Diana Dragomir

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Research Interests

Demographics of small exoplanets
Atmospheres of small exoplanets
Exoplanet host star characterization

Education

Ph.D. in Astronomy, University of British Columbia, May 2013.
Advisor: Jaymie Matthews
Thesis: *Transiting Super-Earth Exoplanets: Search and Characterisation*

M.Sc. in Physics, McGill University, August 2008
Advisor: Andrew Cumming
Thesis: *Constraining the period and eccentricity distributions of long period exoplanets*

B.Sc. in Honours Physics and Minor in Chemistry, McGill University, May 2005
Honours Thesis advisor: Robert Rutledge
Honours Thesis: *Identification and Spectral Classification of Optical Counterparts to ROSAT All-Sky Survey X-Ray Sources*

Academic Employment

Hubble Postdoctoral Fellow - Massachusetts Institute of Technology, 2016 - present
Postdoctoral Scholar - University of Chicago, 2015 - 2016
Postdoctoral Scholar - University of California Santa Barbara/Las Cumbres Observatory Global Telescope (LCOGT), 2012 - 2015
Graduate Research Fellow - University of British Columbia, 2008 – 2012
Visiting Research Fellow - NASA Exoplanet Science Institute, California Institute of Technology, 2010 - 2011
Graduate Research Fellow - McGill University, 2006 – 2008
Undergraduate Research - Research fellow at the MPI für Physik**,** Munich, 2005 – 2006
- Research fellow at McGill University, Montreal, 2004 - 2005
- Research fellow at the Sudbury Neutrino Observatory, Sudbury, summer 2004

Visiting Scientist

Visiting Scientist - California Institute of Technology, 2014 – 2015
KITP program participant, Dynamics and Evolution of Earth-like Planets - Santa Barbara, 2015

Awards

Hubble Fellowship, August 2016 - present
AAS Roger Doxsey Travel Prize Runner-Up, January 2013
University of British Columbia Four Year Fellowship, 2011 - 2012
IPAC Visiting Graduate Fellowship, October 2010 – April 2011
FQRNT (Government of Québec) Doctoral Research Scholarship, 2008 – 2011

GRANTS

Hubble Fellowship (2016 - 2019). Amount: $324 372
Hubble Space Telescope GO program grant (cycle 23). Amount: $41 000
Spitzer Space Telescope GO program grant (cycle 12). Amount: $10 000
Spitzer Space Telescope GO program grant (cycle 11). Amount: $10 000
Hubble Space Telescope GO program grant (cycle 22). Amount: $45 000
Spitzer Space Telescope GO program grant (cycle 10). Amount: $5 000

SELECTED ACCEPTED OBSERVING PROPOSALS

Space-based telescopes

PI of joint Spitzer/HST proposal (cycle 12), *The Nature of 55 Cnc e*, 52 Spitzer hours, 16 HST orbits
PI of Spitzer proposal (cycle 11), *A Comparative Study of Super-Earth Atmospheres*, 163 hours
PI of Spitzer proposal (cycle 10), *Characterizing the Atmosphere of the Warm Super−Earth HD 97658b*, 45 hours
PI of super-Earth transit search program with MOST (2008 - 2013)
Co-I on 10 Spitzer and HST proposals, totalling 1132 hours and 316 HST orbits

Ground-based telescopes

PI of LCOGT DD proposal (2016A), *Monitoring a Transiting System of Disintegrating Minor Planets Around a White Dwarf,* 30 hours
PI of Gemini DD proposal (2015B), *The Composition of Clouds in the Atmosphere of a Neptune-Size exoplanet*, 21 hours
PI of LCOGT proposal (2014B - 2016A), *Photometric Monitoring of Bright Stars Hosting Small Planets*, 584 hours over four semesters
PI of LCOGT proposals (2014A-B), *Toward Sub-Mmag Precision Photometry of Very Bright Stars,* 80 hours
PI of 2.0m Faulkes Telescopes North and South proposal (2013B), S*hort Wavelength Observations of the Hot Neptune analog GJ 3470b,* 72 hours
Co-I on 14 LCOGT proposals (2013A – present), including the ongoing TECH project for follow-up and characterization of K2 planet candidates

ACADEMIC SERVICE

Member of the Spitzer Science Users Panel, 2017 - present
Member of the SOC for *The 2nd Rencontres du Vietnam on Exoplanetary Science*, 2017 - present
Member of TESS Follow-up Steering Committee (chair of space-based photometry group), 2017 - present
Member of TESS Atmospheric Characterization Working Group, 2017 - present
Member of TESS Target Selection working group, 2016 - present
Proposal reviewer for NASA WIYN, 2016 - 2017
Proposal reviewer for HST, 2016
Proposal reviewer for Spitzer, 2016 - present
Proposal reviewer for CFHT, 2015 - present
Referee for *ApJ, MNRAS* and *Nature Astronomy*, 2013 - present
Panel reviewer for NASA ROSES program
Member of CASCA graduate student career counseling panel, May 2013
LCOGT/UCSB exoplanet journal club founder and coordinator, 2013 - 2015
LCOGT seminar series coordinator, 2012 - 2015
UBC Graduate Student Society Physics & Astronomy representative, 2009 - 2010
Vice-president external for the McGill undergraduate physics society, 2004 - 2005
Volunteer organizer for the Canadian Undergraduate Physics Conference, McGill University, 2003

SELECTED INVITED TALKS

- Tufts University Physics and Astronomy Colloquium, September 2017
- Hamburg Observatory Seminar, June 2017
- "Planetary atmospheres: on Earth, in the solar system, and on exoplanets", Stockholm, Sweden, June 2017
- McGill Space Institute Seminar, January 2017
- "Making Great Observatories Even Better", AAS 229 special session, Grapevine, January 2017
- Texas A&M Astronomy Seminar, November 2016
- Fellows at the Frontiers 2016, August 2016
- Opportunity M, Harvard University, August 2016
- Harvard Center for Astrophysics Small Scale Seminar, March 2016
- CHEOPS Science Workshop, Madrid, June 2015
- Infrared Processing and Analysis Center (IPAC) seminar, April 2015
- University of British Columbia astronomy colloquium, January 2015
- Center for Exoplanets and Habitable Worlds seminar (Penn State University), April 2014
- Université de Montreal astrophysics seminar, March 2014
- Observatoire de Geneve exoplanet seminar, February 2014
- NRC Herzberg seminar, November 2013
- California Institute of Technology tea talk, September 2013
- McGill university seminar, August 2009

SELECTED CONTRIBUTED TALKS AND POSTERS (AS FIRST AUTHOR)

- *Maximizing the TESS Mission's Small Planet Yield with CHEOPS,* CHEOPS Science Workshop (2017), Schloss Seggau, Austria
- *Emission Spectroscopy of the Super-Earth 55 Cnc e* (Talk), American Astronomical Society Meeting (2017), Grapevine, TX
- *The Nature of 55 Cnc e* (Talk), Exoplanets I (2016), Davos, Switzerland
- *The variability of nearby exoplanet host stars* (Talk), IAU Focus Meeting 13: Brightness Variations of the Sun and Sun-like Stars (2015), Honolulu, HI
- *Probing exoplanet atmospheres through their Rayleigh scattering signatures* (Talk), Canadian Astronomical Society Meeting (2015), Hamilton, ON
- *Monitoring exoplanets and their host stars with the LCOGT network* (Talk), Exoplanets with JWST-MIRI (2014), Heidelberg, Germany
- *The atmospheres of warm super-Earths: HD 97658b as a case study* (Talk) Towards other Earths II - the Star-Planet Connection (2014), Porto, Portugal
- *Transit photometry with the LCOGT network (*Poster), Protostars & Planet VI (2013), Heidelberg, Germany
- *A warm transiting super-Earth around a very bright star* (Talk), Canadian Astronomical Society Meeting (2013), Vancouver, BC
- *Transiting Super-Earth Exoplanets: Search and Characterization with the MOST Space Telescope* - (Dissertation talk), American Astronomical Society Meeting (2013), Long Beach, CA
- *2012 MOST photometry of the 55 Cancri system* (Talk), IAU Symposium 293: Formation, Detection and Characterization of Extrasolar Habitable Planets (2012), Beijing, China
- *MOST Search for Transits of Super-Earths: Results for BD-082823 b and 61 Vir b (*Talk), Extreme Solar Systems II (2011), Jackson, WY
- *Hunting for Super-Earths with the MOST Space Telescope* (Poster), Canadian Astronomical Society Meeting (2009), Toronto, ON

TEACHING EXPERIENCE

Student advising

- Supervising MIT graduate student Liang Yu on a project which will constrain the scattering processes in the atmosphere of a warm Neptune, using Gemini GMOS spectroscopy (2016 – present).
- Advised University of Chicago graduate student Megan Bedell on work related to radial velocity and Spitzer observations of Solar Twin Planet Search systems (2015 – 2016).
- Supervised UC Santa Barbara graduate student Giulia Collura for summer project on photometric monitoring of exoplanet host stars (2015); this work was presented at the 2015 Sagan Summer Workshop.
- Advised University of Arizona undergraduate students Lauren Biddle and Kyle Pearson (now graduate students at Northern Arizona University) on work related to the GJ 3470b exoplanet system (2013 – 2015); results were published in Biddle et al. (2014) and Dragomir et al. (2015).
- Advised University of British Columbia graduate student Samara Pillay on *MOST* data reduction (2011 – 2012).
- Advised Penn State University undergraduate student Genady Pilyavsky (now a graduate student at Arizona State University) on data reduction and analysis for the TERMS project (2011 – 2013); results were published in multiple papers related to the TERMS project, including Pilyavsky et al. (2011).

Teaching and tutoring

- Teaching Assistant at University of British Columbia
  "Exploring the Universe: Stars and Galaxies", fall 2009 & spring 2010
  "Introduction to Stars and Galaxies", spring 2009
  "Introduction to the Solar System", fall 2008
- Mentor for new teaching assistants at University of British Columbia, fall 2009
- Teaching Assistant at McGill University
  "The Milky Way Inside and Out", fall 2007 & spring 2008
  "Our Evolving Universe", spring 2007
  "Mechanics 101", fall 2006
- Tutor for physics and mathematics courses, 2000 - 2005

PUBLIC OUTREACH

Astronomy on Tap Boston public talk, June 2017
Public talk during MIT Independent Activities Period, January 2017
Founder and organizer of Astronomy on Tap Boston chapter, 2016 - present
Astronomy Conversations presenter at the Adler Planetarium Space Visualization Lab, Chicago, 2016
Public talk at Atlas Senior Center, Chicago, June 2016
Volunteer Astronomer at Chicago Sinfonietta event, Chicago, May 2016
Volunteer Astronomer at High Jump Career Day, Chicago, February 2016
Invited public talk at Santa Barbara Astronomical Unit, April 2015
Volunteer for "Astronomy Day" event for high school students, Lowell Observatory, May 2011
Outreach astronomer at University of British Columbia, summer 2009
Writer of *Hunting for Planets in the Starry Wild*, published in Le Panoptique, August 2008
Science instructor at summer camps and elementary school workshops, Montreal, 2000 – 2005

SELECTED PRESS COVERAGE

"Blue Skies Spotted 100 Light Years Away", Daily Mail, November 2015
"Distant Exoplanet Has Blue Skies", forbes.com, November 2015
"UBC Astronomer Helps Discover New Planet", The Ubyssey, January 2015
"UCSB Astronomer Uncovers The Hidden Identity Of An Exoplanet", UCSB Press Release, July 2013
"Astronomers Nail Down Details of 'Next-Door' Exoplanet", United Press International, July 2013
"Newly Identified Planet Bucks Planetary Trends", Nature World News, July 2013
"Exoplanet Measured by UCSB Astronomer", Santa Barbara News-Press, July 2013
"Hot Planet Keeps Its Water", ScienceNews, August 2012
"Some Highlights in Exoplanets", Ask an Astronomer! @ Cornell University podcast, March 2012
"Gliese's Hints of Habitability", Astrobiology Magazine, June 2011
"Super-Earth Resides in Habitable Zone", Astronomy Now, June 2011

LANGUAGES

English, French and Romanian (native fluency); German (intermediate)

REFERENCES

Jaymie Matthews
Professor, University of British Columbia
604-822-2696; matthews@astro.ubc.ca

Jacob Bean
Assistant Professor, University of Chicago
773-702-9568; jbean@oddjob.uchicago.edu

Sara Seager
Professor, Massachusetts Institute of Technology
617-253-6775; seager@mit.edu

Stephen Kane
Professor, University of California, Riverside
951-827-3434; skane@ucr.edu

Tim Brown
Senior Scientist, Las Cumbres Observatory
805-880-1600; tbrown@lco.global

Heather Knutson
Assistant Professor, California Institute of Technology
626-395-4268; knutson@caltech.edu

REFEREED PUBLICATIONS (8 FIRST AUTHOR)

1. Shporer, A. et al., *EPIC 211418729b and EPIC 211442297b: Two Transiting K2 Warm Jupiters*, AJ, 154, 188
2. Bayliss, D., Hojjatpanah.S, Santerne, A., **Dragomir, D.** et al. (2017), *EPIC201702477b: A Long Period Transiting Brown Dwarf from K2*, AJ, 153, 15
3. Zhou, G. et al. (2016), *Simultaneous infrared and optical observations of the transiting debris cloud around WD 1145+017*, MNRAS, 463, 4422
4. Guzik, J. A. et al. (2016), *Detection of Solar-Like Oscillations, Observational Constraints, and Stellar Models for Theta Cyg, the Brightest Star Observed by the Kepler Mission*, ApJ, 831, 17
5. Stevenson, K. B. et al. (2016), *Transiting Exoplanet Studies and Community Targets for JWST's Early Release Science Program*, PASP, 128, 94401
6. Hoyer, S., Palle, E., **Dragomir, D.**, Murgas, F. (2016), *Ruling Out the Orbital Decay of the WASP-43b Exoplanet*, AJ, 151, 137
7. Kane, S. R., Wittenmeyer, R. A., Hinkel, N. R., Roy, A., Mahadevan, S., **Dragomir, D.** et al. (2016), *Evidence for Reflected Light from the Most Eccentric Exoplanet Known* , ApJ, 821, 65
8. **Dragomir, D.** et al. (2015), *Rayleigh Scattering in the Atmosphere of the Warm Exo -Neptune GJ 3470b*, ApJ, 814, 102
9. Knutson, H. A., **Dragomir, D.** et al. (2014), *Hubble Space Telescope Near-IR Transmission Spectroscopy of the Super-Earth HD 97658*, ApJ, 794, 155
10. Biddle, L. I. et al. (2014), *Warm ice giant GJ 3470b - II. Revised Planetary and Stellar Parameters from Optical to Near-Infrared Transit Photometry*, MNRAS, 443, 1810
11. Claret, A., **Dragomir, D.**, Matthews, J. M. (2014), *Theoretical Gravity and Limb-Darkening Coefficients for the MOST Satellite Photometric System*, A&A, 567, A3
12. Joiner, D. A., Sul, C., **Dragomir, D.**, Kane, S. R., Kress, M. E. (2014), *A Consistent Orbital Stability Analysis for the GJ 581 System*, ApJ, 788, 160
13. van Grootel, V., Gillon, M., Valencia, D., Madhusudhan, N., **Dragomir, D.** et al. (2014), *Transit Confirmation and Improved Stellar and Planet Parameters for the Super-Earth HD 97658 b and its Host Star*, ApJ, 786, 2
14. Brown, T. M. et al. (2013), *Las Cumbres Observatory Global Telescope*, PASP, 125, 1031
15. **Dragomir, D.** et al. (2013), *MOST Detects Transits of HD 97658b, a Warm, Likely Volatile-rich Super-Earth*, ApJ, 772, L2
16. Henry, G. W. et al. (2013), *Host Star Properties and Transit Exclusion for the HD 38529 Planetary System*, ApJ, 768, 155
17. Wang, S. X. et al. (2012), *The Discovery of HD 37605c and a Dispositive Null Detection of Transits of HD 37605b*, ApJ, 761, 46
18. **Dragomir, D.** et al. (2012), *Non-detection of Previously Reported Transits of HD 97658b with MOST Photometry*, ApJ, 759, L41
19. **Dragomir, D.** et al. (2012), *A Search for Transits of GJ 581e and Characterization of the Host Star Variability Using MOST Space Telescope Photometry*, ApJ, 759, 2
20. **Dragomir, D.** et al. (2012), *The HD 192263 System: Planetary Orbital Period and Stellar Variability Disentangled*, ApJ, 754, 37
21. Gazak, J. Z., Johnson, J. A., Tonry, J., **Dragomir, D.** et al. (2012), *Transit Analysis Package (TAP): An IDL Graphical User Interface for Extrasolar Planet Transit Photometry*, Advances in Astronomy, 2012
22. Pilyavsky, G. et al. (2011), *A Search for the Transit of HD 168443b: Improved Orbital Parameters and Photometry*, ApJ, 743, 162
23. Kane, S. R., Gelino, D. M., Ciardi, D. R., **Dragomir, D.** et al. (2011), *Planetary Phase Variations of the 55 Cancri System*, ApJ, 740, 61
24. ***Dragomir***, **D.** et al. (2011), *TERMS Photometry of Known Transiting Exoplanets*, AJ, 142, 115
25. Winn, J. N. et al. (2011), *A Super-Earth Transiting a Naked-Eye Star*, ApJ, 737, L18
26. Kane, S. R., **Dragomir, D.** et al. (2011), *Stellar Variability of the Exoplanet Hosting Star HD 63454*,

ApJ, 737, 58
27. Kane, S. R., Henry, G.W., **Dragomir, D.** et al. (2011), *Revised Orbit and Transit Exclusion for HD 114762b*, ApJL, 735, L41
28. Kane, S. R. et al. (2011), *Improved Orbital Parameters and Transit Monitoring for HD 156846*, ApJ, 733, 28
29. Cumming, A. & **Dragomir, D.** (2010), *An Integrated Analysis of Radial Velocities in Planet Searches*, MNRAS, 401, 1029
30. **Dragomir, D.** et al. (2007), *Spectral Classification of Optical Counterparts to ROSAT All-Sky Survey X-Ray Sources*, AJ, 133, 2495

Submitted Publications

31. Lothringer, J. et al., "An HST/STIS Optical Transmission Spectrum of Warm Neptune GJ 436b", AAS Journals, submitted
32. Benneke, B. et al., "Carbon Deficiency On a Close-in Sub-Neptune Exoplanet", Nature, submitted

Conference Proceedings and White Papers

1. **Dragomir, D.** et al. (2014), *New MOST Photometry of the 55 Cancri System*, Proceedings of the International Astronomical Union, IAU Symposium, 293, 52
2. Yee, J. C. et al. (2017), *The Science Case for an Extended Spitzer Mission*, white paper