

Jason Kalirai

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I am an astrophysicist and the multi-mission project scientist at NASA's Space Telescope Science Institute (STScI), and a Research Scientist at the Johns Hopkins University (JHU). I lead strategic initiatives aimed at maximizing the scientific productivity of NASA's flagship telescopes, motivate future bold US science experiments, lead fundamental scientific research in stellar and galactic astrophysics, and engage the next generation of bright minds to pursue scientific careers.

Education

University of British Columbia, Vancouver BC

- o PhD, Astrophysics 2001-2004
- o MSc, Astrophysics 2000-2001
- o BSc, Honors Physics & Astronomy 1996-2000

University of California at Santa Cruz (UCSC)

- o Hubble Postdoctoral Fellow 2004-2008

Recent Awards and Honors

- o NASA Group Achievement Award for WFIRST 2018
- o Selected by the White House as one of 200 US scientists invited to the "Frontiers Conference" to meet with President Obama 2016
- o Kavli Frontiers of Science Fellow 2014
- o American Astronomical Society's Newton Lacy Pierce Prize 2013
- o Maryland Academy of Sciences Outstanding Young Scientist 2013
- o Baltimore Magazine's "Top 40 under 40" 2013
- o Selected by CNN as the first scientist for their new "The Science Seat" feature 2013
- o Selected by Astronomy magazine as "Top Rising Star" 2013

Professional Publications

50+ research papers published in the past 5 years (full list: <https://www.jasonkalirai.com/research>)

- o h-index = 45; first author h-index = 20

Key research themes

- o stellar evolution, star formation, star clusters, Milky Way galaxy, galaxy formation, future telescopes

Example 1st author papers

- o **Scientific Discovery with the James Webb Space Telescope (Invited Review)** 2018
 - Kalirai, J. 2018, Contemporary Physics, 59 (3), 251-290
- o **Ultra-Deep Hubble Space Telescope Imaging of the Small Magellanic Cloud: The Initial Mass Function of Stars with $M < \sim 1 M_{SUN}$** 2013
 - Kalirai, J. et al. 2013, Astrophysical Journal, 763, 110-117
- o **The Initial-Final Mass Relation: Direct Constraints at the Low Mass End** 2008
 - Kalirai, J. et al. 2008, Astrophysical Journal, 676, 594-609; 225 citations
- o **The Metal-poor Halo of the Andromeda Spiral Galaxy (M31)** 2006
 - Kalirai, J. et al. 2006, Astrophysical Journal, 648, 389-404; 155 citations

Invited Presentations

50+ invited research talks at international science meetings, symposia, and University colloquia 2014-2018

Involvement in Enabling Future Astrophysics

- Multi-Mission Project Scientist for STScI 2016-current
- Member of the Maryland Space Business Roundtable Board of Directors 2017-current
- Project Scientist for the James Webb Space Telescope 2013-2016
- Deputy Project Scientist for the James Webb Space Telescope 2010-2013
- PI of a WFIRST Science Investigation team and member of the Science Working Group 2015-current
- Member of the NASA Astrophysics Advisory committee 2014-2018
- Member of the Large Synoptic Survey Telescope (LSST) Science Advisory Committee 2014-current
- Member of the NASA Astrophysics 30-year Roadmap Team 2013
- Lead of photometric calibration on the Hubble Space Telescope WFC3 Team 2008-2010

Successful Research Grants

- Principle investigator of NASA research contract NNG16PJ26C (\$1M) 2015-current
- Principle investigator of NSF Research Grant 1614933 (\$230k) 2015-2018
- Principle investigator of NSF Research Grant 1211719 (\$330k) 2012-2015
- Science collaborator and lead of a funded sub-program on JWST ERS program 2017-current
- Principle investigator for science and budget on 4 funded Hubble GO programs 2014-current
- Science collaborator on 25+ Hubble programs including funded efforts 2005-current
- Awarded a Hubble Postdoctoral Fellowship and associated grant 2005-2008

Supervision and Mentoring

- Mentor and manager of 5 STScI and JHU postdoctoral researchers 2010-current
- Mentor of an STScI astronomy track scientist 2016-current
- Mentor of an STScI scientist track colleague 2015-current
- Mentor of an STScI summer students and high school student 2013-2014

Community and STScI Service

- Scientific referee for Nature, Science, ApJ, ApJL, AJ, MNRAS, A&A, and others
- Reviewer on major telescope time allocation committees and NASA postdoctoral fellowship panels
- Chair of STScI colloquium, two STScI Spring Symposia, and various STScI committees
- Scientific Organizing Committee member of a dozen workshops and science meetings

Education and Public Outreach

Over the past ten years, I have built a comprehensive program to communicate science and technology to students and the general public, and have led several hundred EPO events. I have spoken in front of tens of thousands of people during this time, and am routinely invited for speaker engagements. This includes,

- Developing partnerships and directly interacting with students in local schools
- Proactively leading new initiatives with groups underrepresented in STEM
- Building STEM education networks and curricula and training teachers and library staff
- Presenting astronomy talks at many informal science centers and major events across the country

Recent example: Facebook live w/ PBS and Miles O'Brien of the 2017 Solar Eclipse (~1 million views)

- <https://www.facebook.com/NOVApbs/videos/10155677217482196/> (~1 million views)

Recent example: NOVA "Wonders" - Are we Alone?

- <https://www.pbs.org/video/nova-wonders-are-we-alone-rnfrcl/> (prime time TV slot)