ALESSANDRA CORSI, Ph.D.

Last updated: October 6, 2024

CONTACT INFORMATION

- **Email:** acorsi2@jh.edu
- **Professional webpage:** `https://www.alessandracorsi.com`

EDUCATION AND ACADEMIC POSITIONS

- **2024–present:** W. H. Miller Professor (pending approval of Board of Trustees), Physics and Astronomy, Johns Hopkins University
- **2023–2024:** Professor of Physics and Astronomy, Texas Tech University.
- **2018–2023:** Associate Professor of Physics and Astronomy, Texas Tech University.
- **2016–2018:** Honorary Adjunct Assistant Professor of Math. and Stat., Texas Tech University.
- **2014–2018**: Assistant Professor of Physics, Texas Tech University.
- **2012–2014:** Assistant Professor of Physics, The George Washington University.
- **2010–2012:** Post-doc, California Institute of Technology.
- **2008–2010:** Post-doc, University of Rome Sapienza, Pennsylvania State University.
- **2007–2008:** Post-doc, National Inst. for Astrophysics (Rome, Italy), University of Rome Sapienza.
- **2007:** Ph.D. in Astronomy, University of Rome Sapienza.
- **2003:** Laurea in Physics cum laude, University of Rome Sapienza.

SUMMARY OF INTERESTS, ACTIVITIES, AND ACCOMPLISHMENTS

- **Research interests and leadership roles**: I work on time-domain multi-messenger astronomy. I have vast experience with observations of astrophysical transients and follow-up of gravitational waves (GWs). I work on detection algorithms for GW data. I play multiple key roles for the National Radio Astronomy Observatory, NASA, the LIGO Scientific Collaboration, and the Cosmic Explorer management team.
- **Honors and awards**: I am a Fellow of the American Physical Society; my awards include a New Horizons Prize in Physics (Breakthrough Foundation); a TAMEST Edith and Peter O'Donnell award in Science; an NSF CAREER award; and a L'Oreal-UNESCO award for Women in Science.
- **Publications**: Co-authored more than 300 peer-reviewed journal articles; h-index: 103.
- **Media communications**: I have experience interviewing with journalists ranging from tiny local newspapers to international documentary production teams for public television. In 2017, I reported on the discovery of the radio afterglow of GW170817 at the National Press Club in Washington D.C.
- **Research funding**: I have secured $\approx$ 2.6 million USD total as Principal Investigator (PI) via grants from the National Science Foundation, NASA, and the U.S. Department of Energy (DoE).
- **Observing proposals**: $\approx$ 890 hrs total as PI on U.S. national radio observing facilities.
- **Conference talks, seminars, colloquia, and lectures**: 38 invited colloquia/seminars; 49 invited contributions at conferences; 3 invited lectures.
- **Research supervision**: Research advisor of 5 post-docs; 8 graduate students; 22 undergraduate students; and 3 high-school students.
- **Diversity, equity, and inclusion**: I lead several educational initiatives involving minority serving institutions (JHU-RADIAL); I give public talks specifically targeting minorities.
- **Public Outreach**: I have experience engaging the general public and students at all levels (including high school students and seniors), and have partnered with local schools and the community.
- **Teaching**: My teaching experience includes large general education Astronomy courses; advanced undergraduate and graduate level Astrophysics and Physics courses; Student-Centered Active Learning Environment for Undergraduate Programs (SCALE-UP).
- **Service**: I routinely serve on award/conference organization/time allocation committees, grant review panels, as referee for major peer-reviewed journals, on departmental and college committees,

and on faculty hiring committees across fields (astrophysics, particle and condensed matter physics).

PROFESSIONAL LEADERSHIP ROLES AND MEMBERSHIPS

- **American Astronomical Society (AAS):**
  - Member (2013–present).
- **American Physical Society (APS)**:
  - **Secretary/Treasurer**, Division of Astrophysics Executive Committee (2023–2025);
  - **Deputy Secretary/Treasurer**, Division of Astrophysics Executive Committee (2021–2023);
  - Member-at-large, Division of Gravitational Physics, Executive Committee (2019–2022);
  - Member (2012–present).
- **CMB-S4**:
  - Member, Science Collaboration (2022–present).
- **Cosmic Explorer**:
  - Multi-messenger Science Liaison, **Management Team** (2022–present);
  - Member, Scientific Consortium (2020–present).
- **Global Relay of Observatories Watching Transients Happen (GROWTH)**:
  - Member (2015–2020).
- **JAGWAR** (Jansky VLA Mapping of Gravitational Wave Bursts as Afterglows in the Radio):
  - **Co-chair** (2019–present).
- **Laser Interferometer Space Antenna (LISA):**
  - Consortium associate member (2020–present).
- **LIGO Scientific Collaboration**:
  - **Co-chair**, Burst Review Committee (2020–present);
  - Burst Benchmark Committee member (2022–2023);
  - Program Committee member (2018-2020);
  - **Co-chair**, Publication & Presentation Committee (2016–2018);
  - Member (2010–present).
- **NASA:**
  - Member, Roman High-Latitude Time-Domain Survey Committee (2024–present);
  - **Co-chair**, Gravitational Wave Science Interest Group (GWSIG; 2023–present);
  - Member, Executive Committee, Physics of the Cosmos Program Analysis Group (2023–present);
  - Member, Fermi User Group (2022–present).
- **National Radio Astronomy Observatory (NRAO)**:
  - **Co-chair**, VLA/VLBA to ngVLA Transition Advisory Group (TAG; 2022–present);
  - **Co-chair**, ngVLA Science Working Group 5 (dynamic universe; 2022–present);
  - Member, ngVLA Science Advisory Committee (SAC; 2022–present);
  - Member, NRAO/GBO User Committee (2020-2022);
  - Member, Common Astronomy Software Applications (CASA) User Committee (2019–2022).
- **Palomar Transient Factory / Zwicky Transient Facility (PTF/ZTF)**:
  - Collaborator (2010–present).
- **Rubin LSST**:
  - Member, Transients and Variable (TVS) Stars Collaboration (2021–present);
  - Member, User Committee (2022–2024);

  - Alternate Member, CEC (In-kind Contribution Evaluation Committee; 2021–2023);
  - **Chair**, Follow-up sub-committee of the CEC (2021).
- **Virgo Collaboration**:
  - Member (2007–2010).

Click here to go back to the summary.

HONORS, AWARDS, AND SCHOLARSHIPS

Individual Honors and Awards

- **New Horizons in Physics Prize** of the Breakthrough Foundation "for leadership in laying foundations for electromagnetic observations of sources of gravitational waves, and leadership in extracting rich information from the first observed collision of two neutron stars" (2022).
- **President's Excellence in Research Professorship**, Texas Tech University (2020-present).
- **2020 SN 10: Scientists to Watch** list by *Science News* (2020).
- **Edith and Peter O'Donnell Award in Science** from TAMEST (The Academy of Medicine, Engineering and Science of Texas) "for her paradigm-shifting research on the merger of stars and black holes" (2020).
- **Above and Beyond Raiders Who Rock Award**, recognizing students, faculty, and staff who make Texas Tech a better community for all of its members (2019).
- **Fellow of the APS** "for major contributions to the discovery of both gravitational wave sources and their electromagnetic counterparts" (since 2019).
- **NSF Early CAREER Awardee** (2015–2021).
- **Fellow of the Research Corporation for Science Advancement** (Scialog) (TDA, 2015–2016).
- **Distinguished Ph.D. scholar award**, Rome University Sapienza Ph.D. program 30th anniversary (2014).
- **Distinguished invitee of the President of the Italian Republic Prof. Giorgio Napolitano**, women's day celebration at the Quirinale (2009).
- **Italian l'Oréal-UNESCO National Awardee "For Women in Science"** (2008).

Team Awards (as part of the LIGO Scientific Collaboration)

- Einstein Medal (2017).
- Princess of Asturias Award for Technical and Scientific Research (2017).
- AAS Bruno Rossi Prize for high-energy astrophysics (2017).
- UK Royal Astronomical Society Group Achievement Award in Astronomy (2017).
- Gruber Cosmology Prize (2016).
- Special Breakthrough Prize in Fundamental Physics (2016).

Scholarships

- Albert Einstein Institute, Max Planck (Hannover, Germany) - 1 month visiting scholarship (2010).
- Penn State Institute for Gravitation and the Cosmos - 1 month visiting scholarship (2009).
- Angelo Della Riccia Foundation - post-doctoral scholarship (2009).
- Angelo Della Riccia Foundation - post-doctoral scholarship (2008).
- INFN scholarship for graduate students (2006).
- INFN (Italian National Institute for Nuclear Physics) scholarship for graduate students (2005).

Click here to go back to the summary.

PUBLICATIONS

- Co-authored more than 300 peer-reviewed journal articles.
- h-index: 106 (from NASA/ADS).

Publication record as returned by NASA/ADS or Google Scholar can be accessed via the following links*:

- Link to NASA ADS list of refereed papers
- Link to Google Scholar entry

*These links select also some papers from another A. Corsi. They are not about astronomy so they are easy to identify.

Selected Refereed Journal Articles

1. **Corsi**, Ho, Cenko et al. A search for relativistic ejecta in a sample of ZTF broad-lined Type Ic supernovae. Astrophysical Journal, 953(2):179, 2023 – NASA ADS link
2. Eddins, Lee, **Corsi** et al. A search for kilonova radio flares in a sample of Swift/BAT short GRBs. Astrophysical Journal, 948:125, 2023 (**Note: Paper led by my graduate student**) – NASA ADS link
3. Balasubramanian, **Corsi**, Mooley et al. GW170817 4.5 Yr After Merger: Dynamical Ejecta Afterglow Constraints. Astrophysical Journal, 938(1):12, 2022 (**Note: Paper led by my graduate student**) – NASA ADS link.
4. Balasubramanian, **Corsi**, Mooley et al. Continued radio observations of GW170817 3.5 years post-merger. **Astrophysical Journal Letters**, 914:L20, 2021 (**Note: Paper led by my graduate student**) – NASA ADS link
5. **Corsi**, Hallinan, Lazzati et al. An Upper Limit on the Linear Polarization Fraction of the GW170817 Radio Continuum. **Astrophysical Journal Letters**, 861:L10, 2018 – NASA ADS link
6. Hallinan, **Corsi**, Mooley, Hotokezaka et al. A radio counterpart to a neutron star merger. **Science**, 358:1579, 2017 (**Note: Hallinan and Corsi share first authorship on this paper**) – NASA ADS link
7. LSC and Virgo Collaboration. Search for Post-merger Gravitational Waves from the Remnant of the Binary Neutron Star Merger GW170817. **Astrophysical Journal Letters**, 851:L16, 2017 (**Note: I contributed substantially to this paper as a member of the paper writing team**) – NASA ADS link
8. LSC and Virgo Collaboration, Fermi Gamma-Ray Burst Monitor, INTEGRAL. Gravitational Waves and Gamma-rays from a Binary Neutron Star Merger: GW170817 and GRB 170817A. **Astrophysical Journal Letters**, 848:L13, 2017 (**Note: I contributed substantially to this paper as a member of the LVC paper review team**) – NASA ADS link
9. LSC and Virgo Collaboration et al. Multi-messenger Observations of a Binary Neutron Star Merger. **Astrophysical Journal Letters**, 848:L12, 2017 (**Note: I contributed substantially to this paper by providing the radio data**) – NASA ADS link
10. Coyne, **Corsi**, and Owen. Cross-correlation method for intermediate-duration gravitational wave searches associated with gamma-ray bursts. **Physical Review D**, 93:104059, 2016 (**Note: Paper led by my graduate student**) – NASA ADS link
11. **Corsi**, Gal-Yam, Kulkarni et al. Radio Observations of a Sample of Broad-line Type Ic Supernovae Discovered by PTF/IPTF: A Search for Relativistic Explosions. **Astrophysical Journal**, 830:42, 2016 – NASA ADS link
12. **Corsi**, Ofek, Gal-Yam et al. A Multi-wavelength Investigation of the Radio-loud Supernova PTF11qcj and its Circumstellar Environment. **Astrophysical Journal**, 782:42, 2014 – NASA ADS link
13. **Corsi**, Ofek, Gal-Yam et al. Evidence for a Compact Wolf-Rayet Progenitor for the Type Ic Supernova PTF10vgv. **Astrophysical Journal Letters**, 747:L5, 2012 – NASA ADS link

14. LSC and Virgo Collaboration et al. Implementation and testing of the first prompt search for gravitational wave transients with electromagnetic counterparts. **Astronomy & Astrophysics**, 539:124, 2012 (**Note: I led the Palomar Transient Factory contribution to this paper**) – NASA ADS link
15. **Corsi** and Owen. Maximum gravitational-wave energy emissible in magnetar flares. **Physical Review D**, 83:104014, 2011 – NASA ADS link
16. **Corsi**, Guetta, Piro. High-energy Emission Components in the Short GRB 090510. **Astrophysical Journal**, 720:1008, 2010 – NASA ADS link
17. **Corsi** and Mészáros. Gamma-ray Burst Afterglow Plateaus and Gravitational Waves: Multi-messenger Signature of a Millisecond Magnetar? **Astrophysical Journal**, 702:1171, 2009 – NASA ADS link
18. Virgo Collaboration. Search for gravitational waves associated with GRB 050915a using the Virgo detector. **Classical and Quantum Gravity**, 25:225001, 2008 (**Note: I am the corresponding author for this paper**) – NASA ADS link

Click here to go back to the summary.

SELECTED MEDIA COMMUNICATIONS

- Interviewee, documentary movie on GW170817, **NHK Japanese Public TV** (2018).
- Invited panel member, Discovery of GW170817, **USA National Press Club** (2017).
- Interviewee, **TTU "Communicator in a Cart"** (2017).
- Interviewee, Radio discovery of GW170817, **Newsweek** (2017).
- Interviewee, Radio discovery of GW170817, **NRAO Press Release** (2017).
- Interviewee, Radio discovery of GW170817, **Optics and Photonics** (2017).
- Interviewee, Radio discovery of GW170817, **Nature News** (2017).
- Interviewee, Radio discovery of GW170817, **Science** (2017).
- Interviewee, Radio discovery of GW170817, **Physics Today** (2017).
- Interviewee, Radio discovery of GW170817, **Lubbock Avalanche Journal** (2017).
- Interviewee, Radio discovery of GW170817, **The Washington Post** (2017).
- Interviewee, LIGO discovery of gravitational waves, **Nature News** (2016).
- Interviewee, LIGO discovery of gravitational waves, **APS News** (2016).
- Interviewee, LIGO discovery of gravitational waves, **Houston Chronicle** (2016).
- Interviewee, LIGO discovery of gravitational waves, **Lubbock Avalanche Journal** (2016).
- Interviewee, LIGO discovery of gravitational waves, **KCBD TV news** (2016).
- Radio Spot, LIGO discovery of gravitational waves, **KTTZ radio** (2016).
- Interviewee, **TTU Arts and Sciences campaign** (2016).
- Interviewee, "In-course Discoveries", **PANORAMA magazine (Ed. Mondadori)** (2009).
- Interviewee, "New Excellences", **ELLE magazine (Ed. Hachette Rusconi)** (2009).
- Interviewee, research accomplishments, **Italian National Radio Tre station** (2009).

Click here to go back to the summary.

SELECTED (PI ONLY) APPROVED RESEARCH GRANTS

Note: ≈ 2.7 million USD total as Principal Investigator

1. **NASA/Swift Cycle 20 GI**, "A SEARCH FOR BL-IC SNE WITH X-RAY AFTERGLOWS" (40 kUSD; 2024–2025).
2. **Department of Energy DE-SC0024591**, "Diaspora: Resilience-enabling services for science from HPC to edge" (**499.999 kUSD**; 2023–2028)

3. **NSF AST-2307358**, "Cosmic Collisions, Relativistic Blasts, and their Remnants in the Era of Multi-Messenger Astronomy" (**431.25 kUSD**; 2023–2026)
4. **NASA/Swift Cycle 19 GI**, "A SEARCH FOR BL-IC SNE WITH X-RAY AFTERGLOWS USING ZTF+SWIFT" (**40 kUSD**; 2024–2025).
5. **NASA/Swift Cycle 18 GI**, "A SEARCH FOR BL-IC SNE WITH X-RAY AFTERGLOWS USING ZTF+SWIFT" (**40 kUSD**; 2023–2024).
6. **NASA/Swift Cycle 17 GI**, "A SEARCH FOR BL-IC SNE WITH X-RAY AFTERGLOWS USING ZTF+SWIFT" (**40.7 kUSD**; 2021–2022).
7. **NSF-Gravity PHY-2011608**, "Unmasking the Remnants of Gamma-Ray Bursts in the Era of Gravitational Wave Astronomy" (**262.5 kUSD**; 2020–2025).
8. **NSF AST-1907975**: "WoU-MMA: Collaborative Research: Combining Theory with Observations to Unlock the Multi-Messenger Physics of Compact Binary Mergers" (**268.6 kUSD**; 2019–2023).
9. **NASA/Swift Cycle 16 GI**, "A SEARCH FOR BL-IC SNE WITH X-RAY AFTERGLOWS USING ZTF+SWIFT" (**37.3 kUSD**; 2020–2021).
10. **NSF-CAREER AST-1455090**, "CAREER: Radio and gravitational-wave emission from the largest explosions since the Big Bang" (**720 kUSD**; 2015–2021).
11. **Chandra Cycle 19 GI**, "Unraveling the physics of engine-driven SNe with ZTF+Chandra" (**24 kUSD**; 2018–2019).
12. **Chandra Cycle 18 GI**, "Chandra late-time observations of PTF11QCJ: CSM-interacting SN or off-axis GRB?" (**35.8 kUSD**; 2017–2018).
13. **Chandra DDT #17508570**, "iPTF17cw: A relativistic broad-lined type Ic supernovae discovered by iPTF" (**7.4 kUSD**; 2017–2018)
14. **ngVLA Community Study**, "Cosmic Explosions and Collisions in the ngVLA Era," NSF/NRAO (**5.7 kUSD**; 2016–2017).
15. **NASA/Swift Cycle 12 GI**, "Joint iPTF-VLA-Swift follow-up of aLIGO events" (**39 kUSD**; 2016–2017).
16. **NASA/Swift Cycle 11 GI**, "Unraveling the missing link between 1998bw-like SNe and GRBs" (**40 kUSD**; 2015–2016).
17. **NASA/Swift Cycle 10 GI**, "Unraveling the missing link between 1998bw-like SNe and GRBs" (**30 kUSD**; 2014–2015).
18. **NSF-Gravity PHY-1307623**, "Gravitational waves, gamma-ray bursts, and the multi-messenger exploration of the transient sky" (**126 kUSD**; 2013–2016).
19. **Chandra DDT #501797**, "PTF 11QCJ: first discovery of a radio luminous Ibn SN" (**12.2 kUSD**; 2011–2012).
20. **Chandra DDT #501794**, "PTF 11QCJ: first discovery of a radio luminous Ibn SN" (**7 kUSD**; 2011–2012).
21. **Chandra DDT #501793**, "Supernova PTF 11qcj: first discovery of a radio luminous Ic SN interacting with an He shell? " (**10.1 kUSD**; 2011–2012).
22. **Spitzer proposal**, "PTF 11QCJ: first discovery of a radio luminous Ibn SN" (**2 kUSD**; 2011–2012).
23. **NASA/Swift Cycle 7 GI**, "Millimeter and optical follow-up of Swift Gamma-Ray Bursts: reverse shock emission and high redshift events" (**15 kUSD**; 2011–2012).

Click here to go back to the summary.

SELECTED (PI ONLY) APPROVED OBSERVING PROPOSALS
Note: ≈ 890 hrs allocated on the Karl G. Jansky VLA and ALMA as Principal Investigator

1. **VLA/23B-172**, "Radio follow up of sub-threshold GRBs associated with O4 GW triggers" (**30 hrs**).
2. **VLA/23A-062**, "Radio counterparts of likely cosmic neutrino events in IceCube data" (**4 hrs**).
3. **VLA/22B-235**, "Jansky VLA mapping of Gravitational Waves as Afterglows in Radio (JAGWAR)" (**156 hrs** for the duration of the LIGO-Virgo-KAGRA O4 run).
4. **VLA/22A-394**, "Jansky VLA mapping of Gravitational Waves as Afterglows in Radio (JAGWAR)" (**80 hrs**).
5. **SH0105**, "A search for BL-Ic SNe with X-ray afterglows using ZTF+Swift" (**9 hrs**).
6. **VLA/20B-472**, "Long-term radio monitoring of GW170817: An emerging kilonova afterglow?" (**14 hrs**).
7. **VLA/20B-149**, "A VLA quest for relativistic explosions in the era of ZTF II" (**48 hrs**).
8. **VLA/20A-568**, "VLA follow-up of the nearby BL-Ic supernova ZTF20aazkjfv (SN2020jqm)" (**10 hrs**).
9. **SG0117**, "A search for BL-Ic SNe with X-ray afterglows using ZTF+Swift" (**6 hrs**).
10. **VLA/19B-230**, "A VLA+ZTF Systematic Quest for Relativistic Explosions" (**20 hrs**).
11. **VLA/19A-094**, "A radio polarization study of supernova PTF11qcj" (**4.75 hrs**).
12. **VLA/18B-204**, "Long-term radio monitoring of GW170817 with the Jansky VLA" (**28 hrs**).
13. **VLA/18A-457**, "Continued radio monitoring of GW170817 with the JVLA" (**17.5 hrs**).
14. **VLA/18A-240**, "Late-time VLA follow-up of the relativistic supernova iPTF17cw" (**3.5 hrs**).
15. **VLA/18A-176**, "A VLA+ZTF systematic quest for relativistic BL-Ic supernovae" (**40 hrs**).
16. **VLA/17B-428**, "Unveiling the radio signature of a relativistic SN associated with GRB 171205A" (**7 hrs**).
17. **VLA/17A-237**, "Radio follow-up of GWs during Advanced LIGO O3" (**45 hrs**).
18. **ALMA/2016.1.00950.T**, "Unraveling the physics of broad-line type Ic supernovae with ALMA" (**4.6 hrs**).
19. **VLA/16B-044**, "Discovering GBM GRB Afterglows with iPTF+VLA" (**10.5 hrs**).
20. **VLA/16B-043**, "VLA follow-up of iPTF Ib/c SNe: An efficient quest for relativistic explosions" (**18 hrs**).
21. **ALMA/2015.1.00910.T**, "Unraveling the physics of broad-line type Ic supernovae with ALMA" (**5.3 hrs**).
22. **VLA/16A-206**, "Radio counterparts to gravitational waves in the Advanced LIGO Era" (**36 hrs**).
23. **VLA/15B-288**, "Probing the magnetar scenario for GRBs with the VLA" (**2.5 hrs**).
24. **VLA/15A-339**, "Radio fingerprints of relativistic explosions in the advanced LIGO era" (**30 hrs**).
25. **VLA/15A-314**, "VLA follow-up of iPTF Ib/c SNe: An efficient quest for relativistic explosions" (**28 hrs**).
26. **VLA/14B-490**, "GRB 141121A: An ultra-long GRB with a reverse shock?" (**12.5 hrs**).
27. **VLA/14A-476**, "Long-term follow-up of the radio loud supernova PTF11qcj with the VLA" (**8 hrs**).
28. **VLA/14A-434**, "VLA follow-up of iPTF Ib/c SNe: An efficient quest for relativistic explosions" (**36 hrs**).
29. **VLA/14A-430**, "Probing the composition of GRB jets with VLA: a quest for reverse shocks" (**45 hrs**).

30. **VLA/13A-508**, "Late-Time Follow-up of GRB 130215A with the VLA" (**12.25 hrs**).
31. **VLA/13A-411**, "Probing the composition of GRB jets with JVLA: a quest for reverse shocks" (**45 hrs**).
32. **VLA/12B-195**, "Radio follow-up of exotic Ic SNe discovered by PTF" (**27 hrs**).
33. **VLA/11B-247**, "PTF11QCJ: first discovery of a radio luminous Ibn SN" (**15 hrs**).
34. **VLA/11B-034**, "Radio Follow-up of Broad Line Ic SNe Discovered by the Palomar Transient Factory" (**20 hrs**).
35. **VLA/11A-227**, "Search for early and late radio emission from broad-line Ic SN detected by PTF" (**12.5 hrs**).
36. **VLA/10C-227**, "Late time follow-up of the broad-line Ic SN PTF10bzf" (**2 hrs**).

Click here to go back to the summary.

SELECTED CONFERENCE TALKS, COLLOQUIA, SEMINARS, AND LECTURES

Invited Seminars and Colloquia

1. "Multi-messenger observations of relativistic transients: progenitors, ejecta, and remnants" (**Max Planck Institute for Radio Astronomy in Bonn**; 2024).
2. "Multi-messenger observations of cosmic collisions and explosions: progenitors, relativistic ejecta, and remnants," Weinberg seminar (**University of Texas at Austin**; 2024).
3. "Relativistic transients in the era of multi-messenger astronomy," colloquium (Department of Physics, **University of Florida**; 2023).
4. "Multi-messenger observations of cosmic collisions: progenitors, relativistic ejecta, and remnants," colloquium (IAS and Department of Astrophysics, **Princeton University**; 2023).
5. "Relativistic transients in the era of multi-messenger astronomy," colloquium (**Max Planck Institute for Radio Astronomy in Bonn**; 2023).
6. "Multi-messenger observations of cosmic collisions: progenitors, relativistic ejecta, and remnants," colloquium (Department of Astronomy, **University of Wisconsin-Madison**; 2023).
7. "Multi-messenger observations of cosmic collisions: progenitors, relativistic ejecta, and remnants," colloquium (Department of Physics and Astronomy, **Johns Hopkins University**; 2023).
8. "Multi-messenger observations of cosmic collisions, relativistic blasts, and their remnants," colloquium (Kavli Institute for Particle Astrophysics and Cosmology, **Stanford University**; 2022).
9. "Relativistic transients in the era of multi-messenger astronomy," colloquium (Department of Physics, **McGill University**; 2022).
10. "Multi-messenger observations of cosmic collisions, relativistic blasts, and their remnants," seminar (**American Museum of Natural History**; 2022).
11. "Multi-messenger observations of cosmic collisions, relativistic blasts, and their remnants," colloquium (Department of Physics and Astronomy, **University of New Mexico**; 2022).
12. "Multi-messenger observations of cosmic collisions, relativistic blasts, and their remnants," colloquium (Department of Physics, **Columbia University in the City of New York**; 2022).
13. "Multi-messenger observations of cosmic collisions, relativistic blasts, and their remnants," seminar (**Institute of Science and Technology Austria** - ISTA; 2022).
14. "Multi-messenger observations of cosmic collisions, relativistic blasts, and their remnants," seminar (Department of Astronomy and Astrophysics, **Pennsylvania State University**; 2022).
15. "Multi-messenger observations of cosmic collisions, relativistic blasts, and their remnants," seminar (School of Physics, **Georgia Institute of Technology**; 2022)

16. "Multi-messenger observations of the most relativistic cosmic bangs: from outflows to remnants," seminar (Department of Physics and Astronomy, **University of Kentucky**; 2021).
17. "Multi-messenger observations of the most relativistic cosmic bangs: from outflows to remnants," lunch talk (Center for computational relativity and gravitation, **Rochester Institute of Technology**; 2021).
18. "Multi-messenger observations of the most relativistic cosmic bangs: from outflows to remnants," colloquium (Physics Department, **Carnegie Mellon University**; 2021).
19. "Unmasking progenitors & remnants of the most relativistic cosmic bangs via MMA," colloquium (Physics and Astronomy Department, **York University**; 2021).
20. "Multi-messenger exploration of the transient radio sky," colloquium (Physics and Astronomy Department, **University of Texas Rio Grande Valley**; 2020).
21. "Multi-messenger exploration of the transient radio sky with LIGO," colloquium (Physics Department, **University of Missouri in St. Louis**; 2020).
22. "Multi-messenger time-domain astronomy: GW170817 and the future," seminar (Department of Physics and Astronomy, **Rice University**; 2018).
23. "Multi-messenger time-domain astronomy: GW170817 and the future," colloquium (Physics Department, **University of Oregon**; 2018).
24. "Radio and GW observations of the transient sky: GW170817 and future prospects," colloquium (**University of Arizona**, Steward Observatory; 2018).
25. "Multi-messenger time-domain astronomy: GW170817 and the future," colloquium (School of Physics and Astronomy, **University of Minnesota**; 2018).
26. "Radio and gravitational wave studies of cosmic explosions and collisions," colloquium, (Physics Department, **Texas A&M Commerce**; 2017).
27. "Radio and gravitational wave studies of cosmic explosions and collisions," colloquium, (Physics and Astronomy Department, **University of Texas San Antonio**; 2017).
28. "Gamma-ray bursts, gravitational waves, and multi-messenger exploration of the transient sky," colloquium (Physics and Astronomy Department, **Texas A&M**; 2014).
29. "Gamma-ray bursts, gravitational waves, and multi-messenger exploration of the transient sky," colloquium (Physics Department, **Florida Atlantic University**; 2014).
30. "Gamma-ray bursts, gravitational waves, and multi-messenger exploration of the transient sky," colloquium (Physics Department, **Texas Tech University**; 2014).
31. "Gamma-ray bursts, gravitational waves, and multi-messenger exploration of the transient sky," colloquium (ITC, **Harvard-Smithsonian Center for Astrophysics**; 2013).
32. "LIGO and the multi-messenger exploration of the transient sky," seminar (LIGO Laboratory, **Caltech**; 2011).
33. "LIGO in the multi-messenger astrophysics era," IGC colloquium (**Penn State University**; 2010).
34. "Gamma-Ray Bursts and Gravitational Waves: a tool for multi-messenger astrophysics," colloquium (Astro-Particle and Cosmology Institute, **CNRS Paris**; 2009).
35. "Gamma-Ray Bursts and Gravitational Waves: a tool for multi-messenger astrophysics," colloquium (**Max Planck Institute for Gravitational Physics**, Hanover, Germany; 2009).
36. "Search for Gravitational Waves associated with GRB 050915a using the Virgo detector," seminar (Center for Gravitational Wave Physics, **Pennsylvania State University**; 2008).
37. "Exploring the nature of GRB progenitors: afterglow analysis and search for gravitational waves," seminar (**National Institute for Nuclear Physics**, Frascati, Rome, Italy; 2008).
38. "Gamma-Ray Burst afterglows: fireball physics & clues to the progenitor," seminar (**Osservatorio Astronomico di Brera**, Italy; 2007).

39. "Gamma-Ray Burst afterglows: fireball physics & clues to the progenitor," seminar (**Istituto Nazionale di Astrofisica**, Rome; 2007).

Invited Conference Contributions

1. "Multi-messenger observations of gravitational wave sources from present to future," invited plenary talk at the **Joint 24th International Conference on General Relativity and Gravitation & 16th Edoardo Amaldi Conference on Gravitational Waves** (Glasgow, July 2025).
2. "Cosmic Explorer: Pushing the gravitational-wave frontier across astronomy, physics, and cosmology,", **April APS meeting** (Sacramento, CA; April 2024).
3. "The Gravitational Wave Science Interest Group of the NASA Physics of the Cosmos Program,", **April APS meeting** (Sacramento, CA; April 2024).
4. "Infrastructure challenges on the horizon in support of upcoming facilities," discussion panel for the **Windows on the Universe: Establishing the Infrastructure for a Collaborative Multi-messenger Ecosystem** workshop (Tucson, AZ; October 2023).
5. "Observations of GRB jets," **GRB50: The Past, Present, and Future of Gamma-Ray Bursts** (Warrenton, VA; August 2023).
6. "Keynote talk on MMA", **New Evolution of MultiMessenger Astrophysics** (State College, PA: August 2023).
7. "Radio observations of stripped-envelope core-collapse supernovae and long GRBs in the era of multi-messenger time-domain astronomy," **19th Annual Meeting of the High Energy Astrophysics Division of the American Astronomical Society** (Waikoloa, Hawaii; March 2023).
8. "Compact Binary Coalescences in the Era of Multi-Messenger Astronomy," **Scientific Frontiers and Synergies for the DSA-2000 Radio Camera** (Pasadena, CA; March 2023).
9. "Electromagnetic counterparts of gravitational waves," **2023 Nevada Center for Astrophysics Symposium** (Las Vegas, Nevada; February 2023)
10. "The next decade of multi-messenger time-domain astronomy: opportunities and challenges for ground-based discovery and follow up," **241st Meeting of the American Astronomical Society** (Seattle, WA; January 2023).
11. "Multi-messenger observations of relativistic transients," **The 2nd Donglu Astrophysics Forum** (China - via Zoom; September 2022).
12. "Merger-Driven Transients: NS-NS, NS-BH, BH-BH," **NASA Time Domain and Multi-Messenger (TDAMM) Initiative Workshop** (Annapolis, MD; August 2022).
13. "Multi-messenger Astrophysics," discussion panel for the **8th PAX (Physics and Astrophysics at the Extreme) workshop**, Massachusetts Institute of technology (Cambridge, MA; August 2022).
14. "MMA Opportunities in the XG Era", **Aspen Summer Workshop** on next generation GW detectors (Aspen, CO; July 2022).
15. "Multi-messenger observations of gravitational-wave transients," **GWADW2022** Approaching the low-frequency design sensitivity of ground-based detectors (Tokyo - via Zoom; May 2022).
16. "Prospects for multi-messenger astronomy in the era of 3G detectors," Next-generation gravitational wave observatories session of the **April APS meeting** (New York City, NY; April 2022).
17. "Observations of GW Afterglows," **IAU Symposium 363** - Neutron Star Astrophysics at the Crossroads: Magnetars and the Multi-messenger Revolution (on Zoom; December 2021).
18. "The transient radio sky in the era of multi-messenger astronomy," Plenary session of the **2021 IEEE International Conference on Antenna Measurements and Applications** (Antibes Juan-les-Pins, France - via Zoom; November 2021)

19. "Multi-messenger time-domain astronomy: GW170817 and the future," **Gravitational Waves Astrophysics Conference 2021**, (Hefei, China - via Zoom; June 2021).
20. "Multi-messenger time-domain astronomy: GW170817 and the future," Spring 2021 **National Meeting of the American Chemical Society** (on Zoom; April 2021).
21. "Multi-messenger exploration of the transient radio sky with LIGO," keynote talk, 2021 virtual **National Radio Science Meeting** (on Zoom; January 2021).
22. "Multi-messenger Observations," discussion panel for the **First Cosmic Explorer Conference**, member (on Zoom; October 2020).
23. "Stellar-mass BBH and their electromagnetic counterparts," discussion panel on electromagnetic follow-up for the **13th LISA Symposium**, member (on Zoom; September 2020).
24. "Stellar Compact Object mergers and short Gamma-Ray Bursts," **Compact Objects and Energetic Phenomena in the Multi-Messenger Era** - Virtual mini conference (on Zoom; July 2020).
25. "Summary of LIGO BNS, NS-BH detections/candidates," **TCAN workshop** on BNS/BH-NS mergers (on Zoom; July 2020).
26. "Multi-messenger time-domain astronomy: GW170817, current GW+EM searches, and the future," 2019 Joint Fall Meeting of the **Texas Sections of APS, AAPT and Zone 13 of the SPS** (Lubbock, TX; 2019).
27. "Radio follow-up of gravitational waves in the Advanced LIGO/Virgo era," **Cospar 2018 42nd Assembly**, Caltech / JPL (Pasadena, CA; July 2018).
28. "Gravitational-Wave Astronomy with Advanced LIGO: Detections, Implications, and Future Prospects," **Cospar 2018 42nd Assembly**, Caltech / JPL (Pasadena, CA; July 2018).
29. "Gravitational Waves and associated emissions," **Cospar 2018 42nd Assembly**, Caltech / JPL (Pasadena, CA; July 2018).
30. "Long GRBs and core-collapse SNe in the ngVLA era," **Astrophysics Frontiers in the next decade** (Portland, OR; 2018).
31. "Radio counterparts from GW events," **Vulcano Workshop** - Frontier Objects in Astrophysics and Particle Physics (Vulcano, Italy; 2018).
32. "VLBI Futures: LIGO and GRB follow-up," **VLBI Futures Workshop** (Lubbock, TX; 2018).
33. "Gravitational-Wave Astronomy with Advanced LIGO: Detections, Implications, and Future Prospects," **Simons Institute for the Theory of Computing Workshop**, UC Berkeley (Berkeley, CA; 2018).
34. "Cosmic Collisions (and explosions) in the ngVLA Era," **Developing the ngVLA science program workshop** (Socorro, NM; 2017).
35. "LIGO - Gravitational Wave Detection and Future Plans," **XIth International Conference of Interconnections between Particle Physics and Cosmology** (Corpus Christi, TX; 2017).
36. "Supernovae driven by Relativistic Engines," **Boutiques & Experiments** 2016: Radio Astronomy, CalTech (Pasadena, CA; 2016).
37. "The future of ground based GW astrophysics," 2016 **April APS meeting** (Salt Lake City, UT; 2016).
38. "Radio and gravitational waves from the most relativistic cosmic explosions," **Building Astronomy in Texas Symposium** (Texas A&M; 2015).
39. "Electromagnetic follow-up of gravitational waves," **Paving the Way to multi-Wavelength Astronomy Workshop** (Leiden, The Netherlands; 2015).
40. "Astrophysics of Gravitational Wave Transients," **Planning for the post-detection era in gravitational wave detectors and astrophysics Workshop** (Silver Springs, MD; 2015).

41. "Gravitational Waves from Gamma-ray bursts," **Ioffe Workshop on GRBs and other explosive transients: Twenty Years of Konus-Wind Experiment** (St. Petersburg, Russia; 2014).
42. "Compact-object Models and Astrophysics Extraction," **GR meeting**, panel discussion member (South Padre Island, TX; 2013).
43. "Joining the Electromagnetic and Gravitational Wave Skies," **January AAS meeting**, panel discussion member (Long Beach, CA; 2013).
44. "Gravitational Waves from Gamma-ray Bursts," **Fall 2012 GRB Symposium** (Malaga, Spain; 2012).
45. "Electromagnetic follow-up of Gravitational Wave events," **Gravitational-wave Physics & Astronomy Workshop** (Hanover, Germany; 2012).
46. "Gravitational Waves from Gamma-ray Bursts," **Swift & Fermi Gamma-ray Burst Conference** (Munich, Germany; 2012).
47. "Gravitational waves from Supernovae and Gamma-Ray Bursts," **IAU Symposium 279** (Nikko, Japan; 2012).
48. "GW and EM Messengers from Magnetars and GRBs," **Inaugural Workshop on Astrophysical Multi-messenger Observatory Network** (State College, PA; 2011).
49. "Gravitational Waves and High energy emission from GRBs: an observational review," **COSPAR meeting** (Bremen, Germany; 2010).
50. "High energy emission from short GRBs," **7th AGILE Workshop** (Rome, Italy; 2009).

Invited Lectures

1. "Multi-messenger exploration of the Transient Radio Sky," **16th Synthesis Imaging Workshop** (Socorro, NM; 2018).
2. "Multi-messenger exploration of the transient sky with LIGO and the VLA," **15th Synthesis Imaging Workshop** (Socorro, NM; 2016).
3. "Electromagnetic follow-up and Transients Astronomy," lecture, **Caltech International Gravitational Wave Astrophysics School** (Pasadena, CA; 2015).

Click here to go back to the summary.

RESEARCH SUPERVISION AS PRIMARY ADVISOR

Post-doctoral Scholars

1. Dr. Kara Merfeld, Texas Tech University / Johns Hopkins University (2023–present).
2. Dr. Dario Carbone, Texas Tech University (2017–2019).
3. Dr. Nipuni Palliyaguru, Texas Tech University (2015–2017).
4. Dr. Robert Coyne, Texas Tech University (2015–2017).
5. Dr. Peter Veres, The George Washington University (2013–2014).

Graduate Students

1. Tanner O'Dwyer, Texas Tech University / Johns Hopkins University (2023–present).
2. Kyle Wipfli, Texas Tech University (2023–present).
3. Tanazza Khanam, Texas Tech University (2019–2024).
4. Avery Eddins, Texas Tech University (2021–2023).
5. Arvind Balasubramanian, Texas Tech University (2018–2022).

6. Deven Bhakta, Texas Tech University (2017–2020).
7. Eric Sowell, Texas Tech University (2016–2020).
8. Robert Coyne, The George Washington University (2012–2015).

Research Undergraduate Students

1. Jazlann Barefield, Texas Tech University (2023).
2. Clive Binu, Texas Tech University (2022–2023).
3. Avery Cook, Texas Tech University (2020–2021).
4. Heather Harbin, Texas Tech University (2018–2021).
5. Pryia Rajkumar, Texas Tech University (2018–2021).
6. Anthony Rushing, Texas Tech University (2018–2019).
7. Connor Grandorf, Texas Tech University (2018–2019).
8. Eric Garcia, Texas Tech University (2018).
9. Connor Spinuzzi, Texas Tech University (2018).
10. Rachel Smith, Texas Tech University (2017–2018).
11. Kyle Artkop, Texas Tech University (2017–2018).
12. Deven Bhakta, Texas Tech University (2014–2017).
13. Chance Norris, Texas Tech University (2015–2016).
14. Brody Moore, Texas Tech University (2015).
15. Carrah Osborn, Texas Tech University (2015).
16. Kyle Stewart, Texas Tech University (2015).
17. Matteo Di Giovanni, Texas Tech University (Summer 2015).
18. Derek Brehm, The George Washington University (2012–2014).
19. Ajayi Scott-Robinson, The George Washington University (2013-2014).
20. Igor Andreoni, The George Washington University (Summer 2013).
21. Maria Concetta Tringali, California Institute of Technology (Summer 2011).
22. Sibilla Di Pace, University of Rome Sapienza (2009).

Research High-School Students

1. Joseph McCarty, Clark Scholar and Student Researcher, Texas Tech University (2019–2020).
2. Nishit Mishra, Clark Scholar, Texas Tech University (2016–2017).
3. Frank Padgett, The George Washington University (2014).

Click here to go back to the summary.

CONTRIBUTIONS TO DIVERSITY, EQUITY, AND INCLUSION

- **Director** of the TTU-Hub for the National and International Exchange Program (NINE) within the NRAO Office of Diversity and Inclusion (2019–2024).
- NRAO RADIAL Development Lab, MSI representative for TTU (2019–2024).
- TTU Spanish Bucy Lecture, **founder and chair** (2019–2024).
- UNM Womxn in Physics panel discussion (on Zoom, Spring 2022).
- NRAO Diversity, inclusion, and broader impacts review panel, member (2021).

- NRAO Student Observing Support (SOS) Committee, member (2020–2021).
- "RADIAL: Partnering with Minority Serving Institutions to Develop Innovations in STEM+C E-learning", Exhibitor Webinar presenter, 237th meeting of the American Astronomical Society (on Zoom; 2021).
- Volunteer lecturer, "Multi-messenger Time-domain Astronomy: GW170817 and the Future", Talkington School for Young Women Students (Lubbock, TX; 2020).
- Keynote speaker, "A global venture in Astrophysics and Higher Education", Regional Meeting of the Texas Women in Higher Education (2016).
- Career Panel member, the TTU Emmy Noether High School Mathematics Day (2015).

Click here to go back to the summary.

PUBLIC OUTREACH

- Scientific consultant and interviewee for Panini (Italian Disney) Comics "Topolino" (Mickey Mouse) issue 3538, with a story based on GW170817, entitled "Sogni D'oro Zio Paperone" (2023).
- Volunteer lecturer, Astronomy Club at Seven Lakes High School in Katy, TX (on Zoom, Spring 2021).
- Judge & Prize Sponsor, South Plains Regional Science and Engineering Fair (Lubbock, TX; 2017–2024).
- Guest speaker, "VLA In-class Activity", Coronado High School, (Lubbock, TX; 2018).
- Keynote speaker, South Plains Regional Science and Engineering Fair (Lubbock, TX; 2017).
- Invited lecturer, "Solar system exploration: A journey through our cosmic neighborhood", TTU Osher Lifelong Learning Institute (Lubbock, TX; 2016).
- Volunteer participant, "2014 Astronomy Festival on the National Mall" (Washington, DC; 2014).
- Volunteer lecturer, "Hunting for the most powerful cosmic explosions: Gamma-ray bursts and their gravitational-wave fingerprints", TC Williams High School (Alexandria, VA; 2013).

Click here to go back to the summary.

TEACHING EXPERIENCE

- **Fundamentals of Radio Astronomy** (undergraduate and graduate level; Spring 2025).
- **Radiative Processes in Astrophysics** (undergraduate and graduate level; Spring 2015, Fall 2020, Fall 2021, Fall 2022, Fall 2023).
- **Special Topics: Radio Astronomy** (undergraduate and graduate level; Spring 2020, Spring 2021, Spring 2022, Spring 2023, Spring 2024).
- **Stellar Astronomy for non-science majors** ($\approx$ 120 students per semester, using clickers and "think-pair-share" technique; Spring 2018, Fall 2018, Spring 2019).
- **Advanced Electricity and Magnetism II** (graduate level; Fall 2017).
- **Solar System Astronomy for non-science majors** ($\approx 130-180$ students, using clickers, "think-pair-share" technique; Fall 2015, Spring 2016, Fall 2016, Spring 2017).
- **Extra-galactic Astronomy course for non-science majors** ("The origin of the Cosmos"; $\approx 40-60$ students, using clickers, "think-pair-share" technique, and SCALE-UP format; Spring 2013, Fall 2013, Spring 2014).

Click here to go back to the summary.

SERVICE TO PROFESSION AND UNIVERSITY

Note: Some dates omitted to maintain confidentiality

Service roles for the broad scientific community

- South Texas Space Science Institute at the University of Texas Rio Grande Valley, External Advisory Committee, member (2024).
- Joint Institute for VLBI ERIC (JIVE), Program Review Committee, member.
- Cecilia Payne-Gaposchkin Doctoral Dissertation Award in Astrophysics, Selection Committee, **chair** and member.
- LSST Corporation Catalyst Fellowship, Selection Committee, member.
- Texas Section of the APS, Steven Weinberg and Robert S. Hyer Research Awards, Selection Committee, member.
- NSF Division of Physics, Committee of Visitors, member.
- NRAO Program Review Panel for the NSF, member.
- Time Allocation Committee for ALMA, the VLA, the NASA *Fermi* and NASA *Swift* Guest Investigator Programs, member; the NASA *Chandra* Guest Investigator Program, **chair**.
- MeerKAT Large Survey Project ThunderKAT, annual program reviewer.
- Grant referee for: the NSF; the European Research Council Starting Grants; the Israeli Science Foundation; the Swiss National Science Foundation; the Gordon and Betty Moore Foundation; the John Templeton Foundation; the NASA post-doctoral fellowships.
- Journal referee for: Nature Physics, The Astrophysical Journal, The Astrophysical Journal Letters, Monthly Notices of the Royal Astronomical Society, Physical Review D, General Relativity and Gravitation, Proceedings of the National Academy of Sciences of the United States of America, The Physics Teacher.

Conference Organization

- Scientific Organizing Committee, member, Follow the Monarchs: A Journey to Explore the Cosmos at (Sub)milliarcsecond Scales with the ngVLA (Morelia, Mexico; 2024).
- Scientific Organizing Committee, **co-chair**, Dawn VII meeting (Vancouver, CA; 2024).
- Scientific Organizing Committee, member, 11th International Fermi Symposium (College Park, MD; 2024).
- Scientific Organizing Committee, member, Windows on the Universe: Establishing the Infrastructure for a Collaborative Multi-messenger Ecosystem (Tucson, AZ; 2023).
- International Scientific Program Committee, member, Multi Messenger and Gravitational Wave (MM&GW) session of the 38th ICRC (Nagoya, Japan; 2023).
- **Co-chair** for the follow-up session, 2022 Rubin Project and Community Workshop (Tucson, AZ; 2022).
- Scientific Organizing Committee, member, Planets, Galaxies, and Gravitational Waves in the ngVLA Era (New York, NY; 2022).
- Scientific Organizing Committee, member, Gravitational Wave Physics and Astronomy Workshop (Hannover, Germany; 2021).
- Scientific Organizing Committee, member, Seventh Physics & Astrophysics at the eXtreme—PAX-VII (on Zoom; 2021).
- International Scientific Program Committee, member, gamma-ray direct (ISPC-GAD) sessions of the 37th ICRC (on Zoom; 2021).
- Scientific Organizing Committee, member, Statistical Methods for the Detection, Classification, and Inference of Relativistic Objects (on Zoom; 2020).
- Scientific Organizing Committee, member, Radio/millimeter Astrophysical Frontiers in the Next Decade (Charlottesville, VA; 2019).
- Local Organizing Committee, member, NRAO Community Day at TTU, (Lubbock, TX; 2019).
- Scientific Organizing Committee, member, 22nd International Conference on General Relativity and Cosmology (Valencia, Spain; 2019).

- Scientific Organizing Committee, **chair** of the Relativistic Astrophysics Session, 21st International Conference on General Relativity and Cosmology (New York, NY; 2016).
- Scientific Organizing Committee, member, The Explosive Death of Massive Stars - COSPAR science assembly (Istanbul, Turkey; 2016).
- Scientific Organizing Committee, member, The Explosive Death of Massive Stars - COSPAR science assembly (Moscow, Russia; 2014).
- Scientific and Local Organizing Committee, **chair**, LIGO-Virgo-Fermi Collaborations International Workshop on Gamma-ray Bursts and Gravitational Waves (Washington, D.C.; 2013).
- Local Organizing Committee, member, 14th Gravitational Wave Data Analysis Workshop (Rome, Italy; 2010).

University service

- TTU PHAS tenure-track faculty, Hiring Committee, member (2017, 2018, 2019, 2022, 2023).
- TTU PHAS Undergraduate Program Committee, **chair** (2021–2024).
- TTU College of Arts and Sciences, Associate Dean for Research, Search Committee, member (2023).
- TTU PHAS Undergraduate Program Committee, member (2016–2020).
- TTU Spanish Bucy Lectureship, **chair** (2022).
- TTU Bucy Lectureship Committee, **chair** (2015–2020).
- TTU PHAS Colloquium Committee, **chair** (2015–2017, Spring 2018-Spring 2019, Spring 2020).
- GWU Physics Undergraduate Committee, member (2012–2014).
- GWU Physics Colloquium Committee, member (2012–2014).
- GWU Physics Curriculum Development Committee, member (2013–2014)

Click here to go back to the summary.

ALESSANDRA CORSI, Ph.D.

List of Publications

Bibliography

- Co-authored more than 300 peer-reviewed journal articles
- h-index: 106 (from NASA/ADS)

Publication record as returned by NASA/ADS or Google Scholar can be accessed via the following links*:

- Link to NASA ADS list of refereed papers
- Link to Google Scholar entry

*These links select also some papers from another A. Corsi. They are not about astronomy so they are easy to identify.

Complete list of short author-list refereed publications (published and accepted)

[1] Gokul P. Srinivasaragavan, Sheng Yang, Shreya Anand, Jesper Sollerman, Anna Y. Q. Ho, Alessandra Corsi, S. Bradley Cenko, Daniel Perley, Steve Schulze, Marquice Sanchez-Fleming, Jack Pope, Nikhil Sarin, Conor Omand, Kaustav K. Das, Christoffer Fremling, Igor Andreoni, Rachel Bruch, Kevin B. Burdge, Kishalay De, Avishay Gal-Yam, Anjasha Gangopadhyay, Matthew J. Graham, Jacob E. Jencson, Viraj Karambelkar, Mansi M. Kasliwal, S. R. Kulkarni, Julia Martikainen, Yashvi S. Sharma, Anastasios Tzanidakis, Lin Yan, Yuhan Yao, Eric C. Bellm, Steven L. Groom, Frank J. Masci, Guy Nir, Josiah Purdum, Roger Smith, and Niharika Sravan. Optical and Radio Analysis of Systemically Classified Broad-lined Type Ic Supernovae from the Zwicky Transient Facility. *arXiv e-prints*, page arXiv:2408.14586, August 2024.

[2] Alessandra Corsi, Avery Eddins, T. Joseph W. Lazio, Eric J. Murphy, and Rachel A. Osten. Radio transients from compact objects across the mass spectrum in the era of multi-messenger astronomy. *Frontiers in Astronomy and Space Sciences*, 11:1401792, July 2024.

[3] Alessandra Corsi, Lisa Barsotti, Emanuele Berti, Matthew Evans, Ish Gupta, Konstantinos Kritos, Kevin Kuns, Alexander H. Nitz, Benjamin J. Owen, Binod Rajbhandari, Jocelyn Read, Bangalore S. Sathyaprakash, David H. Shoemaker, Joshua R. Smith, and Salvatore Vitale. Multi-messenger astrophysics of black holes and neutron stars as probed by ground-based gravitational wave detectors: from present to future. *Frontiers in Astronomy and Space Sciences*, 11:1386748, May 2024.

[4] Shreya Anand, Jennifer Barnes, Sheng Yang, Mansi M. Kasliwal, Michael W. Coughlin, Jesper Sollerman, Kishalay De, Christoffer Fremling, Alessandra Corsi, Anna Y. Q. Ho, Arvind Balasubramanian, Conor Omand, Gokul P. Srinivasaragavan, S. Bradley Cenko, Tomás Ahumada, Igor Andreoni, Aishwarya Dahiwale, Kaustav Kashyap Das, Jacob Jencson, Viraj Karambelkar, Harsh Kumar, Brian D. Metzger, Daniel Perley, Nikhil Sarin, Tassilo Schweyer, Steve Schulze, Yashvi Sharma, Tawny Sit, Robert Stein, Leonardo Tartaglia, Samaporn Tinyanont, Anastasios Tzanidakis, Jan van Roestel, Yuhan Yao, Joshua S. Bloom, David O. Cook, Richard Dekany, Matthew J. Graham, Steven L. Groom, David L. Kaplan, Frank J. Masci, Michael S. Medford, Reed Riddle, and Chaoran Zhang. Collapsars as Sites of r-process Nucleosynthesis: Systematic Photometric Near-infrared Follow-up of Type Ic-BL Supernovae. *Astrophysical Journal*, 962(1):68, February 2024.

[5] Alessandra Corsi, Anna Y. Q. Ho, S. Bradley Cenko, Shrinivas R. Kulkarni, Shreya Anand, Sheng Yang, Jesper Sollerman, Gokul P. Srinivasaragavan, Conor M. B. Omand, Arvind Balasubramanian, Dale A. Frail, Christoffer Fremling, Daniel A. Perley, Yuhan Yao, Aishwarya S. Dahiwale, Kishalay De, Alison Dugas, Matthew Hankins, Jacob Jencson, Mansi M. Kasliwal, Anastasios Tzanidakis, Eric C. Bellm, Russ R. Laher, Frank J. Masci, Josiah N. Purdum, and Nicolas Regnault. A Search for Relativistic Ejecta in a Sample of ZTF Broad-lined Type Ic Supernovae. *Astrophysical Journal*, 953(2):179, August 2023.

[6] Hinna Shivkumar, Amruta D. Jaodand, Arvind Balasubramanian, Christoffer Fremling, Alessandra Corsi, Anastasios Tzanidakis, Samaya Nissanke, Mansi Kasliwal, Murray Brightman, Geert Raaijmakers, Kristin Kruse Madsen, Fiona Harrison, Dario Carbone, A. J. Nayana, Jean-Michel Désert, and Igor Andreoni. SN2019wxt: An Ultrastripped Supernova Candidate Discovered in the Electromagnetic Follow-up of a Gravitational Wave Trigger. *Astrophysical Journal*, 952(1):86, July 2023.

[7] Avery Eddins, Kyung-Hwan Lee, Alessandra Corsi, Imre Bartos, Zsuzsanna Márka, and Szabolcs Márka. A Search for Kilonova Radio Flares in a Sample of Swift/BAT Short Gamma-Ray Bursts. *Astrophysical Journal*, 948(2):125, May 2023.

[8] Arvind Balasubramanian, Alessandra Corsi, Kunal P. Mooley, Kenta Hotokezaka, David L. Kaplan, Dale A. Frail, Gregg Hallinan, Davide Lazzati, and Eric J. Murphy. GW170817 4.5 Yr After Merger: Dynamical Ejecta Afterglow Constraints. *Astrophysical Journal*, 938(1):12, October 2022.

[9] K. H. Lee, I. Bartos, A. Eddins, A. Corsi, Z. Márka, G. C. Privon, and S. Márka. Radio Constraints on r-process Nucleosynthesis by Collapsars. *Astrophysical Journal Letters*, 934(1):L5, July 2022.

[10] Igor Andreoni, Raffaella Margutti, Om Sharan Salafia, B. Parazin, V. Ashley Villar, Michael W. Coughlin, Peter Yoachim, Kris Mortensen, Daniel Brethauer, S. J. Smartt, Mansi M. Kasliwal, Kate D. Alexander, Shreya Anand, E. Berger, Maria Grazia Bernardini, Federica B. Bianco, Peter K. Blanchard, Joshua S. Bloom, Enzo Brocato, Mattia Bulla, Regis Cartier, S. Bradley Cenko, Ryan Chornock, Christopher M. Copperwheat, Alessandra Corsi, Filippo D'Ammando, Paolo D'Avanzo, Laurence Élise Hélène Datrier, Ryan J. Foley, Giancarlo Ghirlanda, Ariel Goobar, Jonathan Grindlay, Aprajita Hajela, Daniel E. Holz, Viraj Karambelkar, E. C. Kool, Gavin P. Lamb, Tanmoy Laskar, Andrew Levan, Kate Maguire, Morgan May, Andrea Melandri, Dan Milisavljevic, A. A. Miller, Matt Nicholl, Samaya M. Nissanke, Antonella Palmese, Silvia Piranomonte, Armin Rest,

Ana Sagués-Carracedo, Karelle Siellez, Leo P. Singer, Mathew Smith, D. Steeghs, and Nial Tanvir. Target-of-opportunity Observations of Gravitational-wave Events with Vera C. Rubin Observatory. *Astrophysical Journal Supplement*, 260(1):18, May 2022.

[11] A. Balasubramanian, A. Corsi, E. Polisensky, T. E. Clarke, and N. E. Kassim. Radio Observations of SN2004dk with VLITE Confirm Late-time Rebrightening. *Astrophysical Journal*, 923(1):32, December 2021.

[12] S. Makhathini, K. P. Mooley, M. Brightman, K. Hotokezaka, A. J. Nayana, H. T. Intema, D. Dobie, E. Lenc, D. A. Perley, C. Fremling, J. Moldòn, D. Lazzati, D. L. Kaplan, A. Balasubramanian, I. S. Brown, D. Carbone, P. Chandra, A. Corsi, F. Camilo, A. Deller, D. A. Frail, T. Murphy, E. J. Murphy, E. Nakar, O. Smirnov, R. J. Beswick, R. Fender, G. Hallinan, I. Heywood, M. Kasliwal, B. Lee, W. Lu, J. Rana, S. Perkins, S. V. White, G. I. G. Józsa, B. Hugo, and P. Kamphuis. The Panchromatic Afterglow of GW170817: The Full Uniform Data Set, Modeling, Comparison with Previous Results, and Implications. *Astrophysical Journal*, 922(2):154, December 2021.

[13] Arvind Balasubramanian, Alessandra Corsi, Kunal P. Mooley, Murray Brightman, Gregg Hallinan, Kenta Hotokezaka, David L. Kaplan, Davide Lazzati, and Eric J. Murphy. Continued Radio Observations of GW170817 3.5 yr Post-merger. *Astrophysical Journal Letters*, 914(1):L20, June 2021.

[14] Alessandra Corsi and Davide Lazzati. Gamma-ray burst jets in supernovae. *New Astronomy Reviews*, 92:101614, June 2021.

[15] D. Bhakta, K. P. Mooley, A. Corsi, A. Balasubramanian, D. Dobie, D. A. Frail, G. Hallinan, D. L. Kaplan, S. T. Myers, and L. P. Singer. The JAGWAR Prowls LIGO/Virgo O3 Paper I: Radio Search of a Possible Multimessenger Counterpart of the Binary Black Hole Merger Candidate S191216ap. *Astrophysical Journal*, 911(2):77, April 2021.

[16] N. T. Palliyaguru, A. Corsi, M. Pérez-Torres, E. Varenius, and H. Van Eerten. VLBI Observations of Supernova PTF11qcj: Direct Constraints on the Size of the Radio Ejecta. *Astrophysical Journal*, 910(1):16, March 2021.

[17] Nipuni T. Palliyaguru, Devansh Agarwal, Golnoosh Golpayegani, Ryan Lynch, Duncan R. Lorimer, Benjamin Nguyen, Alessandra Corsi, and Sarah Burke-Spolaor. A targeted search for repeating fast radio bursts associated with gamma-ray bursts. *Monthly Notices of the RAS*, 501(1):541–547, February 2021.

[18] C. Grandorf, J. McCarty, P. Rajkumar, H. Harbin, K. H. Lee, A. Corsi, I. Bartos, Z. Márka, A. Balasubramanian, and S. Márka. Search for Radio Remnants of Nearby Off-axis Gamma-Ray Bursts in a Sample of Swift/BAT Events. *Astrophysical Journal*, 908(1):63, February 2021.

[19] R. Ricci, E. Troja, G. Bruni, T. Matsumoto, L. Piro, B. O'Connor, T. Piran, N. Navaieelavasani, A. Corsi, B. Giacomazzo, and M. H. Wieringa. Searching for the radio remnants of short-duration gamma-ray bursts. *Monthly Notices of the RAS*, 500(2):1708–1720, January 2021.

[20] Mansi M. Kasliwal, Shreya Anand, Tomás Ahumada, Robert Stein, Ana Sagués Carracedo, Igor Andreoni, Michael W. Coughlin, Leo P. Singer, Erik C. Kool, Kishalay De, Harsh Kumar, Mouza AlMualla, Yuhan Yao, Mattia Bulla, Dougal Dobie, Simeon Reusch, Daniel A. Perley, S. Bradley Cenko, Varun Bhalerao, David L. Kaplan, Jesper Sollerman, Ariel Goobar, Christopher M. Copperwheat, Eric C. Bellm, G. C. Anupama, Alessandra Corsi, Samaya Nissanke, Iván Agudo, Ashot Bagdasaryan, Sudhanshu Barway, Justin Belicki, Joshua S. Bloom, Bryce Bolin, David A. H. Buckley, Kevin B. Burdge, Rick Burruss, Maria D. Caballero-García, Chris Cannella, Alberto J. Castro-Tirado, David O. Cook, Jeff Cooke, Virginia Cunningham, Aishwarya Dahiwale, Kunal Deshmukh, Simone Dichiara, Dmitry A. Duev, Anirban Dutta, Michael Feeney, Anna Franckowiak, Sara Frederick, Christoffer Fremling, Avishay Gal-Yam, Pradip Gatkine, Shaon Ghosh, Daniel A. Goldstein, V. Zach Golkhou, Matthew J. Graham, Melissa L. Graham, Matthew J. Hankins, George Helou,

Youdong Hu, Wing-Huen Ip, Amruta Jaodand, Viraj Karambelkar, Albert K. H. Kong, Marek Kowalski, Maitreya Khandagale, S. R. Kulkarni, Brajesh Kumar, Russ R. Laher, K. L. Li, Ashish Mahabal, Frank J. Masci, Adam A. Miller, Moses Mogotsi, Siddharth Mohite, Kunal Mooley, Przemek Mroz, Jeffrey A. Newman, Chow-Choong Ngeow, Samantha R. Oates, Atharva Sunil Patil, Shashi B. Pandey, M. Pavana, Elena Pian, Reed Riddle, Rubén Sánchez-Ramírez, Yashvi Sharma, Avinash Singh, Roger Smith, Maayane T. Soumagnac, Kirsty Taggart, Hanjie Tan, Anastasios Tzanidakis, Eleonora Troja, Azamat F. Valeev, Richard Walters, Gaurav Waratkar, Sara Webb, Po-Chieh Yu, Bin-Bin Zhang, Rongpu Zhou, and Jeffry Zolkower. Kilonova Luminosity Function Constraints Based on Zwicky Transient Facility Searches for 13 Neutron Star Merger Triggers during O3. *Astrophysical Journal*, 905(2):145, December 2020.

[21] Virginia Cunningham, S. Bradley Cenko, Geoffrey Ryan, Stuart N. Vogel, Alessandra Corsi, Antonino Cucchiara, Andrew S. Fruchter, Assaf Horesh, Tuomas Kangas, Daniel Kocevski, Daniel A. Perley, and Judith Racusin. GRB 160625B: Evidence for a Gaussian-shaped Jet. *Astrophysical Journal*, 904(2):166, December 2020.

[22] Anna Y. Q. Ho, S. R. Kulkarni, Daniel A. Perley, S. Bradley Cenko, Alessandra Corsi, Steve Schulze, Ragnhild Lunnan, Jesper Sollerman, Avishay Gal-Yam, Shreya Anand, Cristina Barbarino, Eric C. Bellm, Rachel J. Bruch, Eric Burns, Kishalay De, Richard Dekany, Alexandre Delacroix, Dmitry A. Duev, Dmitry D. Frederiks, Christoffer Fremling, Daniel A. Goldstein, V. Zach Golkhou, Matthew J. Graham, David Hale, Mansi M. Kasliwal, Thomas Kupfer, Russ R. Laher, Julia Martikainen, Frank J. Masci, James D. Neill, Anna Ridnaia, Ben Rusholme, Volodymyr Savchenko, David L. Shupe, Maayane T. Soumagnac, Nora L. Strotjohann, Dmitry S. Svinkin, Kirsty Taggart, Leonardo Tartaglia, Lin Yan, and Jeffry Zolkower. SN 2020bvc: A Broad-line Type Ic Supernova with a Double-peaked Optical Light Curve and a Luminous X-Ray and Radio Counterpart. *Astrophysical Journal*, 902(1):86, October 2020.

[23] Tuomas Kangas, Andrew S. Fruchter, S. Bradley Cenko, Alessandra Corsi, Antonio de Ugarte Postigo, Asaf Pe'er, Stuart N. Vogel, Antonino Cucchiara, Benjamin Gompertz, John Graham, Andrew Levan, Kuntal Misra, Daniel A. Perley, Judith Racusin, and Nial Tanvir. The Late-time Afterglow Evolution of Long Gamma-Ray Bursts GRB 160625B and GRB 160509A. *Astrophysical Journal*, 894(1):43, May 2020.

[24] Anna Y. Q. Ho, Alessandra Corsi, S. Bradley Cenko, Francesco Taddia, S. R. Kulkarni, Scott Adams, Kishalay De, Richard Dekany, Dmitry D. Frederiks, Christoffer Fremling, V. Zach Golkhou, Matthew J. Graham, Tiara Hung, Thomas Kupfer, Russ R. Laher, Ashish Mahabal, Frank J. Masci, Adam A. Miller, James D. Neill, Daniel Reiley, Reed Riddle, Anna Ridnaia, Ben Rusholme, Yashvi Sharma, Jesper Sollerman, Maayane T. Soumagnac, Dmitry S. Svinkin, and David L. Shupe. The Broad-lined Ic Supernova ZTF18aaqjovh (SN 2018bvw): An Optically Discovered Engine-driven Supernova Candidate with Luminous Radio Emission. *Astrophysical Journal*, 893(2):132, April 2020.

[25] Dario Carbone and Alessandra Corsi. An Optimized Radio Follow-up Strategy for Stripped-envelope Core-collapse Supernovae. *Astrophysical Journal*, 889(1):36, January 2020.

[26] Eric Sowell, Alessandra Corsi, and Robert Coyne. Multiwaveform cross-correlation search method for intermediate-duration gravitational waves from gamma-ray bursts. *Physical Review D*, 100(12):124041, December 2019.

[27] Dougal Dobie, Adam Stewart, Tara Murphy, Emil Lenc, Ziteng Wang, David L. Kaplan, Igor Andreoni, Julie Banfield, Ian Brown, Alessandra Corsi, Kishalay De, Daniel A. Goldstein, Gregg Hallinan, Aidan Hotan, Kenta Hotokezaka, Amruta D. Jaodand, Viraj Karambelkar, Mansi M. Kasliwal, David McConnell, Kunal Mooley, Vanessa A. Moss, Jeffrey A. Newman, Daniel A. Perley, Abhishek Prakash, Joshua Pritchard, Elaine M. Sadler, Yashvi Sharma, Charlotte Ward, Matthew Whiting,

and Rongpu Zhou. An ASKAP Search for a Radio Counterpart to the First High-significance Neutron Star-Black Hole Merger LIGO/Virgo S190814bv. *Astrophysical Journal Letters*, 887(1):L13, December 2019.

[28] Anna Y. Q. Ho, Daniel A. Goldstein, Steve Schulze, David K. Khatami, Daniel A. Perley, Mattias Ergon, Avishay Gal-Yam, Alessandra Corsi, Igor Andreoni, Cristina Barbarino, Eric C. Bellm, Nadia Blagorodnova, Joe S. Bright, E. Burns, S. Bradley Cenko, Virginia Cunningham, Kishalay De, Richard Dekany, Alison Dugas, Rob P. Fender, Claes Fransson, Christoffer Fremling, Adam Goldstein, Matthew J. Graham, David Hale, Assaf Horesh, Tiara Hung, Mansi M. Kasliwal, N. Paul M. Kuin, S. R. Kulkarni, Thomas Kupfer, Ragnhild Lunnan, Frank J. Masci, Chow-Choong Ngeow, Peter E. Nugent, Eran O. Ofek, Maria T. Patterson, Glen Petitpas, Ben Rusholme, Hanna Sai, Itai Sfaradi, David L. Shupe, Jesper Sollerman, Maayane T. Soumagnac, Yutaro Tachibana, Francesco Taddia, Richard Walters, Xiaofeng Wang, Yuhan Yao, and Xinhan Zhang. Evidence for Late-stage Eruptive Mass Loss in the Progenitor to SN2018gep, a Broad-lined Ic Supernova: Pre-explosion Emission and a Rapidly Rising Luminous Transient. *Astrophysical Journal*, 887(2):169, December 2019.

[29] Kyle Artkop, Rachel Smith, Alessandra Corsi, Simona Giacintucci, Wendy M. Peters, Rosalba Perna, S. Bradley Cenko, and Tracy E. Clarke. Radio Follow-up of a Candidate γ-Ray Transient in the Sky Localization Area of GW170608. *Astrophysical Journal*, 884(1):16, October 2019.

[30] G. P. Lamb, N. R. Tanvir, A. J. Levan, A. de Ugarte Postigo, K. Kawaguchi, A. Corsi, P. A. Evans, B. Gompertz, D. B. Malesani, K. L. Page, K. Wiersema, S. Rosswog, M. Shibata, M. Tanaka, A. J. van der Horst, Z. Cano, J. P. U. Fynbo, A. S. Fruchter, J. Greiner, K. E. Heintz, A. Higgins, J. Hjorth, L. Izzo, P. Jakobsson, D. A. Kann, P. T. O'Brien, D. A. Perley, E. Pian, G. Pugliese, R. L. C. Starling, C. C. Thöne, D. Watson, R. A. M. J. Wijers, and D. Xu. Short GRB 160821B: A Reverse Shock, a Refreshed Shock, and a Well-sampled Kilonova. *Astrophysical Journal*, 883(1):48, September 2019.

[31] M. J. Lundquist, K. Paterson, W. Fong, D. J. Sand, J. E. Andrews, I. Shivaei, P. N. Daly, S. Valenti, S. Yang, E. Christensen, A. R. Gibbs, F. Shelly, S. Wyatt, O. Eskandari, O. Kuhn, R. C. Amaro, I. Arcavi, P. Behroozi, N. Butler, L. Chomiuk, A. Corsi, M. R. Drout, E. Egami, X. Fan, R. J. Foley, B. Frye, P. Gabor, E. M. Green, C. J. Grier, F. Guzman, E. Hamden, D. A. Howell, B. T. Jannuzi, P. Kelly, P. Milne, M. Moe, A. Nugent, E. Olszewski, E. Palazzi, V. Paschalidis, D. Psaltis, D. Reichart, A. Rest, A. Rossi, G. Schroeder, P. S. Smith, N. Smith, K. Spekkens, J. Strader, D. P. Stark, D. Trilling, C. Veillet, M. Wagner, B. Weiner, J. C. Wheeler, G. G. Williams, and A. Zabludoff. Searches after Gravitational Waves Using ARizona Observatories (SAGUARO): System Overview and First Results from Advanced LIGO/Virgo's Third Observing Run. *Astrophysical Journal Letters*, 881(2):L26, August 2019.

[32] I. Bartos, K. H. Lee, A. Corsi, Z. Márka, and S. Márka. Radio forensics could unmask nearby off-axis gamma-ray bursts. *Monthly Notices of the RAS*, 485(3):4150–4159, May 2019.

[33] Sheng Yang, David J. Sand, Stefano Valenti, Enrico Cappellaro, Leonardo Tartaglia, Samuel Wyatt, Alessandra Corsi, Daniel E. Reichart, Joshua Haislip, Vladimir Kouprianov, and (DLT40 Collaboration. Optical Follow-up of Gravitational-wave Events during the Second Advanced LIGO/VIRGO Observing Run with the DLT40 Survey. *Astrophysical Journal*, 875(1):59, April 2019.

[34] Nipuni T. Palliyaguru, Alessandra Corsi, Dale A. Frail, Jozsef Vinkó, J. Craig Wheeler, Avishay Gal-Yam, S. Bradley Cenko, Shrinivas R. Kulkarni, and Mansi M. Kasliwal. The Double-peaked Radio Light Curve of Supernova PTF11qcj. *Astrophysical Journal*, 872(2):201, February 2019.

[35] A. Corsi, D. A. Frail, D. Lazzati, D. Carbone, E. J. Murphy, B. J. Owen, D. J. Sand, and R. O'Shaughnessy. Compact Binary Mergers as Traced by Gravitational Waves. In Eric Murphy, editor, *Science with a Next Generation Very Large Array*, volume 517 of *Astronomical Society of the Pacific Conference Series*, page 689, December 2018.

[36] K. P. Mooley, D. A. Frail, D. Dobie, E. Lenc, A. Corsi, K. De, A. J. Nayana, S. Makhathini, I. Heywood, T. Murphy, D. L. Kaplan, P. Chandra, O. Smirnov, E. Nakar, G. Hallinan, F. Camilo, R. Fender, S. Goedhart, P. Groot, M. M. Kasliwal, S. R. Kulkarni, and P. A. Woudt. A Strong Jet Signature in the Late-time Light Curve of GW170817. *Astrophysical Journal Letters*, 868(1):L11, November 2018.

[37] Dario Carbone and Alessandra Corsi. Optimized Radio Follow-up of Binary Neutron-star Mergers. *Astrophysical Journal*, 867(2):135, November 2018.

[38] L. E. Rivera Sandoval, T. J. Maccarone, A. Corsi, P. J. Brown, D. Pooley, and J. C. Wheeler. X-ray Swift observations of SN 2018cow. *Monthly Notices of the RAS*, 480(1):L146–L150, October 2018.

[39] K. P. Mooley, A. T. Deller, O. Gottlieb, E. Nakar, G. Hallinan, S. Bourke, D. A. Frail, A. Horesh, A. Corsi, and K. Hotokezaka. Superluminal motion of a relativistic jet in the neutron-star merger GW170817. *Nature*, 561(7723):355–359, September 2018.

[40] Rosalba Perna, Martyna Chruslinska, Alessandra Corsi, and Krzysztof Belczynski. Binary black hole mergers within the LIGO horizon: statistical properties and prospects for detecting electromagnetic counterparts. *Monthly Notices of the RAS*, 477(3):4228–4240, July 2018.

[41] Alessandra Corsi, Gregg W. Hallinan, Davide Lazzati, Kunal P. Mooley, Eric J. Murphy, Dale A. Frail, Dario Carbone, David L. Kaplan, Tara Murphy, Shrinivas R. Kulkarni, and Kenta Hotokezaka. An Upper Limit on the Linear Polarization Fraction of the GW170817 Radio Continuum. *Astrophysical Journal Letters*, 861(1):L10, July 2018.

[42] Annalisa De Cia, A. Gal-Yam, A. Rubin, G. Leloudas, P. Vreeswijk, D. A. Perley, R. Quimby, Lin Yan, M. Sullivan, A. Flörs, J. Sollerman, D. Bersier, S. B. Cenko, M. Gal-Yam, K. Maguire, E. O. Ofek, S. Prentice, S. Schulze, J. Spyromilio, S. Valenti, I. Arcavi, A. Corsi, D. A. Howell, P. Mazzali, M. M. Kasliwal, F. Taddia, and O. Yaron. Light Curves of Hydrogen-poor Superluminous Supernovae from the Palomar Transient Factory. *Astrophysical Journal*, 860(2):100, June 2018.

[43] Dougal Dobie, David L. Kaplan, Tara Murphy, Emil Lenc, Kunal P. Mooley, Christene Lynch, Alessandra Corsi, Dale Frail, Mansi Kasliwal, and Gregg Hallinan. A Turnover in the Radio Light Curve of GW170817. *Astrophysical Journal Letters*, 858(2):L15, May 2018.

[44] K. P. Mooley, E. Nakar, K. Hotokezaka, G. Hallinan, A. Corsi, D. A. Frail, A. Horesh, T. Murphy, E. Lenc, D. L. Kaplan, K. de, D. Dobie, P. Chand ra, A. Deller, O. Gottlieb, M. M. Kasliwal, S. R. Kulkarni, S. T. Myers, S. Nissanke, T. Piran, C. Lynch, V. Bhalerao, S. Bourke, K. W. Bannister, and L. P. Singer. A mildly relativistic wide-angle outflow in the neutron-star merger event GW170817. *Nature*, 554(7691):207–210, February 2018.

[45] G. Hallinan, A. Corsi, K. P. Mooley, K. Hotokezaka, E. Nakar, M. M. Kasliwal, D. L. Kaplan, D. A. Frail, S. T. Myers, T. Murphy, K. De, D. Dobie, J. R. Allison, K. W. Bannister, V. Bhalerao, P. Chandra, T. E. Clarke, S. Giacintucci, A. Y. Q. Ho, A. Horesh, N. E. Kassim, S. R. Kulkarni, E. Lenc, F. J. Lockman, C. Lynch, D. Nichols, S. Nissanke, N. Palliyaguru, W. M. Peters, T. Piran, J. Rana, E. M. Sadler, and L. P. Singer. A radio counterpart to a neutron star merger. *Science*, 358(6370):1579–1583, December 2017.

[46] M. M. Kasliwal, E. Nakar, L. P. Singer, D. L. Kaplan, D. O. Cook, A. Van Sistine, R. M. Lau, C. Fremling, O. Gottlieb, J. E. Jencson, S. M. Adams, U. Feindt, K. Hotokezaka, S. Ghosh, D. A. Perley, P. C. Yu, T. Piran, J. R. Allison, G. C. Anupama, A. Balasubramanian, K. W. Bannister, J. Bally, J. Barnes, S. Barway, E. Bellm, V. Bhalerao, D. Bhattacharya, N. Blagorodnova, J. S. Bloom, P. R. Brady, C. Cannella, D. Chatterjee, S. B. Cenko, B. E. Cobb, C. Copperwheat, A. Corsi, K. De, D. Dobie, S. W. K. Emery, P. A. Evans, O. D. Fox, D. A. Frail, C. Frohmaier, A. Goobar, G. Hallinan, F. Harrison, G. Helou, T. Hinderer, A. Y. Q. Ho, A. Horesh, W. H. Ip, R. Itoh, D. Kasen, H. Kim, N. P. M. Kuin, T. Kupfer, C. Lynch, K. Madsen, P. A. Mazzali, A. A. Miller,

K. Mooley, T. Murphy, C. C. Ngeow, D. Nichols, S. Nissanke, P. Nugent, E. O. Ofek, H. Qi, R. M. Quimby, S. Rosswog, F. Rusu, E. M. Sadler, P. Schmidt, J. Sollerman, I. Steele, A. R. Williamson, Y. Xu, L. Yan, Y. Yatsu, C. Zhang, and W. Zhao. Illuminating gravitational waves: A concordant picture of photons from a neutron star merger. *Science*, 358(6370):1559–1565, December 2017.

[47] Sheng Yang, Stefano Valenti, Enrico Cappellaro, David J. Sand , Leonardo Tartaglia, Alessandra Corsi, Daniel E. Reichart, Joshua Haislip, and Vladimir Kouprianov. An Empirical Limit on the Kilonova Rate from the DLT40 One Day Cadence Supernova Survey. *Astrophysical Journal Letters*, 851(2):L48, December 2017.

[48] L. Whitesides, R. Lunnan, M. M. Kasliwal, D. A. Perley, A. Corsi, S. B. Cenko, N. Blagorodnova, Y. Cao, D. O. Cook, G. B. Doran, D. D. Frederiks, C. Fremling, K. Hurley, E. Karamehmetoglu, S. R. Kulkarni, G. Leloudas, F. Masci, P. E. Nugent, A. Ritter, A. Rubin, V. Savchenko, J. Sollerman, D. S. Svinkin, F. Taddia, P. Vreeswijk, and P. Wozniak. iPTF 16asu: A Luminous, Rapidly Evolving, and High-velocity Supernova. *Astrophysical Journal*, 851(2):107, December 2017.

[49] Stefano Valenti, David J. Sand, Sheng Yang, Enrico Cappellaro, Leonardo Tartaglia, Alessandra Corsi, Saurabh W. Jha, Daniel E. Reichart, Joshua Haislip, and Vladimir Kouprianov. The Discovery of the Electromagnetic Counterpart of GW170817: Kilonova AT 2017gfo/DLT17ck. *Astrophysical Journal Letters*, 848(2):L24, October 2017.

[50] A. Corsi, S. B. Cenko, M. M. Kasliwal, R. Quimby, S. R. Kulkarni, D. A. Frail, A. M. Goldstein, N. Blagorodnova, V. Connaughton, D. A. Perley, L. P. Singer, C. M. Copperwheat, C. Fremling, T. Kupfer, A. S. Piascik, I. A. Steele, F. Taddia, H. Vedantham, A. Kutyrev, N. T. Palliyaguru, O. Roberts, J. Sollerman, E. Troja, and S. Veilleux. iPTF17cw: An Engine-driven Supernova Candidate Discovered Independent of a Gamma-Ray Trigger. *Astrophysical Journal*, 847(1):54, September 2017.

[51] V. Bhalerao, M. M. Kasliwal, D. Bhattacharya, A. Corsi, E. Aarthy, S. M. Adams, N. Blagorodnova, T. Cantwell, S. B. Cenko, R. Fender, D. Frail, R. Itoh, J. Jencson, N. Kawai, A. K. H. Kong, T. Kupfer, A. Kutyrev, J. Mao, S. Mate, N. P. S. Mithun, K. Mooley, D. A. Perley, Y. C. Perrott, R. M. Quimby, A. R. Rao, L. P. Singer, V. Sharma, D. J. Titterington, E. Troja, S. V. Vadawale, A. Vibhute, H. Vedantham, and S. Veilleux. A Tale of Two Transients: GW 170104 and GRB 170105A. *Astrophysical Journal*, 845(2):152, August 2017.

[52] Griffin Hosseinzadeh, Iair Arcavi, Stefano Valenti, Curtis McCully, D. Andrew Howell, Joel Johansson, Jesper Sollerman, Andrea Pastorello, Stefano Benetti, Yi Cao, S. Bradley Cenko, Kelsey I. Clubb, Alessandra Corsi, Gina Duggan, Nancy Elias-Rosa, Alexei V. Filippenko, Ori D. Fox, Christoffer Fremling, Assaf Horesh, Emir Karamehmetoglu, Mansi Kasliwal, G. H. Marion, Eran Ofek, David Sand, Francesco Taddia, WeiKang Zheng, Morgan Fraser, Avishay Gal-Yam, Cosimo Inserra, Russ Laher, Frank Masci, Umaa Rebbapragada, Stephen Smartt, Ken W. Smith, Mark Sullivan, Jason Surace, and Przemek Woźniak. Type Ibn Supernovae Show Photometric Homogeneity and Spectral Diversity at Maximum Light. *Astrophysical Journal*, 836(2):158, February 2017.

[53] A. Corsi, A. Gal-Yam, S. R. Kulkarni, D. A. Frail, P. A. Mazzali, S. B. Cenko, M. M. Kasliwal, Y. Cao, A. Horesh, N. Palliyaguru, D. A. Perley, R. R. Laher, F. Taddia, G. Leloudas, K. Maguire, P. E. Nugent, J. Sollerman, and M. Sullivan. Radio Observations of a Sample of Broad-line Type IC Supernovae Discovered by PTF/IPTF: A Search for Relativistic Explosions. *Astrophysical Journal*, 830(1):42, October 2016.

[54] N. T. Palliyaguru, A. Corsi, M. M. Kasliwal, S. B. Cenko, D. A. Frail, D. A. Perley, N. Mishra, L. P. Singer, A. Gal-Yam, P. E. Nugent, and J. A. Surace. Radio Follow-up of Gravitational-wave Triggers during Advanced LIGO O1. *Astrophysical Journal Letters*, 829(2):L28, October 2016.

[55] F. Taddia, C. Fremling, J. Sollerman, A. Corsi, A. Gal-Yam, E. Karamehmetoglu, R. Lunnan, B. Bue, M. Ergon, M. Kasliwal, P. M. Vreeswijk, and P. R. Wozniak. iPTF15dtg: a double-peaked Type Ic supernova from a massive progenitor. *Astronomy and Astrophysics*, 592:A89, August 2016.

[56] M. M. Kasliwal, S. B. Cenko, L. P. Singer, A. Corsi, Y. Cao, T. Barlow, V. Bhalerao, E. Bellm, D. Cook, G. E. Duggan, R. Ferretti, D. A. Frail, A. Horesh, R. Kendrick, S. R. Kulkarni, R. Lunnan, N. Palliyaguru, R. Laher, F. Masci, I. Manulis, A. A. Miller, P. E. Nugent, D. Perley, T. A. Prince, R. M. Quimby, J. Rana, U. Rebbapragada, B. Sesar, A. Singhal, J. Surace, and A. Van Sistine. iPTF Search for an Optical Counterpart to Gravitational-wave Transient GW150914. *Astrophysical Journal Letters*, 824(2):L24, June 2016.

[57] Robert Coyne, Alessandra Corsi, and Benjamin J. Owen. Cross-correlation method for intermediate-duration gravitational wave searches associated with gamma-ray bursts. *Physical Review D*, 93(10):104059, May 2016.

[58] S. J. Prentice, P. A. Mazzali, E. Pian, A. Gal-Yam, S. R. Kulkarni, A. Rubin, A. Corsi, C. Fremling, J. Sollerman, O. Yaron, I. Arcavi, W. Zheng, M. M. Kasliwal, A. V. Filippenko, S. B. Cenko, Y. Cao, and P. E. Nugent. The bolometric light curves and physical parameters of stripped-envelope supernovae. *Monthly Notices of the RAS*, 458(3):2973–3002, May 2016.

[59] V. L. Toy, S. B. Cenko, J. M. Silverman, N. R. Butler, A. Cucchiara, A. M. Watson, D. Bersier, D. A. Perley, R. Margutti, E. Bellm, J. S. Bloom, Y. Cao, J. I. Capone, K. Clubb, A. Corsi, A. De Cia, J. A. de Diego, A. V. Filippenko, O. D. Fox, A. Gal-Yam, N. Gehrels, L. Georgiev, J. J. González, M. M. Kasliwal, P. L. Kelly, S. R. Kulkarni, A. S. Kutyrev, W. H. Lee, J. X. Prochaska, E. Ramirez-Ruiz, M. G. Richer, C. Román-Zúñiga, L. Singer, D. Stern, E. Troja, and S. Veilleux. Optical and Near-infrared Observations of SN 2013dx Associated with GRB 130702A. *Astrophysical Journal*, 818(1):79, February 2016.

[60] A. Cucchiara, P. Veres, A. Corsi, S. B. Cenko, D. A. Perley, A. Lien, F. E. Marshall, C. Pagani, V. L. Toy, J. I. Capone, D. A. Frail, A. Horesh, M. Modjaz, N. R. Butler, O. M. Littlejohns, A. M. Watson, A. S. Kutyrev, W. H. Lee, M. G. Richer, C. R. Klein, O. D. Fox, J. X. Prochaska, J. S. Bloom, E. Troja, E. Ramirez-Ruiz, J. A. de Diego, L. Georgiev, J. González, C. G. Román-Zúñiga, N. Gehrels, and H. Moseley. Happy Birthday Swift: Ultra-long GRB 141121A and Its Broadband Afterglow. *Astrophysical Journal*, 812(2):122, October 2015.

[61] Péter Veres, Alessandra Corsi, Dale A. Frail, S. Bradley Cenko, and Daniel A. Perley. Early-time VLA Observations and Broadband Afterglow Analysis of the Fermi/LAT Detected GRB 130907A. *Astrophysical Journal*, 810(1):31, September 2015.

[62] Leo P. Singer, Mansi M. Kasliwal, S. Bradley Cenko, Daniel A. Perley, Gemma E. Anderson, G. C. Anupama, Iair Arcavi, Varun Bhalerao, Brian D. Bue, Yi Cao, Valerie Connaughton, Alessandra Corsi, Antonino Cucchiara, Rob P. Fender, Derek B. Fox, Neil Gehrels, Adam Goldstein, J. Gorosabel, Assaf Horesh, Kevin Hurley, Joel Johansson, D. A. Kann, Chryssa Kouveliotou, Kuiyun Huang, S. R. Kulkarni, Frank Masci, Peter Nugent, Arne Rau, Umaa D. Rebbapragada, Tim D. Staley, Dmitry Svinkin, C. C. Thöne, A. de Ugarte Postigo, Yuji Urata, and Alan Weinstein. The Needle in the 100 deg^2 Haystack: Uncovering Afterglows of Fermi GRBs with the Palomar Transient Factory. *Astrophysical Journal*, 806(1):52, June 2015.

[63] S. Bradley Cenko, Alex L. Urban, Daniel A. Perley, Assaf Horesh, Alessandra Corsi, Derek B. Fox, Yi Cao, Mansi M. Kasliwal, Amy Lien, Iair Arcavi, Joshua S. Bloom, Nat R. Butler, Antonino Cucchiara, José A. de Diego, Alexei V. Filippenko, Avishay Gal-Yam, Neil Gehrels, Leonid Georgiev, J. Jesús González, John F. Graham, Jochen Greiner, D. Alexander Kann, Christopher R. Klein, Fabian Knust, S. R. Kulkarni, Alexander Kutyrev, Russ Laher, William H. Lee, Peter E. Nugent, J. Xavier Prochaska, Enrico Ramirez-Ruiz, Michael G. Richer, Adam Rubin, Yuji Urata, Karla Varela, Alan M. Watson, and Przemek R. Wozniak. iPTF14yb: The First Discovery of a Gamma-Ray Burst Afterglow Independent of a High-energy Trigger. *Astrophysical Journal Letters*, 803(2):L24, April 2015.

[64] Adam N. Morgan, Daniel A. Perley, S. Bradley Cenko, Joshua S. Bloom, Antonino Cucchiara, Joseph W. Richards, Alexei V. Filippenko, Joshua B. Haislip, Aaron LaCluyze, Alessandra Corsi,

Andrea Melandri, Bethany E. Cobb, Andreja Gomboc, Assaf Horesh, Berian James, Weidong Li, Carole G. Mundell, Daniel E. Reichart, and Iain Steele. Evidence for dust destruction from the early-time colour change of GRB 120119A. *Monthly Notices of the RAS*, 440(2):1810–1823, May 2014.

[65] A. Corsi, E. O. Ofek, A. Gal-Yam, D. A. Frail, S. R. Kulkarni, D. B. Fox, M. M. Kasliwal, M. Sullivan, A. Horesh, J. Carpenter, K. Maguire, I. Arcavi, S. B. Cenko, Y. Cao, K. Mooley, Y. C. Pan, B. Sesar, A. Sternberg, D. Xu, D. Bersier, P. James, J. S. Bloom, and P. E. Nugent. A Multi-wavelength Investigation of the Radio-loud Supernova PTF11qcj and its Circumstellar Environment. *Astrophysical Journal*, 782(1):42, February 2014.

[66] D. A. Perley, S. B. Cenko, A. Corsi, N. R. Tanvir, A. J. Levan, D. A. Kann, E. Sonbas, K. Wiersema, W. Zheng, X. H. Zhao, J. M. Bai, M. Bremer, A. J. Castro-Tirado, L. Chang, K. I. Clubb, D. Frail, A. Fruchter, E. Göğüş, J. Greiner, T. Güver, A. Horesh, A. V. Filippenko, S. Klose, J. Mao, A. N. Morgan, A. S. Pozanenko, S. Schmidl, B. Stecklum, M. Tanga, A. A. Volnova, A. E. Volvach, J. G. Wang, J. M. Winters, and Y. X. Xin. The Afterglow of GRB 130427A from 1 to 10^{16} GHz. *Astrophysical Journal*, 781(1):37, January 2014.

[67] Assaf Horesh, Shrinivas R. Kulkarni, Alessandra Corsi, Dale A. Frail, S. Bradley Cenko, Sagi Ben-Ami, Avishay Gal-Yam, Ofer Yaron, Iair Arcavi, Mansi M. Kasliwal, and Eran O. Ofek. PTF 12gzk—A Rapidly Declining, High-velocity Type Ic Radio Supernova. *Astrophysical Journal*, 778(1):63, November 2013.

[68] Shin'ichiro Ando, Bruny Baret, Imre Bartos, Boutayeb Bouhou, Eric Chassande-Mottin, Alessand ra Corsi, Irene Di Palma, Alexander Dietz, Corinne Donzaud, David Eichler, Chad Finley, Dafne Guetta, Francis Halzen, Gareth Jones, Shivaraj Kandhasamy, Kei Kotake, Antoine Kouchner, Vuk Mandic, Szabolcs Márka, Zsuzsa Márka, Luciano Moscoso, Maria Alessandra Papa, Tsvi Piran, Thierry Pradier, Gustavo E. Romero, Patrick Sutton, Eric Thrane, Véronique Van Elewyck, and Eli Waxman. Colloquium: Multimessenger astronomy with gravitational waves and high-energy neutrinos. *Reviews of Modern Physics*, 85(4):1401–1420, October 2013.

[69] Leo P. Singer, S. Bradley Cenko, Mansi M. Kasliwal, Daniel A. Perley, Eran O. Ofek, Duncan A. Brown, Peter E. Nugent, S. R. Kulkarni, Alessandra Corsi, Dale A. Frail, Eric Bellm, John Mulchaey, Iair Arcavi, Tom Barlow, Joshua S. Bloom, Yi Cao, Neil Gehrels, Assaf Horesh, Frank J. Masci, Julie McEnery, Arne Rau, Jason A. Surace, and Ofer Yaron. Discovery and Redshift of an Optical Afterglow in 71 $\deg^2$: iPTF13bxl and GRB 130702A. *Astrophysical Journal Letters*, 776(2):L34, October 2013.

[70] Paolo A. Mazzali, Emma S. Walker, Elena Pian, Masaomi Tanaka, Alessandra Corsi, Takashi Hattori, and Avishay Gal-Yam. The very energetic, broad-lined Type Ic supernova 2010ah (PTF10bzf) in the context of GRB/SNe. *Monthly Notices of the RAS*, 432(3):2463–2473, July 2013.

[71] S. Bradley Cenko, S. R. Kulkarni, Assaf Horesh, Alessandra Corsi, Derek B. Fox, John Carpenter, Dale A. Frail, Peter E. Nugent, Daniel A. Perley, D. Gruber, Avishay Gal-Yam, Paul J. Groot, G. Hallinan, Eran O. Ofek, Arne Rau, Chelsea L. MacLeod, Adam A. Miller, Joshua S. Bloom, Alexei V. Filippenko, Mansi M. Kasliwal, Nicholas M. Law, Adam N. Morgan, David Polishook, Dovi Poznanski, Robert M. Quimby, Branimir Sesar, Ken J. Shen, Jeffrey M. Silverman, and Assaf Sternberg. Discovery of a Cosmological, Relativistic Outburst via its Rapidly Fading Optical Emission. *Astrophysical Journal*, 769(2):130, June 2013.

[72] E. O. Ofek, D. Fox, S. B. Cenko, M. Sullivan, O. Gnat, D. A. Frail, A. Horesh, A. Corsi, R. M. Quimby, N. Gehrels, S. R. Kulkarni, A. Gal-Yam, P. E. Nugent, O. Yaron, A. V. Filippenko, M. M. Kasliwal, L. Bildsten, J. S. Bloom, D. Poznanski, I. Arcavi, R. R. Laher, D. Levitan, B. Sesar, and J. Surace. X-Ray Emission from Supernovae in Dense Circumstellar Matter Environments: A Search for Collisionless Shocks. *Astrophysical Journal*, 763(1):42, January 2013.

[73] Jan-Willem den Herder, Luigi Piro, Takaya Ohashi, Chryssa Kouveliotou, Dieter H. Hartmann, Jelle S. Kaastra, L. Amati, M. I. Andersen, M. Arnaud, J. L. Attéia, S. Bandler, M. Barbera, X. Barcons, S. Barthelmy, S. Basa, S. Basso, M. Boer, E. Branchini, G. Brand uardi-Raymont, S. Borgani, A. Boyarsky, G. Brunetti, C. Budtz-Jorgensen, D. Burrows, N. Butler, S. Campana, E. Caroli, M. Ceballos, F. Christensen, E. Churazov, A. Comastri, L. Colasanti, R. Cole, R. Content, A. Corsi, E. Costantini, P. Conconi, G. Cusumano, J. de Plaa, A. De Rosa, M. Del Santo, S. Di Cosimo, M. De Pasquale, R. Doriese, S. Ettori, P. Evans, Y. Ezoe, L. Ferrari, H. Finger, T. Figueroa-Feliciano, P. Friedrich, R. Fujimoto, A. Furuzawa, J. Fynbo, F. Gatti, M. Galeazzi, N. Gehrels, B. Gendre, G. Ghirlanda, G. Ghisellini, M. Gilfanov, P. Giommi, M. Girardi, J. Grindlay, M. Cocchi, O. Godet, M. Guedel, F. Haardt, R. den Hartog, I. Hepburn, W. Hermsen, J. Hjorth, H. Hoekstra, A. Holland, A. Hornstrup, A. van der Horst, A. Hoshino, J. in't Zand, K. Irwin, Y. Ishisaki, P. Jonker, T. Kitayama, H. Kawahara, N. Kawai, R. Kelley, C. Kilbourne, P. de Korte, A. Kusenko, I. Kuvvetli, M. Labanti, C. Macculi, R. Maiolino, M. Mas Hesse, K. Matsushita, P. Mazzotta, D. McCammon, M. Méndez, R. Mignani, T. Mineo, K. Mitsuda, R. Mushotzky, S. Molendi, L. Moscardini, L. Natalucci, F. Nicastro, P. O'Brien, J. Osborne, F. Paerels, M. Page, S. Paltani, K. Pedersen, E. Perinati, T. Ponman, E. Pointecouteau, P. Predehl, S. Porter, A. Rasmussen, G. Rauw, H. Röttgering, M. Roncarelli, P. Rosati, E. Quadrini, O. Ruchayskiy, R. Salvaterra, S. Sasaki, K. Sato, S. Savaglio, J. Schaye, S. Sciortino, M. Shaposhnikov, R. Sharples, K. Shinozaki, D. Spiga, R. Sunyaev, Y. Suto, Y. Takei, N. Tanvir, M. Tashiro, T. Tamura, Y. Tawara, E. Troja, M. Tsujimoto, T. Tsuru, P. Ubertini, J. Ullom, E. Ursino, F. Verbunt, F. van de Voort, M. Viel, S. Wachter, D. Watson, M. Weisskopf, N. Werner, N. White, R. Willingale, R. Wijers, N. Yamasaki, K. Yoshikawa, and S. Zane. ORIGIN: metal creation and evolution from the cosmic dawn. *Experimental Astronomy*, 34(2):519–549, October 2012.

[74] Alessandra Corsi. Gravitational waves and gamma-ray bursts. In P. Roming, N. Kawai, and E. Pian, editors, *Death of Massive Stars: Supernovae and Gamma-Ray Bursts*, volume 279 of *IAU Symposium*, pages 142–149, September 2012.

[75] Bruny Baret, Imre Bartos, Boutayeb Bouhou, Eric Chassand e-Mottin, Alessandra Corsi, Irene Di Palma, Corinne Donzaud, Marco Drago, Chad Finley, Gareth Jones, Sergey Klimenko, Antoine Kouchner, Szabolcs Márka, Zsuzsa Márka, Luciano Moscoso, Maria Alessandra Papa, Thierry Pradier, Giovanni Prodi, Peter Raffai, Virginia Re, Jameson Rollins, Francesco Salemi, Patrick Sutton, Maggie Tse, Véronique Van Elewyck, and Gabriele Vedovato. Multimessenger science reach and analysis method for common sources of gravitational waves and high-energy neutrinos. *Physical Review D*, 85(10):103004, May 2012.

[76] A. Corsi, E. O. Ofek, A. Gal-Yam, D. A. Frail, D. Poznanski, P. A. Mazzali, S. R. Kulkarni, M. M. Kasliwal, I. Arcavi, S. Ben-Ami, S. B. Cenko, A. V. Filippenko, D. B. Fox, A. Horesh, J. L. Howell, I. K. W. Kleiser, E. Nakar, I. Rabinak, R. Sari, J. M. Silverman, D. Xu, J. S. Bloom, N. M. Law, P. E. Nugent, and R. M. Quimby. Evidence for a Compact Wolf-Rayet Progenitor for the Type Ic Supernova PTF 10vgv. *Astrophysical Journal Letters*, 747(1):L5, March 2012.

[77] Imre Bartos, Chad Finley, Alessandra Corsi, and Szabolcs Márka. Observational Constraints on Multimessenger Sources of Gravitational Waves and High-Energy Neutrinos. *Phys. Rev. Lett.*, 107(25):251101, December 2011.

[78] A. Corsi, E. O. Ofek, D. A. Frail, D. Poznanski, I. Arcavi, A. Gal-Yam, S. R. Kulkarni, K. Hurley, P. A. Mazzali, D. A. Howell, M. M. Kasliwal, Y. Green, D. Murray, M. Sullivan, D. Xu, S. Benami, J. S. Bloom, S. B. Cenko, N. M. Law, P. Nugent, R. M. Quimby, V. Pal'shin, J. Cummings, V. Connaughton, K. Yamaoka, A. Rau, W. Boynton, I. Mitrofanov, and J. Goldsten. PTF 10bzf (SN 2010ah): A Broad-line Ic Supernova Discovered by the Palomar Transient Factory. *Astrophysical Journal*, 741(2):76, November 2011.

[79] Bruny Baret, Imre Bartos, Boutayeb Bouhou, Alessandra Corsi, Irene di Palma, Corinne Donzaud, Véronique van Elewyck, Chad Finley, Gareth Jones, Antoine Kouchner, Szabolcs Márka, Zsuzsa

Márka, Luciano Moscoso, Eric Chassande-Mottin, Maria Alessand ra Papa, Thierry Pradier, Peter Raffai, Jameson Rollins, and Patrick Sutton. Bounding the time delay between high-energy neutrinos and gravitational-wave transients from gamma-ray bursts. *Astroparticle Physics*, 35(1):1–7, August 2011.

[80] Y. Takei, E. Ursino, E. Branchini, T. Ohashi, H. Kawahara, K. Mitsuda, L. Piro, A. Corsi, L. Amati, J. W. den Herder, M. Galeazzi, J. Kaastra, L. Moscardini, F. Nicastro, F. Paerels, M. Roncarelli, and M. Viel. Studying the Warm-hot Intergalactic Medium in Emission. *Astrophysical Journal*, 734(2):91, June 2011.

[81] Alessandra Corsi and Benjamin J. Owen. Maximum gravitational-wave energy emissible in magnetar flares. *Physical Review D*, 83(10):104014, May 2011.

[82] Pietro Ubertini, A. Corsi, S. Foley, S. McGlynn, G. De Cesare, and A. Bazzano. The INTEGRAL view of Gamma-Ray Bursts. *Advances in Space Research*, 47(8):1374–1386, April 2011.

[83] E. Howell, T. Regimbau, A. Corsi, D. Coward, and R. Burman. Gravitational wave background from sub-luminous GRBs: prospects for second- and third-generation detectors. *Monthly Notices of the RAS*, 410(4):2123–2136, February 2011.

[84] A. Corsi, D. Guetta, and L. Piro. GeV emission from short gamma-ray bursts: the case of GRB 081024B. *Astronomy and Astrophysics*, 524:A92, December 2010.

[85] Alessandra Corsi, Dafne Guetta, and Luigi Piro. High-energy Emission Components in the Short GRB 090510. *Astrophysical Journal*, 720(2):1008–1015, September 2010.

[86] Alessandra Corsi and Peter Mészáros. Gamma-ray burst afterglow plateaus and gravitational waves. *Classical and Quantum Gravity*, 26(20):204016, October 2009.

[87] Alessandra Corsi and Peter Mészáros. Gamma-ray Burst Afterglow Plateaus and Gravitational Waves: Multi-messenger Signature of a Millisecond Magnetar? *Astrophysical Journal*, 702(2):1171–1178, September 2009.

[88] E. Branchini, E. Ursino, A. Corsi, D. Martizzi, L. Amati, J. W. den Herder, M. Galeazzi, B. Gendre, J. Kaastra, L. Moscardini, F. Nicastro, T. Ohashi, F. Paerels, L. Piro, M. Roncarelli, Y. Takei, and M. Viel. Studying the Warm Hot Intergalactic Medium with Gamma-Ray Bursts. *Astrophysical Journal*, 697(1):328–344, May 2009.

[89] L. Piro, J. W. den Herder, T. Ohashi, L. Amati, J. L. Atteia, S. Barthelmy, M. Barbera, D. Barret, S. Basso, M. Boer, S. Borgani, O. Boyarskiy, E. Branchini, G. Branduardi-Raymont, M. Briggs, G. Brunetti, C. Budtz-Jorgensen, D. Burrows, S. Campana, E. Caroli, G. Chincarini, F. Christensen, M. Cocchi, A. Comastri, A. Corsi, V. Cotroneo, P. Conconi, L. Colasanti, G. Cusumano, A. de Rosa, M. Del Santo, S. Ettori, Y. Ezoe, L. Ferrari, M. Feroci, M. Finger, G. Fishman, R. Fujimoto, M. Galeazzi, A. Galli, F. Gatti, N. Gehrels, B. Gendre, G. Ghirlanda, G. Ghisellini, P. Giommi, M. Girardi, L. Guzzo, F. Haardt, I. Hepburn, W. Hermsen, H. Hoevers, A. Holland, J. in't Zand, Y. Ishisaki, H. Kawahara, N. Kawai, J. Kaastra, M. Kippen, P. A. J. de Korte, C. Kouveliotou, A. Kusenko, C. Labanti, R. Lieu, C. Macculi, K. Makishima, G. Matt, P. Mazzotta, D. McCammon, M. Méndez, T. Mineo, S. Mitchell, K. Mitsuda, S. Molendi, L. Moscardini, R. Mushotzky, L. Natalucci, F. Nicastro, P. O'Brien, J. Osborne, F. Paerels, M. Page, S. Paltani, G. Pareschi, E. Perinati, C. Perola, T. Ponman, A. Rasmussen, M. Roncarelli, P. Rosati, O. Ruchayskiy, E. Quadrini, I. Sakurai, R. Salvaterra, S. Sasaki, G. Sato, J. Schaye, J. Schmitt, S. Sciortino, M. Shaposhnikov, K. Shinozaki, D. Spiga, Y. Suto, G. Tagliaferri, T. Takahashi, Y. Takei, Y. Tawara, P. Tozzi, H. Tsunemi, T. Tsuru, P. Ubertini, E. Ursino, M. Viel, J. Vink, N. White, R. Willingale, R. Wijers, K. Yoshikawa, and N. Yamasaki. EDGE: Explorer of diffuse emission and gamma-ray burst explosions. *Experimental Astronomy*, 23(1):67–89, March 2009.

[90] A. Klotz, B. Gendre, G. Stratta, A. Galli, A. Corsi, B. Preger, S. Cutini, A. Pélangeon, J. L. Atteia, M. Boër, and L. Piro. Early emission of rising optical afterglows: the case of GRB 060904B and GRB 070420. *Astronomy and Astrophysics*, 483(3):847–855, June 2008.

[91] L. Amati, A. Corsi, L. Piro, J. W. den Herder, and T. Ohashi. EDGE: Explorer of diffuse emission and GRB explosions. *Nuovo Cimento B Serie*, 122(9):1007–1010, September 2007.

[92] B. Gendre, A. Galli, A. Corsi, A. Klotz, L. Piro, G. Stratta, M. Boër, and Y. Damerdji. The gamma-ray burst 050904: evidence for a termination shock? *Astronomy and Astrophysics*, 462(2):565–573, February 2007.

[93] B. Gendre, A. Corsi, L. Piro, and M. de Pasquale. The BeppoSAX, XMM-Newton and Chandra X-ray afterglow catalog. *Nuovo Cimento B Serie*, 121(12):1485–1486, December 2006.

[94] A. Galli, B. Gendre, A. Corsi, J. L. Atteia, M. Boer, Y. Damerdji, A. Klotz, L. Piro, and G. Stratta. GRB 050904: Flares and afterglow multi-wavelength analysis. *Nuovo Cimento B Serie*, 121(12):1483–1484, December 2006.

[95] A. Corsi and L. Piro. Inverse Compton emission in the X-ray afterglow of XRF 050406: Explaining the late-time flattening. *Nuovo Cimento B Serie*, 121(12):1449–1451, December 2006.

[96] M. G. Bernardini, C. L. Bianco, L. Caito, P. Chardonnet, A. Corsi, M. G. Dainotti, F. Fraschetti, R. Guida, R. Ruffini, and S. S. Xue. GRB970228 as a prototype for short GRBs with afterglow. *Nuovo Cimento B Serie*, 121(12):1439–1440, December 2006.

[97] A. Corsi and L. Piro. XRF 050406 late-time flattening: an inverse Compton component? *Astronomy and Astrophysics*, 458(3):741–746, November 2006.

[98] B. Gendre, A. Corsi, and L. Piro. X-ray continuum properties of GRB afterglows observed by XMM-Newton and Chandra. *Astronomy and Astrophysics*, 455(3):803–812, September 2006.

[99] A. Corsi, L. Piro, E. Kuulkers, L. Amati, L. A. Antonelli, E. Costa, M. Feroci, F. Frontera, C. Guidorzi, J. Heise, J. in't Zand, E. Maiorano, E. Montanari, L. Nicastro, E. Pian, and P. Soffitta. The puzzling case of GRB 990123: prompt emission and broad-band afterglow modeling. *Astronomy and Astrophysics*, 438(3):829–840, August 2005.

[100] E. Maiorano, N. Masetti, E. Palazzi, F. Frontera, P. Grandi, E. Pian, L. Amati, L. Nicastro, P. Soffitta, C. Guidorzi, R. Landi, E. Montanari, M. Orlandini, A. Corsi, L. Piro, L. A. Antonelli, E. Costa, M. Feroci, J. Heise, E. Kuulkers, and J. J. M. in't Zand. The puzzling case of GRB 990123: multi-wavelength afterglow study. *Astronomy and Astrophysics*, 438(3):821–827, August 2005.

[101] E. Maiorano, N. Masetti, E. Palazzi, F. Frontera, P. Grandi, E. Pian, L. Amati, L. Nicastro, P. Soffitta, A. Corsi, L. Piro, L. A. Antonelli, E. Costa, M. Feroci, J. Heise, and J. J. M. in't Zand. GRB990123: Multiwavelength afterglow study. *Nuovo Cimento C Geophysics Space Physics C*, 28(4):525, July 2005.

[102] A. Corsi, L. Piro, E. Kuulkers, L. Amati, L. A. Antonelli, E. Costa, M. Feroci, F. Frontera, C. Guidorzi, J. Heise, J. in't Zand, E. Maiorano, E. Montanari, L. Nicastro, E. Pian, and P. Soffitta. The GRB of 1999 January 23: Prompt emission and broad-band afterglow modeling. *Nuovo Cimento C Geophysics Space Physics C*, 28(4):493, July 2005.

Complete list of LSC/Virgo-authored refereed publications (published and accepted)

[103] Ligo Scientific Collaboration, VIRGO Collaboration, and KAGRA Collaboration. Search for Eccentric Black Hole Coalescences during the Third Observing Run of LIGO and Virgo. *Astrophysical Journal*, 973(2):132, October 2024.

[104] Ligo Scientific Collaboration, VIRGO Collaboration, and Kagra Collaboration. Observation of Gravitational Waves from the Coalescence of a 2.5–4.5 M $_\odot$ Compact Object and a Neutron Star. *Astrophysical Journal Letters*, 970(2):L34, August 2024.

[105] Ligo Scientific Collaboration, VIRGO Collaboration, and Kagra Collaboration. Search for Gravitational-lensing Signatures in the Full Third Observing Run of the LIGO–Virgo Network. *Astrophysical Journal*, 970(2):191, August 2024.

[106] Ligo Scientific Collaboration, VIRGO Collaboration, and Kagra Collaboration. Search for Gravitational-wave Transients Associated with Magnetar Bursts in Advanced LIGO and Advanced Virgo Data from the Third Observing Run. *Astrophysical Journal*, 966(1):137, May 2024.

[107] C. Fletcher, J. Wood, R. Hamburg, P. Veres, C. M. Hui, ..., The Ligo Scientific Collaboration, The VIRGO Collaboration, and The Kagra Collaboration. A Joint Fermi-GBM and Swift-BAT Analysis of Gravitational-wave Candidates from the Third Gravitational-wave Observing Run. *Astrophysical Journal*, 964(2):149, April 2024.

[108] LIGO Scientific Collaboration and the Virgo Collaboration. GWTC-2.1: Deep extended catalog of compact binary coalescences observed by LIGO and Virgo during the first half of the third observing run. *Physical Review D*, 109(2):022001, January 2024.

[109] Ligo Scientific Collaboration, VIRGO Collaboration, and Kagra Collaboration. GWTC-3: Compact Binary Coalescences Observed by LIGO and Virgo during the Second Part of the Third Observing Run. *Physical Review X*, 13(4):041039, October 2023.

[110] LIGO Scientific Collaboration, VIRGO Collaboration, Kagra Collaboration, and Chime/Frb Collaboration. Search for Gravitational Waves Associated with Fast Radio Bursts Detected by CHIME/FRB during the LIGO-Virgo Observing Run O3a. *Astrophysical Journal*, 955(2):155, October 2023.

[111] LIGO Scientific Collaboration, VIRGO Collaboration, and Kagra Collaboration. Open Data from the Third Observing Run of LIGO, Virgo, KAGRA, and GEO. *Astrophysical Journal Supplement*, 267(2):29, August 2023.

[112] LIGO Scientific Collaboration, VIRGO Collaboration, and Kagra Collaboration. Constraints on the Cosmic Expansion History from GWTC-3. *Astrophysical Journal*, 949(2):76, June 2023.

[113] LIGO Scientific Collaboration, VIRGO Collaboration, and KAGRA Collaboration. Population of Merging Compact Binaries Inferred Using Gravitational Waves through GWTC-3. *Physical Review X*, 13(1):011048, January 2023.

[114] Ligo Scientific Collaboration, VIRGO Collaboration, and Kagra Collaboration. Model-based Cross-correlation Search for Gravitational Waves from the Low-mass X-Ray Binary Scorpius X-1 in LIGO O3 Data. *Astrophysical Journal Letters*, 941(2):L30, December 2022.

[115] Ligo Scientific Collaboration, VIRGO Collaboration, and Kagra Collaboration. All-sky search for continuous gravitational waves from isolated neutron stars using Advanced LIGO and Advanced Virgo O3 data. *Physical Review D*, 106(10):102008, November 2022.

[116] Ligo Scientific Collaboration, VIRGO Collaboration, and Kagra Collaboration. Search for gravitational waves from Scorpius X-1 with a hidden Markov model in O3 LIGO data. *Physical Review D*, 106(6):062002, September 2022.

[117] LIGO Scientific Collaboration and Virgo Collaboration. Search for Subsolar-Mass Binaries in the First Half of Advanced LIGO's and Advanced Virgo's Third Observing Run. *Phys. Rev. Lett.*, 129(6):061104, August 2022.

[118] Ligo Scientific Collaboration, VIRGO Collaboration, and Kagra Collaboration. Search for continuous gravitational wave emission from the Milky Way center in O3 LIGO-Virgo data. *Physical Review D*, 106(4):042003, August 2022.

[119] LIGO Scientific Collaboration, VIRGO Collaboration, and KAGRA Collaboration. Searches for Gravitational Waves from Known Pulsars at Two Harmonics in the Second and Third LIGO-Virgo Observing Runs. *Astrophysical Journal*, 935(1):1, August 2022.

[120] LIGO Scientific Collaboration, VIRGO Collaboration, and KAGRA Collaboration. All-sky, all-frequency directional search for persistent gravitational waves from Advanced LIGO's and Advanced Virgo's first three observing runs. *Physical Review D*, 105(12):122001, June 2022.

[121] LIGO Scientific Collaboration, Virgo Collaboration, and Kagra Collaboration. First joint observation by the underground gravitational-wave detector KAGRA with GEO 600. *Progress of Theoretical and Experimental Physics*, 2022(6):063F01, June 2022.

[122] LIGO Scientific Collaboration and Virgo Collaboration. Search of the early O3 LIGO data for continuous gravitational waves from the Cassiopeia A and Vela Jr. supernova remnants. *Physical Review D*, 105(8):082005, April 2022.

[123] LIGO Scientific Collaboration, VIRGO Collaboration, and Kagra Collaboration. Search for Gravitational Waves Associated with Gamma-Ray Bursts Detected by Fermi and Swift during the LIGO-Virgo Run O3b. *Astrophysical Journal*, 928(2):186, April 2022.

[124] LIGO Scientific Collaboration, VIRGO Collaboration, and Kagra Collaboration. Constraints on dark photon dark matter using data from LIGO's and Virgo's third observing run. *Physical Review D*, 105(6):063030, March 2022.

[125] LIGO Scientific Collaboration, VIRGO Collaboration, and Kagra Collaboration. Search for intermediate-mass black hole binaries in the third observing run of Advanced LIGO and Advanced Virgo. *Astronomy and Astrophysics*, 659:A84, March 2022.

[126] LIGO Scientific Collaboration, VIRGO Collaboration, and Kagra Collaboration. All-sky search for short gravitational-wave bursts in the third Advanced LIGO and Advanced Virgo run. *Physical Review D*, 104(12):122004, December 2021.

[127] LIGO Scientific Collaboration, VIRGO Collaboration, and Kagra Collaboration. Search for Lensing Signatures in the Gravitational-Wave Observations from the First Half of LIGO-Virgo's Third Observing Run. *Astrophysical Journal*, 923(1):14, December 2021.

[128] LIGO Scientific Collaboration, VIRGO Collaboration, and Kagra Collaboration. All-sky search for long-duration gravitational-wave bursts in the third Advanced LIGO and Advanced Virgo run. *Physical Review D*, 104(10):102001, November 2021.

[129] LIGO Scientific Collaboration, VIRGO Collaboration, and Kagra Collaboration. Constraints from LIGO O3 Data on Gravitational-wave Emission Due to R-modes in the Glitching Pulsar PSR J0537-6910. *Astrophysical Journal*, 922(1):71, November 2021.

[130] LIGO Scientific Collaboration, VIRGO Collaboration, and Kagra Collaboration. Searches for Continuous Gravitational Waves from Young Supernova Remnants in the Early Third Observing Run of Advanced LIGO and Virgo. *Astrophysical Journal*, 921(1):80, November 2021.

[131] LIGO Scientific Collaboration, VIRGO Collaboration, and Kagra Collaboration. All-sky search for continuous gravitational waves from isolated neutron stars in the early O3 LIGO data. *Physical Review D*, 104(8):082004, October 2021.

[132] LIGO Scientific Collaboration, VIRGO Collaboration, and Kagra Collaboration. Search for anisotropic gravitational-wave backgrounds using data from Advanced LIGO and Advanced Virgo's first three observing runs. *Physical Review D*, 104(2):022005, July 2021.

[133] LIGO Scientific Collaboration, VIRGO Collaboration, and Kagra Collaboration. Upper limits on the isotropic gravitational-wave background from Advanced LIGO and Advanced Virgo's third observing run. *Physical Review D*, 104(2):022004, July 2021.

[134] LIGO Scientific Collaboration, VIRGO Collaboration, and KAGRA Collaboration. Observation of Gravitational Waves from Two Neutron Star-Black Hole Coalescences. *Astrophysical Journal Letters*, 915(1):L5, July 2021.

[135] LIGO Scientific Collaboration and Virgo Collaboration. Search for Gravitational Waves Associated with Gamma-Ray Bursts Detected by Fermi and Swift during the LIGO-Virgo Run O3a. *Astrophysical Journal*, 915(2):86, July 2021.

[136] LIGO Scientific Collaboration, VIRGO Collaboration, and Kagra Collaboration. Constraints on Cosmic Strings Using Data from the Third Advanced LIGO-Virgo Observing Run. *Phys. Rev. Lett.*, 126(24):241102, June 2021.

[137] LIGO Scientific Collaboration and Virgo Collaboration. Tests of general relativity with binary black holes from the second LIGO-Virgo gravitational-wave transient catalog. *Physical Review D*, 103(12):122002, June 2021.

[138] LIGO Scientific Collaboration, VIRGO Collaboration, Kagra Collaboration, D. Antonopoulou, Z. Arzoumanian, T. Enoto, C. M. Espinoza, and S. Guillot. Diving below the Spin-down Limit: Constraints on Gravitational Waves from the Energetic Young Pulsar PSR J0537-6910. *Astrophysical Journal Letters*, 913(2):L27, June 2021.

[139] LIGO Scientific Collaboration and Virgo Collaboration. Population Properties of Compact Objects from the Second LIGO-Virgo Gravitational-Wave Transient Catalog. *Astrophysical Journal Letters*, 913(1):L7, May 2021.

[140] LIGO Scientific Collaboration and Virgo Collaboration. GWTC-2: Compact Binary Coalescences Observed by LIGO and Virgo during the First Half of the Third Observing Run. *Physical Review X*, 11(2):021053, April 2021.

[141] LIGO Scientific Collaboration and Virgo Collaboration. All-sky search in early O3 LIGO data for continuous gravitational-wave signals from unknown neutron stars in binary systems. *Physical Review D*, 103(6):064017, March 2021.

[142] LIGO Scientific Collaboration and Virgo Collaboration. A Gravitational-wave Measurement of the Hubble Constant Following the Second Observing Run of Advanced LIGO and Virgo. *Astrophysical Journal*, 909(2):218, March 2021.

[143] LIGO Scientific Collaboration and Virgo Collaboration. Open data from the first and second observing runs of Advanced LIGO and Advanced Virgo. *SoftwareX*, 13:100658, January 2021.

[144] LIGO Scientific Collaboration, Virgo Collaboration, M. J. Keith, A. G. Lyne, J. Palfreyman, B. Shaw, B. W. Stappers, and P. Weltevrede. Gravitational-wave Constraints on the Equatorial Ellipticity of Millisecond Pulsars. *Astrophysical Journal Letters*, 902(1):L21, October 2020.

[145] LIGO Scientific Collaboration and Virgo Collaboration. GW190521: A Binary Black Hole Merger with a Total Mass of 150 $M_\odot$. *Phys. Rev. Lett.*, 125(10):101102, September 2020.

[146] LIGO Scientific Collaboration Kagra Collaboration and VIRGO Collaboration. Prospects for observing and localizing gravitational-wave transients with Advanced LIGO, Advanced Virgo and KAGRA. *Living Reviews in Relativity*, 23(1):3, September 2020.

[147] LIGO Scientific Collaboration and Virgo Collaboration. Properties and Astrophysical Implications of the 150 $M_\odot$ Binary Black Hole Merger GW190521. *Astrophysical Journal Letters*, 900(1):L13, September 2020.

[148] LIGO Scientific Collaboration and Virgo Collaboration. GW190412: Observation of a binary-black-hole coalescence with asymmetric masses. *Physical Review D*, 102(4):043015, August 2020.

[149] LIGO Scientific Collaboration and Virgo Collaboration. GW190814: Gravitational Waves from the Coalescence of a 23 Solar Mass Black Hole with a 2.6 Solar Mass Compact Object. *Astrophysical Journal Letters*, 896(2):L44, June 2020.

[150] LIGO Scientific Collaboration and Virgo Collaboration. Optically targeted search for gravitational waves emitted by core-collapse supernovae during the first and second observing runs of advanced LIGO and advanced Virgo. *Physical Review D*, 101(8):084002, April 2020.

[151] LIGO Scientific Collaboration, Virgo Collaboration, et al. A Joint Fermi-GBM and LIGO/Virgo Analysis of Compact Binary Mergers from the First and Second Gravitational-wave Observing Runs. *Astrophysical Journal*, 893(2):100, April 2020.

[152] LIGO Scientific Collaboration and the Virgo Collaboration. A guide to LIGO-Virgo detector noise and extraction of transient gravitational-wave signals. *Classical and Quantum Gravity*, 37(5):055002, March 2020.

[153] LIGO Scientific Collaboration and the Virgo Collaboration. GW190425: Observation of a Compact Binary Coalescence with Total Mass ~ 3.4 $M_\odot$. *Astrophysical Journal Letters*, 892(1):L3, March 2020.

[154] LIGO Scientific Collaboration and The Virgo Collaboration). Model comparison from LIGO-Virgo data on GW170817's binary components and consequences for the merger remnant. *Classical and Quantum Gravity*, 37(4):045006, February 2020.

[155] LIGO Scientific Collaboration and Virgo Collaboration. Search for gravitational waves from Scorpius X-1 in the second Advanced LIGO observing run with an improved hidden Markov model. *Physical Review D*, 100(12):122002, December 2019.

[156] LIGO Scientific Collaboration and Virgo Collaboration. Tests of general relativity with the binary black hole signals from the LIGO-Virgo catalog GWTC-1. *Physical Review D*, 100(10):104036, November 2019.

[157] LIGO Scientific Collaboration, Virgo Collaboration, et al. Search for Gravitational-wave Signals Associated with Gamma-Ray Bursts during the Second Observing Run of Advanced LIGO and Advanced Virgo. *Astrophysical Journal*, 886(1):75, November 2019.

[158] LIGO Scientific Collaboration and Virgo Collaboration. Search for Subsolar Mass Ultracompact Binaries in Advanced LIGO's Second Observing Run. *Phys. Rev. Lett.*, 123(16):161102, October 2019.

[159] LIGO Scientific Collaboration and Virgo Collaboration. Search for Eccentric Binary Black Hole Mergers with Advanced LIGO and Advanced Virgo during Their First and Second Observing Runs. *Astrophysical Journal*, 883(2):149, October 2019.

[160] LIGO Scientific Collaboration and Virgo Collaboration. Search for intermediate mass black hole binaries in the first and second observing runs of the Advanced LIGO and Virgo network. *Physical Review D*, 100(6):064064, September 2019.

[161] LIGO Scientific Collaboration and Virgo Collaboration. Directional limits on persistent gravitational waves using data from Advanced LIGO's first two observing runs. *Physical Review D*, 100(6):062001, September 2019.

[162] LIGO Scientific and Virgo Collaboration. Search for the isotropic stochastic background using data from Advanced LIGO's second observing run. *Physical Review D*, 100(6):061101, September 2019.

[163] LIGO Scientific Collaboration and Virgo Collaboration. Binary Black Hole Population Properties Inferred from the First and Second Observing Runs of Advanced LIGO and Advanced Virgo. *Astrophysical Journal Letters*, 882(2):L24, September 2019.

[164] LIGO Scientific Collaboration and Virgo Collaboration. GWTC-1: A Gravitational-Wave Transient Catalog of Compact Binary Mergers Observed by LIGO and Virgo during the First and Second Observing Runs. *Physical Review X*, 9(3):031040, July 2019.

[165] LIGO Scientific Collaboration and Virgo Collaboration. Tests of General Relativity with GW170817. *Phys. Rev. Lett.*, 123(1):011102, July 2019.

[166] LIGO Scientific Collaboration and Virgo Collaboration. All-sky search for short gravitational-wave bursts in the second Advanced LIGO and Advanced Virgo run. *Physical Review D*, 100(2):024017, July 2019.

[167] LIGO Scientific Collaboration and Virgo Collaboration. All-sky search for continuous gravitational waves from isolated neutron stars using Advanced LIGO O2 data. *Physical Review D*, 100(2):024004, July 2019.

[168] LIGO Scientific Collaboration, Virgo Collaboration, et al. Searches for Gravitational Waves from Known Pulsars at Two Harmonics in 2015-2017 LIGO Data. *Astrophysical Journal*, 879(1):10, July 2019.

[169] LIGO Scientific Collaboration and Virgo Collaboration. Narrow-band search for gravitational waves from known pulsars using the second LIGO observing run. *Physical Review D*, 99(12):122002, June 2019.

[170] LIGO Scientific Collaboration and Virgo Collaboration. All-sky search for long-duration gravitational-wave transients in the second Advanced LIGO observing run. *Physical Review D*, 99(10):104033, May 2019.

[171] M. Soares-Santos, A. Palmese, W. Hartley, J. Annis, J. Garcia-Bellido, O. Lahav, Z. Doctor, M. Fishbach, D. E. Holz, H. Lin, M. E. S. Pereira, A. Garcia, K. Herner, R. Kessler, H. V. Peiris, M. Sako, S. Allam, D. Brout, A. Carnero Rosell, H. Y. Chen, C. Conselice, J. deRose, J. deVicente, H. T. Diehl, M. S. S. Gill, J. Gschwend, I. Sevilla-Noarbe, D. L. Tucker, R. Wechsler, E. Berger, P. S. Cowperthwaite, B. D. Metzger, P. K. G. Williams, LIGO Scientific Collaboration, and Virgo Collaboration. First Measurement of the Hubble Constant from a Dark Standard Siren using the Dark Energy Survey Galaxies and the LIGO/Virgo Binary-Black-hole Merger GW170814. *Astrophysical Journal Letters*, 876(1):L7, May 2019.

[172] LIGO Scientific Collaboration and Virgo Collaboration. Low-latency Gravitational-wave Alerts for Multimessenger Astronomy during the Second Advanced LIGO and Virgo Observing Run. *Astrophysical Journal*, 875(2):161, April 2019.

[173] LIGO Scientific Collaboration and Virgo Collaboration. Search for Gravitational Waves from a Long-lived Remnant of the Binary Neutron Star Merger GW170817. *Astrophysical Journal*, 875(2):160, April 2019.

[174] LIGO Scientific Collaboration and Virgo Collaboration. Searches for Continuous Gravitational Waves from 15 Supernova Remnants and Fomalhaut b with Advanced LIGO. *Astrophysical Journal*, 875(2):122, April 2019.

[175] LIGO Scientific Collaboration and Virgo Collaboration. Search for Transient Gravitational-wave Signals Associated with Magnetar Bursts during Advanced LIGO's Second Observing Run. *Astrophysical Journal*, 874(2):163, April 2019.

[176] LIGO Scientific Collaboration and Virgo Collaboration. Properties of the Binary Neutron Star Merger GW170817. *Physical Review X*, 9(1):011001, January 2019.

[177] E. Burns, A. Goldstein, C. M. Hui, L. Blackburn, M. S. Briggs, V. Connaughton, R. Hamburg, D. Kocevski, P. Veres, C. A. Wilson-Hodge, E. Bissaldi, W. H. Cleveland, M. M. Giles, B. Mailyan, C. A. Meegan, W. A. Paciesas, S. Poolakkil, R. D. Preece, J. L. Racusin, O. J. Roberts, A. von Kienlin, Fermi Gamma-Ray Burst Monitor, LIGO Scientific Collaboration, and Virgo Collaboration. A Fermi Gamma-Ray Burst Monitor Search for Electromagnetic Signals Coincident with Gravitational-wave Candidates in Advanced LIGO's First Observing Run. *Astrophysical Journal*, 871(1):90, January 2019.

[178] LIGO Scientific Collaboration, Virgo Collaboration, et al. Search for Multimessenger Sources of Gravitational Waves and High-energy Neutrinos with Advanced LIGO during Its First Observing Run, ANTARES, and IceCube. *Astrophysical Journal*, 870(2):134, January 2019.

[179] LIGO Scientific Collaboration and Virgo Collaboration. Search for Subsolar-Mass Ultracompact Binaries in Advanced LIGO's First Observing Run. *Phys. Rev. Lett.*, 121(23):231103, December 2018.

[180] LIGO Scientific Collaboration and Virgo Collaboration. GW170817: Measurements of Neutron Star Radii and Equation of State. *Phys. Rev. Lett.*, 121(16):161101, October 2018.

[181] LIGO Scientific Collaboration and Virgo Collaboration. Search for Tensor, Vector, and Scalar Polarizations in the Stochastic Gravitational-Wave Background. *Phys. Rev. Lett.*, 120(20):201102, May 2018.

[182] LIGO Scientific Collaboration and Virgo Collaboration. Full band all-sky search for periodic gravitational waves in the O1 LIGO data. *Physical Review D*, 97(10):102003, May 2018.

[183] LIGO Scientific Collaboration and Virgo Collaboration. Constraints on cosmic strings using data from the first Advanced LIGO observing run. *Physical Review D*, 97(10):102002, May 2018.

[184] LIGO Scientific Collaboration and Virgo Collaboration. GW170817: Implications for the Stochastic Gravitational-Wave Background from Compact Binary Coalescences. *Phys. Rev. Lett.*, 120(9):091101, March 2018.

[185] LIGO Scientific Collaboration and Virgo Collaboration. Effects of data quality vetoes on a search for compact binary coalescences in Advanced LIGO's first observing run. *Classical and Quantum Gravity*, 35(6):065010, March 2018.

[186] LIGO Scientific Collaboration and Virgo Collaboration. All-sky search for long-duration gravitational wave transients in the first Advanced LIGO observing run. *Classical and Quantum Gravity*, 35(6):065009, March 2018.

[187] LIGO Scientific Collaboration and Virgo Collaboration. First Search for Nontensorial Gravitational Waves from Known Pulsars. *Phys. Rev. Lett.*, 120(3):031104, January 2018.

[188] LIGO Scientific Collaboration and Virgo Collaboration. First narrow-band search for continuous gravitational waves from known pulsars in advanced detector data. *Physical Review D*, 96(12):122006, December 2017.

[189] LIGO Scientific Collaboration and Virgo Collaboration. First low-frequency Einstein@Home all-sky search for continuous gravitational waves in Advanced LIGO data. *Physical Review D*, 96(12):122004, December 2017.

[190] LIGO Scientific Collaboration and Virgo Collaboration. GW170608: Observation of a 19 Solar-mass Binary Black Hole Coalescence. *Astrophysical Journal Letters*, 851(2):L35, December 2017.

[191] LIGO Scientific Collaboration and Virgo Collaboration. Search for Post-merger Gravitational Waves from the Remnant of the Binary Neutron Star Merger GW170817. *Astrophysical Journal Letters*, 851(1):L16, December 2017.

[192] LIGO Scientific Collaboration and Virgo Collaboration. On the Progenitor of Binary Neutron Star Merger GW170817. *Astrophysical Journal Letters*, 850(2):L40, December 2017.

[193] LIGO Scientific Collaboration and Virgo Collaboration. Estimating the Contribution of Dynamical Ejecta in the Kilonova Associated with GW170817. *Astrophysical Journal Letters*, 850(2):L39, December 2017.

[194] LIGO Scientific Collaboration, Virgo Collaboration, et al. Search for High-energy Neutrinos from Binary Neutron Star Merger GW170817 with ANTARES, IceCube, and the Pierre Auger Observatory. *Astrophysical Journal Letters*, 850(2):L35, December 2017.

[195] LIGO Scientific Collaboration, Virgo Collaboration, et al. A gravitational-wave standard siren measurement of the Hubble constant. *Nature*, 551(7678):85–88, November 2017.

[196] LIGO Scientific Collaboration and Virgo Collaboration. GW170817: Observation of Gravitational Waves from a Binary Neutron Star Inspiral. *Phys. Rev. Lett.*, 119(16):161101, October 2017.

[197] LIGO Scientific Collaboration and Virgo Collaboration. GW170814: A Three-Detector Observation of Gravitational Waves from a Binary Black Hole Coalescence. *Phys. Rev. Lett.*, 119(14):141101, October 2017.

[198] LIGO Scientific Collaboration, Virgo Collaboration, et al. Gravitational Waves and Gamma-Rays from a Binary Neutron Star Merger: GW170817 and GRB 170817A. *Astrophysical Journal Letters*, 848(2):L13, October 2017.

[199] LIGO Scientific Collaboration, Virgo Collaboration, et al. Multi-messenger Observations of a Binary Neutron Star Merger. *Astrophysical Journal Letters*, 848(2):L12, October 2017.

[200] LIGO Scientific Collaboration and Virgo Collaboration. All-sky search for periodic gravitational waves in the O1 LIGO data. *Physical Review D*, 96(6):062002, September 2017.

[201] LIGO Scientific Collaboration, Virgo Collaboration, D. Steeghs, and L. Wang. Upper Limits on Gravitational Waves from Scorpius X-1 from a Model-based Cross-correlation Search in Advanced LIGO Data. *Astrophysical Journal*, 847(1):47, September 2017.

[202] LIGO Scientific Collaboration, Virgo Collaboration, et al. Search for high-energy neutrinos from gravitational wave event GW151226 and candidate LVT151012 with ANTARES and IceCube. *Physical Review D*, 96(2):022005, July 2017.

[203] LIGO Scientific Collaboration and Virgo Collaboration. Search for intermediate mass black hole binaries in the first observing run of Advanced LIGO. *Physical Review D*, 96(2):022001, July 2017.

[204] LIGO Scientific and Virgo Collaboration. GW170104: Observation of a 50-Solar-Mass Binary Black Hole Coalescence at Redshift 0.2. *Phys. Rev. Lett.*, 118(22):221101, June 2017.

[205] LIGO Scientific Collaboration and Virgo Collaboration. Search for gravitational waves from Scorpius X-1 in the first Advanced LIGO observing run with a hidden Markov model. *Physical Review D*, 95(12):122003, June 2017.

[206] LIGO Scientific Collaboration, Virgo Collaboration, et al. Search for Gravitational Waves Associated with Gamma-Ray Bursts during the First Advanced LIGO Observing Run and Implications for the Origin of GRB 150906B. *Astrophysical Journal*, 841(2):89, June 2017.

[207] LIGO Scientific Collaboration, Virgo Collaboration, et al. Effects of waveform model systematics on the interpretation of GW150914. *Classical and Quantum Gravity*, 34(10):104002, May 2017.

[208] LIGO Scientific Collaboration and Virgo Collaboration. Search for continuous gravitational waves from neutron stars in globular cluster NGC 6544. *Physical Review D*, 95(8):082005, April 2017.

[209] LIGO Scientific Collaboration, Virgo Collaboration, et al. First Search for Gravitational Waves from Known Pulsars with Advanced LIGO. *Astrophysical Journal*, 839(1):12, April 2017.

[210] LIGO Scientific Collaboration and Virgo Collaboration. Directional Limits on Persistent Gravitational Waves from Advanced LIGO's First Observing Run. *Phys. Rev. Lett.*, 118(12):121102, March 2017.

[211] LIGO Scientific Collaboration and Virgo Collaboration. Upper Limits on the Stochastic Gravitational-Wave Background from Advanced LIGO's First Observing Run. *Phys. Rev. Lett.*, 118(12):121101, March 2017.

[212] LIGO Scientific Collaboration. Calibration of the Advanced LIGO detectors for the discovery of the binary black-hole merger GW150914. *Physical Review D*, 95(6):062003, March 2017.

[213] LIGO Scientific Collaboration and Virgo Collaboration. All-sky search for short gravitational-wave bursts in the first Advanced LIGO run. *Physical Review D*, 95(4):042003, February 2017.

[214] LIGO Scientific Collaboration. Exploring the sensitivity of next generation gravitational wave detectors. *Classical and Quantum Gravity*, 34(4):044001, February 2017.

[215] LIGO Scientific Collaboration and Virgo Collaboration. The basic physics of the binary black hole merger GW150914. *Annalen der Physik*, 529(1-2):1600209, January 2017.

[216] LIGO Scientific Collaboration and Virgo Collaboration. The Rate of Binary Black Hole Mergers Inferred from Advanced LIGO Observations Surrounding GW150914. *Astrophysical Journal Letters*, 833(1):L1, December 2016.

[217] LIGO Scientific Collaboration and Virgo Collaboration. Upper Limits on the Rates of Binary Neutron Star and Neutron Star-Black Hole Mergers from Advanced LIGO's First Observing Run. *Astrophysical Journal Letters*, 832(2):L21, December 2016.

[218] LIGO Scientific Collaboration and Virgo Collaboration. Results of the deepest all-sky survey for continuous gravitational waves on LIGO S6 data running on the Einstein@Home volunteer distributed computing project. *Physical Review D*, 94(10):102002, November 2016.

[219] LIGO Scientific Collaboration and Virgo Collaboration. First targeted search for gravitational-wave bursts from core-collapse supernovae in data of first-generation laser interferometer detectors. *Physical Review D*, 94(10):102001, November 2016.

[220] LIGO Scientific Collaboration and Virgo Collaboration. Binary Black Hole Mergers in the First Advanced LIGO Observing Run. *Physical Review X*, 6(4):041015, October 2016.

[221] LIGO Scientific Collaboration and Virgo Collaboration. Improved Analysis of GW150914 Using a Fully Spin-Precessing Waveform Model. *Physical Review X*, 6(4):041014, October 2016.

[222] LIGO Scientific Collaboration and Virgo Collaboration. Directly comparing GW150914 with numerical solutions of Einstein's equations for binary black hole coalescence. *Physical Review D*, 94(6):064035, September 2016.

[223] LIGO Scientific Collaboration and Virgo Collaboration. Comprehensive all-sky search for periodic gravitational waves in the sixth science run LIGO data. *Physical Review D*, 94(4):042002, August 2016.

[224] LIGO Scientific Collaboration and Virgo Collaboration. Characterization of transient noise in Advanced LIGO relevant to gravitational wave signal GW150914. *Classical and Quantum Gravity*, 33(13):134001, July 2016.

[225] LIGO Scientific Collaboration, Virgo Collaboration, et al. Localization and Broadband Follow-up of the Gravitational-wave Transient GW150914. *Astrophysical Journal Letters*, 826(1):L13, July 2016.

[226] LIGO Scientific Collaboration and VIRGO Collaboration. GW151226: Observation of Gravitational Waves from a 22-Solar-Mass Binary Black Hole Coalescence. *Phys. Rev. Lett.*, 116(24):241103, June 2016.

[227] LIGO Scientific Collaboration and Virgo Collaboration. Properties of the Binary Black Hole Merger GW150914. *Phys. Rev. Lett.*, 116(24):241102, June 2016.

[228] LIGO Scientific and Virgo Collaborations. Tests of General Relativity with GW150914. *Phys. Rev. Lett.*, 116(22):221101, June 2016.

[229] LIGO Scientific Collaboration, Virgo Collaboration, et al. High-energy neutrino follow-up search of gravitational wave event GW150914 with ANTARES and IceCube. *Physical Review D*, 93(12):122010, June 2016.

[230] LIGO Scientific Collaboration and Virgo Collaboration. Search for transient gravitational waves in coincidence with short-duration radio transients during 2007-2013. *Physical Review D*, 93(12):122008, June 2016.

[231] LIGO Scientific Collaboration and Virgo Collaboration. Observing gravitational-wave transient GW150914 with minimal assumptions. *Physical Review D*, 93(12):122004, June 2016.

[232] LIGO Scientific Collaboration and Virgo Collaboration. GW150914: First results from the search for binary black hole coalescence with Advanced LIGO. *Physical Review D*, 93(12):122003, June 2016.

[233] LIGO Scientific Collaboration and Virgo Collaboration. GW150914: The Advanced LIGO Detectors in the Era of First Discoveries. *Phys. Rev. Lett.*, 116(13):131103, April 2016.

[234] LIGO Scientific Collaboration and Virgo Collaboration. GW150914: Implications for the Stochastic Gravitational-Wave Background from Binary Black Holes. *Phys. Rev. Lett.*, 116(13):131102, April 2016.

[235] LIGO Scientific Collaboration and Virgo Collaboration. Observation of Gravitational Waves from a Binary Black Hole Merger. *Phys. Rev. Lett.*, 116(6):061102, February 2016.

[236] LIGO Scientific Collaboration and Virgo Collaboration. First low frequency all-sky search for continuous gravitational wave signals. *Physical Review D*, 93(4):042007, February 2016.

[237] LIGO Scientific Collaboration, Virgo Collaboration, et al. Search of the Orion spur for continuous gravitational waves using a loosely coherent algorithm on data from LIGO interferometers. *Physical Review D*, 93(4):042006, February 2016.

[238] LIGO Scientific Collaboration and Virgo Collaboration. All-sky search for long-duration gravitational wave transients with initial LIGO. *Physical Review D*, 93(4):042005, February 2016.

[239] LIGO Scientific Collaboration and Virgo Collaboration. Prospects for Observing and Localizing Gravitational-Wave Transients with Advanced LIGO and Advanced Virgo. *Living Reviews in Relativity*, 19(1):1, February 2016.

[240] LIGO Scientific Collaboration and Virgo Collaboration. Astrophysical Implications of the Binary Black-hole Merger GW150914. *Astrophysical Journal Letters*, 818(2):L22, February 2016.

[241] LIGO Scientific Collaboration, Virgo Collaboration, et al. Searches for Continuous Gravitational Waves from Nine Young Supernova Remnants. *Astrophysical Journal*, 813(1):39, November 2015.

[242] LIGO Scientific Collaboration and Virgo Collaboration. Characterization of the LIGO detectors during their sixth science run. *Classical and Quantum Gravity*, 32(11):115012, June 2015.

[243] LIGO Scientific Collaboration. Advanced LIGO. *Classical and Quantum Gravity*, 32(7):074001, April 2015.

[244] LIGO Scientific Collaboration and Virgo Collaboration. Directed search for gravitational waves from Scorpius X-1 with initial LIGO data. *Physical Review D*, 91(6):062008, March 2015.

[245] LIGO Scientific Collaboration and Virgo Collaboration. Narrow-band search of continuous gravitational-wave signals from Crab and Vela pulsars in Virgo VSR4 data. *Physical Review D*, 91(2):022004, January 2015.

[246] LIGO Scientific Collaboration and Virgo Collaboration. Searching for stochastic gravitational waves using data from the two colocated LIGO Hanford detectors. *Physical Review D*, 91(2):022003, January 2015.

[247] LIGO and Virgo Collaboration. Improved Upper Limits on the Stochastic Gravitational-Wave Background from 2009-2010 LIGO and Virgo Data. *Phys. Rev. Lett.*, 113(23):231101, December 2014.

[248] LIGO Scientific Collaboration, Virgo Collaboration, et al. Multimessenger search for sources of gravitational waves and high-energy neutrinos: Initial results for LIGO-Virgo and IceCube. *Physical Review D*, 90(10):102002, November 2014.

[249] LIGO Scientific Collaboration and Virgo Collaboration. First all-sky search for continuous gravitational waves from unknown sources in binary systems. *Physical Review D*, 90(6):062010, September 2014.

[250] LIGO Scientific Collaboration and Virgo Collaboration. Implementation of an F-statistic all-sky search for continuous gravitational waves in Virgo VSR1 data. *Classical and Quantum Gravity*, 31(16):165014, August 2014.

[251] LIGO Scientific Collaboration, Virgo Collaboration, and IPN Collaboration. Search for Gravitational Waves Associated with γ-ray Bursts Detected by the Interplanetary Network. *Phys. Rev. Lett.*, 113(1):011102, July 2014.

[252] LIGO Scientific Collaboration and Virgo Collaboration. Methods and results of a search for gravitational waves associated with gamma-ray bursts using the GEO 600, LIGO, and Virgo detectors. *Physical Review D*, 89(12):122004, June 2014.

[253] LIGO Scientific Collaboration and Virgo Collaboration. Search for gravitational radiation from intermediate mass black hole binaries in data from the second LIGO-Virgo joint science run. *Physical Review D*, 89(12):122003, June 2014.

[254] LIGO Scientific Collaboration, Virgo Collaboration, et al. The NINJA-2 project: detecting and characterizing gravitational waveforms modelled using numerical binary black hole simulations. *Classical and Quantum Gravity*, 31(11):115004, June 2014.

[255] LIGO Scientific Collaboration and Virgo Collaboration. Search for gravitational wave ringdowns from perturbed intermediate mass black holes in LIGO-Virgo data from 2005-2010. *Physical Review D*, 89(10):102006, May 2014.

[256] LIGO Scientific Collaboration and Virgo Collaboration. Constraints on Cosmic Strings from the LIGO-Virgo Gravitational-Wave Detectors. *Phys. Rev. Lett.*, 112(13):131101, April 2014.

[257] LIGO Scientific Collaboration and Virgo Collaboration. Application of a Hough search for continuous gravitational waves on data from the fifth LIGO science run. *Classical and Quantum Gravity*, 31(8):085014, April 2014.

[258] LIGO Scientific Collaboration and Virgo Collaboration. Gravitational Waves from Known Pulsars: Results from the Initial Detector Era. *Astrophysical Journal*, 785(2):119, April 2014.

[259] LIGO Scientific Collaboration, Virgo Collaboration, et al. First Searches for Optical Counterparts to Gravitational-wave Candidate Events. *Astrophysical Journal Supplement*, 211(1):7, March 2014.

[260] LIGO Scientific Collaboration and Virgo Collaboration. Search for long-lived gravitational-wave transients coincident with long gamma-ray bursts. *Physical Review D*, 88(12):122004, December 2013.

[261] LIGO Scientific Collaboration and Virgo Collaboration. Directed search for continuous gravitational waves from the Galactic center. *Physical Review D*, 88(10):102002, November 2013.

[262] LIGO Scientific Collaboration and Virgo Collaboration. Parameter estimation for compact binary coalescence signals with the first generation gravitational-wave detector network. *Physical Review D*, 88(6):062001, September 2013.

[263] LIGO Scientific Collaboration. Enhanced sensitivity of the LIGO gravitational wave detector by using squeezed states of light. *Nature Photonics*, 7(8):613–619, August 2013.

[264] LIGO Scientific Collaboration, Virgo Collaboration, et al. A first search for coincident gravitational waves and high energy neutrinos using LIGO, Virgo and ANTARES data from 2007. *J. Cosmology Astropart. Phys.*, 2013(6):008, June 2013.

[265] LIGO Scientific Collaboration. Einstein@Home all-sky search for periodic gravitational waves in LIGO S5 data. *Physical Review D*, 87(4):042001, February 2013.

[266] LIGO Scientific Collaboration, Virgo Collaboration, et al. Search for gravitational waves from binary black hole inspiral, merger, and ringdown in LIGO-Virgo data from 2009-2010. *Physical Review D*, 87(2):022002, January 2013.

[267] LIGO Scientific Collaboration, Virgo Collaboration, et al. Swift Follow-up Observations of Candidate Gravitational-wave Transient Events. *Astrophysical Journal Supplement*, 203(2):28, December 2012.

[268] LIGO Scientific Collaboration et al. Search for Gravitational Waves Associated with Gamma-Ray Bursts during LIGO Science Run 6 and Virgo Science Runs 2 and 3. *Astrophysical Journal*, 760(1):12, November 2012.

[269] LIGO Scientific Collaboration, Virgo Collaboration, et al. The characterization of Virgo data and its impact on gravitational-wave searches. *Classical and Quantum Gravity*, 29(15):155002, August 2012.

[270] LIGO Scientific Collaboration, Virgo Collaboration, et al. All-sky search for gravitational-wave bursts in the second joint LIGO-Virgo run. *Physical Review D*, 85(12):122007, June 2012.

[271] LIGO Scientific Collaboration, Virgo Collaboration, et al. Upper limits on a stochastic gravitational-wave background using LIGO and Virgo interferometers at 600-1000 Hz. *Physical Review D*, 85(12):122001, June 2012.

[272] B. Sathyaprakash, M. Abernathy, F. Acernese, P. Ajith, B. Allen, P. Amaro-Seoane, N. Andersson, S. Aoudia, K. Arun, P. Astone, B. Krishnan, L. Barack, F. Barone, B. Barr, M. Barsuglia, M. Bassan, R. Bassiri, M. Beker, N. Beveridge, M. Bizouard, C. Bond, S. Bose, L. Bosi, S. Braccini, C. Bradaschia, M. Britzger, F. Brueckner, T. Bulik, H. J. Bulten, O. Burmeister, E. Calloni, P. Campsie, L. Carbone, G. Cella, E. Chalkley, E. Chassande-Mottin, S. Chelkowski, A. Chincarini, A. Di Cintio, J. Clark, E. Coccia, C. N. Colacino, J. Colas, A. Colla, A. Corsi, A. Cumming, L. Cunningham, E. Cuoco, S. Danilishin, K. Danzmann, E. Daw, R. De Salvo, W. Del Pozzo, T. Dent, R. De Rosa, L. Di Fiore, M. Di Paolo Emilio, A. Di Virgilio, A. Dietz, M. Doets, J. Dueck, M. Edwards, V. Fafone, S. Fairhurst, P. Falferi, M. Favata, V. Ferrari, F. Ferrini, F. Fidecaro, R. Flaminio,

J. Franc, F. Frasconi, A. Freise, D. Friedrich, P. Fulda, J. Gair, M. Galimberti, G. Gemme, E. Genin, A. Gennai, A. Giazotto, K. Glampedakis, S. Gossan, R. Gouaty, C. Graef, W. Graham, M. Granata, H. Grote, G. Guidi, J. Hallam, G. Hammond, M. Hannam, J. Harms, K. Haughian, I. Hawke, D. Heinert, M. Hendry, I. Heng, E. Hennes, S. Hild, J. Hough, D. Huet, S. Husa, S. Huttner, B. Iyer, D. I. Jones, G. Jones, I. Kamaretsos, C. Kant Mishra, F. Kawazoe, F. Khalili, B. Kley, K. Kokeyama, K. Kokkotas, S. Kroker, R. Kumar, K. Kuroda, B. Lagrange, N. Lastzka, T. G. F. Li, M. Lorenzini, G. Losurdo, H. Lück, E. Majorana, V. Malvezzi, I. Mandel, V. Mandic, S. Marka, F. Marin, F. Marion, J. Marque, I. Martin, D. McLeod, D. Mckechan, M. Mehmet, C. Michel, Y. Minenkov, N. Morgado, A. Morgia, S. Mosca, L. Moscatelli, B. Mours, H. Müller-Ebhardt, P. Murray, L. Naticchioni, R. Nawrodt, J. Nelson, R. O' Shaughnessy, C. D. Ott, C. Palomba, A. Paoli, G. Parguez, A. Pasqualetti, R. Passaquieti, D. Passuello, M. Perciballi, F. Piergiovanni, L. Pinard, M. Pitkin, W. Plastino, M. Plissi, R. Poggiani, P. Popolizio, E. Porter, M. Prato, G. Prodi, M. Punturo, P. Puppo, D. Rabeling, I. Racz, P. Rapagnani, V. Re, J. Read, T. Regimbau, H. Rehbein, S. Reid, F. Ricci, F. Richard, C. Robinson, A. Rocchi, R. Romano, S. Rowan, A. Rüdiger, A. Samblowski, L. Santamaría, B. Sassolas, R. Schilling, P. Schmidt, R. Schnabel, B. Schutz, C. Schwarz, J. Scott, P. Seidel, A. M. Sintes, K. Somiya, C. F. Sopuerta, B. Sorazu, F. Speirits, L. Storchi, K. Strain, S. Strigin, P. Sutton, S. Tarabrin, B. Taylor, A. Thürin, K. Tokmakov, M. Tonelli, H. Tournefier, R. Vaccarone, H. Vahlbruch, J. F. J. van den Brand, C. Van Den Broeck, S. van der Putten, M. van Veggel, A. Vecchio, J. Veitch, F. Vetrano, A. Vicere, S. Vyatchanin, P. Weßels, B. Willke, W. Winkler, G. Woan, A. Woodcraft, and K. Yamamoto. Scientific objectives of Einstein Telescope. *Classical and Quantum Gravity*, 29(12):124013, June 2012.

[273] LIGO Scientific Collaboration and Virgo Collaboration. Search for gravitational waves from intermediate mass binary black holes. *Physical Review D*, 85(10):102004, May 2012.

[274] LIGO Scientific Collaboration and Virgo Collaboration. First low-latency LIGO+Virgo search for binary inspirals and their electromagnetic counterparts. *Astronomy and Astrophysics*, 541:A155, May 2012.

[275] LIGO Scientific Collaboration and Virgo Collaboration. Search for gravitational waves from low mass compact binary coalescence in LIGO's sixth science run and Virgo's science runs 2 and 3. *Physical Review D*, 85(8):082002, April 2012.

[276] LIGO Scientific Collaboration and Virgo Collaboration. Implementation and testing of the first prompt search for gravitational wave transients with electromagnetic counterparts. *Astronomy and Astrophysics*, 539:A124, April 2012.

[277] Virgo Collaboration. Virgo: a laser interferometer to detect gravitational waves. *Journal of Instrumentation*, 7(3):3012, March 2012.

[278] LIGO Scientific Collaboration and Virgo Collaboration. All-sky search for periodic gravitational waves in the full S5 LIGO data. *Physical Review D*, 85(2):022001, January 2012.

[279] LIGO Scientific Collaboration, Virgo Collaboration, et al. Directional Limits on Persistent Gravitational Waves Using LIGO S5 Science Data. *Phys. Rev. Lett.*, 107(27):271102, December 2011.

[280] Ligo Scientific Collaboration. A gravitational wave observatory operating beyond the quantum shot-noise limit. *Nature Physics*, 7(12):962–965, December 2011.

[281] Virgo Collaboration. A state observer for the Virgo inverted pendulum. *Review of Scientific Instruments*, 82(9):094502–094502–9, September 2011.

[282] LIGO Scientific Collaboration, Virgo Collaboration, et al. Beating the Spin-down Limit on Gravitational Wave Emission from the Vela Pulsar. *Astrophysical Journal*, 737(2):93, August 2011.

[283] LIGO Scientific Collaboration and Virgo Collaboration. Search for gravitational waves from binary black hole inspiral, merger, and ringdown. *Physical Review D*, 83(12):122005, June 2011.

[284] Virgo Collaboration. Status of the Virgo project. *Classical and Quantum Gravity*, 28(11):114002, June 2011.

[285] LIGO Scientific Collaboration, Virgo Collaboration, et al. Search for Gravitational Wave Bursts from Six Magnetars. *Astrophysical Journal Letters*, 734(2):L35, June 2011.

[286] Virgo Collaboration. Performance of the Virgo interferometer longitudinal control system during the second science run. *Astroparticle Physics*, 34(7):521–527, February 2011.

[287] Virgo Collaboration. The Virgo Interferometer for Gravitational Wave Detection. *International Journal of Modern Physics D*, 20(10):2075–2079, January 2011.

[288] Virgo Collaboration. Calibration and sensitivity of the Virgo detector during its second science run. *Classical and Quantum Gravity*, 28(2):025005, January 2011.

[289] Virgo Collaboration. Automatic Alignment system during the second science run of the Virgo interferometer. *Astroparticle Physics*, 34(6):327–332, January 2011.

[290] Virgo Collaboration. Search for gravitational waves from compact binary coalescence in LIGO and Virgo data from S5 and VSR1. *Physical Review D*, 82(10):102001, November 2010.

[291] Virgo Collaboration. Noise from scattered light in Virgo's second science run data. *Classical and Quantum Gravity*, 27(19):194011, October 2010.

[292] LIGO Scientific Collaboration and Virgo Collaboration. TOPICAL REVIEW: Predictions for the rates of compact binary coalescences observable by ground-based gravitational-wave detectors. *Classical and Quantum Gravity*, 27(17):173001, September 2010.

[293] LIGO Scientific Collaboration and Virgo Collaboration. Search for Gravitational-wave Inspiral Signals Associated with Short Gamma-ray Bursts During LIGO's Fifth and Virgo's First Science Run. *Astrophysical Journal*, 715(2):1453–1461, June 2010.

[294] LIGO Scientific Collaboration and Virgo Collaboration. Search For Gravitational-wave Bursts Associated with Gamma-ray Bursts using Data from LIGO Science Run 5 and Virgo Science Run 1. *Astrophysical Journal*, 715(2):1438–1452, June 2010.

[295] LIGO Scientific Collaboration and Virgo Collaboration. All-sky search for gravitational-wave bursts in the first joint LIGO-GEO-Virgo run. *Physical Review D*, 81(10):102001, May 2010.

[296] LIGO Scientific Collaboration and Virgo Collaboration. Searches for Gravitational Waves from Known Pulsars with Science Run 5 LIGO Data. *Astrophysical Journal*, 713(1):671–685, April 2010.

[297] Virgo Collaboration. Measurements of Superattenuator seismic isolation by Virgo interferometer. *Astroparticle Physics*, 33(3):182–189, April 2010.

[298] Virgo Collaboration. Automatic Alignment for the first science run of the Virgo interferometer. *Astroparticle Physics*, 33(3):131–139, April 2010.

[299] Virgo Collaboration. Performances of the Virgo interferometer longitudinal control system. *Astroparticle Physics*, 33(2):75–80, March 2010.

[300] Virgo Collaboration. Cleaning the Virgo sampled data for the search of periodic sources of gravitational waves. *Classical and Quantum Gravity*, 26(20):204002, October 2009.

[301] LIGO Collaboration and Virgo Collaboration. An upper limit on the stochastic gravitational-wave background of cosmological origin. *Nature*, 460(7258):990–994, August 2009.

[302] Virgo Collaboration. Laser with an in-loop relative frequency stability of 1.0e-21 on a 100-ms time scale for gravitational-wave detection. *Physical Review A*, 79(5):053824, May 2009.

[303] Virgo Collaboration. Gravitational wave burst search in the Virgo C7 data. *Classical and Quantum Gravity*, 26(8):085009, April 2009.

[304] Virgo Collaboration. Search for gravitational waves associated with GRB 050915a using the Virgo detector. *Classical and Quantum Gravity*, 25(22):225001, November 2008.

[305] Virgo Collaboration. First joint gravitational wave search by the AURIGA EXPLORER NAUTILUS Virgo Collaboration. *Classical and Quantum Gravity*, 25(20):205007, October 2008.

[306] Virgo Collaboration. Noise studies during the first Virgo science run and after. *Classical and Quantum Gravity*, 25(18):184003, September 2008.

[307] Virgo Collaboration. Virgo status. *Classical and Quantum Gravity*, 25(18):184001, September 2008.

[308] Virgo Collaboration. Lock acquisition of the Virgo gravitational wave detector. *Astroparticle Physics*, 30(1):29–38, August 2008.

[309] Virgo Collaboration. The Virgo 3 km interferometer for gravitational wave detection. *Journal of Optics A: Pure and Applied Optics*, 10(6):064009, June 2008.

[310] LIGO Scientific Collaboration and Virgo Collaboration. Astrophysically triggered searches for gravitational waves: status and prospects. *Classical and Quantum Gravity*, 25(11):114051, June 2008.

[311] AURIGA Collaboration and Virgo Collaboration. A cross-correlation method to search for gravitational wave bursts with AURIGA and Virgo. *Classical and Quantum Gravity*, 25(11):114046, June 2008.

[312] Virgo Collaboration. Status of Virgo. *Classical and Quantum Gravity*, 25(11):114045, June 2008.

[313] Virgo Collaboration. The Real-Time Distributed Control of the Virgo Interferometric Detector of Gravitational Waves. *IEEE Transactions on Nuclear Science*, 55(1):302–310, February 2008.

[314] Virgo Collaboration. Data Acquisition System of the Virgo Gravitational Waves Interferometric Detector. *IEEE Transactions on Nuclear Science*, 55(1):225–232, February 2008.

[315] Virgo Collaboration. Status of coalescing binaries search activities in Virgo. *Classical and Quantum Gravity*, 24(23):5767–5775, December 2007.

[316] Virgo Collaboration. Gravitational waves by gamma-ray bursts and the Virgo detector: the case of GRB 050915a. *Classical and Quantum Gravity*, 24(19):S671–S679, October 2007.

[317] Virgo Collaboration. Improving the timing precision for inspiral signals found by interferometric gravitational wave detectors. *Classical and Quantum Gravity*, 24(19):S617–S625, October 2007.

[318] Virgo Collaboration. Coincidence analysis between periodic source candidates in C6 and C7 Virgo data. *Classical and Quantum Gravity*, 24(19):S491–S499, October 2007.

[319] Virgo Collaboration. Analysis of noise lines in the Virgo C7 data. *Classical and Quantum Gravity*, 24(19):S433–S443, October 2007.

[320] Virgo Collaboration. Data quality studies for burst analysis of Virgo data acquired during Weekly Science Runs. *Classical and Quantum Gravity*, 24(19):S415–S422, October 2007.

[321] Virgo Collaboration. Status of Virgo detector. *Classical and Quantum Gravity*, 24(19):S381–S388, October 2007.

Alessandra Corsi, Ph.D.
- Research Statement -

Overview

My research focuses on the multi-messenger study of astrophysical transients related to the deaths of massive stars, such as core-collapse supernovae (SNe) and long gamma-ray bursts (GRBs), and to the mergers of neutron stars (NSs) and/or black holes (BHs) in binary systems (short GRBs and their afterglows). I have worked for more than a decade on the study of these "cosmic fireworks" and their progenitors, using both electromagnetic (EM) and gravitational-wave (GW) observations. Massive stars contribute to the chemical composition of matter as we know it on Earth, and their deaths seed our universe with BHs and NSs. These are the most exotic objects of the stellar graveyard, made of pure space-time curvature or matter under the most extreme conditions. Mergers of NSs and BHs in binary systems can power "kilonova" explosions (faint, short-lived UV-to-IR transients) that are cosmic mines for elements such as gold and platinum. They can also power the most relativistic astrophysical jets (GRBs), which are unique laboratories for understanding relativistic particle acceleration and magnetic field amplification processes.

Although light is the traditional cosmic messenger, thanks to detectors such as the Laser Interferometer Gravitational Wave Observatory (LIGO) we can now study the cosmos using a completely independent messenger. Indeed, the merger of two NSs in a binary system is also one of the most efficient emitters of GWs, ripples in space-time predicted by Einstein's general theory of relativity. GWs travel to us unaltered (they interact only very weakly with matter), probing matter under the most extreme conditions in NSs. EM observations, on the other hand, bring complementary information by probing the properties (composition, amount, speed distribution) of the matter ejected during NS-NS coalescences, and the immediate surroundings of the binaries (e.g., host galaxies and interstellar medium densities). The discovery of GWs and light from the double NS merger GW170817 [1,2] has demonstrated the great potential of multi-messenger astronomy in a spectacular way, marking the beginning of a revolution in astronomy. *The strength and originality of my research lie in this multi-messenger approach to studying the cosmos.*

What I consider my biggest achievement so far is the discovery of the radio counterpart of the first binary NS merger GW170817. Specifically, I led one of two teams who independently discovered (and then published jointly the discovery of) radio emission from a relativistic off-axis and structured jet launched after the merger of GW170817 (Hallinan, Corsi et al. [3], shared first authorship and published in Science). This result came from work I carried out thanks to the support of a CAREER award of the U.S. National Science Foundation (NSF) on the topic "CAREER: Radio and gravitational-wave emission from the largest explosions since the Big Bang." In recognition of my leading role in this discovery, in 2017 I was invited by the NSF to present during a Press Conference at the National Press Club in Washington DC. In 2019, I was elected Fellow of the American Physical Society "for exceptional contributions to the discovery of both gravitational waves and their electromagnetic counterparts." In 2020 I was awarded the TAMEST (The Academy of Medicine, Engineering, Sciences of Texas) Edith and Peter O'Donnell award for Science, "for paradigm-shifting research on the merger of stars and black holes," and then selected by Science News as one of the "2020 SN 10: Scientists to Watch." In 2022, I received a New Horizons Prize "for leadership in laying foundations for electromagnetic observations of sources of gravitational waves, and leadership in extracting rich information from the first observed collision of two neutron stars."

I believe my biggest strength is the uncommon set of skills I acquired by recognizing, early on, the potential for discovery that lies in bridging GW physics and time-domain astronomy, two long-time fairly disconnected fields. After working on X-ray data and optical photometry of GRBs and SNe, I now have vast experience with radio observations of astrophysical transients. I routinely secure time on the Jansky VLA to observe SNe, GRBs, and follow up GW triggers from LIGO [2-7]. In parallel, I work on detection algorithms for mining data from ground-based GW detectors [8-10], and have developed semi-analytical models for GW emission from highly magnetized NSs [11-12]. *Thanks to this multi-faceted know-how, I have established myself as one of the international leaders in the newly born field of GW astronomy.*

Over the next decade, the rich landscape of international facilities currently being constructed or planned will bring new EM and GW discoveries into reach, while requiring a major evolution of traditional data analysis techniques into the realm of data science. I would be thrilled to contribute to this exciting astronomical venture as faculty in the Department of Physics and Astronomy at Johns Hopkins University.

Past Accomplishments and Current Research

I have been active in the field of multi-messenger astronomy since my Ph.D. After working on GRB X-ray afterglows with the Rome BeppoSAX team (e.g., [13]), I expanded my research activity into the realm of GW physics. I joined the Virgo collaboration and led an analysis of the GW data collected around the γ-ray trigger time of GRB 050915a. My work became the first paper the Virgo collaboration published on an astrophysically-motivated search in general, and on the multi-messenger analysis of a GRB in particular [14]. This work earned me a National (Italy) L'Oreal-Unesco award for Women in Science.

As a visiting post-doc at Penn State and, later on, as a post-doctoral scholar at CalTech, I worked on estimating the maximum GW emission from both newly born (GRBs) and older (soft gamma-ray repeaters) magnetized NSs [11-12]. I showed how GWs from secularly unstable magnetars formed in GRBs can be used to probe the nature of the central engine powering these relativistic transients [11]. *More than ten years later, my work on this topic is still considered of great interest for answering one of the key questions left open by GW170817 and its associated GRB170817a, namely, what is the nature of the merger remnant.* This is a question that EM observations alone cannot answer unambiguously. Thus, in 2017 as faculty at Texas Tech University (TTU), I was among the small group of people who took the lead on the first LIGO post-merger analysis of GW170817 [10]. Today, I am working on developing more sensitive LIGO data analysis techniques for the search of post-merger GW signals. I have recently demonstrated that the horizon distances reached in post-merger searches for GW170817 can be improved by about an order of magnitude using an optimized data analysis algorithm that my students and I have developed (CoCoA, the Cross-Correlation Algorithm) [8-9]. This result is very promising for the prospect of constraining the nature of NS-NS merger remnants in future GW detections.

At CalTech I also helped shape the LIGO effort aimed at enabling searches for optical counterparts to GW events, leading the optical follow-up campaign of initial LIGO alerts with the Palomar Transient Factory [15]. Then, I expanded my expertise on EM transients to the radio domain. This was motivated by my curiosity to understand why some massive stars die as "ordinary" (stripped-envelope core-collapse) SNe, while others (a small fraction of the total) die launching GRB jets. To explore the link between GRBs and SNe, one needs to study events "in the gap", that have properties in between ordinary SNe and GRBs. *As I have demonstrated in several of my papers* [4-7]*, these gap events constitute a population of mildly-relativistic transients whose emission is best probed in the radio.* Today, I continue hunting for radio transients that can help us unveil the physical ingredients that distinguish GRB progenitors from ordinary SNe, leveraging the larger discovery rate enabled by the Zwicky Transient Facility (ZTF) [7].

My interest in radio transients also links back to my interests in GW physics—a link I have capitalized on since becoming faculty in 2012. Indeed, the radio band is particularly promising for multi-messenger studies of coalescing NS-NS and BH-NS systems, that are efficient emitters of GWs. The optical emission powered by NS-NS and BH-NS ejecta is dominated by quasi-thermal emission processes from matter moving at low speeds (e.g. the kilonova emission). On the other hand, radio probes the non-thermal synchrotron emission arising from matter ejected at mildly-to-ultra-relativistic speeds. Differently from gamma-rays and X-rays, radio light from the fast ejecta associated with binary NS mergers can be detected for a large range of binary inclination angles (relative to our line of sight) and ejecta structures (angular distribution of energy and speed). Thus, radio observations are often the tie breaker between different models, and can remove the degeneracy between distance and inclination angle that affects GW observations (with potential impact on cosmology). Moreover, the zoo of ejecta structures as a function of total mass and mass ratio of the NS binary system can be mapped in the radio and linked to the equation of state (EoS) of nuclear matter [16-19]. *Via the discovery and extensive radio follow-up of GW170817, I have demonstrated that the radio band is unique [3,18-20]: it reveals information we would be unable to gather using observations in other bands of the EM spectrum.*

After GW170817, the third observing run (O3) of the LIGO / Virgo detectors has brought further interesting discoveries. These include the detection of one NS-NS binary merger (GW190425) with total mass significantly higher than previously known Galactic binary NS systems; one exceptionally asymmetric system (GW190814) harboring an object with mass in the gap between NSs and BHs; and a few NS-BH merger candidates, the first systems of this kind to be observed in GWs. However, due to the large GW localization areas, we are yet to discover another definitive EM counterpart. Thus, several key questions

opened by GW170817 remain, as of today, to be answered [16-17]. How common is GW170817? What is the zoo of NS-NS/BH-NS radio counterparts as a function of binary total masses and mass ratios [16]? How does this zoo map onto the nature of the merger remnant [17]? For which binary systems can the merger remnant be probed directly using GWs [8-10]? Can we use kilonovae late-time radio flares to constrain indirectly the nature of the merger remnant [18-19]? Is a BH remnant needed to launch a successful jet after the merger, and are choked jets common? Can radio polarization measurements unveil the jet magnetic field structure [20]? Do stellar-mass binary BHs emit jets? Can host galaxy studies in the radio help constrain the formation scenarios of compact binary progenitors [16]?

To answer some of these questions, at the time of writing my group is carrying out late-time follow-up observations of GW170817 in the radio. Theoretical models predict that late-time "radio flares" (a.k.a. kilonova afterglows) will accompany some binary NS mergers years after the collision, if the kilonova ejecta energy-speed distribution is not too steep. The detection of a radio flare would exclude the stiffest EoS and relatively high mass ratio progenitor systems (due to the weak or absent core bounce in these scenarios). The deepest radio observations of the GW170817 field published so far, led by my graduate student [19], favor steeper energy-velocity distribution over flatter ones. The additional observations we are currently carrying out are key to constrain the large parameter space of post-merger scenarios, and to securely exclude previous claims of a late-time X-ray excess (see references in [19]).

As of January 2024, the first part of the LIGO-Virgo fourth observing run O4, dubbed O4a, has been completed. The second part of the run is expected to start in April 2024, after a two-month commissioning break, and to last about nine months. During O4a, only the LIGO detectors have been operational, while Virgo is expected to join the second part of the run (O4b). The O4a run has yielded multiple detections of binary BHs, but no high-confidence NS-NS merger detections. This likely implies that the fiducial value of the NS-NS local merger rate density is a factor of ≈ 2 lower than predicted after the end of the O3 run, and that we have $\approx 80\%$ probability of detecting at least one NS-NS merger during O4b. *I have secured as PI 156 hrs of VLA time (at scheduling priority A) to hunt for radio counterparts to GWs during O4*, and I am a Co-I on another approved proposal for very long baseline interferometric (VLBI) observations of these counterparts in the radio. I am also the PI of an approved VLA program to follow-up in the radio potential sub-threshold GW-GRB coincidences identified using data from LIGO and Swift GUANO. One of my graduate students leads an approved VLA program to hunt for late-time radio flares in short GRBs associated with NS-NS mergers. As a member of the LIGO Scientific Collaboration, I chair the paper writing team for an all-sky search for long-duration GW bursts in data from the O4a run, and I am leading the review of an optimized version of the CoCoA that we expect to run for post-merger GW searches in LIGO O4b data. *Hence, I expect to play a major role in exciting multi-messenger discoveries ahead.* The National Science Foundation is the major source of support for these aspects of my research activity, with funding currently approved until 2026 (which I expect to renew in the future).

Future Goals

Looking into the near-term future, as of Fall 2023 I have secured funding from the Department of Energy (DoE) for *a new 5-year project aimed at improving the efficiency of multi-messenger observing campaigns of GW sources using distributed data applications and Artificial Intelligence-guided scientific simulations.* This work, done in collaboration with a team that includes researchers at the Argonne National Laboratory, Oak Ridge National Laboratory, and SLAC National Accelerator Laboratory, is likely to identify strategies to transition smoothly to an era where multi-messenger astronomy enabled by GWs will enter fully the "big data" regime. Indeed, over the next decade, LIGO will transition to its A+ ($5\times$ the NS-NS detection rate of Advanced LIGO) and A# ($\sim 8\times$ the detection rate of A+) configurations. LIGO A+/A# will likely be followed by next-generation detectors such as Cosmic Explorer (with hundreds of thousands of detections per year of compact binary systems containing at least one NS) [21]. The future of multi-messenger time-domain astronomy is thus very promising, especially if EM facilities progress in tandem with GW ones, extending multi-messenger studies to larger redshifts [17].

Over the timescale of LIGO A+ specifically, I will focus attention on *the radio follow-up of the kilonovae that the Vera C. Rubin Observatory Legacy Survey of Space and Time (LSST) will uncover in the GW error regions.* As a member of the Rubin Transients and Variable Stars Collaboration, I am involved in

efforts aimed at shaping the Rubin survey strategy to include target-of-opportunity follow-up of GWs [22]. With its unique combination of large aperture and wide field of view, Rubin will be able to cover well-localized GW regions in just a handful of pointings and achieve deep observations of GW events located at large distances, where counterparts are expected to be too faint for most telescopes. The Rubin LSST will also be a fantastic opportunity for extending my (NASA- and NSF-funded) studies of rare, relativistic, core-collapse SNe beyond the ZTF era. Rubin will collect large statistical samples of even the rarest SNe, such as the stripped-envelope core-collapse ones with broad lines that I study in the radio [4-7]. Nailing down the rates of these rare SNe is key to shedding light on the decades-old mystery of why some SNe launch relativistic jets and others do not. Because of the large expected number of transient discoveries, dealing with Rubin LSST data is very much a problem within the realm of data science. *Thus, at Johns Hopkins University I would take advantage of the Institute for Data-Intensive Engineering and Sciences.*

In the longer-term future, I plan to focus on the science that will be enabled by Cosmic Explorer (10× the sensitivity of Advanced LIGO) [21], the next generation VLA (ngVLA) (10× the sensitivity and resolution of the VLA) [16], and the NASA Nancy Grace Roman Space Telescope. These facilities can work together to bring into reach multi-messenger discoveries in the higher redshift universe. As the multi-messenger science liaison for the management team of Cosmic Explorer, I am deeply involved in the effort aimed at shaping the science case for this detector [21]. As co-chair of the ngVLA working group on the dynamic universe, and co-chair of the advisory group for the transition from VLA operations to ngVLA construction, I am also heavily involved in shaping the science goals and path forward for the ngVLA [16, 23]. As a member of the NASA/Roman High Latitude Time-domain Survey Committee, I am eager to explore the potential of Roman for enabling kilonova discoveries in coincidence with well-localized GW events identified by Cosmic Explorer [17], and studies of astrophysical transients in tandem with the ngvLA (including stripped-envelope core-collapse SNe).

Finally, following the recent exciting news of the formal adoption of the "Laser Interferometer Space Antenna" (LISA) mission by the European Space Agency, and given my role as co-chair of the NASA GW Science Interest Group (GW-SIG), I am working to foster the continued engagement of the US community in multi-messenger and multi-band GW science with LISA. In the near future, I plan to submit a NASA proposal focused on exploring opportunities for multi-messenger science with the ngVLA and LISA, expanding my research beyond the realm of ground-based GW detection. In fact, LISA and the ngVLA can work together to shed light on the evolutionary path that brings massive black hole binaries from dual Active Galactic Nuclei (AGN) to mergers. *At Johns Hopkins University, I would be thrilled to explore this topic in collaboration with Professor Berti and other faculty interested in LISA sources and AGN physics.*

References: [1]Abbott et al. 2017, PRL, 119, 161101 • [2]Abbott et al. 2017, ApJL, 848, L12 • [3]Hallinan, Corsi et al. 2017, Science, 358, 1579 • [4]Corsi et al. 2014, ApJ, 782, 42 • [5]Corsi et al. 2016, ApJ, 830, 42 • [6]Corsi et al. 2017, ApJ, 847, 54 • [7] Corsi et al. 2023, ApJ, 953, 179 [8]Sowell et al. 2019, PRD, 100, 124041 • [9]Coyne et al. 2016, PRD, 93, 104059 • [10]Abbott et al. 2017, ApJL, 851, L16 • [11]Corsi & Meszaros 2009, ApJ, 702, 1171 • [12]Corsi & Owen 2011, PRD, 83, 104014 • [13]Corsi et al. 2005, A&A, 438, 829 • [14]Acernese et al. 2008, CQG, 255, 22 • [15]Aasi et al. 2014, ApJS, 211, 7 • [16]Corsi et al. arXiv:1903.10589, Astro2020 Science White Paper • [17]Corsi et al. 2024, arXiv:2402.13445 • [18]Balasubramanian et al. 2021, ApJL, 914, L20 [19]Balasubramanian et al. 2022, ApJ, 938, 12 • [20]Corsi et al. 2018, ApJL, 861, L10 • [21]Evans, Corsi et al. 2023, arXiv:2306.13745 • [22]Andreoni et al. 2022, ApJS, 260, 18 • [23]Beasley et al. 2019, Astro2020 White paper

Alessandra Corsi, Ph.D.
- Teaching and Mentoring Statement -

Teaching Philosophy

I have chosen to pursue an academic career because my biggest aspiration is to have a job where I never stop learning. It is this passion for learning that I hope to inspire in the students when I teach a class, regardless of the specific course level or topic. I particularly enjoy working with students on problem solving, and on small projects focused on practical applications of the concepts I teach in class.

Since becoming faculty in 2012, I have taught a variety of courses from large, general education Astronomy courses with almost 200 students, to advanced undergraduate and graduate level Astrophysics and Physics courses, some of which had only a handful of students. At the George Washington University (GWU), I taught a large general education Astronomy course ("ASTR-1002: Origin of the Cosmos") in two very different settings. One was a traditional lecture-hall setting, in which I encouraged active learning via the use of clickers, and of the so-called "think-pair-share" technique. The second was a "Student-Centered Active Learning Environment for Undergraduate Programs" (SCALE-UP) setting, where the traditional lectures are substituted with brief mini-lectures, and most of the class time is spent on student-centered activities coached by the instructor. Since then, I have kept an open mind toward new pedagogical approaches that may improve the student learning experience.

At Texas Tech University (TTU), I have taught several semesters of general education Astronomy courses in a traditional setting ("ASTR-1400: Solar System Astronomy" and "ASTR-1401: Stellar Astronomy"), keeping the use of clickers and think-pair-share technique. At TTU I also took the lead on revising our astrophysics curriculum. As part of this effort, I developed a "Radiative processes in Astrophysics" course at both the advanced undergraduate and graduate levels, and a "Special Topics: Radio Astronomy" course again at both the advanced undergraduate and graduate levels. At the graduate level I have also taught "Advanced Electricity and Magnetism" (a core course of our Ph.D. program) over one semester, and the course associated with departmental colloquia ("Physics Seminar") over multiple semesters. At the time of writing, I am collaborating with the National Radio Astronomy Observatory (NRAO) to adapt the "Special Topics: Radio Astronomy" course I have developed at TTU to an open-source e-learning platform so it can be made available to the Radio Astronomy Data Imaging and Analysis Lab (RADIAL) intentional partnership of minority-serving institutions.

Going forward, I would like to maintain and further develop my varied teaching portfolio. Ideally, I would like to keep alternating introductory or lower-level undergraduate courses with upper-level undergraduate and graduate courses, so as to develop a broad understanding of students' struggles, and a vision for potential teaching innovations to address such struggles. Considering my general teaching philosophy and my teaching experience, I fit well the academic offerings of the Department of Physics and Astronomy at Johns Hopkins University. For example, I could teach courses such as "Stars and the Universe: Cosmic Evolution," "Special Relativity/Waves," "Astrophysical Plasmas," "Radiative Astrophysics," "Observational Astronomy." If there is interest, I would also be enthusiastic to develop a hands-on course on multi-messenger time-domain astronomy. This could build on some of the material I have developed for my "Special Topics: Radio Astronomy" course, but also expand on it to include modules dedicated to the analysis of gravitational-wave open data and, down the road, data collected with the Rubin Observatory.

Mentoring

Since becoming faculty in 2012, I have supervised a total of 5 post-docs, 8 graduate students, 22 undergraduate students, and 3 high school students. Overall, I have developed strong skills for directing a very diverse group of researchers. On a practical level, I run my research group by having weekly meetings where students and post-docs can showcase their progress and learn from each other. At the same time, I meet regularly one-on-one with each of the members of my group to discuss the more technical aspects of their work. This allows me to identify struggles early on, and also to talk about strategies for career advancement and work-life balance.

After supervising my first high school student at GWU, at TTU I have actively recruited them by regularly volunteering as mentor for the Clark Scholar Program, an intensive summer research program

for high school juniors and seniors. Several of the undergraduate and high school students I have supervised have led [1-3] or co-authored [4] papers published in peer-reviewed journals. My high-school student McCarthy was admitted into MIT. My undergraduate student Rajkumar was admitted to the University of Wisconsin-Madison Ph.D. program. My undergraduate student Harbin has played a pivotal role in establishing TTU as the first US mainland Hub of the National and International Non-Traditional Exchange Program of the National Radio Astronomy Observatory (NRAO NINE).

I have also been successful with graduate student mentoring. My very first graduate student, Dr. Coyne, graduated from GWU under my supervision and then spent two years as post-doc at TTU (also under my supervision). He is now an Associate Teaching Professor at the University of Rhode Island. Today we continue to collaborate on LIGO data analyses. My second graduate student, Dr. Sowell, has a successful career at Lockheed Martin (where he was offered a job about 6 months before he actually graduated!). My graduate student Bhakta was an undergraduate at TTU and decided to stay in our Master's degree program working under my supervision specifically to strengthen his research portfolio and become competitive for applying to highly ranked Ph.D. programs in the country. Indeed, he is currently a Ph.D. student in the Astronomy Department at the University of Virginia. My graduate student Dr. Balasubramanian was one of the most productive students I supervised in terms of scientific publication output, and he is now a postdoctoral fellow at the Tata Institute of Fundamental Research (TIFR). Ms. Eddins concluded her Master with Thesis at TTU under my supervision in Fall 2023 and is pursuing a career in data science and scientific computing (currently, she is under consideration for a position at the National Radio Astronomy Observatory). My graduate student Ms. Khanam will be defending her Ph.D. thesis in Summer 2024. At the time of writing, I am also working with two other graduate students, Mr. O'Dwyer (second year graduate student at TTU) who is leading a paper on the radio follow-up of core-collapse supernovae, and Mr. Wipfli who is working with me on a smaller project focused on the RADIAL effort described above.

Finally, I consider supervising and properly mentoring post-docs a very critical duty. The post-doctoral years are among the most challenging in academia due to the short-term nature of the post-doctoral appointments. Because of this, I strive to offer post-docs the most promising opportunities in terms of research projects, talks at international conferences, and other activities that gain them visibility (such as participating in grant review panels). I involve my post-docs as PIs or co-PIs in observing proposals so they can learn how to present their research in a compelling fashion. I also offer my post-docs opportunities to help me mentor students in my group, so they can develop mentoring skills early on. Of the post-docs I have supervised so far (in addition to Dr. Coyne mentioned above), Dr. Carbone is now faculty at the University of the Virgin Islands, Dr. Veres is faculty at the University of Alabama in Huntsville, and Dr. Palliyaguru is a former Lecturer at TTU and currently a co-founder of the HealthSurveil startup company. Thus, despite a very competitive job market, these post-doctoral researchers have been able to continue their career in STEM after working under my supervision. I am confident that Dr. Merfeld, my current post-doc, will be equally successful.

References: [1] Grandorf et al. 2021, ApJ, 908, 63 • [2] Artkop et al. 2019, ApJ, 884, 16 • [3] Eddins et al. 2023, ApJ, 953, 179 [4] Palliyaguru et al. 2016, ApJ, 829, L28

Alessandra Corsi, Ph.D.
- Statement of Service / Outreach / Engagement -

Service to the University

I have a strong track record of service carried out across institutions. At the George Washington University (GWU), I served as member of the Physics Department Colloquium Committee and Curriculum Development Committee. At Texas Tech University (TTU), after chairing for multiple semesters the Departmental Colloquium Committee, I served on the Undergraduate Committee Affairs and then became its chair. My biggest contributions while serving on the Undergraduate Committee Affairs have been to re-design the curriculum of the Astronomy concentration for the Physics B.S. (while developing two of the five upper-level courses that are offered as part of this concentration), and leading the TTU yearly assessment of the Physics program used to ensure compliance with the Southern Association of Colleges and Schools Commission on Colleges. Since 2015, I have organized the TTU Bucy Lecture, which brings a high caliber scientist each year to Lubbock, TX to deliver a public lecture on a recent discovery. In 2022, I organized the very first public Bucy Lecture in the Spanish language to promote awareness of recent scientific achievements in the local Hispanic community of Lubbock. Since 2023, I have promoted an effort aimed at improving the representation of minority speakers in the TTU Bucy Lecture series, instituting Bucy Lectures targeting women and early-career scientists. Also at TTU, I served on a total of five faculty hiring committees in areas spanning astrophysics, high-energy physics, and condensed matter physics. At the university level, in 2023 I served on the search committee for the Associate Dean for Research of the TTU College of Arts and Science (after declining for personal reasons an invitation to serve on the Dean of Arts and Sciences search committee).

At Johns Hopkins University, I would be eager to put the above experience at the service of the Department and the University.

Service to the Profession

I have always chosen to take on a rather heavy load of service to the profession, where I am eager to make an impact. I intend to continue spending substantial effort on this front in the future. As common in my field, I routinely serve on scientific organizing committees for conferences and workshops, as reviewer for multiple peer-reviewed journals, and as proposal reviewer, including for Frontiers in Physics proposals to the National Science Foundation (NSF) and proposals to the Gordon and Betty Moore Foundation.

In addition, I serve on multiple committees related to science, instrumentation, and research planning. For the National Radio Astronomy Observatory (NRAO), I served on time allocation committees, on the Common Astronomy Software Applications (CASA) Users Committee, and I currently serve on the NRAO Users Committee. At this time, I co-chair (with Dr. Rachel Osten at the Space Telescope Science Institute) the next generation Very Large Array (ngVLA) science working group 5 ("Exploring the Dynamic Universe"). I also co-chair, together with Dr. Joseph Lazio at Caltech/JPL, the VLA/VLBA to ngVLA Transition Advisory Group, while being a member of the ngVLA Science Advisory Committee. For the Rubin LSST, which promises to be the next big leap forward for optical time-domain surveys of the sky, I served as member of the Rubin In-Kind Contribution Committee and member of the Rubin LSST Users Committee. For the National Aeronautics and Space Administration (NASA), I served as member and/or chair of various time allocation committees. I currently serve as member of the NASA/Roman High-Latitude Time-Domain Survey Committee; I co-chair the Gravitational Wave Science Interest Group (GWSIG) together with Prof. Chiara Mingarelli at Yale; I am a member of the Executive Committee of the NASA Physics of the Cosmos Program Analysis Group, and of the NASA/Fermi User Group. For the LIGO Scientific Collaboration, I am co-chair of the Burst Review Committee and I previously served on the Burst Benchmark Committee and on the Program Committee, and chaired the Publication and Presentation Committee. Looking at the next decade of gravitational-wave astronomy from the ground, I currently serve on the management team of the Cosmic Explorer next generation gravitational-wave detector concept as liaison for multi-messenger science, together with Prof. Edo Berger at Harvard.

At the broader level of the American Physical Society (APS), I served as elected member at large of the Executive Committee of the Division of Gravitational Physics (DGRAV), and as deputy treasurer of

the Executive Committee of the Division of Astrophysics (DAP). Currently, I serve as the DAP Secretary and Treasurer. In terms of broader roles I have taken on for the NSF, I highlight serving on the NRAO program review panel, on the NRAO Diversity, Inclusion, and Broader Impacts review panel, and as member of the Committee of Visitors for the NSF Division of Physics.

Finally, I contribute to various awards and fellowship committees. Specifically, I have served as a member first, and then chair (for two consecutive years) of the selection committee for the Cecilia Payne-Gaposchkin Doctoral Dissertation Award in Astrophysics of the Division of Astrophysics of the APS. I have also served as reviewer for NASA post-doctoral fellowships, as member of the selection committee for the Rubin LSST Corporation's Catalyst Fellowship, and for the Texas Section of the APS Steven Weinberg and Robert S. Hyer Research Awards.

Outreach and Engagement

I am a strong believer in the power that science, and knowledge in general, have to elevate human beings, and to open unexpected avenues and opportunities that make life better for everyone. The idea that I can contribute to such an empowering process is what motivates me to dedicate substantial effort to education and public outreach, and to promoting diversity, equity, and inclusion (DEI).

At TTU, as the Principal Investigator of a NSF CAREER award, I embarked in a major effort aimed at developing hands-on in-class activities for non-science majors and high school students. These activities, based on data I collect as part of my research, aim to give young students a taste of multi-messenger astronomy. Since 2018, I have tested these activities at both TTU and Coronado High School in Lubbock, successfully engaging young students with no prior training in astronomy. Then, I set for myself a more ambitious goal of reaching minority serving institutions beyond TTU (which itself is Hispanic serving). In 2019 I established a partnership with the NRAO via which TTU has become the first U.S. mainland hub for the NRAO's National and International Non-Traditional Exchange (NINE) program. The main goal of the TTU-NINE hub (of which I am the director) is to develop a Radio Astronomy course for Physics and Astronomy majors with large hands-on, observing- and data-centered components. After developing the course in Fall 2019, and teaching it multiple times at TTU, I am working to port the course material to an open-source e-learning platform (dubbed "superknova") so it can be made available to the Radio Astronomy Data Imaging and Analysis Lab (RADIAL) intentional partnership. Currently, I am also co-I on an NSF-sponsored program for Partnerships in Astronomy & Astrophysics Research and Education (PAARE) aimed at exploring pathways for Deaf/Hard-of-Hearing and minority undergraduate students to participate in summer research experiences.

At both GWU and TTU, I engaged young students in the community beyond my research group and classrooms. At GWU, I brought outreach material and delivered a public lecture to the planetarium of T.C. Williams High School in the nearby city of Alexandria (a community of students composed of 34% Black, 30% Hispanic, and 8% Asian Pacific and/or native American and/or Hawaiian members). At TTU, I instituted and funded a LIGO Prize and a Multi-Messenger Astronomy Prize at the South Plains Regional Science and Engineering Fair (SPRSEF), with the goal of improving on the current lack of astronomy projects at the Fair. The SPRSEF attracts K12 students from 60-65 schools throughout a region up to about 300 km from Lubbock, and a large number of the participating students are Hispanic. I have also regularly volunteered as a judge for the SPRSEF, and provided public speeches for the SPRSEF award ceremony. In January 2021, I gave a Zoom volunteer lecture for the High School Astronomy Club Virtual Panel at Seven Lakes High School in Katy (TX), a suburb of Houston almost 1000 km away.

I have also substantial experience with outreach activities for the general public. In 2014, I organized the joint participation of GWU and the American University in the "2014 Astronomy Festival on the National Mall." I was a Career Panel member for the 2015 TTU Emmy Noether High School Mathematics Day, designed to foster women's interest in science careers. In 2016, I was a keynote speaker for the Regional Meeting of Texas Women in Higher Education, and lecturer for the TTU Osher Lifelong Learning Institute (designed for adults age 50+). In 2019, I offered a volunteer lecture to the Talkington School for Young Women Students in Lubbock. In 2022, I led a discussion panel for the UNM Womxn in Physics.

With the above portfolio, I would add to and enhance the outreach activities and community involvement programs available at Johns Hopkins University.