

Prof. J. TODD HOEKSEMA, Ph.D.

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History, Education, and Professional Experience

The Prairie School, Racine, WI; High School Valedictorian, 1974.

Calvin College, Grand Rapids, MI; B.A. in Physics (with Honors) and Mathematics, 1978.

Stanford University, Dept. of Applied Physics; MS, 1980; PhD, 1984.

Research Associate, Center for Space Science and Astrophysics, Stanford University, 1984-89.

Senior Research Scientist, Hansen Experimental Physics Lab., Stanford University, 1989 - 2022.

NASA HQ, Heliophysics Discipline Scientist (IPA), 2000-4.

Professor (Research) of Physics, Stanford University, since 2022.

Profile

Primary scientific interests include the physics of the Sun and heliosphere, the solar cycle, photospheric and coronal magnetic fields, space weather, solar velocity fields, helioseismology, solar-terrestrial relations, and education and public outreach. Experience includes research administration, system and scientific programming, and the design, construction, and operation of instruments to measure solar vector magnetic and velocity fields from ground and space.

Memberships & Leadership Positions

American Astronomical Society, Solar Physics Division; **SPD Chair/Vice-Ch.**, 2006-10

American Geophysical Union, Space Physics and Aeronomy Division; **SH Secretary**, 2015-19.

International Astronomical Union. American Scientific Affiliation. AAAS.

Selected Activities and Awards

Calvin College Distinguished Alumni, 2017.

NASA Distinguished Public Service Medal, 2006.

Director, COFFIES DRIVE Science Center, 2020-; Wilcox Solar Observatory, 2004-.

SDO/HMI **PI** 2022-; Magnetic Science Team Leader, since 2004. SOHO/MDI Instrument Scientist, 1986-2011. EPO: Principal Scientist, Stanford SOLAR Center, 1996-2017.

NASA Heliophysics Roadmap Teams: **Chair** 2005-6; HQ Rep. 2002; Member, 1999.

Chair: NAS SSB CSSP (co-ch), 2013-6; AURA Solar Observatory Council, 2010-3; SPD Metcalf Travel Award Comm., 2010-18; NSO/SOLIS Science Advisory Group, 1997-2001.

Member: NSO Director Search Comm., 2023; AAS Comm. on Astronomy & Public Policy (CAPP), 2012-2022. AURA Board of Directors, 2018-24, 2010-13. 2012 Solar & Space Physics Decadal Survey. 2020 & 2010 Astronomy Decadal Survey GB-OIR Program Panel; Solar Cycle 24 Prediction Panel, SWPC. Scientific Organizer, numerous meetings & sessions.

Publications and Presentations: Author/Co-author of more than 200 [publications](#) and of more than 200 contributed and invited presentations: [before 2005](#) and [after 2005](#).

Hoeksema, J.T., et al., 2018, *On-Orbit Performance of the Helioseismic and Magnetic Imager Instrument Onboard the Solar Dynamics Observatory*, Solar Physics 293, AID 45.

Chen, R., J. Zhao, S. Hess Webber, Y. Liu, J.T. Hoeksema, M. DeRosa, 2022, *Inferring Maps of the Sun's Far-side Unsigned Magnetic Flux from F-S Helioseismic Images Using ML Techniques*, [ApJ 941, 197](#).

Hoeksema, J.T. et al., 2014, *The Helioseismic and Magnetic Imager (HMI) Vector Magnetic Field Pipeline: Overview and Performance*, Solar Physics; DOI: [10.1007/s11207-014-0516-8](https://doi.org/10.1007/s11207-014-0516-8).

Hoeksema, J.T. et al.; *The CGEM Model: Using HMI Vector Magnetogram and Doppler Data to Determine Coronal Magnetic Field Evolution*, 2020, ApJS 250, 28; [2020ApJS..250..28H](#).

Fouhey, D, R Higgins, S Antiochos, G Barnes, M DeRosa, J.T Hoeksema, K.D Leka, Y Liu, P Schuck, T Gombosi, *Large-scale Spatial Cross-calibration of Hinode/SOT-SP and SDO/HMI*, [ApJS 264,49F](#).