

Dr. Kristina Nyland

CONTACT INFORMATION	U.S. Naval Research Laboratory 4555 Overlook Ave SW Washington, DC 20375	Phone: (202)-767-8682 E-mail: kristina.nyland@nrl.navy.mil https://www.kristina-nyland.com
EDUCATION	New Mexico Institute of Mining and Technology , Socorro, NM, USA <i>Ph.D., Physics</i>	January 2015
	<ul style="list-style-type: none">• Dissertation Title: <i>Not Dead Yet: Low-level Star Formation and Active Galactic Nuclei in the Continued Evolution of Early-type Galaxies</i>• Relevant Graduate Coursework:<ul style="list-style-type: none">- Advanced Radio Astronomy (Credits: 3; Grade: A)- Fourier Transforms (Credits: 3; Grade: A)	
	University of Michigan , Ann Arbor, MI, USA <i>B.S., Physics and Astronomy</i> <i>Minor, Italian Language</i>	2007 2007
RESEARCH INTERESTS	Galaxies: Galaxy formation and evolution, AGN feedback, Early-type galaxies – Black Holes: Intermediate-mass black holes, Massive black hole seed formation – Surveys: Radio continuum deep fields, Multi-band forced photometry – Spectral Line: Multi-phase galactic outflows, Radio jet-ISM interactions	
EMPLOYMENT HISTORY	<ul style="list-style-type: none">• Radio Astronomer, Naval Research Laboratory (NRL), Remote Sensing Division• National Research Council Postdoctoral fellow, resident at NRL• Postdoctoral researcher, National Radio Astronomy Observatory (NRAO)• Postdoctoral researcher, Netherlands Institute for Radio Astronomy (ASTRON)• Graduate student research assistant, Magdalena Ridge Observatory (MRO)• Teaching and research assistant, New Mexico Institute of Mining and Technology (NMT)• Undergraduate research assistant, University of Michigan, Department of Astronomy	2021 - present 2018 - 2021 2015 - 2018 2014 - 2015 2010 - 2011 2007 - 2014 2005 - 2007
RESEARCH EXPERIENCE	Radio Astronomer - U.S. Naval Research Laboratory <ul style="list-style-type: none">• Supervisor: Dr. Namir Kassim (NRL) NRC Postdoctoral Fellow - resident at the U.S. Naval Research Laboratory <ul style="list-style-type: none">• Supervisor: Dr. Tracy Clarke (NRL)• Planned, executed, and reduced data from radio interferometry experiments using telescopes such as the Very Large Array (VLA) and Very Long Baseline Array (VLBA). The goal of these experiments was to identify and study quasars in the centers of distant galaxies with extreme (> 100%) variability at radio frequencies over timescales of years to decades (Nyland et al. 2020). Understanding the physical origin of the radio variability is essential for maintaining and enhancing the quasar-based Celestial Reference Frame used for navigation and timing.• Applied advanced signal processing techniques and calibration methodologies for imaging deep radio astrophysics data in the low-frequency (< 1000 MHz) domain. This work utilized observations by the NRL-developed Very Large Array Low-band Ionosphere and Transient Experiment (VLITE). VLITE is an advanced radio astronomical sensor system that provides long wavelength data at HF/VHF/UHF radio frequencies for NRL scientists in support of basic astrophysics and space physics research.• Led a successful observing campaign for complementary observations with the <i>Chandra</i> X-ray Observatory, the <i>Hubble</i> Space Telescope, and the Atacama Large Millimeter/Submillimeter Array (ALMA) to study the conditions under which quasars exhibit extreme variability at radio frequencies.	November 2021 - present October 2018 - 2021

Postdoctoral Researcher - NRAO-Charlottesville **November 2015 - September 2018**

- Supervisor: Dr. Mark Lacy (NRAO)
- Developed a parallelized multi-band photometry script for the *Spitzer* Extragalactic Representative Volume Survey (SERVS) with improved performance for faint/blended sources that has proven to be essential for obtaining accurate photometric redshifts (Nyland et al. 2017b).
- Advanced the case for the ngVLA by performing imaging simulations of radio AGN (Nyland et al. 2018).

Postdoctoral Researcher - ASTRON **September 2014 - October 2015**

- Supervisor: Dr. Raffaella Morganti (ASTRON)
- Led a successful campaign to study neutral hydrogen absorption by the jets of active radio galaxies using global very long baseline interferometry (VLBI; Schulz, Morganti, Nyland, et al. 2021).
- Testing advanced radio astronomical calibration methodologies, including direction-dependent calibration and imaging, using data from the Low-frequency Array (LOFAR). The goal of this project was to study the lobes of diffuse radio plasma produced by active supermassive black holes (Sridhar, Morganti, Nyland, et al. 2020).

Graduate Student Researcher - NMT/NRAO-Socorro **August 2007 - August 2014**

- Supervisors: Dr. Lisa Young (NMT) and Dr. Joan Wrobel (NRAO)
- Ph.D. Thesis: *Not Dead Yet: Low-level Star Formation and Active Galactic Nuclei in the Continued Evolution of Early-type Galaxies*
- Led the VLA science for the ATLAS^{3D} survey of nearby early-type galaxies (Nyland et al. 2016, 2017a).
- Led follow-up studies of nearby AGN with unusual properties (low-mass, multi-phase outflows) using the VLA and VLBA (Nyland et al. 2012, 2013, 2017c).

Graduate Student Researcher - MROI **May 2010 - May 2011**

- Supervisor: Dr. Colby Jurgenson (Ohio State University)
- Tested the anti-reflection and beamsplitter coatings for the fringe tracking beam combiner being designed for the Magdalena Ridge Observatory Interferometer (MROI; Nyland et al. 2010).
- Simulated fringe visibilities using MATLAB and Zemax for the MROI science beam combiner.
- Helped develop, model, and test the mathematical algorithm for the automated alignment system of the fringe tracking beam combiner being designed for MROI.

Undergraduate Student Researcher - University of Michigan **2005 - 2007**

- Supervisor: Dr. Renato Dupke (University of Michigan)
- Senior Thesis: *A Chandra Spectral Analysis of the X-Ray Source RXJ0419.6+0225 Associated with an Unusual Galaxy Cluster*

AWARDS AND GRANTS	<ul style="list-style-type: none"> • <i>HST</i> Cycle 29 observing grant (\$56,002) 2021 • NRL Karle Fellowship Award 2021 • “Best Talk” at the NRL Sigma Xi Postdoctoral Symposium (<i>Sigma Xi Membership</i>) 2021 • <i>Chandra</i> Cycle 22 observing grant (\$98,160) 2020 • ALMA Ambassador (\$10,000) 2019 • NMT 125th Anniversary Poster Competition - 2nd place (\$750) 2014 • NRAO Student Observing Support for project 13A-353 (\$3,000) 2012 • APS Four Corners Section Outstanding Student Talk Award (\$100) 2012 • NM Space Grant (\$10,000) 2010
-------------------	--

MEMBERSHIP	<ul style="list-style-type: none"> • Sigma Xi, The Scientific Research Honor Society 2021 - present • Sigma Pi Sigma 2009 - present • American Astronomical Society 2006 - present
------------	---

PROFESSIONAL EXPERIENCE	<p>Membership</p> <ul style="list-style-type: none"> • Sigma Xi, The Scientific Research Honor Society 2021 - present • Sigma Pi Sigma 2009 - present • American Astronomical Society 2006 - present
-------------------------	--

Review Panels

- VLASS Survey Science Group 2021 - present
- Science review panelist for NRAO 2020 - present
- Science review panelist for ALMA 2018 - 2021
- Technical review panelist for LOFAR 2015

Referee for Peer-reviewed Journals

2013 - present

- ApJ, A&A, MNRAS, PASA, and Symmetry

Workshops Attended

- [Machine Learning and Visualization in the Data Intensive Era](#) 2021
- Advanced Python Workshop 2015
- 3rd LOFAR Data Processing School 2015
- NRAO Synthesis Imaging Workshop 2006, 2008, 2010, 2012, 2014

SCIENTIFIC
COMPUTING

General

- GNU/Linux environment, Python (2 and 3), MATLAB
- Relational databases (SQL)
- L^AT_EX, Microsoft Office

Astronomical Software and Tools

- CASA, AIPS, WSClean, PyBDSF
- SAOImage DS9, TOPCAT, Montage, SWarp, EAZY

SELECTED
APPROVED
OBSERVING
PROPOSALS

Very Large Array (VLA)

- 21A-017 (80 hrs; P.I. - Lacy): *A 3GHz survey of the Expanded Chandra Deep Field South*
- 20A-445 (66 hrs; P.I. - Rujopakarn): *Augmenting the VLA Ultra-Deep Field with compact baselines*
- 20B-329 (8.5 hrs): *The Radio SED Evolution of Compact and Variable Radio AGN Identified in VLASS*
- 18A-199/19A-242 (190 hrs; P.I. - Rujopakarn): *Capturing Radio AGN at Cosmic Dawn with JVLA JWST*
- 16A-279 (12 hrs): *Evolutionary Stage & Impact of the Radio Lobes in NGC 3998*
- 14A-360 (208 hrs; P.I. - Rujopakarn): *Resolving the Obscured Cosmic Accretion History and Modes of Galaxy Assembly*
- 14A-305 (5 hrs): *Resolving the Compact Emission in an Intermediate-Mass Black Hole*
- 12B-281 (16 hrs): *The Importance of LLAGN in ETGs Containing Molecular Gas*
- 12A-404 (23 hrs): *Star Formation & LLAGN in the ATLAS^{3D} Sample of ETGs*
- 11A-226 (13.5 hrs): *Radio Continuum & LLAGN in Early-type Galaxies*

Very Long Baseline Interferometric (VLBI) Observations

- 21B-218 (12 hrs, VLBA): *A Candidate Young Jet Discovered in Commensal VLITE Data*
- 20A-201 (48 hrs): *VLBA Follow-up of VLASS AGN Transients at High Redshift*
- G14C001 (37 hrs, global VLBI): *Tracing the Evolution of Fast Jet-driven Outflows*
- 13A-353 (8 hrs): *HSA Observations of the AGN Driving the Massive Molecular Outflow in NGC 1266*
- 12B-164 (12 hrs): *VLBA Observations of a Central Intermediate Mass Black Hole Candidate*

Giant Meterwave Radio Telescope (GMRT)

- C30.049 (20 hrs): *Deep Low-frequency Observations of the Fading Radio Lobes in NGC 3998*
- C26.025 (7 hrs): *Low-frequency Radio Observations of a Candidate AGN-Driven Molecular Outflow*

Low Frequency Array (LOFAR)

- LC3.025 (8.5 hrs): *The Evolutionary Impact of Radio Lobes in a Nearby Early-type Galaxy: A Low-frequency Case Study of NGC 3998*

Atacama Large Millimeter/Submillimeter Array (ALMA)

- Cycle 8 (P.I. - Nyland): *Dust and Star formation in the Hosts of Quasar Jets Caught Switching On*
- Cycle 6 (P.I. - Patil): *Resolving the dust emission in heavily obscured, hyper-luminous quasars*
- Cycle 3 (P.I. - Kohn): *ALMA deep survey on GOODS-S-JVLA field*
- Cycle 0 (P.I. - Alatalo): *Mapping Shock Chemistry in NGC 1266: Local Example of AGN Feedback*

Chandra

- Cycle 22, Project 22700460 (84 ks): *A Chandra Pilot Study of Radio Changing-state Quasars Identified in the VLA Sky Survey*
- Cycle 22, joint NRAO-Chandra program, Project 22700627 (31 ks): *The Radio SED Evolution of Compact and Variable Radio AGN Identified in VLASS*

HST

- Cycle 29, Project 16713 (4 orbits): *The Hosts of Quasars with Newborn Jets Discovered in the Very Large Array Sky Survey*

NuSTAR

- Cycle 6, Project 06252 (70 ks, P.I. - Patil): *Unveiling the Nuclear Engine of a Heavily Obscured Quasar with Young Radio Jets*

OBSERVATORY
SUPPORT

NRAO Community Day Event at the University of Maryland–Baltimore County 2019

- Gave presentations on ALMA, ngVLA, and VLITE and assisted with tutorials.

ALMA Ambassador 2019

- Co-led an [ALMA Cycle 7 proposal workshop](#) at the University of Maryland.

Next-generation Very Large Array October 2016 - present

- Led 3 (co-authored 2) science use cases for review by the ngVLA Science Advisory Committee.
- Led an ngVLA Community Study titled *Revolutionizing AGN Science with the ngVLA*.
- Led 2 (co-authored 7) [ngVLA science book chapter sections](#)
- [Led 1](#) (co-authored 8) Astro2020 Decadal Review white papers supporting the ngVLA for AGN science.

CASA Data Processing Helpdesk May 2013 - August 2014

- Provided part-time support to the NRAO user community by answering CASA help desk tickets, submitting JIRA tickets to the software bug tracking system, editing and testing new versions of data reduction tutorials on the CASA Guides, and testing new tasks/capabilities in CASA.

VLA Data Reduction Workshops 2013, 2016

- Served as an expert CASA tutor at advanced NRAO data reduction workshops.

13th and 14th NRAO Synthesis Imaging Workshops 2012, 2014

- Assisted with observation preparation tutorials, data reduction tutorials, and VLA tours.

OBSERVING
EXPERIENCE

Radio Astronomy Spring 2011-present

- Set-up observing scripts for hundreds of hours of VLA observations, 37 hours of global VLBI observations, 70 hours of VLBA observations, and 8 hours of High Sensitivity Array (HSA; VLBA + phased VLA) observations. Directly supervised observing script preparation as a co-I for additional projects spanning several hundred hours of VLA time, including >300 hr in the *Hubble* Ultra Deep Field.

Las Campanas Observatory, Chile April 2017

- Performed deep photometric imaging with the 2.5 meter Du Pont telescope over 3 nights.
- Observed with the FIRE near-infrared spectrograph on the 6.5 meter Magellan Baade telescope

	McDonald Observatory, Fort Davis, TX	April 2011
	<ul style="list-style-type: none"> Operated the VIRUS-P IFU spectrograph on the 2.7 meter Harlan J. Smith Telescope for one week while measuring stellar kinematics to map early-type galaxy dark matter halos. 	
STUDENT MENTORING	Star Formation Regulation in Quenched Dwarf Galaxies	2021-present
	<ul style="list-style-type: none"> Postbaccalaureate student: Azia Robinson Provided mentoring and co-supervision of a student research project based at Princeton University in collaboration with Prof. Jenny Greene. Duties included instruction on processing and analyzing multi-configuration VLA observations of 21cm line emission. 	
	The Fundamental Plane of Black Hole Activity for Low-mass Seyfert Galaxies	Spring 2021
	<ul style="list-style-type: none"> Co-supervised a student research project involving VLA data processing and analysis for the Astro 399 (Introduction to Research) course at the University of Michigan in collaboration with Prof. Kayhan Gultekin. Duties included weekly meetings and on-demand assistance on Slack for a group of 4 students at the sophomore, junior, and senior levels. A publication is in progress (Gultekin et al., in prep.). 	
	Understanding the Properties of Obscured Radio AGN and Faint Submm Galaxies	2016-2020
	<ul style="list-style-type: none"> Graduate student: Pallavi Patil (currently a Jansky postdoctoral fellow) Provided mentoring and co-supervision of a graduate student research project at the University of Virginia. Duties included hands-on instruction on processing and analyzing data from NRAO telescopes and supervising 2 student-led papers and successful observing proposals for ALMA and <i>NuSTAR</i>. 	
	The Radio Properties of the Most Massive Nearby Galaxies	2017-2018
	<ul style="list-style-type: none"> Postbaccalaureate student: Louis Keyamo Johnson Co-supervised a student research project through the Princeton University Post-Baccalaureate program in collaboration with Prof. Jenny Greene. 	
	Broadband Polarization Properties of Early-type Galaxies	2017-2018
	<ul style="list-style-type: none"> Undergraduate student: Evan Sheldahl (currently a Ph.D. student at the University of New Mexico) I developed and supervised a senior undergraduate thesis project in fulfillment of the distinguished-major astronomy degree requirements at the University of Virginia. Duties included hands-on instruction on the calibration/analysis of broadband VLA polarimetry and supervision of a successful student-led proposal. 	
	Spatially-resolved Radio Spectrum of the Jet Driving the Outflow in NGC1266	2013-2014
	<ul style="list-style-type: none"> Undergraduate student: Dillon Dong (currently a Ph.D. student at Caltech) Provided mentoring and co-supervision of an undergraduate student research project in collaboration with Dr. Eric Murphy. Duties included supervising a successful student-led VLA observing proposal. 	
TEACHING EXPERIENCE	New Mexico Institute of Mining and Technology	
	<ul style="list-style-type: none"> Teaching Assistant, Physics 121 (Mechanics) Laboratory Teaching Assistant, Physics 122 (Electricity and Magnetism) Recitation 	Fall 2009 Spring 2010
BROADER IMPACTS AND SERVICE	Press Releases and Publicity	
	<ul style="list-style-type: none"> <i>The VLA Sky Survey in the Multiwavelength Spotlight</i> – NRAO eNews <i>Survey Finds Newborn Black Hole Jets in Distant Galaxies</i> – Sky & Telescope <i>NRL Researchers Catch Supermassive Black Holes Launching Newborn Radio Jets</i> – NRL press release <i>VLA Sky Survey Reveals Newborn Jets in Distant Galaxies</i> – NRAO press release <i>A Young Population of Hidden Jets</i> – AAS Nova Highlights <i>Young Radio AGN in the ngVLA Era</i> – NRAO eNews <i>Where Will the Next-Generation Very Large Array Take Us? To Our Cosmic Origins</i> – NRAO Blog <i>Astronomers find far-flung wind from a black hole in the universe's first light</i> – Science News <i>VLA, ALMA Team Up to Give First Look at Birthplaces of Most Current Stars</i> – NRAO press release 	

Outreach Presentations

- *Newborn Jets in Distant Galaxies*. Astronomy On Tap Charlottesville. Virtual event. (June 22, 2021).
- *The Impact of Supermassive Black Hole Feedback on Galaxy Evolution*. Presentation for the Dutch Secretary of State during the ASTRON re-opening ceremony in the Netherlands (March 16, 2015).
- *The Role of Wimpy AGNs in Shaping the Evolution of their Host Galaxies*. NRAO Summer Student REU Program in Socorro, NM (July 8, 2014).
- *Radio Observations of Accreting Supermassive Black Holes in Nearby Galaxies*. VLA site tour for U.S. Senator Martin Heinrich (July 14, 2013).
- *Black Holes: Probing the Invisible*. Public open house at the VLA (April 6, 2013).

Diversity and Inclusion

- Student mentor through the NRAO REU and Princeton post-baccalaureate programs **2017-2019**
- Member of the “Astronomy Allies” network of volunteer advocates **2015-present**
- Founding member of the “Society of Women in Physics,” University of Michigan chapter **2004-2007**

Telescope and Observatory Tours

- VLA tour guide during NRAO sponsored conferences, workshops, and open house events. **2011-2015**
- MROI Beam Combiner Facility tour coordinator during NRAO Imaging Workshops. **2010, 2012, 2014**

Service

- SOC member for the “DSA-2000 Science Workshop” conference **2022**
- SOC chair for the “VLA Sky Survey in the Multiwavelength Spotlight” conference **2021-2022**
- Co-organizer of the Astronomy talk series at NRL **2018-present**
- Local Organizing Committee member for Astrophysical Frontiers Conference **2018**
- Co-organizer of the TUNA lunch talk series at NRAO **2016-2018**
- Co-organizer of the ASTRON lunch talk series **2014-2015**

SELECTED
INVITED TALKS

Nyland, K., *AGN Feedback Across Cosmic Time*. DSA-2000 Science Workshop, January 19, 2022, virtual.

Nyland, K., et al. *Young Quasar Jets Revealed by the VLA Sky Survey*. ASTRON Astrolunch talk series organized in the Netherlands. Virtual webinar (April 28, 2021).

Nyland, K., et al. *Young and Compact Jets in the Era of Multi-epoch Radio Surveys*. ICRAR-Curtin colloquium series organized jointly by the International Centre for Radio Astronomy Research and Curtin University in Perth, Australia. Virtual webinar (April 22, 2021).

Nyland, K., et al. *Newborn Jets in Distant Galaxies*. Galactic Fidelity (GalFid) seminar organized by Rhodes University and SARAO in South Africa. Virtual webinar (January 26, 2021).

Nyland, K., et al. *AGN Jets and Accretion Flows: New Insights from Compact Jets at Cosmic Noon*. Chandra Frontiers of Time-Domain Science. Virtual conference (October 8, 2020).

Nyland, K., et al. *AGN Jets and Accretion Flows: New Insights from Compact Jets at Cosmic Noon*. 11th CMB-S4 Workshop: Cosmology and Astrophysics in the Next Decade (August 11, 2020).

Nyland, K., et al. *AGN Jets and Accretion Flows: New Insights from Compact Jets at Cosmic Noon*. Compact Objects and Energetic Phenomena in the Multi-messenger Era. Virtual mini conference (July 15, 2020).

Nyland, K. *High-redshift Dust as a Galaxy Evolution Probe: Prospects for ALMA in the 2030's*. The ALMA 2030 Vision: Design Considerations for the Next ALMA Correlator. Charlottesville, VA (February 11, 2020).

Nyland, K. *AGN with Extreme Variability Identified in a Search for Transients Using VLASS and FIRST*. NASA Goddard Geodesy Seminar. Greenbelt, MD (November 21, 2019).

Nyland, K., et al. *New Advancements in our Understanding of AGN Feedback from the VLA and Beyond*. Physics Colloquium at the University of Maryland. College Park, MD (October 28, 2019).

Nyland, K., et al. *New Advancements in our Understanding of AGN Feedback from the VLA and Beyond*.

Virginia Tech Physics and Astronomy Colloquium. Blacksburg, VA (September 23, 2019).

Nyland, K., et al. *New Advancements in our Understanding of AGN Feedback from the VLA and Beyond*. US Naval Observatory Colloquium Series. Washington, DC (April 11, 2019).

Nyland, K., et al. *Multi-band Forced Photometry Over One Square Degree of SERVS: Accurate Photometric Redshifts & Implications for Galaxy Evolution Science*. Galaxies & Cosmology Seminar at the Harvard-Smithsonian Center for Astrophysics in Boston, MA (January 31, 2017).

SELECTED
CONTRIBUTED
TALKS

Nyland, K., *Multi-epoch Radio Spectra of Variable VLASS Quasars*. The Mid-Atlantic Radio-loud AGN Meeting, October 21, 2021, University of Maryland Baltimore County, Baltimore, MD.

Nyland, K., et al. *Newborn Quasar Jets that have Switched on Over the Lifetime of the VLA*. The Past, Present, and Future of the VLA: Celebrating 40 Years. Virtual conference (August 4-7, 2021).

Nyland, K., et al. *Young Quasar Jets Revealed by Dynamic Radio Surveys*. Extragalactic Jets on All Scales conference organized by the Max Planck Institute for Astronomy in Heidelberg, Germany. Virtual conference (June 14-18, 2021).

Nyland, K., et al. *Powerful Quasars with Young Jets Revealed by Multi-epoch Radio Surveys*. 6th Workshop on Compact Steep Spectrum and GHz-peaked Spectrum Radio Sources organized in Poland. Virtual conference (May 10-14, 2021).

Nyland, K., et al. *Newborn Jets in Distant Galaxies*. Sigma Xi Postdoctoral Symposium organized by the U.S. Naval Research Laboratory. Virtual conference (January 26, 2021).

Nyland, K., et al. *Radio-changing State Quasars in the VLA Sky Survey*. American Astronomical Society Meeting. Virtual conference (January 11-15, 2021).

Nyland, K., et al. *Compact Radio Jets Revealed by Commensal VLITE Observations*. Science at Low Frequencies conference. Virtual conference (December 1-4, 2020).

Nyland, K., et al. *Variable Radio AGN at High Redshift Identified in VLASS: New Insights on Galaxy Evolution*. IAUS 359: Galaxy Evolution and Feedback Across Different Environments. Bento Goncalves, Brazil (March 1-5, 2020).

Nyland, K., et al. *Commensal VLITE Meter-Wavelength Imaging in and Around the Hubble Ultra Deep Field*. Science at Low Radio Frequencies Meeting. Tempe, AZ (December 10-13, 2019).

Nyland, K., et al. *Variable Radio AGN at High-z Identified in VLASS: New Insights on Galaxy Evolution from the Dynamic Radio Sky*. The New Faces of Black Holes. Annapolis, MD (November 11-13, 2019).

Nyland, K., et al. *Parsec-scale Observations of Jets in the ngVLA Era: From Physics to Feedback*. Radio/Millimeter Astrophysical Frontiers. Charlottesville, VA (June 25-27, 2019).

Nyland, K., et al. *Uncovering the Impact of Jet-ISM Feedback on Galaxy Evolution in the ngVLA Era*. Astrophysical Frontiers in the Next Decade and Beyond. Portland, OR (June 26-29, 2018).

Nyland, K., et al. *New Surveys with Current and Next Generation Radio Telescopes*. Cosmic Censuses. University of Sussex (October 9-13, 2017).

Nyland, K., et al. *An Enhanced Multiwavelength Photometric Catalog for the Spitzer Extragalactic Volume Survey*. Astronomical Data Analysis Software and Systems. Trieste, Italy (October 16-20, 2016).

Nyland, K., et al. *The Cosmic Evolution of AGN Feedback: Insights from Broad-band Radio Spectral Indices*. Mapping the Pathways of Galaxy Transformation Across Time and Space. Avalon, California (July 31-Aug. 5, 2016).

Nyland, K., et al. *Evidence for a Dearth of Radio Emission in Gas-rich Early-type Galaxies Compared to "Normal" Star-forming Spirals*. A 3D View on Galaxy Evolution: from Statistics to Physics. Heidelberg, Germany (July 6-10, 2015).

Nyland, Kristina, et al. *Detection of a High Brightness Temperature Radio Core in the AGN-Driven Molecular Outflow Candidate NGC 1266*. The 223rd Meeting of the AAS. National Harbor, MD (January 8, 2014).

Nyland, K., et al. *The Intermediate Mass Black Hole Candidate in the Center of NGC 404: Evidence from Radio Continuum Observations*. Black Hole Fingerprints: Dynamics, Disruptions and Demographics. Snowbird, UT (March 17-22, 2013).

Nyland, K., et al. *The Intermediate Mass Black Hole Candidate in the Center of NGC 404: Evidence from EVLA Observations*. APS Four Corners Section Regional Meeting. Socorro, NM (October 26-28, 2012).

SELECTED WHITE
PAPERS

Nyland, K.; Patil, P.; Mukherjee, D.; Lacy, M.; Prandoni, I.; Harwood, J.; Kimball, A.; Alatalo, K.; et al., 2019, *Astro2020: Decadal Survey on Astronomy and Astrophysics*, science white papers, no. 191; *Bulletin of the American Astronomical Society*, Vol. 51, Issue 3. *AGN Feedback Driven by Jet-ISM Interactions on Sub-Galactic Scales: Opportunities for Advancement in the Next Decade*.

Emonts, B.; Lacy, M.; **Nyland, K.**; Mason, B.; Lehnert, M.; Carilli, C.; Sarazin, C.; Cai, Z.; Chatterjee, S.; Dannerbauer, H.; Gallagher, J.; Harrington, K.; et al.; 2019, *Astro2020: Decadal Survey on Astronomy and Astrophysics*, science white papers, no. 417; *Bulletin of the American Astronomical Society*, Vol. 51, Issue 3. *The Radio Universe at Low Surface Brightness: Feedback accretion in the circumgalactic medium*.

Plotkin, R.; Reines, A.; and **Nyland, K.**, 2019, *Astro2020: Decadal Survey on Astronomy and Astrophysics*, science white papers, no. 315; *Bulletin of the American Astronomical Society*, Vol. 51, Issue 3. *Local Constraints on Supermassive Black Hole Seeds*.

SELECTED
CONFERENCE
PROCEEDINGS

Nyland, K.; Dong, D.; Patil, P.; Lacy, M.; Clarke, T.; Kassim, N.; Peters, W.; Polisensky, E.; et al. 2021, *Astron. Nach.*, 2021; 342, 1146. *Powerful Quasars with Young Jets Revealed by Multi-epoch Radio Surveys*.

Lonsdale, C. J.; Patil, P.; Lonsdale, C.; Whittle, M.; **Nyland, K.**, 2021, *Astron. Nach.*, 2021; 342, 1146. *VLBA Observations of Extremely Luminous, Young, and Highly Obscured Radio Quasars from the WISE-Radio Sample*.

Patil, P.; Whittle, M.; **Nyland, K.**; et al., 2021, *Astron. Nach.*, 2021; 342, 1146. *WISE-NVSS Selected Obscured and Ultra-luminous Quasars with Compact Radio Jets*.

Nyland, K. Astronomy in Focus XXX, presented at IAU XXX General Assembly, Vienna, Austria. Proceedings of the IAU, 2020. *AGN Feedback and its Importance to Galaxy Evolution in the Era of the ngVLA*.

Nyland, K.; Dong, D.; Patil, P.; Lacy, M.; Kimball, A.; Hallinan, G.; Sarbadhicary, S.; Polisensky, E.; Kassim, N.; Peters, W.; Clarke, T.; Mukherjee, D.; van Velzen, S.; and Baldassare, V.; IAU Symposium No. 359 Proceedings: Galaxy evolution and feedback across different environments (arXiv:2005.04734). *Variable Radio AGN at High Redshift Identified in the VLA Sky Survey*.

Nyland, K.; Alatalo, K.; Wrobel, J. M.; Young, L. M.; Morganti, R.; Davis, T. A.; de Zeeuw, P. T.; Deustua, S.; Bureau, M., 2014, *The Galactic Center: Feeding and Feedback in a Normal Galactic Nucleus*, Proceedings of the IAU, 303, 388. *Detection of a High Brightness Temperature Radio Core in the AGN-Driven Molecular Outflow Candidate NGC 1266*.

Nyland, K.; Jurgenson, C. A.; Buscher, D. F.; Haniff, C. A.; Young, J. S.; Lewis, J.; Schnell, R., 2010, *SPIE*, 7734, 122. *Custom Beamsplitter and AR Coatings for Interferometry*.

Creech-Eakman, M. J.; Romero, V.; Payne, I.; Haniff, C.; Buscher, D.; Aitken, C.; Anderson, C.; Bakker, E.; Coleman, T.; Dahl, C.; Farris, A.; Jimenez, S.; Jurgenson, C.; King, R.; Klingle-Smith, D., III; McCord, K.; McCracken, T.; **Nyland, K.**; and 18 coauthors, 2010, *SPIE*, 7734:5-16. *Magdalena Ridge Observatory Interferometer: advancing to first light and new science*.

- SELECTED POSTER PRESENTATIONS
- Nyland, K.**, et al. *AGN life cycles, SMBH Masses, & Galactic Winds: Advancing our Understanding of SMBH-Galaxy Co-evolution with the ngVLA*. 233rd Meeting of the AAS. Seattle, WA (January 6-10, 2019).
- Nyland, K.**, et al. *Building a Dead Galaxy through Energetic Supermassive Black Hole Feedback*. The New Mexico Tech 125th Anniversary Poster Competition. Socorro, NM (October 16-19, 2014).
- Nyland, K.**, et al. *Probing the Star Formation-LLAGN Relationship in Early-Type Galaxies Through Multifrequency EVLA Observations*. The Starburst-AGN Connection in the Multiwavelength Limelight. Villanueva de la Cañada, Spain (September 14-16, 2011).