

# SAURABH W. JHA

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## APPOINTMENTS

Distinguished Professor, Rutgers University, Department of Physics and Astronomy, 2023–  
Professor, Rutgers University, Dept. of Physics and Astronomy, 2017–2023  
Associate Professor, Rutgers University, Dept. of Physics and Astronomy, 2012–2016  
Assistant Professor, Rutgers University, Dept. of Physics and Astronomy, 2007–2012  
Panofsky Fellow, Stanford Linear Accelerator Center; and  
Full Member, Kavli Institute for Particle Astrophysics and Cosmology, 2006–2007  
Miller Research Fellow, Miller Institute for Basic Research in Science; and Postdoctoral  
Research Fellow, University of California, Berkeley, Dept. of Astronomy, 2002–2006

## EDUCATION

Ph.D., Astronomy, Harvard University, 2002  
thesis: “Exploding Stars, Near and Far,” supervised by Prof. Robert P. Kirshner  
A.M., Astronomy, Harvard University, 1999  
A.B., *magna cum laude*, Physics and Mathematics, Harvard University, 1996

## AWARDS AND FELLOWSHIPS

American Association for the Advancement of Science Fellow, 2022  
*“for distinguished contributions to the study of Type Ia supernovae, including significant insights on their intrinsic properties and their use as cosmological probes.”*  
American Physical Society Fellow, 2019  
*“for critical contributions to a deeper understanding of Type Ia supernovae, and to their exploitation as cosmological probes.”*  
Rutgers School of Arts and Sciences Award for Distinguished Contributions to Undergraduate Education, 2018  
Clarivate Analytics (was Thomson Reuters) Highly Cited Researcher, 2015, 2016, 2018  
Research Corporation Scialog Fellow in Time Domain Astrophysics, 2015–2016  
Breakthrough Prize in Fundamental Physics, 2015  
*awarded to the High-z Supernova Search Team and the Supernova Cosmology Project*  
Bart J. Bok Prize, Harvard Department of Astronomy, 2010–2011  
Rutgers Society of Physics Students Outstanding Teaching Award, 2011  
Gruber Cosmology Prize, 2007  
*awarded to the High-z Supernova Search Team and the Supernova Cosmology Project*  
Edward L. Fireman Prize, Harvard Department of Astronomy, 2002  
*awarded annually to one graduate student by a vote of the faculty*  
National Science Foundation Graduate Research Fellowship, 1997–2000  
Leo Goldberg Prize, Harvard Department of Astronomy, 1996  
*awarded annually for outstanding undergraduate research*

## RESEARCH AND EXPERIENCE

247 refereed journal articles with more than 56,000 citations (NASA ADS); *h*-index: 96

## SAURABH W. JHA

Postdoctoral research, UC Berkeley Department of Astronomy, 2002–2006  
supernova cosmology with Prof. Alexei V. Filippenko  
Graduate research, Harvard-Smithsonian Center for Astrophysics, 1996–2002  
observational studies of supernovae with Prof. Robert P. Kirshner  
gamma-ray burst afterglows with Profs. Krzysztof Z. Stanek and Peter M. Garnavich  
discovery of extrasolar planets with Profs. Robert W. Noyes and Dimitar D. Sasselov  
Research Assistant, Tel Aviv University, 1996, triple star studies with Prof. Tsevi Mazeh  
Undergraduate Thesis research, Harvard University, 1995–1996  
observations and analysis of a unique triple star with Prof. David W. Latham  
Visiting Observer, Keck 10m telescopes, Lick 3m, MMT 4m and 6.5m, Magellan 6.5m  
Baade and Clay, Cerro Tololo 4m and 1.5m, Kitt Peak 4m and 2.1m, UKIRT,  
Hawaii 2.2m, Oak Ridge 1.5m, and Whipple 1.2m and 1.5m

### TEACHING AND OUTREACH

Physics 110, “Astronomy & Cosmology,” Fall 2011–2013, Spring 2016, Fall 2017–2019,  
*710 students total, student evaluation of teaching effectiveness: 4.79 out of 5*  
Physics 341, “Principles of Astrophysics,” Fall 2008–2010, 2020, *224 students total (4.57/5)*  
Physics 342, “Principles of Astrophysics,” Spring 2009–2011, 2017, *220 students (4.75/5)*  
Physics 441/541, “Stars and Star Formation,” Spring 2018, 2020, 2022, 2024, *84 students (4.82/5)*  
Physics 514, “Radiative Processes,” Spring 2014–2016, 2021–2024, *42 students total (4.88/5)*  
Physics 690, “The Dark Universe,” Spring 2008, *11 students (4.78/5)*  
Physics 106, “Concepts in Physics,” Spring 2013–2014, *211 students total (4.15/5)*  
*supervised 4 graduate students each year who team-taught this course to gain experience,  
3 of these 8 students went on to instruction-focused positions (faculty, postdoc, and staff)*  
Byrne Seminar, “Death from the Skies,” Spring 2013, co-instructor for first-year seminar  
Rutgers REU Physics GRE prep sessions, co-leader, 2013–2018; leader, 2021–2023  
Outreach talks to numerous students, alumni, and amateur astronomy groups, 2006–

### PROFESSIONAL AND DEPARTMENTAL ACTIVITIES

PI, “See Through Supernovae: Nebular Spectroscopy of Exploding White Dwarfs”, JWST  
Cycles 1+2+3 program  
PI, SIRAH (Supernovae in the Infrared avec Hubble), HST Cycles 27+28 program  
Member, DLT40 Survey, Keck Infrared Transients Survey, Global Supernova Project,  
Foundation Supernova Survey, Frontier Fields SN Survey, LSST Transients/Variable  
Stars and Dark Energy Science Collaborations (with DESC Builder Status), Roman  
SN Science Investigation Team, SweetSpot, CLASH, CANDELS, SDSS-II SN Survey,  
SH<sub>0</sub>ES, ESSENCE, High-Z SN Search Team  
Co-Chair, Space Telescope Science Institute, JWST/HST Long-Term Variability  
Monitoring Working Group, 2023–  
Rubin Observatory LSST Survey Cadence Optimization Committee, 2023–  
Chair, Deep Drilling Fields Task Force, 2023–  
AURA Science Advisory Committee, 2023–  
Hubble Space Telescope Users’ Committee, 2022–  
NASA Roman Science Interest Group, 2020–

## SAURABH W. JHA

Co-ombudsperson, LSST Dark Energy Science Collaboration, 2018–2022  
Co-convener, Observing Strategy Working Group, LSST Dark Energy Science Collaboration, 2021–2022  
Co-convener, SN Working Group, LSST Dark Energy Science Collaboration, 2014–2017  
Chair, Southern African Large Telescope (SALT) Science Committee, 2012–2014  
Referee for *The Astronomical Journal*, *The Astrophysical Journal*, *The Astrophysical Journal Letters*, *Monthly Notices of the Royal Astronomical Society*, *Astronomy & Astrophysics*, *Journal of Cosmology and Astroparticle Physics*, *Physical Review Letters*, *Publications of the Astronomical Society of Japan*  
Proposal reviewer for NSF, DOE, NASA, NOAO, Hubble, Subaru, Rutgers/SALT  
Conference co-organizer, “The Physics of Supernovae,” held August 22 to September 16, 2016, *Munich Institute for Astro- and Particle Physics*, Germany  
Conference co-organizer, “The Extragalactic Distance Scale and Cosmic Expansion in the Era of Large Surveys and the James Webb Telescope,” held July 3 to 28, 2023, *Munich Institute for Astro-, Particle, and Bio Physics*, Germany  
Rutgers Institutional Representative to LSSTC, 2009–2010, 2011–2012, 2016, 2019–2023  
LSSTC Membership Committee, 2018–2023  
Member, AAS, IAU, APS (Fellow), AAAS (Fellow), International Ombuds Association  
Rutgers Physics and Astronomy Committees: Astrophysics Seminar (Fall 2007, Fall 2012, Spring 2017, Spring 2022), Colloquium (2007, 2010, 2017, 2022), Responsibilities (2008–2010, 2017–2018), Grad Admissions (2008–2011), Grad Studies (2010, 2014–2016, 2017–), Undergrad Studies (2011), Ph.D. Qualifier (2011–2014, Chair: 2016–2022, 2023–), WWW (2011–2014), GSO Liaison (2013–2015), DELTA-P coordinator (2014)  
Rutgers Graduate School New Brunswick Executive Council, 2015–2017  
Rutgers School of Graduate Studies Executive Council, 2017–2019

### STUDENT AND POSTDOCTORAL RESEARCH ADVISEES

Ben Shappee (undergraduate student, 2008–2009, now University of Hawaii faculty)  
Ben Dilday (postdoctoral researcher, 2008–2010)  
Curtis McCully (graduate student, 2008–2014, now LCOGT/UCSB researcher)  
Joey Rodriguez (undergraduate student, 2008–2010, now Michigan State Univ. faculty)  
Brandon Patel (graduate student, 2009–2015, now in private sector)  
Samia Bouzid (undergraduate honors thesis student, 2010–2012, now in science media)  
Hema Bhagavatula (graduate student, 2011)  
Thomas Holoien (undergrad honors thesis student, 2011–2013, now Carnegie Observatories Fellow/postdoc)  
David Feld (PhD qualifying exam research student, 2013)  
Viraj Pandya (undergraduate student, 2013–2014, now Hubble Fellow at Columbia)  
Yssavo Camacho-Neves (REU student, 2013; graduate student, 2015–)  
Kyle Dettman (graduate student, 2016–2021, now in data science)  
Travis Court (REU student, 2016, now Univ. Pittsburgh PhD student)  
Mi Dai (postdoctoral researcher, 2017–2020, now Johns Hopkins Horizon Fellow)  
Intan Shahira Binti Abdul Halim (undergraduate student, 2018)  
Youssef Eweis (undergraduate student, 2018–2019, Iowa State graduate student)

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Weber Lin (undergraduate honors thesis student, 2018)  
Lindsey Kwok (graduate student, 2019-)  
Tyler Barna (undergraduate honors thesis student, 2020-2021, now U. Minnesota PhD student)  
Conor Larison (graduate student, 2021-)  
Heather Prince (postdoctoral researcher, co-advisor, 2022-)  
Teresa Boland (undergraduate honors thesis student, 2022-)  
Michaela Schwab (undergraduate honors thesis student, 2023-)  
Colin Macrie (undergraduate student, 2023-)

### GRANTS AWARDED

LSST Discovery Alliance, External Mentor for LSST Catalyst Fellow Dr. K. Azalee Bostroem, \$50,000, FY 2023-2025  
NASA FINESST, "Modeling the Near-Infrared Spectral Diversity of Thermonuclear Supernovae," fellowship awarded to Ph.D. student Lindsey Kwok, \$150,000 (admin-PI), FY 2023-2025  
NASA/STScI, JWST, "See Through Supernovae: Nebular Spectroscopy of Exploding White Dwarfs," Cycle 1+2+3 GO proposal, 20 hours per cycle (PI), \$189,189 for Cycle 1, FY 2023-2024, subsequent funding pending  
DOE, "Probing the Physics of Dark Energy with LSST: Large-Scale Structure and Supernovae," \$230,000 FY 2022-2025 (co-PI with E. Gawiser; \$690,000 total funding)  
NASA/STScI, Hubble Space Telescope, "Tripling the sample of late-time Type Ia supernovae," Cycle 30+31+32 GO proposal, 67 orbits (admin co-I; PI: Or Graur), \$89,999 FY 2023-2026, subsequent funding pending  
NASA/STScI, Hubble Space Telescope, "Late-time Imaging of Type Ia Supernova 2017erp," Cycle 29 DD proposal, 3 orbits (admin co-I; PI: Or Graur), \$30,000 FY 2022-2025  
NASA/STScI, Hubble Space Telescope, "A spectroscopic study of the Type Ia supernova near-infrared plateau," Cycle 29+30 GO proposal, 6 orbits (admin co-I; PI: Or Graur), \$9,999 FY 2022-2025  
NASA/STScI, Hubble Space Telescope, "Do subluminous Type Ia supernovae experience a near-infrared plateau?" Cycle 29 GO proposal, 4 orbits (admin co-I; PI: Or Graur), \$16,222 FY 2022-2025  
NASA/STScI, Hubble Space Telescope, "The Near-Infrared Plateau of Type Ia Supernovae," Cycle 29 GO proposal, 8 orbits (admin co-I; PI: Or Graur), \$19,998 FY 2022-2024  
NASA/STScI, Hubble Space Telescope, "Radioactive Stars: Bound Remnants from White Dwarf Supernovae," Cycle 29 GO proposal, 9 orbits (PI), \$76,087 FY 2022-2025  
NASA/Keck+NIRES, "SIRAH Near-Infrared Supernova Spectroscopy," \$34,325 FY 2021-2023, 2020B+2021A, 8 half nights (PI)  
LSSTC and Las Cumbres Observatory, "Building a TOM for Early Classification of Type Ia Supernovae and Managing Follow-up," \$45,000 FY 2020-2021 (administrative PI; science PI: postdoc Mi Dai)

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- NASA/STScI, Hubble Space Telescope, "Supernovae in the Infrared avec Hubble," \$221,779 to Rutgers FY 2020–2024, Cycle 27+28 GO proposal, 77 orbits (PI)
- NASA/STScI, Hubble Space Telescope, "Left Behind: A Bound Remnant from a White Dwarf Supernova?" \$59,100 FY 2019–2022, Cycle 25 GO proposal, 14 orbits (PI)
- NSF/AST, "Unusual White Dwarf Supernovae," \$337,602 FY 2017–2019 (PI)
- NASA/Keck+MOSFIRE, "RELICS of Distant Supernovae," \$10,075 FY 2017–2019, observing time in semester 2017A (PI)
- NASA/WFIRST SIT, "Optimizing the WFIRST Type Ia Supernova Survey," \$327,611 to Rutgers FY 2016–2021 (Rutgers lead; overall PI: R. Foley, UCSC)
- DOE, "Probing the Physics of Dark Energy with LSST: Large-Scale Structure and Supernovae," \$210,000 FY 2016–2019 (co-PI with E. Gawiser; \$465,000 total funding)
- NASA/STScI, Hubble Space Telescope, "The Progenitor System of a Peculiar Thermonuclear White-Dwarf Supernova," \$64,769 FY 2016–2018, Cycle 22 GO proposal, 14 orbits (PI)
- NASA/STScI, Hubble Space Telescope, "Rings within Rings: High-Resolution Imaging of a Spectacular Gravitational Lens," \$14,908 FY 2015–2018, Cycle 22 GO proposal, 2 orbits (PI)
- NASA/Keck+DEIMOS, "The Next Frontier: High-Redshift Supernovae in the HST Frontier Fields," \$35,000 FY 2014–2017, observing time semesters 2014B, 2015A (PI)
- NASA/STScI, Hubble Space Telescope, "Frontier Field Supernova Search," \$4,500 FY 2014–2017, Cycle 21+22+23 GO proposal, 60 orbits (co-I)
- NASA/STScI, Hubble Space Telescope, "UV Spectroscopy of a Peculiar White Dwarf Supernova," \$49,046 FY 2014–2017, Cycle 21 GO proposal, 6 orbits (PI)
- NASA/STScI, Hubble Space Telescope, "The Peculiar Type Ia SN 2012Z: A Massive Star Progenitor?" \$29,988 FY 2013–2016, Cycle 20+21 GO proposal, 4 orbits (PI)
- NASA/STScI, Hubble Space Telescope, "UV Spectroscopy of a Peculiar White Dwarf Supernova," \$49,845 FY 2013–2016, Cycle 20 GO proposal, 6 orbits (administrative PI, science PI: graduate student Curtis McCully)
- NSF/AST, "CAREER: Supernova Cosmology and the Changing Sky," \$643,342 FY 2010–2015 (PI)
- NASA/Keck+DEIMOS, "Adding to the Treasury: Spectroscopic Classification of High-Redshift Supernovae Discovered by HST," \$55,500 FY 2012–2015, observing time in semesters 2011B, 2012A, 2012B, 2013A (PI)
- NASA/STScI, Hubble Space Telescope, "Supernova Follow-up for the HST Multi-Cycle Treasury Programs," \$17,439 FY 2010–2014, Cycle 18 GO proposal, 258 orbits (co-I)
- NASA/STScI, Hubble Space Telescope, "Observing the IR Catastrophe in a Deflagration Type Ia Supernova," \$56,643 FY 2009–2013, Cycle 17 GO proposal, 10 orbits (PI)
- DOE, "Discovering the Nature of Dark Energy: Towards Better Distances from Type Ia Supernovae," \$55,000 FY 2009; \$10,000 supplemental, FY 2010 (PI)
- NASA/STScI, Hubble Space Telescope, "Late-Time Photometry of SN 2005hk: A New Kind of Type Ia SN," \$46,049 FY 2007–2010, Cycle 16 GO proposal, 9 orbits (PI)