

# Aki Roberge

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Exoplanets & Stellar Astrophysics Lab.  
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**RESEARCH INTERESTS :** Study of planet formation through multi-band observations of young circumstellar disks; Development of future exoplanet mission concepts

## EDUCATION

The Johns Hopkins University, Baltimore, MD

Ph.D. in Astrophysics 2002

Thesis title: “Ultraviolet Spectroscopy of Circumstellar Disks,”

M.A. in Physics 1999

Massachusetts Institute of Technology, Cambridge, MA

B.S. in Physics w/ Planetary Science minor 1996

## PROFESSIONAL APPOINTMENTS

Research Astrophysicist 2008 – present

NASA Goddard Space Flight Center, Exoplanets & Stellar Astrophysics Lab.

Development of future space telescope mission concepts; Far-UV to far-IR observations of protoplanetary and debris disks

Deputy Program Scientist, Nancy Grace Roman Space Telescope 2020 – 2021

Study Scientist, NASA [LUVOIR Decadal Large Mission Study](#) 2016 – 2019

Member, [WFIRST Formulation Science Working Group](#) 2015 – 2020

Member, NASA Exoplanet Probe Science and Technology Definition Team, [External Occulter \(Exo-S\) STDT](#) 2013 – 2015

NASA Postdoctoral Program Research Associate 2005 – 2008

NASA Goddard Space Flight Center, Exoplanets & Stellar Astrophysics Lab.

Far-UV spectroscopy of atomic gas in debris disks; Mid-IR to far-IR survey for new debris disks with both gas and dust; Development of future space telescope mission concepts

Carnegie Postdoctoral Research Fellow 2002 – 2005

Carnegie Institution of Washington, Dept. of Terrestrial Magnetism

Far-UV spectroscopy of molecular gas in debris disks; Spatially resolved optical spectroscopy and coronagraphic imaging of a protoplanetary disk

Graduate Research Assistant 1997 – 2002  
 The Johns Hopkins University, Dept. of Physics & Astronomy  
 Far-UV spectroscopy of gas and star-grazing planetesimals in protoplanetary and debris disks;  
 Study of stellar activity in early-type stars

### SELECTED AWARDS

Robert H. Goddard Award for Leadership 2019  
 GSFC Special Act Award for “Exceptional Outreach to Minority Serving Institutions” 2015  
 Robert H. Goddard Award for Science 2014  
 NASA Goddard Space Flight Center Peer Award 2010

### SELECTED AWARDED PROJECTS

NASA Nexus for Exoplanet System Science  
 Co-I on “[The Virtual Planetary Laboratory](#): Advancing the Search for Life Beyond the Solar System” project (PI: V. Meadows) 2018 – 2023  
 Co-I on “[Rocky Planet Habitability](#): Insights from Solar System Climate Dynamics Through Time” project (PI: A. Del Genio) 2015 – 2019  
 NASA WFIRST Science Investigation Team 2015 – 2020  
 Deputy PI for Coronagraph SIT Team (PI: M. Turnbull)  
 NASA Research Opportunities in Space and Earth Sciences (ROSES)  
 Co-I on SOFIA Third Generation Science Instrument “The High Resolution Mid-Infrared Spectrometer (HIRMES)” (PI: S. Mosley) 2015 – 2018  
 Co-I on APRA project “Development and Flight-testing of Technology for Future NASA Astrophysics Missions” (PI: K. France) 2015 – 2018  
 PI on Origins of Solar Systems project “Finding the Needle in the Haystack: Realistic Simulations of ExoEarth Observations in the Presence of Exozodiacal Dust” 2009 – 2012  
 NASA Astrobiology Institute  
 Co-I on [Goddard Center for Astrobiology](#) project 2008 – 2019  
 “Origin and Evolution of Organics in Planetary Systems” (PI: M. Mumma)  
 NASA Astrophysics Strategic Mission Concept Studies 2008  
 Co-I on *New Worlds Observer* telescope + free-flying occulter mission study (PI: W. Cash)  
 Co-I on *Star Formation Observatory* optical/UV instrument study (PI: P. Scowen)  
 NASA Origins Science Mission Concept Study 2004  
 Co-I on *HORUS* UV/optical telescope mission study (PI: J. Morse)

**SELECTED AWARDED OBSERVING PROPOSALS***NASA/ESA Hubble Space Telescope*

- Co-I on Cycle 25 program “The Mega-MUSCLES Treasury Survey: Measurements of the UV Spectral Characteristics of Low-mass Exoplanetary Systems” (PI: C. Froning) 2017
- PI on Cycle 23 program “Inventing Gas in Debris Disks: UV Spectroscopy of Eta Tel” 2015
- Co-I on Cycle 22 program “The MUSCLES Treasury Survey: Measurements of the UV Spectral Characteristics of Low-mass Exoplanetary Systems (PI: K. France)” 2014
- PI on Cycle 20 program “An Inventory of Gas in a Debris Disk: Far-UV Spectroscopy of 49 Ceti” 2012
- PI on Cycle 17 program “Coronagraphic Imaging of Debris Disks Containing Gas” 2008

*Atacama Large Millimeter Array*

- PI on Cycle 3 program “The Mysterious Gas in the 49 Ceti Debris Disk” 2015
- Co-I on Cycle 2 program “Mapping the C I in the Beta Pictoris Debris Disk” 2014

*Large Binocular Telescope Interferometer*

- Co-I on [NASA Key Science Team](#) proposal (PI: A. Weinberger) 2012 – 2017  
“Signal and Noise: Debris Disks and Exozodiacal Dust”

*ESA Herschel Space Observatory*

- PI on Open Time 2 program “Ultra-Cold Material in Young Debris Disks” 2012
- Co-I on Open Time Key Programmes “Gas in Protoplanetary Systems” (GASPS; PI: W. Dent) & “Dust Around Nearby Stars” (DUNES; PI: C. Eiroa) 2009 – 2013

*NASA Spitzer Space Telescope*

- PI on Cycle 2 program “Determining the Disk Fraction Among Shell Stars: A Survey for CS Disks with Gas and Dust” 2005

*NASA/CNES/CSA Far Ultraviolet Spectroscopic Explorer*

- PI on Cycle 4 program “Circumstellar Gas in Young Planetary Debris Disks” 2003

**OTHER OBSERVING EXPERIENCE**

Magellan Telescopes, Las Campanas, Chile 2002 – 2008

PI of two projects involving near-IR imaging of H<sub>2</sub> around circumstellar disk stars and in the R CrA star-forming region; Co-I on an optical spectroscopic survey of circumstellar gas around

nearby shell stars; Co-I on a mid-IR photometric survey for circumstellar disks; Co-I on a near-IR survey for Herbig-Haro jets from protostars

W. M. Keck Telescopes, Mauna Kea, Hawaii 2003  
Co-I on a mid-IR photometric survey for circumstellar disks

### SELECTED SERVICE ACTIVITIES

Member, NASA Planetary Science Advisory Committee 2018 – 2020

Member, Collaborative Consultation Committee, US Military Academy 2018 – 2019

Co-organizer, NASA GSFC / Howard University Interaction Days 2014 – 2016

Member, [NASA Astrophysics Visionary Roadmap Team](#) 2013

Science Vision Team member, NASA GSFC 2011

Executive Committee member, NASA Exoplanets Exploration Program Analysis Group ([ExoPAG](#)) 2009 – 2013

Science Director's Council member, NASA GSFC 2009 – 2011

NASA Goddard Association of Postdoctoral Scholars vice-president / civil servant advisor 2009 – 2010

Extrasolar Planets Seminar co-organizer, NASA GSFC 2006 – 2011

*Multimission Archive at Space Telescope (MAST)* Users Group advisory committee member 2003 – 2006

Scientific organizing committee member

“NASA Sagan Exoplanet Summer Workshop”, Pasadena CA July 2019

“The Space Astrophysics Landscape for the Next Decade: Major Missions for the 2020s and Beyond”, Washington DC Mar. 2019

“Habitable Worlds 2017: A System Science Workshop”, Laramie WY Nov. 2017

“Exoclipse Conference”, Boise ID Aug. 2017

“High-Contrast Imaging in Space Workshop”, Baltimore MD Nov. 2016

“Space Telescopes and Instrumentation: Optical, Infrared, and Millimeter Wave”, SPIE Astronomical Telescopes + Instrumentation Conference, Edinburgh, Scotland June 2016

AAS Division for Planetary Science Annual Meeting, Washington DC Nov. 2015

“Exploring the Universe with JWST Conference”, Noordwijk, Netherlands Oct. 2015

“Physics of Planetary Atmospheres: From Earth to Exoplanets,” AGU Chapman Conference, Annapolis MD June 2013

- “Enhancing the Legacy of HST Spectroscopy Workshop”, Baltimore MD Nov. 2012  
 “From Atoms to Pebbles: Herschel’s View of Star and Planet Formation Symposium”, Grenoble, France Mar. 2012  
 “Far-IR Astronomy from Space: A Community Workshop about the Future,” Pasadena CA May 2008

Review panel member or chair: NASA ROSES Exoplanets, NASA ROSES Origins of Solar Systems, NASA Exoplanet Technology Development (APRA & TDEM), NASA Sagan Fellowship Program, NSF Astronomy, NASA *Hubble Space Telescope*, W. M. Keck Observatory (NASA time), ESA ALMA Observatory

External proposal reviewer: European Research Council, French Agence Nationale de la Recherche, Canadian Space Agency, Netherlands Organization for Scientific Research

Referee for *Nature*, *The Astrophysical Journal*, *The Astrophysical Journal Letters*, *The Astronomical Journal*, *Astronomy & Astrophysics*

### TEACHING EXPERIENCE

Research mentor, NASA Postdoctoral Program 2013 – 2019  
 Allison Youngblood, Maxime Rizzo, Christopher Stark

Research advisor, Ph.D. students 2007 – 2016  
 Amy Steele, Ashlee Wilkins, Jessica Donaldson (University of Maryland, College Park), Erika Nesvold (University of Maryland, Baltimore County), Tala Monroe (Indiana University), Lynnae Quick (Catholic University)

Research advisor, undergraduate and pre-doctoral students 2014 – present  
 Junellie Gonzalez-Quiles (UMCP), Steve Anusie, Aara’L Yarber, Ameer Blake (Howard University), Tiffany Jansen (University of Washington), Andrew Lincowski (University of Arizona), Brittany Miles (UCLA)

Guest lecturer, Catholic University of America, Physics Dept. astronomy seminar Fall 2007

Advisor, Carnegie Institution for Science, Dept. of Terrestrial Magnetism 2003, 2004  
 Research Experience for Undergraduates Summer Program

Graduate teaching assistant, Johns Hopkins University 1996 – 1997  
 Undergraduate level *General Physics for Biological Science Majors* & general physics lab.

### INVITED TALKS SINCE 2010

American Institute of Aeronautics and Astronautics, Los Angeles-Las Vegas Section July 2020

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NASA Sagan Exoplanets Summer Workshop, Pasadena CA	July 2019
Science with HabEx Community Meeting, New York NY	Oct. 2018
International Astrobiology Summer School, Santander, Spain	June 2018
US Military Academy, Evening Lecture, West Point NY	May 2018
Planetary Habitability and the Search for Life Workshop, Leiden, Netherlands	Apr. 2018
Robert H. Goddard Memorial Symposium, Greenbelt MD	Mar. 2018
AAAS Annual Meeting, Science Session, Austin TX	Feb. 2018
Workshop on Gaseous Debris Disks, RIKEN, Wako, Japan	Oct. 2017
Ball Aerospace, Science and Technology Colloquium, Boulder CO	Oct. 2017
US Naval Observatory, Science Colloquium, Washington DC	July 2017
University of Colorado, APS Colloquium, Boulder CO	Apr. 2017
Laboratoire d'Astrophysique de Marseille, Science Colloquium, Marseille, France	Apr. 2017
Johns Hopkins University, CAS Seminar, Baltimore MD	Nov. 2016
University of Washington, Astrobiology Colloquium, Seattle WA	Oct. 2016
University of Maryland College Park, Planetary Astronomy Seminar	Sept. 2016
Exoplanets Exploration Program Analysis Group Meeting XIV, San Diego CA	June 2016
Northrop Grumman Search for Life Workshop, Redondo Beach CA	Mar. 2016
NASA Astrophysics Subcommittee Meeting, Washington DC	Mar. 2016
Robert H. Goddard Memorial Symposium, Greenbelt MD	Mar. 2016
Pathways to Habitable Planets II Conference, Bern, Switzerland	July 2015
Exoplanets Exploration Program Analysis Group Meeting XII, Chicago IL	June 2015
Gordon Conference on Origins of Solar Systems, South Hadley MA	June 2015
NASA Astrophysics Subcommittee Meeting, Washington DC	Mar. 2015
University of Maryland College Park, Astronomy Colloquium	Feb. 2015
Exoplanets Exploration Program Analysis Group Meeting XI, Seattle WA	Jan. 2015

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Wide-Field Infrared Surveys: Science and Techniques Conference, Pasadena CA	Nov. 2014
30 Years of Beta Pictoris and Debris Disk Studies Conference, Paris, France	Sept. 2014
NASA Sagan Summer Workshop, Pasadena CA ( <a href="#">video of talk</a> )	July 2014
NASA Ames Research Center, SOFIA Science Colloquium	Apr. 2014
Exoplanets Exploration Program Analysis Group Meeting IX, Washington DC	Jan. 2014
University of Maryland College Park, Planetary Astronomy Seminar	Nov. 2013
University of Notre Dame, Astrophysics Seminar	Oct. 2013
University of Delaware, Dept. of Physics & Astronomy Colloquium	Dec. 2012
Exoplanets Exploration Program Analysis Group Meeting VI, Reno NV	Oct. 2012
University of Washington, Astronomy Dept. Colloquium	Feb. 2012
Exoplanets Exploration Program Analysis Group Meeting V, Austin TX	Jan. 2012
NASA Goddard Space Flight Center, Science Jamboree	June 2011
Exoplanets Exploration Program Analysis Group Meeting IV, Alexandria VA	June 2011
Space Telescope Science Institute, ALMA Community Day Workshop	Apr. 2011
Indiana University, Astronomy Dept. Colloquium	Nov. 2010
Exoplanets Exploration Program Analysis Group Meeting II, Pasadena CA	June 2010
NASA Goddard Space Flight Center, Astrophysics Science Division Colloquium	Apr. 2010
Johns Hopkins University Applied Physics Lab, Planetary Science Seminar	Mar. 2010
The Origin and Fate of the Sun: Evolution of Solar-Mass Stars Conference, Garching, Germany	Mar. 2010
Exoplanets Exploration Program Analysis Group Meeting I, Washington DC	Jan. 2010
<b>SELECTED PUBLIC OUTREACH</b>	
Invited speaker, Goddard Retirees and Alumni Luncheon, Greenbelt MD	Aug. 2018
Panelist, “7 Dwarves/TRAPPISTS” panel at the Escape Velocity Science Fiction Convention, Washington DC	May 2018

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Panelist, “Exoplanets Everywhere!”, AAAS News Briefing, Austin TX	Feb. 2018
Speaker, “Towards Earth 2.0: Exoplanets and Future Missions”, NASA GSFC Hyperwall presentation for US Congressman Babin and staff, Greenbelt MD	June 2017
Lecturer, “ <a href="#">Finding Earth 2.0: Extraordinary Tools to Expand the Search Space</a> ” Philosophical Society of Washington, Cosmos Club, Washington DC	May 2017
Invited speaker, “The Search for Life”, Maryland Space Business Roundtable, National Air and Space Museum, Washington DC	Sept. 2016
Invited speaker, “New Worlds: Current and Future Discoveries in Exoplanets”, Conference for Undergraduate Women in Physics, Wesleyan University	Jan. 2016
Invited speaker, “New Worlds: Current and Future Discoveries in Exoplanets”, NASA@Howard Lecture Series	Oct. 2015
Lecturer, “ <a href="#">The Exoplanet-Starshade Mission Lecture and Panel Discussion</a> ”, Adler Planetarium (Chicago IL) & Hayden Planetarium (New York, NY)	June & Nov. 2014
Narrator, “ <a href="#">Nearby Star’s Icy Debris Suggests ‘Shepherd’ Planet</a> ”, NASA Press Feature	Mar. 2014
Lecturer, “New Worlds: Current and Future Discoveries in Exoplanets,” Johns Hopkins University Space Grant Teachers Certificate Program	2012, 2013
Panelist, “Exoplanets and Astrobiology” panel discussion at the Science Fiction & Fantasy Writers of America Nebula Awards Weekend	May 2012
Panelist, “Science Fiction & Science Fact” panel discussion for general public, STS-135 Shuttle Launch Event, NASA Kennedy Space Center Visitor’s Complex	July 2011
Interviewee, “ <a href="#">20 Years of Hubble Science: Exoplanets</a> ,” NASA Goddard Multimedia video series	July 2010
Featured scientist, “ <a href="#">Imagine the Universe!</a> ” educational website, NASA Goddard Space Flight Center	Fall 2007

**SELECTED PRESS**

Sky & Telescope Magazine, “ <a href="#">Astronomers Dream Big</a> ”	May 2019
NPR Science Friday, “ <a href="#">New Space Telescopes Race for a New View of the Cosmos</a> ”	Dec. 2018
Forbes Magazine, “ <a href="#">NASA Just Discovered Seven New Exoplanets... So What?</a> ”	Feb. 26, 2017



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Scientific American, “ <a href="#">20 Big Questions About the Future of Humanity</a> ”	Sept. 1, 2016
Many Worlds website, “ <a href="#">Movement in the Search For ExoLife</a> ”	Jan. 22, 2016
Astronomy Magazine, “ <a href="#">ALMA sees icy wreckage in nearby solar system</a> ”	Mar. 7, 2014
Sky & Telescope Magazine, “The Birth of Carbon Planets?”	Sept. 2006
Science News Magazine, “Is this young star ready to form planets?”	Nov. 24, 2001

### REFEREED PUBLICATIONS

(15 first-author, h-index: 36)

81. Plavchan, P., Barclay, T., Gagné, J., et al. (2020). “A Planet Within the Debris Disk around the Pre-Main-Sequence Star AU Microscopii.” *Nature*, 582, 497
80. Quick, L. C., **Roberge, A.**, Mlinar, A. B., & Hedman, M. M. (2020). “Forecasting Rates of Volcanic Activity on Terrestrial Exoplanets and Implications for Cryovolcanic Activity on Extrasolar Ocean Worlds.” *Publications of the Astronomical Society of the Pacific*, 132, 084402
79. Cataldi, G., Wu, Y., Brandeker, A., et al. (2020). “The Surprisingly Low Carbon Mass in the Debris Disk around HD 32297.” *The Astrophysical Journal*, 892, 99
78. Ertel, S., Defrère, D., Hinz, P., et al. (2020). “The HOSTS Survey for Exozodiacal Dust: Observational Results from the Complete Survey.” *The Astronomical Journal*, 159, 177
77. MacGregor, M. A., Weinberger, A. J., Nesvold, E., et al. (2019). “Multiple Rings of Millimeter Dust Emission in the HD 15115 Debris Disk.” *The Astrophysical Journal*, 877, L32
76. **Roberge, A.** & Moustakas, L. A. (2018). “The Large Ultraviolet/Optical/Infrared Surveyor.” *Nature Astronomy*, 2, 605
75. MacGregor, M. A., Weinberger, A. J., Hughes, A. M., et al. (2018). “ALMA Detection of Extended Millimeter Halos in the HD 32297 and HD 61005 Debris Disks.” *The Astrophysical Journal*, 869, 75
74. Cataldi, G., Brandeker, A., Wu, Y., et al. (2018). “ALMA Resolves CI Emission from the  $\beta$  Pictoris Debris Disk.” *The Astrophysical Journal*, 861, 72
73. Grady, C. A., Brown, A., Welsh, B., **Roberge, A.**, Kamp, I., Rivière Marichalar, P. (2018). “The Star-Grazing Bodies in the HD 172555 System.” *The Astronomical Journal*, 155, 242
72. **Roberge, A.** & Seager, S. (2018). “The ‘Spectral Zoo’ of Exoplanet Atmospheres.” In *Handbook of Exoplanets* (eds. H. J. Deeg & J. A. Belamonte), Springer International Publishing, [doi:10.1007/978-3-319-30648-3\\_98-1](https://doi.org/10.1007/978-3-319-30648-3_98-1)

71. Ertel, S., Defrère, D., Hinz, P., Mennesson, B., Kennedy, G. M., Danchi, W. C., Gelino, C., Hill, J. M., et al. (2018). “The HOSTS Survey – Exozodiacal Dust Measurements for 30 Stars.” *Astronomical Journal*, 155, 194
70. Lomax, J. R., Wisniewski, J. P., **Roberge, A.**, Donaldson, J. K., Debes, J. H., Malumuth, E. M., & Weinberger, A. J. (2018). “Optical Coronagraphic Spectroscopy of AU Mic: Evidence of Time Variable Colors?” *The Astronomical Journal*, 155, 2
69. Richards, S. N., Moseley, S., H., Stacey, G., et al. (2018). “SOFIA-HIRMES: Looking Forward to the High-Resolution Mid-Infrared Spectrometer.” *Journal of Astronomical Instrumentation*, 7, 1840015
68. **Roberge, A.**, Rizzo, M. J., Lincowski, A. P., Arney, G. N., Stark, C. C., Robinson, T. D., Snyder, G., Pueyo, L., et al. (2017). “Finding the Needles in the Haystacks: High-Fidelity Models of the Modern and Archean Solar System for Simulating Exoplanet Observations.” *Publications of the Astronomical Society of the Pacific*, 129, 124401
67. Kruczek, N., France, K., Evonosky, W., Parke Loyd, R. O., Youngblood, A., **Roberge, A.**, Wittenmyer, R. A., Stocke, J. T., et al. (2017). “H<sub>2</sub> Fluorescence in M Dwarf Systems: A Stellar Origin.” *The Astrophysical Journal*, 845, 3
66. Youngblood, A., France, K., Parke Loyd, R. O., Brown, A., Mason, J. P., Schneider, P. C., Tilley, M. A., Berta-Thompson, Z. K., et al. (2017). “The MUSCLES Treasury Survey IV: Scaling Relations for Ultraviolet, Ca II K, and Energetic Particle Fluxes from M Dwarfs.” *The Astrophysical Journal*, 843, 31
65. Hughes, A. M., Lieman-Sifry, J., Flaherty, K. M., Daley, C. M., **Roberge, A.**, Kóspál, Á., Moór, A., Kamp, I., et al. (2017). “Radial Surface Density Profiles of Gas and Dust in the Debris Disk around 49 Ceti.” *The Astrophysical Journal*, 839, 86
64. Debes, J. H., Poteet, C. A., Jang-Condell, H., Gaspar, A., Hines, D., Kastner, J. H., Pueyo, L., Rapson, V., **Roberge, A.**, et al. (2017). “Chasing Shadows: Rotation of the Azimuthal Asymmetry in the TW Hya Disk.” *The Astrophysical Journal*, 835, 205
63. Matrà, L., Dent, W. R. F., Wyatt, M. C., Kral, Q., Wilner, D. J., Panić, O., Hughes, A. M., de Gregorio-Monsalvo, I., et al. (2017). “Exocometary Gas Structure, Origin and Physical Properties Around  $\beta$  Pictoris Through ALMA CO Multitransition Observations.” *Monthly Notices of the Royal Astronomical Society*, 464, 1415
62. Choquet, E., Milli, J., Wahhaj, Z., Soummer, R., **Roberge, A.**, Augereau, J.-C., Booth, M., Absil, O., et al. (2017) “First Scattered-light Images of the Gas-rich Debris Disk around 49 Ceti.” *The Astrophysical Journal*, 834, L12
61. Stark, C. C., Shaklan, S., Lisman, D., Cady, E., Savransky, D., **Roberge, A.**, & Mandell, A. M.

- (2016). “Maximized ExoEarth Candidate Yields for Starshades.” *Journal of Astronomical Telescopes, Instruments, and Systems*, 2, id. 041204
60. Eiroa, C., Rebollido, I., Montesinos, B., Villaver, E., Absil, O., Henning, Th., Bayo, A., Canovas, H., et al. (2016). “Exocomet signatures around the A-shell star  $\sigma$  Leonis?” *Astronomy & Astrophysics*, 594, L1
59. Marino, S., Matrà, L., Stark, C., Wyatt, M. C., Casassus, S., Kennedy, G., Rodriguez, D., Zuckerman, B., et al. (2016). “Exocometary Gas in the HD 181327 Debris Ring.” *Monthly Notices of the Royal Astronomical Society*, 460, 2933
58. Miles, B. E., **Roberge, A.**, & Welsh, B. (2016). “UV Spectroscopy of Star-Grazing Comets Within the 49 Ceti Debris Disk.” *The Astrophysical Journal*, 824, 126
57. Defrère, D., Hinz, P. M., Mennesson, B., Hoffmann, W. F., Millan-Gabet, R., Skemer, A. J., Bailey, V., Danchi, W. C., et al. (2016). “Nulling Data Reduction and On-Sky Performance of the Large Binocular Telescope Interferometer.” *The Astrophysical Journal*, 824, 66
56. France, K., Parke Loyd, R. O., Youngblood, A., Brown, A., Schneider, P. C., Hawley, S. L., Froning, C. S., Linsky, J. L., **Roberge, A.**, et al. (2016). “The MUSCLES Treasury Survey. I. Motivation and Overview.” *The Astrophysical Journal*, 820, 89
55. Stark, C. C., **Roberge, A.**, Mandell, A., Clampin, M., Domagal-Goldman, S. D., McElwain, M. W., & Stapelfeldt, K. (2015). “Lower Limits on Aperture Size for an ExoEarth Detecting Coronagraphic Mission.” *The Astrophysical Journal*, 808, 149
54. Weinberger, A. J., Bryden, G., Kennedy, G. M., **Roberge, A.**, Defrère, D., Hinz, P. M., Millan-Gabet, R., Rieke, G., et al. (2015). “Target Selection for the LBTI Exozodi Key Science Program.” *The Astrophysical Journal Supplement Series*, 216, 24
53. Kennedy, G. M., Wyatt, M. C., Bailey, V., Bryden, G., Danchi, W. C., Defrère, D., Haniff, C., Hinz, P. M., et al. (2015). “Exo-zodi Modeling for the Large Binocular Telescope Interferometer.” *The Astrophysical Journal Supplement Series*, 216, 23
52. Cataldi, G., Brandeker, A., Olofsson, G., Chen, C. H., Dent, W. R. F., Kamp, I., **Roberge, A.**, & Vandenbussche, B. (2015). “Constraints on the gas content of the Fomalhaut debris belt. Can gas-dust interactions explain the belt’s morphology?” *Astronomy & Astrophysics*, 574, L1
51. Defrère, D., Hinz, P. M., Skemer, A. J., Kennedy, G. M., Bailey, V. P., Hoffmann, W. F., Mennesson, B., et al. (2015). “First-light LBT Nulling Interferometric Observations: Warm Exozodiacal Dust Resolved within a Few AU of  $\eta$  Crv.” *The Astrophysical Journal*, 799, 42
50. **Roberge, A.**, Welsh, B., Kamp, I., Weinberger, A. J., & Grady, C. A. (2014). “Volatile-Rich Circumstellar Gas in the Unusual 49 Ceti Debris Disk.” *The Astrophysical Journal*, 796, 11

49. Stark, C. C., **Roberge, A.**, Mandell, A., & Robinson, T. D. (2014). “Maximizing the ExoEarth Candidate Yield from a Future Direct Imaging Mission.” *The Astrophysical Journal*, 795, 122
48. **Roberge, A.** (2014). “Hurling Comets Around a Planetary Nursery.” *Nature*, 514, 440
47. Carmona, A., Pinte, C., Thi, W.-F., Benisty, M., Ménard, F., Grady, C., Kamp, I., Woitke, P., et al. (2014). “Constraining the Structure of the Transition Disk HD 135344B (SAO 206462) by Simultaneous Modeling of Multi-Wavelength Gas and Dust Observations.” *Astronomy & Astrophysics*, 567, A51
46. Dent, W. R. F., Wyatt, M. C., **Roberge, A.**, Augereau, J.-C., Casassus, S., Corder, S., Greaves, J. S., de Gregorio-Monsalvo, I., Hales, A., Jackson, A. P., Hughes, A. M., Lagrange, A.-M., Matthews, B., & Wilner, D. (2014). “Molecular Gas Clumps from the Destruction of Icy Bodies in the  $\beta$  Pictoris Debris Disk.” *Science*, 343, 1490  
NASA press feature about above paper at <http://www.nasa.gov/content/goddard/nearby-stars-icy-debris-suggests-shepherd-planet>
45. Weigert, J., Liseau, R., Thébault, P., Olofsson, G., Mora, A., Bryden, G., Marshall, J. P., Eiroa, C., et al. (2014). “How dusty is  $\alpha$  Centauri? Excess or Non-Excess Over the Infrared Photospheres of Main-Sequence Stars.” *Astronomy & Astrophysics*, 563, A102
44. Howard, C. D., Sandell, G., Vacca, W. D., Duchêne, G., Mathews, G., Augereau, J.-C., Barrado, D., Dent, W. R. F., et al. (2013). “*Herschel*/PACS Survey of Protoplanetary Disks in Taurus/Auriga – Observations of [O I], [C II], and Far-Infrared Continuum.” *The Astrophysical Journal*, 776, 21
43. Krivov, A. V., Eiroa, C., Löhne, T., Marshall, J. P., Montesinos, B., del Burgo, C., Absil, O., Ardila, D., et al. (2013). “*Herschel*’s ‘Cold Debris Disks’: Background Galaxies or Quiescent Rims of Planetary Systems?” *The Astrophysical Journal*, 772, 32
42. Donaldson, J. K., LEBRETON, J., **Roberge, A.**, Augereau J.-C., & Krivov, A. V. (2013). “Modeling the HD32297 Debris Disk with Far-IR *Herschel* Data.” *The Astrophysical Journal*, 772, 17
41. **Roberge, A.**, Kamp, I., Montesinos, B., Dent, W. R. F., Meeus, G., Donaldson, J. K., Olofsson, J., Moór, A., et al. (2013). “*Herschel* Observations of Gas and Dust in the Unusual 49 Ceti Debris Disk.” *The Astrophysical Journal*, 771, 69
40. Debes, J. H., Jang-Condell, H., Weinberger, A. J., **Roberge, A.**, & Schneider, G. (2013). “The 0.5-2.22  $\mu\text{m}$  Scattered Light Spectrum of the Disk Around TW Hya: Detection of a Partially Filled Disk Gap at 80 AU.” *The Astrophysical Journal*, 771, 45
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