

Biography: Professor Clive Dyer

Clive gained 1st class honours in the Natural Sciences Tripos at Christ's College Cambridge and has since worked in space and radiation research for more than 40 years, authoring more than 200 publications in the field. He studied for his PhD in the Cosmic Ray Group at Imperial College London working on the HEOS-1 and Ariel-5 spacecraft. This was followed by a National Academy of Sciences Research Associateship at NASA Goddard Space Flight Center analyzing data from gamma-ray spectrometers carried on the Apollo 15 to 17 and Apollo-Soyuz missions. Following this he joined the UK Ministry of Defence as Senior Lecturer in the Department of Nuclear Science at the Royal Naval College Greenwich and subsequently transferred to the Space Department at the Royal Aircraft Establishment Farnborough where he founded the Radiation Environments, Effects and Hardening Team. During his time at Farnborough he became a Senior Fellow and Chief Scientist (Space) and received the Geoffrey Pardoe Space Award of the Royal Aeronautical Society. For more than twenty years he led a programme of research into radiation environments and effects. He has flown radiation monitors on a wide range of aircraft (including Concorde), twelve Space Shuttle missions, the MIR Space Station and a variety of spacecraft in orbits from LEO to interplanetary space. He continues to provide consultancy in these areas and is Visiting Professor at the University of Surrey Space Centre. He has been actively involved with the IEEE Nuclear and Space Radiation Effects Conference since 1983 and with the European Conference on Radiation Effects on Components and Systems since 1991, serving as a short course lecturer at both. In 2010 he was honoured with the Radiation Effects Prize of the IEEE Nuclear and Plasma Sciences Society. During the last two years he has been actively involved with the Royal Academy of Engineering Study on "Extreme Space Weather: impacts on engineered systems and infrastructure," which reported in February 2013, as well as with the resurrection of the UK Cosmic Ray Advisory Group on Aircrew Dose and the IEC Technical Standard on Single Event Effects in Avionics.

Space Weather: past, present and future

Summary

Space Weather is the influence of space environment variability on technology and human health. While our Sun is remarkably constant in the wavelengths that illuminate and warm us, it is extremely variable in other wavelengths and in its emission of plasma and energetic particles. Mankind's increasing dependence on technology is creating new concerns and Space Weather has finally captured the attention of politicians. The question is being asked as to what would be the consequences in today's high technology society of a repeat of the major solar flare event observed in white-light by Richard Carrington in 1859. The lecture will review the history, current status and recommendations for future strategies, particularly with respect to radiation effects.