NPR Affiliate WGBH-Boston/The World, June 2024
On the mysteries of the lunar farside – Interview with CNN, April 2024
On unusual near-Earth asteroid Kamoʻoalewa and its origin from Giordano Bruno lunar crater – UA News, April 25, 2024
Interview for The UnXplained: Mysteries of the Universe with William Shatner, a documentary series for the History Channel, Feb-Mar 2024
On the shapes of orbits – interview with LiveScience.com, Feb 2024
On how leap year works – Interviews with UA Communications, KOLD TV-13 (CBS affiliate), and AZPM, February 2024
On unusual near-Earth asteroid Kamoʻoalewa – UA News, October 23, 2023; and interviews with multiple online media (New York TImes, CNN, Wired, NPR affiliates (KJZZ, AZPM), Space.com, LiveScience, MangoTV, CuriosityTV, etc.), October–November 2023
On solar system dynamics – consultation with BBC-PBS-NOVA The Planets 2, July 2023
On the unusual near-Earth asteroid Kamo'oalewa – interview for Curiosity Stream documentary, June 2023
On the stability and chaotic dynamics of the solar system – Interview for Live Science, May 2023
Q&A with Asian Pacific Islander Desi American Heritage Month Faculty Spotlight – University of Arizona – College of Science, April 2023
On tides and volcanoes of extra-terrestrial bodies – Interview for BBC Planets 2 documentary film, March 2023
"Stormy seas of chaos in the three body problem", 2nd Place Winner, animated data art presentation at The Art of Planetary Science Exhibit, February 2023

Search for Planet 9, a film by Florence Tran written with Cécile Dumas, Vimeo, December 2022
On Milankovitch theory of climate cycles – consultation for Associated Press, July 2022
On lunar impact by a rocket body – consultation for Leonard David's Inside Outer Space news blog, June 2022
Q&A with PNAS, April 2022
On interplanetary dust – consultation for Nature Astronomy, April 2022
Weird orbits and how they work, Live interview with Fraser Cain/Universe Today, YouTube, April 2022
Migratory planets and chaos in the young solar system, Phoenix Astronomical Society meeting, March 2022
On Planet 9 – Interview for podcast program, "Last Seen", WBUR-Boston (NPR affiliate), February 2022
On the faint young Sun paradox – interview for Quanta magazine, January 2022
On Planet 9 – Interview for a documentary film, French Public TV, September 2021
On Planet 9 – Interview for a documentary program, ScreenGlue.com, UK, July 2021
Panel Discussion on "Talented Teachers with a Leadership Mindset", IIT-Delhi Faculty Alumni Day, October 4, 2020; streamed on YouTube and FaceBook
Steward Observatory Advisory Board – presentation on Planet Nine, 2020
Plenary address and Q&A at Conference for Undergraduate Women in Physics at the University of Oklahoma, Norman, January 18, 2020
Q&A with Babbage Radio of the Economist magazine, December 2019
The Structure and Evolution of the Solar System, presentation to Seminarians of Sacred Heart Seminary and School of Theology, Hales Corners, Wisconsin, February 28, 2019
Q&A with Tucson's Hard Science Fiction Writers Group, September 1, 2018
Radio interview - MicRobin Radio (AM970 in New York, New York), Dec 9, 2017
Prospects for Unseen Planets in the Distant Solar System, Huachuca Astronomy Club, August 11, 2017
The Search for Planet Nine, TEDx, Portland, OR, April 2017 (> 1 million views)
The Structure and Evolution of the Solar System, Saddlebrooke SkyGazers Club, February 12, 2017
The Structure and Evolution of the Solar System, Sun City-Oro Valley, October 20 2016
Pluto Matters, Benjamin Dean lecture, Morrison Planetarium, May 9, 2016
Planet Migration, Other Earths dinner presentation, April 20, 2016
The Structure and Evolution of the Solar System, UA Osher Lifelong Learning Institute, March 18, 2016
Science Advisor for California Academy of Sciences–Morrison Planetarium, 2015-2016
Pluto and the Kuiper Belt, UA-Summer Science Saturday Lecture Series, July 18 2015.
The Structure and Evolution of the Solar System, UA Lifelong Learning Institute, Oct 01, 2014
Jury panel for "The Art of Planetary Science", UA, Oct 2014
Tracking the Planets: Ours and Theirs, Girls Need Their Space, UA, March 29, 2014
Fractions for Planets, art exhibit for "The Art of Planetary Science", UA, Oct 2013
The Early History of the Solar System, Biosphere 2, AZ, Oct 22, 2011
Migrating planets, East Valley Astronomy Club, Mesa, AZ, Nov 5, 2009
Migrating Planets, Arizona Senior Academy Village, October 01, 2009
Migrating planets, LPL Public Evening Lecture, Tucson, AZ, Sep 15, 2009
Panelist for "Expanding Your Horizons Youth Conference", UA-WISE, Tucson, AZ, March 28, 2009
Balancing work and family, Girl Scout Troop 794, Tucson, AZ, Feb 22, 2009
Lessons from Pluto, Basis High School, Tucson, AZ, Oct 24, 2008
Optical Illusions, Science Night at Catalina Foothills School District, Tucson, AZ, Dec 1, 2007
Video program on the Late Heavy Bombardment, National Geographic, Nov 27, 2006
Workshop on Space Science for K-12 teachers in the Catalina Foothills School District, Tucson, AZ, July 25–28, 2005
Video program on the Solar System, Coast Learning Systems Astronomy Telecourse, September 21, 2004
Presentation and discussion on new discoveries in the Solar System, Science Teachers Workshop, Catalina Foothills School District, Tucson, AZ, June 2004

Popular writing/press:

Pluto orbits in elegant arrangement with the giant planets, The Science Breaker, May 2023
How Pluto walks a tightrope between a stable and a chaotic orbit, Keith Cooper, Space.com, April 2022
Planetary migration: a brief history of the solar system's evolution, article in IIT-Tech Ambit, June 2021

Prospects for Unseen Planets Beyond Neptune, presentation to the UA Osher Lifelong Learning Institute, February 19, 2021
On the Great Conjunction of December 2020 – Interviews with National Public Radio, New York Times, KPNX TV, December 2020
"How the planets got their spots", Economist magazine, December 2019
Interview with PBS NOVA, WGBH Educational Foundation, Boston, MA, February 25, 2019
Q&A with Transmitter Media (New York City), January 5, 2019
Interview with Arizona Daily Star, Nov 8, 2018
"An Indian orbiter reached Mars five years ago, and it's still ticking", Ars Technica, October 2019
"La mystérieuse planét X serait plus proche que prévu du Soleil", Le Figaro, March 2019
"A Journey Into the Solar System's Outer Reaches, Seeking New Worlds to Explore", New York Times, December 2018
"Did This Wrong-way Asteroid Come from Beyond the Solar System?", Sky & Telescope, May 2018
"Elon Musk's Tesla in Space Could Crash Into Earth", National Geographic News, February 2018
"Forget Planet 9 – there's Evidence of a Tenth Planet Lurking at the Edge of the Solar System", Newsweek, June 2017
"UA-led OSIRIS-REx team snaps photos of Jupiter and its moons ", Arizona Daily Star, February 2017
"In the motions of distant solar system objects, astronomers find hints of Planet Nine", Los Angeles Times, October 2016
"The Galaxy may be teeming with small planets", Arizona Daily Star–Science Supplement, January 2016
"Exploring our solar system's past through Pluto", Arizona Science podcast, AZPM.org, December 2015
"Our wild wild solar system", cover story in National Geographic magazine, July 2013
NASA Solar System Exploration portal profile, http://solarsystem.nasa.gov/people, July 2013
"What Would Happen If Earth and Mars Switched Places?", Scientific American, blog by George Musser, June 2011
AstroConfidential column, Astronomy magazine, June 2011
"Will Pluto ever collide with Neptune?", Astronomy magazine, October 2007
"Planets and planetary systems", *Scholastic Encyclopedia* (2005)
"Migrating Planets", *Scientific American*, 281(3):56-63 (1999)
"Chaotic planet formation", *Nature*, 402:599-600 (1999)
"Galileo reveals Ganymede's secrets", *Physics World*, March 1997
"Bringing Order to Chaos", *Mercury*, 26(4):33-34 (1997)
"The Kuiper Belt: a review of the present status", *Highlights of Astronomy*, 11A:223-228 (1998)
"The origin of the Solar system", *Encyclopedia of Earth Sciences*, McMillan Publishing, New York(1995)
"Pluto and Charon: Planets on the edge", *Lun. and Plan. Infm. Bull.*, August (1993)

& Numerous interviews with science journalists, on radio and in print and electronic media.