# Scott M. Ransom

**Work:**
National Radio Astronomy Observatory
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## Experience

National Radio Astronomy Observatory (NRAO), Astronomer with Tenure, 2010–present
(Asst. Astronomer, 2004–2006; Assoc. Astronomer, 2006–2009, tenured in 2009)

University of Virginia, Visiting Research Professor of Astronomy, 2005–present

Fellow, Gravity & the Extreme Universe, Canadian Institute for Advanced Research, 2017–present

Chair of NANOGrav Collaboration, 2019–2022

McGill University Tomlinson Post-Doctoral Fellow, 2001–2004

U.S. Army, Research Officer (Los Alamos NL 1991, 1992), Field Artillery Officer & Instructor, 1992–1999

## Teaching

Univ. of Virginia, Astro 534: Graduate Radio Astronomy (co-taught 8 times)

## Education

Harvard University, Cambridge, MA: AM, Astronomy, 1994; PhD, Astronomy, 2001
Thesis: "New Search Techniques for Binary Pulsars", Advisor: G. G. Fazio

Unites States Military Academy, West Point, NY: BS, Engineering Physics, 1992

## Selected Honors

American Astronomical Society HEAD Bruno Rossi Prize (NANOGrav), 2025

American Astronomical Society Lancelot M. Berkeley Prize (CHIME/FRB Team), 2022

Fellow of the American Physical Society (Astrophysics), 2015

Visiting Miller Professor, Miller Institute, UC Berkeley, Spring 2015

Visiting Fellow, All Souls College, Oxford University, Fall 2014

American Astronomical Society Helen B. Warner Prize, 2010

Hertz Foundation Graduate Fellowship, 1992–1994

## Research Interests

I study neutron stars, pulsars, and Fast Radio Bursts. I search for and monitor unusual pulsars, using advanced algorithms and instruments, and data from telescopes at energies from radio waves to gamma-rays. I focus on exotic neutron stars, which can be used for various physics tests, such as millisecond and/or binary systems, pulsars in globular clusters and supernova remnants, and magnetars. I am a founder of the NANOGrav collaboration and have developed key pulsar instrumentation, algorithms, and software, such as `PRESTO`, a suite of programs that has found the majority of all known binary and millisecond pulsars.

## Selected Professional Committees / Service

IAU Standards of Fundamental Astronomy (SOFA) board member, 2013–present

NAS Committee on Astronomy and Astrophysics (CAA), 2018–2024

US Astronomy Decadal Survey 2020 Panel on Compact Objects and Energetic Phenomena, 2019–2021

NAS Committee on Radio Frequencies (CORF), 2016–2019

US Astronomy Decadal Survey 2010 Stars and Stellar Evolution Science Frontiers Panel, 2009

## Graduate Students Supervised

Past: **Ryan Lynch**, UVA PhD, 2011 (NRAO scientist); **Anya Bilous**, UVA PhD, 2012 (U. Amsterdam scientist); **Tim Pennucci**, UVA PhD, 2015 (finance); **Siraprapa Sanpa-Arsa**, UVA PhD, 2016 (Chiang Mai Univ. faculty); **Brian Prager**, UVA PhD, 2017 (industry data scientist); **Thankful Cromartie**, UVA PhD, 2020 (NRC Fellow, NRL); **Kyle Corcoran**, UVA PhD, 2024 (Computational Physics, Inc.); **Olivia Young**, RIT PhD (co-supervised, remote at UVA), 2025, (NRC Fellow, NRL)

Current: **Amaris McCarver** (UVA 2nd yr), **Anika Deutsch** (UVA 2nd yr), **Reynier Squillace** (UVA 3rd yr), **Deven Bhakta** (UVA 6th yr)

## Selected Recent Awarded Funding

2025-2028: NSF Astronomy and Astrophysics Research Grant (AAG) Award 2510064, "High Precision and Long Duration Timing of Exotic Pulsars in Globular Clusters", **$407,600**, PI S. Ransom

2021-2024: Gordon & Betty Moore Foundation, "NANOGrav Large Observing Program on the GBT", **$2.3M**, PI S. Ransom

2020-2025: NSF PFC Award 2020265, "NANOGrav Physics Frontier Center", ∼$17M over 5 years. NRAO portion ∼**$945K, with an additional $300K/year for GBT time**, PI X. Siemens

2018-2022: Gordon & Betty Moore Foundation, "Ultra-wideband Receiver for GBO and NANOGrav", **$870K+$370K**, PI S. Ransom

## Selected Recent and High-Impact Publications

**407 refereed publications as of August 8, 2025. H-index of 105.**

Agazie, G., et al. 2023, "The NANOGrav 15 yr Data Set: Evidence for a Gravitational-wave Background", ApJ, 951, L8

Cromartie, H. T., Fonseca, E., **Ransom, S. M.**, et al. 2020, "Relativistic Shapiro delay measurements of an extremely massive millisecond pulsar", Nature Astronomy, 4, 72

Chatterjee, S., et al. 2017, "A direct localization of a fast radio burst and its host", Nature, 541, 58

Spitler, L. G., et al. 2016, "A repeating fast radio burst", Nature, 531, 202

**Ransom, S. M.**, et al. 2014, "A millisecond pulsar in a stellar triple system", Nature 505, 520

Demorest, P. B., Pennucci, T., **Ransom, S. M.**, Roberts, M. S. E., & Hessels, J. W. T. 2010, "A two-solar-mass neutron star measured using Shapiro delay", Nature, 467, 1081

## Miscellaneous

Supervised seven postdoctoral fellows: Paul Demorest (2010-2011), Glenn Jones (2012-2013), Jintao Luo (2012-2015), Kevin Stovall (2016-2018), Tim Pennucci (2019-2021), Tasha Gautam (2023), & Alex Saffer (2024+)

Member of **CHIME/FRB** Team and NASA's *NICER* Science Team

Open source pulsar software (e.g. `PRESTO`) available at `http://github.com/scottransom`

Graduate level radio astronomy textbook was published April 2016 by Princeton University Press: J. J. Condon & S. M. Ransom, "Essential Radio Astrononomy". A free online version will continue to exist here: `https://science.nrao.edu/opportunities/courses/era/`.