

# DR. ALBERT R. CONRAD

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## EMPLOYMENT HISTORY

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2014 – Present <i>Scientist</i>	Large Binocular Telescope, University of Arizona
2015 – Present <i>Affiliate Faculty</i>	University of Hawaii at Hilo
2011 – 2015 <i>System Lead</i>	Max Planck Institute for Astronomy, Heidelberg, Germany
2003 – 2010 <i>Support Astronomer</i>	W.M. Keck Observatory, Kamuela, Hawaii
1992 - 2003 <i>Software Engineer</i>	W.M. Keck Observatory, Kamuela, Hawaii

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## EDUCATION

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1994 Doctor of Philosophy in Computer and Information Science <i>Dissertation: Exact Arithmetic in <math>\overline{Q}</math> with Applications in Celestial Mechanics</i>	University of California at Santa Cruz
1977 Bachelor of Science in Mathematics and Computer Science	University of California at Berkeley

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## PROFESSIONAL ACTIVITIES, HONORS, & AWARDS

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- Vice chair of the International Astrophysical Union Working Group on Cartographic Coordinates and Rotational Elements (IAU/WGCCRE).
- Co-Investigator on two NASA Planetary Astronomy Grants: ‘*Disk-Resolved Imaging of Asteroids*’ and ‘*A Multi-Wavelength Observing Program of Io Using Adaptive Optics and Interferometric Techniques*’
- Discovered and named the moon *Peneius* of asteroid (41) Daphne.
- Asteroid 22899 was given the name *AIconrad* in recognition of contributions in the field of astronomy at the 2016 Binaries in the Solar System workshop in Prague.
- Commendation from W. M. Keck Director for accomplishments in astronomical research.
- Commendation from W. M. Keck Director for excellence in software group management.
- Graduated with Great Distinction in Mathematics from U. C. Berkeley.

## PUBLICATION RECORD

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### Refereed Journals

1. Carl Schmidt, Mikhail Sharov, Katherine de Kleer, Nick Schneider, Imke de Pater, Phillip H. Phipps, **Albert Conrad**, Luke Moore, Paul Withers, John Spencer, Klaus Strassmeier, Christian Veillet John Hill, Mike Brown "Io's Optical Aurorae in Jupiter's Shadow" *PSJ* **4** 36 (2023)
2. Daewook Kim, Hyukmo Kang, Jim Wiese, Heejoo Choi, **Al Conrad**, Vishnu Reddy & David Thompson "Deployable cryogenic cross-dispersing unit for simultaneous zJHK spectroscopy" *791 2 Optical Review* (2023)
3. Sharkey, Benjamin N. L., Reddy, Vishnu, Malhotra, Renu, Thirouin, Audrey, Kuhn, Olga, **Conrad, Albert**, Rothberg, Barry, Sanchez, Juan A., Thompson, David, Veillet, Christian "Lunar-like silicate material forms the Earth quasi-satellite (469219) 2016 HO3 Kamo'oalewa" *Nature ComEE* **231** (2021)
4. Katherine de Kleer, Michael Skrutskie, Jarron Leisenring, Ashley G. Davies, **Al Conrad**, Imke de Pater, Aaron Resnick, Vanessa P. Bailey, Denis Defre, Phil Hinz "Resolving Io's Volcanoes from a Mutual Event Observation at the Large Binocular Telescope" *PSJ* **2** 227 (2021)
5. Benjamin N.L. Sharkey, Vishnu Reddy, Renu Malhotra, Audrey Thirouin, Olga Kuhn, **Albert Conrad**, Barry Rothberg, Juan A. Sanchez, David Thompson, Christian Veillet, "Characterizing Earth Quasi-Satellite (469219) 2016 HO3 Kamo'oalewa", *Nature Astronomy*, **231** (2021)
6. Jack D. Drummond, W. J. Merline, B. Carry, **A. Conrad**, P. Tamblyn, B. Enke, J. Christou, C. Dumas, C. R. Chapman, D. D. Durda, W. M. Owen, W. M. Grundy, O. R. Reynolds, M. D. Buckman "The orbit of asteroid (317) Roxane's satellite Olympias from Gemini, Keck, VLT and the SOR, and (22) Kalliope's Linus from the SOR" *Icarus* **358** (2021)
7. Carry, B.; Vachier, F.; Berthier, J.; Marsset, M.; Vernazza, P.; Grice, J.; Merline, W. J.; Lagadec, E.; Fienga, A.; **Conrad, A.**; Podlowska-Gaca, E.; Santana-Ros, T.; Viikinkoski, M.; Hanus, J.; Dumas, C.; Drummond, J. D.; Tamblyn, P. M.; Chapman, C. R.; et al "VizieR Online Data Catalog: SPHERE/ZIMPOL (41) Daphne images" *A&A* **132C** (2019)
8. B. Carry, F. Vachier, J. Berthier, M. Marsset, P. Vernazza, J. Grice, W. J. Merline, E. Lagadec, A. Fienga, **A. Conrad**, E. Podlowska-Gaca, T. Santana-Ros, M. Viikinkoski, J. Hanuš, C. Dumas, J. D. Drummond, P. M. Tamblyn, C. R. Chapman, et al "The homogeneous internal structure of CM-like asteroid (41) Daphne" *A&A* **A132** (2019)
9. Drummond, Jack D., Merline, William J., Carry, Benoit, **Conrad, Al**, Reddy, Vishnu, Tamblyn, Peter, Chapman, Clark R., Enke, Brian L., Pater, Imke de, Kleer, Katherine de, Christou, Julian, Dumas, Christophe "The triaxial ellipsoid size, density, and rotational pole of asteroid (16) Psyche from Keck and Gemini AO observations 2004-2015" *Icarus* **305** **174** (2018)

10. Archinal, B.A., Acton, C.H., A'Hearn, M.F., **Conrad, A.**, Consolmagno, G.J., Duxbury, T., Hestroffer, D., Hilton, J.L., Kirk, R.L., Klioner, S.A., McCarthy, D., Meech, K., Oberst, J., Ping, J., Seidemann, P.K., Tholen, D.J., Thomas, P.C., Williams, I.P. "Report of the IAU Working Group on Cartographic Coordinates, Rotational Elements: 2015" *Celestial Mechanics & Dynamical Astronomy* **130** #22 (2018)
11. Pajuelo, M., Carry, B., Vachier, F., Marsset, M., Berthier, J., Descamps, P., Merline, W.J., Tamblyn, P.M., Grice, J., **Conrad, A.**, Storrs, A., Timerson, B., Dunham, D., Preston, S., Vigan, A., Yang, B., Vernazza, P., Fauvaud, S., Bernasconi, L., Romeuf, D., Behrend, R., Dumas, C., Drummond, J.D., Margot, J.L., Kervella, P., Marchis, F., Girard, J.H., "Physical, spectral, and dynamical properties of asteroid (107) Camilla and its satellites" *Icarus* **309** 134 (2018)
12. K. de Kleer, M. Skrutskie, J. Leisenring, A. G. Davies, A. Resnick, **A. Conrad**, I. de Pater, P. Hinz, Denis Defrere, A. Skemer, C. Veillet, "Occultation of Io by Europa reveals a complex resurfacing process at Io's Loki Patera" *Nature* **545** 199 (2017)
13. Michael K. Shepard, James Richardson, Patrick A. Taylor, Linda A. Rodriguez-Ford, **Al Conrad**, Imke de Pater, Mate Adamkovics, Katherine de Kleer, Jared R. Males, Katie M. Morzinski, Laird Close, Mikko Kaasalainen, Matti Viikinkoski, Bradley Timerson, Vishnu Reddy, Christopher Magri, Michael Nolan, Ellen S. Howell, Lance A. M. Benner, Jon D. Giorgini, Brian D. Warner, Alan W. Harris, "Radar observations and shape model of asteroid 16 Psyche" *Icarus* **281** 388 (2017)
14. Jack D. Drummond, William J. Merline, Benoit Carry, **Al Conrad**, Vishnu Reddy, Peter Tamblyn, Clark R. Chapman, Brian L. Enke, Imke de Pater, Katherine de Kleer, Julian Christou, Christophe Dumas, "The Triaxial Ellipsoid Size and Rotational Pole of Asteroid (16) Psyche from Keck and Gemini AO Observations 2004-2015" *Icarus*, in press (2017)
15. Sanchez, J.A., Reddy, V, Shepard, M.K., Thomas, C., Cloutis, E.A., Takir, D., **Conrad, A.**, Kiddell, C., Applin, D., "Detection of Rotational Spectral Variation on the M-type Asteroid (16) Psyche" *AJ* **153** 29 (2017)
16. **Albert Conrad**, Katherine de Kleer, Jarron Leisenring, ,rea La Camera, Carmelo Arcidiacono, Mario Bertero, Patrizia Boccacci, Denis Defrere, Imke de Pater, Philip Hinz, Karl-Heinz Hofmann, Martin Kuerster, Julie Rathbun Dieter Schertl, ,y Skemer, Michael Skrutskie, John Spencer, Christian Veillet, Gerd Weigelt, Charles E. Woodward "Spatially resolved M-band emission from Io's Loki Patera - Fizeau imaging at the 22.8 meter LBT", *Astrophysical Journal* **149** 175 (2016)
17. Drummond, J. D., Carry, B., Merline, W. J., Dumas, C., Hammel, H., Erard, S., **Conrad, A.**, Tamblyn, P., Chapman, C. R., "Dwarf planet Ceres: Ellipsoid dimensions and rotational pole from Keck and VLT adaptive optics images" *Icarus* **236** 28 (2014)
18. Merline, W. J., Drummond, J. D., Carry, B., **Conrad, A.**, Tamblyn, P. M., Dumas, C., Kaasalainen, M., Erikson, A., Mottola, S., Durech, J., Rousseau, G., Behrend, R., Casalnuovo, G. B., Chinaglia, B., Christou, J. C., Chapman, C. R., Neyman, C "The Resolved Asteroid Program - Size, shape, and pole of (52) Europa", *Icarus* arXiv:1301.5101 (2013)
19. Zhang X., Arcidiacono C, **Conrad A.R.**, Herbst T.M., Gaessler W., Bertram T., Ragazzoni R., Schreiber L., Diolaiti E., Kuerster M., Bizenberger P., Meschke D., Rix H.W., Rao C., Mohr L., Briegel F., Kittmann F., Berwein J., Trowitzsch J. "Calibrating the interaction matrix for the LINC-NIRVANA high layer wavefront sensor" *Optics Express* **20** 8078 (2012)

20. B. Carry, M. Kaasalainen, W. J. Merline, T. G. Mueller, L. Jorda, J. D. Drummond, J. Berthier, L. O'Rourke, J. Durech, M. Kueppers, **A. Conrad**, C. Dumas, H. Sierks, and the OSIRIS Team "Shape modeling technique KOALA validated by ESA Rosetta at (21) Lutetia" *Planetary and Space Science* **66** 200 (2012)
21. Archinal, B. A.; A'Hearn, M. F.; **Conrad, A.**; Consolmagno, G. J.; Courtin, R.; Fukushima, T.; Hestroffer, D.; Hilton, J. L.; Krasinsky, G. A.; Neumann, G.; et al. "Erratum to: Reports of the IAU Working Group on Cartographic Coordinates and Rotational Elements: 2006 & 2009" *Celestial Mechanics & Dynamical Astronomy* **110** 401 (2011) 110
22. Xianyu Zhang, Wolfgang Gaessler, **Albert R. Conrad**, Thomas Bertram, Carmelo Arcidiacono, Thomas M. Herbst, Martin Kuerster, Peter Bizenberger, Daniel Meschke, Hans-Walter Rix, Changhui Rao, Lars Mohr, Florian Briegel, Frank Kittmann, Juergen Berwein, Jan Trowitzsch, Laura Schreiber, Roberto Ragazzoni, Emiliano Diolaiti "First laboratory results with the LINC-NIRVANA high layer wavefront sensor" *Optics Express* **19** 16087 (2011)
23. J.L. Heldmann, et al., "LCROSS (Lunar Crater Observation and Sensing Satellite) Observation Campaign: Strategies, Implementation, and Lessons Learned", *Space Science Reviews* **167** 93 (2012)
24. Imke de Pater, Michael H. Wong, Katherine de Kleer, Heidi B. Hammel, Mate Adamkovics, **Al Conrad** "Keck Adaptive Optics Images of Jupiter's North Polar Cap and Northern Red Oval", *Icarus* **213** 559 (2011)
25. B.A. Archinal (chair), M.F. A'Hearn, E. Bowell, **A. Conrad**, G.J. Consolmagno, R. Courtin, T. Fukushima, D. Hestroffer, J.L. Hilton, G.A. Krasinsky, G. Neumann, J. Oberst, P.K. Seidelmann, P. Stooke, D.J. Tholen, P.C. Thomas, I.P. Williams "Report of the IAU/IAG Working Group on Cartographic Coordinates and Rotational Elements: 2009" *Celestial Mechanics & Dynamical Astronomy* **109**, 101 (2011)
26. J.D. Drummond, **A. Conrad**, W. J. Merline, B. Carry, C. R. Chapman, H. A. Weaver, P. M. Tamblyn, J. C. Christou, C. Dumas "Physical properties of the ESA Rosetta target asteroid (21) Lutetia. I. The triaxial ellipsoid dimensions, rotational pole, and bulk density", *Astronomy and Astrophysics* **523** A93 (2010)
27. Carry B., Kaasalainen M., Leyrat C., Merline W. J., Drummond J. D., **Conrad A.**, Weaver H. A., Tamblyn P. M., Chapman C. R., Dumas C., Colas F., Christou J. C., Dotto E., Perna D., Fornasier S., Bernasconi L., Behrend R., Vachier F., Kryszczyńska A., Polinska M., Fulchignoni M., Roy R., Naves R., Poncy R., Wiggins P. "Physical properties of the ESA Rosetta target asteroid (21) Lutetia : II. Shape and flyby geometry, Astronomy and Astrophysics", **523**, A94 (2010)
28. Imke de Pater, Michael H. Wong, Philip Marcus, Statia Luszcz-Cook, Mate Adamkovics, **Al Conrad**, Xylar Asay-Davis, Christopher Go "Persistent Rings in and around Jupiter's Anticyclones - Observations and Theory", *Icarus* **210** 742 (2010)
29. Benoit Carry, Christophe Dumas, Mikko Kaasalainen, Jérôme Berthier, William J Merline, Stéphane Erard, **Al Conrad**, Jack D Drummond, Daniel Hestroffer, Marcello Fulchignoni, Thierry Fusco "Physical Properties of 2 Pallas", *Icarus* **205** 460 (2010)
30. **A. R. Conrad**, R. W. Goodrich, R. D. Campbell, W. J. Merline, J. D. Drummond, C. Dumas, B. Carry "Keck observations of Solar System objects: Perspectives for ELT", *Earth Moon and Planets* **105** 115 (2009)
31. Michael W. Busch, Shrinivas R. Kulkarni, **Al Conrad** "No Satellites Detected Around 21 Lutetia", *Icarus* **203** 681 (2009)
32. **A.R. Conrad**, C. Dumas, W. J. Merline, J.D. Drummond, R.D. Campbell, R. W. Goodrich, D. Le Mignant, F. H. Chaffee, T. Fuscoe, S.H. Kwok and R. I. Knight, "Direct measurement

- of the size, shape, and pole of 511 Davida with Keck AO in a single night,” *Icarus* **191** 616 (2007)
33. Michael W. Busch, Shrinivas R. Kulkarni, **A.R. Conrad**, P. Brian Cameron, “Keck Adaptive Optics Imaging of Near-Earth Asteroid 2004 XP14,” *Icarus* **192** 589 (2007)
  34. P.K. Seidelmann, B.A. Archinal, M.F. A'Hearn, **A. Conrad**, G.J. Consolmagno, D. Hestroffer, J.L. Hilton, G.A. Krasinsky, G. Neumann, J. Oberst, P. Stooke, E.F. Tedesco, D.J. Tholen, P.C. Thomas, I.P. Williams, “Report of the IAU/IAG Working Group on Cartographic Coordinates and Rotational Elements,” *Celestial Mechanics & Dynamical Astronomy* **98** 155 (2007)
  35. Close, Laird M., Zuckerman, Ben, Song, Inseok, Barman, Travis, Marois, Christian, Rice, Emily L., Siegler, Nick, Macintosh, Bruce, Becklin, Eric E., Campbell, R,y, Lyke, James E., **Conrad, Al**, Le Mignant, David, “New Masses and Ages for the Planetary Mass Binary Candidate Ophiuchus #11 and the Discovery of Another Very Wide, Low-Mass, Binary in Ophiuchus,” *Astrophysical Journal*, **660** 1492 (2007)
  36. M. E. Brown, M. A. van Dam, A. H. Bouchez, D. Le Mignant, R. D. Campbell, J. C. Y. Chin, **A. Conrad**, S. K. Hartman, E. M. Johansson, R. E. Lafon, D. L. Rabinowitz, P. J. Stomski, Jr., D. M. Summers, C. A. Trujillo, and P. L. Wizinowich, “Satellites of the largest Kuiper Belt objects,” *Astrophysical Journal* **639**, 43 (2006)
  37. F. Marchis, D. Le Mignant, F.H. Chaffee, A.G. Davies, S.H. Kwok, R. Prange, I. dePater, P. Amico, R. Campbell, T. Fuxco, R.W. Goodrich, **A. Conrad**, “Keck AO survey of Io global volcanic activity between 2 and 5 um,” *Icarus* **176** 96 (2005)
  38. Michael J. Mumma, Michael A. DiSanti, Karen Magee-Sauer, Boncho P. Bonev1, Geronimo L. Villanueva1, Hideyo Kawakita, Neil Dello Russo, Erika L. Gibb, James E. Lyke, R,all D. Campbell, Joel Aycock, **Al Conrad**, Grant M. Hill, “Direct Measurement of Parent Volatiles in comet 9P/Tempel 1: A comparison of volatile composition before and after Impact,” *Science* **14** 270 (2005)
  39. Meech, K. J., et al., “Deep Impact: Observations from a Worldwide Earth-Based Campaign Science,” **310** 265 (2005)
  40. Wirth, Gregory D., et al., “The Team Keck Treasury Redshift Survey of the GOODS-North Field,” *Astrophysical Journal* **127** 3121 (2004)
  41. Mumma, M. J., McLean, I. S., DiSanti, M. A., Larkin, J. E., Dello Russo, N., Magee-Sauer, K., Becklin, E. E., Bida, T., Chaffee, F., **Conrad, A. R.**, and 9 others, “A survey of organic volatile species in comet C/1999 H1 (Lee) using NIRSPEC at the Keck Observatory,” *The Astrophysical Journal* **546** 1183 (2001).

#### International Astrophysical Union (IAU) Circulars

1. W. J. Merline; P. M. Tamblyn; J. D. Drummond; Christou, J. C.; **A. R. Conrad**; B. Carry; et al., “(317) Roxanne I = Olympias”, *IAU Circular*, No. 2020-V139 (2020)
2. W. J. Merline; P. M. Tamblyn; B. D. Warner; P. Pravec; J. P. Tamblyn; C. Neyman; **A. R. Conrad**; W. M. Owen; B. Carry; J. D. Drummond; et al., “S/2012 (2577) 1”, *IAU Circular*, No. 9267 (2013)
3. Merline, W. J.; Drummond, J. D.; Tamblyn, P. M.; Carry, B.; Neyman, C.; **Conrad, A. R.**; Chapman, C. R.; Christou, J. C.; Dumas, C.; Enke, B. L., “2005 YU\_55,” *IAU Circular*, No. 9242 (2011)
4. Merline, W. J.; Tamblyn, P. M.; Drummond, J. D.; Christou, J. C.; **Conrad, A. R.**; Keck Observatory, W. M.; Carry, B.; Chapman, C. R.; Dumas, C.; Durda, D. D.; “S/2009 (317) 1”, *IAU Circular*, No. 9099 (2010)

5. W. J. Merline, **A. R. Conrad**, J. D. Drummond, P. M. Tamblyn, C. Dumas, B. Carry, R.M. Owen, R.D., Campbell, R.W. Goodrich, "S/2008 35107," *LAU Circular*, No. 8977, September 18, 2008.
6. **A. R. Conrad**, W. J. Merline, J. D. Drummond, P. M. Tamblyn, C. Dumas, B. Carry, R.D., Campbell, R.W. Goodrich, R.M. Owen, C. R. Chapman, "S/2008 41," *LAU Circular*, No. 8930, March 21, 2008.
7. Merline, W. J., Dumas, C., Siegler, N., Close, L. M., Chapman, C. R., Tamblyn, P. M., Terrell, D., **Conrad, A.**, Menard, F., Duvert, G., "S/2003 283," *LAU Circular*, No. 8165.
8. Mumma, M. J., Dello Russo, N., DiSanti, M. A., Magee-Sauer, K., Novak, R., **Conrad, A.**, Chaffee, F., "Comet C/1999 T1 (McNaught-Hartley)," *LAU Circular*, No. 7578, 2000.

#### Magazine Articles and Books Published

1. **Albert R. Conrad**, "Software Systems for Astronomy," *Springer-Link Briefs*, ISBN 978-1-4614-7058-8, 2013
2. Laura Kinoshita, **Al Conrad**, Bill Merline, "Discovery of an Extreme Asteroid Moon," *Cosmic Matters Magazine*, Summer 2008.
3. Mike Brown, **Al Conrad**, Linda Copman, "Planetary Astronomy: The New Solar System," *Cosmic Matters Magazine*, Fall 2007.
4. Robert Kibrick, **Al Conrad**, Andrew Perala, "Through the far looking glass: collaborative remote observing with the W. M. Keck Observatory," *ACM Interactions*, Vol. 5, Iss. 3, pp. 32 – 39, ISSN:1072-5520, 1998

#### Papers Presented at Astronomy Conferences (AAS/DPS, LPSC, AGU, ACM/LPI<sup>1</sup>)

1. **Albert Conrad**, Steve Ertel, Imke de Pater, Ned Molter, Deepashri Thatte, Joel Sanchez-Bermudez, Anand Sivaramakrishnan, Joseph Shields, Katherine de Kleer, Rachel Cooper, Jarron Leisenring "Locating a new emission source in Io's Bosphorus Regio" *EGU* **3625** (2023)
2. B.N.L. Sharkey, V. Reddy, R. Malhotra, A. Thirouin, O. Kuhn, **A. Conrad**, B. Rothberg, J.A. Sanchez, D. Thompson, C. Veillet "Assessing the Origins of Earth Quasi-Satellite (469219) Kamo`oalewa" *LPSC* **1620** (2022)
3. de Pater, Imke, Fouchet, Thierry, Wong, Michael, Fry, Patrick, Fletcher, Leigh, Hueso, Ricardo, Melin, Henrik, Showalter, Mark, Bockelee-Morvan, Dominique, Lellouch, Emmanuel, de Kleer, Katherine, **Conrad, Al**, Sromovsky, Lawrence, Rodriguez-Ovalle, Pablo, Irwin, Patrick, Stansberry, John, Holler, Bryan, JWST-ERS 1373 Team "JWST Observations of the Jovian System from Commissioning and ERS data" *AAS/DPS* **54** (2022)
4. Archinal, B. A.; Acton, C. H.; **Conrad, A.**, et al. "Coordination of Planetary Coordinate System Recommendations by the IAU Working Group on Cartographic Coordinates and Rotational Elements - 2020 Status and Future" *ISPRS* **XLIII-B3** (2020)

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<sup>1</sup> LPSC – Lunar and Planetary Sciences Conference; AAS/DPS – American Astronomical Society Division of Planetary Sciences; ACM/LPI – Lunar Planetary Institute Colloquium on Asteroids, Comets, , Meteorites.

5. **Conrad, Albert**; Reddy, Vishnu; Sharkey, Benjamin; Kuhn, Olga; Kareta, Theodore; Veillet, Christian “Characterization of faint near-Earth asteroids using LBT” *AAS/DPS-EPSC 1881* (2019)
6. **Conrad, A.**; Archinal, B.; and the IAU Working Group on Cartographic Coordinates and Rotational Elements, “Update for 2019 from the IAU working group on cartographic coordinates and rotational elements.” *LPSC 2110* (2019)
7. Kareta, T.; Reddy, V.; Sanchez, J. A.; Linder, T.; Lauretta, D. S.; Arai, T.; Sharkey, B.; Kuhn, O.; **Conrad, A.**; Hergenrother, C. "Spectral Heterogeneity Among Geminid Complex Small Bodies" *LPSC 155140* (2019)
8. Paganelli, Flora; **Conrad, Albert R.**; Costa Sitjà, Marc "Ground Observation of asteroids at mission ETA" *PSIDA 6032* (2018)
9. **Conrad, Al** and Fouchet, Thierry, “Jovian System as a Demonstration of JWST’s Capabilities for Solar System Science: Status Update” *AAS 232* 311.02 (2018)
10. Paganelli, Flora; **Conrad, Albert R.**; Costa Sitjà, Marc "Ground Observation of asteroids at mission ETA through JPL Horizons and SPICE" *EPSC 202* (2018)
11. Fohring, Dora; Reddy, Vishnu; Wainscoat, Richard; **Conrad, Al**; Sharkey, Benjamin “Photometry and Spectroscopy of (469129) 2016 HO3” *AAS 505.04* (2018)
12. **Conrad, A.**, Veillet, C., “Planetary science with the Large Binocular Telescope: Viewing the Solar System with a 23-meter aperture” *EPSC 883* (2017)
13. Skrutskie, Michael F., de Kleer, Katherine R., Stone, Jordan, **Conrad, Al**, Davies, Ashley, de Pater, Imke, Leisenring, Jarron, Hinz, Philip, Skemer, Andrew, Veillet, Christian, Woodward, Charles E., Ertel, Steve, Spalding, Eckhart, “Diffraction-limited Mid-infrared Integral Field Spectroscopy of Io's Volcanic Activity with ALES on the Large Binocular Telescope” *AAS/DPS* (2017)
14. Reddy, Vishnu, Kuhn, Olga; Thirouin, Audrey, **Conrad, Al**, Malhotra, Renu, Sanchez, Juan A., Veillet, Christian, “Ground-based Characterization of Earth Quasi Satellite (469219) 2016 HO3” *AAS/DPS* (2017)
15. **Conrad, A. R.**, “The Role of Earth-Based Observatories for Solar System Science in 2050” *LPI Contributions* (2017)
16. Jack D. Drummond, **Al Conrad**, Vishnu Reddy, Katherine de Kleer, Mate Adamkovics, Imke de Pater, William J. Merline, Peter Tamblyn, “Asteroid (16) Psyche: Triaxial Ellipsoid Dimensions and Rotational Pole from Keck II NIRC2 AO Images and Keck I OSIRIS Images” *AAS/DPS* (2016)
17. Katherine de Kleer, Michael F. Skrutskie, Jarron Leisenring, Imke de Pater, Ashley Davies, **Al Conrad**, Aaron Caleb Resnick, Philip Hinz, Denis Defrère, Christian Veillet, Christian, “Time-Evolution and Thermal Mapping of Io's Loki Patera at High Resolution” *AAS/DPS* (2016)
18. Michael K. Shepard, James Richardson, Patrick A. Taylor, Linda A. Rodriguez-Ford, **Al Conrad**, Imke de Pater, Mate Adamkovics, Katherine de Kleer, Jared R. Males, Katie M.

- Morzinski, Laird Close, Mikko Kaasalainen, Matti Viikinkoski, Bradley Timerson, Vishnu Reddy, Christopher Magri, Michael Nolan, Ellen S. Howell, Lance A. M. Benner, Jon D. Giorgini, Brian D. Warner, Alan W. Harris, “Radar observations and shape model of asteroid 16 Psyche” *AAS/DPS* (2016)
19. Skrutskie M., **Conrad, A.**, Resnick, A., , P.Leisenring, J., Hinz, de Pater, I., de Kleer, K., Spencer, J., Skemer, A., Woodward, C.E., Davies, A.G., Defrere, D. “Large Binocular Telescope Observations of Europa Occulting Io’s Volcanoes at 4.8 $\mu$ m” *AAS/DPS*, (2015)
  20. **Conrad, A.**, de Kleer, K., Leisenring, J., La Camera, A., Arcidiacono, C., Bertero, M., Boccacci, P., Defrère, D., de Pater, I., Hinz, P., Hoffman, K.-H., Kürster, M., Rathbun, J., Schertl, D., Skemer, A., Skrutskie, M., Spencer, J., Veillet, C., Weigelt, G., Woodward, C. “High resolution LBT imaging of Io and Jupiter”, *EPSC 351* (2015)
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