Headquarters U.S. Air Force

Integrity – Service – Excellence

Air Force Space Weather Briefing

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Air Force Weather
20 November 2014
Near-Earth Space Environment

U.S. AIR FORCE

INTEGRITY - SERVICE - EXCELLENCE

RADIATION BELTS
- 30+ Satellites
- Geomagnetic Storming
- High Energy Particles

MAGNETOSPHERE
- 50+ Satellites
- Electromagnetic Radiation

THERMOSPHERE
- 25+ Satellites
- Scintillation

MESOSPHERE

IONOSPHERE
- Solar Radio Burst
- High Energy Particles

STRATOSPHERE

TROPOSPHERE

UNCLASSIFIED

SEAMLESS ENVIRONMENT
Space Weather Effects

Electromagnetic Radiation

- HF RADIO BLACKOUT
- SATCOM INTERFERENCE
- RADAR INTERFERENCE
- SATELLITE ORBIT DECAY
- GEOLOCATION ERRORS

Arrival: 8 mins
Duration: 1-2 hours

High Energy Charged Particles

- SATELLITE DISORIENTATION
- SPACECRAFT DAMAGE
- FALSE SENSOR READINGS
- LAUNCH PAYLOAD FAILURE
- “HI FLIER” RADIATION HAZARD

Arrival: 15 mins to few hours
Duration: Days

Low-Medium Energy Charged Particles

- GEOLOCATION ERRORS
- SATCOM DISRUPTIONS
- SPACECRAFT ANOMALIES
- SATELLITE ORBIT DECAY
- RADAR FALSE TARGETS

Arrival: 1-4 days
Duration: Days

DoD Missions/Systems Affected

- Space Situational Awareness (SSA)
- Space object tracking
- Satellite anomaly attribution
- Tactical Comm. (HF – air, land & sea)
- Space-Based Comm. (UHF SATCOM)
- U-2 Operations
- Missile Defense Radars
- GPS aided systems (munitions, navigation)
- Space Surveillance (intel, targeting)
- Space launch & satellite operations
Space Weather Operations Center (SpaceWOC) located at Air Force Weather Agency HQ, Offutt AFB, Nebraska provides mission-tailored analyses, forecasts and warnings of system-impacting space weather to national agencies, DoD operators, warfighters and decision makers.
SUBJECT: AFWA EVENT WARNING REPORT ISSUED AT 0802Z 20 JAN 2013
PART A. SOLAR RADIATION DOSAGE EVENT (UPDATE): A SOLAR PROTON EVENT IS IN PROGRESS. BELOW IS AN ESTIMATE OF THE MAXIMUM RADIATION IN MILLIREMS BASED ON THE GOES SPACECRAFT PROTON MONITORS. YOU WILL RECEIVE AN UPDATE EVERY HOUR OR WHENEVER ONE OF THE CATEGORIES BELOW IS CROSSED. THE CURRENT RADIATION DOSE CALCULATION AS OF 0701Z IS 212 MREMS.

CATEGORIES ARE:
GREEN = LESS THAN 10 MREMS
YELLOW = 10 – 99 MREMS
RED = 100 OR GREATER MREMS

PART B. N/A
PART C. REMARKS:
ISSUED BY THE AIR FORCE WEATHER AGENCY, OFFUTT AFB, NE. IF YOU HAVE QUESTIONS OR REQUIRE FURTHER INFORMATION, CALL THE DUTY FORECASTER AT DSN 272-8087, COMMERCIAL 402-232-8087. INFORMATION CAN ALSO BE OBTAINED AT https://weather.afwa.af.mil UNDER THE SPACE WEATHER LINK.
FORECASTERS: Bauman/ Otero

40K+ products daily
Questions