

DR. ALEXA J. HALFORD

SPACE WEATHER PHYSICIST

SPACE SCIENCES DEPARTMENT



Dr. Alexa Halford joined The Aerospace Corporation in the Space Science Department in 2017. Her area of expertise is understanding the near-Earth space environment, specifically radiation belt dynamics and related space weather. Her research areas include wave-particle dynamics, loss of energetic particles to the upper atmosphere, and magnetosphere/ionosphere/atmosphere interactions.

Currently, Halford is co-leading the Center for Assessing Space-weather Impacts and Innovation (CASII). CASII is a new private/public/academic partnership focused on completing fundamental and applied science targeted to address the needs of those affected by space-weather. In addition, Halford is working with the REACH project developing tools to assess the radiation environment in low Earth orbit. She is also co-leading the Assessment of Understanding and Quantifying Progress working group, which is part of the NASA CCMC-led International Forum for Space Weather Capabilities Assessment.

Halford has participated in peer-reviewed papers and invited talks at both domestic and international conferences. In addition to Halford's research, she has completed extensive service to the research community through organizing conferences, workshops, and sessions; served on multiple committees, including the NASA Living with a Star TR&T steering committee and the American Geophysical Union SPA Fellows nomination committee; served on review panels for NASA and NSF; and acted as a reviewer for numerous academic journals. She has also convened and chaired multiple sessions on implicit bias within the space physics and Earth sciences research community in an effort to cultivate a more inclusive, diverse, and safe environment for complete innovative and transformative research.

Education

Halford completed her bachelor's degree at Augsburg University with a double major in mathematics and physics. She earned a master's degree in astrophysics and planetary sciences from the University of Colorado Boulder and a Ph.D. in physics at University of Newcastle Australia.

Awards and Honors

Halford received the Goddard Heliophysics Science Division Peer award in 2017 and the Augsburg First Decade Award in 2013, which is presented to Augsburg graduates of the past 10 years who have made significant progress in their professional achievements and contributions to the community. This award celebrates how the awardee has exemplified the mission of the College: to prepare future leaders in service to the world. Halford was also awarded the Dartmouth Space Grant Young Visiting Scientist fellowship 2012–2013 for her initial postdoctoral position with the NASA BARREL mission.

Affiliations

Halford is a member of the American Geophysical Union (AGU), and the Committee on Space Research (COSPAR).

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