THE UNIVERSITY OF MICHIGAN
REGENTS COMMUNICATION

Item for Information

Received by the Regents
July 17, 2008

Subject: Henry Russel Lecturer for 2009

I am pleased to inform you that the Russel Awards Faculty Advisory Committee, chaired by Dean Janet A. Weiss, selected Lennard Fisk, Thomas M. Donahue Distinguished University Professor of Space Science, and Professor of Atmospheric, Oceanic and Space Sciences, as the Henry Russel Lecturer for 2009. The Russel Lecture will be delivered by Professor Fisk on March 10, 2009.

The Henry Russel Lectureship is the highest honor that the University bestows upon a senior member of its faculty. A description of the contributions of this extraordinary faculty member is attached.

Respectfully submitted:

Mary Sue Coleman
President

July 2008

Attachment

Lennard A. Fisk

After receiving his Ph.D. in Applied Physics from the University of California, San Diego in 1969, Professor Fisk has served as a Postdoctoral Research Fellow and then Astrophysicist at NSAS/Goddard Space Flight Center until joining the faculty at the University of New Hampshire where he served from 1976 through 1987 as a faculty member in the Department of Physics, Director of the University's Space Science Center, Director of Research, and Vice President for Research and Financial Affairs. From 1987 through 1993, he served as Associate Administrator for Space Science and Applications at the National Aeronautics and Space Administration in Washington, D.C. Professor Fisk joined the Department of Atmospheric, Oceanic, and Space Sciences Department at the University of Michigan in 1993. At the University of Michigan, Professor Fisk has been honored as the Thomas M. Donahue Collegiate Professor of Space in 2003 and as the Thomas M. Donahue Distinguished University Professor of Space Science in 2006.

Professor Fisk was elected to the National Academy of Sciences in 2003. In the citation issued at his election, it was noted that he is "a world renowned theorist recognized for his incisive ideas and innovative theories that form the framework for understanding many important processes in our solar system"

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Professor Fisk is considered to be one of the most innovative thinkers in space science. He has introduced new ideas and concepts in the understanding of the atmosphere of the Sun and its extension into space to form the heliosphere. In 1974 he introduced a theory for the origin of anomalous cosmic rays, which predicted that these particles result from interstellar neutral gas that is ionized and accelerated in the solar wind. The model predicted that the particles would be singly-charged, a concept that was controversial when first proposed, but confirmed years later by space experiments specifically designed to check this prediction. In 1976 he pioneered the development of numerical models for the acceleration and propagation of energetic particles in the heliosphere and the modulation of cosmic rays. The methods he developed form the basis of many cosmic ray transport models of today. To explain Helium-3 rich solar cosmic rays, Fisk introduced in 1978 a new class of plasma heating mechanisms that can dramatically alter the composition of solar energetic particles, and greatly enrich the abundance of rare isotopes. Starting in 1996, he began developing a model for the solar magnetic field based on the conservation of open magnetic flux. Fisk's field model explains a wide range of recent observations, including the magnetic field reversal of the Sun. In recent years, he has developed theories for the acceleration of energetic particles in the heliosphere, providing an explanation for the recent discovery that superthermal particles accelerated in a wide variety of settings in the heliosphere, and perhaps in other astrophysical settings, have a common spectral shape.

Professor Fisk has received many honors for his research. He is an elected Member of the International Academy of Astronautics (IAA) and a Foreign Member of Academia Europaea, the pan-European academy for the arts, sciences and letters. He is a Fellow of the American Geophysical Union, the recipient of the IAA Basic Science Award twice (1997, 2007) and the Space Science Award of the American Institute for Aeronautics and Astronautics (1994). Professor Fisk also received the Atwood Award in 2007, the highest award of the College of Engineering.

Professor Fisk has served on numerous advisory committees for the National Research Council (NRC), for NASA, and for and the National Science Foundation. He currently serves as the Chair of the NRC Space Studies Board, which is the senior advisory committee for all of the nation's space science activities.

For his service to the National Academies (the National Academy of Science, the National Academy of Engineering, and the Institute of Medicine), Professor Fisk was named a National Associate of the National Academies, a lifetime distinction.

Professor Fisk has provided service to the University of Michigan, serving as the Chair of the Department of Atmospheric, Oceanic, and Space Sciences (AOSS) from 1993-2003.