Robert Wagoner
Professor of Physics, Emeritus

Bio

Robert V. Wagoner's scientific direction was established rather suddenly in 1960, when he attended a series of lectures on cosmology by the British astrophysicist Fred Hoyle. At the time, Wagoner was a mechanical engineering undergraduate at Cornell University, receiving his B.M.E. in 1961. Born and raised in Teaneck, New Jersey, his other major interest was golf, leading to a position on the Cornell team. He switched to physics while at Stanford University, receiving an M.S. in engineering science in 1962 and a Ph.D. in physics in 1965. He then worked as a postdoctoral fellow at Caltech, collaborating with William A. Fowler and Hoyle on the first complete calculation of the abundances of the elements produced in the primordial universe. After three years, he returned to Cornell as a faculty member in the astronomy department. Five years later, he returned to Stanford's physics department, where he is a professor of physics, emeritus and a member of the Kavli Institute for Particle Astrophysics and Cosmology.

ACADEMIC APPOINTMENTS

• Emeritus Faculty, Acad Council, Physics

HONORS AND AWARDS

• Visiting Fellow, Institute of Theoretical Astronomy, Cambridge University (1967, 1971)
• George Ellery Hale Distinguished Visiting Professor, University of Chicago (1978)
• Sherman Fairchild Distinguished Scholar, Caltech (1976)
• Fellowship, Guggenheim Foundation (1978)
• Fellowship, A.P. Sloan Foundation (1969)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

• Fellow, American Physical Society (1965 - present)
• Member, American Astronomical Society (1966 - present)

LINKS

• My Personal Website: https://web.stanford.edu/dept/physics/people/faculty/wagoner_robert%20-%20Copy.html

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Probes (accretion disks, ...) of black holes, sources and detectors of gravitational radiation, theories of gravitation, anthropic cosmological principle.
Teaching

COURSES

2016-17

• Black Holes and Extreme Astrophysics: PHYSICS 17 (Spr)

STANFORD ADVISEES

Orals Evaluator

Mae Teo

Publications

PUBLICATIONS

• Order out of Randomness: Self-Organization Processes in Astrophysics SPACE SCIENCE REVIEWS
  2018; 214 (2)

• Evidence for an Optical Low-frequency Quasi-periodic Oscillation in the Kepler Light Curve of an Active Galaxy The Astrophysical Journal
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• DISKOSEISMOLOGY AND QPOs CONFRONT BLACK HOLE SPIN ASTROPHYSICAL JOURNAL LETTERS
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• Corotation resonance and diskoseisimology modes of black hole accretion disks ASTROPHYSICAL JOURNAL
  Silbergleit, A. S., Wagoner, R. V.
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• Relativistic and Newtonian diskoseisimology Conference on Jean-Pierre Lasota, X-Ray Binaries, Accretion Disks and Compact Stars
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• Normal modes of black hole accretion disks GEOPHYSICAL AND ASTROPHYSICAL FLUID DYNAMICS
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• Diskoseisimology International Conference on Helioseismology, Asteroseismology and MHD Connections (HELAS II)
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  IOP PUBLISHING LTD. 2008

• Global disk oscillation modes in cataclysmic variables and other newtonian accretors ASTROPHYSICAL JOURNAL
  Ortega-Rodriguez, M., Wagoner, R. V.
  2007; 668 (2): 1158-1164
• A timing signature of gravitational radiation from LMXB neutron stars Conference on X-Ray Timing 2003 - Rossi and Beyond
  Wagoner, R. V.
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• Astronomy - Heartbeats of a neutron star NATURE
  Wagoner, R. V.
  2003; 424 (6944): 27–28

• Conditions for steady gravitational radiation from accreting neutron stars ASTROPHYSICAL JOURNAL
  Wagoner, R. V.
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• Relativistic diskoseismology. III. Low-frequency fundamental p-modes ASTROPHYSICAL JOURNAL
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• Relativistic diskoseismology. II. Analytical results for c-modes ASTROPHYSICAL JOURNAL
  Silbergleit, A. S., Wagoner, R. V., Ortega-Rodriguez, M.
  2001; 548 (1): 335-347

• Relativistic gravity and some astrophysical applications Summer School on Astroparticle Physics and Cosmology
  Wagoner, R. V.
  INT CENTRE THEORETICAL PHYSICS.2001: 1-?

• Gravitational radiation evolution of accreting neutron stars 20th Texas Symposium on Relativistic Astrophysics
  Wagoner, R. V., Hennawi, J. F., Liu, J. S.
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  Ortega-Rodriguez, M., Wagoner, R. V.
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• An analytic approximation for plane-parallel compton scattering near accretion disks ASTROPHYSICAL JOURNAL
  Wagoner, R. V., Silbergleit, A. S.
  1999; 527 (1): 254-261

• Relativistic diskoseismology Conference on Processes in Astrophysical Fluids on the Occasion of the 60th Birthday of Giora Shaviv
  Wagoner, R. V.
  ELSEVIER SCIENCE BV.1999: 259–69

• Scalar-tensor cosmologies and their late time evolution PHYSICAL REVIEW D
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  1998; 58 (12)

• Nucleosynthesis constraints on scalar-tensor theories of gravity PHYSICAL REVIEW D
  Santiago, D. I., Kalligas, D., Wagoner, R. V.
  1997; 56 (12): 7627-7637


• Diskoseismology - signature of AGN and stellar mass black-hole accretion disks. Wagoner, R., Nowak, M., Akerlof, C. W., Srednicki, M. A.
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- **DISKOSIEISMOLOGY - PROBING ACCRETION DISKS 2. G-MODES, GRAVITATIONAL-RADIATION REACTION, AND VISCOSITY** ASTROPHYSICAL JOURNAL
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- **OBTAINING THE METRIC OF OUR UNIVERSE** PHYSICAL REVIEW D
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- **CONTINUUM OPACITY PRODUCED BY SPECTRAL-LINES IN SUPERNOVAE AND SIMILAR EXPANSIONS** ASTROPHYSICAL JOURNAL
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Robert Wagoner
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