Michael G. Jones

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Employment

Caltech/IPAC *Pasadena, CA, USA*

2025 – present

- Staff scientist in the NASA/IPAC Infrared Science Archive (Sep. 2025 – present)

University of Arizona *Tucson, AZ, USA*

2020 – 2025

- Post-doctoral research associate with David Sand (Nov. 2020 – Aug. 2025)

Instituto de Astrofísica de Andalucía *Granada, Spain*

2016 – 2020

- Juan de la Cierva formación post-doctoral fellow (May 2018 – Sep. 2020)
- Post-doctoral researcher with Lourdes Verdes-Montenegro (July 2016 – Apr. 2018)

Education

Cornell University *Ithaca, NY, USA*

PhD – Astronomy *2011-2016*

Supervisors: Martha P. Haynes & Riccardo Giovanelli

University of Cambridge – Fitzwilliam College *Cambridge, United Kingdom*

MSci & BA – Natural Sciences (Astrophysics) *2007-2011*

Observing Time & Experience

2025	**HST**, PI of large (149 orbits + archival) treasury program targeting Local Volume dwarf satellites.
2025	**HST**, PI of 24-orbit program for deep imaging of nearby dwarf galaxy Pavo.
2024	**Gemini**, PI of 9.6 h Gemini imaging proposal for SEAMLESS extremely low mass dwarfs.
2024	**MeerKAT**, PI of 5 h proposal to perform kinematic modeling of HI gas in the dwarf galaxy Corvus A.
2024	**Gemini**, PI of 3.5 h Gemini Fast Turnaround proposal following up two extremely low mass dwarfs.
2024	**GBT**, PI of 42 h GBT proposal targeting newly discovered "blue blobs."
2023	**VLA+HST**, PI of 3.5 h VLA and 1 HST orbit program targeting newly discovered very low mass galaxy.
2023	**MeerKAT**, PI of DDT project to image the neutral gas in the dwarf galaxy Pavo.
2023	**VLA**, PI of VLA C-config project following up satellites with ongoing ram pressure stripping.
2023	**ALMA**, PI of an A-rated 70 h ALMA Cycle 10 project to map the molecular gas in known "blue blobs."
2023	**VLA+HST**, PI of 10 h VLA & 2 orbit HST program targeting ultra-faint dwarfs near the Local Group.
2022-23	**GBT+HST**, PI of joint 25 h GBT and 6 orbit HST follow-up program for "blue blob" candidates.
2021-24	**VLA**, PI of 42, 46, & 41 h projects to map HI gas in satellite systems and measure kinematics of UDGs.
2021-23	**HST**, PI of SNAP project to detect globular clusters in field ultra-diffuse galaxies.
2021-23	**GBT**, PI of 4 GBT projects (200 h) to search for HI in low-mass systems.
2021-23	**Kuiper 61"**, Over 10 nights of solo observing with the Mont4K imager.
2020-23	**CFHT**, Co-I of MegaCam projects to observe satellites in MW-like systems in Hα.

2020	**GMRT**, PI of a pilot project to observe HI kinematics in two ultra-diffuse galaxies.
2018	**GTC**, PI of 25 h of MEGARA IFU project to observe blue, field ultra-diffuse galaxies.
2018	**NOT**, 3 nights of observing with the ALFOSC instrument on the NOT in La Palma.
2014	**WIYN**, 2 nights of observing with the pODI instrument on the 3.5m WIYN telescope at Kitt Peak.
	Arecibo, Over 300 h of time awarded as co-PI of the Arecibo Pisces–Perseus Supercluster Survey.
2012-19	Over 100 h observing experience with the ALFA and LBW instruments as part of the ALFALFA team for the main survey and associated projects.

Funding & Awards

2024	**HST GO program**, HST-GO-17607 grant of $40k.	*STScI*
2023	**HST GO program**, HST-GO-17316 grant of $39k.	*STScI*
2023	**HST GO program**, HST-GO-17267 grant of $56k.	*STScI*
2021	**HST SNAP program**, HST-SNAP-16758 grant of $55k.	*STScI*
2017	**Juan de la Cierva fellowship**, a competitive, national-level post-doctoral fellowship (€50k).	*MCIU (Spain)*
2015	**Eleanor York Prize**, for service to the community and academic achievement.	*Cornell*

Service & Leadership

Univeristy of Arizona

HST external panelist, HST external expert reviewer, ALMA distributed reviewer (2 cycles), UKRI Expert Reviewer, session chair at Rare Gems in Big Data conference, AAS CSMA Micro-grant reviewer (3 years), refereeing for AAS journals, refereeing for MNRAS, CFHT external expert reviewer, Gemini FT reviewer

Instituto de Astrofísica de Andalucía

Led IAA journal club, refereeing for MNRAS

Technical Skills

Languages

Python, IDL, C

Astronomy Tools

astropy, photutils, astroquery, CASA, GBTIDL, SoFiA, Zooniverse, TOPCAT, Aladin, DS9, APT, ACS+WFC3 ETC, JWST ETC, DOLPHOT, Stan

Version Control & Reproducibility

git, GitHub, Conda, Zenodo, Bitbucket, mybinder

Teaching & Outreach

Research Mentoring

Currently advising UA undergraduates Swapnaneel Dey, Nicolas Mazziotti, and Josué Barceló, who are preparing their first astronomy research papers. In addition, I have mentored Cornell students Jeremy Borden, Johnathan Gomez Barrientos, Johnathan Letai during undergraduate research projects and AP Research high school student Isabel Doty.

Community College Python Course

Prepared lectures and taught part of an astronomy-themed introductory Python course for Pima Community College students.

Teaching Experience

Two years as a teaching assistant for a large introductory astronomy classes at Cornell. Several guest lectures for 100 and 200-level classes at Cornell and University of Arizona.

Local TV News

Appeared in a KOLD local news interview discussing the discovery of “blue blobs.”

Astronomy on Tap

Public talk at Tucson’s Astronomy on Tap, “Space Drafts.”

Workshop Seminars

Demonstrated observing, lectured and tutored students as part of the Undergratduate ALFALFA Team workshop at Arecibo observatory. Co-wrote and led workshop seminars on Python and TOPCAT for undergraduates working on summer research projects at Cornell.

Journal Club

Created a journal club at the IAA for students and post-docs to discuss recent papers and background for upcoming seminars.

Talks & Seminars

Conferences

2025	**Galactic Frontiers II**, Searching for semi-resolved galaxies	*Invited*
2024	**Small Galaxies Cosmic Questions II**, Pushing into the semi-resolved regime	*Contributed*
2024	**KICP DGSCS**, Building a statistical sample of extremely low mass galaxies	*Contributed*
2024	**Rare Gems in Big Data**, Galaxies & cosmology discussions summary	*Contributed*
2024	**AAS243**, Gas and star formation in satellites of Milky Way analogs	*Contributed*
2023	**LSST PCW**, Pushing the boundaries of faint galaxies science	*Contributed*
2023	**Sextens**, Ultra-diffuse galaxies in low density environments	*Invited*
2023	**AAS241**, Gas-rich, field ultra-diffuse galaxies host few globular clusters	*Contributed*
2022	**DECam at 10 years**, Gas-rich ultra-diffuse galaxies in the field	*Contributed*
2022	**AAS240**, Young, blue, and isolated stellar systems in the Virgo cluster	*Press Briefing*
2019	**MIAPP**, $\Omega_{\rm HI}$ at $z \approx 0$ from ALFALFA	*Contributed*
2019	**SKA Science Meeting**, Towards a FAIR understanding of compact group evolution	*Contributed*
2018	**Lorentz Center**, Estimating the abundance of gas-bearing UDGs	*Contributed*
2018	**PHISCC**, What drives evolution in compact groups?	*Contributed*
2017	**PHISCC**, HI scaling relations of the most isolated galaxies	*Contributed*
2016	**3GC4**, ALFALFA HIMF: Accounting for uncertainty and bias	*Contributed*
2016	**AAS227**, The effects of environment in ALFALFA & limitations of HI surveys	*Dissertation*
2015	**PHISCC**, Spectroscopic confusion: Its impact on HI surveys and stacking	*Contributed*

Colloquia and Seminars

2024	**ASU**, Low-mass galaxy quenching as a test of cosmological models	*Seminar*
2023	**NOIRLab**, Pavo: Discover of a star-forming galaxy just beyond the Local Group	*Seminar*
2022	**NOIRLab**, Young, blue, and isolated stellar systems in the Virgo cluster	*Seminar*
2022	**STScI**, Young, blue, and isolated stellar systems in the Virgo cluster	*Seminar*
2021	**RIT**, Are they even galaxies? Extreme mass-to-light ratio, gas-rich systems	*Colloquium*
2021	**ASU**, Ultra-diffuse galaxy formation through tidal interaction	*Seminar*
2021	**Steward Observatory**, The cool gas content of galaxies from isolation to dense groups	*Seminar*
2018	**Kapteyn Institute**, HI-bearing ultra-diffuse galaxies and the HI mass function	*Colloquium*
2017	**University of Exeter**, HI galaxy surveys	*Seminar*
2017	**ICRAR**, HI scaling relations of isolated galaxies	*Seminar*
2017	**ICRAR**, ALFALFA 100% HI mass function	*Seminar*
2015	**ASTRON**, The environmental dependence of the HI mass function in α.70	*Seminar*

First Author Papers

Star formation histories and gas content limits of three ultra-faint dwarfs on the periphery of M31 — *Submitted to ApJ*
Jones et al. 2025b

Pavo: Stellar feedback in action in a low-mass dwarf galaxy — *ApJ 990, 164*
Jones et al. 2025a

Corvus A: A low-mass, isolated galaxy at 3.5 Mpc — *ApJL 971, 37*
Jones et al. 2024c

Dark no more: The low luminosity stellar counterpart of a dark cloud in the Virgo cluster — *ApJL 966, 15*
Jones et al. 2024b

Gas and star formation in satellites of Milky Way analogs — *ApJ 966, 93*
Jones et al. 2024a

Pavo: Discovery of a star-forming dwarf galaxy just outside the Local Group — *ApJL 957, 5*
Jones et al. 2023c

Disturbed, diffuse, or just missing? A global study of the HI content of Hickson Compact Groups — *A&A 670, 21*
Jones et al. 2023b

Gas-rich, field ultra-diffuse galaxies host few globular clusters — *ApJL 942, L5*
Jones et al. 2023a

Young, blue, and isolated stellar systems in the Virgo Cluster. II. A new class of stellar system — *ApJ 935, 51*
Jones et al. 2022b

AGC 226178 and NGVS 3543: Two deceptive dwarfs towards Virgo — *ApJL 926, 15*
Jones et al. 2022a

Evidence for ultra-diffuse galaxy formation through tidal heating of normal dwarfs — *ApJ 919, 72*
Jones et al. 2021

The HI mass function of group galaxies in the ALFALFA survey — *MNRAS 494, 2090-2108*
Jones et al. 2020

Evolution of compact groups from intermediate to final stages: A case study of the HI content of HCG 16 — *A&A 632, A78*
Jones et al. 2019

The ALFALFA HI mass function: A dichotomy in the low-mass slope and a locally suppressed knee mass — *MNRAS 477, 2-17*
Jones et al. 2018c

The contribution of HI-bearing ultra-diffuse galaxies to the cosmic number density of galaxies — *A&A 614, A21*
Jones et al. 2018b

The AMIGA sample of isolated galaxies XIII. The HI content of an almost "nurture free" sample — *A&A 609, A17*
Jones et al. 2018a

The environmental dependence of the HI mass function in ALFALFA 70% — *MNRAS 457, 4393-4405*
Jones et al. 2016b

When is stacking confusing?: The impact of confusion in deep HI galaxy surveys — *MNRAS 455, 1574-1583*
Jones et al. 2016a

Spectroscopic confusion: Its impact on current and future extragalactic HI surveys — *MNRAS 449, 1856-1868*
Jones et al. 2015

The relationship between accretion disc age and stellar age and its consequences for protostellar discs — *MNRAS 419, 925-935*
Jones et al. 2012

Co-author Papers

Identifying Dwarfs of MC Analog GalaxiEs (ID-MAGE): The Search for Satellites around Low-mass Hosts — *ApJ 989, 58*
Hunter et al. 2025 (MGJ 11th author)

The NGC 3109 Satellite System: The First Systematic Resolved Search for Dwarf Galaxies Around an SMC-mass Host — *ApJ 989, 21*
Doliva-Dolinsky et al. 2025 (MGJ 16th author)

Citizen Science Identification of Isolated Blue Stellar Systems in the Virgo cluster — *Accepted to ApJ*
Dey et al. 2025 (MGJ 2nd author)

MeerKAT view of Hickson Compact Groups: II. HI deficiency in the core and surrounding regions — *Accepted to A&A*
Sorgho et al. 2025 (MGJ 5th author)

NEUTRALUNIVERSEMACHINE: How filaments and dark-matter haloes influence the galaxy's cold gas content — *A&A 695, A5*
Ma et al. 2025 (MGJ 3rd author)

Three Quenched, Faint Dwarf Galaxies in the Direction of NGC 300: New Probes of Reionization and Internal Feedback *ApJL 977, 5*
Sand et al. 2024 (MGJ 3rd author)

WALLABY Pilot Survey: Gas-rich Galaxy Scaling Relations from Marginally Resolved Kinematic Models *ApJ 976, 159*
Deg et al. 2024 (MGJ 6th author)

All Puffed Up: Tidal Heating as an Ultra Diffuse Galaxy Formation Pathway *AJ 168, 212*
Fielder et al. 2024 (MGJ 2nd author)

The Faint Satellite System of NGC 253: Insights into Low-density Environments and No Satellite Plane *ApJ 966, 188*
Mutlu-Pakdil et al. 2024 (MGJ 5th author)

The AMIGA sample of isolated galaxies - effects of environment on angular momentum *MNRAS 528, 1630*
Sorgho et al. 2024 (MGJ 4th author)

Parameterized Asymmetric Neutral Hydrogen Disk Integrated Spectrum Characterization (PANDISC). I. Introduction to a Physically Motivated H I Model *ApJ 950, 163*
Peng et al. 2023 (MGJ 4th author)

A Generalist, Automated ALFALFA Baryonic Tully-Fisher Relation *ApJ 950, 87*
Ball et al. 2023 (MGJ 3rd author)

The quenched satellite population around Milky Way analogues *MNRAS 524, 5314*
Karunakaran et al. 2023 (MGJ 3rd author)

The Disturbed and Globular-cluster-rich Ultradiffuse Galaxy UGC 9050-Dw1 *ApJL 954, 39*
Fielder et al. 2023 (MGJ 2nd author)

NeutralUniverseMachine: An Empirical Model for the Evolution of HI and H2 Gas in the Universe *ApJ 955, 57*
Guo et al. 2023 (MGJ 3rd author)

MIGHTEE-HI: The first MeerKAT HI mass function from an untargeted interferometric survey *MNRAS 522, 5308*
Ponomareva et al. 2023 (MGJ 5th author)

Effects of Active Galactic Nucleus Feedback on Cold Gas Depletion and Quenching of Central Galaxies *ApJ 941, 205*
Ma et al. 2022 (MGJ 5th author)

HI properties of satellite galaxies around local volume hosts *MNRAS 516, 1741*
Karunakaran et al. 2022 (MGJ 7th author)

Infall Profiles for Supercluster-Scale Filaments *ApJ 935, 130*
Crone Odekon et al. 2022 (MGJ 2nd author)

Young, blue, and isolated stellar systems in the Virgo Cluster. I. 2-D Optical spectroscopy *ApJ 935, 50*
Bellazzini et al. 2022 (MGJ 3rd author)

Tucana B: An Isolated and Quenched Ultra-faint Dwarf Galaxy at D=1.4 Mpc *ApJL 935, 17*
Sand et al. 2022 (MGJ 3rd author)

Cold Gas Reservoirs of Low and High Mass Central Galaxies Differ in Response to AGN Feedback *ApJL 933, 12*
Guo et al. 2022 (MGJ 2nd author)

Decoding the star forming properties of gas-rich galaxy pairs *MNRAS 513, 2581*
Bok et al. 2022 (MGJ 5th author)

Hubble Space Telescope Observations of NGC 253 Dwarf Satellites: Three Ultra-faint Dwarf Galaxies *ApJ 926, 77*
Mutlu-Pakdil et al. 2022 (MGJ 4th author)

Satellites around Milky Way Analogs: Tension in the number and fraction of quiescent satellites seen in observations versus simulations *ApJL 916, 19*
Karunakaran et al. 2021 (MGJ 12th author)

Star formation and quenching of central galaxies from stacked HI measurements *ApJ 918, 53*
Guo et al. 2021 (MGJ 2nd author)

The dependence of subhalo abundance matching on galaxy photometry and selection criteria *MNRAS 506, 3205-3223*
Stiskalek et al. 2021 (MGJ 4th author)

MeerKAT-64 discovers wide-spread tidal debris in the nearby NGC 7232 galaxy group *MNRAS 505, 3795-3809*
Namumba et al. 2021 (MGJ 5th author)

A diffuse tidal dwarf galaxy destined to fade out as a "dark galaxy" *A&A 649, L14*
Román et al. 2021 (MGJ 2nd author)

HI study of isolated and paired galaxies: the MIR SFR-M* sequence *MNRAS 499, 3193-3213*
Bok et al. 2020 (MGJ 5th author)

WALLABY – An SKA Pathfinder HI Survey *ApSS 365, 118*
Koribalski et al. 2020 (MGJ one of many co-authors listed alphabetically)

Morphology and surface photometry of a sample of isolated early-type galaxies from deep imaging *A&A 640, A38*
Rampazzo et al. 2020 (MGJ 8th author)

Direct Measurement of the HI-halo Mass Relation through Stacking *ApJ 894, 92*
Guo et al. 2020 (MGJ 2nd author)

A Comprehensive Examination of the Optical Morphologies of 719 Isolated Galaxies in the AMIGA Sample *MNRAS 488, 2175-2189*
Buta et al. 2019 (MGJ 4th author)

The environment of HI-bearing ultra diffuse galaxies in the ALFALFA survey *MNRAS 490, 566-577*
Janowiecki et al. 2019 (MGJ 2nd author)

The HI content of dark matter haloes at z≈0 from ALFALFA *MNRAS 486, 5124-5138*
Obuljen et al. 2019 (MGJ 5th author)

The Arecibo Pisces-Perseus Supercluster Survey. I. Harvesting ALFALFA *ApJ 157, 81*
O'Donoghue et al. 2019 (MGJ 4th author)

Unveiling the environment and faint features of the isolated galaxy CIG 96 with deep optical and HI observations *A&A 619, A163*
Ramírez-Moreta et al. 2018 (MGJ 17th author)

The Arecibo Legacy Fast ALFA Survey: The ALFALFA Extragalactic HI Source Catalog *ApJ 861, 49*
Haynes et al. 2018 (MGJ one of many co-authors listed alphabetically)

The Enigmatic (Almost) Dark Galaxy Coma P: The Atomic Interstellar Medium *AJ 155, 65*
Ball et al. 2018 (MGJ 14th author)

The ALFALFA "Almost Darks" Campaign: Pilot VLA HI Observations of Five High Mass-To-Light Ratio Systems *ApJ 149, 72*
Cannon et al. 2015 (MGJ 9th author)

HIghMass-High HI Mass, HI-rich Galaxies at z~0 Sample Definition, Optical and Hα Imaging, and Star Formation Properties *ApJ 793, 40*
Huang et al. 2015 (MGJ 5th author)

The Clustering of ALFALFA Galaxies: Dependence on H I Mass, Relationship with Optical Samples, and Clues of Host Halo Properties *ApJ 776, 43*
Papastergis et al. 2013 (MGJ 5th author)