

# JOAQUIN D. VIEIRA

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## SCIENTIFIC INTERESTS

Observational cosmology, sub/mm instrumentation, cosmic microwave background, extragalactic surveys, atomic and molecular spectroscopy, multi-wavelength observing, cosmic star formation history, galaxy evolution, cosmic acceleration, gravitational lensing, epoch of reionization, cosmic neutrinos, dark matter, cosmic dust, early life.

## EDUCATION

2009 Ph.D. Physics, **The University of Chicago**

Thesis: Extragalactic Millimeter-Wave Sources in the South Pole Telescope Survey Data  
Advisor: John Carlstrom

2005 M.S. Physics, **The University of Chicago**

2002 B.S. Astrophysics, **The University of California, Los Angeles**

## PROFESSIONAL HISTORY

Aug. 2019 – *current*

*Associate Professor*, Department of Astronomy

*Associate Professor*, Department of Physics

*Director*, Center for Astrophysical Surveys (CAPS)

*Senior Astronomy Lead*, National Center for Supercomputing Applications (NCSA)

**University of Illinois at Urbana-Champaign**

Aug. 2018 – 2019

*Associate Professor*, Department of Astronomy

**University of Illinois at Urbana-Champaign**

Aug. 2013 – 2018

*Assistant Professor*, Department of Astronomy

**University of Illinois at Urbana-Champaign**

Sept. 2009 – Aug. 2013

*Postdoctoral Researcher*, **California Institute of Technology**

Sept. 2002 – Sept. 2009

*Graduate Research Assistant*

**The University of Chicago, Kavli Institute for Cosmological Physics**

## AWARDS

2020 NASA Group Achievement Award for Origins Space Telescope

2017 Alfred P. Sloan Research Fellowship

2015 National Center for Supercomputing Applications (NCSA) Fellow

2015 Beckman Fellow, Center for Advanced Study, University of Illinois

2011 Antarctic Service Medal of the United States of America

1996 President's Award for Educational Excellence

## GRANTS AS PI

CMB-S4 DOE R&D funds, 2019 \$70,000

NASA HST *The Most Massive Protoclusters at  $z=4.3-5.8$  Selected by SPT*, 2019–2022 \$53,970

NRAO Student Observing Support, 2019 \$35,000

NSF *South Pole Telescope Operations and Data Products*, 2019–2023 \$811,125

NASA APRA *Terahertz Intensity Mapper* 2019–2024 \$7,700,682

JWST Early Release Science Program, *TEMPLATES*, 2019–2021 \$66,370

NRAO Student Observing Support, 2018 \$35,889

NSF AAG, *Exploring Galaxy Evolution at High Resolution*, 2017–2020 \$334,825

NASA *Fermi Cycle 10, Hunting the Unidentified Fermi Sources with SPT*, \$45,000

Sloan Fellowship, 2017 \$60,000

SPT Project subaward, 2014–2019, \$315,692

*HST Cycle 24, Exploring a Massive Starburst in the Epoch of Reionization*, \$20,157

Department of Energy Block Grant: *Cosmic Frontier Experiment* 2016-2020, \$190,000

*Chandra Cycle 16: The Most Concentrated Infrared Luminosity Density in the Universe*, \$38,298

*HST Cycle 21: High-Redshift Starburst Galaxies Under the Cosmic Microscope*, \$60,396

*Spitzer Cycle 10: High-Redshift Starburst Galaxies Under the Cosmic Microscope*, \$5,000

*Herschel OT2: Revealing the most luminous dusty star forming galaxies*, \$67,138

*HST Cycle 19: Strongly Lensed Dusty Star Forming Galaxies*, \$143,828

NSF AAG 2013: *Exploring Galaxy Evolution with ALMA and Gravitational Lensing*, \$238,626

*Spitzer Cycle 8: Strongly Lensed Dusty Star Forming Galaxies*, \$5,000

*Spitzer Cycle 6: High-Redshift Sub-Millimeter Galaxies*, \$81,480

## COMPETITIVE TELESCOPE TIME AS PI

ALMA Cycle 7, *Resolving water emission and dust temperature in the early universe*, 0.8 hours

*Spitzer Cycle 14: The SPT+Herschel+ALMA+Spitzer Legacy Survey*, 115.4 hours

JWSTERS (Co-PI), *TEMPLATES*, 50.1 hrs

ALMA Cycle 5, *Resolving water emission in the early universe*, 0.8 hours

ALMA Cycle 5, *Spatially resolved molecular spectroscopy in the Epoch of Reionization*, 13.1 hrs

ALMA Cycle 4, *Resolving water emission in the early universe*, 6.0 hours

ALMA Cycle 4, *Completing the SPT+ALMA Redshift Survey*, 27.8 hours

ATNF ATCA 2015B, *High Resolution Imaging of Strongly-Lensed Radio-Bright Galaxies*, 41 hrs

*Chandra Cycle 16, The Most Concentrated Infrared Luminosity Density in the Universe*, 50ks

*Spitzer Cycle 10, High-Redshift Starburst Galaxies Under the Cosmic Microscope*, 37 hours

*Hubble Cycle 21, High-Redshift Starburst Galaxies Under the Cosmic Microscope*, 6 orbits

Keck 2013A, *A MOSFIRE survey of H $\alpha$  in the CDF-S*, 2 nights

Keck 2012B, *A MOSFIRE survey of H $\alpha$  in the CDF-S*, 2 nights

Keck 2012A, *Detecting neutral hydrogen in emission at  $z=1.3$* , 1 night

*Herschel OT2, Revealing the most luminous dusty star forming galaxies*, 16.9 hours

*Hubble Cycle 19, Strongly Lensed Dusty Star Forming Galaxies*, 18 orbits

*Spitzer Cycle 8 (DDT), Measuring the Stellar Mass of a  $z=6.3$  Submillimeter Galaxy*, 2 hours

Keck 2011B, *Detecting neutral hydrogen in emission at high redshift*, 2 nights

NOAO 2011A, SOAR, *High-Redshift Strongly Lensed Galaxies*, 5 nights

*Spitzer Cycle 6, High-Redshift Sub-Millimeter Galaxies*, 55 hours

NOAO 2009B, Gemini-S, *Strongly-Lensed High-Redshift Sub-Millimeter Galaxies*, 1 night

NOAO 2009B, SOAR, *Strongly-Lensed High-Redshift Sub-Millimeter Galaxies*, 5 nights

## **COLLABORATIONS**

South Pole Telescope (SPT) 2005–*current*  
CMB-Stage IV (CMB-S4) Collaboration 2014–*current*  
Origins Space Telescope (OST) 2016–*current*  
The B-mode Foreground Experiment (BFORE) NASA balloon experiment, 2016— *current*  
The Terahertz Intensity Mapper (TIM) NASA balloon experiment 2015— *current*  
Herschel/SPIRE Extragalactic GT Team (HerMES) team member 2009–*current*  
Dark Energy Survey (DES) 2014–*current*  
Large Synoptic Survey Telescope (LSST) Dark Energy Survey Collaboration (DESC) 2015—  
Cornell Caltech Atacama Telescope (CCAT) science team 2010–2014  
Chajnantor Sub/millimeter Survey Telescope (CSST) science team 2013–*current*

## **TEACHING EXPERIENCE**

Astronomy 100: Introduction to Astronomy; Spring 2014, Fall 2017  
Astronomy 414: Astronomical Techniques; Spring 2016, Spring 2017  
Astronomy 503: Observational Astronomy; Spring 2015, Fall 2016, Fall 2018  
Astronomy 496: The Art and Practice of Astronomy; Fall 2017, Fall 2018  
Former Graduate Students: Andrew Nadolski (2019)  
Currently advising 6 graduate students: Sreevani Jarugula (5th yr), Kedar Phadke (4th yr), Frank Fu (2nd yr), Melanie Archipley (2nd yr), Chris Tandoi (1st yr), Breanna Lucero (1st yr)

## **PROFESSIONAL SERVICE**

Dark Energy Survey (DES) Joint Oversight Committee (JOG) (2019—)  
CMB-S4 Science Council and Co-Coordinator of the Sources Working Group (2019—)  
SOC for *Astrophysics with the CMB-S4 Survey* workshop, 2019  
LOC for *South Pole Observatory* workshop, 2019  
ALMA TAC Cycle 6–8 (2018–2020)  
NASA Origins Space Telescope (FIR Surveyor) Science & Technology Definition Team (2016—)  
NASA Origins Far-Infrared Imager and Polarimeter (FIP) scientist (2016—)  
*Spitzer* Cycle 12 TAC member (2015)  
Panel member and chair for NASA APRA and SAT (2014/15)  
TAC member, Caltech Optical Observatories 2012B,  
TAC member, CARMA 2013A  
SOC for “Through the Infrared Looking Glass: A dusty view of galaxy and AGN evolution”  
October 2011, Pasadena, CA  
Referee, *Nature*, *ApJ*, *MNRAS*, *A&A*  
Member AAS, APS, IAU

## **INSTITUTIONAL SERVICE**

Faculty Search Committee, U. Illinois  
    Department of Physics (2013)  
    Department of Astronomy (2014, 2016, 2017, 2018, 2019)  
Graduate Admissions Committee  
    Member (2014–2016)  
    Chair (2017,2018)  
Director, Center for Astrophysical Surveys (CAPS), NCSA (2019—)

## **PUBLIC OUTREACH**

Illinois Public Media (local NPR affiliate) podcasts for the 50th anniversary of Apollo  
Founder and organizer *Astronomy on Tap* Champaign-Urbana, 2016—*current*  
Allerton Family Campout & Exploration hands-on astronomy demonstrations, 2015—*current*  
Bottenfield Elementary physics and astronomy STEM demonstrations 2017—*current*  
Booker T. Washington STEM Academy Astronomy in Schools lectures, 2015—2016  
Osher Lifelong Learning Institute (OLLI) lectures, 2015—*current*  
University of Illinois Saturday Morning Physics for Everyone lecture, 2015  
Kavli Foundation Spotlight Roundtable Live Webcast and Q&A, 2013  
Composed music for the movie for the public accompanying the 3rd Sloan Digital Sky Survey (SDSS) data release 2004 <http://astro.uchicago.edu/cosmos/projects/sloanmovie/>

## **REFERENCES**

Prof. John Carlstrom, University of Chicago, USA, [jc@kicp.uchicago.edu](mailto:jc@kicp.uchicago.edu)  
Prof. Anthony Gonzalez, University of Florida, USA, [anthony@astro.ufl.edu](mailto:anthony@astro.ufl.edu)  
Prof. William Holzzapfel, University of California, Berkeley, USA, [swlh@cosmology.berkeley.edu](mailto:swlh@cosmology.berkeley.edu)  
Prof. Lloyd Knox, University of California, Davis, USA, [lknox@ucdavis.edu](mailto:lknox@ucdavis.edu)  
Prof. Douglass Scott, University of British Columbia, Canada, [dscott@phas.ubc.ca](mailto:dscott@phas.ubc.ca)