

Third Space Weather Summit Held for Industry and Government Agencies

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The potential for space weather effects has been increasing significantly in recent years. For instance, in 2008 airlines flew about 8000 transpolar flights, which experience greater exposure to space weather than nontranspolar flights. This is up from 368 transpolar flights in 2000, and the number of such flights is expected to continue to grow. Transpolar flights are just one example of the diverse technologies susceptible to space weather effects identified by the National Research Council's *Severe Space Weather Events—Understanding Societal and Economic Impacts: A Workshop Report* (2008). To discuss issues related to the increasing need for reliable space weather information, experts from industry and government agencies met at the third summit of the Commercial Space Weather Interest Group (CSWIG) and the National Oceanic and Atmospheric Administration's (NOAA) Space Weather Prediction Center (SWPC), held 30 April 2009 during Space Weather Week (SWW), in Boulder, Colo.

Devrie Intriligator (Carmel Research Center, Inc.) and W. Kent Tobiska (Space Environment Technologies (SET)) cochaired the summit. In opening the session, Intriligator praised SWPC and Thomas Bogdan, its director, for implementing CSWIG's request for External Space Weather Data Store (E-SWDS), a near-real time operational database electronic communication method between SWPC and external core partner users.

Bogdan discussed SWPC priorities, goals, and plans. Bogdan said he anticipates that more stable budgets will enable SWPC to continue hardware modernization, hire and train forecasters, and put the ENLIL model into operation. He noted that SWPC is working with NOAA aviation and other core entities on overlapping concerns involving space weather.

David Bouwer (SET), who represented CSWIG during the E-SWDS implementation, praised the SWPC staff, summarized E-SWDS's advantages, and answered questions about E-SWDS.

Intriligator raised CSWIG's concerns about the quality and availability of data, including data from a possible replacement for the Advanced Composition Explorer (ACE) satellite at Lagrange point L1 and from satellites such as National Polar-orbiting Operational Environmental Satellite System (NPOESS), Geostationary Operational Environmental Satellites (GOES), and Defense Meteorological Satellites Program (DMSP). Intriligator stressed that a rapid launch of an L1 replacement is urgently needed because ACE is unable to return reliable real-time solar wind data during space weather events such as the 2003 Halloween storm (NOAA Technical Memorandum OAR SEC-88, "Halloween space weather storms of 2003"). In addition, other ACE instruments, such as its low-energy particle detectors, have suffered degradation. Many space weather forecasts need ACE and other data as inputs. If the crucial real-time input data are not available, the space weather community may not be able to test and validate forecasting models during the upcoming solar maximum.

To address this situation, Bogdan discussed two possible options: buying data from a commercial satellite at L1, and an interagency cooperative launch of Deep Space Climate Observatory (DSCOVR), a satellite that NASA has built but not launched due to funding issues.

Bogdan also summarized the National Space Weather Program (NSWP) participation in the Committee for Space Environmental Sensor Mitigation Options (CSES MO) with Office of Science and Technology Policy and Office of Management and Budget staff.

Michael Bonadonna (Office of the Federal Coordinator for Meteorology) summarized recent NSWP activities, including updating NSWP, determining the scope of CSES MO activities, and organizing the 2009 Space Weather Enterprise Forum. In addition, Bonadonna discussed the 2006 "Report of the Assessment Committee for the National Space Weather Program"

(http://www.nswp.gov/nswp_acreport0706.pdf) recommendations for better coordination between NSWP agencies and the private sector. He also fielded questions on including CSWIG members as official representatives and/or technical consultants in NSWP deliberations. Bonadonna stated that there were no plans to do this. Robert Schunk (Utah State University and chair of SWPC Interest Group) and others advocated that CSWIG and academic representatives regularly participate in NSWP activities because they may have signifi-

cant unanticipated inputs. Bonadonna said that on occasion CSWIG members and others could be consulted.

CSWIG thanked Bogdan, Bonadonna, and other agency representatives for participating in the summit. The next summit will be held during SWW 2010 with teleconferences as needed.

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