

Modern Space System Issues**Session Chair: Kweder, Cohen****Focus:** Environmental issues and their impact on space system design and operation with emphasis on radiation effects

Speaker	Author	Title	Phone No	e-mail	Company	Paper Rcvd
1 Janet Barth -024		Natural Radiation Environment Definition for Electronic System Design	301 286-8046	jbarth@pop700.gsfc.nasa.gov	NASA	24
2 Glenn Kweder-008		Nuclear Weapons Impact on LEO Space Systems	703 971-3108x	gkweder@logicon.com	RDA	8
3 Joseph Allen-006		Historical and Recent Solar Activity and Geomagnetic Storms Affecting Spacecraft Operations	303 497-7284	joe.h.allen@noaa.gov	NGC	6
4 Richard Mahoney-010		GPS Block IIF Survivability Challenges	310 336-5581	richard.w.mahoney@aero.org	Aerospace	10
5 Carl Bloemker-007		DOD Spacecraft Microelectronics Requirements	505 344-7455	cbloemker@jaycor.com	Jaycor	7
6 Ken LaBel		NASA ERC Program	301-286-3966	ken.label@gsfc.nasa.gov	NASA	59
7 Joe Marshall		Improving SC PL Processing by using the RAD750 Processor	703 367-1326	joe.marshall@baesystems.com	BAE Systems	58

[Breakout](#)

This session will discuss current challenges to space systems that have to operate in the harsh natural space radiation environment as well as possible nuclear environments that can be several orders of magnitude worse. The session will include a description of the natural space radiation environment by Dr. Janet Barth of Goddard Spaceflight Center. Mr. Ken LaBel, also from Goddard, will discuss the feasibility of using commercial microelectronics in this challenging environment. Mr. Carl Bloemker of SAIC will provide a military perspective on the use of commercial microelectronics in spacecraft. Mr. Joe Allen, from the National Geophysical Data Center in Boulder Colorado will discuss satellite anomalies and failures over the past few years as a result of the natural space environment. Richard Mahoney, from the Aerospace Corporation will discuss the challenges involved in hardening the Global Positioning Satellites (GPS IIF) to survive nuclear as well as natural space threats. Glenn Kweder from Logicon, and co-chair for the session, will discuss possible Third World nuclear threats that could put low earth orbit satellites at risk. Joe Marshall of BAE Systems will discuss the increased capabilities of spacecraft that utilize the RAD750 processor.