JINGZHE MA

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EMPLOYMENT

Postdoc Research Associate, University of California at Irvine September 2017 - present
• *Herschel*-selected dusty star-forming galaxies
Superviser: Prof. Asantha Cooray

EDUCATION

PhD, Astronomy, University of Florida Aug 2012 - Aug 2017
• Thesis Topic: "The Formation and Evolution of High-redshift Dusty Galaxies"
Advisors: Prof. Anthony Gonzalez and Prof. Jian Ge

B.S., Physics with honors, Northeastern University in China 2008 - 2012
• Highest honor thesis: "Probing the Dynamics of Dark Energy with Novel Parametrizations"
Advisor: Prof. Xin Zhang

HONORS, AWARDS & GRANTS

• Rodger Doxsey Travel Prize, 229th American Astronomical Society meeting Jan, 2017
• Hubble Space Telescope Cycle 23 GO-14200 (PI) $49303 2016 - 2017
• Hubble Space Telescope Cycle 21 GO-13614 (Co-I) $41504 2014 - 2017
• Graduate Student Fellowship, University of Florida 2012 - 2016
• College of Liberal Arts and Sciences Travel Grant, University of Florida 2015, 2017
• Graduate Student Council Travel Grant, University of Florida 2014
• Schrader Fellowship, University of Florida 2012
• "Challenge Cup" National Undergraduate Science and Technology Competition Winner, China 2011
• National Scholarship, China 2008 - 2009

TELESCOPE EXPERIENCE

• **Keck-II Telescope — NIRES:** Semester 2018A, "The Circumgalactic Medium of Submillimeter Galaxies", 2 nights (PI: A. Cooray, co-I: Jingzhe Ma)
• **Hubble Space Telescope — WFC3 IR grism:** Cycle 23, GO-14200, "Revealing the host galaxy of a Milky Way-type 2175 Å absorber", 3 orbits **(PI: Jingzhe Ma)**
• **Spitzer Space Telescope and Hubble Space Telescope — IRAC & WFC3:** joint Spitzer Cycle 10 (10094) and HST Cycle 21 (13614), "High-Redshift Starburst Galaxies Under the Cosmic Microscope: Unveiling the stellar histories of strongly lensed starburst galaxies with ALMA and Spitzer", 37 hours (Spitzer) and 6 orbits (HST) (PI: J. Vieira, co-I: Jingzhe Ma)
• **Hubble Space Telescope and Spitzer Space Telescope — ACS, WFC3 & IRAC:** joint HST Cycle 24 (14740) and Spitzer Cycle 13, "Exploring a Massive Starburst in the Epoch of Reionization", 5 orbits (HST) and 6 hours (Spitzer) (PI: D. Marrone, co-I: Jingzhe Ma)

• **Keck-II Telescope — ESI:** Semester 2013A, "Chemical Enrichment History in z $\sim$ 1-2 Quasar 2175 Å Dust Absorbers", 2 nights (PI: Jian Ge)
• **ALMA:** Cycle 3, "A full inventory of the molecular ISM in two starburst galaxies at z = 5.7", 10 hrs (PI: M. Aravena, co-I: Jingzhe Ma)
• **ALMA:** Cycle 3, "The fine structure of an extreme, lensed starburst galaxy at z = 5.7", 10 hrs (PI: D.P. Marrone, co-I: Jingzhe Ma)
• **Gran Telescopio CANARIES (GTC) — CIRCE:** Semester 2015B, "A pilot Ks-band imaging survey of quasar dust absorber host galaxies", 23 hrs (PI: Jian Ge, co-I: Jingzhe Ma)
• **Gran Telescopio CANARIES (GTC) — OSIRIS:** Semester 2016A & 2015B, "Narrow band imaging of quasar 2175 Å dust-absorber host galaxies", 11 hrs (PI: Jian Ge, co-I: Jingzhe Ma)
• **Shane Telescope — Kast:** Semester 2014A & 2015B, "The HI gas of 2175 Å Absorbers", 8 nights (PI: J. X. Prochaska)
• **Chandra Space Telescope — ACIS:** Cycle 16, GO-16700846, "Is the Most Concentrated Infrared Luminosity Density in the Universe dominated by an AGN or a Hyper-Starburst? ", 50.2 ks (PI: J. Vieira)
• **Gemini South Telescope — Flamingos2:** Semester 2014A, "Stellar Masses for Strongly Lensed Starburst Galaxies", 4.2 hours (PI: Anthony Gonzalez, co-I: Jingzhe Ma)

SELECTED PRESS RELEASES

Chandra Press Office: "Under Construction: Distant Galaxy Churning Out Stars at Remarkable Rate"
Chandra Blog Post: "Super Starburst Galaxy Found One Billion Years After the Big Bang"
Phys Org: "Under construction: Distant galaxy churning out stars at remarkable rate"
Astrobites: "Investigating One of the Strongest Starbursts in the Universe"
UF news: "Hyper-starburst galaxy churns out stars, clues to universe's evolution"

PROFESSIONAL MEMBERSHIP

• American Astronomical Society — member since 2014
• Astronomical Society of the Pacific — member since 2016

SELECTED CONFERENCE TALKS AND POSTERS

1. IMPS seminar (invited talk), University of California at Santa Cruz — January 30, 2018
2. 231st American Astronomical Society Meeting (talk), Washington DC, January 11, 2018
3. 229th American Astronomical Society Meeting (dissertation talk), Grapevine, TX January 5, 2017
4. IMPS seminar (talk), University of California at Santa Cruz — December 5, 2016
5. SPT SMG Collaboration Meeting (talk), University of Illinois at Urbana Champaign, Champaign, IL — July 25-29, 2016
6. 32nd Institut D'Astrophysique De Paris Colloquium (poster), Paris — June 20-24, 2016
7. 7th Galaxies in Absorption (talk), University of Pittsburgh, Pittsburgh, PA — April 25-27, 2016
8. 227th American Astronomical Society Meeting (poster), Kissimmee, FL — January 4, 2016
9. SPT SMG Collaboration Meeting (talk), University of Illinois at Urbana Champaign, Champaign, IL — July 27, 2015

10. 225th American Astronomical Society Meeting (talk), Seattle, WA January 4, 2015
11. Galaxy Evolution Ski Conference (poster), Obergurgl, Austria April 26, 2014
12. SPT SMG Collaboration Meeting (talk), California Institute of Technology, Pasadena, CA July 15, 2013

TEACHING AND PUBLIC OUTREACH

1. Springs and Stars Public Outreach April 15, 2017
2. Teachers' Training Workshop Instructor January 14, 2017
3. Mercury Transit Public Outreach May 9, 2016
4. WISE Spring Girls' Camp Instructor March 21, 2016
5. Co-founder of the UF Astronomy Outreach Team Jan 2016
6. AAS Astronomy Ambassadors program Jan 3-4, 2016
7. Alachua Astronomy Club Presentation "Probing distant galaxies with cosmic flashlights and cosmic microscopes" (invited talk) Sept 8, 2015
8. Undergraduate Course "Astrophysics" Fall 2013
9. Undergraduate Course "Discover the Universe" Spring 2014 - Spring 2015
10. Public Night, Campus Teaching Observatory, University of Florida 2014 - 2016
11. Starry Night, Florida Museum of Natural History 2013 - 2015
12. Founder of the Northeastern University Astronomy Club 2010

COLLABORATORS

Manual Aravena (UDP), Matthew Ashby (CfA), Matthieu Bethermin (ESO), Matthew Bothwell (Cambridge), Niel Brandt (PSU), Scott Chapman (Dalhousie), Carlos DeBreuck (ESO), Chris Fassnacht (UC Davis), Bitten Gullberg (Duhram), Christopher Hayward (Flatiron), Yashar Hezevah (Stanford), Tuo Ji (PRIC), Britt Lundgren (NSF), Matthew Malkan (UCLA), Dan Marrone (Arizona), Desika Narayanan (Haverford), Pasquier Noterdaeme (IAP), Jason X. Prochaska (UCSC), Justin Spilker (Arizona), Antony Stark (CfA), Maria Strandet (MPIfR), Joaquin Vieria (UIUC), Axel Weiss (MPIfR), Niraj Welikala (Oxford), Shaohua Zhang (PRIC)

REFERENCES

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JINGZHE MA LIST OF PUBLICATIONS

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FIRST-AUTHOR PUBLICATIONS

6.*"Quasar 2175 Å dust absorbers II: Correlation analysis and relationship with other absorption line systems"*, **Ma, J.** et al. 2017, MNRAS, in press
5.*"Quasar 2175 Å dust absorbers I: metallicity, depletion pattern, and kinematics"*, **Ma, J.** et al. 2017, MNRAS, 472, 2196
4. *"SPT0346-52: Negligible AGN Activity in a Compact, Hyper-starburst Galaxy at z = 5.7"*, **Ma, J.** et al. 2016, ApJ, 832, 114
3. *"Stellar Masses and Star Formation Rates of Lensed, Dusty, Star-forming Galaxies from the SPT Survey"*, **Ma, J.** et al. 2015, ApJ, 812, 88
2. *"Cold gas and a Milky Way-type 2175-Å bump in a metal-rich and highly depleted absorption system"*, **Ma, J.** et al. 2015, MNRAS, 454, 1751
1. *"Probing the dynamics of dark energy with novel parametrizations"*, **Ma, J.** & Zhang, X. 2011, Physics Letters B, 699, 233

CO-AUTHORED PUBLICATIONS

17.*"Galaxy growth in a massive halo in the first billion years of cosmic history"*, Marrone, D. et al. including **Ma, J.** 2017, Nature, in press
16.*"ISM Properties of A Massive Dusty Star-forming Galaxy Discovered at $z \sim 7$"*, Strandet, M. et al. including **Ma, J.** 2017, ApJL, 842, L15
15. *"ALMA Observations of Atomic Carbon in $z \sim 4$ Dusty Star-forming Galaxies"*, Bothwell, M. et al. including **Ma, J.** 2017, MNRAS, 466, 2825
14. *"DeepSky: Identifying Absorption Bumps via Deep Learning"*, Yuan, X. et al. including **Ma, J.** 2016, IEEE International Congress on Big Data, 214
13. *"The Optical Variability of SDSS Quasars from Multi-epoch Spectroscopy. III. A Sudden UV Cutoff in Quasar SDSS J2317+0005"*, Guo, H. et al. including **Ma, J.** 2016, ApJ, 826, 186
12. *"ALMA Imaging and Gravitational Lens Models of South Pole Telescope-Selected Dusty, Star-Forming Galaxies at High Redshifts"*, Spilker, J. et al. including **Ma, J.** 2016, ApJ, 826, 112
11. *"The Redshift Distribution of Dusty Star Forming Galaxies from the SPT Survey"*, Strandet, M. et al. including **Ma, J.** 2016, ApJ, 822, 80
10. *"A survey of the cold molecular gas in gravitationally lensed star-forming galaxies at $z > 2$"*, Aravena, M. et al. including **Ma, J.** 2016, MNRAS, 457, 4406
9. *"Keck/ESI Long-slit Spectroscopy of SBS 1421+511: A Recoiling Quasar Nucleus in an Active Galaxy Pair?"*, Sun, L. et al. including **Ma, J.** 2016, ApJ, 818, 64
8. *"An ALMA view of the interstellar medium of the z = 4.77 lensed starburst SPT-S J213242-5802.9"*, Bethermin, M. et al. including **Ma, J.** 2016, A&A, 586, L7
7. *"Probing star formation in the dense environments of $z \sim 1$ lensing haloes aligned with dusty star-forming galaxies detected with the South Pole Telescope"*, Welikala, N. et al. including **Ma,**

J. 2016, MNRAS, 455, 1629

6. *"Sub-kiloparsec Imaging of Cool Molecular Gas in Two Strongly Lensed Dusty, Star-forming Galaxies"*, Spilker, J.S. et al. including **Ma, J.** 2015, ApJ, 811, 124

5. *"The nature of the [C II] emission in dusty star-forming galaxies from the SPT survey"*, Gullberg, B. et al. including **Ma, J.** 2015, MNRAS, 449, 2883

4. *"Seven Broad Absorption Line Quasars With Excess Broadband Absorption Near 2250 Å"*, Zhang, S. et al. including **Ma, J.** 2015, ApJ, 802, 92

3. *"The Rest-frame Submillimeter Spectrum of High-redshift, Dusty, Star-forming Galaxies"*, Spilker, J. et al. including **Ma, J.** 2014, ApJ, 785, 149

2. *"SPT 0538-50: Physical Conditions in the Interstellar Medium of a Strongly Lensed Dusty Star-forming Galaxy at z = 2.8"*, Bothwell, M.S. et al. including **Ma, J.** 2013, ApJ, 779, 67

1. *"Interacting model of new agegraphic dark energy: observational constraints and age problem"*, Li, Y., **Ma, J.** et al. 2011, Science China Physics, Mechanics and Astronomy, 54, 1367