Welcoming remarks by Dr. Walter Schimmerling, Program Scientist

Dear Colleagues:

Welcome to the Sixth Annual Space Radiation Health Investigators' Workshop. We are fortunate to have almost one hundred scientists attending, coming from universities, national laboratories, NASA centers, and industry, and from the United States, Japan, and Europe. The first of these meetings was initiated by Stu Nachtwey, at Johnson Space Center, whose vision maintained radiation research at NASA for many years. We all owe a debt of gratitude to Stu and I would like to ask that you join me in a few moments of silence to remember him.

We will explore space. Last week I was privileged to attend a ceremony commemorating the first 5 years of operation of the Loma Linda University Medical Center Proton Therapy synchrotron, of which my good friend and colleague, James Slater, is the director. The NASA Administrator, Mr. Goldin, was a featured speaker because Loma Linda has also started construction of a space radiobiology laboratory, that will house research of overlapping relevance to space and therapy. In his speech, Mr. Goldin evoked the image of mankind poised at the edge of the sea, both the literal sea from which we have sprung and whose distances the great explorers risked, and the figurative sea represented by space and its challenges. Mr. Goldin made it clear that, when another planet is discovered orbiting a star less than a lifetime away, a planet with an atmosphere containing water and oxygen, and methane to indicate the presence of life, another blue planet, when such a planet is discovered as it inevitably will, humans need to be ready to meet that challenge, to voyage toward it, and to address the greatest riddle of all, whether we are or are not, alone in the universe.

In order to prepare for that voyage, humans will live and work on the moon and on Mars. But, before we can do so, we will need to learn the constraints imposed by radiation, due both to galactic cosmic rays and solar disturbances, on human crews and their life support. The limits need to be known accurately, because the cost of overdesigning to compensate for our ignorance may compromise the missions. The NASA Space Radiation Health program is intended to provide predictions with an uncertainty that is, in the long term, as small as laboratory science tested in spaceflight can make. In the short term, as embodied in the Radiation 2000 initiative, it is intended to provide the best predictions and the best estimate of their uncertainty that can be made in time for the design of the first exploration missions.

Exploration has been celebrated as a manifestation of human genius in every civilization, whether in China or Polynesia or Phoenicia and Greece, where ours originated. On a remote dawn many centuries ago, Homer tells us of that a "band of swart men went down to their ships in the winedark Aegean sea," to begin the Odyssey of our particular civilization. We are fortunate that our work, which this workshop is intended to further, will make an essential contribution to that even greater adventure called space exploration. Let us begin.