MARTIN H. ISRAEL

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EDUCATION:

University of Chicago	Physics	S.B.	1962
California Institute of Technology	Physics	Ph.D.	1969

FACULTY APPOINTMENTS:

Washington University	Professor of Physics	1975-present
California Institute of Technology	Visiting Associate	1979-1980
Washington University	Associate Professor of Physics	1972-1975
Washington University	Assistant Professor of Physics	1968-1972

ADMINISTRATIVE APPOINTMENTS:

Washington University	Vice Chancellor for Academic Planning	1995-1997
Washington University	Vice Chancellor	1994-1995
Washington University	Dean, Faculty of Arts and Sciences	1988-1994
Washington University	Acting Dean, Faculty of Arts and Sciences	1987-1988
Washington University	Associate Director, McDonnell Center for the Space Sciences	1982-1987

PROFESSIONAL SOCIETY MEMBERSHIP

American Physical Society (Fellow)
American Astronomical Society
American Association for the Advancement of Science
American Association of University Professors

HONORS AND AWARDS

Alfred P. Sloan Fellow	1970-1972
NASA Exceptional Scientific Achievement Award	1980

PROFESSIONAL SERVICE

NRC-Space Science Board Radiobiological Advisory Panel	1971-1973
NRC-Geophysics Research Board Balloon Study Panel	1974-1975
Bevalac Users Group Executive Committee (chair, 1975)	1974-1975
NRC Committee on Space Astronomy and Astrophysics	1976-1979
NASA High Energy Astrophysics Management Operations Working Group	1976-1984
APS Astrophysics Division Executive Committee (chair 1980-81)	1975-1977 &1979-1982
NASA Cosmic-Ray Program Working Group, co-chair	1980-1987
AAS High Energy Astrophysics Division Executive Committee	1982-1984
19th International Cosmic Ray Conference, National Organizing Committee, chair	1982-1985
AAU Space Science Working Group Steering Committee (chair 1983-1985)	1983-1988
NASA Particle Astrophysics Magnet Facility Definition Team (chair)	1985-1987
NASA Space and Earth Sciences Advisory Committee	1986-1988
NASA Astrophysics Council	1986-1987
NASA Structure and Evolution of the Universe Subcommittee	1996-1999
NASA GSFC Space Science Visiting Committee (chair, 2000-2001)	1997-2001

NASA ACCESS Working Group Steering Committee (chair)	1998-2000
NASA Space Station Utilization Advisory Subcommittee	1998-2002
NASA GSFC Center Director's Visiting Committee	2000-2001
Advances in Space Research, Editor of Vol 24 (4), *Origin and Acceleration of Cosmic Rays,* Proceedings of COSPAR Symposium E1.3, July 2000	2000-2001
St. Louis Science Center Scientific Advisory Committee	2000-2002
NASA Office of Space Science Strategic Planning Workshop	Nov. 2002
NASA Scientific Ballooning Roadmap Team (chair)	2004-2005 & 2007-2008

SELECTED PUBLICATIONS

W. R. Binns, R. K. Fickle, T. L. Garrard, **M. H. Israel**, J. Klarmann, E. C. Stone and C. J. Waddington (1982) The abundance of the actinides in the cosmic radiation as measured on HEAO-3. *Astrophysical Journal* **261**, L117-L120.

W. R. Binns, T. L. Garrard, P. S. Gibner, **M. H. Israel**, M. P. Kertzman, J. Klarmann, B. J. Newport, E. C. Stone, and C. J. Waddington (1989) The abundances of ultraheavy elements in the cosmic radiation: results from HEAO-3. *Astrophysical Journal* **346**, 997-1009.

N. E. Yanasak, M. E. Wiedenbeck, R. A. Mewaldt, A. J. Davis, A. C. Cummings, J. S. George, R. A. Leske, E. C. Stone, E. R. Christian, T. T. von Rosenvinge, W. R. Binns, P. L. Hink, and **M. H. Israel** (2001) Measurement of the Secondary Radionuclides ^{10}Be, ^{26}Al, ^{36}Cl, ^{54}Mn, and ^{14}C and Implications for the Galactic Cosmic-Ray Age. *Astrophysical Journal* **563,** 768-792.

S. M. Niebur, L. M. Scott, M. E. Wiedenbeck, W. R. Binns, E. R. Christian, A. C. Cummings, A. J. Davis, J. S. George, P. L. Hink, **M. H. Israel**, R. A. Leske, R. A. Mewaldt, E. C. Stone, T. T von Rosenvinge, and N. E. Yanasak (2003) Cosmic-Ray Energy Loss in the Heliosphere: Direct Evidence from Electron-Capture-Decay Secondary Isotopes. *Journal of Geophysical Research – Space Phys.* **108**(A10), 8033-8041.

M. H. Israel, W. R. Binns, A. C. Cummings, R. A. Leske, R. A. Mewaldt, E. C. Stone, T. T. von Rosenvinge, M. E. Wiedenbeck (2005) Isotopic Composition of Cosmic Rays: Results from the Cosmic Ray Isotope Spectrometer on the ACE Spacecraft. *Nuclear Physics A* **758**, 201c-208c.

S. W. Barwick, J. J. Beatty, D. Z. Besson, W. R. Binns, B. Cai, J. M. Clem, A. Connolly, D. F. Cowen, P. F. Dowkontt, M. A. DuVernois, P. A. Evenson, D. Goldstein, P. W. Gorham, C. L. Hebert, **M. H. Israel**, J. G. Learned, K. M. Liewer, J. T. Link, S. Matsuno, P. Miočinović, J. Nam, C. J. Naudet, R. Nichol, K. Palladino, M. Rosen, D. Saltzberg, D. Seckel, A. Silvestri, B. T. Stokes, G. S. Varner, and F. Wu, (2006) Constraints on Cosmic Neutrino Fluxes from the Antarctic Impulsive Transient Antenna Experiment, *Phys. Rev. Lett.* **96**, 171101-1-4.

RESEARCH:

Professor Israel's principal research interest has been cosmic-ray astrophysics, the study of atomic nuclei that have been accelerated to high energy by supernova explosions in our Galaxy. Determination of the elemental and isotopic composition of these nuclei sheds light on those explosive processes and also on the mechanisms of nucleosynthesis, whereby heavier elements are manufactured from lighter elements by stellar nuclear reactions.

Professor Israel was principal investigator of the Heavy Nuclei Experiment, which successfully flew on the HEAO-3 spacecraft in 1979-81 measuring abundances of the rare cosmic-ray

ultraheavy (UH) elements with atomic number greater than 28. The results of that instrument, along with a related British instrument that flew at about the same time, were the best available measurements of those rare cosmic rays for over twenty years.

During a ten-year period, 1987-97, he was engaged full-time in senior university administration. In July 1997 he returned to full-time research and teaching.

He is a co-investigator on a balloon-flight instrument to measure UH cosmic rays, the Trans-Iron Galactic Element Recorder (TIGER) which successfully flew above Antarctica for nearly 32 days in December-January 2001-02 and for 18 days in December-January 2003-04. Results from that instrument have been the basis for the Ph.D. theses of three graduate students.

Professor Israel is a co-investigator on a space-flight instrument measuring the isotopic composition of cosmic rays (the Cosmic Ray Isotope Spectrometer, CRIS), which has been returning data continuously since its launch in August 1997 on the Advanced Composition Explorer, ACE, spacecraft.

Since early 2004 he has been a collaborator in the ANITA (ANtarctic Impulsive Transient Antenna) project to observe ultra-high-energy neutrinos interacting in the Antarctic ice, using an array of radio antennas on a stratospheric balloon. ANITA made its first flight over Antarctica in December-January 2006-07, and preparation is underway for a second flight a year from now, as data from the first flight is being analyzed.