

**Justin D. R. Pierel**

321 I Street NE

Washington, DC 20002

Tel : (803) 800 0702

E-Mail : [jpierel@stsci.edu](mailto:jpierel@stsci.edu)**STScI** | SPACE TELESCOPE  
SCIENCE INSTITUTE**Education**

- 2021** PH.D. – UNIVERSITY OF SOUTH CAROLINA. DISSERTATION: “EXPANDING THE FRONTIERS OF SUPERNOVA COSMOLOGY IN PREPARATION FOR NEXT GENERATION TELESCOPES”.  
 ▷ *Physics & Astronomy*. ▷ *Advisor: Dr. Steven Rodney*.
- 2020** M.S. – UNIVERSITY OF SOUTH CAROLINA. THESIS: “PROJECTED COSMOLOGICAL CONSTRAINTS FROM STRONGLY LENSED SUPERNOVAE WITH THE ROMAN SPACE TELESCOPE”.  
 ▷ *Physics & Astronomy*. ▷ *Readers: Dr. Steven Rodney, Dr. Sherry Suyu*.
- 2014** B.A. – BOWDOIN COLLEGE.  
 ▷ *Major: Mathematics & German*. ▷ *Minor: Economics*.

**Experience**

- 2021** POSTDOCTORAL RESEARCH FELLOW, TRANSIENT SCIENCE GROUP, SPACE TELESCOPE SCIENCE INSTITUTE (STScI) .
- 2019** NASA FINESST FELLOW, DEPT. PHYSICS & ASTRONOMY, UNIVERSITY OF SOUTH CAROLINA.
- 2016** RESEARCH ASSISTANT, DEPT. PHYSICS & ASTRONOMY, UNIVERSITY OF SOUTH CAROLINA.
- 2015** RESEARCH ASSISTANT, PLANETARY SYSTEMS LAB, NASA GSFC.
- 2015** INSTRUCTOR, NASA ARSET, NASA GSFC.
- 2014** GEOSPATIAL ANALYST, SSAI/NASA DEVELOP, NASA LARC/GSFC.

**First-Author Publications**

- 2021** SALT3-NIR: TAKING THE TYPE IA SUPERNOVA COSMOLOGY WORKHORSE TO LONGER WAVELENGTHS.  
 ▷ *J.D.R. Pierel, D.O. Jones et al., in prep.*
- 2021** HST DATA RELEASE FROM SIRAH.  
 ▷ *J.D.R. Pierel, S. Jha et al., in prep.*
- 2021** UNDERSTANDING TYPE IA SUPERNOVA DISTANCE BIASES BY SIMULATING SPECTRAL VARIATIONS.  
 ▷ *J.D.R. Pierel, D.O. Jones et al. 2021, ApJ, 911, 2.*
- 2021** PROJECTED COSMOLOGICAL CONSTRAINTS FROM STRONGLY LENSED SUPERNOVAE WITH THE ROMAN SPACE TELESCOPE.  
 ▷ *J.D.R. Pierel, S. Rodney et al. 2021, ApJ, 908, 190.*

## First-Author Publications (Cont.)

- 2019** TURNING GRAVITATIONALLY LENSED SUPERNOVAE INTO COSMOLOGICAL PROBES.  
 ▷ *J.D.R. Pierel, S. Rodney 2019, ApJ, 876(2), 107.*
- 2018** EXTENDING SUPERNOVA SPECTRAL TEMPLATES FOR NEXT GENERATION SPACE TELESCOPE OBSERVATIONS.  
 ▷ *J.D.R. Pierel, S. Rodney, A. Avelino, et al. 2018, PASP, 130, 114504.*
- 2017** D/H RATIOS ON SATURN AND JUPITER FROM CASSINI CIRS.  
 ▷ *J.D.R. Pierel, C.A. Nixon, E. Lellouch, et al. 2017, AJ, 154(5), 178.*

## Grant Awards (Bold corresponds to projects as PI)

- 2020-2023** NASA HST GO PROGRAM (ACTIVE TOO; [GO 16264](#)).  
 ▷ *"LensWatch: Time Delay Measurement of a Multiply-Imaged Supernova".*
- 2021** GEMINI FAST TURNAROUND.  
 ▷ *Measuring Host Galaxy Redshifts for Supernovae Discovered by HST in the UV.*
- 2021** NASA HST GO PROGRAM.  
 ▷ *"This is NUTS! A Narrow-field Ultraviolet Transient Survey".*
- 2019-2021** NASA FINESST AWARD (\$110K).  
 ▷ *Optimizing WFIRST Surveys: Precision Cosmology with Gravitationally Lensed Supernovae. ▷ 3 Year Award.*
- 2020-2021** NASA HST GO PROGRAM.  
 ▷ *"Supernovae in the Infrared avec Hubble".*
- 2020** NASA HST GO PROGRAM.  
 ▷ *"TREASUREHUNT: Hubble's UV-Visible treasury imaging of the JWST NEP Time-Domain Field".*
- 2020** DEPARTMENT GRADUATE RESEARCH AWARD (\$1K).
- 2019** NASA HST AR PROGRAM (\$90K; [AR 15808](#)).  
 ▷ *"SALT3: Taking the Type Ia Supernova Cosmology Workhorse to Longer Wavelengths".*
- 2019** GRADUATE TEACHING RESOURCE DEVELOPMENT (\$1K).  
 ▷ *Leveraging Python for STEM Research.*
- 2019** NASA SCSGC GRA (\$25K).
- 2018** NASA SCSGC GRA (\$25K).
- 2018** DEPARTMENT GRADUATE SERVICE AWARD (\$1K).
- 2017** NASA HST AR PROGRAM (\$50K; [AR 15050](#)).  
 ▷ *"Turning Gravitationally Lensed Supernovae into Cosmological Probes".*
- 2016** NASA EPSCoR.  
 ▷ *"Rare and Peculiar Stellar Explosions with the Next Generation of Space Telescopes".*

## Other Publications

- 2021** RELATIVE TIME DELAY AND MAGNIFICATIONS OF THE LAST APPEARANCE OF SUPERNOVA REFSDAL.  
▷ *P. Kelly, ..., J.D.R. Pierel, et al. 2021, Accepted..*
- 2021** GRAVITATIONALLY LENSED SUPERNOVA WITH AN OBSERVABLE TWO-DECADE TIME DELAY.  
▷ *S. Rodney, G. Brammer, J.D.R. Pierel, et al. 2021, NatAs, 164R.*
- 2021** SALT3: AN IMPROVED TYPE IA SUPERNOVA MODEL FOR MEASURING COSMIC DISTANCES.  
▷ *W. Kenworthy, ..., J.D.R. Pierel, et al. 2021, Accepted..*
- 2019** MODELS AND SIMULATIONS FOR THE PHOTOMETRIC LSST ASTRONOMICAL TIME SERIES CLASSIFICATION CHALLENGE (PLASTiCC).  
▷ *R. Kessler, ..., J.D.R. Pierel, et al. 2019, PASP, 131, 094501.*

## Professional Development

- 2019-2020** MINI-COURSE: LEVERAGING PYTHON FOR STEM RESEARCH.  
▷ *Developed and taught Python course for ~30 undergraduate/graduate students and faculty in 2019, ~70 in 2020. ▷ [Course Page](#).*
- 2019** ISEE PROFESSIONAL DEVELOPMENT PROGRAM.  
▷ *Intensive development program to train graduate students for a career in STEM teaching at the college level.*
- 2017** 47TH SAAS-FEE ADVANCED COURSE.  
▷ *Supernovae: Cosmic Explosions.*

## Open-Source Software

- 2021** BYOSED: FLEXIBLE SOFTWARE FOR SIMULATING EFFECTS ON SNIa DISTANCE MEASUREMENTS.  
▷ [GitHub](#). ▷ [ReadTheDocs](#). ▷ [Publication](#).
- 2021** SALT3: THE NEXT ITERATION OF THE SALT MODEL.  
▷ [GitHub](#). ▷ [ReadTheDocs](#). ▷ [Publication](#).
- 2019** SUPERNOVA TIME DELAYS (SNTD): SOFTWARE TO MEASURE TIME DELAYS OF MULTIPLY-IMAGED SUPERNOVAE.  
▷ [GitHub](#). ▷ [ASCL](#). ▷ [ReadTheDocs](#). ▷ [Publication](#).
- 2018** SNSSEXTEND: SOFTWARE TO EXTEND OPTICAL SUPERNOVA SPECTRAL TEMPLATES.  
▷ [GitHub](#). ▷ [ASCL](#). ▷ [ReadTheDocs](#). ▷ [Publication](#).

## Presentations

- 2021** SUPERNOVA REQUIEM: A GRAVITATIONALLY LENSED SUPERNOVA WITH AN OBSERVABLE TWO-DECADE TIME DELAY.  
▷ *HotSci – STSci (Remote)*.
- 2021** SUPERNOVA REQUIEM: A GRAVITATIONALLY LENSED SUPERNOVA WITH AN OBSERVABLE TWO-DECADE TIME DELAY.  
▷ *EAS (Remote)*.
- 2020** OPTIMIZING THE ROMAN SPACE TELESCOPE SUPERNOVA COSMOLOGY PROGRAM.  
▷ *FLASH – UCSC (Remote)*.
- 2020** SUPERNOVA TIME DELAYS: PRECISION MEASUREMENTS WITH COSMIC TELESCOPES.  
▷ *AAS – Honolulu, HI*.
- 2019** TURNING GRAVITATIONALLY LENSED SUPERNOVAE INTO COSMOLOGICAL PROBES.  
▷ *SCAM – Chicago, IL*.
- 2019** TURNING GRAVITATIONALLY LENSED SUPERNOVAE INTO COSMOLOGICAL PROBES.  
▷ *MASC – Clemson, SC*.
- 2018** TURNING GRAVITATIONALLY LENSED SUPERNOVAE INTO COSMOLOGICAL PROBES.  
▷ *"The Universe as a telescope: Probing the cosmos at all scales with strong lensing" – Milan, Italy*.
- 2018** EXTENDING SUPERNOVA SPECTRAL TEMPLATES FOR NEXT-GENERATION SPACE TELESCOPE OBSERVATIONS.  
▷ *WFIRST SN SIT Meeting – Chicago, IL*.
- 2018** EXTENDING SUPERNOVA SPECTRAL TEMPLATES FOR NEXT-GENERATION SPACE TELESCOPE OBSERVATIONS.  
▷ *MASC – Florence, SC*.
- 2018** EXTENDING SUPERNOVA SPECTRAL TEMPLATES FOR NEXT-GENERATION SPACE TELESCOPE OBSERVATIONS.  
▷ *AAS – Washington, DC*.
- 2015** MEASUREMENT OF THE D/H ABUNDANCE ON JUPITER AND SATURN USING THE CIRST FAR-IR INTERFEROMETER.  
▷ *AAS DPS – Washington, DC*.
- 2015** NEW PRODUCTS FOR NEAR REAL-TIME ENHANCED LANDSLIDE DETECTION AND PRECIPITATION MONITORING.  
▷ *AGU – San Francisco, CA*.