

# Michael G. Jones

Steward Observatory, 933 North Cherry Avenue, Tucson, AZ 85721-0065, USA

✉ [jonesmg@arizona.edu](mailto:jonesmg@arizona.edu) 🏠 [jonesmg.github.io](https://jonesmg.github.io) ☎ 0000-0002-5434-4904

## 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

---

- 2023 **HST+VLA**, PI of 3.5 h VLA and 1 HST orbit program targeting newly discovered very low mass galaxy.
- 2023 **MeerKAT**, 1.25 h DDT project to image the neutral gas in the dwarf galaxy Pavo.
- 2023 **VLA**, PI of 27 h 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”.
- 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 ultra-diffuse galaxies.
- 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 10 h VLA & 2 orbit HST program targeting ultra-faints at the edge of the Local Group.
- 2020-23 **CFHT**, Co-I of MEGACAM project to observe satellites in MW-like systems in H $\alpha$ .
- 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”**, many nights of solo observing with the Mont4K imager.

## Funding & Awards

---

2023	<b>HST GO program</b> , HST-GO-17316 grant of \$58k.	STScI
2023	<b>HST GO program</b> , HST-GO-17267 grant of \$56k.	STScI
2021	<b>HST SNAP program</b> , HST-SNAP-16758 grant of \$55k.	STScI
2017	<b>Juan de la Cierva fellowship</b> , a competitive, national-level post-doctoral fellowship (€50k).	IAA
2015	<b>Eleanor York Prize</b> , for service to the community and academic achievement.	Cornell
2015	<b>Travel Grant</b> , for conference travel from Cornell's graduate school.	Cornell
2011	<b>Newton Prize</b> , for excellence in sciences while contributing to college life.	Cambridge
2011	<b>1912 Senior Scholarship</b> , for achieving a Class I degree.	Cambridge

## Talks & Seminars

---

### CONFERENCES

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

### COLLOQUIA AND SEMINARS

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

## Teaching & Outreach

---

### Research Mentoring

Mentoring of UA undergraduates Swapnaneel Dey and Nicolas Mazziotti (NASA Space Grant student), who are preparing their first astronomy research papers. 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. 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 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

---

### Gas and star formation in satellites of Milky Way analogs

Jones et al. 2023d

*Submitted to ApJ*

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

Jones et al. 2023c

*ApJL 957, 5*

### Disturbed, diffuse, or just missing? A global study of the HI content of Hickson Compact Groups

Jones et al. 2023b

*A&A, 670, 21*

### Gas-rich, field ultra-diffuse galaxies host few globular clusters

Jones et al. 2023a

*ApJL 942, L5*

### Young, blue, and isolated stellar systems in the Virgo Cluster. II. A new class of stellar system

Jones et al. 2022b

*ApJ 935, 51*

### AGC 226178 and NGVS 3543: Two deceptive dwarfs towards Virgo

Jones et al. 2022a

*ApJL 926, 15*

### Evidence for ultra-diffuse galaxy formation through tidal heating of normal dwarfs

Jones et al. 2021

*ApJ 919, 72*

### The HI mass function of group galaxies in the ALFALFA survey

Jones et al. 2020

*MNRAS 494, 2090-2108*

### Evolution of compact groups from intermediate to final stages: A case study of the HI content of HCG 16

Jones et al. 2019

*A&A 632, A78*

<b>The ALFALFA HI mass function: A dichotomy in the low-mass slope and a locally suppressed knee mass</b>	<i>MNRAS 477, 2-17</i>
Jones et al. 2018c	
<b>The contribution of HI-bearing ultra-diffuse galaxies to the cosmic number density of galaxies</b>	<i>A&amp;A 614, A21</i>
Jones et al. 2018b	
<b>The AMIGA sample of isolated galaxies XIII. The HI content of an almost “nurture free” sample</b>	<i>A&amp;A 609, A17</i>
Jones et al. 2018a	
<b>The environmental dependence of the HI mass function in ALFALFA 70%</b>	<i>MNRAS 457, 4393-4405</i>
Jones et al. 2016b	
<b>When is stacking confusing?: The impact of confusion in deep HI galaxy surveys</b>	<i>MNRAS 455, 1574-1583</i>
Jones et al. 2016a	
<b>Spectroscopic confusion: Its impact on current and future extragalactic HI surveys</b>	<i>MNRAS 449, 1856-1868</i>
Jones et al. 2015	
<b>The relationship between accretion disc age and stellar age and its consequences for protostellar discs</b>	<i>MNRAS 419, 925-935</i>
Jones et al. 2012	

## Co-author Papers

---

<b>The AMIGA sample of isolated galaxies - effects of environment on angular momentum</b>	<i>MNRAS 528, 1630</i>
Sorgho et al. 2024	
<b>Parameterized Asymmetric Neutral Hydrogen Disk Integrated Spectrum Characterization (PANDISC). I. Introduction to a Physically Motivated H I Model</b>	<i>ApJ 950, 163</i>
Peng et al. 2023	
<b>A Generalist, Automated ALFALFA Baryonic Tully-Fisher Relation</b>	<i>ApJ 950, 87</i>
Ball et al. 2023	
<b>The quenched satellite population around Milky Way analogues</b>	<i>MNRAS 524, 5314</i>
Karunakaran et al. 2023	
<b>The Disturbed and Globular-cluster-rich Ultradiffuse Galaxy UGC 9050-Dw1</b>	<i>ApJL 954, 39</i>
Fielder et al. 2023	
<b>NeutralUniverseMachine: An Empirical Model for the Evolution of HI and H2 Gas in the Universe</b>	<i>ApJ 955, 57</i>
Guo et al. 2023	

- MIGHTEE-HI: The first MeerKAT HI mass function from an untargeted interferometric survey** *MNRAS* 522, 5308  
Ponomareva et al. 2023
- Effects of Active Galactic Nucleus Feedback on Cold Gas Depletion and Quenching of Central Galaxies** *ApJ* 941, 205  
Ma et al. 2022
- HI properties of satellite galaxies around local volume hosts** *MNRAS* 516, 1741  
Karunakaran et al. 2022
- Infall Profiles for Supercluster-Scale Filaments** *ApJ* 935, 130  
Crone Odekon et al. 2022
- Young, blue, and isolated stellar systems in the Virgo Cluster. I. 2-D Optical spectroscopy** *ApJ* 935, 50  
Bellazzini et al. 2022
- Tucana B: An Isolated and Quenched Ultra-faint Dwarf Galaxy at D=1.4 Mpc** *ApJL* 935, 17  
Sand et al. 2022
- Cold Gas Reservoirs of Low and High Mass Central Galaxies Differ in Response to AGN Feedback** *ApJL* 933, 12  
Guo et al. 2022
- Decoding the star forming properties of gas-rich galaxy pairs** *MNRAS* 513, 2581  
Bok et al. 2022
- Hubble Space Telescope Observations of NGC 253 Dwarf Satellites: Three Ultra-faint Dwarf Galaxies** *ApJ* 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** *ApJL* 916, 19  
Karunakaran et al. 2021
- Star formation and quenching of central galaxies from stacked HI measurements** *ApJ* 918, 53  
Guo et al. 2021
- The dependence of subhalo abundance matching on galaxy photometry and selection criteria** *MNRAS* 506, 3205-3223  
Stiskalek et al. 2021
- MeerKAT-64 discovers wide-spread tidal debris in the nearby NGC 7232 galaxy group** *MNRAS* 505, 3795-3809  
Namumba et al. 2021
- A diffuse tidal dwarf galaxy destined to fade out as a “dark galaxy”** *A&A* 649, L14  
Román et al. 2021

- HI study of isolated and paired galaxies: the MIR SFR-M\* sequence** *MNRAS* 499, 3193-3213  
Bok et al. 2020
- WALLABY – An SKA Pathfinder HI Survey** *ApSS* 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 Arcicbo 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 Arcicbo 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 $\alpha$  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