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Research Interests

Mission planning & science systems modeling; coronagraphic high-contrast imaging; debris disk modeling, detection, and observation; planet-disk interactions; extra-solar planets; dust dynamics; exozodiacal clouds

Education

Ph.D. Physics	University of Maryland	2010
Thesis: "Decoding Images of Debris Disks"		
Advisor: Dr. Marc J. Kuchner, NASA Goddard Space Flight Center		

Current Position

JWST Deputy Observatory Project Scientist	NASA Goddard Space Flight Center	2022 -
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Previous Positions

JWST Deputy Integration, Test, & Commissioning Project Scientist	NASA Goddard Space Flight Center	2020 - 2022
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Preparing for and conducting JWST commissioning with an emphasis on coronagraph science modes. Led the JWST Coronagraph Sensitivity Working Group.

Large Strategic Mission Scientist	NASA Goddard Space Flight Center	2020 - 2020
Future telescope planning & design trade analysis, science yield estimates, modeling of debris disks and their impact on future missions.		

Associate Scientist, Instruments Division	STScI	2015 - 2020
JWST Optical Telescope Element commissioning Wavefront Ops Lead, JWST Coronagraph Working Group member, future mission planning & science yield estimates, observing & modeling debris disks to constrain composition and optical properties		

NASA Postdoctoral Program Research Fellow	2013 - 2015
Science yield calculations for future missions, debris disk modeling	
Carnegie Postdoctoral Research Fellow	2010 - 2013
Debris disk detection and modeling, exoplanet detection	
GSRP Research Fellow, NASA Goddard Space Flight Center	2005 - 2009
Numerical modeling of exozodiacal clouds and observed debris disks, Advisor: Dr. Marc J. Kuchner	
Observations of debris disks with the Keck Interferometer Nuller, Advisor: Dr. Marc J. Kuchner	
Research Assistant, NASA Goddard Space Flight Center	2005
Analysis of GLAST anticoincidence detector test data, Advisor: Dr. Steven Ritz	
MRSEC Research Fellow, University of Nebraska	2003
Experimental AGFM studies of FePt:C thin films, Advisor: Dr. Ming Lang Yan	
Research Assistant, University of Northern Iowa	2002 - 2004
Magnetic properties of mechanically milled alloys, Advisor: Dr. Paul M. Shand	

Professional Experience

HWO Technical Assessment Group (TAG)	2023 - 2024
Member of TAG	
Co-lead of Exoplanets Science Yield sub-Working Group	
Steering Committee Member for ConOps & Post-Processing sub-Working Group	
Coronagraph Design Survey	2023 - 2024
Co-lead of ExEP survey to study variety of coronagraph designs for HWO	
LUVOIR Science and Technology Definition Team	2018 - 2020
Performing yield calculations, simulating data products, and advising team on how design and operations decisions affect science yield	
WFIRST Starshade Rendezvous Mission Concept Study Team	2017 - 2020

Performing yield calculations & exposure time estimates, developing debris disk science case

HabEx Science and Technology Definition Team 2017 - 2020

Performing yield calculations, simulating data products, and advising team on how design and operations decisions affect science yield

LUVOIR/HabEx Exoplanets Standards Team 2016 - 2020

Defining standard yield metrics and performing yield calculations for direct comparisons between mission concepts

JWST Coronagraph Working Group 2016 - 2020

Developing community tools for JWST Coronagraphy, implementing OTE commissioning plans, pipeline development and documentation

ATLAST Mission Concept Science Team Member 2013 - 2015

Target selection, completeness and exposure time calculations, optimization of design to maximize science yield

Kepler Science Team Collaborator 2011 - 2012

Searching for signs of structured exozodis in Kepler transit light curves

Keck Interferometer Nuller Key Science Co-Investigator 2008 - 2010

"The KIN Survey of Exozodiacal Dust around Nearby Stars," PI: Dr. Eugene Serabyn
"Follow-up Observations of Circumstellar Disks with the KIN," PI: Dr. Marc J. Kuchner

Keck Interferometer Nuller Shared Risk Science Team 2006 - 2008

"Circumstellar Disk Detection with the Keck Nuller," PI: Dr. Wesley A. Traub

Funded Proposals

- PI, "Determining the Astrophysical Noise Floor of the Habitable Worlds Observatory," ROSES ADSPS, 2024
- Admin PI, "UV Exoplanet Science: Instrument Requirements and Limitations," Internal Goddard Science Task Group, 2024, Science PI: Roser Juanola-Parramon

- Co-I, "A Collaboration Hub for Developing a Framework for Spectral Characterization of Rocky Exoplanets," Internal Goddard Science Task Group, 2024, PI: Amber Young
- PI, "Extending The Habitable Worlds Observatory Preliminary Input Catalog," SEEC, 2024
- Co-I, "Exoplanet Spectroscopy Work Package," NASA Integrated Science Funding Model work package, 2024
- Co-I, "Catching a cat by the tail: Tracing Dust Dynamics in the Beta Pictoris Debris Disk in the Aftermath of Giant Collisions," JWST Cycle 3 GO, PI: Marshall Perrin
- PI, "Science Support for the Habitable Worlds Observatory Technical Analysis Group," Internal Goddard Science Task Group, 2023
- Co-I, "HWO Search for Life," Internal Goddard Science Task Group, 2023
- Co-I, "The Virtual Planetary Laboratory: Advancing the Search for Life on Exoplanets," ROSES ICAR, PI: Vicki Meadows, 2023
- Co-I, "Bridging the Gap Between Exo-Kuiper Belts and the Solar System's Zodiacal Light in Support of Future NASA Exoplanet Missions," HST Cycle 31 GO, PI: John Debes
- Co-I, "Reaching 0.1 arcsec inner working angle for NIRCam coronagraphic imaging," JWST Cycle 2 GO, PI: Bin Ren
- Co-I, "Coronagraphic Imaging of Scattered light Debris Disks - Cycle 2," JWST Cycle 2 GO, PI: Andras Gaspar
- Co-I, "Icy Kuiper Belts in Exoplanetary Systems," JWST Cycle 1 GO, PI: Christine Chen
- Co-I, "Imaging Planet-Disk Interactions in the Beta Pictoris Disk," HST Cycle 30 GO, PI: Kevin Wagner
- Co-I, "Imaging Planet-Disk Interactions in the Beta Pictoris Disk," HST Cycle 29 GO, PI: Kevin Wagner
- Co-I, "Coronagraphic Imaging of the Iconic Quasar 3C 273," HST Cycle 29 GO, PI: Bin Ren
- Co-I, "Time Domain Coronagraphy: Diagnosing the Stripping of AU Mic's Debris Disk," HST Cycle 29 GO, PI: John Wisniewski
- Co-I, "Exoplanet Spectroscopy Technologies Work Package," Astrophysics 2022 ISFM Proposal, PI: Mike McElwain
- Collaborator, "Biosignature Strategy Development for LUVEx STG," Goddard Internal Science Task Group, PI: Giada Arney
- Co-I, "Developing an Exoplanet Biosignature Characterization DRM," Sellers Exoplanet Environments Collaboration Proposal, PI: Shawn Domagal-Goldman

- Co-I, "Evidence for Planetary Sculpting in the HD 53143 Debris Disk," ALMA Cycle 9 Proposal, PI: Meredith Macgregor
- PI, "Creating a Standard Framework for Exoplanet Survey Simulations," Internal Goddard Science Task Group, 2021
- PI, "Revealing Structure in the HD 53143 Debris Disk," HST Cycle 28 GO Proposal
- Co-I, "Time Domain Coronagraphy: Diagnosing the Stripping of AU Mic's Debris Disk," HST Cycle 28 GO Proposal, PI: John Wisniewski
- Co-I, "Imaging Planet-Disk Interactions in the Beta Pictoris Disk," HST Cycle 28 GO Proposal, PI: Kevin Wagner
- Co-I, "Upgrading the Gemini Planet Imager using Coronagraph Mask Optimizations Developed for LUVOIR", STScI DDRF Proposal, PI: Marshall Perrin
- Co-I, "Time Domain Coronagraphy: Diagnosing the Stripping of AU Mic's Debris Disk," HST Cycle 27 GO Proposal, PI: John Wisniewski
- PI, "Determining the Dynamical Origin of the Disk Structure Around HD 53143", ALMA Cycle 6 Proposal, PI: C. C. Stark
- Co-I, "The Virtual Planetary Laboratory: Advancing the Search for Life Beyond the Solar System", NAI Can-8 Proposal, PI: Victoria Meadows
- Co-I, "Debris Disk Dust Characterization Through Spectral Types: Deep Visible-Light Imaging of Nine Systems", HST Cycle 25 GO Proposal, PI: Elodie Choquet
- Co-I, "Imaging the predicted asteroid belt analogue around Epsilon Eridani", HST Cycle 25 GO Proposal, PI: Kerri Cahoy
- Co-I, "Harnessing the Power of the WFIRST-Coronagraph: a Coordinated Plan for Exoplanet and Disk Science", WFIRST SIT, PI: Margaret Turnbull
- Co-I, "Segmented Coronagraph Design & Analysis," JPL Contract, PI: Remi Soummer
- Co-I, "An Extinction Probe Through the HD 107146 Debris Ring: Taking Unique Advantage of a Background Galaxy Transit," HST Cycle 24 GO, PI: Glenn Schneider
- Co-I, "Enhancing the Scientific Return from HST Imaging of Debris Disks," HST Cycle 24 GO, PI: Alycia Weinberger
- Co-I, "Characterizing Dusty Debris in Exoplanetary Systems", Gemini 2015B LLP Proposal, PI: Christine Chen

- Co-I, "Rocky Planet Habitability: Insights from Solar System Climate Dynamics Through Time," NASA Nexus for Exoplanet System Science, PI: Anthony D. Del Genio
- PI, "Confirming the Recent Collisional Destruction of an Extra-Solar Pluto," ALMA Cycle 2, PI: Christopher Stark
- Co-I, "Decoding Debris System Substructures: Imprints of Planets/Planетесimals and Signatures of Extrinsic Influences on Material in Ring-Like Disks," HST Cycle 22 GO Proposal, PI: Glenn Schneider
- Co-I, "SpiKeS: Spitzer Kepler Survey," Spitzer Space Telescope Cycle 10, PI: Michael Werner
- Co-I, "SMACK: A New Tool for Modeling Debris Disks," HST Cycle 21 Theory Proposal, PI: Marc Kuchner
- Co-I, "Small SpiKeS: Small Spitzer Kepler Survey," Spitzer Space Telescope Cycle 9, PI: Michael Werner
- Co-I, "EXCEDE: EXoplanetary Circumstellar Environments and Disk Explorer," 2011 NASA Explorer Program, PI: Glenn Schneider
- Co-I, "Imaging Disk-Planet Interactions in the Beta Pictoris Disk," HST Cycle 19 GO Proposal, PI: Daniel Apai
- Co-I, "Probing for Exoplanets Hiding in Dusty Debris Disks: Inner (<10 AU) Disk Imaging, Characterization, and Exploration," HST Cycle 18 GO Proposal, PI: Glenn Schneider
- Co-I, "Dynamical Models of the Zodiacal Cloud with Grain-Grain Collisions," 2010 Planetary Geology and Geophysics Proposal, PI: Marc J. Kuchner

Mentorship

Megan Gialluca, Graduate Student	Advisor	2024 -
Miles Currie, Postdoc	Advisor	2024 -
Natasha Latouf, Graduate Student	Advisor & mentor	2023 -
Corey Spohn, Postdoc	Advisor	2023 -
Alex Howe, Research Assistant	Advisor	2022 -
Noah Tuchow, Postdoc	Advisor	2022 -
Miles Currie, Graduate Student	Advisor & mentor	2023 - 2024
Isabel Rebollido, Postdoc	Co-advisor	2020 - 2023
Jens Kammerer, Postdoc	Co-advisor	2020 - 2023
Nick Wogan, Graduate Student	3 mo research rotation advisor	2022
Kyle van Gorkom, Research Assistant	Research project advisor	2017

Awards & Honors

Robert H. Goddard Award (Astrophysics Decadal Survey Planning Team)	NASA	2024
NASA Group Achievement Award (JWST PS Team)	NASA	2022
Robert H. Goddard Award (LUVOIR Science Support & Analysis Team)	NASA	2021
NASA Group Achievement Award (Exoplanet Standards & Evaluation Team)	NASA	2020
STScI Individual Achievement Award (Exoplanet Mission Design)	STScI	2019
NASA Group Achievement Award (Astrophysics Large Mission Study Teams)	NASA	2019
STScI Achievement Award (JWST OTIS Testing)	STScI	2018
"Bravo" for Telescopes Team OTIS Support	STScI	2017
"Bravo" for Planetary Society Event	STScI	2017
STScI Achievement Award (Coronagraph Visibility Tool)	STScI	2017
Astrophysics Science Division Peer Award	NASA GSFC	2014
NASA Postdoctoral Program Fellowship	NASA GSFC	2013 - 2016
Carnegie Research Fellowship	Carnegie DTM	2010 - 2013
Astrophysics Science Division Peer Award	NASA GSFC	2009
NASA Graduate Student Research Fellowship	NASA GSFC	2006 - 2009
Hartman Travel Grant	AAS DPS	2009
Student Stipend Award	AAS DDA	2007
Alumni Merchant Scholarship	U. of Northern Iowa	2004 & 2006
Purple & Old Gold Award for Meritorious Achievement in Physics	U. of Northern Iowa	2004
Materials Research Science & Engineering Center Fellowship	U. of Nebraska	2003
McKay Science, Math, and Technology Scholarship	U. of Northern Iowa	2002
Science Symposium Physics Scholarship	U. of Northern Iowa	2001
Eagle Scout Award		1999

Talks

Public Planetarium Talk, Rochester Museum & Science Center (Invited)	Oct 2024
Sagan Summer Workshop, Virtual (Invited)	July 2024
Exoplanet Seminar, NASA GSFC	June 2024
START/TAG F2F Meeting, Baltimore, MD (Invited)	June 2024
ExEP Tech Colloquium, Virtual (Invited)	May 2024
Chesapeake Bay Area Exoplanets Meeting, STScl, Baltimore, MD	May 2024
Yield Modeling Splinter Meeting, 243 rd AAS Meeting, New Orleans, LA	Jan 2024
243 rd AAS Meeting, New Orleans, LA	Jan 2024
Starlight Suppression Workshop, Caltech, Pasadena, CA (Invited)	Aug 2023
TES Knowledge Exchange, NASA Goddard, Greenbelt, MD	Jun 2023
Physics Colloquium, U. of Northern Iowa, Cedar Falls, IA (Invited)	Apr 2023
EMAC Workshop, Virtual	Feb 2023
Starlight Suppression Splinter Session, 241 st AAS Meeting, Seattle, WA (Invited)	Jan 2023
241 st AAS Meeting, Seattle, WA	Jan 2023
NASA's Universe of Learning Astro2020 Science Briefing, Virtual (Invited)	Dec 2021
STScl Spring Symposium, Virtual (Invited)	Apr 2021
SEEC Retreat, Virtual (Invited)	Feb 2021
235 th AAS Meeting, Honolulu, HI	Jan 2020
Special Seminar, U. Michigan, Ann Arbor, MI	Nov 2019
Astronomy Colloquium, The Ohio State University, Columbus, OH (Invited)	Nov 2019
Astronomy Colloquium, Notre Dame, South Bend, IN (Invited)	Nov 2019
Special Seminar, U. Chicago, Chicago, IL	Nov 2019
GPI LLP Debris Disks Meeting, STScl, Baltimore, MD	Oct 2019
WFIRST Outreach Session @ 234 th AAS Meeting, St. Louis, MO	Jun 2019
HabEx Splinter Session @ 234 th AAS Meeting, St. Louis, MO	Jun 2019
Life in the Universe Workshop, JHU, Baltimore, MD	May 2019
Chesapeake Bay Area Exoplanets Meeting, JHU APL, Columbia, MD	May 2019
Remote Occulter Workshop, NASA GSFC, Greenbelt, MD (Invited)	May 2019
233 rd AAS Meeting, Washington, DC	Jan 2018
HabEx Splinter Session @ 233 rd AAS Meeting, Washington, DC	Jan 2018
AGU Fall Meeting, Washington, DC	Dec 2018

Comparative Climatology of Terrestrial Planets III, Houston, TX	Aug 2018
HabEx Face-to-Face Meeting	May 2018
NAS Exoplanet Science Strategy Committee Meeting, Irvine, CA (Invited)	Apr 2018
LUVOIR ECLIPS / Science & Engineering Tag-ups	Apr 2018
HabEx STDT Meeting	Apr 2018
231 st AAS Meeting, Washington, DC	Jan 2018
US Naval Observatory Colloquium, Washington, DC (Invited)	Sep 2017
Exoplanets Standard Definitions Team Telecon	Jul 2017
LUVOIR/HabEx Joint Face-to-Face Meeting (Invited)	Jul 2017
ExoPAG16 Exoplanet Yield Panelist (Invited)	Jun 2017
JWST Proposal Planning Workshop (Invited)	May 2017
HabEx Face-to-Face Meeting (Invited)	Apr 2017
LUVOIR/HabEx Joint Face-to-Face Meeting (Invited)	Nov 2016
National Capital Area Disks Meeting, Carnegie DTM, Washington, DC	Jul 2016
SPIE Astronomical Telescopes & Instrumentation	Jun 2016
High Contrast Imaging on Segmented Apertures Workshop (Invited)	May 2016
Northrop Grumman Search for Life Workshop, Redondo Beach, CA (Invited)	Mar 2016
NASA ExoPAG 13, Kissimmee, FL (Invited)	Jan 2016
ATLAST Technical Interchange Meeting, NASA GSFC, Greenbelt, MD	Nov 2015
STScI Science Coffee, Baltimore, MD	Oct 2015
AIAA Space 2015 (talk & panel discussion), Pasadena, CA (Invited)	Aug 2015
Carnegie DTM Seminar, Carnegie DTM, Washington, DC (Invited)	Jun 2015
NASA ExoPAG 12, Chicago, IL (Invited)	Jun 2015
Hot Dust Around Main Sequence Stars, Caltech, Pasadena, CA	May 2015
NASA HQ Science Brown Bag Lunch Talk, Washington, DC (Invited)	Feb 2015
ExoPAG Science Interest Group #1, JPL, Pasadena, CA	Feb 2015
225 th AAS Meeting, Seattle, WA	Jan 2015
ATLAST Technical Interchange Meeting, NASA GSFC, Greenbelt, MD	Dec 2014
AURA Beyond JWST Committee Meeting (Invited)	Sep 2014
Star & Planet Formation Seminar, STScI, Baltimore, MD (Invited)	Aug 2014
JPL Astrophysics Colloquium, Pasadena, CA (Invited)	Jul 2014
Sagan Exoplanet Summer Workshop, Caltech, Pasadena, CA (Invited)	Jul 2014
National Capital Area Disks Meeting, Carnegie DTM, Washington, DC	Jul 2014

"On the Shoulders of Giants: Planets Beyond the Reach of Kepler"	Jun 2014
AAS Meeting-in-a-Meeting (Invited)	
ATLAST Team Meeting, STScl, Baltimore, MD	Apr 2014
Exoplanet Club, NASA GSFC, Greenbelt, MD	Feb 2014
AURA Beyond JWST Committee Meeting (Invited)	Jan 2014
ATLAST Team Meeting, NASA GSFC, Greenbelt, MD	Jan 2014
223 rd AAS Meeting, National Harbor, MD	Jan 2014
Star & Planet Formation Seminar, STScl, Baltimore, MD (Invited)	Nov 2013
ATLAST Team Meeting, NASA GSFC, Greenbelt, MD (Invited)	Nov 2013
U. of Northern Iowa Physic Colloquium, Cedar Falls, IA (Invited)	Apr 2013
221 st AAS Meeting, Long Beach, CA	Jan 2013
National Capital Area Disks Meeting, STScl, Baltimore, MD	Jul 2012
NASA GSFC Extrasolar Planets Seminar, NASA GSFC, Greenbelt, MD	Sep 2011
Carnegie DTM Seminar, Carnegie DTM, Washington, D.C.	Jun 2011
NASA Exoplanet Exploration Program Analysis Group (ExoPAG)	Jun 2011
Meeting 4, Alexandria, VA (Invited)	
218 th AAS Meeting, Boston, MA	May 2011
Signposts of Planets Workshop, NASA GSFC, Greenbelt, MD (Invited)	Apr 2011
Computational Astrophysics Seminar, NASA GSFC,	Dec 2010
Greenbelt, MD (Invited)	
DTM Astronomy Group Meeting, Carnegie DTM, Washington, D.C.	Oct 2010
Advanced School and Workshop on Computational Gravitational	May 2010
Dynamics, Lorentz Center, Leiden, Netherlands (Invited)	
215 th AAS Meeting, Washington, D.C.	Jan 2010
Solar, Stellar, & Planetary Sciences (SSP) Seminar, Harvard-Smithsonian	Nov 2009
CfA, Cambridge, MA	
Planetary Astronomy Lunch Series, University of Maryland, College Park, MD	Oct 2009
41 st AAS DPS Meeting, Fajardo, Puerto Rico	Oct 2009
Wunch Talk, Princeton University, Princeton, NJ	Sep 2009
2 nd Exozodiacal Dust Disks and Darwin Meeting, International Space	Apr 2009
Science Institute, Bern, Switzerland (Invited)	
National Capital Area Disks Meeting, University of Maryland,	Jan 2009
College Park, MD (Invited)	

Star & Planet Formation Seminar, STScl, Baltimore, MD	Jan 2009
213 th AAS Meeting, Long Beach, CA	Jan 2009
NASA Graduate Student Researchers Program (GSRP) Fellowship	Sep 2008
Symposium, NASA GSFC, Greenbelt, MD	
Exoplanet Forum, Pasadena, CA	May 2008
National Capital Area Disks Meeting, Carnegie DTM, Washington, D.C.	Dec 2007
Exozodiacal Dust Disks and Darwin Meeting, International Space	Aug 2007
Science Institute, Bern, Switzerland (Invited)	
The Spirit of Lyot Meeting, UC Berkeley, Berkeley, CA	Jun 2007
38 th AAS DDA Meeting, University of Michigan, Ann Arbor, MI	May 2007
Unjournal Club, University of Maryland, College Park, MD	Apr 2007
Exoplanet Club, NASA GSFC, Greenbelt, MD	Mar 2007
Nearby Resolved Debris Disks Workshop, STScl, Baltimore, MD	Oct 2005

Press

NASA press release "NASA's Webb Discovers Dusty 'Cat's Tail' in Beta Pictoris System"	January 10, 2024
Multiple interviews after JWST launch & commissioning	2022 - 2023
NASA press release "NASA's Webb to Explore a Neighboring, Dusty Planetary System"	July 21, 2021
Space.com article "Lego LUVOIR Space Telescope Debuts at	
Astronomy Conference"	January 11, 2019
Hubble news release "Hubble Surveys Debris-Strewn Exoplanetary	November 6, 2014
Construction Yards"	
Featured interview on Naked Astronomy Podcast	October 25, 2010
NASA press release "Dust Models Paint Alien's View of Solar System"	September 23, 2010
picked up by hundreds of media outlets and accompanying video	
received 100,000+ hits	
Featured on JPL PlanetQuest home page, regarding observations of	October 15, 2009
51 Oph disk	
Featured on NExScl home page, regarding observations of 51 Oph disk	September 24, 2009
Featured in W.M. Keck Observatory press release, regarding	September 24, 2009
observations of 51 Oph disk	
NASA press release "NASA Supercomputer Shows How Dust Rings	October 10, 2008
Point to Exo-Earths" picked up by 100+ media outlets	

Debris disk simulation featured on cover of Nature July 6, 2006

Service

Founded HWO Exoplanet Journal Club at Goddard	2024
Volunteer for AAS HWO and Five Minute Formulation Booths	2024
Chair of ExEP Coronagraph Design Survey	2023 - 2024
Member of ExEP Coronagraph Technology Roadmap study	2023 - 2024
Member of ExEP HWO Science Metrics study	2023 - 2024
Chair of NASA Review Panel	2023
Member of Science Organizing Committee for "Towards Starlight Suppression for the Habitable Worlds Observatory Workshop"	2023
ExoPAG SAG23 Participant	2023
Member of NASA Review Panel	2022
ExoPAG SAG22 Co-Lead	2020 - 2021
NAS Astro2020 Exoplanets, Astrobiology, and Solar System Science Panel Member	2019 - 2021
ExoPAG Executive Committee Member	2017 - 2020
Consultant and reviewer for NAS Exoplanet Science Strategy Committee and report	2018
External expert for Ph.D. thesis committee: Zachary Draper	2018
Organized Exoplanets Science Interest Group meetings	2018
Consultant for ExoPAG	2016
Consultant for the AURA BJWST committee	2014 - 2015
NASA ROSES proposal review committee	2013
Organized and led Carnegie DTM astronomy journal club meetings	2011 - 2012
NASA Postdoctoral Program applications review committee	2011 - 2012
Scientific Organizing Committee & Local Organizing Committee Member for Signposts of Planets Conference	October 2011
Scientific Organizing Committee & Local Organizing Committee Member for Signposts of Planets Workshop	April 2011
Informal mentor to UMD graduate student Maxime Rizzo	2010
Organized NASA GSFC circumstellar disks group meeting	2006 - 2010
Referee for Astronomy & Astrophysics	
Referee for the Astronomical Journal	

- Referee for the *Astrophysical Journal*
- Referee for the *Journal of Astronomical Telescopes, Instruments, and Systems*
- Referee for *Monthly Notices of the Royal Astronomical Society*
- Reviewed NASA Postdoctoral Program proposals
- Reviewed STScI Giacconi and Lasker Fellowship proposals
- Reviewed NASA ROSES proposals
- Red Team reviewer of various mission proposals

Outreach

Public planetarium lecture at Rochester Museum & Science Center	2024
JWST Blog Post "Reconnaissance of Potentially Habitable Worlds with NASA's Webb"	2024
Press conference at 243 rd AAS on Beta Pictoris debris disk	2024
Public JWST lecture at U. of Northern Iowa	2023
JWST interview for KCRG local news	2023
JWST Blog Post "How Webb's Coronagraphs Reveal Exoplanets in the Infrared"	2023
JWST outreach to local Girl Scout & Boy Scout troops	2022
JWST interview for U. of Northern Iowa Alumni publication	2022
JWST interview for U. of Maryland Alumni publication	2022
Panelist at "Jobs in Science" discussion w/ State Department education representatives	2022
Public talk to NASA's Universe of Learning on Astro2020 Decadal Science Goals	2022
Created LUVOIR web site (luvoirtelescope.org)	2019
Produced and scripted LUVOIR design walkthrough outreach video	2019
Creator of Lego LUVOIR, displayed at NASA's AAS Booth	2019
Produced and scripted LUVOIR "Why Go Big" outreach video	2017
Assisted with development of LUVOIR online exoplanet yield tool	2016
Volunteer Carnegie DTM staffer at USA Science Festival	April 2012
Co-authored cover story for <i>Astronomy Magazine</i>	August 2010
Organized & led tour of NASA GSFC for International OSA Network of Students	September 2009
Judge at Greenbelt Elementary School Science Fair	February 2009
Judge at Physics/Astronomy Spotlight on Graduate Research Competition at the University of Maryland College Park	December 2008

Volunteer NASA staffer at Smithsonian Folk Life Festival	July 2008
Science advisor for Maryland Science Center Planetarium show "Beyond the Planets"	2006
Volunteer physics department staffer at Maryland Day festival at the University of Maryland College Park	2005 & 2006

Peer-Reviewed Publications

A. M. Avsar et al. "A Search for Collisions and Planet-Disk Interactions in the Beta Pictoris Disk with 26 Years of High-precision HST/STIS Imaging," *ApJ*, 975, 40 (2024).

C. Chen et al. "MIRI MRS Observations of Beta Pictoris. II. The Spectroscopic Case for a Recent Giant Collision," *ApJ*, 973, 139 (2024).

P. M. S. Krishnanth et al. "Deepest Limits on Scattered Light Emission from the Epsilon Eridani Inner Debris Disk with HST/STIS," *AJ*, 168, 169 (2024).

R. Belikov and **C. C. Stark** et al. "Coronagraph design survey for future exoplanet direct imaging space missions," *Proc. SPIE*, 13092, 1309266 (2024).

M. W. McElwain et al. "ExoSpec project: exoplanet spectroscopy technologies for the Habitable Worlds Observatory at NASA's Goddard Space Flight Center," *Proc. SPIE*, 13092, 130925K (2024).

C. Spohn, **C. C. Stark**, D. Savransky, "How the Habitable Worlds Observatory's field of regard will impact the use of precursor science," *Proc. SPIE*, 13092, 130925L (2024).

J. Kammerer et al. "JWST-TST High Contrast: JWST/NIRCam observations of the young giant planet β Pic b," *AJ*, 168, 51 (2024).

B. Mennesson et al. "Current laboratory performance of starlight suppression systems, and potential pathways to desired Habitable Worlds Observatory exoplanet science capabilities," *JATIS*, 10, 035004 (2024).

C. C. Stark et al. "Paths to Robust Exoplanet Science Yield Margin for the Habitable Worlds Observatory," *JATIS*, 10, 034006 (2024).

A. R. Howe, **C. C. Stark**, J. E. Sadleir, "The Scientific Impact of a Noiseless Energy-Resolving Detector for a Future Exoplanet-Imaging Mission," *JATIS*, 10, 2, 025008 (2024).

K. Worthen et al. "MIRI MRS Observations of Beta Pictoris. I. The Inner Dust, the Planet, and the Gas," *ApJ*, 964, 168 (2024).

J. Hom et al. "A uniform analysis of debris discs with the Gemini Planet Imager II: constraints on dust density distribution using empirically informed scattering phase functions," *MNRAS*, 528, 6959 (2024).

N. W. Tuchow, **C. C. Stark**, E. Mamajek, "HPIC: The Habitable Worlds Observatory Preliminary Input Catalog," *AJ*, 167, 139 (2024).

K. A. Crotts et al. "A Uniform Analysis of Debris Disks with the Gemini Planet Imager. I. An Empirical Search for Perturbations from Planetary Companions in Polarized Light Images," *ApJ*, 961, 245 (2024).

I. Rebollido, **C. C. Stark**, et al. "JWST-TST High Contrast: Asymmetries, Dust Populations, and Hints of a Collision in the Beta Pictoris Disk with NIRCam and MIRI," *AJ*, 167, 69 (2024).

C. C. Stark, N. Latouf, A. M. Mandell, A. Young, "Optimized bandpasses for the Habitable Worlds Observatory's exoEarth survey," *JATIS*, 10, 4005s (2024).

L. Feinberg et al. "James Webb Space Telescope optical stability lessons learned for future great observatories," *JATIS*, 10, 1204F (2024).

M. H. Currie, **C. C. Stark**, J. Kammerer, R. Juanola-Parramon, V. S. Meadows, "Mitigating Worst-case Exozodiacal Dust Structure in High-contrast Images of Earth-like Exoplanets," *AJ*, 166, 197 (2023).

J. P. Gardner et al. "The James Webb Space Telescope Mission," *PASP*, 135, 8001G (2023).

M. McElwain et al. "The James Webb Space Telescope Mission: Optical Telescope Element Design, Development, and Performance," *PASP*, 135, 8001M (2023).

J. R. Rigby et al. "How Dark the Sky: The JWST Backgrounds," *PASP*, 135, 8002R (2023).

J. Rigby et al. "The Science Performance of JWST as Characterized in Commissioning," *PASP*, 135, 8001R (2023).

C. C. Stark, B. Ren, M. A. MacGregor, W. S. Howard, S. A. Hurt, A. J. Weinberger, G. Schneider, E. Choquet, "The apparent absence of forward scattering in the HD 53143 debris disk," *ApJ*, 945, 131 (2023).

J. Kammerer, **C. C. Stark**, K. J. Ludwick, R. Juanola-Parramon, B. Nemati, "Simulating Reflected Light Coronagraphy of Earth-like Exoplanets with a Large IR/O/UV Space Telescope: Impact and Calibration of Smooth Exozodiacal Dust," AJ, 164, 235 (2022).

Boccaletti et al., "JWST/MIRI coronagraphic performances as measured on-sky," A&A, 667, 165 (2022)

T. Baines, N. T. Zimmerman, R. Juanola-Parramon, N. Susemiehl, A. Mandell, T. Groff, M. McElwain, **C. C. Stark**, G. Villaneuva, M. Rizzo, "Simulated design trades for a visible wavelength integral field spectrograph operating behind a space coronagraph," Proc. SPIE, 12180, 121805F (2022).

A. Potier, G. Ruane, K. Tajdaran, **C. C. Stark**, P. Chen, L. Dewell, R. Juanola-Parramon, A. Nordt, L. Pueyo, A. J. Eldorado-Riggs, D. Redding, D. Sirbu, "Contrast performance of an 8m off-axis, segmented space telescope equipped with an adaptive optics system," Proc. SPIE, 12180, 121805D (2022).

Girard et al. "JWST/NIRCam coronagraphy: commissioning and first on-sky results," Proc. SPIE, 12180, 121803Q, (2022).

E. C. Smith, J. R. Rigby, M. W. McElwain, C. W. Bowers, R. A. Kimble, **C. C. Stark**, P. A. Lightsey, M. Garcia Martin, A. C. H. Glasse, B. Sunnquist, B. Brooks, M. L. Boyer, "On-orbit JWST backgrounds from stray light and thermal emission," Proc. SPIE, 12180, 121800R (2022).

M. W. McElwain, L. D. Feinberg, R. A. Kimble, C. W. Bowers, J. S. Knight, C. Atkinson, M. D. Perrin, J. R. Rigby, E. C. Smith, **C. C. Stark**, S. G. Neff, J. P. Gardner, J. C. Mather, "The James Webb Space Telescope mission status," Proc. SPIE, 12180, 121800P (2022).

A. Potier, G. Ruane, **C. C. Stark**, P. Chen, A. Chopra, L. Dewell, R. Juanola-Parramon, A. Nordt, L. Pueyo, D. Redding, A. J. Eldorado-Riggs, D. Sirbu, "Adaptive optics performance of a simulated coronagraph instrument on a large, segmented space telescope in steady state," JATIS, 8, 5002 (2022).

R. Juanola-Parramon, N. T. Zimmerman, L. Pueyo, M. Bolcar, Q. Gong, T. Groff, J. Krist, A. Roberge, G. Ruane, **C. C. Stark**, "Modeling and performance analysis of the LUVOIR coronagraph instrument," JATIS, 8, 4001 (2022).

M. A. MacGregor, S. A. Hurt, **C. C. Stark**, W. S. Howard, A. J. Weinberger, B. Ren, G. Schneider, E. Choquet, D. Mawet, "ALMA images the eccentric HD 53143 debris disk," ApJ, 933, 1 (2022).

C. C. Stark, "ExoVista: A suite of planetary system models for exoplanet studies," AJ, 163, 105 (2022).

R. Belikov, D. Sirbu, J. B. Jewell, O. Guyon, **C. C. Stark**, "Theoretical performance limits for coronagraphs on obstructed and unobstructed apertures: how much can current designs be improved?" Proc. SPIE, 11823, 118230W (2021).

Ren et al. "A layered debris disk around M star TWA 7 in scattered light," ApJ, 914, 95 (2021).

Werner et al. "SpiKeS: Precision warm Spitzer photometry of the Kepler field," *ApJS*, 254, 11 (2021).

R. Morgan, D. Savransky, M. Turmon, B. Mennesson, W. Dula, D. Keithly, E. E. Mamajek, P. Newman, P. Plavchan, T. D. Robinson, G. Roudier, **C. C. Stark**, "Faster exoEarth yield for HabEx and LUVOIR via extreme precision radial velocity prior knowledge," *JATIS*, 7, 1220 (2021).

M. C. Turnbull, N. Zimmerman, J. H. Girard, S. R. Hildebrandt, Z. Li, E. Bogat, J. Gonzalez-Quiles, **C. C. Stark**, A. Mandell, T. Meshkat, S. R. Kane, "Community exoplanet imaging data challenge for Roman CGI and starshade rendezvous," *JATIS*, 7, 1218 (2021).

Romero-Wolf et al. "Starshade rendezvous: exoplanet sensitivity and observing strategy," *JATIS*, 7, 1210 (2021).

N. T. Zimmerman, M. W. McElwain, T. D. Groff, R. Juanola-Parramon, A. M. Mandell, M. S. Marley, B. J. Rauscher, H. B. Subedi, T. Baines, N. E. Batalha, A. Roberge, A. J. R. W. Smith, **C. C. Stark**, N. D. Susemehl, "ExoSpec project: an exoplanet spectroscopy technology research collaboration based at NASA's Goddard Space Flight Center and Ames Research Center," *Proc. SPIE*, 11443, 114433T (2020).

J. H. Girard, E. Bogat, J. Gonzalez-Quiles, S. R. Hildebrandt, S. R. Kane, Z. Li, M. C. Turnbull, **C. C. Stark**, A. Mandell, T. Meshkat, N. T. Zimmerman, "The Roman exoplanet imaging data challenge: a major community engagement effort," *Proc. SPIE*, 11443, 1144337 (2020).

Maier et al. "Design of the vacuum high contrast imaging testbed for CDEEP, the Coronagraphic Debris and Exoplanet Exploring Pioneer," *Proc. SPIE*, 11443, 114431Y (2020).

M. W. McElwain, L. D. Feinberg, R. A. Kimble, C. W. Bowers, J. S. Knight, M. B. Niedner, M. D. Perrin, J. R. Rigby, E. C. Smith, **C. C. Stark**, J. C. Mather, "Status of the James Webb Space Telescope mission," *Proc. SPIE*, 11443, 114430T (2020).

C. Chen et al., "Multiband GPI Imaging of the HR 4796A Debris Disk," *ApJ* 898, 55 (2020).

C. C. Stark, C. Dressing, S. Dulz, E. Lopez, M. S. Marley, P. Plavchan, J. Sahlmann, "Toward Complete Characterization: Prospects for Directly Imaging Transiting Exoplanets," *AJ* 159, 286 (2020).

S. D. Dulz, P. Plavchan, J. R. Crepp, **C. C. Stark**, R. Morgan, S. R. Kane, P. Newman, W. Matzko, G. D. Mulders, "Joint Radial Velocity and Direct Imaging Planet Yield Calculations. I. Self-consistent Planet Populations," *ApJ* 893, 122 (2020).

C. A. Grady, J. P. Wisniewski, G. Schneider, A. Boccaletti, A. Gaspar, J. H. Debes, D. C. Hines, C. C. Stark, C. Thalmann, A.-M. Lagrange, J.-C. Augereau, E. Sezestre, J. Milli, Th. Henning, M. J. Kuchner, "The Eroding Disk of AU Mic," *ApJL* 889, 21 (2020).

D. Redding, K. Coste, O. Polanco, C. Pineda, K. Hurd, H. Tseng, S. Martin, R. Morgan, K. Schulz, J. Tesch, E. Cady, M. Rodgers, M. East, **C. C. Stark**, G. Wu, P. Huang, B. Hood, D. Chan, D. Putnam, S. Greene, S.

Johnson, J. Benson, "A Habitable Exoplanet Observatory (HabEx) starshade-only architectures," Proceedings of the SPIE 11115, 111150V (2019).

J. P. Wisniewski, A. F. Kowalski, J. R. A. Davenport, G. Schneider, C. A. Grady, L. Hebb, K. D. Lawson, J.-C. Augereau, A. Boccaletti, A. Brown, J. H. Debes, A. Gaspar, T. K. Henning, D. C. Hines, M. J. Kuchner, A.-M. Lagrange, J. Milli, E. Sezestre, **C. C. Stark**, C. Thalmann, "High-fidelity Imaging of the Inner AU Mic Debris Disk: Evidence of Differential Wind Sculpting?" ApJ 883, 8 (2019).

B. Ren, É. Choquet, M. D. Perrin, G. Duchêne, J. H. Debes, L. Pueyo, M. Rice, C. Chen, G. Schneider, T. M. Esposito, C. A. Poteet, J. J. Wang, S. M. Ammons, M. Ansdell, P. Arriaga, V. P. Bailey, T. Barman, J. Sebastián Bruzzone, J. Bulger, J. Chilcote, T. Cotten, R. J. De Rosa, R. Doyon, M. P. Fitzgerald, K. B. Follette, S. J. Goodsell, B. L. Gerard, J. R. Graham, A. Z. Greenbaum, J. B. Hagan, P. Hibon, D. C. Hines, L.-W. Hung, P. Ingraham, P. Kalas, Q. Konopacky, J. E. Larkin, B. Macintosh, J. Maire, F. Marchis, C. Marois, J. Mazoyer, F. Ménard, S. Metchev, M. A. Millar-Blanchaer, T. Mittal, M. Moerchen, E. L. Nielsen, M. N'Diaye, R. Oppenheimer, D. Palmer, J. Patience, C. Pinte, L. Poyneer, A. Rajan, J. Rameau, F. T. Rantakyrö, J.-B. Ruffio, D. Ryan, D. Savransky, A. C. Schneider, A. Sivaramakrishnan, I. Song, R. Soummer, **C. C. Stark**, S. Thomas, A. Vigan, J. K. Wallace, K. Ward-Duong, S. Wiktorowicz, S. Wolff, M. Ygouf, C. Norman, "An Exo-Kuiper Belt with an Extended Halo around HD 191089 in Scattered Light," ApJ 882, 64 (2019).

C. C. Stark, R. Belikov, M. R. Bolcar, E. Cady, B. P. Crill, S. Ertel, T. Groff, S. Hildebrandt, J. Krist, P. D. Lisman, J. Mazoyer, B. Mennesson, B. Nemati, L. Pueyo, B. J. Rauscher, A. J. Riggs, G. Ruane, S. B. Shaklan, D. Sirbu, R. Soummer, K. St. Laurent, N. Zimmerman, "The ExoEarth Yield Landscape for Future Direct Imaging Space Telescopes," JATIS 5, 024009 (2019).

M. A. Thompson, A. J. Weinberger, L. D. Keller, J. A. Arnold, **C. C. Stark**, "Studying the Evolution of Warm Dust Encircling BD +20 307 Using SOFIA," ApJ 875, 45 (2019).

G. Ruane, A. J. Riggs, C. T. Coker, S. B. Shaklan, E. Sidick, D. Mawet, J. Jewell, K. Balasubramanian, **C. C. Stark**, "Fast linearized coronagraph optimizer (FALCO) IV: coronagraph design survey for obstructed and segmented apertures," Proceedings of the SPIE 10698, 106984U (2018).

J. H. Girard, W. Blair, B. Brooks, K. Brooks, R. Brown, H. Bushouse, A. Canipe, C. Chen, M. Correnti, J. B. Hagan, B. Hilbert, D. Hines, J. Leisenring, J. Long, B. Nickson, M. D. Perrin, K. Pontoppidan, L. Pueyo, A. Rajan, A. Riedel, R. Soummer, J. Stansberry, **C. C. Stark**, K. Van Gorkom, B. York, "Making good use of JWST's coronagraphs: tools and strategies from a user's perspective," Proceedings of the SPIE 10698, 106983V (2018).

B. Mennesson, J. Debes, E. Douglas, B. Nemati, **C. C. Stark**, J. Kasdin, B. Macintosh, M. Turnbull, M. Rizzo, A. Roberge, N. Zimmerman, K. Cahoy, J. Krist, V. Bailey, J. Trauger, J. Rhodes, L. Moustakas, M. Frerking, F. Zhao, I. Poberezhskiy, R. Demers, "TheWFIRST coronagraph instrument: a major step in the exploration of sun-like planetary systems via direct imaging," Proceedings of the SPIE 10698, 106982I (2018).

K. Fogarty, J. Mazoyer, K. St. Laurent, R. Soummer, M. N'Diaye, **C. C. Stark**, L. Pueyo, "Optimal deformable mirror and pupil apodization combinations for apodized pupil Lyot coronagraphs with obstructed pupils," Proceedings of the SPIE 10698, 106981J (2018).

C.-P. Lajoie, M. D. Perrin, C. Myers, T. Comeau, B. Kulp, D. S. Acton, J. S. Knight, E. Wolf, M. Abernathy, M. Allen, E. A. Barker, C. Hanley, M. Jordan, M. Lallo, H. Livingston, L. Pueyo, J. Scott, J. Stansberry, **C. C. Stark**, D. Zak, "Wavefront sensing and control demo during the cryo-vacuum testing of JWST: exercising the science and operations center," Proceedings of the SPIE 10698, 106983T (2018).

K. St. Laurent, K. Fogarty, N. T. Zimmerman, M. N'Diaye, **C. C. Stark**, J. Mazoyer, A. Sivaramakrishnan, L. Pueyo, S. Shaklan, R. Vanderbei, R. Soummer, "Apodized pupil Lyot coronagraphs designs for future segmented space telescopes," Proceedings of the SPIE 10698, 106982W (2018).

D. Redding, K. Coste, O. Polanco, C. Pineda, K. Hurd, H. Tseng, J. Quezada, S. Martin, J. Nissen, K. Schulz, J. Tesch, E. Cady, M. Rodgers, M. East, J. Mooney, **C. C. Stark**, "HabEx Lite: a starshade-only habitable exoplanet imager alternative," Proceedings of the SPIE 10698, 106980X (2018).

R. K. Kopparapu, E. Hébrard, R. Belikov, N. M. Batalha, G. D. Mulders, **C. C. Stark**, D. Teal, S. Domagal-Goldman, A. Mandell, "Exoplanet Classification and Yield Estimates for Direct Imaging Missions," ApJ 856, 122 (2018).

É. Choquet, G. Bryden, M. D. Perrin, R. Soummer, J.-C. Augereau, C. H. Chen, J. H. Debes, E. Gofas-Salas, J. B. Hagan, D. C. Hines, D. Mawet, F. Morales, L. Pueyo, A. Rajan, B. Ren, G. Schneider, **C. C. Stark**, & S. Wolff "HD 104860 and HD 192758: two debris disks newly imaged in scattered-light with HST," arXiv 1801.05424 (2018).

A. Roberge, M. J. Rizzo, A. P. Lincowski, G. N. Arney, **C. C. Stark**, T. D. Robinson, G. F. Snyder, L. Pueyo, N. T. Zimmerman, T. Jansen, E. R. Nesvold, V. S. Meadows, M. C. Turnbull "Finding the Needles in the Haystacks: High-fidelity Models of the Modern and Archean Solar System for Simulating Exoplanet Observations," PASP, 129, 124401 (2017).

L. Pueyo, N. Zimmerman, M. Bolcar, T. Groff, **C. C. Stark**, G. Ruane, J. Jewell, R. Soummer, K. St. Laurent, J. Wang, D. Redding, J. Mazoyer, K. Fogarty, R. Juanola-Parramon, S. Domagal-Goldman, A. Roberge, O. Guyon, A. Mandell, "The LUVOIR architecture 'A' coronagraph instrument," Proceedings of the SPIE 10398, 103980F (2017).

M. Werner, M. Swain, G. Vasisht, X. Wang, S. Macenka, A. Mandell, S. Domagal-Goldman, J. Green, & **C. C. Stark** "Extension of ATLAST/LUVOIR's capabilities to 5 μ m or beyond," JATIS, 2, 041205-1 (2016).

C. C. Stark, E. J. Cady, M. Clampin, S. D. Domagal-Goldman, D. Lisman, A. M. Mandell, M. W. McElwain, A. Roberge, T. D. Robinson, D. Savransky, S. B. Shaklan, K. R. Stapelfeldt "A Direct Comparison of ExoEarth Yields for Starshades and Coronagraphs," Proceedings of the SPIE, 9904, 99041U-1 (2016).

C. C. Stark, S. B. Shaklan, D. Lisman, E. J. Cady, D. Savransky, A. Roberge, A. M. Mandell "Maximized ExoEarth Candidate Yields for Starshades," *JATIS*, 2, 041204-1 (2016).

G. Schneider, C. A. Grady, **C. C. Stark**, A. Gaspar, J. Carson, J. H. Debes, T. Henning, D. C. Hines, H. Jang-Condell, M. J. Kuchner, M. Perrin, T. J. Rodigas, M. Tamura, & J. P. Wisniewski "Deep HST/STIS Visible-light Imaging of Debris Systems around Solar Analog Hosts," *Astronomical Journal*, 152, 64 (2016).

S. Marino, L., Matrà, **C. C. Stark**, M. C. Wyatt, S. Casassus, G. Kennedy, D. Rodriguez, B. Zuckerman, S. Perez, W. R. F. Dent, M. J. Kuchner, A. M. Hughes, G. Schneider, A. Steele, A. Roberge, J. Donaldson, & E. Nesvold "Exocometary Gas in the HD 181327 Debris Ring," *MNRAS*, 460, 2933 (2016).

N. T. Zimmerman, M. N'Diaye, K. E. St. Laurent, R. Soummer, L. Pueyo, **C. C. Stark**, A. Sivaramakrishnan, M. Perrin, R. J. Vanderbei, N. J. Kasdin, S. Shaklan, & A. Carlotti "Lyot Coronagraph Design Study for Large, Segmented Space Telescope Apertures," *Proc. of the SPIE*, 9904, 99041Y-1 (2016).

M. D. Perrin, D. S. Acton, C.-P. Lajoie, J. S. Knight, M. D. Lallo, M. Allen, W. Baggett, E. Barker, T. Comeau, E. Coppock, B. H. Dean, G. Hartig, W. L. Hayden, M. Jordan, A. Jurling, T. Kulp, J. Long, M. W. McElwain, L. Meza, E. P. Nelan, R. Soummer, J. Stansberry, **C. C. Stark**, R. Telfer, A. L. Welsh, T. P. Zielinski, & N. T. Zimmerman "Preparing for JWST Wavefront Sensing and Control Operations," *Proc. of the SPIE*, 9904, 99040F-1 (2016).

M. Konishi, et al. "Discovery of an Inner Disk Component Around HD 141569A," *Astrophysical Journal*, 818, 23 (2016).

M. N'Diaye, R. Soummer, L. Pueyo, A. Carlotti, **C. C. Stark**, & M. D. Perrin "Apodized Pupil Lyot Coronagraphs for Arbitrary Apertures. V. Hybrid Shaped Pupil Designs for Imaging Earth-like planets with Future Space Observatories," *Astrophysical Journal*, 818, 163 (2016).

É. Choquet, et al. "First Images of Debris Disks around TWA 7, TWA 25, HD 35650, and HD 377," *Astrophysical Journal*, 817, 2 (2016).

M. M. Hedman & **C. C. Stark** "Saturn's G and D rings provide nearly complete measured scattering/phase functions of nearby debris disks," *Astrophysical Journal*, 811, 67 (2015).

C. C. Stark, A. Roberge, A. Mandell, M. Clampin, S. D. Domagal-Goldman, M. W. McElwain, K. R. Stapelfeldt "Lower Limits on Aperture Size for an ExoEarth-Detecting Coronagraphic Mission," *Astrophysical Journal*, 808, 149 (2015).

C. C. Stark, M. J. Kuchner, & A. Lincowski "The Pseudo-zodi Problem for Edge-on Planetary Systems," *Astrophysical Journal*, 801, 128 (2015).

D. Apai, G. Schneider, C. A. Grady, M. C. Wyatt, A.-M. Lagrange, M. J. Kuchner, **C. C. Stark**, & S. H. Lubow "The Inner Disk Structure, Disk-Planet Interactions, and Temporal Evolution in the Beta Pictoris System: A Two-Epoch Coronographic Study," *Astrophysical Journal*, 800, 136 (2015)

T. J. Rodigas, **C. C. Stark**, A. Weinberger, J. H. Debes, P. M. Hinz, L. Close, C. Chen, P. S. Smith, J. R. Males, A. J. Skemer, A. Puglisi, K. B. Follette, K. Morzinski, Y.-L. Wu, R. Briguglio, S. Esposito, E. Pinna, A. Riccardi, G. Schneider, & M. Xompero "On the Morphology and Chemical Composition of the HR 4796A Debris Disk," *Astrophysical Journal*, 798, 96 (2015).

C. C. Stark, A. Roberge, A. Mandell, & T. D. Robinson "Maximizing the ExoEarth Candidate Yield from a Future Direct Imaging Mission," *Astrophysical Journal*, 795, 122 (2014).

G. Schneider, C. A. Grady, D. C. Hines, **C. C. Stark**, J. H. Debes, J. Carson, M. J. Kuchner, M. D. Perrin, A. J. Weinberger, J. P. Wisniewski, M. D. Silverstone, H. Jang-Condell, T. Henning, B. E. Woodgate, E. Serabyn, A. Moro-Martin, M. Tamura, P. M. Hinz, & T. J. Rodigas "Probing for Exoplanets Hiding in Dusty Debris Disks: Disk Imaging, Characterization, and Exploration with HST/STIS Multi-Roll Coronagraphy," *Astronomical Journal*, 148, 59 (2014).

C. C. Stark, G. Schneider, A. J. Weinberger, J. H. Debes, C. A. Grady, H. Jang-Condell, & M. J. Kuchner "Revealing Asymmetries in the HD 181327 Debris Disk: A Recent Massive Collision or ISM Warping," *Astrophysical Journal*, 789, 58 (2014).

B. Jackson, **C. C. Stark**, E. R. Adams, J. Chambers, & D. Deming "A Survey for Very Short-period Planets in the Kepler Data," *Astrophysical Journal*, 779, 165 (2013).

C. C. Stark, A. P. Boss, A. J. Weinberger, B. K. Jackson, M. Endl, W. Cochran, C. Caldwell, E. Agol, E. Ford, J. Li, K. Ibrahim, & J. Hall "A Search for Exozodis with Kepler," *Astrophysical Journal*, 764, 195 (2013).

J. Debes, K. Walsh, & **C. C. Stark** "The Link Between Planetary Systems, Dusty White Dwarfs, and Metal Polluted White Dwarfs," *Astrophysical Journal*, 747, 148 (2012).

C. C. Stark "The Transit Light Curve of an Exozodiacal Dust Cloud," *Astronomical Journal*, 142, 123 (2011).

R. Millan-Gabet, E. Serabyn, B. Mennesson, W. A. Traub, R. K. Barry, W. C. Danchi, M. Kuchner, **C. C. Stark**, S. Ragland, M. Hrynevych, J. Woillez, K. Stapelfeldt, G. Bryden, M. M. Colavita, A. J. Booth "Exozodiacal Dust Levels for Nearby Main-sequence Stars: A Survey with the Keck Interferometer Nuller," *Astrophysical Journal* 734, 67 (2011).

M. Reidemeister, A. V. Krivov, **C. C. Stark**, J.-C. Augereau, T. Löhne, & S. Müller "The Cold Origin of the Warm Dust Around ϵ Eridani," *Astronomy & Astrophysics* 527, 57 (2011).

M. J. Kuchner & **C. C. Stark** "Collisional Grooming Models of the Kuiper Belt Dust Cloud," *Astronomical Journal* 140, 1007 (2010).

D. Defrère, O. Absil, R. den Hartog, C. Hanot & **C. Stark** "Nulling Interferometry: Impact of Exozodiacal Clouds on the Performance of Future Life-Finding Space Missions," *Astronomy & Astrophysics* 509, 9 (2010).

C. C. Stark & M. J. Kuchner "A New Algorithm for Self-Consistent 3-D Modeling of Collisions in Dusty Debris Disks," *Astrophysical Journal* 707, 543 (2009).

C. C. Stark, et al. "51 Ophiuchus: A Possible Beta Pictoris Analog Measured with the Keck Interferometer Nuller," *Astrophysical Journal* 703, 1188 (2009).

C. C. Stark & M. J. Kuchner, "The Detectability of Exo-Earths and Super-Earths Via Resonant Signatures in Exozodiacal Clouds," *Astrophysical Journal* 686, 637 (2008).

P. M. Shand, **C. Stark**, D. S. Williams, M. A. Morales, T. M. Pekarek, and D. L. Leslie-Pelecky, "Spin Glass or Random Anisotropy?: The Origin of Magnetically Glassy Behavior in Nanostructured GdAl₂," *Journal of Applied Physics* 97, 10J505-1-3 (2005).

M. A. Morales, D. S. Williams, P. M. Shand, **C. Stark**, T. M. Pekarek, L. P. Yue, V. Petkov, and D. L. Leslie-Pelecky, "Disorder-Induced Depression of the Curie Temperature in Mechanically Milled GdAl₂," *Physical Review B* 70, 184407-1-8 (2004).

C. Stark, P.M. Shand, T.M. Pekarek, D. Williams, R. Brown, L. Yue, and D.L. Leslie-Pelecky, "Coexistence of Ferromagnetic and Glassy States in Mechanically Milled GdAl₂," *American Journal of Undergraduate Research* 1, 27 (2002).

Proceedings & White Papers

I. Snellen, S. Albrecht, G. Anglada-Escude, I. Baraffe, P. Baudoz, W. Benz, J.-L. Beuzit, B. Biller, J. Birkby, A. Boccaletti, R. van Boekel, J. de Boer, M. Brogi, L. Buchhave, L. Carone, M. Claire, R. Claudi, B.-O. Demory, J.-M. Desert, S. Desidera, S. Gaudi, R. Gratton, M. Gillon, J. L. Grenfell, O. Guyon, T. Henning, S. Hinkley, E. Huby, M. Janson, C. Helling, K. Heng, M. Kasper, C. Keller, M. Kenworthy, O. Krause, L. Kreidberg, N. Madhusudhan, A.-M. Lagrange, R. Launhardt, T. Lenton, M. Lopez-Puertas, A.-L. Maire, N. Mayne, V. Meadows, B. Mennesson, G. Micela, Y. Miguel, J. Milli, M. Min, E. de Mooij, D. Mouillet, M. N'Diaye, V. D'Orazi, E. Palle, I. Pagano, G. Piotto, D. Queloz, H. Rauer, I. Ribas, G. Ruane, F. Selsis, F. Snik, A. Sozzetti, D. Stam, **C. C. Stark**, A. Vigan, P. de Visser, "ESA Voyage 2050 White Paper: Detecting life outside our solar system with a large high-contrast-imaging mission," *ESA Voyage 2050 White Paper* (arXiv:1908.01803)

C. Dressing, **C. C. Stark**, S. Domagal-Goldman, M. Marley, K. Stapelfeldt, E. Lopez, G. Arney, A. Roberge, D. Mawet, J. Males, "The Landscape for Directly Characterizing Potentially Habitable & Inhabited Planets in the Late 2020s and Beyond," *Astro2020 APC White Paper*

L. Pueyo, V. Bailey, M. Bolcar, L. Coyle, L. Feinberg, T. Groff, O. Guyon, J. Jewell, J. Kasdin, S. Knight, D. Mawet, J. Mazoyer, B. Mennesson, M. Perrin, D. Redding, A. J. Riggs, G. Ruane, R. Soummer, **C. C. Stark**, S.

Will, N. Zimmerman, "Wavefront Sensing and Control technologies for Exo-Earth imaging," Astro2020 APC White Paper

S. Shaklan, B. Crill, R. Belikov, S. Bryson, E. Bendek, M. Bolcar, K. Fogarty, J. Krist, D. Mawet, C. Mejia Prada, J. Mazoyer, M. N'Diaye, J. Noss, R. Juanola-Parramon, E. Por, A. J. Riggs, G. Ruane, N. Siegler, D. Sirbu, A. Sivaramakrishnan, R. Soummer, K. St. Laurent, **C. C. Stark**, N. Zimmerman, "Status of Space-based Segmented-Aperture Coronagraphs for Characterizing Exo-Earths Around Sun-Like Stars," Astro2020 APC White Paper

M. Peebles, B. Emonts, M. Kyprianou, M. T. Penny, G. F. Snyder, **C. C. Stark**, M. Troxel, N. T. Zimmerman, J. ZuHone, "On the need for synthetic data and robust data simulators in the 2020s," Astro2020 APC White Paper.

S. Seager, N. J. Kasdin, J. Booth, M. Greenhouse, D. Lisman, B. Macintosh, S. Shaklan, M. Vess, S. Warwick, D. Webb, S. D'Amico, J. Debes, S. Domagal-Goldman, S. Hildebrandt, R. Hu, M. Hughes, A. Kiessling, N. Lewis, J. Rhodes, M. Rizzo, A. Roberge, T. Robinson, L. Rogers, D. Savransky, D. Scharf, **C. C. Stark**, M. Turnbull, A. Romero-Wolf, J. Ziemer, A. Gray, M. Hughes, G. Agnes, J. Arenberg, S. Bradford, M. Fong, J. Gregory, S. Matousek, J. Murphy, J. Rhodes, D. Scharf, P. Willems, "Starshade Rendezvous Probe Mission," Astro2020 APC White Paper

J. Mazoyer, P. Baudoz, R. Belikov, B. Crill, K. Fogarty, R. Galicher, T. Groff, O. Guyon, R. Juanola-Parramon, J. Kasdin, L. Leboulleux, J. L. Sayson, D. Mawet, C. M. Prada, B. Mennesson, M. N'Diaye, M. Perrin, L. Pueyo, A. Roberge, G. Ruane, E. Serabyn, S. Shaklan, N. Siegler, D. Sirbu, R. Soummer, **C. C. Stark**, J. Trauger, N. Zimmerman, "High-Contrast Testbeds for Future Space-Based Direct Imaging Exoplanet Missions," Astro2020 APC White Paper

C. C. Stark, G. N. Arney, R. Belikov, M. R. Bolcar, E. Cady, B. P. Crill, S. D. Domagal-Goldman, S. D. Dulz, B. S. Gaudi, T. D. Groff, B. A. Hicks, R. K. Kopparapu, J. E. Krist, P. D. Lisman, E. E. Mamajek, A. M. Mandell, D. Mawet, J. Mazoyer, M. W. McElwain, B. Mennesson, R. Morgan, M. N'Diaye, P. Plavchan, L. Pueyo, B. J. Rauscher, A. J. Eldorado Riggs, A. Roberge, T. D. Robinson, G. Ruane, K. St. Laurent, D. Sirbu, R. Soummer, D. Savransky, S. B. Shaklan, K. R. Stapelfeldt, N. T. Zimmerman, "Optimal Architectures and Survey Designs for Maximizing the Yields of Direct-Imaging Exoplanet Missions," Astro2020 Science White Paper

C. D. Dressing, **C. C. Stark**, P. Plavchan, E. Lopez, "Ground-Based Radial Velocity as Critical Support for Future NASA Earth-Finding Missions," Astro2020 White Paper

T. D. Robinson, J. Lustig-Yaeger, G. N. Arney, A. Barr, J. Blecic, A. P. Boss, K. Bott, S. T. Bryson, H. Cadillo-Quiroz, D. A. Caldwell, L. Close, W. D. Cochran, T. Currie, W. C. Danchi, F. Del Sordo, S. D. Domagal-Goldman, C. Dong, Y. K. Feng, D. P. Fleming, J. J. Fortney, P. Gao, B. S. Gaudi, D. M. Gelino, D. H. Grinspoon, S. D. Guzewich, N. Haghighipour, H. E. Hartnett, Y. Hasegawa, N. Iro, S. R. Kane, M. Kenworthy, E. S. Kite, R. K. Kopparapu, J. Krissansen-Totton, Y. Lee, A. P. Lincowski, M. R. Line, C. Lisse, E. D. Lopez, F. Marchis, M. Lopez-Morales, T. W. Lyons, M. S. Marley, V. S. Meadows, K. Molaverdikhani, H. Ngo, K. Pahlevan, R. M. Ramirez, S.

Ragland, C. T. Reinhard, A. Roberge, G. Ruane, S. Rugheimer, E. W. Schwieterman, S. Seager, L. E. Sohl, **C. C. Stark**, K. G. Stassun, K. B. Stevenson, K. Tsigarisdis, D. Valencia, K. R. Wagner, L. M. Walkowicz, D. A. Williams, "Characterizing Exoplanet Habitability," Astro2020 White Paper

G. N. Arney, N. Batalha, A. V. Britt, N. Cowan, S. D. Domagal-Goldman, C. Dressing, K. France, Y. Fujii, R. Kopparapu, S. Kane, J. Krissansen-Totton, A. Lincowski, O. Lehmer, E. Lopez, J. Lustig-Yaeger, V. S. Meadows, S. Olson, M. Niki Paranteau, I. Pascucci, R. Ramirez, C. Reinhard, A. Roberge, T. D. Robinson, E. Schwieterman, **C. C. Stark**, E. T. Wolf, A. Youngblood, "The Sun-like Stars Opportunity," Astro2020 White Paper

J. H. Checlair, D. S. Abbot, R. J. Webber, Y. K. Feng, J. L. Bean, E. W. Schwieterman, **C. C. Stark**, T. D. Robinson, E. Kempton, "A Statistical Comparative Planetology Approach to Maximize the Scientific Return of Future Exoplanet Characterization Efforts," Astro2020 White Paper

R. Kopparapu, E. Hebrard, R. Belikov, N. M. Batalha, G. D. Mulders, **C. C. Stark**, D. Teal, S. Domagal-Goldman, D. Gelino, A. Mandell, A. Roberge, S. Rinehart, S. R. Kane, Y. Hasegawa, W. Henning, B. Hicks, V. Adibekyan, E. W. Schwieterman, E. Kohler, J. Teske, N. Hinkel, C. Nixon, K. France, W. Danchi, J. Haqq-Misra, E. T. Wolf, S. D. Guzewich, B. Charnay, G. Arney, H. E. Hartnett, E. D. Lopez, D. Minniti, J. Renaud, V. Airapetian, C. Dong, A. D. Del Genio, M. Trainer, G. Rau, A. Jensen, M. Way, C. M. Lisse, W. Lyra, F. Marchis, D. Jontof-Hutter, P. Young, R. Pierrehumbert, C. E. Harman, J. Fortney, B. Moore, S. Beckwith, E. Shock, S. Desch, K. E. Mandt, N. Izenberg, E. B. Ford, S. Curry, C. Scharf, A. Anbar, "Exoplanet Diversity in the Era of Space-based Direct Imaging Missions," Astro2020 White Paper

J. Debes, E. Choquet, V. C. Faramaz, G. Duchene, D. Hines, **C. C. Stark**, M. Ygouf, J. Girard, A. Moro-Martin, P. Arriaga, C. Chen, T. Currie, S. Dodson-Robinson, E. S. Douglas, P. Kalas, C. M. Lisse, D. Mawet, J. Mazoyer, B. Mennesson, M. A. Millar-Blanchaer, A. Sivramakrishnan, J. Wang, "Cold Debris Disks as Strategic Targets for the 2020s," Astro2020 Science White Paper, arXiv 1906.02129

B. Mennesson, G. Kennedy, S. Ertel, M. Wyatt, D. Defrère, J. Debes, **C. C. Stark**, J. Kasdin, B. Macintosh, P. Hinz, V. Bailey, K. Stapelfeldt, D. Mawet, N. Scott, A. Roberge, C. Lisse, W. Lyra, Y. Hasegawa, A. Gaspar, W. Danchi, R. Millan-Gabet, C. Haniff, A. Skemer, E. Serabyn, J. Stone, G. Bryden, "Interplanetary dust around main sequence stars: origin, magnitude, and implications for exoplanet habitability searches," Astro2020 Science White Paper

A. Gáspár, D. Apai, J.-C. Augereau, N. P. Ballering, C. A. Beichman, A. Boccaletti, M. Booth, B. P. Bowler, G. Bryden, C. H. Chen, T. Currie, W. C. Danchi, J. Debes, D. Defrère, S. Ertel, A. P. Jackson, P. G. Kalas, G. M. Kennedy, M. A. Kenworthy, J. Serena Kim, F. Kirchschlager, Q. Kral, S. Krijt, A. V. Krivov, M. J. Kuchner, J. M. Leisenring, T. Löhne, W. Lyra, M. A. MacGregor, L. Matrà, D. Mawet, B. Mennesson, T. Meshkat, A. Moro-Martín, E. R. Nesvold, G. H. Rieke, A. Roberge, G. Schneider, A. Shannon, **C. C. Stark**, K. Y. L. Su, P. Thébault, D. J. Wilner, M. C. Wyatt, M. Ygouf, A. N. Youdin, "Modeling Debris Disk Evolution," Astro2020 White Paper

R. Belikov, T. Barclay, N. M. Batalha, E. Bendek, M. Bolcar, S. Chakrabarti, T. Currie, C. Goldblatt, O. Guyon, N. J. Kasdin, J. Kasting, B. D Kern, J. J. Lissauer, J. Lozi, B. Macintosh, B. Mennesson, J. R. Males, F. Marchis, M.

S. Marley, C. Marois, S. R. Martin, M. W. McElwain, J. A. Morse, E. A. Pluzhnik, L. Pueyo, B. Quarles, E. V. Quintana, A. J. Eldorado Riggs, S. Shaklan, D. Sirbu, **C. C. Stark**, K. R. Stapelfeldt, M. Turnbull, "Direct Imaging of Exoplanets in Nearby MultiStar Systems," Astro2020 White Paper

V. P. Bailey et al. "Key Technologies for the Wide Field Infrared Survey Telescope Coronagraph Instrument," Astro2020 Science White Paper, arXiv 1901.04050

P. Plavchan et al., "Community Endorsement of the National Academies 'Exoplanet Science Strategy' and 'Astrobiology Strategy for the Search for Life in the Universe' Reports," Astro2020 White Paper

R. Kopparapu, E. Hebrard, R. Belikov, N. M. Batalha, G. D. Mulders, **C. C. Stark**, et al. "Exoplanet Diversity in the Era of Space-based Direct Imaging Missions," NAS Exoplanet Science Strategy White Paper, arXiv 1803.03812.

G. Ruane, J. Jewell, D. Mawet, S. Shaklan, & **C. C. Stark** "Segmented coronagraph design and analysis (SCDA): an initial design study of apodized vortex coronagraphs," arXiv 1712.02042.

R. Trabert, S. Shaklan, P. D. Lisman, A. Roberge, M. Turnbull, S. Domagal-Goldman, & **C. C. Stark** "Design reference missions for the exoplanet starshade (Exo-S) probe-class study," Techniques and Instrumentation for Detection of Exoplanets VII SPIE Proceedings 9605, 96050Y-1 (2015).

B. J. Rauscher, M. R. Bolcar, M. Clampin, S. D. Domagal-Goldman, M. W. McElwain, S. H. Moseley, C. Stahle, **C. C. Stark**, & H. A. Thronson, "ATLAST detector needs for direct spectroscopic biosignature characterization in the visible and near-IR," UV/Optical/IR Space Telescopes and Instruments: Innovative Technologies and Concepts VII SPIE Proceedings 9602, 96020D-1 (2015).

P. Stahl, M. Postman, G. Mosier, S.W. Smith, C. Blaurock, H. Kong, & **C. Stark**, "AMTD: Update of Engineering Specifications Derived from Science Requirements for Future UVOIR Space Telescopes," Space Telescopes and Instrumentation 2014: Optical, Infrared, and Millimeter Wave SPIE Proceedings 9143, 91431T-1 (2014).

D. Defrère, **C. Stark**, K. Cahoy, & I. Beerer, "Direct imaging of exoEarths embedded in clumpy debris disks," Space Telescopes and Instrumentation 2012: Optical, Infrared, and Millimeter Wave SPIE Proceedings 8442, 88420-M1 (2012).

D. Defrère, O. Absil, R. den Hartog, C. Hanot & **C. Stark**, "Influence of Exozodiacal Dust Clouds on Mid-IR Earth-like Planet Detection," Pathways Towards Habitable Planets ASPC Proceedings 430, 422 (2010).

O. Absil, D. Defrère, A. Roberge, J.-C. Augereau, V. Coudé Du Foresto, C. Hanot, **C. Stark**, & J. Surdej, "Direct Imaging of Earth-like Planets: Why We Care About Exozodis," Optical and Infrared Interferometry II SPIE Proceedings 7734, 77340L(2010).

M. J. Kuchner & **C. C. Stark**, "Collisional Grooming of Debris Disks," Exoplanets & Disks: Their Formation and Diversity AIP Conference Proceedings 1158, 47 (2009).

J. Kasting, W. A. Traub, et al. "Exoplanet Characterization and the Search for Life," White Paper for Decadal Survey (2009).

A. Roberge, et al. "Understanding Habitability and Characterizing ExoEarths: The Role of Debris Disks," White Paper for Decadal Survey (2009).

D. Leisawitz, et al. "Characterizing Extrasolar Planetary Systems," White Paper for Decadal Survey (2009).

P. R. Lawson, W. A. Traub, S. C. Unwin, et al. "2008 Exoplanet Forum Report," JPL Publication 09-3 (2009).

M. J. Kuchner, **C. C. Stark**, O. Absil, J.-C. Augereau, & P. Thebault, "Dynamics of Exozodiacal Clouds," arXiv:0707.1280v1, White Paper (2007).