

Sierra L. Grant, Ph.D.

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Current Employment

Max Planck Institute for Extraterrestrial Physics **09/2021–Current**
Postdoctoral Researcher
 Supervisor: Prof. Ewine F. van Dishoeck

Education

Boston University **05/2017–08/2021**
Ph.D.

Advisor: Prof. Catherine C. Espaillat
 “Protoplanetary Disk Evolution: From Inner Disk Accretion to Outer Disk Dust Evolution”

Boston University **09/2015–05/2017**
M.A.

Advisor: Prof. Catherine C. Espaillat

University of Michigan **09/2011–05/2015**

B.S. Astronomy & Astrophysics and B.S. Interdisciplinary Physics

Advisor: Prof. Nuria P. Calvet

Research Interests

I study protoplanetary disks which are disks of gas and dust that surround young stars and are the birth places of exoplanets. Specifically, I focus on the inner disk structure and how populations of disks evolve. I use models and observations, with data from space-based (including *Spitzer* and *Herschel*) and ground-based telescopes (including the VLT, Lowell Discovery Telescope, Gemini South, NASA's IRTF, and ALMA), to characterize these protoplanetary disks and their evolution.

Honors and Awards

2020	ALMA Student Observing Support (\$33,148)
Fall 2015	Dean's Fellowship
Fall 2011, 2013, & Spring 2014	University Honors

Presentations

05/2022	Center for Astrophysics SMA Seminar – Invited Talk
04&05/2022	MPE IR Group Tea Talk – Contributed Talk
05/2022	ESO Star and Planet Formation Seminar – Invited Talk
02/2022	IR2022: An Infrared Bright Future for Ground-based IR Observatories in the Era of JWST – Contributed Talk
03/2021	Caltech Tea Talk – Invited Talk

Presentations (cont.)

- 12/2020 Five years after HL Tau: a new era in planet formation – **Contributed Talk**
- 12/2018 Star and Planet Formation Lunch Talk, Amherst, MA – **Invited Talk**
- 07/2018 Cool Stars 20, Boston, MA – **Poster**
- 01/2018 The 4th MA-CT Regional Star Formation Meeting, Boston, MA
– **Contributed Talk**
- 12/2017 Boston Area Exoplanet Science Meeting, Cambridge, MA – **Contributed Talk**
- 01/2017 Regional Star Formation Meeting, New Haven, CT – **Contributed Talk**
- 06/2015 Frontiers in Star Formation: Celebrating Contributions to the Field by Nuria Calvet and Lee Hartmann, Ann Arbor, MI – **Invited Talk**
- 01/2015 225th American Astronomical Society Meeting, Seattle, WA – **Poster**
- 02/2014 Scientista Symposium, Massachusetts Institute of Technology, Cambridge, MA
– **Poster**
- 2013, 2014, & 2015 Undergraduate Research Presentation, University of Michigan, Ann Arbor, MI
– **Poster**

Publications

First-Author, Refereed:.....

- 01/2022 "*Accretion Properties in Herbig Ae/Be Stars as Traced by the Br γ Line*"
Sierra L. Grant, Catherine C. Espaillat, Sean Brittain, Caleb Scott-Joseph, Nuria Calvet
- 06/2021 "*An ALMA Survey of Protoplanetary Disks in Lynds 1641*"
Sierra L. Grant, Catherine C. Espaillat, John Wendeborn, John J. Tobin, Enrique Macías, Anneliese Rilinger, Álvaro Ribas, S. Thomas Megeath, William J. Fischer, Nuria Calvet, Kyoung Hee Kim
ApJ, 913, 123
- 08/2018 "*Herschel Observations of Protoplanetary Disks in Lynds 1641*"
Sierra L. Grant, Catherine C. Espaillat, S. Thomas Megeath, Nuria Calvet, William J. Fischer, Christopher J. Miller, Kyoung Hee Kim, Amelia M. Stutz, Álvaro Ribas, Connor E. Robinson
ApJ, 863, 13

Co-Author, Refereed:.....

- 02/2022 "*Scanning disk rings and winds in CO at 0.01-10 au: a high-resolution M-band spectroscopy survey with IRTF-iSHELL*"
Banzatti, Andrea; Abernathy, Kirsten M.; Brittain, Sean; Bosman, Arthur D.; Pontoppidan, Klaus M.; Boogert, Adwin; Jensen, Stanley; Carr, John; Najita, Joan; **Grant, Sierra**; Sigler, Rocio M.; Sanchez, Michael A.; Kern, Joshua; Rayner, John T.
- 05/2019 "*Using Multiwavelength Variability to Explore the Connection among X-Ray Emission, the Far-ultraviolet H $_2$ Bump, and Accretion in T Tauri Stars*"
C. C. Espaillat, C. Robinson, **S. Grant**, M. Reynolds
ApJ, 876, 121

Non-Refereed:.....

03/2014 *"A Month of Personal Transformation at Kitt Peak"*
Sierra L. Grant
 NOAO Newsletter, Issue 109, March 2014

Accepted Observing Proposals

As PI:.....

2021 NOEMA (13.5 hours, ranked "B", Co-PI)
 "Orion's hunting grounds: The first unbiased mass census of Herbig
 Ae/Be disks"
 Sierra Grant, Michiel R. Hogerheijde, Lucas Stapper, Ewine F. van
 Dishoeck, Sierk van Terwisga, Alice Booth

2021 VLT-CRIFRES+ (1.4 hours, Science Verification, not observed)
 "Probing the impact of dust cavities on the gas distribution in
 intermediate-mass stars"
 Sierra Grant, Carlo Manara, Ewine van Dishoeck, Giulio Bettoni,
 Melissa McClure

2020 Gemini South Observatory (17 hours in 2020A, 7.7 hours in 2020B)
 "Accretion onto Intermediate-mass Stars"
 Sierra Grant, Catherine Espaillat, Sean Brittain, Nuria Calvet

2019 ALMA (Cycle 7, 2019.1.00951.S)
 "Characterizing Protoplanetary Disks in the Orion L1641 Region"
 Sierra Grant, Catherine Espaillat, Kyoung Hee Kim, Enrique Macías,
 Álvaro Ribas, Tom Megeath, Nuria Calvet, John Tobin

2019 & 2020 NASA Infrared Telescope Facility (3 half-nights each in 2019B and 2020A)
 "Accretion onto Intermediate-mass Stars"
 Sierra Grant, Catherine Espaillat, Sean Brittain, Nuria Calvet

2017 & 2018 Lowell Discovery Telescope, Lowell Observatory (10 half-nights)
 "Probing Gas and Dust in the Sites of Planet Formation"
 Sierra Grant, Catherine Espaillat

As Co-I:.....

10/2017 *Hubble Space Telescope* (6 orbits) & *Chandra X-ray Observatory* (35ks) &
 VLA (9.6 hours)
 "Connecting Mass Accretion and Ejection in Pre-main Sequence Stars"
 Catherine Espaillat, Jesús Hernández, **Sierra Grant**, Enríque Macías,
 Mark Reynolds, Connor Robinson

10/2015 *Spitzer Space Telescope* (Proposal ID #12036)
 "Footprints of the Magnetosphere: the Star-Disk Connection in T Tauri
 Stars"
 Catherine Espaillat, **Sierra Grant**, Jesus Hernandez, Nuria Calvet
 Coordinated with the *Hubble Space Telescope* and the The Neil Gehrels
 Swift Observatory for simultaneous observations

Affiliations and Outreach

11/2021 – Current	Planet Formation Witnesses and Probes: Transition Disks Research Unit
09/2021 – Current	Inclusion, Diversity, and Equity in European Astronomy (IDEEA)
09/2015 – 08/2021	Women as Leaders in Astronomy (Boston University)
09/2015 – 08/2021	Boston University Astronomy Public Open Nights
09/2018 – 05/2019	Letters to a Pre-Scientist Pen Pal
09/2011 – 05/2015	Student Astronomical Society
09/2011 – 05/2012	Douglass Houghton Scholars Program
09/2011 – 05/2012	Women in Science and Engineering Residency Program
06/2010	Michigan Technological University Women in Engineering Program

Leadership

09/2018 – 08/2021	Women as Leaders in Astronomy Organizer
09/2018 – 08/2019	Graduate Student Representative

Mentored Students

10/2021 – Current	Giulio Bettoni: Giulio is a Leiden University Ph.D. student who is working with me at MPE in Garching. Giulio's focus is on chemistry in the inner regions of protoplanetary disks.
06/2018 – 08/2019	Caleb Scott-Joseph: Caleb was a high school student at Boston University Academy who I mentored to analyze high-resolution, near-infrared spectra of protoplanetary disks.

Workshops

12/2017	JWST Proposal Planning Workshop, Pasadena, CA
03/2016	NRAO Live! ALMA Proposal Workshop at Boston University, Boston, MA

Teaching

Spring 2016	AS 203: Principles of Astronomy II Teaching Assistant
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