

## Curriculum Vitae Jennifer B. Bergner

### Positions

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Assistant Professor, UC Berkeley Department of Chemistry	2023–
NASA Sagan Postdoctoral Fellow, University of Chicago Department of the Geophysical Sciences	2019 – 2022
Graduate Student, Harvard Chemistry and Harvard-Smithsonian Center for Astrophysics	2014 – 2019
Postbaccalaureate Intramural Research Training Award, National Institutes of Health, NIDDK	2013 – 2014
Undergraduate Research Assistant, UVA Departments of Chemistry & Environmental Engineering	2011–2013

### Education

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Ph.D. Chemistry & Chemical Biology	Harvard University, 2019
M.A. Chemistry & Chemical Biology	Harvard University, 2016
B.S. Chemistry	University of Virginia, 2013

### Awards & Distinctions

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Chevron Chair in Chemistry, UC Berkeley	2023
Scialog Fellow for Signatures of Life in the Universe, Research Corporation for Science Advancement	2023
American Astronomical Society Laboratory Astrophysics Division Dissertation Prize	2021
International Astronomical Union PhD Prize, Division H (Interstellar Matter & the Local Universe)	2020
Robert L. Brown Outstanding Dissertation Award, National Radio Astronomy Observatory	2020
NASA Hubble-Sagan Postdoctoral Fellowship	2019
Fireman Dissertation Award, Harvard Astronomy Department	2019
Rodger Doxsey Travel Prize, American Astronomical Society 223rd meeting	2019
Distinction in Teaching Award, Harvard Bok Center	2016 & 2017
Graduate Research Fellowship Program, National Science Foundation	2014 – 2019

### Selected Service

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Laboratory Astrophysics Taskforce, NSF/NASA Astronomy and Astrophysics Advisory Committee	2023–
ngVLA Science Advisory Council Member	2022–
Co-Chair of Science Working Group 2: Astrochemistry and the Molecular Emergence of Life	
Science Team Member for NASA Pioneer class concept <i>POEMM</i>	2023–
Science Team Member for NASA far-IR Probe concepts: <i>SALTUS</i> , <i>PRIMA</i> , <i>SPICE</i>	2022–
Science Team Member for NASA MIDEX concept <i>OASIS</i>	2021–
Leader of ‘Prebiotic Molecules’ Science Working Group	
Reviewer for The Astrophysical Journal, Astronomy & Astrophysics, ACS Earth & Space Chemistry, Nature, Nature Communications, various NASA and NSF grants	

### Selected Invited Research Talks

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Earth, Environmental and Planetary Sciences Colloquium, Brown University	February 2023
Vertical Shear Instability Meeting (virtual)	October 2022
Niels Bohr Legacy Symposium in Astrochemistry, Copenhagen	October 2022
Origins Seminar Series (virtual, hosted by Alien Earths collaboration)	August 2022
ACS National Meeting, “Inorganic and Organometallic Astrochemistry” Session, Chicago IL	August 2022
General Seminar Series, Carnegie Earth & Planets Lab	May 2022
CIERA Astronomy Seminar, Northwestern University	May 2022
Astronomy Colloquium, University of Maryland	April 2022
Astronomy & Astrophysics Colloquium, Columbia University	March 2022
Physics & Astronomy Colloquium, Dartmouth College	March 2022
Astronomy Colloquium, Yale University	March 2022

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Astronomy Seminar, UT Austin	February 2022
Astronomy Seminar, Penn State University	February 2022
Physical Chemistry Seminar, UC Berkeley	February 2022
Origins of Life Seminar, University of Wisconsin-Madison	January 2022
Geophysical Sciences Seminar, University of Chicago	January 2022
CLEVER Planets Seminar series (virtual)	October 2021
Astrophysical and Planetary Sciences Colloquium, CU Boulder	September 2021
238th AAS Meeting, LAD Dissertation Prize talk (virtual)	June 2021
Caltech Geological & Planetary Sciences Division Seminar	May 2021
ACS National Meeting, "Astrochemical Complexity in Planetary Systems" Session (virtual)	April 2021
Astrochemistry Discussions, Phosphorus Day (virtual)	February 2021
Physics & Astronomy Colloquium, Dartmouth College	January 2021
American Geophysical Union, "Accretion and Differentiation of Rocky Planets" Session (virtual)	December 2020
Origins of Life Speaker Series, University of Chicago Physical Sciences Division	October 2020
National Radio Astronomy Observatory Colloquium	October 2020
Planetary Science Colloquium, MIT	November 2019
SOFIA Colloquium, NASA Ames Research Center	October 2019
Submillimeter Array Science Seminar, Harvard CfA	January 2019
Molecular Physics Seminar, Institut de Physique de Rennes	December 2018
Geophysical Sciences Seminar, University of Chicago	November 2018
Institute for Theory & Computation Lunch Seminar, Harvard CfA	September 2018
Astronomy Seminar, University of Connecticut	September 2018

## Publications

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### *First author*

HCN snowlines in protoplanetary disks: constraints from ice desorption experiments <b>Bergner, J. B.</b> , Rajappan, M., & Öberg, K. I. The Astrophysical Journal, 933, 206	July 2022 ADS
First images of phosphorus molecules towards a proto-Solar analog <b>Bergner, J. B.</b> , Burkhardt, A. M., Öberg, K. I., Rice, T. S., & Bergin, E. A. The Astrophysical Journal, 927, 7	March 2022 ADS
Astrochemistry with the Orbiting Astronomical Satellite for Investigating Stellar Systems (OASIS) <b>Bergner, J. B.</b> , Shirley, Y. L., Jørgensen, J. K., et al. Frontiers in Astronomy & Space Sciences, 8, 246	February 2022 ADS
Molecules with ALMA at Planet-forming Scales (MAPS) XI: CN and HCN as tracers of photochemistry in disks <b>Bergner, J. B.</b> , Öberg, K. I., Guzmán, V. G., et al. The Astrophysical Journal Supplement Series, 257, 11	November 2021 ADS
Ice inheritance in dynamical disk models <b>Bergner, J. B.</b> & Ciesla, F. The Astrophysical Journal, 919, 45	September 2021 ADS
An evolutionary study of volatile chemistry in protoplanetary disks <b>Bergner, J. B.</b> , Öberg, K. I., Bergin, E. A., et al. The Astrophysical Journal, 898, 97	August 2020 ADS
Detection of phosphorus-bearing molecules towards a Solar-type protostar <b>Bergner, J. B.</b> , Öberg, K. I., Walker, S., Guzmán, V. V., Rice, T. S., & Bergin, E. A. The Astrophysical Journal Letters, 884, 2	October 2019 ADS
Organic complexity in protostellar disk candidates <b>Bergner, J. B.</b> , Martín-Doménch, Öberg, K. I., et al. ACS Earth & Space Chemistry, 3, 1564	July 2019 ADS
A survey of C <sub>2</sub> H, HCN, and C <sup>18</sup> O in protoplanetary disks <b>Bergner, J. B.</b> , Öberg, K. I., Bergin, E. A., Loomis, R. A., & Pegues, J. The Astrophysical Journal, 876, 25	April 2019 ADS
Oxygen atom reactions with C <sub>2</sub> H <sub>6</sub> , C <sub>2</sub> H <sub>4</sub> , and C <sub>2</sub> H <sub>2</sub> in ices <b>Bergner, J. B.</b> , Öberg, K. I., & Rajappan, M. The Astrophysical Journal, 874, 115	March 2019 ADS

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- A survey of CH<sub>3</sub>CN and HC<sub>3</sub>N in protoplanetary disks  
**Bergner, J. B.**, Guzmán, V. G., Öberg, K. I., Loomis, R. A., & Pegues, J. April 2018  
The Astrophysical Journal, 857, 69 ADS
- Methanol formation via oxygen insertion chemistry in ices  
**Bergner, J. B.**, Öberg, K. I., & Rajappan, M. August 2017  
The Astrophysical Journal, 845, 29 ADS
- Complex organic molecules towards embedded low-mass protostars  
**Bergner, J. B.**, Öberg, K. I., Garrod, R. T., & Graninger, D. M. June 2017  
The Astrophysical Journal, 841, 120 ADS
- Kinetics and mechanisms of the acid-base reaction between NH<sub>3</sub> and HCOOH in interstellar ice analogs  
**Bergner, J. B.**, Öberg, K. I., Rajappan, M., & Fayolle, E. C. October 2016  
The Astrophysical Journal, 829, 85 ADS
- Significant contributor*
- New Detections of Phosphorus Molecules towards Solar-type Protostars  
Wurmser, S. & **Bergner, J. B.** August 2022  
The Astrophysical Journal, 934, 153 ADS
- Chemical Feedback of Pebble Growth: Impacts on CO depletion and C/O ratios  
van Clepper, E., **Bergner, J. B.**, Bosman, A., Bergin, E., & Ciesla, F. March 2022  
The Astrophysical Journal, 927, 206 ADS
- Hot corino chemistry in the Class I binary source Ser-emb 11  
Martín-Doménech, R., **Bergner, J. B.**, Öberg, K. I., et al. September 2021  
The Astrophysical Journal, 923, 155 ADS
- Molecules with ALMA at Planet-forming Scales (MAPS) VI: Distribution of the small organics HCN, C<sub>2</sub>H, and H<sub>2</sub>CO  
Guzmán, V. G., **Bergner, J. B.**, Law, C. J., et al. November 2021  
The Astrophysical Journal Supplement Series, 257, 6 ADS
- An Atacama Large Millimeter/submillimeter Array Survey of Chemistry in Disks around M4-M5 Stars  
Pegues, J., Öberg, K. I., **Bergner, J. B.**, et al. April 2021  
The Astrophysical Journal. 911, 150 ADS
- The TW Hya Rosetta Stone Project I: Radial and vertical distributions of DCN and DCO<sup>+</sup>  
Öberg, K. I., Cleeves, L. I., **Bergner, J. B.**, et al. November 2020  
The Astrophysical Journal, 161, 38 ADS
- An ALMA survey of H<sub>2</sub>CO in protoplanetary disks  
Pegues, J., Öberg, K. I., **Bergner, J. B.**, et al. February 2020  
The Astrophysical Journal, 890, 142 ADS
- A new, rotating hot corino in Serpens  
Martín-Doménech, R., **Bergner, J. B.**, Öberg, K. I., & Jørgensen, J. K. August 2019  
The Astrophysical Journal, 880, 130 ADS
- Carbon chain molecules toward embedded low-mass protostars  
Law, C. J., Öberg, K. I., **Bergner, J. B.**, & Graninger, D. July 2018  
The Astrophysical Journal, 863, 88 ADS
- On the inference of the cosmic-ray ionization rate from the HCO<sup>+</sup>-to-DCO<sup>+</sup> abundance ratio: The effect of nuclear spin  
Shingledecker, C. N., **Bergner, J. B.**, Le Gal, R., et al. October 2016  
The Astrophysical Journal, 830, 151 ADS
- Collaborator*
- CORINOS. I. JWST/MIRI Spectroscopy and Imaging of a Class 0 Protostar IRAS 15398-3359  
Yang, Y., Green, J., Pontoppidan, K., et al. incl. **Bergner, J. B.** December 2022  
The Astrophysical Journal Letters, 1, L13 ADS
- Cold Deuterium Fractionation in the Nearest Planet-forming Disk  
Munoz-Romero, C. E., Öberg, K. I., Law, C. J., et al. incl. **Bergner, J. B.** December 2022  
The Astrophysical Journal, 943, 35 ADS
- UV-driven chemistry as a signpost of late-stage planet formation  
Calahan, J., Bergin, E., Bosman, A., et al. incl. **Bergner, J. B.** December 2022  
Nature Astronomy, 7, 49 ADS
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- Molecules with ALMA at Planet-forming Scales (MAPS): A Circumplanetary Disk Candidate in Molecular-line Emission in the AS 209 Disk  
Bae, J., Teague, R. Andrews, S. M., et al. incl. **Bergner, J. B.** August 2022  
The Astrophysical Journal Letters, 934, L20 ADS
- Molecules with ALMA at Planet-forming Scales (MAPS): Special Issue of the Astrophysical Journal Supplement Series Papers I, II, III, IV, V, VII, IX, X, XII, XIII, XIV, XV, XVI, XVII, XVIII, XIX  
<http://alma-maps.info/publications.html>
- If you like C/O variations, you should have put a ring on it  
van der Marel, N., Bosman, A., Krijt, S., et al. incl. **Bergner, J. B.** August 2021  
A&A Letters, 653, L9 ADS
- The TW Hya Rosetta Stone Project IV. A hydrocarbon rich disk atmosphere  
Cleeves, L. I., Loomis, R. A., Teague, R., et al. incl. **Bergner, J. B.** April 2021  
The Astrophysical Journal, 911, 29 ADS
- Dynamical Masses and Stellar Evolutionary Model Predictions of M Stars  
Pegues, J., Czekala, I., Andrews, S., et al. incl. **Bergner, J. B.** February 2021  
The Astrophysical Journal, 908, 42 ADS
- The TW Hya Rosetta Stone Project III. Resolving the Gaseous Thermal Profile of the Disk  
Calahan, J. K., Bergin, E., Zhang, K., et al. incl. **Bergner, J. B.** February 2021  
The Astrophysical Journal, 908, 8 ADS
- The TW Hya Rosetta Stone Project II: Spatially resolved emission of H<sub>2</sub>CO hints at low-temperature gas-phase formation  
Terwisscha van Scheltinga, J., Hogerheijde, M. R., et al. incl. **Bergner, J. B.** November 2020  
The Astrophysical Journal, 906, 111 ADS
- An Unbiased ALMA Spectral Survey of the LkCa 15 and MWC 480 Protoplanetary Disks  
Loomis, R. A., Öberg, K. I., Andrews, S.M., et al. incl. **Bergner, J. B.** April 2020  
The Astrophysical Journal, 893, 101 ADS
- Sulfur chemistry in protoplanetary disks: CS and H<sub>2</sub>CS  
Le Gal, R., Öberg, K. I., Loomis, R. A., Pegues, J., & **Bergner, J. B.** May 2019  
The Astrophysical Journal, 876, 72 ADS
- Desorption kinetics and binding energies of small hydrocarbons  
Behrard, A., Fayolle, E. C., Graninger, D. M., **Bergner, J. B.**, et al. April 2019  
The Astrophysical Journal, 875, 73 ADS
- The distribution and excitation of CH<sub>3</sub>CN in a solar nebula analog  
Loomis, R. A., Cleeves, L. I., Öberg, K. I., et al. incl. **Bergner, J. B.** June 2018  
The Astrophysical Journal, 859, 131 ADS
- CO diffusion and desorption kinetics in CO<sub>2</sub> ices  
Cooke, I. R., Öberg, K. I., Fayolle, E. C., Peeler, Z., & **Bergner, J. B.** January 2018  
The Astrophysical Journal, 852, 75 ADS
- N<sub>2</sub> and CO desorption energies from water ice  
Fayolle, E. C., Balfe, J., Loomis, R. A., **Bergner, J. B.**, et al. January 2016  
The Astrophysical Journal Letters, 816, L28 ADS
- Sphingosine-1-phosphate receptor 1 reporter mice reveal receptor activation sites in vivo  
Kono, M., Tucker, A. E., Tran, J., **Bergner, J. B.**, Turner, E. M., & Proia, R. L. May 2014  
The Journal of Clinical Investigation, 124, 2076 JCI
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