

Michael G. Jones

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Education

Cornell University

Ithaca, NY, USA

PHD & MS – ASTRONOMY

2011–2016

Supervisors: Martha P. Haynes & Riccardo Giovanelli

University of Cambridge – Fitzwilliam College

Cambridge, UK

MSCI & BA – NATURAL SCIENCES (ASTROPHYSICS)

2007–2011

Employment

University of Arizona

Tucson, AZ, USA

2020 – present

- Post-doctoral researcher with David Sand (Nov. 2020 – present)

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)

Cornell University

Ithaca, NY, USA

2011 – 2016

- Research assistant (2013 – 2016)
- Teaching assistant (2011 – 2013)

Observing Time & Experience

- 2021–22 **VLA**, PI of 42 & 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 UDGs.
- 2022–23 **HST+GBT**, PI of joint 25 h GBT and 6 orbit HST follow-up program for “blue blob” candidates.
- 2023 **HST+VLA**, PI of joint 10 h VLA and 2 orbit HST program targeting ultra-faint galaxies at the edge of the Local Group.
- 2023 **ALMA**, PI of an A-rated 70 h ALMA Cycle 10 project to map the molecular gas in known “blue blobs.”
- 2020–23 **CFHT**, Co-I of MEGACAM project to observe satellites in MW-like systems in H α .
- 2021–23 **GBT**, PI of 4 GBT projects (200 h) to search for HI in low-mass systems.
- 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.
- 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.
- 2021–23 **Kuiper 61”**, 10 nights of observing with the Mont4K imager.

Funding & Awards

2023	HST GO program , HST-GO-17267 grant of \$60k.	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).	IAA
2015	Eleanor York Prize , for service to the community and academic achievement.	Cornell
2015	Travel Grant , for conference travel from Cornell's graduate school.	Cornell
2011	Newton Prize , for excellence in sciences while contributing to college life.	Cambridge
2011	1912 Senior Scholarship , for achieving a Class I degree in 4th year.	Cambridge

Talks & Seminars

CONFERENCES

Aug. 2023	LSST PCW , Pushing the boundaries of faint galaxies science	Contributed
June 2023	Sextens , Ultra-diffuse galaxies in low density environments	Invited
Jan. 2023	AAS241 , Gas-rich, field ultra-diffuse galaxies host few globular clusters	Contributed
Sept. 2022	DECam at 10 years , Gas-rich ultra-diffuse galaxies in the field	Contributed
June 2022	AAS240 , Young, blue, and isolated stellar systems in the Virgo cluster	Press Briefing
Aug. 2019	MIAPP , Ω_{HI} at $z \approx 0$ from ALFALFA	Contributed
Apr. 2019	SKA Science Meeting , Towards a FAIR understanding of compact group evolution	Contributed
Aug. 2018	Lorentz Center , Estimating the abundance of gas-bearing UDGs	Contributed
June 2018	PHISCC , What drives evolution in compact groups?	Contributed
Feb. 2017	PHISCC , HI scaling relations of the most isolated galaxies	Contributed
Nov. 2016	3GC4 , ALFALFA HIMF: Accounting for uncertainty and bias	Contributed
Jan. 2016	AAS227 , The effects of environment in ALFALFA & limitations of HI surveys	Contributed
Mar. 2015	PHISCC , Spectroscopic confusion: Its impact on HI surveys and stacking	Contributed

COLLOQUIA AND SEMINARS

Sept. 2023	NOIRLab , Pavo: Discover of a star-forming galaxy just beyond the Local Group	Seminar
Sept. 2022	NOIRLab , Young, blue, and isolated stellar systems in the Virgo cluster	Seminar
Feb. 2022	STScI , Young, blue, and isolated stellar systems in the Virgo cluster	Seminar
Nov. 2021	RIT , Are they even galaxies? Extreme mass-to-light ratio, gas-rich systems	Colloquium
Sept. 2021	Arizona State University , Ultra-diffuse galaxy formation through tidal interaction	Seminar
Jan. 2021	Steward Observatory , The cool gas content of galaxies from isolation to dense groups	Seminar
Feb. 2018	Kapteyn Institute , HI-bearing ultra-diffuse galaxies and the HI mass function	Colloquium
Oct. 2017	University of Exeter , HI galaxy surveys	Seminar
Aug. 2017	ICRAR , HI scaling relations of isolated galaxies	Seminar
Aug. 2017	ICRAR , ALFALFA 100% HI mass function	Seminar

Teaching & Outreach

Research Mentoring

Mentoring of UA undergraduates Swapnaneel Dey and Nicolas Mazziotti (NASA Space Grant student), who were both accepted to summer REU programs. In addition, I have mentored Cornell students Jeremy Borden, Johnathan Gomez Barrientos, Johnathan Letai while they were working on astronomy undergraduate research projects. Mentored AP Research high school student Isabel Doty.

Community College Python Course

Lectured/demonstrated as part of an astronomy-themed introductory Python course for Pima Community College students.

Teaching

Two years as a teaching assistant for a large introductory astronomy classes at Cornell, including some guest lectures.

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 Undergraduate 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.

First Author Papers

Pavo: Discovery of a star-forming dwarf galaxy just outside the Local Group

arXiv:2310.01478

Jones et al. 2023c (Accepted to ApJL)

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	<i>A&A</i> 614, A21
Jones et al. 2018b	
The AMIGA sample of isolated galaxies XIII. The HI content of an almost “nurture free” sample	<i>A&A</i> 609, A17
Jones et al. 2018a	
The environmental dependence of the HI mass function in ALFALFA 70%	<i>MNRAS</i> 457, 4393-4405
Jones et al. 2016b	
When is stacking confusing?: The impact of confusion in deep HI galaxy surveys	<i>MNRAS</i> 455, 1574-1583
Jones et al. 2016a	
Spectroscopic confusion: Its impact on current and future extragalactic HI surveys	<i>MNRAS</i> 449, 1856-1868
Jones et al. 2015	
The relationship between accretion disc age and stellar age and its consequences for protostellar discs	<i>MNRAS</i> 419, 925-935
Jones et al. 2012	

Co-author Papers

Parameterized Asymmetric Neutral Hydrogen Disk Integrated Spectrum Characterization (PANDISC). I. Introduction to a Physically Motivated H I Model	<i>ApJ</i> 950, 163
Peng et al. 2023	
A Generalist, Automated ALFALFA Baryonic Tully-Fisher Relation	<i>ApJ</i> 950, 87
Ball et al. 2023	
The quenched satellite population around Milky Way analogues	<i>MNRAS</i> 524, 5314
Karunakaran et al. 2023	
The Disturbed and Globular-cluster-rich Ultradiffuse Galaxy UGC 9050-Dw1	<i>ApJL</i> 954, 39
Fielder et al. 2023	
NeutralUniverseMachine: An Empirical Model for the Evolution of HI and H2 Gas in the Universe	<i>ApJ</i> 955, 57
Guo et al. 2023	
MIGHTEE-HI: The first MeerKAT HI mass function from an untargeted interferometric survey	<i>MNRAS</i> 522, 5308
Ponomareva et al. 2023	
Effects of Active Galactic Nucleus Feedback on Cold Gas Depletion and Quenching of Central Galaxies	<i>ApJ</i> 941, 205
Ma et al. 2022	

HI properties of satellite galaxies around local volume hosts	<i>MNRAS</i> 516, 1741
Karunakaran et al. 2022	
Infall Profiles for Supercluster-Scale Filaments	<i>ApJ</i> 935, 130
Crone Odekon et al. 2022	
Young, blue, and isolated stellar systems in the Virgo Cluster. I. 2-D Optical spectroscopy	<i>ApJ</i> 935, 50
Bellazzini et al. 2022	
Tucana B: An Isolated and Quenched Ultra-faint Dwarf Galaxy at D=1.4 Mpc	<i>ApJL</i> 935, 17
Sand et al. 2022	
Cold Gas Reservoirs of Low and High Mass Central Galaxies Differ in Response to AGN Feedback	<i>ApJL</i> 933, 12
Guo et al. 2022	
Decoding the star forming properties of gas-rich galaxy pairs	<i>MNRAS</i> 513, 2581
Bok et al. 2022	
Hubble Space Telescope Observations of NGC 253 Dwarf Satellites: Three Ultra-faint Dwarf Galaxies	<i>ApJ</i> 926, 77
Mutlu-Pakdil et al. 2022	
Satellites around Milky Way Analogs: Tension in the number and fraction of quiescent satellites seen in observations versus simulations	<i>ApJL</i> 916, 19
Karunakaran et al. 2021	
Star formation and quenching of central galaxies from stacked HI measurements	<i>ApJ</i> 918, 53
Guo et al. 2021	
The dependence of subhalo abundance matching on galaxy photometry and selection criteria	<i>MNRAS</i> 506, 3205-3223
Stiskalek et al. 2021	
MeerKAT-64 discovers wide-spread tidal debris in the nearby NGC 7232 galaxy group	<i>MNRAS</i> 505, 3795-3809
Namumba et al. 2021	
A diffuse tidal dwarf galaxy destined to fade out as a “dark galaxy”	<i>A&A</i> 649, L14
Román et al. 2021	
HI study of isolated and paired galaxies: the MIR SFR-M* sequence	<i>MNRAS</i> 499, 3193-3213
Bok et al. 2020	
WALLABY – An SKA Pathfinder HI Survey	<i>ApSS</i> 365, 118
Koribalski et al. 2020	

Morphology and surface photometry of a sample of isolated early-type galaxies from deep imaging

A&A 640, A38

Rampazzo et al. 2020

Direct Measurement of the HI-halo Mass Relation through Stacking

ApJ 894, 92

Guo et al. 2020

A Comprehensive Examination of the Optical Morphologies of 719 Isolated Galaxies in the AMIGA Sample

MNRAS 488, 2175-2189

Buta et al. 2019

The environment of HI-bearing ultra diffuse galaxies in the ALFALFA survey

MNRAS 490, 566-577

Janowiecki et al. 2019

The HI content of dark matter haloes at $z \approx 0$ from ALFALFA

MNRAS 486, 5124-5138

Obuljen et al. 2019

The Arecibo Pisces-Perseus Supercluster Survey. I. Harvesting ALFALFA

ApJ 157, 81

O'Donoghue et al. 2019

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

The Arecibo Legacy Fast ALFA Survey: The ALFALFA Extragalactic HI Source Catalog

ApJ 861, 49

Haynes et al. 2018

The Enigmatic (Almost) Dark Galaxy Coma P: The Atomic Interstellar Medium

AJ 155, 65

Ball et al. 2018

The ALFALFA “Almost Darks” Campaign: Pilot VLA HI Observations of Five High Mass-To-Light Ratio Systems

ApJ 149, 72

Cannon et al. 2015

HighMass-High HI Mass, HI-rich Galaxies at $z \sim 0$ Sample Definition, Optical and H α Imaging, and Star Formation Properties

ApJ 793, 40

Huang et al. 2015

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