

# Dr. Katherine R. de Kleer

California Institute of Technology, M/C 150-21, Pasadena, CA 91125  
dekleer@caltech.edu  
web.gps.caltech.edu/~dekleer

<b>EDUCATION</b>	<b>Ph.D. Astrophysics</b> , University of California, Berkeley <b>Spring 2017</b> <i>Thesis:</i> “Extreme Worlds of the Outer Solar System: Dynamic Processes on Uranus & Io” <i>Advisor:</i> Prof. Imke de Pater
	<b>M.A. Astrophysics</b> , University of California, Berkeley <b>Spring 2013</b>
	<b>B.Sc. Mathematics</b> , Massachusetts Institute of Technology <b>Spring 2009</b>
	<b>B.Sc. Physics with Astronomy Minor</b> , Massachusetts Institute of Technology <b>Spring 2009</b> <i>Thesis:</i> “Photometry and Transit-Timing Analysis for Eleven Transiting Exoplanets” <i>Advisor:</i> Prof. Joshua Winn
<b>RESEARCH INTERESTS</b>	Broad interests in planetary astronomy, including the surfaces and atmospheres of planets and satellites and their relationship to interiors and thermochemical histories. Recent work has focused on the composition of ice giant atmospheres and on the atmospheres and geological activity of the galilean satellites, based on ground- and space-based telescope observations at optical through radio wavelengths. Additional interests include planetary ring systems, atmospheres and geophysics of extrasolar planets, and astrobiology.
<b>ACADEMIC POSITIONS</b>	<b>Heising-Simons Foundation 51 Pegasi b Postdoctoral Fellow</b> , Caltech <b>2017-present</b> <b>Visting Scholar</b> , Keck Observatory <b>June 2017</b> <b>NSF Graduate Research Fellow</b> , UC Berkeley <b>2013-2017</b> <b>Graduate Student Researcher</b> , UC Berkeley <b>2010; 2012-2013; 2016-2017</b> <b>Visiting Research Student</b> , Montana State University, Bozeman, Montana <b>Fall 2015; Summer 2016</b> <b>Visiting Research Student</b> , Max Planck Institute (MPE), Garching, Germany <b>Summer 2012</b> <b>Visiting Research Student</b> , Tel Aviv University, Tel Aviv, Israel <b>Summer &amp; Fall 2009</b> <b>Undergraduate Research Assistant (UROP Program)</b> , MIT <b>2008-2009</b> <b>NSF REU Research Student</b> , NASA Ames/SETI Institute <b>Summer 2007</b> <b>Undergraduate Research Assistant (UROP Program)</b> , MIT <b>Spring 2007</b> <b>NSF REU Research Student</b> , MIT Haystack Observatory <b>Summer 2006</b>
<b>SELECTED AWARDS &amp; HONORS</b>	<b>Outstanding Student Presentation Award</b> , JpGU-AGU Joint Meeting, Chiba, Japan <b>2017</b> <b>The Mary Elizabeth Uhl Prize for Outstanding Scholarly Achievement</b> , UC Berkeley <b>2017</b> <b>The Pierazzo International Student Travel Award</b> , Planetary Science Institute <b>2017</b> <b>The Robert J. Trumpler Graduate Student Excellence Award</b> , UC Berkeley <b>2016</b> <b>Outstanding Graduate Student Instructor</b> , UC Berkeley <b>2013</b>
<b>GRANT FUNDING</b>	<b>Space Telescope Science Institute</b> , <i>Eclipse observations of Europa’s water plumes</i> (PI K. de Kleer): \$115,627 (Feb 1, 2018 - Jan 31, 2020)
<b>PI TELESCOPE PROGRAMS</b>	<b>The Atacama Large Millimeter Array (ALMA)</b> 2. <b>K. de Kleer</b> , & M. Brown, Cycle 6 (2018-19): 2018.1.01271.S (9 hours) 1. <b>K. de Kleer</b> , I. de Pater, M. Gurwell, A. Moullet, B. Butler, R. Moreno, Cycle 4 (2016-17): 2016.1.00691.S (7.2 hours) <b>Hubble Space Telescope (HST)</b> 1. <b>K. de Kleer</b> & M. Brown, Cycle 25 (2018): GO-15425, STIS (10 orbits) <b>Keck Observatory</b> 3. <b>K. de Kleer</b> & M. Brown, Spr 2019: C272, NIRES (3 nights) 2. <b>K. de Kleer</b> & M. Brown, Fall 2018: C311, HIRES (3×1/4 nights) 1. <b>K. de Kleer</b> & M. Brown, Spr 2018: C235, HIRES (4×1/4 nights) <b>Magellan Telescopes</b> 1. <b>K. de Kleer</b> & M. Brown, Spr 2019: MagE (2 nights) <b>The Very Large Telescope (VLT)</b> 1. <b>K. de Kleer</b> & L. Fletcher, Spr 2018: 0101.C-0458, VISIR (7 hours) <b>Gemini Observatory</b>

8. **K. de Kleer** & I. de Pater, Spr 2019 - Spr 2021: GN-2019A-Q-130, NIRI+ALTAIR (long-term cadence program).
7. **K. de Kleer** & I. de Pater, Spr 2017 - Fall 2018: GN-2017A-Q-53, NIRI+ALTAIR (long-term cadence program).
6. **K. de Kleer** & I. de Pater, Fall 2016: GN-2016B-Q-5, NIRI+ALTAIR (20 hours; cadence program).
5. **K. de Kleer** & I. de Pater, Spr 2016: GN-2016A-Q-34, NIRI+ALTAIR (20 hours; cadence program).
4. **K. de Kleer** & I. de Pater, Spr 2016: GN-2016A-Q-33, NIRI+ALTAIR (3 hours).
3. **K. de Kleer** & I. de Pater, Fall 2015: GN-2015B-FT-12, NIRI+ALTAIR (3.5 hours).
2. **K. de Kleer**, I. de Pater, A. Davies, Spr 2014: GN-2014A-Q-34, NIRI+ALTAIR (20 hours; cadence program).
1. **K. de Kleer**, I. de Pater, A. Davies, Fall 2013: GN-2013B-DD-3, NIRI+ALTAIR (3 hours; cadence program).

#### **NASA Infrared Telescope Facility (IRTF)**

2. **K. de Kleer**, I. de Pater, A. Davies, M. Ádámkovics, J. Rathbun, J. Spencer, Spr 2014: 2014A032, NSFCam/CSHELL (6.7 hours over 20 nights)
1. **K. de Kleer**, I. de Pater, A. Davies, M. Ádámkovics, Fall 2013: 2013B030, SpeX (6.7 hours over 4 nights).

#### **Combined Array for Research in Millimeter Astronomy (CARMA)**

4. **K. de Kleer**, I. de Pater, S. Luszcz-Cook, Fall 2013. A/B/C-arrays, 220 GHz (8 hours ToO).
3. **K. de Kleer**, I. de Pater, S. Luszcz-Cook, Fall 2013. B-array, 220 GHz (15 hours).
2. **K. de Kleer**, I. de Pater, S. Luszcz-Cook, Spr 2013. B-array, 220 GHz (15 hours Director's Time).
1. **K. de Kleer**, I. de Pater, S. Luszcz-Cook, Spr 2013. C-array, 220 GHz (28 hours).

#### **Lick Observatory**

2. **K. de Kleer**, I. de Pater, J. Tollefson, M. Wong, S. Luszcz-Cook, E. Gates, D. Gavel, Fall 2016. 2016B.S002, ShARCs/ShaneAO (cadence program).
1. **K. de Kleer** & I. de Pater, Fall 2015: 2015B\_S015, ShARCs/ShaneAO (4 hours over 4 nights).

### **TEACHING, OUTREACH & LEADERSHIP**

**Lead Instructor**, Introductory Lab Physics, Patten University at San Quentin State Prison, San Quentin, CA. Position includes: syllabus creation and instruction for a college-level laboratory physics course taught to inmates at San Quentin prison; management of two instructors and two tutors; creation of lab experiments subject to prison regulations. **Fall 2016**

**Outreach Collaborator**, Guerilla Science. Collaborator on numerous large-scale science outreach events at schools, music festivals, and co-working spaces across California and New York. **2012-present**

#### *Selected Projects:*

Astronomy Observing, Oregon Eclipse Festival, OR	<b>2017</b>
Astronomy Observing, Symbiosis Music Festival, CA	<b>2017</b>
Intergalactic Travel Bureau, Mysteryland Music Festival, NY	<b>2016</b>
Fire Organ, Maker Faire, CA	<b>2015</b>
Enlightenment Party, The Embassy, CA	<b>2013</b>
Interplanetary Travel Bureau, Cesar Chavez Education Center, CA	<b>2012</b>

#### **Graduate Student Instructor**, UC Berkeley

A121 Radio Astronomy Laboratory	<b>Spring 2015</b>
C162 The Solar System	<b>Fall 2012</b>
A122 Infrared and Optical Astronomy Laboratory	<b>Fall 2010</b>

**Instructor & Curriculum Designer**, Five Stars Mentoring Program, Girls Inc., Oakland, CA. Hands-on astronomy course for underprivileged middle and high school girls. **Fall 2013**

**Lead Field Staff (full-time)**, Pacific Quest, Na'alehu, HI. Field instructor for at-risk young adults in wilderness therapy setting. Position included: management of two staff and 15 young adults; coordination with therapists to carry out individualized therapy plans for students; directing students in running an organic farm. **2011**

**Instructor (full-time)**, Astrocamp, Guided Discoveries, Idyllwild, CA. Physics and astronomy outdoor education camp for middle school students. **Spring 2010**

#### **Undergraduate Teaching Assistant**, MIT

12.409 Hands-On Astronomy	<b>2008-2009</b>
---------------------------	------------------

**Co-creator and Co-teacher**, "Hands-on Astronomy", MIT High School Studies Program. Extracurricular weekly class for local high school students. **2008**

Public Talks & Star Parties, various locations 2005-present

## RESEARCH ADVISING

Ben Cassese, Undergraduate Student, Caltech 2019-present

Elizabeth Banks, High School Student & Caltech visiting summer student 2018

Clayton Cantrall, Undergraduate Student, UC Berkeley 2015-2017  
*Co-advised with Imke de Pater*

Sara Gutierrez, Undergraduate Student, UC Berkeley 2014-present  
*Co-advised with Imke de Pater*

Thomas Fitzpatrick, Undergraduate Student, UC Berkeley 2014-present  
*Co-advised with Imke de Pater*

## PUBLICITY

Berkeley Science Review, "Io is so hot right now" Nov 2017

Press Release, UC Berkeley/Keck/Gemini/AAS DPS, "Long-term, hi-res tracking of eruptions on Jupiter's moon Io" Oct 2016

Press Conference, AAS DPS Meeting, "Long-term, hi-res tracking of Io's eruptions" Oct 2016

GeminiFocus Featured Article, "Gemini captures extreme eruption on Io" Oct 2014

Image Release, Gemini Observatory "Extreme volcanism: Image captures one of the brightest volcanoes ever seen in the Solar System" Aug 2014

Press Release, UC Berkeley "A hellacious two weeks on Jupiter's moon Io" Aug 2014

## PROFESSIONAL ACTIVITIES & SERVICE

Co-Lead for Keck Institute for Space Studies (KISS) workshop:  
*Isotopes at Io and the Icy Moons* Dec 2018

Co-Lead for Keck Institute for Space Studies (KISS) study:  
*Tidal heating: Lessons from Io and the jovian system* Oct 2018

Protocols Committee, Caltech GPS Division 2017-2018

Keck Expert, Solar System Panel, Keck-JWST Meeting Sep 2016

Discipline Leader, Satellites Working Group, International Outer Planet Watch 2016-present

Steering Committee Member, International Outer Planet Watch 2016-present

Mentor, Graduate-Undergraduate Mentoring Program, UC Berkeley 2016-2017

Grant Reviewer, NASA 2016-present

Mentor, Society for Women in the Physical Sciences, UC Berkeley 2016-2017

Public Liaison, Astronomy Department, UC Berkeley 2015-2017

Referee for *Icarus*; *AAS Journals*; *Nature journals* 2015-present

Graduate Assembly Delegate, Astronomy Department, UC Berkeley 2013-2015

Residential Advisor, Dept of Residential Life, MIT 2008

## PUBLICATIONS *\*student advised*

31. de Kleer, K., Nimmo, F., Kite, E. *submitted*.

30. de Kleer, K., de Pater, I., Molter, E.M., \*Banks, E., Davies, A.G., Alvarez, C., Campbell, R., Aycock, J., Pelletier, J., Stickle, T., Kacprzak, G.G., Nielsen, N.M., Stern, D., Tollefson, J. Io's volcanic activity from time domain adaptive optics observations: 2013-2018. *Icarus*, *in review*.

29. de Kleer, K., Brown, M.E. Europa's optical aurora: Update from four new Hubble eclipse observations. *RNAAS* **3**, article id. 27 (2019).

28. Molter, E., de Pater, I., Luszcz-Cook, S., Hueso, R., Tollefson, J., Alvarez, C., Sanchez-Lavega, A., Sromovsky, L.A., Fry, P.M., Delcroix, M., Campbell, R., de Kleer, K., Gates, E., Lynam, P.D., Ammons, S.M., Coy, B.P., Duchene, G., Gonzales, E.J., Hirsch, L., Magnier, E.A., Ragland, S., Rich, R.M., Wang, F. Analysis of Neptune's 2017 bright equatorial storm. *Icarus*, **321**, 324-345 (2019).

27. de Kleer, K., de Pater, I., Ádámkóvics, M. Emission from volcanic SO gas on Io at high spectral resolution. *Icarus*, **317**, 104-120 (2019).

26. de Pater, I., Butler, B., Sault, R.J., Moullet, A., Moeckel, C., Tollefson, J., de Kleer, K., Gurwell, M., Milam, S. Potential for Solar System science with the ngVLA. *In: Science with the next generation very large array* (ed. E. Murphy), Astronomical Society of the Pacific conference series #7, p. 49-72 (2018).

25. de Kleer, K. and Brown, M.E. Europa's optical aurora. *AJ*, **156**, article id. 167, 8 pp. (2018).

24. \*Cantrall, C., de Kleer, K., de Pater, I., Williams, D., Davies, A.G., Nelson, D. Variability and geologic associations of volcanic activity on Io in 2001-2016. *Icarus*, **312**, 267-294 (2018).

23. Davies, A.G., Davies, R.L., Veeder, G.J., **de Kleer, K.**, de Pater, I., Matson, D.L., Johnson, T.V., Wilson, L. Discovery of a powerful, transient, explosive thermal event at Marduk Fluctus, Io, in *Galileo* NIMS data. *GRL*, **45**, 2926-2933 (2018).
22. Wong, M.H., Tollefson, J., Hsu, A.I., de Pater, I., Simon, A.A., Hueso, R., Sánchez-Lavega, A., Sromovsky, L., Fry, P., Luszcz-Cook, S., Hammel, H., Delcroix, M., **de Kleer, K.**, Orton, G.S., Baranec, C. A new dark vortex on Neptune. *AJ*, **155**, 117-126 (2018).
21. Drummond, J., Merline, W., Carry, B., Conrad, A., Reddy, V., Tamblyn, P., Chapman, C., Enke, B., de Pater, I., **de Kleer, K.**, Christou, J., Dumas, C. The triaxial ellipsoid size, density, and rotational pole of asteroid (16) Psyche from Keck and Gemini AO observations 2004-2015. *Icarus*, **305**, 174-185 (2018).
20. **de Kleer, K.** and de Pater, I. Our solar system - A panorama. In *Handbook of Exoplanets*, ed. H.J. Deeg and J.A. Belmonte, pub. Springer Living Reference Work (2017).
19. de Pater, I., **de Kleer, K.**, Davies, A., Ádámkóvics, M. Three decades of Loki Patera observations. *Icarus* **297**, 265-281 (2017).
18. Hueso, R., de Pater, I., Simon, A., Sánchez-Lavega, A., Delcroix, M., Wong, M.H., Tollefson, J.W., Baranec, C., **de Kleer, K.**, and 26 co-authors. Neptune long-lived atmospheric features in 2013-2015 from small (28 cm) and large (10 m) telescopes. *Icarus* **295** 89-109 (2017).
17. Crossfield, I.J.M., Ciardi, D.R., Isaacson H., Howard, A.W., Petigura, E.A., Weiss, L.M., Fulton, B.J., Sinukoff, E., Schlieder, J.E., Mawet, D., Ruane, G., de Pater, I., **de Kleer, K.**, and 11 co-authors. Two small transiting planets and a possible third body orbiting HD 106315. *AJ* **153**, 255-262 (2017).
16. **de Kleer, K.**, Skrutskie, M., Leisenring, J., Davies, A.G., Conrad, A., de Pater, I., Resnick, A., Bailey, V., Defrère, D., Hinz, P., Skemer, A., Spalding, E., Vaz, A., Veillet, C., Woodward, C.E. Multi-phase volcanic resurfacing at Loki Patera on Io. *Nature*, **545**, 199-202 (2017).
15. **de Kleer, K.** and de Pater, I. Io's Loki Patera: Modeling of Three Brightening Events in 2013-2016. *Icarus* **289**, 181-198 (2017).
14. M. Shepard, J. Richardson, P. Taylor, L. Rodrigues-Ford, A. Conrad, I. de Pater, M. Ádámkóvics, **K. de Kleer**, and 14 co-authors. Radar observations and shape model of asteroid 16 Psyche. *Icarus*, **281**, 388 (2017).
13. **de Kleer, K.** and de Pater, I. Spatial distribution of Io's volcanic activity from near-IR adaptive optics observations on 100 nights in 2013-2015. *Icarus*, **280**, 405 (2016).
12. **de Kleer, K.** and de Pater, I. Time variability of Io's volcanic activity from near-IR adaptive optics observations on 100 nights in 2013-2015. *Icarus*, **280**, 378 (2016).
11. de Pater, I., Laver, C., Davies, A.G., **de Kleer, K.**, Williams, D.A., Howell, R.R., Rathbun, J.A., Spencer, J.R. Io: Eruptions at Pillan, and the time evolution of Pele and Pillan from 1996 to 2016. *Icarus* **264**, 198 (2016).
10. Luszcz-Cook, S., **de Kleer, K.**, de Pater, I., Ádámkóvics, M., Hammel, H.B. Retrieving Neptune's aerosol properties from Keck OSIRIS Observations. I. Dark Regions. *Icarus*, **276**, 52 (2016).
9. Conrad, A., **de Kleer, K.**, Leisenring, J., La Camera, A., and 16 co-authors. Spatially-resolved M-band emission from Io's Loki Patera – Fizeau imaging at the 22.8 meter LBT. *AJ*, **149**, 175 (2015).
8. **de Kleer, K.**, Luszcz-Cook, S., de Pater, I., Ádámkóvics, M., Hammel, H. Clouds and aerosols on Uranus: Radiative transfer modeling of spatially-resolved near-infrared Keck spectra. *Icarus* **256**, 120 (2015).
7. Crossfield, I., Petigura, E., Schlieder, J.E., Howard, A.W., Fulton, B.J., Aller, K.M., Ciardi, D.R., Lépine, S., Barclay, T., de Pater, I., **de Kleer, K.**, Quintana, E.V., and 15 co-authors. A nearby M star with three transiting super-Earths discovered by K2. *ApJ* **804**, 10 (2015).
6. **de Kleer, K.**, de Pater I., Davies, A., Ádámkóvics, M. Near-infrared monitoring of Io & detection of a violent outburst in August 2013. *Icarus* **242**, 352 (2014).
5. **de Kleer, K.**, de Pater, I., Ádámkóvics, M., Hammel, H. Near-Infrared Spectra of the Uranian Ring System. *Icarus* **226**, 1038 (2013).
4. Hicken, M., Challis, P., Kierschner, R.P., Rest, A., Cramer, C.E., Wood-Vasey, W.M., Bakos, Gaspar, Berlind, Perry, Brown, W.R., Caldwell, N., Calkins, M., Currie, T., **de Kleer, K.**, and 26 co-authors. CfA4: Light Curves for 94 Type Ia Supernovae. *ApJ Supplement* **200**, 12 (2012).
3. de Pater, I., Wong, M.H., **de Kleer, K.**, Hammel, H., Ádámkóvics, M., Conrad, A. Keck adaptive optics images of Jupiter's north polar cap and Northern Red Oval, *Icarus* **213**, 559 (2011).

2. Tripathi, A., Winn, J.N., Johnson, J.A., Howard, A.W., Halverson, S., Marcy, G.W., Holman, M.J., **de Kleer, K.**, Carter, J.A., Esquerdo, G.A., Everett, M.E., Cabrera, N.E. A Prograde, Low-inclination Orbit for the very hot Jupiter WASP-3b. *ApJ* 715, 421 (2010).
1. Jenniskens, P., **de Kleer, K.**, Vaubaillon, J., Trigo-Rodriguez, J.M., Madiedo, J.M., and 9 co-authors. Leonids 2006 Observations of the Tail of Trails. *Icarus* 196, 171 (2008).

**PROCEEDINGS  
& WHITE  
PAPERS**

7. **de Kleer, K.**, Gurwell, M., de Pater, I., Butler, B., Moullet, A., Trumbo, S., Sault, R.J., Moeckel, C., Tollefson, J., Milam, S. Solar system satellites: Key science enabled by the ngVLA. Astro2020 Science White Paper (2019).
6. Wong, M.H., Cartwright, R., Sayanagi, K., Tiscareno, M., Orton, G., Sinclair, J., Lucas, M., Holler, B., Otarola, A., **de Kleer, K.**, Fry, P., Luszcz-Cook, S.H. Solar system deep time-surveys of atmospheres, surfaces, and rings. Astro2020 Science White Paper (2019).
5. Chanover, N., Wong, M.H., Greathouse, T., Trilling, D., Conrad, A., de Pater, I., Gaidos, E., Cartwright, C., Lucas, M., Meech, K., Orton, G., Pinilla-Alonso, N., Sayanagi, K., Schwamb, M.E., Tiscareno, M., Veillet, C., Holler, B., **de Kleer, K.**, Hammel, H., Hendrix, A., Otarola, A., Nixon, C., Benecchi, S., Simon, A., Mandt, K., Verbiscer, A., Giles, R., Retherford, K., Fry, P., Bell, J.F., Milam, S., Rivkin, A., Luszcz-Cook S. Triggered high-priority observations of dynamic solar system phenomena. Astro2020 Science White Paper (2019).
4. de Pater, I., Butler, B., Sault, R.J., Moullet, A., Moeckel, C., Tollefson, J., **de Kleer, K.**, Gurwell, M.A., Milam, S. Potential for solar system science with the ngVLA: the Giant Planets. Astro2020 Science White Paper (2019).
3. Moullet, A., Butler, B., de Pater, I., Gurwell, M.A., **de Kleer, K.**, Sault, R.J., Moeckel, C., Tollefson, J., Milam, S. Solar system's minor bodies: the role of the ngVLA. Astro2020 Science White Paper (2019).
2. Leisenring, J.M., Hinz, P.M., Skrutskie, M., Skemer, A., Woodward, C.E., Veillet, C., Arcidiacono, C., Bailey, V., Bertero, M., Boccacci, P., Conrad, A., **de Kleer, K.**, de Pater, I., and 10 co-authors. Fizeau interferometric imaging of Io volcanism with LBTI/LMIRcam. *SPIE* 9146, 91462S (2014).
1. Lonsdale, C.J., **de Kleer, K.**, Diamond, P.J., Thrall, H., Lonsdale, C.J., Smith, H.E. OH emission and absorption associated with supernovae in Arp 220. *IAU Symposium*, 242, 432 (2007).

**SEMINARS &  
COLLOQUIA**

- Lowell Observatory**, Colloquium (March 7, 2019)
- UC Santa Cruz**, CODEP/IGPP Seminar (February 15, 2019)
- Caltech**, GPS Division Seminar (Oct 1, 2018)
- UC Riverside**, Astrobiology Colloquium (May 11, 2018)
- Caltech**, Dix Planetary Science Seminar (March 8, 2018)
- Summit Series**, Eden, UT (February 10, 2018)
- UC Berkeley**, Joint Astronomy-EPS Colloquium (January 25, 2018)
- UC Berkeley**, Lunch Talk (January 25, 2018)
- UCLA**, EPSS Colloquium (November 7, 2017)
- Gordon and Betty Moore Foundation**, Palo Alto, Evenings with Astronomers (September 13, 2017)
- Seattle Yacht Club**, Evenings with Astronomers (September 12, 2017)
- Heising-Simons Foundation**, Lunch Talk (August 15, 2017)
- Lick Observatory**, Music of the Spheres public lecture (August 12, 2017)
- Keck Observatory**, Lunch Talk (June 27, 2017)
- UC Santa Cruz**, Planetary Lunch Seminar (April 27, 2017)
- MIT**, Special Seminar (April 4, 2017)
- Keck Observatory**, Astronomy Talk public lecture (January 5, 2017)
- NASA JPL**, Planetary Science Seminar (May 9, 2016)
- Caltech**, Dix Planetary Science Seminar (May 3, 2016)
- Montana State University**, Physics Department Colloquium (Apr 22, 2016)
- Johns Hopkins University Applied Physics Lab**, Colloquium (Apr 8, 2016)

NASA Goddard Space Flight Center, Solar System Exploration Seminar (Apr 6, 2016)  
American Museum of Natural History, Astrophysics Department Colloquium (Apr 5, 2016)  
MIT, Planetary Lunch Colloquium (Mar 29, 2016)  
Harvard Center for Astrophysics, Small-Scale Phenomena Seminar (Mar 28, 2016)  
Montana State University, Earth Science Department Colloquium (Mar 3, 2016)  
UC Berkeley, Astronomy Department Lunch Talk (Jan 28, 2016)  
Steward Observatory, The University of Arizona, Seminar (Mar 2015)  
UC Berkeley, Astronomy Department Grad Student–Postdoc Seminar (Nov 2014)  
UC Berkeley, Center For Integrated Planetary Sciences Seminar (Apr 2014)

**CONFERENCE  
& WORKSHOP  
PRESENTA-  
TIONS**

*(invited) de Kleer, K. Planetary Systems, Radio/millimeter astrophysical frontiers in the next decade, Charlottesville, VA (Jun 2019)*

de Kleer, K., Brown, M., de Pater, I., Ádámkóvics, M. *Eclipse observations of the galilean satellite atmospheres*, 50th AAS DPS Meeting, Knoxville, TN, Oral Presentation 403.01 (Oct 2018)

de Kleer, K., *Broadening the context for solar system science*, Sagan Symposium, Caltech (Nov 2018)

de Kleer, K., *The dynamic outer solar system*, Rising Stars in Physics, MIT (Apr 2018)

de Kleer, K., Butler, B., Gurwell, M., Moullet, A., de Pater, I. *Thermal properties of the icy galilean satellites from millimeter ALMA observations*, Lunar and Planetary Science Meeting, The Woodlands, TX, Oral Presentation #2567 (Mar 2018)

de Kleer, K., de Pater, I. *Io's volcanoes at high spatial, spectral, and temporal resolution from ground-based observations*, 49th AAS DPS Meeting, Provo, UT, Oral Presentation 407.03 (Oct 2017)

*(invited) de Kleer, K. Observing the Solar System's satellites with the James Webb Space Telescope*, JWST Solar System Workshop, Space Telescope Science Institute, Baltimore, MD, Oral Presentation (Nov 2017)

*(invited) de Kleer, K. Observing Io's surface with JWST*, Oort Workshop, Leiden, The Netherlands, Oral Presentation (May 2017)

*(invited) de Kleer, K., Skrutskie, M., Leisenring, J., Davies, A.G., Resnick, A., Conrad, A., de Pater, I., Hinz, P., Defrère, Veillet, C. Resolving Io's volcanoes from a mutual event observation at the Large Binocular Telescope*. AGU Fall Meeting, San Francisco, CA, Oral Presentation P54A-04 (Dec 2016)

de Kleer, K., de Pater, I., Yoneda, M. *Io's volcanic activity in 2013-2016 and comparison with extended sodium cloud variability*. AGU Fall Meeting, San Francisco, CA, Oral Presentation P21E-04 (Dec 2016)

de Kleer, K., de Pater, I. *The volcanism and tidal heating of Io*. Keck Science Meeting, Pasadena, CA, Oral Presentation (Sep 2016)

de Kleer, K., Skrutskie, M., Leisenring, J., de Pater, I., Davies, A.G., Conrad, A., Resnick, A.C., Hinz, P., Defrère, D., Veillet, C. *Time-evolution and thermal mapping of Io's Loki Patera at high resolution*. 48th AAS DPS/11th EPSC Joint Meeting, Pasadena, CA, Oral Presentation 517.12 (Oct 2016)

de Kleer, K., de Pater, I. *Two new brightening events at Io's Loki Patera*. AGU Fall Meeting, San Francisco, CA, Poster Presentation P31C-2074 (Dec 2015)

de Kleer, K., de Pater, I. *The spatial distribution of volcanic events on Io in 2013-2015*. 47th AAS DPS Meeting, National Harbor, MD, Oral Presentation 405.04 (Nov 2015)

de Kleer, K., de Pater, I. *Investigating variability in Io's volcanic activity and surface frosts: Results from 2013-2015*. ESO Planets Workshop, Santiago, Chile, Oral Presentation (Mar 2015)

de Kleer, K., de Pater, I., Davies, A.G., Ádámkóvics, M. *Io's volcanic activity from near-infrared observations during the EXCEED mission*. AGU Fall Meeting, San Francisco, CA, Oral Presentation P13E-02 (Dec 2014)

de Kleer, K., de Pater, I., Fitzpatrick, T. *A timeline of volcanic activity on Io in 2013-14 with near-infrared surface maps*. 46th AAS DPS Meeting, Tucson, AZ, Poster Presentation 418.13 (Oct 2014)

de Kleer, K., de Pater, I., Davies, A.G., Ádámkóvics, M., Ciardi, D. *Three rare volcanic outbursts on Io in August 2013*. 48th ESLAB Symposium, Noordwijk, The Netherlands, Oral Presentation (Jun 2014)

de Kleer, K., de Pater, I., Ádámkóvics, M. *Infrared observations of SO emission from Io's atmosphere during eclipse*. AGU Fall Meeting, San Francisco, CA, Poster Presentation P43A-2003 (Dec 2013)

- de Kleer, K.**, de Pater, I., Davies, A.G., Luszcz-Cook, S., Ádámkovics, M. *Monitoring Io in the near-infrared*. Io Boulder Workshop, Boulder, CO, Oral Presentation (Oct 2013)
- de Kleer, K.**, de Pater, I., Luszcz-Cook, S., Ádámkovics, M., Hammel, H., Fry, P. *Clouds, hazes, and rings: Keck observations of Uranus*. 45th AAS DPS Meeting, Denver, CO, Poster Presentation 312.19 (Oct 2013).
- de Kleer, K.**, de Pater, I., Hammel, H., Ádámkovics, M., Luszcz-Cook, S. *Keck observations of the Uranian atmosphere and rings*. 42nd AAS DPS Meeting, Pasadena, CA Poster Presentation 11.32 (Oct 2010).
- de Kleer, K.**, Lonsdale, C.J., Diamond, P.J., Lonsdale, C.J., Smith, G., Thrall, H. *Time variation in OH megamaser emission and absorption toward radio supernovae in Arp 220*. 209th AAS/AAPT Joint Meeting, Seattle, WA, Poster Presentation 149.19 (Jan 2007).