Rocio Kiman

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Last updated: October 30 2023

California Institute of Technology
1200 E California Blvd
Pasadena, California 91125

Appointments

Sherman Fairchild Postdoctoral Scholar
Research Associate in Astronomy — September 2022–Present
California Institute of Technology
Pasadena, California, USA.

Volunteer for Astronomy Outreach — July 2022
Santa Barbara Museum of Natural History
Santa Barbara, California, USA.

Postdoctoral Scholar — September 2021–August 2022
Kavli Institute for Theoretical Physics
University of California, Santa Barbara
Santa Barbara, California, USA.

Education

The Graduate Center, City University of New York — 2016–2021
Ph.D. in Physics
Master of Philosophy Physics (June 2, 2020)
Thesis Title: "A Unified Approach to M Dwarf Ages"
Thesis Advisors: Prof. Kelle Cruz & Dr. Jackie Faherty
New York, New York, USA.

Universidad de Buenos Aires — 2011–2016
Licenciatura in Physics
Thesis Title: "Higgs boson pair production at the LHC"
Thesis Advisor: Prof. Daniel de Florian
Buenos Aires, Argentina.

Grants & Awards

TESS Cycle 5 Guest Investigator Program, for $\$70,000$	July 19 2022
PSC-CUNY Cycle 51 Trad B Research Award, (PI: K.Cruz) for \$6000	April 16 2020
Sigma Xi Grants in Aid of Research, for \$4334	June 01 2019
Doctoral Student Research Grant (Round 14) for \$875	March 13 2019
Provosts Pre-Dissertation Research Fellowship for the Sciences, for \$5000	March 08 2019
K2 Guest Observer Cycle 6 (PI: J. Faherty) for $\$125,000$	Junes 25 2018
PSC-CUNY Cycle 49 Trad B Research Award (PI: K.Cruz) for \$6000.00	April 13 2018
CUNY Science Scholarship AY 20162017: $\$26,000$ stipend and full tuition AY 20172018, AY 20182019, AY 20192020 and AY 20202021: full tuition	August 25 2016
CONICET Doctoral Fellowship, \$5270 stipend	April 01–August 24 2016

Open source code and tutorials

`wdwarfdate`: Open source code that estimates ages of white dwarfs in a Bayesian framework. [Source] [Docs]

Modeling 1: Make a quick fit using astropy.modeling Astropy Python Package tutorial. [Docs]

Modeling 2: Create a User Defined Models using astropy.modeling Astropy Python Package tutorial. [Docs]

Observing Time Awarded

Three nights with the Double Spectrograph (DBSP), Palomar Observatory for the 2023A semester (PI: R. Kiman).
Three nights with the Double Spectrograph (DBSP), Palomar Observatory for the 2022B semester (PI: G. Hallinan).

Invited Talks

Seminar Center for Astrophysics, Harvard University, October 18 2022, *Studying Radius Inflation on Low-Mass Stars Using Gaia DR3.*
Seminar at IPAC/Caltech, October 5 2022, *A Unified Approach to M Dwarf Ages.*
Kavli Institute for Theoretical Physics, Probes of Transport in Stars Program, December 9 2021, *Through the Fully Convective Boundary: An Overview of Low-mass Stars and Brown Dwarfs.*
Berkeley online short talk, April 22 2021, *Age Relations for Low-Mass Stars.*
Carnegie Observatories online Lunch Talk, March 19 2021, *Age Relations for Low-Mass Stars.*
Center for Astrophysics's Exoplanet Presentation Lounge online, February 23 2021, *Age Relations for Low-Mass Stars.*
Gemini Observatory Seminar, January 10 2020, Hilo, HI, USA. *Age-dating low mass stars using magnetic activity and kinematics.*
Leibniz-Institut für Astrophysik Potsdam (AIP) Seminar, July 2 2019, Potsdam, Germany. *Finding Age Relations for Low Mass Stars Using Magnetic Activity and Kinematics.*
Princeton University Seminar, May 23 2019, NJ, USA. *Finding Age Relations for Low Mass Stars Using Magnetic Activity and Kinematics.*
Invited panelist, AAS 233, 6–10 January, 2019, Seattle, Washington, USA. *An Open Discussion on Software.*

Selected Contributed Presentations

Contributed talk, American Astronomical Society Meeting #241, 8-12 January 2023, Seattle, Washington, *Studying Radius Inflation on Low-Mass Stars Using Gaia DR3.*
Fifty Years of the Skumanich Relations, March 08-11 2022, Boulder, Colorado USA, *A unified approach to M dwarf ages.*
University of Washington online Lunch Talk, March 9 2021, *Age Relations for Low-Mass Stars.*
Leiden Observatory online Lunch Talk, February 2 2021, *Age Relations for Low-Mass Stars.*
Dartmouth online Journal club, September 9 2020, *Age Relations for Low-Mass Stars.*
Poster presentation, American Astronomical Society Meeting #235, 4-8 January, 2020, Honolulu, HI, USA. *Age-Activity relation for M dwarfs using Hα equivalent widths* Kiman R., Faherty J., Cruz K., Xu S., Schmidt S., Angus R., Gagné J., Bardalez Gagliuffi D., Rice E.
Contributed talk, TRAPPIST-1 conference, June 11–14, 2019, Liège, Belgium. *TRAPPIST-1 in the context of M-dwarfs re-defined by Gaia DR2.*
Contributed talk, Big Apple Magnetic Fields Conference, January 24–25, 2019, Center for Computational Astrophysics at the Flatiron Institute, NY, New York, USA. *Finding age relations for low mass stars using magnetic activity and kinematics.*
Poster presentation, American Astronomical Society Meeting #233, 6–10 January, 2019, Seattle, Washington, USA. *Finding age relations for low mass stars using magnetic activity and kinematics.* Kiman, R., Schmidt, S.J., Angus, R., Cruz, K.L., Faherty, J.K. & Rice, E.
Poster presentation, Cool Stars, July 30 to August 3, 2018, Boston-Cambridge, USA. *Age Dating Low Mass Stars Using Galactic Kinematics.* Kiman, R., Schmidt, S.J., Angus, R., Cruz, K.L., Faherty, J.K. & Rice, E.
Contributed talk, Cool Stars, July 30 to August 3, 2018, Boston-Cambridge, USA. *Age Dating Low Mass Stars Using Galactic Kinematics.*

Schools and Selected Conferences Attended

LSST program September 8–13 2019, CCA, New York
Space Astrometry For Astrophysics. 3–7 June 2019, L'Aquila, Italy
.Astronomy X. 24–27 September 2018, Baltimore MD, USA.
Gaia Sprint. 4–8 to June, 2018, Center for Computational Astrophysics at the Flatiron Institute, NY, New York, USA.

Python in Astronomy. April 30 to May 4, 2018, Center for Computational Astrophysics at the Flatiron Institute, NY, New York, USA.
Gaia DR2 Sprint. 25–27 April, 2018, Center for Computational Astrophysics at the Flatiron Institute, NY, New York, USA.
IYAS on the scientific exploration of the Gaia data. February 26 to March 2, 2018, Paris, France.
La Serena School of Data Science. 21-29 August, 2017, La Serena, Chile.

Teaching Experience

ASTRO 10200 - Laboratory Explorations in Astronomy — 2019–2020
Hunter College, CUNY, New York, USA
Classical Mechanics, University of Buenos Aires, Argentina — 2016
Private Tutor for High-School and Undergraduate Students — 2009–2015
High-school subjects: Mathematics, Physics, Chemistry and Informatic
Undergraduate subjects: Calculus, Algebra, Physics and Chemistry

Outreach Activities

Solar annular eclipse viewing from Bryce Canyon National Park, with star party at night. October 14 2023. Bryce Canyon National Park, Utah.
Astronomy on Tap talk: *The evolution of the stars.* October 11 2023. Grand Canyon Lodge, North Rim, Arizona.
Spanish Language Stargazing Lecture: *Cuál es la edad de una estrella?* August 18 2023. CalTech, Pasadena, California.
Help organization and participate on International Astronomy day at Santa Barbara, together with the Santa Barbara Museum of Natural History and the Astronomical Unit. April 29 2023. Santa Barbara, California.
Participation on Pasadena School Science Fair, solar observation with Hα telescope. April 22 2023. Pasadena, California.
Astronomy on Tap talk: *How old are stars?* February 13 2023. Pasadena, California.
Participation in the explaining video about JWST with the Santa Barbara Museum of Natural History. July 13 2022. Available online.
Planetarium presentations: *Explorando el Sistema Solar.* Santa Barbara Museum of Natural History, Sundays during July 2022. Santa Barbara, California.
Invited talk about the Lunar Eclipse for the Astronomy Girl Scouts Club, at the Santa Barbara Museum of Natural History, May 13 2022. Santa Barbara, California.
Invited talk at the Graduate Student Research Symposium, October 23 2020. City College of New York, CUNY.
Public talk at *Viernes Astronómicos: Cuál es la edad de las estrellas?*, September 18 2020. Universidad Nacional Mayor de San Marcos, Lima, Perú. Open public. Available online.
Participation in the presentation in Spanish, September 24 2019. *Astronomía en Vivo: Historia del Universo.* American Museum of Natural History, New York, USA. Open public.
Presentation at Adventures in Science Camps, January 29 2019. American Museum of Natural History, New York, USA. For children in Grades 1–5.
Outreach Assistant, 2014–2016. Universidad de Buenos Aires, Argentina
- Presenter at the "Physics week" for high-school students, 2014-2015.
- Presenter at the "Museum's night", 2014-2015.
- Presenter at the Book Fair in Buenos Aires, May 2015.
- Monthly outreach talks for high-school students about the career in Physics.

Observing experience

Three nights with the Double Spectrograph (DBSP), Palomar Observatory — Spring semester 2023
Three nights with the Double Spectrograph (DBSP), Palomar Observatory — Fall semester 2022
FIRE at the Magellan Telescope at Las Campanas Observatory in Chile. For the Backyard worlds project. — December 10–13 2019
SpeX at the NASA Infrared Telescope Facility (NASA IRTF) — August 28 2018

Telescope at the Mauna Kea Observatory in Hawaii. Remote Observing.
CAPSCam at the DuPont Telescope November 30 2017
at Carnegie's Las Campanas Observatory in Chile. Remote Observing.

First Author Publications

4. Measuring Radii of Single FGK and M Dwarfs Using Gaia DR3 to Study the Effect of Magnetic Activity.
Kiman, R.; Brandt, T. D.; Faherty, J. K.; Popinchalk, M.; in prep.
3. `wdwarfdate`: A Python Package to Derive Bayesian Ages of White Dwarfs.
Kiman, R.,; Xu, S.; Faherty, J.K.; Angus, R.; Brandt, T.D.; Casewell, S.L., Gagné; J., Cruz, K.L.; The Astronomical Journal, 164, 2, 13 (2022) DOI: 10.3847/1538-3881/ac7788
2. Calibration of the Hα Age-Activity relation for M dwarfs
Kiman, R.; Faherty, J.K.; Cruz, K.L.; Gagné , J.; Angus, R.; Schmidt, S. J.; Mann, A.W.; Bardalez Gagliuffi, D.C.; Rice, E.; The Astronomical Journal, 161, 6, 22 (2021) DOI: 10.3847/1538-3881/abf561
1. Exploring the age dependent properties of M and L dwarfs using *Gaia* and SDSS.
Kiman, R., Schmidt, S.J., Angus, R., Cruz, K.L., Faherty, J.K. & Rice, E., The Astronomical Journal, 157, 6, 231 (2019) DOI: 10.3847/1538-3881/ab1753

Co-author Publications

16. Dynamical masses and ages of Sirius-like systems
Zhang, H.; Brandt, T. D. ; **Kiman, R.**; Venner, A.; An, Q.; Chen, M.; Li, Y.; Monthly Notices of the Royal Astronomical Society, 524, 1, 695-715 (2023) DOI: 10.1093/mnras/stad1849
15. Surveying nearby brown dwarfs with HGCA: direct imaging discovery of a faint, high-mass brown dwarf orbiting HD 176535 A
Li, Y.; Brandt, T. D.; Brandt, G. M.; An, Q.; Franson, K.; Dupuy, T. J.; Chen, M.; Bowens-Rubin, R.; Lewis, B. L.; Bowler, B. P.; Gibbs, A.; **Kiman, R.**; Faherty, J. K.; Currie, T.; Jensen-Clem, R.; Zhang, H.; Contreras-Martinez, E.; Fitzgerald, M. P. ; Mazin, B. A.; Millar-Blanchaer, M.; Monthly Notices of the Royal Astronomical Society, 522, 4, 622-5637 (2023) DOI: 10.1093/mnras/stad1315
14. The Oceanus Moving Group: A New 500 Myr Old Host for the Nearest Brown Dwarf
Gagné, J.; Moranta, L.; Faherty, J. K.; **Kiman, R.**; Couture, D.; Larochelle, A. R.; Popinchalk, M.; Morrone, D.; The Astrophysical Journal, 945, 2, 23 (2023) DOI: 10.3847/1538-4357/acb8b7
13. Examining the Rotation Period Distribution of the 40 Myr Tucana-Horologium Association with TESS
Popinchalk, M.; Faherty, J. K.; Curtis, J. L.; Gagné, Jonathan; Bardalez Gagliuffi, D. C.; Vos, J. M.; Ayala, A.; Gonzales, L.; **Kiman, R.**; The Astrophysical Journal, 945, 2, 18 (2023) DOI: 10.3847/1538-4357/acb055
12. Magnetic braking saturates: evidence from the orbital period distribution of low-mass detached eclipsing binaries from ZTF
El-Badry, K.; Conroy, C.; Fuller, J.; **Kiman, R.**; van Roestel, J.; Rodriguez, A. C.; Burdge, K. B.; Monthly Notices of the Royal Astronomical Society, Advance Access (2022) DOI: 10.1093/mnras/stac2945
11. The POKEMON Speckle Survey of Nearby M Dwarfs. I. New Discoveries
Clark, C. A.; van Belle, G. T.; Horch, E. P.; von Braun, K.; Ciardi, D. R.; Winters, J. G.; **Kiman, R.**; The Astronomical Journal, 164, 2, 13 (2022) DOI: 10.3847/1538-3881/ac739c
10. Discovery of 34 Low-mass Comoving Systems Using NOIRLab Source Catalog DR2
Kiwy, F.; Faherty, J. K.; Meisner, A.; Schneider, A. C.; Kirkpatrick, J. D.; Kuchner, M. J.; Burgasser, A. J.; Casewell, S.; **Kiman, R.**; Calamari, E.; Aganze, C.; Hsu, C.; Sainio, A.; Thakur, V.; Backyard Worlds: Planet 9 Collaboration; The Astronomical Journal, 164, 1, 24 (2022) DOI: 10.3847/1538-3881/ac68e7

9. WDJ220838.73+454434.04: a White Dwarf Companion in the AR Lacertae System
Bickle, T. P.; Jalowiczor, P. A.; Casewell, S. L.; Faherty, J. K.; **Kiman, R.**; Schneider, A. C. ; Kirkpatrick, J. D.; Meisner, A. M.; Kuchner, M. J.; Caselden, D.; Backyard Worlds: Planet 9 Collaboration; Research Notes of the AAS, 6, 6, 127 (2022). DOI: 10.3847/2515-5172/ac780a

8. Ross 19B: An Extremely Cold Companion Discovered via the Backyard Worlds: Planet 9 Citizen Science Project
Schneider, A. C. ; Meisner, A. M. ; Gagne, J. ; Faherty, J. K. ; Marocco, F. ; Burgasser, A. J. ; Kirkpatrick, J. D. ; Kuchner, M. J. ; Gramaize, L. ; Rothermich, A. ; Brooks, H. ; Vrba, F. J. ; Bardalez Gagliuffi, D. ; Caselden, D. ; Cushing, M. C. ; Gelino, C. R. ; Line, M. R. ; Casewell, S. L. ; Debes, J. H. ; Aganze, C.; Ayala, A. ; Gerasimov, R. ; Gonzales, E. C. ; Hau, C. ; **Kiman, R.** ; Popinchalk, M. ; Theissen, C. ; The Backyard Worlds; Planet 9 Collaboration; The Astrophysical Journal, 921, 2, 13 (2021) DOI: 10.3847/1538-4357/ac1c75

7. Evaluating Rotation Periods of M dwarfs
Popinchalk, M.; Faherty, J.; **Kiman, R.**; Angus, R.; Curtis, J.; Gagne, J.; Cruz, K.; Rice, E.; The Astrophysical Journal, 916, 2, 77 (2021) DOI: 10.3847/1538-4357/ac0444

6. Gyro-Kinematic Ages for 29, 949 Kepler Stars
Lu, Y.; Angus, R.; Curtis, J.L.; David, T.J., **Kiman, R.**; The Astronomical Journal, 161, 4, 189 (2021) DOI: 10.3847/1538-3881/abe4d6

5. The Field Substellar Mass Function Based on the Full-sky 20-pc Census of 525 L, T, and Y Dwarfs.
Kirkpatrick, J.D.; Gelino, C.R.; Faherty, J.K.; Meisner, A.M.; Caselden, D.; Schneider, A.C.; Marocco, F.; Cayago, A.J.; Smart, R.L.; Eisenhardt, P.R.; Kuchner, M.J.; Wright, E.L.; Cushing, M.C.; Allers, K.N.; Bardalez Gagliuffi, D.C.; Burgasser, A.J.; Gagne, J.; Logsdon, S.E.; Martin, E.C.; Ingalls, J.G.; Lowrance, P.J.; Abrahams, E.S.; Aganze, C.; Gerasimov, R.; Gonzales, E.C.; Hsu, C.; Kamraj, N.; **Kiman, R.**; et al, The Astrophysical Journal Supplement Series, 253, 1, 85 (2021) DOI: 10.3847/1538-4365/abd107

4. Discovery of a Nearby Young Brown Dwarf Disk
Schutte, M. C.; Lawson, K. D.; Wisniewski, J. P.; Kuchner, M. J.; Silverberg, S. M.; Faherty, J. K.; Bardalez Gagliuffi, D. C.; **Kiman, R.**; Gagn, J.; Meisner, A.; Schneider, A. C.; Bans, A. S.; Debes, J. H.; Kovacevic, N.; Bosch, M. K. D.; Durantini Luca, H. A.; Holden, J.; Hyogo, M.; The Astronomical Journal, 160, 4, 10 (2020) DOI: 10.3847/1538-3881/abaccd

3. Spitzer Follow-up of Extremely Cold Brown Dwarfs Discovered by the Backyard Worlds: Planet 9 Citizen Science Project.
Meisner, A. M.; Faherty, J.K.; Kirkpatrick, J. D.; Schneider, A.C.; Caselden, D.; Gagn, J.; Kuchner, M.J.; Burgasser, A.J.; Casewell, S.L.; Debes, J.H.; Artigau, .; Bardalez Gagliuffi, D.C.; Logsdon, S.E.; **Kiman, R.** et al., The Astrophysical Journal, Volume 899, Issue 2, id.123 (2020) DOI:10.3847/1538-4357/aba633

2. Exploring the evolution of stellar rotation using Galactic kinematics
Angus, R.; Beane, A.; Price-Whelan, A. M.; Newton, E.; Curtis, J. L.; Berger, T.; van Saders, J.; **Kiman, R.**; Foreman-Mackey, D.; Lu, Y.; Anderson, L.; Faherty, J. K., The Astronomical Journal, Volume 160, Number 2 (2020) DOI: 10.3847/1538-3881/ab91b2

1. Toward Precise Stellar Ages: Combining Isochrone Fitting with Empirical Gyrochronology.
Angus, R., Morton, T. D., Foreman-Mackey, D., van Saders, J., Curtis, J., Kane, S. R., Bedell, M., **Kiman, R.**, Hogg, D. W.; Brewer, J. The Astronomical Journal, Volume 158, Issue 5, article id. 173, 12 pp. (2019). DOI: 10.3847/1538-3881/ab3c53