federica b. bianco (she/her) — Curriculum Vitae

University of Delaware
Department of Physics & Astronomy
Biden School of Public Policy & Administration
Data Science Institute
Vera C. Rubin Observatory Construction Project
Deputy Project Scientist

email: fbianco@udel.edu
http://fbb.space

EDUCATION :

Ph.D. in Physics, 2010
University of Pennsylvania, Philadelphia, PA, USA.
Thesis: *Chasing Shadows in the Outer Solar System.*
Supervisor: Prof. Charles R. Alcock.

MS Physics, 2007
University of Pennsylvania , Philadelphia, PA, USA

Laurea degree in Astronomy, 2003
Università degli Studi di Bologna, Italy.
Graduated Summa cum Laude with Honors.
Thesis: *Densità di Nane Bianche nell'Alone di Materia Oscura Galattico: simulazione sulla base di osservazioni MACHO.*
Supervisor: Prof. Bruno Marano.

RESEARCH INTERESTS

Data-driven and observational science, focusing on interdisciplinarity and inference from large data in the time domain.

- **Astrophysics**: Constraining astrophysical systems through the application of statistical methodologies and AI to survey data. My work includes constraints on progenitors of rare and unusual stellar explosions and on the evolution of the Solar System with large surveys and innovative observing methodologies.
- **Urban Science:** pioneering the application of astronomical techniques and data-science methods to observations of cities, including broad-band, hypertemporal, and hyperspectral imaging, and records data integration to enable inference on the sociological, economic, and ecological level at the MUON.
- **Science Communication:** Bridge the communication gaps by developing training and education models to grow the scientific literacy of policy makers and the public and the communication effectiveness of scientists.
- **Science Leadership:** Shaping the future of collaborations and astronomy. As the Deputy Project Scientist of Rubin Observatory I lead the synthesis of community input to optimize survey design for the Legacy Survey of Space and Time (LSST), a transformational project whose scale and complexity (30Gb data per minute, 20Tb per night) drives advances in infrastructure and methodology. In community leadership roles, I facilitated the work of 2000+ members of the international science community as Science Collaborations Coordinator for Rubin LSST, focusing on establishing principles of equity and accessibility in scientific collaborations.

OUTREACH AND EDUCATION INTERESTS :

Development and implementation of innovative educational and training frameworks.

- **Curriculum Development:** developing data-science curriculum across disciplines including physical, natural, and social sciences, focusing on the common methodologies while developing approaches that are specifically suited to each audience and including ethical considerations in the exploitation and development of data science methodologies.

- **Hackathons, data-drives, debug-a-thons:** developing immersive learning experiences to promote evidence-based inference

PROFESSIONAL APPOINTMENTS :

2022-present	Associate Professor *Department of Physics and Astronomy, University of Delaware*
2022-present	Associate Professor *Biden School of Public Policy and Administration, University of Delaware*
2022-present	Rubin observatory Construction Project *Deputy Project Scientist*
2019-2022	Assistant Professor *Department of Physics and Astronomy, University of Delaware*
2019-2022	Assistant Professor *Biden School of Public Policy and Administration, University of Delaware*
2019-present	Resident Faculty *Data Science Institute, University of Delaware*
2017-2022	Rubin Observatory LSST Science Collaborations Coordinator *Legacy Survey of Space and Time*
2016-2018	Research Assistant Professor of Urban Science *Center for Urban Science and Progress, New York University*
2015-2016	Senior Research Scientist *Center for Urban Science and Progress, New York University*
2012-2015	James Arthur Fellow *Center for Cosmology and Particle Physics, New York University*
2009-2012	Postdoctoral Fellow *UCSB - Las Cumbres Observatory Global Telescope Network*
2005-2009	Smithsonian Predoctoral Fellow *Harvard-Smithsonian Center for Astrophysics*
2002-2003	Overseas Fellow Undergraduate Research *University of Pennsylvania Department of Physics and Astronomy* 2022-present

ADDITIONAL APPOINTMENTS :

2022-present	Adjunct Faculty *Lincoln University, The Nation's First Degree-Granting HBCU*
Spring 2021, 2023	Visiting Professor *Università degli studi di Parma, Dipartimento di Fisica*
2019-2021	Visiting Professor *Center for Urban Science and Progress, New York University*

AWARDS :

TED Fellow 2019

Blavatnik Awards for Young Scientists Nominee 2016 NYU.

James Arthur Postdoctoral Fellowship, September 2012-2015.

Smithsonian Predoctoral Fellowship, September 2005-2009.

Magna cum Laude Università degli Studi di Bologna, September 2004.

GRANTS :

NSF Astronomy and Astrophysics Grants: $250K *Every Datapoint Counts: Atmosphere-aided Flare Studies in the Rubin era*, 2023, Principal Investigator, National Science Foundation Award Number:2308016.

NSF Astronomy and Astrophysics Grants: $600 *Preparing for Science with the Rubin Observatory: Groundwork to Explore the Galactic Population of Exoplanets*, 2022, Co-Principal Investigator (PI R. Street), National Science Foundation Award Number:2206828.

NSF Harvesting the Data Revolution Data Science Corps: $1.5M *Delaware and Mid-Atlantic Data Science Corps* , 2021, Principal Investigator, National Science Foundation.

NSF Astronomy and Astrophysics Grants: $600K *Detecting and studying light echoes in the era of Rubin and Artificial Intelligence*, 2021, Principal Investigator, National Science Foundation Award Number:2108841.

NSF EPSCoR: $1M *Characterizing the Global Illicit Trade in Energy-Critical Materials using Machine Learning, Remote Sensing, and Qualitative Research* , 2021, Co-Principal Investigator (PI J. Klinger), National Science Foundation Award Number:2039857.

NASA ASAP: *Meta-study of UV-through-NIR Explosive Transients for the Roman Space Telescope and Beyond*, 2021 (PI M. Modjaz)

NIH ACCEL: $80K *The Effects of Subpopulations and Policy Change on COVID19 Hospital Demand Models*, 2020, Co-Investigator, National Institutes of Health.

Google Cloud COVID-19 $1500 research credits program in Google Cloud Platform credits. Principal Investigator.

Extraordinary call for COVID-19 related proposals *Hacking vulnerable people as massive particles* Principal Investigator, IAU Office for Astronomy Development.

University of Delaware - General University Research Grants : $30k *Echoes of light: detection with artificial intelligence to characterize the history of explosions in our Galaxy.* Sole Investigator

NSF OAC-1841625: $262k *Community Planning for Scalable Cyberinfrastructure to Support Multi-Messenger Astrophysics***,** , 2018, Co-Investigator, Office of Advanced Cyberinfrastructure (OAC), National Science Foundation

DOE IDEAS GRANT DE-AR0000886: $500k *Grid Dynamics and Energy Consumption Patterns Through Remote Observations of City Lights***,** , 2018, Principal Investigator, Advanced Research Projects Agency – Energy (ARPA-E), Department of Energy

XVI Canary Islands Winter School of Astrophysics Scholarship, Instituto de Astrofisica de Canarias Tenerife, Spain, November 2004.

AAS International Travel Grant, 2013, 2016.

TEACHING :

Fall 2022,23	Instructor	UD PHYS267/SPPA267/GEO267 Lincoln University of Pennsylvania MATH115 *Fundamentals of Data Science for Everyone* Undergraduate level
Spring 2020,22	Instructor	UD PHYS667 *Machine Learning for Time Series Analysis* Graduate level
Fall 2019,21,23	Instructor	UD PHYS461/661 *Data Science for (Physical) Scientists* Undergraduate+Graduate level
Fall 2020,22	Instructor	UD SPPA667 *Principles of Urban Science* Graduate level
Spring 2021,23	Instructor	Universita di Pisa *Machine Learning for Physical and Natural Scientists* Graduate level

Spring 2020	Instructor	UD PHYS207 *Fundamentals of Physics I* Undergraduate level
Fall 2021, 2020	Guest lecturer	UD PHIL/UAPP667 *Ethics of Data Science and AI* Graduate level
Fall 2015-2018	Instructor	NYU CUSP, *Principles of Urban Informatics* Master-level data science class
2015-2018	CUSP Hackathons	Founder and director of the hackathon program for CUSP Master students, 3-6 events/year
Spring 2017,18	Co-Instructor	NYU CUSP-GX 9002, *Advanced Topics in Urban Informatics* Graduate level
Spring 2017	Guest Lecturer	NYU Physics, *Science communication* Undergraduate/Graduate level
Spring 2017	Guest Lecturer	NYU CUSP-GX 7009, *Urban Sensing* Graduate level
Fall 2013	Instructor	NYU PHYS-UA 13 *Observational Astronomy* Undergraduate level
2013,14,16	Guest Lecturer	NYU MAP-UA 209, *Quarks to Cosmos* Undergraduate level
Winter 2012	Guest Lecturer	UCSB Physics 133, *Galaxies/Cosmology* Undergraduate level
Winter 2012	Guest Lecturer	UCSB Astronomy 1 Undergraduate level
Fall 2008	Teaching Assistant	Harvard Science A-36 *Science of the Physical Universe* Undergraduate level
Spring 2008	Guest Lecturer	Harvard Astronomy 1 *The Astronomical Universe* Undergraduate level
2003/2004	Teaching Assistant	University of Pennsylvania - Physics Laboratories.

MENTORING :

Current Ph.D. students: *Riley Clarke, Willow Fox Fortino, Siddarth Chaini, Tatiana Acero Cullar, Shar Daniels.*

2023-present	Mentor of Postdoctoral Catalyst Fellow Somayeh Khakpash (Rutgers University)
Summer 2023	Mentoring Undergraduate NYU student Aria Tameze
Summer 2023	Co-Mentoring undergraduate students Ibrahim Wilson - NASA space grant fellow
2021-present	Mentoring Undergraduate Computer Science and Music students from Lincoln University
2019-present	Mentoring PhD Students in the University of Delaware Physics Department
2019-present	Mentoring and co-Mentoring Undergaduate and Graduate Students in the Biden School of Public Policy and Administration at the University of Delaware
2019-present	Mentoring and co-Mentoring University of Delaware Master of Data Science students
2018-2019	Mentoring postdoc Dr. Julien Bauer
2018	Mentoring NYU Tandon Master of Science in Integrated Digital Media student Gabriella Cammarata on *Data-Driven sculptures: how to design beautiful and scientifically correct 3D printed data representation.*
2017	Mentoring a team of 4 CUSP Urban Informatics Graduate students in the CUSP Capstone project *A Data-Driven Evaluation of Bias in Pre-Trial Detention.*
2017	Mentoring a team of 2 CUSP Urban Informatics Graduate students in *Automatic detection of cigarette signs from street level images with Deep Learning*
2017	Mentoring OPT trainee Ilan Reinstein (Applied Physics Master).
2015-2016	Mentoring Physics Graduate NYU student Kieran Finn.
2012-2017	Co-Mentoring Physics Graduate NYU student Yuqian Liu.
2014	Co-Mentoring Physics Undergraduate NYU student Seung Man Oh.

OUTREACH AND SERVICE :

Service to the scientific community: Event Organizing Committees

202	Rubin LSST Project Community Workshop Scientific Organizing Committee, August 2021, Tucson, AZ, SOC
2022	Rubin LSST Project Community Workshop Scientific Organizing Committee, August 2021, Tucson, AZ, SOC
2022	Rubin LSST@Europe 4s Summer 2022, Rome, Italy, SOC
2022	Bayesian Deep Learning for Cosmology and Transient Astronomy, February 2022, Paris, SOC.
2022	Roman telescope Science meeting, February 2022, Pasadena California, SOC
2021	Rubin LSST Project Community Workshop Scientific Organizing Committee, August 2021, *Virtual*, SOC
2020	UD Virtual Symposium on Computational Social Science for an Inclusive Society, *Virtual*, SOC
2020	UD Virtual Symposium on Computational Social Science for an Inclusive Society - Ethics in AI session organizer and moderator, Virtual, Session Chair
2020	Rubin LSST Project Community Workshop August 2020, SOC, *Virtual*, `https://project.lsst.org/meetings/rubin2020/`
2020	Rubin Cadence Metrics Hackathon - Lead Organizer, August 2020, *Virtual*, `https://lsst-tvssc.github.io/metricshackathon2020/`
2019	Rubin LSST Project Community Workshop Scientific Organizing Committee , August 2019, Tucson AZ, SOC `https://www.lsst.org/news/lsst-2019-concludes-tucson`
2018	Enabling Multi-Messenger Astrophysics in the Big Data Era April 25-26, Space Telescope Science Institute, Baltimore, USA, SOC `http://www.stsci.edu/institute/conference/emma`
2018	Deep Learning For Mutimessenger Astrophysics: Real-Time Discovery at Scale, October 17–19, NCSA/University of Illinois, SOC `http://www.ncsa.illinois.edu/Conferences/DeepLearningLSST/`
2018	LSST - Large Synoptic Survey Telescope - Special Programs Workshop October 8-10, 2018, Palermo, Italy, SOC `https://indico.ict.inaf.it/event/716/`
2018	LSST Cadence Hackathon at the Flatiron Institute, September 17-19, 2018 NYC, `https://fbb.space/LSSTHackathonCCA/`, SOC
2016-2019 ,	Organizer LSST Transients and Variable Stars Collaboration workshops and events `https://lsst-tvssc.github.io/DDFMS_meeting_2018.html`, `https://lsst-tvssc.github.io/TVS-SMWLV2019`, `http://eventi.na.astro.it/en/lsst-tvs-2018/`
2015-2016	Founder and organizer of NYU Center for Urban Science and Progress Hackathon Series.
2015-present	Member of the Project Organizing Committee of Hot-wiring the Transient Universe `http://hotwireduniverse.org/`
2010	*Santa Barbara Astro day* at UCSB, SOC
2005	Creator and co-founder of the annual *CfA Predoctoral Symposium* (Harvard Smithsonian CfA)

Service to the scientific community: Leadership roles and committees

2020-present	Rubin Contribution Evaluation Committee
2020-present	Gemini Board of Directors
2019-2020	Gemini Time-Domain Advisory Group
2019-present	LINCC Science Advisory Committee
2019-present	Rubin Observatory LSST Science Advisory Committee
2019	GBS Sub-Committee on The Evolving Roles of the Gemini, Blanco, and SOAR Telescopes `https://www.nsf.gov/attachments/296041/public/aaac_feb25_klaus_honschied.pdf`
2018-present	LSSTC Board of Directors
2017-present	Rubin Legacy Survey of Space and Time (LSST) Science Collaborations Coordinator. `https://project.lsst.org/science-collaborations-0`
2017	Member of LCSC Working Group documenting and prioritize the goals, requirements, and aspirations of the community for science with Rubin Observatory data.
2016-2018	Serving on NOAO Time Allocation Committee.
2015-present	Co-chair of the Transients and Variable stars LSST Science Collaboration. `https://lsst-tvssc.github.io/`
2015	Served on NSF review panel.
2014	Served in NASA mission review panel
2014	Co-founder, organizer, and NYU-coordinator of AstroML NYC-wide reading group (NYU, Columbia, AMNH, and CUNY)
2013-2014	Organizer of CCPP 2013 Fall Astro-Seminar series CCPP-NYU
2012-2015	Leading and coordinating bi-weekly *Astro-Coffee* CCPP-NYU
2010, 2012	LCOGT support scientist in the annual KITP teachers conference
2011	Head of the LCOGT committee organizing and producing the first LCOGT AAS booth for the 219th AAS meeting, January 2010
2011-2012	Founder and Chair of the monthly LCOGT Science Seminar Series
2010-2012	Founder and organizer of LCOGT journal club (biweekly astronomy discussion group for scientists and non-scientists)
2010	Local organizing committee for the triennial Trans Neptunian Science conference *TNO 2010*
2006	Founder and organizer of the Weekly Predocs Coffee (weekly gathering to foster connections among Smithsonian Predoctoral fellows at the CfA)

Pedagogical service and outreach

2021 April 23-25	UD Misinformation Hackathon - Judge, Mentor, Coorganizer
2020 May 4-5	UD COVID-19 Hackathon - Lead Organizer
2020 September 17-20	Ethics4NextGen AI Hackathon Mentor
2020-present	Masters in Data Science Executive Committee, University of Delaware
2019	Feature: *Astrophysicist explains how boxing makes her a better scientist.* National Public Radio - WHYY
2017 April 24	NYU Women in Science (WINS) panel
2017 March 25	Organizer of Women In Machine Learning and Data Science (WIMLDS) Smart Cities Hackathon `http://www.wimldsdatadive.com/hackathons/2`
2015 November 3	Organizer and Moderator of the First CUSP Hack Day: coordinating over 50 participants hacking 12 data driven projects
2015	Astronomy Expert on Supermoon Night for rooftop event organized by PrayTell
2015	Feature: *Leisure activities: The power of a pastime* Nature/NatureJobs article about scientist's hobbies.
2015	Organizing the *NYC Science Train* Outreach Program.
2015-present	Working with *Guerilla science*
2014	Designing a demo on HST's Cassegrain telescope design for a NOVA documentary.

2014	Live blogging for the *Huffington Post* in occasion of the Partial Solar Eclipse.
2011-2012	Coordinate amateur astronomer observations at Faulkes Telescope North, HW, facilitate collaboration between amateur and professional astronomers

Diversity, equity, and inclusion

2021-present	Rubin Inclusive Research Task Force
2020-present	Masters in Data Science Executive Committee, University of Delaware
2020 November 5-8	Organize and Lead National Society of Black Physicists Rubin TVS Science Collaboration Booth
2020 October 30	Co-organize and co-lead DPA Booth at Black-in-Physics Job Fair
2021-present	Rubin Research Inclusion Committee
2020-present	Data Ethics reading group, co-founder and organizer, University of Delaware
2020-present	University of Delaware Anti-racism Stirring Committee
2020-present	Diversity Equity and Inclusion Task force of the Natural Science Departments of the University of Delaware
2020-present	Founder and Chair of the University of Delaware Department of Physics and Astronomy Climate, Diversity, Equity, and Inclusion Committee
2020-present	Co-Founder and member of the Rubin LSST TVS Justice, Equity, Diversity, and Inclusion (JEDI) group.
2015-2016	Founder of Pints and Equality: a diversity focus group at NYU physics.
2015 October 15	Presenting topics on Diversity and Equality in Academy, Astronomy on Tap NYC.

COMPETITIVE TELESCOPE TIME AWARDS :

Co-I Deep Drilling in the Time Domain with DECam, NSF's National Optical-Infrared observation time, Jan 2021

Co-I DECAM-CNTAC 2 nights of observation Jan 2021

PI of LCOGT long term program *A synergistic observational approach at a crucial time for Outer Solar System studies*, $\sim$ 551 hours over six observing cycles on the LCOGT 2m and 1m robotic networks (2013).

Co-I of NSF grant: *Collaborative Research: Using Spectroscopy of Light Echoes to Observe the 19th Century Great Eruption of Eta Carinae* (PI Nathan Smith)

SOAR 3.0 m telescope, 2 half-nights to monitor light echoes of Eta Carinae, 2013 (PI).

KPNO Mayall 4.0 m telescope, 5 nights to discovery light echoes of historical events, 2012.

SOAR 3.0 m telescope, 4 half-nights to monitor light echoes of Eta Carinae, 2012 (PI)

Faulkes Telescope North (2.0 m), 3 hours to observe Lucky Imaging of Comet ISON (PI) 2013B DDT

Faulkes Telescope North High speed observations of Nova Delphini (PI) 2013B DDT

Faulkes Telescope North/South (2.0 m), 127 hours queued scheduled time to follow-up light echo candidates with traditional imaging and detect new echoes of historical explosions (PI) since 2010.

Faulkes Telescope North/South (2.0 m), 50 hours to observe occultations of stars by Outer Solar System objects (PI) since 2010

MMT 6.5 meter telescope, 10 nights observing with Megacam optical images in continuous readout mode between January 2007 and July 2008 (PI).

Several nights of commissioning observations were awarded over the years at both Faulkes telescopes for lucky imaging and high speed photometry and at the TAOS 50cm robotic telescopes for software development.

BOARDS, PROFESSIONAL ORGANIZATIONS, AND SCIENCE TEAMS :

2023	NASA Unidentified Anomalous Phenomena Study Team`https://www.nasa.gov/news-release/update-nasa-shares-uap-independent-study-report-names-director/`
2023 to present	The NSF AI Institute for Artificial Intelligence and Fundamental Interactions (IAIFI) Advisory Board `https://iaifi.org/`
2022 to present	Vera C. Rubin Observatory Project Science Team
2020-2022	Gemini Telescope Board of Directors
2017-2022	Rubin Observatory LSST Science Collaborations Coordinator
2015-2023	Rubin Observatory LSST Transients and Variable Stars Collaboration Chair
2015	POC Hot-wiring the Transient Universe
2015	Leading the FLICKER Science team. Flicker is a CubeSat mission proposed to NASA SIMPLEx. `http://www.flicker.space/flicker-concept`
2010 to present	Member of the Whipple science team.
2009-2012	Member of the LCOGT science team.
2007-2012	Member of the Time Series Center, Harvard, IIC.
2004 to present	Member of the TAOS collaboration.

INVITED WORKSHOPS :

1. *SOMACHINE - Machine Learning, Big Data, and Deep Learning in Astronomy - A Severo Ochoa School of the Instituto de Astrofísica de Andalucía (CSIC).* November, 2020; April 2021
2. *SATCOM - online workshop.* June 29-July 2, 2020
3. *Astronomical Data Science Workshop*, Texas AMU, College Station, TX, February 17-18, 2020.
4. *Kavli-IAU Workshop International co-ordination of multi-messenger transient observations in the 2020s and beyond.* Cape Town, February 3-7, 2020.
5. *WFIRST/LSST Deep Fields workshop*, Princeton University, Princeton, NJ, August 30, 2018.
6. *PLAsTiCC transient challenge workshop*, Flat Iron Center for Computational Astrophysics, New York (NY), July 2014 2017.
7. *A Definitive Investigation of the Core-Collapse Supernova Cassiopeia A* - Princeton Center for Theoretical Science (PCTS), April 2017
8. *LSST Observing Strategy white paper workshop* - Tucson, November 2015
9. *The Dynamic Universe: Understanding ExaScale Astronomical Synoptic Surveys* Aspen Center for Physics, June 2015
10. *Type Ia Workshop.* Institute for Advanced Studies, Princeton, NJ, September 2014.
11. *Observational Signatures of Type Ia Supernova Progenitors*, Lorentz Center, Leiden, NL, September 2010.

INVITED TALKS AND COLLOQUIA :

1. **The status of the Vera C. Rubin Observatory and the Legacy Survey of Space and Time**, October 6, 2023
   INVITED TALK: Gravi-Gamma-Nu 4th workshop *Gran Sasso Science Institute, L'Aquila, Abruzzo, Italy*

2. **Optimization of the Observing Cadence for the Rubin Observatory Legacy Survey of Space and Time: A Pioneering Process of Community-focused Experimental Design**, July 25, 2023 , CSU-Rubin DP0 Summer Data Summit (an NSF PEER program) Las Cumbres Observatory (virtual), CA

3. **Vera C. Rubin observatory: Ushering a new era for time domain astronomy**, June 7, 2023
   INVITED TALK: Strauss-Lupton Fest *Princeton University, Princeton, NJ*

4. **Rubin LSST : Ushering a new era of of Time Domain Astronomy**, March 3, 2023
   INVITED TALK: Steve Kahn Symposium *SLAC National Accelerator Laboratory*

5. **The Vera C. Rubin Observatory Legacy Survey of Space and Time**, February 21, 2023
   Colloquium, *Department of Physics, University of Maryland, College Park, Maryland*

6. **The Vera C. Rubin Observatory Legacy Survey of Space and Time**, November 8, 2022
   Colloquium, *Center for Interdisciplinary Exploration and Research in Astrophysics (CIARA) - Northwestern University, Evenston, IL*

7. **Beyond the stars: data-driven approaches from astrophysics to interdisciplinary research**, November 8, 2022
   Seminar, *Center for Interdisciplinary Exploration and Research in Astrophysics (CIARA) - Northwestern University, Evenston, IL*

8. **Rubin LSST Survey Cadence Optimization Committee: Phase 2 recommendations**, November 2, 2022
   PLENARY: *SCOC-SC Third Virtual Workshop, November 2nd 2022*

9. **Rubin LSST Survey Strategy**, October 28, 2022
   PLENARY: *LSST@Europe4, Rome, Italy*

10. **The Legacy Survey of Space and Time**, October 22, 2022
    Colloquium: *TIFR, Tata Institute of Fundamental Research, India*

11. **Rubin-Gaia synergies**, October 14, 2022
    INVITED TALK: *Transient Sky with Gaia, Coimbra, Portugal*

12. **Science Collaborations Plenary**, August 10 2022
    PLENARY: *Rubin LSST Project Community Workshop*, Tucson AZ

13. **Status of the Rubin Project and the Science Collaborations**, 11th - 15th July 2022
    INVITED TALK: Preparing for the Rubin Observatory's Legacy Survey of Space and Time, The National Astronomy Meeting (NAM) of the Royal Astronomical Society 2022 The University of Warwick

14. **Beyond the stars: data-driven approaches to astrophysics, survey design, and interdisciplinary research**, April 5, 2022
    Colloquium: *Department of Astronomy, University of Santa Cruz*

15. **Science with the Vera C. Rubin Observatory**, March 28, 2022
    Plenary: *From Data to Software to Science - LINCC workshop, Flat Iron Institute, NYC.*

16. **Beyond the Stars**, March 3, 2022
Colloquium: *Department of Physics, University of California San Diego*

17. **Ethics and diversity in AI and ML**, January 18, 2022
Invited talk: *NASA SME AI/ML retreat*

18. **Vera C. Rubin Observatory: Ushering a New Era of Time Domain Astronomy**, November 2, 2021
Invited talk: *NASA Cosmic Program seminar series*

19. **Vera C. Rubin Observatory: Ushering a New Era of TDA** , September 17, 2021
Invited talk: *Instituto de Astronomía Teórica y Experimental Seminar*, Argentina.

20. **Rubin LSST Project Community Workshop 2021**, August 11, 2021
PLENARY TALK: *Rubin LSST Science Collaborations Report*

21. **Thabo Mbeki African School of Public and International Affairs Design & Development Of Short Learning Programmes Workshop** June 28, 2021
INVITED SPEAKER: Urbanization and the GIS System

22. **Beyond the stars: good and bad ways to use our skills to make a better world**, March 27 2021
South African Astronomical Observatory **Colloquium**

23. **MAGIC workshop**, Vera C. Rubin Observatory: Ushering a New Era of Time Domain Astronomy, January 27, 2021. INVITED SPEAKER

24. **Beyond the stars : good and bad ways to use our skills to make a better world**, November 10, 2020
University of Washington-Seattle DIRAC center seminar

25. **Rubin LSST Project Community Workshop 2020**, August 12, 2020
PLENARY TALK: *Rubin LSST Science Collaborations Report*

26. **2020 Joint Statistical Meetings** - American Statistical Association, Section on Physical and Engineering Sciences *Challenging Signal Detection Problems In Astronomy,* August 4, 2020 .
INVITED SPEAKER: *Experimental Design and Discovery of Unknown Unknowns with the Rubin Observatory Legacy Survey of Space and Time*

27. Vera Rubin Observatory & National Earth Science Teachers Association (NESTA) workshop July 20, 2020.
INVITED SPEAKER: *Explosions in my data, Supernova Science*

28. A Meeting-in-a-Meeting (MiM) as part of the **236th Meeting of the AAS**, Supermassive Black Hole Studies with the Legacy Survey of Space and Time (LSST), June 1, 2020.
INVITED SPEAKER: *The LSST Science Collaborations*

29. Data Science Webinar, University of Delaware COVID-19 Data Modeling and Impact June 23, 2020.
INVITED PANELIST: *Hacking COVID-19 away*

30. Virtual Panel Discussion Biden School COVID-19 Engagement, May 6, 2020.
INVITED PANELIST

31. 3rd SPHEREx Community Workshop, FlatIron Institute, NYC, February 24-26, 2019.
INVITED TALK: *Rubin Observatory LSST - observing strategy, data products, and potential synergies.*

32. **Astronomical Data Science Workshop**, Texas AMU, College Station, TX, February 17-18, 2020.
INVITED TALK: *How Studying the Ever-Changing Sky has Changed.*

33. **Kavli IAU Workshop** International co-ordination of multi-messenger transient observations in the 2020s and beyond. Cape Town, February 3-7, 2020.
INVITED TALK: *Transient/Multi-messenger Science with Rubin Observatory (LSST)*
INVITED TALK: *ToOs with Rubin Observatory*

34. **235rd Meeting of the American Astronomical Society**, Honolulu, HI January 4-9, 2019.
Rubin Observatory Open House: *The Rubin Observatory LSST Science Collaborations: activities and goals.*

35. An Evening of Conversations & Connections, Annual UD Alumni event, New York, NY, November 13 2019.
KEYNOTE ADDRESS

36. **Equinox Lecture**, Central Michigan University, Mt. Pleasant, MI, September 23, 2019.
INVITED LECTURE: *LSST: chasing changes all over the sky*

37. **Conveying Science Through Art: A Public Engagement Workshop organized by Guerilla Science & Pratt Institute**, NYC Academy of Sciences, September 8-9, 2019
INVITED LECTURE: *What is the job of a scientist?*

38. **LSST Project Community Workshop** 2019, Tucson, AZ, August 12, 2019
INVITED TALK: *LSST science 101*

39. **LSST Project Community Workshop** 2019, Tucson, AZ, August 12, 2019
INVITED TALK: *LSST Transients and Variable Stars Science Collaboration*

40. **European Week of Astronomy and Space Science**, TIME DOMAIN S1: Exploring the time-domain phase space from current surveys to LSST, Lyon, France, June 26, 2019.
INVITED TALK: *The LSST survey and the transient sky*

41. Open digital infrastructure in astrophysics, Kavli Institute for Theoretical Physics, University of California, Santa Barbara. June 2, 2019.
INVITED TALK: *LSST (TVS) for software developers.*

42. Inference for Multi-messenger Astrophysics Workshop, University of California, Berkeley, May 30, 2019
INVITED TALK: *Machine and deep learning applications in LSST user generated data products*

43. University of Delaware Italian Honors Day, Newark, DE, May 2, 2019.
KEYNOTE ADDRESS: *Italian Renaissance Woman*

44. **TED 2019** - Bigger than us, Vancouver, Canada. April 15, 2019.
TED talk: *How we use astrophysics to study earthbound problems*

45. **National Academy of Science, Space Science Week Committee on Astronomy and Astrophysics**, Washington, DC, March 27, 2019
INVITED TALKS: *The status of the LSST Science Collaborations*

46. IV Workshop LSST Chile, La Serena, Chile, March 6, 2019.
INVITED TALK: *LSST Science Collaborations*

47. **233rd Meeting of the American Astronomical Society**, Seattle, WA January 6-10, 2019.
LSST Town Hall: *LSST Science Collaborations and the LSST Corporation's Enabling Science Activities*

48. **Symposium in occasion of the 30th anniversary of the bilateral agreement on science and technology between Italy and the USA** December 5, 2018, Italian Embassey, Washington DC
INVITED TALK: *The Large Synoptic Survey Telescope*

49. Center for Computational Astrophysics at the Flat Iron Institute **Colloquium**, September 21, 2018.
Detectable Changes in Astronomy

50. Workshop on WFIRST/LSST Deep Fields, Princeton University, August 30, 2018.
INVITED TALK: *LSST deep drilling field program*

51. LSST TVS Program, Naples Italy, April 9, 2018.
INVITED TALK: *The LSST Overview, TVS Task Force proposals and Roadmap*

52. **European Week of Astronomy and Space Science** - Supernova Diversity Symposium, April 3 - 4, 2018.
INVITED TALK: *The LSST Supernova Survey*

53. **European Week of Astronomy and Space Science** - Software in Astronomy Symposium, April 4, 2018.
INVITED TALK: *Measuring the Impact of Your Research Software*

54. University of Toronto **Astronomy Colloquium**, March 7th, 2018.
Detectable Changes in Astronomy

55. Villanova University **Astronomy Colloquium**, February 16th, 2018.
Detectable Changes in Astronomy

56. **231st Meeting of the American Astronomical Society**, Washington, DC January 8-12, 2018.
LSST Town Hall: *Science Collaborations and the LSST Corporation's Enabling Science Activities*

57. University of Wisconsin, Milwaukee, **Physics Colloquium**, Milwaukee, WI November 3, 2017.
Detectable Changes in Astronomy

58. Westport Astronomical Society, CT, USA, October 17, 2017
INVITED OUTREACH TALK: *A peek into the future of astronomy, from LSST to Urban Science*

59. University of Stockholm/Oskar Klein Center, Sweden, September 8th, 2017.
Talk as "opponent" in PhD defense: *Stripped Envelope Supernovae in Context*

60. PLAsTiCC transient challenge workshop, Center for Computational Astrophysics, New York (NY), July 2014 2017.
INVITED TALK: *LSST transient challenge metrics beyond supernovae*

61. Supernovae: the LSST revolution, Northwestern University, Evanston (IL), June 1-2, 2017.
INVITED TALK: *LSST Metrics for Supernovae*

62. **IAUS 329**: The Lives and Death-Throes of Massive Stars, Auckland, New Zealand - November 28-December 2, 2016.
INVITED TALK: *Moving beyond SNIbc: the diversity of stripped envelope SNe.*

63. **AMC BuildSys 2016**, Stanford, CA, USA - November 16-17, 2016.
ACCEPTED PAPER: *Hypertemporal Imaging of NYC Grid Dynamics*

64. Supernovae through the ages, Rapa Nui, Chile - August 8-13, 2015
INVITED TALK: *A Roadmap to the LSST transient sky*

65. Joint Steward Observatory/NOAO **Colloquium**, Tucson, AZ - November 5, 2015.
Explosions in my Data

66. University of California, Santa Cruz, FLASH (Job Talk). Santa Cruz, CA – February 20, 2015.
Forensic studies of massive stars (and other adventures in time domain astronomy).

67. MSU **Colloquium** (Job Talk), Mississippi State, MS – January 27, 2015.
Replay: Echoes of Light from Eta Carinae

68. PACC workshop: SNIa in the NIR, UPitt, Pittsburg, PA – March 28, 2012
INVITED TALK: *Optical, NIR and bolometric early light curve of SN 2011fe.*

69. Herzberg Institute of **Astrophysics Colloquium**, Victoria BC – February 7, 2012
LCOGT: a global telescope network for time domain astronomy (and how I use it).

70. SN 2011fe Splinter Meeting, AAS, Austin, TX – January 9, 2012
INVITED TALK: *Optical, NIR and bolometric early light curve of SN 2011fe.*

71. Santa Barbara Astronomical Unit Monthly Meeting, Santa Barbara Museum of Natural History, Santa Barbara, CA – April 6, 2012
INVITED OUTREACH TALK: *Replay: Light Echoes of Eta Carinae.*

72. University of Massachusetts Lowell, **Physics Colloquium**, Lowell, MA – October 8, 2008
Chasing Shadows: Occultation Surveys of the Outer Solar System

73. Monthly Meeting, Skyscrapers Amateur Astronomical Society of Rhode Island – September 5, 2008
INVITED OUTREACH TALK: *Chasing Shadows: Occultation Surveys of the Outer Solar System*

SELECTED PANELS :

1. PANEL MODERATOR: Data Science-driven Equity from Healthcare, FinTech, Community, and Educational Perspectives, University of Delaware Data Science Symposium, September 22, 2023

2. INVITED PANELIST: Future of Workforce Development, University of Delaware Community in Engagement Initiative, Equity in Action series, Feb 23, 2023

3. INVITED PANELIST: GSN Alert system splinter session - American Astronomical Society Meeting 241 January 10, 2023

4. INVITED PANELIST: Teaching Data Science to Physicists - American Physical Society webinar March 4, 2022

5. INVITED PANELIST: Education in Astroinformatics and Astrostatistics: An overview of new interdisciplinary courses, training opportunities, and resources for the 2020s - Splinter Meetings of the American Astronomical Society AAS237, January 2020

6. INVITED PANELIST: Virtual Panel Discussion DSI COVID-19 May, 2020.

7. INVITED PANELIST: UD grad students career panel - November 2020

8. INVITED PANELIST: NECoPA Panel Data Collection for Pandemic Prediction- Session 7 Track 2B November

9. INVITED PANELIST: AAS Splinter Meeting: Education in Astrostatistics and Astroinformatics,January 12, 2021.

10. INVITED PANELIST: Virtual Panel Discussion Biden School COVID-19 Engagement, May 6, 2020.

11. INVITED PANELIST: Data Science Webinar, University of Delaware COVID-19 Data Modeling and Impact,

12. INVITED PANELIST: Hacking COVID-19 away, June 23, 2020.

13. PANEL MODERATOR: UD 2021 Virtual Symposium on Computational Social Science for an Inclusive Society - How is ethics embedded in data and models -October 2, 2020

14. INVITED PANELIST: NYU Women in Science panel April 24, 2017

15. INVITED PANELIST: CSI: Princeton—A definitive Investigation of the Core-collapse Supernova Cassiopeia A, April 17-19, 2017

CONTRIBUTED TALKS AND SEMINARS :

1. Rubin LSST Survey Strategy, August 10 2022
   PARALLEL: Rubin LSST Project Community Workshop, Tucson AZ

2. 2021 National Workshop on Data Science Education, online, June 14-18, 2021
   CONTRIBUTED TALK: slides

3. Astrophysics Seminar, Michigan State University, April 29, 2020.
   INVITED SPEAKER: Q/A session on the Legacy Survey of Space/Time (LSST)

4. European Week of Astronomy and Space Science
   CONTRIBUTED TALK: *Host Galaxies of Type Ic and Broad-lined Type Ic Supernovae from the Palomar Transient Factory: Implications for Jet Production*

5. UC Berkeley Theoretical Astrophysics Center Seminar, Berkeley, CA February 26th, 2018.
   Detectable Changes in Astronomy

6. Special Webinar LSST Brazil - October 19, 2016.
   The Transient Sky and LSST

7. Rutgers University, Seminar, New Brunswick, NJ - April 7, 2016.
   Explosions in my Data

8. University of Delaware, Seminar, Newark, DE - February 24 , 2016.
   Explosions in my Data

9. Stony Brook, Seminar, New York, NY - October 21, 2015.
   Explosions in my Data

10. University of Pittsburgh, Astro Seminar, Pittsburgh, PA – October 9, 2015.
    Echoes from the Past.

11. Hot-Wiring the Transient Universe. Santa Barbara, CA – May 13, 2015.
    CONTRIBUTED TALK: *Learning about stripped envelope SN explosions.*

12. Black Board Talk, NYU Center for Cosmology and Particle Physics, New York, NY – March 30, 2015.
    Forensic studies of massive stars.

13. University of Washington, Astro Seminar (Job Talk), Seattle WA – January 20, 2015.
    Probing the progenitors channels of stripped SN with the CfA SN sample.

14. AAS, Seattle, WA – January 5, 2015.
    CONTRIBUTED TALK: *The fist homogeneous, multi-color photometric and spectroscopic sample of Stripped Envelope Super Novae and what it can tell us about their progenitors*

15. CAASTRO Annual Scientific Conference Supernovae in the Local Universe: Celebrating 10,000 days of Supernova 1987A Coffs Harbour, NSW, Australia – August 12, 2014.
    CONTRIBUTED TALK: *Stripped Envelope Supernovae: insight from the CfA sample*

16. University of Pennsylvania, Astro Seminar, Philadelphia, PA – April 9, 2014.
    Echoes of Light from Eta Carinae and the fate of massive stars

17. Stony Brook, Seminar, New York, NY - November 13, 2013
    Replay: Echoes of Light from Eta Carinae.

18. Columbia University, Seminar, New York, NY – May 2, 2013
    Replay: Echoes of Light from Eta Carinae.

19. American Museum of Natural History, Seminar, New York, NY – March 26, 2013
Replay: Echoes of Light from Eta Carinae.

20. Black Board Talk, NYU Center for Cosmology and Particle Physics, New York, NY – March 11, 2013.
Chasing shadows in the solar system.

21. Digging deeper and faster: algorithms for computationally limited problems in time-domain astronomy, Caltech, Pasadena CA – December 13, 2012
CONTRIBUTED TALK: *LCOGT/LIHSP: A Robotic system for Lucky Imaging.*

22. Carnegie Observatory Friday Lunch Seminar, Pasadena, CA – May 25, 2012
LCOGT: a booming global telescope network for time domain astronomy , and two explosive results.

23. Santa Barbara Astronomy Day, Kavli Institute for Theoretical Physics, Santa Barbara, CA – March 9, 2012
CONTRIBUTED TALK: *Replay: Light Echoes of Eta Carinae.*

24. Santa Barbara Astro Day, UCSB, Santa Barbara, CA – October 1, 2010
CONTRIBUTED TALK: *Constraints from SNLS and SDSS data on SN Ia progenitors from shocks by the secondary star.*

25. Observational Signature of Type Ia Supernova Progenitors Workshop, Lorentz Center, Leiden, Netherlands – September 20th 2010
CONTRIBUTED TALK: *Constraints from SNLS and SDSS data on SN Ia progenitors from shocks by the secondary star.*

26. TNO 2010: Dynamical and Physical properties of Trans-Neptunian Objects, Philadelphia, PA – June 27, 2010
CONTRIBUTED TALK: *The TAOS Project: 3.75 year results for the Kuiper Belt and Sedna region*

27. Friday Astrophysics Lunch, UCSB, Santa Barbara, CA – February 19, 2010
Occultations Surveys of the Outer Solar System: Beyond the Kuiper Belt

28. Santa Barbara Astro Day, UCSB, Santa Barbara, CA – June 5, 2009
CONTRIBUTED TALK: *First Constraints on Outer Solar System Formation and Evolution Models from TAOS: a Fast Photometric Occultation Survey*

29. Astronomy Journal Club, UPenn, PA – March 17, 2009
A Search for Occultations of Bright Stars by Small Kuiper Belt Objects Using Megacam on the MMT

30. Friday Astrophysics Lunch, UCSB, Santa Barbara, CA – February 20, 2009
Chasing Shadows: Occultation Surveys of the Outer Solar System

31. Astro Lunch Seminar, UPITT/CMU, Pittsburg, PA – February 13, 2009
Chasing Shadows: Occultation Surveys of the Outer Solar System

32. Special Particle Astrophysics Seminar, Fermilab, Botavia, IL – February 5, 2009
Chasing Shadows: Occultation Surveys of the Outer Solar System

33. TIARA Workshop on Dim KBOs - Nat'l Tsing Hua University, Hsinchu, Taiwan, December 10, 2008
CONTRIBUTED TALK (given by proxy): *The MMT/Megacam occultation survey*

34. Special Seminar, Herzberg Institute for Astrophysics, Victoria, BC, CA – September 30, 2008
Chasing Shadows: Occultation Surveys of the Outer Solar System

35. Brown Bag Lunch Talk, LPL, University of Arizona, AZ – July 2, 2008
Chasing Shadows: Occultation Surveys of the Outer Solar System

36. Optical Infrared Division Lunch Talk, CfA, Cambridge, MA – April 24, 2008
Chasing Shadows: Occultation Surveys of the Outer Solar System

37. Third Annual Smithsonian Predoctoral Symposium, CfA, Cambridge, MA – March 7, 2008
CONTRIBUTED TALK: *TAOS and the fast photometry occultation surveys: state of the art and preliminary results*

38. Second Annual Smithsonian Predoctoral Symposium, CfA, Cambridge, MA – March 2, 2007
CONTRIBUTED TALK: *So many pixels, so little time... and such tiny features too!*

39. Trans Neptunian Objects: Dynamical and Physical properties - Catania, Italy – July 4, 2006
CONTRIBUTED TALK: *Taiwanese-American Occultation Survey: status of the project*

40. First Annual Smithsonian Predoctoral Symposium, CfA, Cambridge, MA – February 28, 2006
CONTRIBUTED TALK: *Chasing shadows with TAOS*

PUBLICATIONS :

Lead or Main-Contributing Author Refereed Publications

[1] Tatiana Acero-Cuellar, Federica **Bianco**, Gregory Dobler, Masao Sako, and Helen Qu. "There's no difference: Convolutional Neural Networks for transient detection without template subtraction". In: *arXiv e-prints*, arXiv:2203.07390 (Mar. 2022), arXiv:2203.07390. arXiv: 2203.07390 [cs.CV].

[2] Federica B. **Bianco**, Željko Ivezić, R. Lynne Jones, Melissa L. Graham, Phil Marshall, Abhijit Saha, Michael A. Strauss, Peter Yoachim, Tiago Ribeiro, Timo Anguita, A. E. Bauer, Franz E. Bauer, Eric C. Bellm, Robert D. Blum, William N. Brandt, et al. "Optimization of the Observing Cadence for the Rubin Observatory Legacy Survey of Space and Time: A Pioneering Process of Community-focused Experimental Design". In: *ApJS* 258.1, 1 (Jan. 2022), p. 1. DOI: 10.3847/1538-4365/ac3e72. arXiv: 2108.01683 [astro-ph.IM].

[3] Kelly M. Hambleton, Federica B. **Bianco**, Rachel Street, Keaton Bell, David Buckley, Melissa Graham, Nina Hernitschek, Michael B. Lund, Elena Mason, Joshua Pepper, Andrej Prsa, Markus Rabus, Claudia M. Raiteri, Robert Szabo, Paula Szkody, et al. "Rubin Observatory LSST Transients and Variable Stars Roadmap". In: *arXiv e-prints*, arXiv:2208.04499 (Aug. 2022), arXiv:2208.04499. DOI: 10.48550/arXiv.2208.04499. arXiv: 2208.04499 [astro-ph.IM].

[4] Xiaolong Li, Federica B. **Bianco**, Gregory Dobler, Roee Partoush, Armin Rest, Tatiana Acero-Cuellar, Riley Clarke, Willow Fox Fortino, Somayeh Khakpash, and Ming Lian. "Toward the Automated Detection of Light Echoes in Synoptic Surveys: Considerations on the Application of Deep Convolutional Neural Networks". In: *AJ* 164.6, 250 (Dec. 2022), p. 250. DOI: 10.3847/1538-3881/ac9409.

[5] Xiaolong Li, Fabio Ragosta, William I. Clarkson, and Federica B. **Bianco**. "Preparing to Discover the Unknown with Rubin LSST: Time Domain". In: *ApJS* 258.1, 2 (Jan. 2022), p. 2. DOI: 10.3847/1538-4365/ac3bca. arXiv: 2107.10281 [astro-ph.IM].

[6] Gregory Dobler, Federica B **Bianco**, Mohit S Sharma, Andreas Karpf, Julien Baur, Masoud Ghandehari, Jonathan Wurtele, and Steven E Koonin. "The Urban Observatory: A Multi-Modal Imaging Platform for the Study of Dynamics in Complex Urban Systems". In: *Remote Sensing* 13.8 (2021), p. 1426.

[7] J. Rafael Martinez-Galarza, Federica B **Bianco**, Dennis S Crake, Tirumala Kushal, Ashish A. Mahabal, Matthew J. Graham, and Daniel Giles. "Where is Waldo (and his friends)? A comparison ofanomaly detection algorithms for time-domain astronom". In: *Submitted to MNRAS, arXiv preprint available* (2020). arXiv: 2009.06760.

[8] Maryam Modjaz, Federica B. **Bianco**, Magdalena Siwek, Shan Huang, Daniel A. Perley, David Fierroz, Yu-Qian Liu, Iair Arcavi, Avishay Gal-Yam, Alexei V. Filippenko, Nadia Blagorodnova, Bradley S. Cenko, Mansi Kasliwal, Shri Kulkarni, Steve Schulze, Kirsty Taggart, and Weikang Zheng. "Host Galaxies of Type Ic and Broad-lined Type Ic Supernovae from the Palomar Transient Factory: Implications for Jet Production". In: *ApJ* 892.2, 153 (Apr. 2020), p. 153. DOI: 10.3847/1538-4357/ab4185. arXiv: 1901.00872 [astro-ph.HE].

[9] Igor Andreoni, Shreya Anand, Federica B. **Bianco**, S. Bradley Cenko, Philip S. Cowperthwaite, Michael W. Coughlin, Maria Drout, V. Zach Golkhou, David L. Kaplan, Kunal P. Mooley, Tyler A. Pritchard, Leo P. Singer, Sara Webb, with the support of the LSST Transient, and Variable Stars Collaboration. "A Strategy for LSST to Unveil a Population of Kilonovae without Gravitational-wave Triggers". In: *PASP* 131.1000 (June 2019), p. 068004. DOI: 10.1088/1538-3873/ab1531. arXiv: 1812.03161 [astro-ph.IM].

[10] Federica B. **Bianco**, Maria R. Drout, Melissa L. Graham, Tyler A. Pritchard, Rahul Biswas, Gautham Narayan, Igor Andreoni, Philip S. Cowperthwaite, Tiago Ribeiro, (With the Support of the LSST Transient, and Variable Stars Collaboration. "Presto-Color: A Photometric Survey Cadence for Explosive Physics and Fast Transients". In: *PASP* 131.1000 (June 2019), p. 068002. DOI: 10.1088/1538-3873/ab121a. arXiv: 1812.03146 [astro-ph.IM].

[11] Marc Williamson, Maryam Modjaz, and Federica B. **Bianco**. "Optimal Classification and Outlier Detection for Stripped-envelope Core-collapse Supernovae". In: *ApJ* 880.2, L22 (Aug. 2019), p. L22. DOI: 10.3847/2041-8213/ab2edb. arXiv: 1903.06815 [astro-ph.SR].

[12] Julien Baur, Gregory Dobler, Federica **Bianco**, Mohit Sharma, and Andreas Karpf. "Persistent Hyperspectral Observations of the Urban Lightscape". In: *2018 IEEE Global Conference on Signal and Information Processing (GlobalSIP)*. IEEE. 2018, pp. 983–987.

[13] Or Graur, Federica B. **Bianco**, Shan Huang, Maryam Modjaz, Isaac Shivvers, Alexei V. Filippenko, Weidong Li, and J. J. Eldridge. "LOSS Revisited. I. Unraveling Correlations Between Supernova Rates and Galaxy Properties, as Measured in a Reanalysis of the Lick Observatory Supernova Search". In: *ApJ* 837.2, 120 (Mar. 2017), p. 120. DOI: 10.3847/1538-4357/aa5eb8. arXiv: 1609.02921 [astro-ph.HE].

[14] Or Graur, Federica B. **Bianco**, Maryam Modjaz, Isaac Shivvers, Alexei V. Filippenko, Weidong Li, and Nathan Smith. "LOSS Revisited. II. The Relative Rates of Different Types of Supernovae Vary between Low- and High-mass Galaxies". In: *ApJ* 837.2, 121 (Mar. 2017), p. 121. DOI: 10.3847/1538-4357/aa5eb7. arXiv: 1609.02923 [astro-ph.HE].

[15] Yu-Qian Liu, Maryam Modjaz, and Federica B. **Bianco**. "Analyzing the Largest Spectroscopic Data Set of Hydrogen-poor Super-luminous Supernovae". In: *ApJ* 845.1, 85 (Aug. 2017), p. 85. DOI: 10.3847/1538-4357/aa7f74. arXiv: 1612.07321 [astro-ph.HE].

[16] F. B. **Bianco**, M. Modjaz, S. M. Oh, D. Fierroz, Y. Q. Liu, L. Kewley, and O. Graur. "Monte Carlo method for calculating oxygen abundances and their uncertainties from strong-line flux measurements". In: *Astronomy and Computing* 16 (July 2016), pp. 54–66. DOI: 10.1016/j.ascom.2016.03.002. arXiv: 1505.06213 [astro-ph.IM].

[17] Federica B **Bianco**, Steven E Koonin, Charlie Mydlarz, and Mohit S Sharma. "Hypertemporal imaging of NYC grid dynamics: Short paper". In: *Proceedings of the 3rd ACM International Conference on Systems for Energy-Efficient Built Environments*. 2016, pp. 61–64.

[18] Kieran Finn, Federica B. **Bianco**, Maryam Modjaz, Yu-Qian Liu, and Armin Rest. "Comparison of Diversity of Type IIb Supernovae with Asymmetry in Cassiopeia A Using Light Echoes". In: *ApJ* 830.2, 73 (Oct. 2016), p. 73. DOI: 10.3847/0004-637X/830/2/73. arXiv: 1605.03186 [astro-ph.HE].

[19] Yu-Qian Liu, Maryam Modjaz, Federica B. **Bianco**, and Or Graur. "Analyzing the Largest Spectroscopic Data Set of Stripped Supernovae to Improve Their Identifications and Constrain Their Progenitors". In: *ApJ* 827.2, 90 (Aug. 2016), p. 90. DOI: 10.3847/0004-637X/827/2/90. arXiv: 1510.08049 [astro-ph.HE].

[20] Maryam Modjaz, Yuqian Q. Liu, Federica B. **Bianco**, and Or Graur. "The Spectral SN-GRB Connection: Systematic Spectral Comparisons between Type Ic Supernovae and Broad-lined Type Ic Supernovae with and without Gamma-Ray Bursts". In: *ApJ* 832.2, 108 (Dec. 2016), p. 108. DOI: 10.3847/0004-637X/832/2/108. arXiv: 1509.07124 [astro-ph.HE].

[21] Or Graur, Federica B. **Bianco**, and Maryam Modjaz. "A unified explanation for the supernova rate-galaxy mass dependence based on supernovae detected in Sloan galaxy spectra". In: *MNRAS* 450.1 (June 2015), pp. 905–925. DOI: 10.1093/mnras/stv713. arXiv: 1412.7991 [astro-ph.HE].

[22] F. B. **Bianco**, M. Modjaz, M. Hicken, A. Friedman, R. P. Kirshner, J. S. Bloom, P. Challis, G. H. Marion, W. M. Wood-Vasey, and A. Rest. "Multi-color Optical and Near-infrared Light Curves of 64 Stripped-envelope Core-Collapse Supernovae". In: *ApJS* 213.2, 19 (Aug. 2014), p. 19. DOI: 10.1088/0067-0049/213/2/19. arXiv: 1405.1428 [astro-ph.SR].

[23] J. L. Prieto, A. Rest, F. B. **Bianco**, T. Matheson, N. Smith, N. R. Walborn, E. Y. Hsiao, R. Chornock, L. Paredes Álvarez, A. Campillay, C. Contreras, C. González, D. James, G. R. Knapp, A. Kunder, S. Margheim, N. Morrell, M. M. Phillips, R. C. Smith, D. L. Welch, and A. Zenteno. "Light Echoes from η Carinae's Great Eruption: Spectrophotometric Evolution and the Rapid Formation of Nitrogen-rich Molecules". In: *ApJ* 787.1, L8 (May 2014), p. L8. DOI: 10.1088/2041-8205/787/1/L8. arXiv: 1403.7202 [astro-ph.SR].

[24] Russell M. Genet, B. J. Fulton, Federica B. **Bianco**, John Martinez, John Baxter, Mark Brewer, Joseph Carro, Sarah Collins, Chris Estrada, Jolyon Johnson, Akash Salam, Vera Wallen, Naomi Warren, Thomas C. Smith, James D. Armstrong, Steve McGaughey, John Pye, Kakkala Mohanan, and Rebecca Church. "Observing Double Stars". In: *Society for Astronomical Sciences Annual Symposium* 31 (May 2012), pp. 147–157.

[25] S. González-Gaitán, A. Conley, F. B. **Bianco**, D. A. Howell, M. Sullivan, K. Perrett, R. Carlberg, P. Astier, D. Balam, C. Balland, S. Basa, D. Fouchez, N. Fourmanoit, M. L. Graham, J. Guy, D. Hardin, I. M. Hook, C. Lidman, R. Pain, N. Palanque-Delabrouille, C. J. Pritchet, N. Regnault, J. Rich, and V. Ruhlmann-Kleider. "The Rise Time of Normal and Subluminous Type Ia Supernovae". In: *ApJ* 745.1, 44 (Jan. 2012), p. 44. DOI: 10.1088/0004-637X/745/1/44. arXiv: 1109.5757 [astro-ph.GA].

[26] A. Rest, J. L. Prieto, N. R. Walborn, N. Smith, F. B. **Bianco**, R. Chornock, D. L. Welch, D. A. Howell, M. E. Huber, R. J. Foley, W. Fong, B. Sinnott, H. E. Bond, R. C. Smith, I. Toledo, D. Minniti, and K. Mandel. "Light echoes reveal an unexpectedly cool η Carinae during its nineteenth-century Great Eruption". In: *Nature* 482.7385 (Feb. 2012), pp. 375–378. DOI: 10.1038/nature10775. arXiv: 1112.2210 [astro-ph.GA].

[27] F. B. **Bianco**, D. A. Howell, M. Sullivan, A. Conley, D. Kasen, S. González-Gaitán, J. Guy, P. Astier, C. Balland, R. G. Carlberg, D. Fouchez, N. Fourmanoit, D. Hardin, I. Hook, C. Lidman, R. Pain, N. Palanque-Delabrouille, S. Perlmutter, K. M. Perrett, C. J. Pritchet, N. Regnault, J. Rich, and V. Ruhlmann-Kleider. "Constraining Type Ia Supernovae Progenitors from Three Years of Supernova Legacy Survey Data". In: *ApJ* 741.1, 20 (Nov. 2011), p. 20. DOI: 10.1088/0004-637X/741/1/20. arXiv: 1106.4008 [astro-ph.CO].

[28] F. B. **Bianco**, Z. -W. Zhang, M. J. Lehner, S. Mondal, S. -K. King, J. Giammarco, M. J. Holman, N. K. Coehlo, J. -H. Wang, C. Alcock, T. Axelrod, Y. -I. Byun, W. P. Chen, K. H. Cook, R. Dave, I. de Pater, D. -W. Kim, T. Lee, H. -C. Lin, J. J. Lissauer, S. L. Marshall, P. Protopapas, J. A. Rice, M. E. Schwamb, S. -Y. Wang, and C. -Y. Wen. "The TAOS Project: Upper Bounds on the Population of Small Kuiper Belt Objects and Tests of Models of Formation and Evolution of the Outer Solar System". In: *AJ* 139.4 (Apr. 2010), pp. 1499–1514. DOI: 10.1088/0004-6256/139/4/1499. arXiv: 1001.2006 [astro-ph.EP].

[29] Federica **Bianco**. "Chasing shadows in the outer solar system". PhD thesis. University of Pennsylvania, Jan. 2010.

[30] F. B. **Bianco**, P. Protopapas, B. A. McLeod, C. R. Alcock, M. J. Holman, and M. J. Lehner. "A Search for Occultations of Bright Stars by Small Kuiper Belt Objects Using Megacam on the MMT". In: *AJ* 138.2 (Aug. 2009), pp. 568–578. DOI: 10.1088/0004-6256/138/2/568. arXiv: 0903.3036 [astro-ph.EP].

[31] Z. -W. Zhang, F. B. **Bianco**, M. J. Lehner, N. K. Coehlo, J. -H. Wang, S. Mondal, C. Alcock, T. Axelrod, Y. -I. Byun, W. P. Chen, K. H. Cook, R. Dave, I. de Pater, R. Porrata, D. -W. Kim, S. -K. King, T. Lee, H. -C. Lin, J. J. Lissauer, S. L. Marshall, P. Protopapas, J. A. Rice, M. E. Schwamb, S. -Y. Wang, and C. -Y. Wen. "First Results from the Taiwanese-American Occultation Survey (TAOS)". In: *ApJ* 685.2 (Oct. 2008), p. L157. DOI: 10.1086/592741. arXiv: 0808.2051 [astro-ph].

[32] T. C. Nihei, M. J. Lehner, F. B. **Bianco**, S. -K. King, J. M. Giammarco, and C. Alcock. "Detectability of Occultations of Stars by Objects in the Kuiper Belt and Oort Cloud". In: *AJ* 134.4 (Oct. 2007), pp. 1596–1612. DOI: 10.1086/521396. arXiv: astro-ph/0703460 [astro-ph].

Other Publications

[33] Eric D. Feigelson, Federica B. Bianco, and Rosaria Bonito. "An Evenly Spaced LSST Cadence for Rapidly Variable Stars". In: *ApJS* 268.1, 11 (Sept. 2023), p. 11. DOI: 10.3847/1538-4365/ace616. arXiv: 2308.00232 [astro-ph.SR].

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