



International Cooperation Aspects of Space Weather

Suzanne Parete-Koon

**Office of Space and Advanced Technology (OES/SAT)
Bureau of Oceans, Environment, Science
U.S. Department of State**





Goals of National Space Policy

- Promote U.S. Leadership in Space
- Advance U.S. Foreign Policy, Economic and National Security Interests
- Increase benefits of civil, scientific, and environmental space activities
- Increase Interagency partnerships
- Enable a competitive domestic Commercial space sector
- Encourage International Cooperation on space activities of mutual benefit



The Secretary of State shall carry out diplomatic and public diplomacy efforts to support U.S. space policies, programs and use of capabilities and systems by friends and allies



Space Cooperation at State

- State plays a facilitation, coordination and clearance role in international space cooperation
 - For all USG agencies (including NASA and NOAA)
 - With all foreign governments
- In its coordination role, OES/SAT leads on umbrella agreements
 - Negotiating umbrella agreements
 - Consultations under those agreements
 - Now with 9 countries (Russia, Canada, France, Ukraine, Argentina, Brazil, Norway, Sweden, Hungary)
- Also pushes for space cooperation with specific countries or groups of them for broader foreign policy reasons



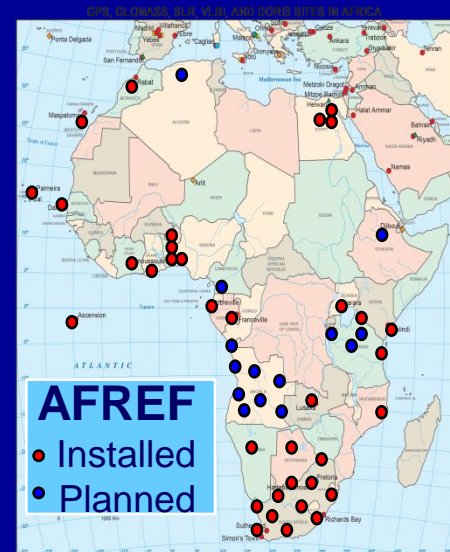
Major OES/SAT Activities

- Lead implementation of GPS international cooperation
 - Bi-lateral Consultations with satellite system providers
 - International Committee on GNSS (ICG)
- International Guidelines for Safe Space Operations and Space Situational Awareness – UN Committee for the Peaceful Uses of Outer Space (UNCOPUOS)
- Advocate and facilitate international aspects of NASA's Space Exploration Program
- Coordinate within State and the National Security Community on policies for space technologies
- **Space Weather is an aspect of all of these**



Space Weather and Diplomacy

- Promote the Peaceful Uses of Outer Space for the benefit of all nations
- Build capacity in the space sciences so that developing countries can take advantage of space-based technologies (e.g., remote sensing or GNSS)
- Use space science as a motivator for broader education programs
 - International Heliophysical Year
 - International Space Weather Initiative





Space Weather and Diplomacy

International Heliophysical Year (IHY)

- OES/SAT has been involved with NASA and the U.S. Air Force , through UNCOPUOS, in the UN Basic Space Science Initiative to deploy ground-based world-wide instrument arrays for the International Heliophysical Year 2007 [UNCOPUOS IHY free magnetometer program] since 2004
- We work closely with our embassy science officers and the local science communities to build an African indigenous capability for research and applications in:
 - GPS, remote sensing, GIS, satellite communications, satellite meteorology, global climate changes, space and atmospheric sciences, and data management, particularly in the sub-Saharan region.



Space Weather and Diplomacy

International Space Weather Initiative

- Initiated by the Heliophysics Science community for endorsement by the United Nation's Committee on the Peaceful Uses of Outer Space
- Three-year work plan to build on the success of the IHY
 - Study universal solar system processes that affect the interplanetary and terrestrial environment
 - Deploy and maintain instrument arrays
 - Public outreach about Space Weather



Space Weather and Diplomacy

US-European Space Situational Awareness Activities

- June 2008 meeting in Washington DC
 - Review of current status of SSA capabilities and exchanged plans for their further enhancement
 - Space Weather Breakout session conducted
- February 2009 meeting in Darmstadt Germany
 - Tracking and data standards
 - Space weather data standards and modeling
 - Future meetings will include separate dialogs for space weather and space object monitoring.



Summary

- As the Space Weather Community transitions from research-focused to operations-focused, it must be acknowledged that formal international cooperation will be more complex
- State has the tools to aid the community in these efforts
 - OES/SAT can advocate for international space weather cooperation activities at the national-level
- In order to facilitate cooperation, State needs to be aware of the specific requirements of the Space Weather Community