

# DR. MUNAZZA K. ALAM

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## RESEARCH INTERESTS

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Observations of exoplanet atmospheres, protoplanetary disk modeling, planet formation and evolution

## EMPLOYMENT

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Space Telescope Science Institute, Assistant Astronomer	2023–
Carnegie Earth & Planets Laboratory, Carnegie EPL Postdoctoral Fellow	2021–2023
Harvard University, Postdoctoral Researcher	2021

## EDUCATION

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Harvard University	2016–2021
Ph.D., Astronomy and Astrophysics	
<i>Thesis</i> : “Characterizing Distant Worlds: Atmospheric Reconnaissance of Giant Planets with <i>Hubble</i> ”	
A.M. (2018), Astronomy and Astrophysics	
Macaulay Honors College at Hunter College, City University of New York (CUNY)	2012–2016
B.A., Physics and Astronomy – <i>Summa Cum Laude (Salutatorian)</i>	

## FELLOWSHIPS & GRANTS

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Kavli Frontiers of Science Fellow, US National Academy of Sciences	2023–
National Geographic Young Explorers Grant	2015–
NSF Graduate Research Fellowship	2017–2020
John P. and Carol J. Merrill Graduate Fellowship, Harvard University	2017
Judith and Stanley Zabar Graduate Scholarship, Hunter College	2016
John P. McNulty Scholarship, Hunter College	2014–2016
CUNY Macaulay Honors College full merit scholarship, Hunter College	2012–2016

## SELECTED HONORS & AWARDS

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Selected for the Explorers Club’s <i>Explorers 50: Fifty People Changing the World that the World Needs Know About</i> , Class of 2024	2024
Keck Principal Investigator Data Award, NExSci for NASA	2020, 2022
Rodger Doxsey Travel Prize, AAS 237th Meeting	2021
Nominated as one of the 40 Women to Watch in 2019, The Tempest	2019
Derek Bok Center Certificate of Distinction in Teaching, Harvard University	2017, 2018
Awarded for teaching SPU 30 (Life as a Planetary Phenomenon), Spring 2017	
Awarded for teaching AY 16 (Stellar & Planetary Astronomy), Spring 2018	
Best Poster Award, IAC Winter School of Radiative Transfer in Stellar & Planetary Atmospheres	2017
Joseph A. Gillet Memorial Prize, Hunter College	2016
Award Citation: “ <i>awarded to a member of the senior class who has, in the opinion of the department, the most thorough knowledge of general physics</i> ”	
Rosalyn S. Yalow Award, Hunter College	2016
Award Citation: “ <i>presented to one of Hunter’s finest science students</i> ”	

## SELECTED OBSERVING PROPOSALS (AS PI)

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*Mining Metals: Constraining the Abundances of Refractory Species in Ultra-hot Jupiters*, Magellan/MIKE  
2023A semester, 2 nights, **PI: Alam**, Co-Is: Teske, Hoeijmakers, Welbanks, Line, Öberg

*Mining Metals: Connecting the Refractory Abundances in Ultra-hot Jupiters to Formation Location*,  
Magellan/MIKE 2022B semester, 3 nights, **PI: Alam**, Co-Is: Teske, Hoeijmakers, Welbanks, Line

*A Helium Search in Planets on the Edges of the Hot Neptune Desert and Warm Neptune Savana*, Keck/NIRSPEC

- 2022B semester, 2 nights, **PI: Alam**, Co-Is: Bourrier, Kirk, dos Santos, Allart, López-Morales, Ehrenreich, Seidel, Attia, Jaziri, Guilluy, Dethier
- A Sharper Look: Observing a Clear Atmosphere Exoplanet Simultaneously at Low & High Spectral Resolution*, Magellan/MIKE + Magellan/IMACS 2021B semester, 1 night, **PI: Alam**, Co-Is: Teske, Gao
- Probing Atmospheric Escape in Young Transiting Exoplanets*, Keck II/NIRSPEC 2020B semester, 1.5 nights, **PI: Alam**, Co-Is: dos Santos, Kirk, López-Morales, Ehrenreich, Bourrier, Allart, Siedel, Lovis, Livingston, King, Oklopčić, Zhou
- Investigating Giant Planet Origins with Elemental Abundances of Stellar Hosts*, Keck I/HIRES 2020A semester, 0.25 nights, **PI: Alam**, Co-I: López-Morales
- Investigating Giant Planet Origins: Stellar Host Elemental Abundances*, Magellan/MIKE 2019A, 2020A, & 2020B semesters, 6.5 nights, **PI: Alam**, Co-Is: López-Morales, Buchhave

## SELECTED INVITED TALKS

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<b>Pennsylvania State University</b> , <i>Characterizing the Atmospheres of Sub-Neptune Exoplanets</i>	Feb 2024
<b>Wesleyan University</b> , <i>Exploring Exoplanet Atmospheres with HST &amp; JWST</i>	Feb 2024
<b>Bard College</b> , <i>Exploring Exoplanet Atmospheres with HST &amp; JWST</i>	Nov 2023
<b>Kavli Frontiers of Science</b> , <i>Astrobiology in the Era of JWST</i>	Mar 2023
<b>University of Maryland</b> , <i>A Simple Static Disk Condensation Model to Connect Refractory Abundances in Ultra-hot Jupiters with Formation Location</i>	Feb 2023
<b>241st AAS Meeting</b> , <i>JWST Transiting Exoplanet Early Release Science: A Transmission Spectrum of WASP-39b with NIRSpec G395H</i>	Jan 2023
<b>Johns Hopkins University</b> , <i>Mining Metals: Connecting Refractory Abundances in Ultra-hot Jupiter to Formation Location</i>	Nov 2022
<b>University of Pennsylvania</b> , <i>Characterizing Exoplanets with HST and JWST</i>	Sept 2022
<b>Geological Society of Washington</b> , <i>Exotic Exoplanets and How to Find Them</i>	May 2022
<b>American University</b> , <i>Exoplanet Exploration with Hubble</i>	Feb 2022
<b>NASA ExoExplorers</b> , <i>The First Near-Infrared Transmission Spectrum of HIP 41378f, a Low-Mass Temperate Jovian World in a Multi-Planet System</i>	Jan 2022
<b>Carnegie EPL</b> , <i>A NIR Transmission Spectrum for HIP 41378f</i>	Dec 2021
<b>University of Windsor</b> , <i>Exotic Exoplanets and How to Find Them</i>	Nov 2021
<b>American University</b> , <i>Exotic Exoplanets and How to Find Them</i>	Oct 2021
<b>Oberlin College</b> , <i>Characterizing Exoplanet Atmospheres with Hubble</i>	Oct 2021
<b>University of Michigan</b> , <i>A Cloud-Free Atmosphere for WASP-62b</i>	Oct 2020
<b>NASA Jet Propulsion Laboratory</b> , <i>A Clear Atmosphere for WASP-62b, the Only Known Gas Giant in the JWST Continuous Viewing Zone</i>	Sept 2020
<b>UC Berkeley &amp; UCLA</b> , <i>Characterizing Giant Planet Atmospheres with Hubble</i>	Sept 2020
<b>University of Chicago</b> , <i>Characterizing Giant Planet Atmospheres with Hubble and Large Ground-based Telescopes</i>	Aug 2020
<b>University of Exeter</b> , <i>Characterizing Giant Planet Atmospheres with HST</i>	Aug 2020
<b>University of Hawaii Institute for Astrophysics</b> , <i>Characterizing Giant Planet Atmospheres</i>	Feb 2020
<b>Seminar Columbia University</b> , <i>The HST PanCET Program: Characterizing the Atmospheres of Inflated Hot Jupiters</i>	Apr 2019
<b>Geneva Observatory</b> , <i>Precise Optical Transmission Spectra for a Hot Jupiter and a Nearby Super-Earth</i>	Sept 2018
<b>Pontificia Universidad Católica</b> , <i>An Optical Transmission Spectrum for WASP-52b</i>	Aug 2018
<b>Smithsonian Board of Regents Meeting</b> , <i>Through the Looking Glass: Next Generation Telescopes and the Future of Astronomy</i>	Apr 2018

## SELECTED CONTRIBUTED TALKS

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<b>Conference Exoplanets V</b> , <i>Early Results from the JWST COMPASS Program</i>	June 2024
<b>Conference From Clouds to Planets II</b> , <i>Mining Metals: Connecting Refractory Abundances in Ultra-hot Jupiters to Formation Location</i>	Oct 2022
<b>Talk Exo-Webb Summer Series</b> , <i>Evidence of a Clear Atmosphere for WASP-62b, the Only Known Transiting Gas Giant in the JWST Continuous Viewing Zone</i>	Jul 2020
<b>Conference Cloud Academy I</b> , <i>An Optical Transmission Spectrum for WASP-52b</i>	Sept 2018
<b>Conference Exoplanets II</b> , <i>An Optical Transmission Spectrum of the Inflated Hot Jupiter WASP-52b</i>	Jul 2018

**Conference** Keele University Transiting Exoplanets, *Characterizing HD 21934b, the Nearest Transiting Rocky Planet*

Jul 2017

## SELECTED PUBLIC TALKS

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<b>Public talk</b> Liberty Science Center, <i>Exploring Exoplanets with JWST</i>	Jul 2023
<b>Public talk</b> Sandy Spring Museum, <i>Finding Other Earths</i>	Dec 2022
<b>Public talk</b> Virginia Living Museum, <i>Weather on Other Worlds</i>	Apr 2021
<b>Assembly speaker</b> Nightingale-Bamford School, <i>My Journey as an Astronomer</i>	Jan 2020
<b>Public talk</b> National Geographic Explorer Nights, <i>Exploring the Universe</i>	Apr 2019
<b>Public talk</b> National Geographic Student Matinee, <i>Keep Looking Up: My Journey in Astronomy</i>	Mar 2019
<b>Public talk</b> CfA Observatory Night, <i>Weather on Other Worlds: Studying Exoplanet Atmospheres</i>	Feb 2019
<b>Keynote speaker</b> Virginia Association of Science Teachers, <i>Building Stronger Classrooms</i>	Nov 2018
<b>Keynote speaker</b> Virginia Science Education Leadership Association, <i>Diversify &amp; Strengthen Science for All</i>	Nov 2018
<b>Public talk</b> Macaulay Honors College Professional Lunch Series, <i>My Path to Astronomy</i>	Oct 2018
<b>Public talk</b> National Geographic Young Explorers Grants Program Workshop at Yale University, <i>Brown Dwarfs: The Cool Neighbors</i>	Apr 2016

## SELECTED MEDIA FEATURES

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<b>Podcast</b> NPR The Takeaway, <a href="#">New Photos from JWST Bring Jupiter Into Focus</a>	Aug 2022
<b>Article</b> Astrobites, <a href="#">Women's History Month: Dr. Munazza Alam</a>	Mar 2022
<b>Book</b> National Geographic Kids, <i>No Boundaries</i>	Feb 2022
<b>Book</b> Millbrook Press, <i>Who is a Scientist?</i>	Oct 2021
<b>Magazine</b> Harvard Gazette, <a href="#">Quick, hand me my worm pick</a>	Sept 2021
<b>Magazine</b> Eos, <a href="#">Munazza Alam: Searching for New Worlds</a>	Sept 2021
<b>Magazine</b> Smithsonian Magazine, <a href="#">The Five Big Ways JWST Will Help Astronomers Understand the Universe</a>	Aug 2021
<b>Podcast</b> HMSC Science Connects!, <a href="#">Pondering Distant Suns</a>	Jun 2020
<b>Book</b> National Geographic Kids, <i>Absolute Expert: Space!</i>	Jun 2020
<b>Magazine</b> National Geographic, "Women: A Century of Change"	Mar 2020
<b>Radio show</b> RMWorldTravel with Robert & Mary Carey and Rudy Maxa	Aug 2019
<b>Podcast</b> KPCC Radio, <i>Tell Them, I Am</i> ( <a href="#">Episode 20</a> )	May 2019
<b>Magazine</b> National Geographic Kids, "Dare to Explore"	Mar 2019
<b>Video</b> Explorer Academy: <a href="#">The Truth Behind</a>	Oct 2018
<b>Television</b> CUNY TV <a href="#">Study with the Best</a> (Culture and Identity)	May 2018
<b>Book</b> National Geographic Kids <a href="#">Solve This!</a> : Wild & Wacky Challenges for the Genius Engineer in You	Mar 2018
<b>Book</b> National Geographic Kids <a href="#">Explorer Almanac 2019</a>	May 2018
<b>Article</b> National Geographic, <a href="#">Woman of Impact in Science</a> , Meet Munazza Alam: the woman searching for planet Earth's twin	Mar 2018
<b>Article</b> National Geographic, <a href="#">Finding Clarity in the Stars</a>	Oct 2016

## SELECTED OUTREACH & SERVICE

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<b>SOC</b> Building Bridges Across Planetary-Related Sciences II	2023
<b>Organizer</b> Carnegie EPL Astronomy Seminar	2022
<b>Referee</b> ApJ, AJ, Nature	2019–
<b>Subject-matter expert reviewer</b> NASA peer review	2022
<b>Postdoc representative</b> Carnegie EPL Library Committee	2021
<b>Graduate student representative</b> CfA Director Search Committee	2021
<b>Student representative</b> Harvard Graduate Admissions Committee	2021
<b>Committee member</b> Center for Astrophysics   Harvard & Smithsonian APS-IDEA	2020–2021
<b>Coordinator</b> Harvard Astronomy Peer Mentoring Program	2019–2021
<b>Reviewer</b> Hubble Space Telescope Proposal Review Committee, Cycles 26, 27, & 31	2019–2024
<b>Co-founder</b> Open Labs at Harvard	2016–2019

## PUBLICATIONS

54 refereed or submitted papers, 9 first and second author (via [NASA ADS](#)).

### FIRST & SECOND AUTHOR PUBLICATIONS

9. **Alam, M.K.**, Gao, P., Adams Redai, J., Wallack, N., Wogan, N.F., Aguichine, A., Dattilo, A., Alderson, L., Batalha, N.E., Batalha, N.M., Kirk, J., López-Morales, M., Meech, A., Moran, S.E., Teske, J., Wakeford, H.R., Wolfgang, A. *JWST COMPASS: The first near- to mid-infrared transmission spectrum of the hot super-Earth L 168-9b*, accepted to The Astronomical Journal (2024), arXiv DOI: 2411.03154.
8. **Alam, M.K.**, Kirk, J., Dos Santos, L.A., McCreery, P., Allan, A.P., Owen, J.E., Vidotto, A.A., Allart, R., Bourrier, V., King, G.W., López-Morales, M., Seidel, J.V. *Non-Detections of Helium in the Young Sub-Jovian Planets K2-100b, HD 63433b, & V1298 Tau c*, The Astronomical Journal, 168, 102, pp.1-18 (2024).
7. Dos Santos, L.A., **Alam, M.K.**, Espinoza, N., Visaapragada, S., *Observing atmospheric escape in sub-Jovian worlds with JWST*, The Astronomical Journal, 165, 6, pp.244-252 (2023).
6. **Alam, M.K.**, Kirk, J., Dressing, C.D., López-Morales, M., Ohno, K., Gao, P., Akimsanmi, B., Santerne, A., Grouffal, S., Adibekyan, V., Barros, S.C.C., Buchhave, L., Crossfield, I.J.M., Dai, F., Deleuil, M., Giacalone, S., Lillo-Box, J., Marley, M., Mayo, A.W., Mortier, A., Santos, N.C., Sousa, S.G., Turtelboom, E.V., Wheatley, P.J., Vanderburg, A.M. *The First Near-Infrared Transmission Spectrum of HIP 41378f, a Low-Mass Temperate Jovian World in a Multi-Planet System*, The Astrophysical Journal Letters, 927, 1, pp.L5-L14 (2022).
5. **Alam, M.K.**, López-Morales, M., MacDonald, R., Nikolov, N., Kirk, J., Goyal, J., Sing, D.K., Wakeford, H.R., Rathcke, A.D., Deming, D.L., Sanz-Forcada, J., Lewis, N.K., Barstow, J.K., Mikal-Evans, T., Buchhave, L.A. *Evidence of a Clear atmosphere for WASP-62b, the Only Transiting Giant Planet in the JWST Continuous Viewing Zone*, The Astrophysical Journal Letters, 906, 2, pp.L10-L20 (2021).
4. **Alam, M.K.**, López-Morales, M., Nikolov, N., Sing, D.K., Henry, G.W., Baxter, C., Désert, J.M., Barstow, J.K., Mikal-Evans, T., Bourrier, V., Lavvas, P., Wakeford, H.R., Williamson, M.H., Sanz-Forcada, J., Buchhave, L., Cohen, O., García Muñoz, A. *The HST PanCET Program: An Optical to Infrared Transmission Spectrum of HAT-P-32Ab*, The Astronomical Journal, 160, 1, pp.51-70 (2020).
3. Kirk, J., **Alam, M.K.**, López-Morales, M., Zeng, Li. *Confirmation of WASP-107b's extended Helium atmosphere with Keck II/NIRSPEC*, The Astronomical Journal, 159, 3, pp.115-124 (2020).
2. **Alam, M.K.**, Nikolov, N., López-Morales, M., Sing, D.K., Goyal, J., Henry, G.W., Sanz-Forcada, J., Williamson, M.H., Evans, T.M., Wakeford, H.R., Bruno, G., Ballester, G.E., Stevenson, K.B., Lewis, N.K., Barstow, J.K., Bourrier, V., Buchhave, L.A., Ehrenreich, D., García Muñoz, A. *The HST PanCET Program: Detection of Na I & A Cloudy Atmosphere for the Inflated Hot Jupiter WASP-52b*, The Astronomical Journal, 156, 6, pp. 298-323 (2018).
1. Riedel, A.R., **Alam, M.K.**, Rice, E.L., Cruz, K.L., & Henry, T.J. *Young Stars with SALT*, The Astrophysical Journal, 840, 2, pp.87-106 (2017).

### THIRD+ AUTHOR PUBLICATIONS

46. Ashtari, R., et al. (**Alam, M.K.**). *Sculpting Hubble's Exoplanet Legacy: Insights Towards Aerosol Formation in Exoplanets Using An AI-based Survey of Exoplanet Atmospheres*, accepted to The Astronomical Journal (2024).
45. Scarsdale, N., et al. (**Alam, M.K.**). *JWST COMPASS: The 3-5 Micron Transmission Spectrum of the Super-Earth L 98-59 c*, accepted to The Astronomical Journal (2024).
44. Boehm, V.A., Lewis, N.K., Fairman, C.E., Moran, S.E., Gascón, C., Wakeford, H.R., **Alam, M.K.**, Alderson, L., Barstow, J., Batalha, N.E., Grant, G., López-Morales, M., MacDonald, R.J., Ohno, K. *The HUSTLE Program: The UV to Near-Infrared HST WFC3/UVIS G280 Transmission Spectrum of WASP-127b*, accepted to The Astronomical Journal (2024), arXiv DOI: 2410.17368.
43. Bell, T.J., et al. (including **Alam, M.K.**) *Nightside clouds and disequilibrium chemistry on the hot Jupiter WASP-43b*, Nature Astronomy, 8, pp.879-898 (2024).
42. Allen, N., et al. (including **Alam, M.K.**) *HST SHEL: Enabling Comparative Exoplanetology with HST/STIS*, submitted to AJ (2023).

41. Wallack, N., Batalha, N.E., Alderson, L., Scarsdale, N., Adams Redai, J.I., Aguichine, A., **Alam, M.K.**, Gao, P., Wolfgang, A., Batalha, N.M., Kirk, J., López-Morales, M., Moran, S.E., Teske, J., Wakeford, H.R., Wogan, N.F. *JWST COMPASS: Investigating the Atmosphere of the Sub-Neptune TOI-836c*, The Astronomical Journal, arXiv DOI: 2404.01264 (2024).
40. Alderson, L., Batalha, N.E., Wakeford, H.R., Wallack, N., Aguichine, A., Teske, J., Adams Redai, J., **Alam, M.K.**, Batalha, N.M., Gao, P., Kirk, J., López-Morales, M., Moran, S.E., Scarsdale, N., Wogan, N.F., Wolfgang, A. *JWST COMPASS: NIRSpec/G395H Transmission Observations of the Super-Earth TOI-836b*, The Astrophysical Journal, 167, 5, 215. pp.1-14 (2024).
39. May, E.M., MacDonald, R., Bennett, K.A., Moran, S.E., Wakeford, H.R., Peacock, S., Lustig-Yaeger, J., Highland, A.N., Stevenson, K.B., Sing, D.K., Mayorga, L.C., Batalha, N.E., Kirk, J., López-Morales, M., Valenti, J.A., **Alam, M.K.**, Alderson, L., Fu, G., Gonzalez-Quiles, J., Lothringer, J.D., Rustamkulov, Z., Sotzen, K. *Double Trouble: Two Transits of Super-Earth GJ 1132 b Observed with JWST NIRSpec G395H*, The Astrophysical Journal Letters, 959, 1, L19, pp.1-17 (2023).
38. Powell, D., Feinstein, A.D., Lee, E.K.H., et al. (including **Alam, M.K.**) *Detection of SO<sub>2</sub> in the Mid-Infrared Transmission Spectrum of WASP-39b*, Nature, 626, 8001, pp.979-983 (2024).
37. Esparza-Borges, E., López-Morales, M., Adams Redai, J.I., et al. (including **Alam, M.K.**), *Detection of Carbon Monoxide in the Atmosphere of WASP-39b Applying Standard Cross-Correlation Techniques to JWST NIRSpec G395H Data*, accepted to The Astronomical Journal (2023), arXiv DOI: 2309.00036.
36. McGruder, C.D., López-Morales, M., Kirk, J., Rackham, B.V., May, E., Ahrer, E.-M., King, G.W., **Alam, M.K.**, Allen, N.H., Ortiz-Ceballos, K., Espinoza, N., Gardner, T., Jordán, A., Meyer, K., Monnier, J.D., Osip, D.J., Wheatley, P.J. *ACCESS, LRG-BEASTS, & MOPSS: Featureless Optical Transmission Spectra of WASP-25b and WASP-124b*, The Astronomical Journal, 166, 3, pp.120-141 (2023).
35. Dos Santos, L.A., García Muñoz, A., Sing, D.K., López-Morales, M., **Alam, M.K.**, Bourrier, V., Ehrenreich, D., Henry, G.W., Lecavelier des Etangs, A., Nikolov, N.K., Sanz-Forcada, J., Wakeford, H.W. *Hydrodynamic atmospheric escape in HD 189733 b: Signatures of carbon and variable hydrogen measured with the Hubble Space Telescope*, The Astronomical Journal, 166, 3, pp.89-107 (2023).
34. Harada, C., Dressing, C.D., **Alam, M.K.**, Kirk, J., López-Morales, M., Ohno, K., Akisanme, B., Barros, S., Buchhave, L., Collier Cameron, A., Crossfield, I., Dai, F., Gao, P., Giacalone, S., Grouffal, S., Lillo-Box, J., Mayo, A., Mortier, A., Santerne, A., Santos, N., Santos, S., Turtelboom, E., Vanderburg, A., Wheatley, P. *Stability and detectability of exomoons orbiting HIP 41378 f, a temperate Jovian planet with an anomalously low apparent density*, The Astronomical Journal, 166, 5, pp.208-230 (2023).
33. Moran, S.E., Stevenson, K.B., Sing, D.K., MacDonald, R.J., Kirk, J., Lustig-Yaeger, J., Peacock, S., Mayorga, L.C., Bennett, K.A., López-Morales, M., May, E.M., Rustamkulov, Z., Valenti, J.A., Adams Redai, J.I., **Alam, M.K.**, Batalha, N.E., Fu, G., Gonzalez-Quiles, J., Highland, A.N., Kruse, E., Lothringer, J.D., Ortiz Ceballos, K.N., Sotzen, K.S., Wakeford, H.R. *High Tide or Rip-Tide on the Cosmic Shoreline? A Water-Rich Atmosphere or Stellar Contamination for the Warm Super-Earth GJ 486b from JWST Observations*, The Astrophysical Journal Letters, 948, L11, pp.1-14 (2023).
32. Coulomb, L.-P., Benneke, B., et al. (including **Alam, M.K.**), *A broadband thermal emission spectrum of the ultra-hot Jupiter WASP-18b*, Nature, 620, 7973, p.292-298 (2023).
31. Lustig-Yaeger, J., Fu, G., May, E.M., Ortiz Ceballos, K. N., Moran, S.E., Peacock, S., Stevenson, K.B., López-Morales, M., MacDonald, R.J., Mayorga, L.C., Sing, D.K., Sotzen, K.S., Valenti, J.A., Adams, J., **Alam, M.K.**, Batalha, N.E., Bennett, K.A., Gonzalez-Quiles, J., Kirk, J., Kruse, E. , Lothringer, J.D. ; Rustamkulov, Z., Wakeford, H.R. *A JWST transmission spectrum of a nearby Earth-sized exoplanet*, Nature Astronomy, 7, pp.1317-1328 (2023).
30. Grant, D.G., Wakeford, H.W., Lothringer, J.D., **Alam, M.K.**, et al. *Detection of carbon monoxide's fundamental band structure in WASP-39b's atmosphere with JWST*, The Astrophysical Journal Letters, 949, 1, L15, pp.1-8 (2023).
29. Tsai, S., Lee, E.K.H., et al. (including **Alam, M.K.**), *Direct Evidence of Photochemistry in an Exoplanet Atmosphere*, Nature, 617, 7961, pp.483-487 (2023).
28. Ahrer, E.-M., Stevenson, K.B., et al., (including **Alam, M.K.**), *Early Release Science of the exoplanet WASP-39b with JWST NIRCам*, Nature, 614, 7949, pp.653-658 (2023).



27. Feinstein, A., Radica, M., et al., (including **Alam, M.K.**), *JWST Early Release Science: Exoplanet transit spectroscopy with NIRISS-SOSS*, Nature, 614, 7949, pp.670-675 (2023).
26. Alderson, L., Wakeford, H.W., **Alam, M.K.**, et al. *JWST Early Release Science: Exoplanet Transit Spectroscopy with NIRSpec G395H*, Nature, 614, 7949, pp.664-669 (2023).
25. Rustamkulov, Z., Sing, D.K. et al., (including **Alam, M.K.**), *The Broadband Transmission Spectrum of WASP-39b from JWST NIRSpec PRISM Observations*, Nature, 614, 7949, pp.659-663 (2023).
24. JWST Transiting Exoplanet Community Early Release Science Team (**including Alam, M.K.**), *Identification of carbon dioxide in an exoplanet atmosphere*, Nature, 614, 7949, pp.649-652 (2023).
23. Ratchke, A.D., Buchhave, L.A., Mendonça, J.M., Sing, D.K., López-Morales, M., **Alam, M.K.**, Henry, G.W., Nikolov, N.K., García Muñoz, A., Mikal-Evans, T., Wakeford, H.R., Dos Santos, L.A. *HST PanCET Program: A Flat Optical Transmission Spectrum for the Hot Jupiter WASP-101b*, MNRAS, 522, 1, pp.582–594 (2023).
22. Gressier, A., Lecavelier des Etangs, A., Sing, D.K., López-Morales, M., **Alam, M.K.**, Barstow, J.K., Bourrier, V., Dos Santos, L.A., García Muñoz, A., Lothringer, J.D., Nikolov, N.K., Sotzen, K., Henry, G.W., Mikal-Evans, T. *The Hubble PanCET Program: The near-UV transmission spectrum of WASP-79b*, Astronomy & Astrophysics, 672, A34, pp.1-14 (2023).
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