

An Advanced Neutron Spectrometer for Future Manned Exploration Missions

An Advanced Neutron Spectrometer (ANS) is being developed to support future manned exploration missions. This new instrument uses a refined gate and capture technique that significantly improves the identification of neutrons in mixed radiation fields found in spacecraft, habitats and on planetary surfaces. The new instrument is a composite scintillator comprised of PVT loaded with lithium-6 glass scintillators. We will describe the detection concept and show preliminary results from laboratory tests and exposures at particle accelerators.

Author list:

Mark Christl	NASA/MSFC (Corresponding Author)
Jeffrey A. Apple	NASA/MSFC
Mark D. Cox	NASA/MSFC
Kurtis L. Dietz	NASA/MSFC
Christopher C. Dobson	NASA/MSFC
Brian F. Gibson	NASA/MSFC
David E. Howard	NASA/MSFC
Amanda C. Jackson	NASA/MSFC
Mathew J. Kayatin	NASA/MSFC
Evgeny N. Kuznetsov	UAH
Joseph K. Norwood	NASA/MSFC
Garrick W. Merrill	NASA/MSFC
John W. Watts	UAH
Mohammad S. Sabra	USRA
Dennis A. Smith	NASA/MSFC
Miguel A. Rodriguez-Otero	NASA/MSFC