Gerard T. van Belle, Ph.D.

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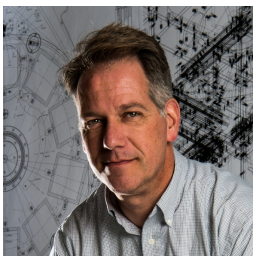

Experience

2024 – present ⊕ **Director of Science,** (tenured), *Lowell Observatory*, Flagstaff, AZ. In charge of the two dozen-plus Lowell science staff: supporting science research, institutional resource allocation, mentoring staff at all levels, and developing personnel policy. Serving on the Executive Leadership Team: directing observatory strategy and management, philanthropic representation of the institution, and financial modeling. Representation of the observatory via multiple public presentations and media engagements each quarter.

2011 – present ⊕ **Astronomer,** *Lowell Observatory*, Flagstaff, AZ. On staff with the observatory with a primary focus in researching fundamental stellar parameters, developing astronomical interferometry with optical interferometers, and carrying out high-resolution imaging programs with the Lowell Discovery Telescope (LDT). This included frequent public speaking engagements, proposal and journal article writing, budget management, contract oversight, and creative and entrepreneurial development of novel business ideas. Tenure granted in 2014.

2007 – 2011 ⊕ **PRIMA Instrument Scientist,** *European Southern Observatory*, Garching bei München, Germany. Responsible for the scientific development and use of the PRIMA (Phase-Referenced Imaging and Microarcsecond Astrometry) facility of ESO's Very Large Telescope Interferometer, including instrument implementation and commissioning. Member of the ESO Astronomy Faculty.

2010 – 2011 ⊕ **MATISSE Instrument Scientist,** *European Southern Observatory*, Garching bei München, Germany. Oversaw instrument development for MATISSE (Multi-AperTure mid-Infrared SpectroScopic Experiment) and progress towards delivery, including development of multinational institutional agreements for budgets and deliverables.

2002 – 2007 ⊕ **Science Community Development Lead,** *Michelson Science Center (now the NASA Exoplanet Science Institute), California Institute of Technology*, Pasadena, CA. Responsible for administration of the Michelson Program at the MSC and coordination of scientific use of NASA time of the Keck telescopes, including proposal review, grant administration, and policy development and implementation. Additional activities include oversight of the Michelson Summer Workshop, administration of the NASA Keck-IRTF management and operations working group, and independent scientific research. Member of the Caltech Professional Staff.

1996 – 2002 ⊕ **Senior Optical Engineer,** *NASA Jet Propulsion Laboratory*, Pasadena, CA. Beginning with designing the basic optical layout of the Keck Interferometer, duties included delay line and transport optic design, heavy construction of the interferometer facility, ensuing instrument installation, and scientific utilization of the interferometer. Additionally, scientific observations with the Palomar Testbed Interferometer included size and shape characterizations of nearby stars. Member of the Technical Staff.

1991 ⊕ **Visiting Lecturer,** *Saint Mary's College of Maryland*, Saint Mary's City, MD, Department of Physics.

1990 ⊕ **Engineering Intern,** *Intermec Corporation*, Everett, WA, Product Quality Assurance Department.

1989 ⊕ **Research Assistant,** *Harvey Mudd College*, Claremont, CA, Department of Physics

1983 – 1986 ⊕ **Founder,** *Polynet Public Systems*, Seattle, WA. Pioneering networking and connectivity social media platform.

Education

1993 – 1996 ⊕ **Ph.D. Physics, University of Wyoming**, Laramie, WY
Thesis title: *Angular Size Measurements of Highly Evolved Stars.* Advisor: H. Melvin Dyck. Made use of the IOTA interferometer to measure the angular sizes and derived fundamental quantities, such as effective temperature and linear radius, for highly evolved stars, including giant stars, supergiant stars, and Mira variable stars.

1990 – 1993 ⊕ **M.A. Physics, The Johns Hopkins University**, Baltimore, MD
Thesis title: *Analysis of CO_2^+ Features in Comet P/Halley Derived from Ultraviolet Spectrophotometry by ASTRON*. Advisor: Paul D. Feldman. The degree of asymmetry in the distribution of CO2+ emitted from Comet P/Halley's nucleus was measured, both prior to and after perihelion in 1986, observing molecular bands found in the 250-350 nm wavelength regime with the ASTRON spacecraft. Additional work at JHU included instrument design, hands-on machine shop construction, and engineering support for the sounding rocket program, both on campus and at NASA Wallops Flight Facility.

1986 – 1990 ⊕ **B.A. Physics-Astronomy, Whitman College**, with honors, minor in Mathematics, Walla Walla, WA. Advisor: Katherine Bracher.

1986 ⊕ **Watson Groen Christian School**, (now known as Shoreline Christian School), Seattle, WA

Research Teams

Major Efforts

2022– present ⊕ **MoonLITE** (Lunar InTerferometry Express) Proposal Team. **Principal Investigator** for a NASA Astrophysics Pioneers proposal to deploy an optical astronomical interferometer on the lunar surface via a Commercial Lunar Payload Services (CLPS) lander delivery. Initiated and led proposal development, including science team recruitment, development of science and technical requirements, and budgets and schedules.

2017– present ⊕ **QWSSI** (Quad-camera, Wave-front-sensing, Six-wavelength-channel Speckle Interferometer). **Principal Investigator** for a high-speed speckle imager on the Lowell Discovery Telescope. Initiated instrument development; proposal, schedule, and budget development; optical and mechanical design; fabrication, construction, and alignment; commissioning and upgrades; and ongoing scientific use.

2011– 2022 ⊕ **NPOI** (Navy Precision Optical Interferometer). Lowell Observatory's **Principal Investigator** for its participation in the NPOI consortium, with an emphasis on milliarcsecond-scale optical imaging for Space Domain Awareness (SDA) and astrophysical science applications. Additional roles included **Director**, 2017-2018, and **Chief Scientist**, 2018-2022. Oversaw facility development; proposal, schedule, and budget development; personnel hiring and management; optical and mechanical design; fabrication, construction, and alignment of instrumentation; commissioning and upgrades; and ongoing scientific use.

Additional Research Teams

2024 – · · · ⊕ The Big Fringe Telescope, Principal Investigator

2022 – 2024 ⊕ CHARA Array SILMARIL Commissioning Team

2013 – 2022 ⊕ Planet Formation Imager Kick-Off Committee member

2013 – 2016 ⊕ NPOI-VISION Commissioning Team

2011 ⊕ VLTI PRIMA Instrument Group, ESO, 2007-2011, and MATISSE Instrument Group

2007 ⊕ CHARA Array MIRC Commissioning Team

2006 – 2008 ⊕ Spitzer Precision MIPS Photometry Team

Research Teams (continued)

- 2005 – 2014 ⊕ "Cataclysmic Variables in the Infrared Cartel"
- 2005 ⊕ CHARA Array "Classic" Commissioning Team
- 1996 – 2002 ⊕ Keck Interferometer Design & Commissioning Team
- 1997 – · · · ⊕ Palomar Testbed Interferometer Collaboration
- 1994 – 1998 ⊕ IR-Optical Telescope Array (IOTA) group
- 1992 – 1993 ⊕ Johns Hopkins Sounding Rocket Group (flights 36.085UG & 36.109UG)

Funded Research Proposals

Dr. van Belle has been awarded over $16.3M in research funding over the past two decades:

- 2022 ⊕ Lowell Slipher Society Award, Page charges for Giant Star Paper, $2,269
- ⊕ NSF AAG, "A Reference Set for Miras", $75,161 (Lowell portion)
- ⊕ Lowell Slipher Society Award, 2022/05 – 2022/08, support for grad student Catherine Clark, $24,059
- ⊕ Imaging High-Altitude Satellites with Next-Generation Detectors, 2022-06 – 2023-06, DoD DURIP award, $116,560
- 2021 ⊕ LDT Survey of X-type Asteroids, grant from Observatory Cote d'Azur, $30,000
- 2020 ⊕ LDT Survey of X-type Asteroids, grant from Observatory Cote d'Azur, $28,000
- ⊕ Lowell Slipher Society Award, Automated software for TiMo, $2,495
- 2019 ⊕ Precision In-Space Manufacturing for Structurally-Connected Space Interferometry, NASA SBIR Phase II Award, with Made in Space (now Redwire Space, Inc.), $98,657 (Lowell share)
- ⊕ High Sensitivity Observations of Geostationary Satellites at High Spatial Resolution II, Naval Research Laboratory, 2019/10 - 2022/12, $11M (capital construction, awarded), $30M cap
- 2018 ⊕ Imaging High-Altitude Satellites with Near-IR Speckle Imagers, 2018/06 – 2019/06, DoD DURIP award, $73,100
- ⊕ Imaging High-Altitude Satellites with Speckle Imagers, 2018/06 – 2019/06, DoD DURIP award, $169,500
- ⊕ Titan Monitoring Telescope, NASA NNX11AH46G, 2018/09 – 2019/09, $100,000
- 2017 ⊕ NESSI Survey of Potential Low-Mass Exoplanet Hosts, JPL RSA 1569545, 2017/02 - 2019/01, $6,300
- ⊕ NESSI Survey of Potential Low-Mass Exoplanet Hosts, JPL RSA 1580984, 2017/08 - 2019/07, $8,300
- 2016 ⊕ High Sensitivity Observations of Geostationary Satellites at High Spatial Resolution, Naval Research Laboratory, 2016/10 - 2021/09, $3.268M
- ⊕ Nearby M-Dwarf Multiplicity Survey, NSF AST-1616084, 2016/09 - 2019/08, $580,497
- 2015 ⊕ AAS International Travel Grant for IAU General Assembly, 2015-08, $1,050
- 2014 ⊕ IAU Travel Grant for IAU Symposium 307, "New Windows on Massive Stars: Asteroseismology, Interferometry, Spectropolarimetry", 2014-06, 750€
- 2013 ⊕ High-Resolution Imaging of Stellar Surfaces, NSF AST-1310800, 2013/10 - 2016/09, $77,764 subaward (out of $555,000 total to PI Anders Jorgensen NMT)
- 2012 ⊕ High Precision, Directly Determined Radii and Effective Temperatures for Giant Stars, NASA NNX13AF01G, 2012/01 - 2014/01, $233,800
- 2011 ⊕ High Precision, Directly Determined Radii and Effective Temperatures for Giant Stars, NSF AST-1212203, 2011/09 - 2015/08, $341,760
- 2012 ⊕ AAS International Travel Grant for IAU General Assembly, $1,800

Funded Research Proposals (continued)

- NAI travel grant for IAU GA, $1,500
- Diameters of Faint M-Dwarfs, NASA Keck Interferometer, PI: G. van Belle, 1 night of Keck-Keck time, 2012A, $18,000

2007
- Distances to Eclipsing M Dwarf Binaries, HST Cycle 16 (ID: HST-GO-11213), PI: G. van Belle, 35 orbits, $135,000

2005
- Testing Repeatable High-Precision Time Series Photometry with Spitzer: Observations of the Eclipsing Binary GU Bootes, Spitzer DDT (ID:GUBOO/259), PI: G. van Belle, 9 hours time, $11,000

Additionally, from 1996-2002, Dr. van Belle oversaw budgeting, contracting, scheduling, and implementation of substantial portions of the $100M Keck Interferometer project, including direct oversight the $10M beam transport subsystem.

Students Mentored:

Supervision and mentoring of students over the past two decades; examples below, with current employment:

2009
- Dr. Tabetha Boyajian, PhD Astrophysics, Georgia State University; Associate Professor of Physics & Astronomy, Louisiana State University

2011
- Dr. Iva Karovicova, PhD Astrophysics, Laboratoire Hyppolite Fizeau, Universite de Nice Sophia Antipolis (LUAN), France; DFG fellow at the Landessternwarte in Heidelberg

2013
- Dr. Alexa Hart, PhD Astrophysics, University of Denver

2014
- Mr. Ryan Buckingham, BS Computer Science, Northern Arizona University; Software Engineer at Lockheed Martin

2016
- Dr. Victor Garcia, PhD Physics, Vanderbilt; Staff Product Data Scientist at Cash App

2018
- Dr. Gena Pilyavsky, PhD Astrophysics, Arizona State University; Principal Scientist, Research & Advanced Systems at Textron Systems

2020
- Mr. Adam Schilperoort, BS Computer Science, Northern Arizona University; Software Engineer at Center for Astronomical Adaptive Optics at Univ. of Arizona
- Mr. Khristian Jones, BA Computer Engineering, Montana State University-Bozeman; R&D Electrical Engineer II at Arizona Radio Observatory

2022
- Dr. Catherine A. Clark, PhD Astronomy and Planetary Science, Northern Arizona University; Scientific Coordinator at Caltech
- Dr. Zachary Hartman, PhD Astrophysics, Georgia State University; NASA Postdoctoral Fellow at NASA Ames

2023
- Mr. Bradley Kingsley, BS Mechanical Engineering, Northern Arizona University; Mechanical Engineer at U.S. Naval Research Laboratory
- Ms. Solvay Blomquist, BS Astronomy and Mathematics; PhD Student, Univ. of Arizona Wyant College of Optical Sciences
- Mr. Nick Green, BS Mechanical Engineering, Northern Arizona University; Mechanical Engineer at Raytheon Missiles & Defense

2025
- Dr. Wyatt Clark, PhD Bioengineering, Northern Arizona University; Senior Research Associate at Aneuvas Technologies, Inc.

Selected Community Service

2026
- Host, CHARA Annual Science meeting, Flagstaff, AZ

2024
- Science Organizing Committee, Cool Stars 22, San Diego, CA

2023
- National Science Foundation Astronomy Committee of Visitors, Arlington, VA

Selected Community Service (continued)

2021, 2022, 2023	NASA APRA Review Panel
2021	NASA Keck Key Strategic Mission Support panel
2019, 2020	NASA XRP Review Panel, Pasadena, CA
2019	NASA SMEX MO Review Panel, Washington, DC
	Dunlap Summer School on Instrumentation, guest lecturer, University of Toronto
	National Science Foundation MRI Review Panel
2016, 2017, 2018	Sagan Fellowship Review Panel
2015-2016	NASA LBTI operations Review Panel
2016	NASA ADAP Review Panel
2015	Proceedings Editor, Cool Stars 18 Workshop
2014	Chair, Cool Stars 18, Flagstaff
2006-2015	IAU Commission 54 ("Optical and Near-Infrared Interferometry") President, 2012-2015, Vice President, 2009-2012, Secretary 2006-2009
2010	Science Organizing Committee, "Science Cases for Optical and Infrared Interferometry", JENAM Lisbon, Portugal
	Board Secretary, VLTI 2nd Generation Fringe Tracker Design Study Reviews
	ESO "On the Fringe" VLTI Training Schools, Guest lecturer, Porquerolles Island, Côte d'Azur France
2009	Board Member, VLTI Gravity and MATISSE Preliminary Design Review
2004A, 2004B	Acting Chairman (non-voting), NASA Keck Time Allocation Committee
2003, 2004	Michelson Summer Schools Director

Selected Recent Public Engagements

Dr. van Belle has been averaging 3-6 public engagements per year for the past decade, including:

2025-2026	"Life in a Universe Full of Planets" Podcast host
August 2025	Exoplanets panel host, World Science Fiction Convection, Seattle, WA
September 2024	Off-Nominal, podcast guest
August 2023	Local Host, Arizona Space Business Roundtable, Flagstaff, AZ
February 2023	A Day in the Life of an Astronomer, invited talk, Westminster Village Retirement Community, Phoenix, AZ
July 2022	Solve-it For Kids, podcast guest
July 2020	Cosmic Controversy, podcast by Bruce Dorminey, Forbes
2019	Dialogue Earth, listed co-star in a feature-length documentary about artist Ulrike Arnold
April 2019	Space Astrophysics Landscape for the 2020s and Beyond, NASA HQ workshop, "Optical Interferometry in Space", invited talk, Potomac, MD
March 2019	Astronomy on Tap, "In-Space Manufacturing of Mega-Telescopes", Flagstaff, AZ
August 2018	SETI panel, World Science Fiction Convection, with David Brin and Douglas Van Belle, San Jose, CA
May 2018	TEDx in LA, "Bridges into Space", LA Community College, CA
April 2018	Museum of Mathematics, "Music of the Spheres: Astronomy, Math, and Sound", New York City, NY

Selected Recent Public Engagements (continued)

Additionally, Dr. van Belle has averaged 12+ scientific presentations (ie. colloquia) annually since 2012.

Skills

Languages	⊕ Strong reading, writing and speaking competency for English; basic German skills.
Coding	⊕ Python, C, bash, IDL, Visual Basic, Perl, Octave, LaTeX, …
Misc.	⊕ Academic research, instrumentation development, project design reviews, proposal preparation, public speaking, team leadership, teaching, training, consultation, LaTeX.

Miscellaneous Experience

Awards and Achievements

2020	⊕ **NAU College of Engineering, Informatics and Applied Sciences "Above and Beyond" Award**, recognizing outstanding student internship experiences.
2018	⊕ **Significant Sig Award**, Sigma Chi Fraternity, Chicago, IL.
2017	⊕ **Communication and Leadership Award**, Toastmasters International, Flagstaff Conference
2015	⊕ **Asteroid 25155 van Belle**, (1998 SA_{55})
2013	⊕ **Lowell Observatory Employee of the Year**
2002	⊕ **JPL Edward Stone Award for Outstanding Research Publication**, for Altair oblateness article (see 2001 ApJ article in publications list)
2001	⊕ **JPL Award for Excellence**, as a member of the Keck Interferometer Development Team, for first fringes
1996	⊕ **Outstanding Graduate Research Award**, Department of Physics & Astronomy, University of Wyoming
1990	⊕ **Graduated with Honors in Physics-Astronomy**, Whitman College
	⊕ **Balfour Award**, for Outstanding Senior Class Member, from the Gamma Epsilon chapter of the Sigma Chi Fraternity

Professional Affiliations

Full member	⊕ American Astronomical Society
	⊕ International Astronomical Union
Member	⊕ Society of Photo-optic Instrumentation Engineers (SPIE)

Certifications

1997	⊕ Private Pilot – Airplane Single Engine Land, 1998 (valid but not current)
1992	⊕ PADI-certified scuba diver

Additional Information

Citizenship	⊕ USA, Canada
Training	⊕ Center for Creative Leadership, Leadership Development Program, March 2025
Visibility	⊕ Erdős-Bacon number is 8

As of 2025 March 1: 140 refereed articles since 1995 with 21 as first author, h-index of 43 with over 6,000 citations. Refereed and non-refereed publications are available on NASA ADS.