

## Sadia Hoq

Boston University  
Department of Astronomy  
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### Education

Boston University College of Arts and Sciences, May 2010  
B.A., Major in Astronomy & Physics, Major in Economics  
Senior Thesis: “Properties of two Open Star Clusters in the Kepler Field of View”  
Senior Thesis Advisor: Prof. Kenneth Janes

Boston University, September 2010 – Present  
M.S., Astronomy, May 2012  
Ph.D., Astronomy, Expected August 2016  
Dissertation: “Magnetic Fields in the Perseus Spiral Arm and in Infrared Dark Clouds”  
Thesis Advisor: Prof. Dan Clemens

### Awards

- AAS Chambliss Student Achievement Honorable Mention, 2014, Boston, MA
- AAS Chambliss Student Achievement Award, 2013, Long Beach, CA
- Astronomy Department Outstanding Teaching Fellow Award 2012/2013

### Research Experience

- Research Assistant, June 2012 – Present; Advisor: Prof. Dan Clemens  
Studying the galactic magnetic field using polarizations of stars in open clusters and near Infrared Dark Clouds
- Research Assistant, June 2010 – May 2012; Advisor: Prof. James Jackson  
Studying the chemical evolution of high-mass star-forming regions
- Research Assistant, May 2007 – May 2010; Advisor: Prof. Kenneth Janes  
Analyzing properties of distant, old open star clusters

### Teaching Experience

- Alien Worlds MOOC; Professor: Andrew West  
Spring 2014 – Summer 2014, Role: Course Coordinator  
Helped redraft the course “Alien Worlds” taught at Boston University into a Massive Open Online Course (MOOC) in partnership with edX. Responsibilities included helping design and build course content, interviewing and filming astronomers, and being the liaison to the BU Digital Learning Initiative, Research Visualization, and BU Productions teams.
- Alien Worlds; Professor: Andrew West  
Fall 2012, Fall 2013: Head Teaching Fellow; Spring 2011: Teaching Fellow  
Open to non-Astronomy majors at Boston University as a science elective. Head Teaching Fellow responsibilities included helping manage the other teaching fellows in the class, being the first point of contact for students, and helping the professor design the curriculum. Also led weekly discussion sections, graded assignments, and ran nighttime observing sessions.
- Principles of Astronomy 1; Professor: Jeffrey Hughes

Fall 2010: Teaching Fellow

Required class for freshman undergraduate Astronomy majors. Responsibilities included grading assignments, and running day and nighttime labs.

### **Service/Leadership**

- BU Astronomy Time Allocation Committee Member 2013 – Present  
Part of a five-person panel in Astronomy Department, which ranks observing proposals submitted by Boston University members for use of telescopes at Lowell Observatory, such as the Discovery Channel and Perkins Telescopes.
- Research Experience for Undergraduates (REU) Student Mentor, Summer 2015  
Graduate student mentor to REU student Madison Hill.
- BU Research Internship in Science & Engineering (RISE) Student Mentor, Summer 2013  
Research mentor for High School Summer student Adam Rubinstein, who studied the NIR polarimetry of a sample of star clusters in the outer Galaxy.
- Graduate Admissions Student Representative, Spring 2013  
Helped the faculty to organize prospective graduate student visits to the Astronomy Department. Responsibilities included being the point of contact for visiting students and helping organize personalized visiting schedules and activities.

### **Telescope Time Awarded**

- SOFIA, HAWC+ Instrument, 2016, **P.I. Hoq**  
Title: “Magnetic Fields in Infrared Dark Clouds”
- Perkins Telescope, Lowell Observatory, 2010-2014  
Observed 30 nights as PI or CoI to study Galactic magnetic field using polarimetry
- Australia Telescope Compact Array, ATNF, 2013, P.I. Jackson  
Title: “Chemical Oddballs in the Late Stages of Star Formation”
- Mopra Radio Telescope, ATNF, 2012, P.I.: Jackson  
Title: “Millimetre Astronomy Legacy Team 90 GHz Survey (MALT90)”
- Australia Telescope Compact Array, ATNF, 2012, **P.I. Hoq**  
Title: “Chemical Oddballs in the Late Stages of Star Formation”

### **Meeting/Seminar Talks**

1. Harvard-Smithsonian Center for Astrophysics Large-Scale Seminar Series (Invited)  
“The Magnetic Fields of Infrared Dark Clouds”, September 2015
2. Midwest Magnetic Fields Conference, Madison, WI  
“The Magnetic Field of an Infrared Dark Cloud”, May 2015
3. Star Formation Meeting, UMASS Amherst, MA  
“The Role of Magnetic Fields in IRDCs”, January 2015

**Skills/Programming Experience:** IDL, SAO DS9, Python

Sadia Hoq  
Publications List

**First Author Refereed Publications**

1. Hoq, S., & Clemens, D. P., “Open Clusters as Probes of the Galactic Magnetic Field I. Cluster Properties”, 2015, *AJ*, 150, 135
2. Hoq, S., Jackson, J. M., Foster, J., et al., “Chemical Evolution in High-Mass Star-Forming Regions: Results from the MALT90 Survey”, 2013, *ApJ*, 777, 157

**Co-Author Refereed Publications**

1. Stephens, I. W., Jackson, J. M., Sanhueza, P., et al. “Interferometric Observations of High-Mass Star-Forming Clumps with Unusual N<sub>2</sub>H<sup>+</sup>/HCO<sup>+</sup> Line Ratios”, 2015, *ApJ*, 802, 6
2. Janes, K. Barnes, S. A., Meibom, S., **Hoq, S.**, “Open Clusters in the Kepler Field. II. NGC 6866”, 2014, *AJ*, 147, 139
3. Jackson J., Rathborne, J., Foster, J., et al., “MALT90: The Millimetre Astronomy Legacy Team 90 GHz Survey”, 2013, *PASA*, 30, 57
4. Foster, J., Rathborne, J., Sanhueza, P., et al., “Characterisation of the MALT90 Survey and the Mopra Telescope at 90 GHz”, 2013, *PASA*, 30, 38
5. Janes, K., Barnes, S., Meibom, S., **Hoq, S.**, “NGC 6811: An Intermediate-age Cluster in the Kepler Field”, 2013, *AJ*, 145, 7
6. Janes, K., **Hoq, S.**, “A Quantitative Analysis of Distant Open Clusters”, 2011, *AJ*, 141, 92

**Posters & Conference Proceedings**

1. **Hoq, S.**, Clemens, D. P., Guzman, A., Stephens, I., “The Role of Magnetic Fields in Infrared Dark Clouds”, 2015, Magnetic Fields in the Universe V, Corsica, France
2. **Hoq, S.**, Clemens, D. P., Guzman, A., “The Role of Magnetic Fields in IRDCs”, 2014, NRAO Filaments Meeting, VA
3. **Hoq, S.**, Clemens, D. P., “High-Mass Star Formation in IRDCs: The Role of Magnetic Fields”, 2014, AAS, 22422008
4. Clemens, D. P., Cashman, L., **Hoq, S.**, Montgomery, J., Pavel, M.D., “The Galactic Plane Infrared Polarization Survey (GPIPS): Final Calibration and Full Data Release”, 2014, AAS, 22422006
5. Foster, J., Rathborne, J., Jackson, J., Longmore, S., Whitaker, S., **Hoq, S.**, “The Millimeter Astronomy Legacy Team 90 GHz Survey (MALT90) and ALMA”, 2013, ASPC, 476, 127
6. Clemens, D. P., Cashman, L. R., **Hoq, S.**, Montgomery, J., Pavel, M. D., “The Galactic Plane Infrared Polarization Survey (GPIPS): The Full Poster”, 2013, AAS, 22135215
7. **Hoq, S.**, Cashman, L. R., Clemens, D. P., “Using Open Star Clusters to Probe the Small-Scale Characteristics of the Galactic Magnetic Field”, 2013, AAS, 22125030
8. Janes, K., Meibom, S., Barnes, S., **Hoq, S.**, “Bayesian Analysis of Star Cluster Color-Magnitude Diagrams”, 2013, AAS, 22125015
9. Janes, K., Barnes, S., Meibom, S., **Hoq, S.**, “NGC 6811: An Intermediate-age Cluster In The Kepler Field”, 2011, AAS, 21822706
10. **Hoq, S.**, Jackson, J., Foster, J., “Classifying Star Forming Cores through Chemical Anomalies”, 2011, AAS, 21813011

11. Janes, K., **Hoq, S.**, Lollo, A., MacDonald, M., “Separating The Wheat From The Chaff: Finding The Properties Of Distant Old Open Clusters”, 2007, AAS, 2115813