

# STEREO Space Weather Group Update

- Group leaders: Dave Webb & Doug Biesecker
- Website updated occasionally:
  - <http://secchi.nrl.navy.mil/spwx/index.php>
  - Webmaster is Lynn McNutt of NRL/SECCHI
- Contains background on SWx, SWx-related meetings, PI SWx studies, tools/projects, references & links
- Member list with email addresses
  - Currently have ~120 members
  - Recent emailing; bounces – **I need updated addresses!**
  - Contact me to join ([david.webb@hanscom.af.mil](mailto:david.webb@hanscom.af.mil)) or request to subscribe at <http://ares.nrl.navy.mil/cgi-bin/majordomo>
- Maintain a list of URLs/links that all PI teams can use
  - Recently added more STEREO CME/event catalog links
  - **Feedback please!**
- Maintain reference list of key SWx papers
  - Recently updated; need **feedback!**
- Tools/Projects list
  - **Feedback:** Need updates from each team
  - Interactions with STEREO Teams & SSC

# STEREO Space Weather Event Pages

- Based on old ISTP Sun-Earth Connection Events site:
  - <http://www-istp.gsfc.nasa.gov/istp/events/>
- Contains an event summary, online data, modeling & links to other data
- First STEREO SWx event was Dec. 13-15, 2000
- Event just added: May 19-22, 2007
- Need your **feedback** on these Event pages!
  - Incorporate or link to other STEREO data:
    - Beacon (NRT quicklook)
    - SECCHI & SWAVES imagery
    - PLASTIC & IMPACT in-situ data
    - Modeling/simulation results
  - Need more geo inputs!
  - Try to incorporate new events/pages soon after events occurrence

# SPACE WEATHER TOOLS

## General:

- ❖ Geometric Localization of STEREO CMEs (*V. Pizzo & D. Biesecker, 2004; NOAA*)
- ❖ WSA Model Predictions (*N. Arge, J. Luhmann, D. Biesecker; AFRL, UCB, NOAA; Arge & Pizzo, 2000*)  
Leslie Mayer work, SWPC, incorporating STEREO locations into the WSA model. Will resemble standard output at: <http://www.swpc.noaa.gov/ws/> but w/ ST A & B added

## CME Detection:

- ❖ CACTUS – Computer Aided CME Tracking (*E. Robbrecht & D. Berghmans, 2005; ROB*)  
Latest COR2 runs at <http://sidc.oma.be/cactus/>
- ❖ SEEDS – Solar Eruptive Event Detection System (*J. Zhang et al.,; GMU*)  
Being tested/used on LASCO & SECCHI CMEs:  
<http://spaceweather.gmu.edu/seeds/index.php>
- On-board Automatic CME Detection Algorithm (*E. De Jong, P. Liewer, J. Hall, J. Lorre & R. Howard*) ; *JPL, NRL* Not implemented?

## CME-Related Features Detection:

- ❖ Computer Aided EUVI Wave and Dimming Detection (*O. Podladchikova, D. Berghmans, A. Zhukov; ROB; Podladchikova & Berghmans, 2005*)  
Tested on SOHO EIT images: <http://sidc.oma.be/nemo/>. SECCHI soon?
- Velocity Map Construction (*J. Hochedez, S. Gissot; ROB*)
- Automatic Solar Feature Classification (*D. Rust, P. Bernasconi; JHU/APL*)

# SPACE WEATHER – ENABLING PROJECTS

- ❖ **Identifying and Tracking CMEs with the Heliospheric Imagers** (*R. Harrison, C. Davis; RAL*)
- ❖ **Structural Context of Heliosphere Using SMEI Data** (*D. Webb, B. Jackson; BC/AFRL, UCSD; Jackson et al., 2006*)
- **Interplanetary Acceleration of ICMEs** (*M. Owens; BU*)
- **Relationship Between CMEs and Magnetic Clouds** (*S. Matthews; MSSL*)
- **3D Structure of CMEs** (*V. Bothmer, H. Cremades, D. Tripathi; MPI, Ger., Cambridge, UK; Cremades & Bothmer, 2004*)

# DATA BROWSERS AND VIEWERS

- ❖ **STEREO Science Center Real-Time Data Pages** (*W. Thompson et al*)  
[http://stereo-ssc.nascom.nasa.gov/beacon/beacon\\_secchi.shtml](http://stereo-ssc.nascom.nasa.gov/beacon/beacon_secchi.shtml)
- ❖ **Solar Weather Browser** (*B. Nicula, D. Berghmans, R. van der Linden; ROB*)  
<http://sidc.oma.be/SWB/>
- ❖ **STEREO Key Parameters** (*C. Russell & IMPACT, PLASTIC & SWAVES teams; UCLA*)  
<http://www-ssc.igpp.ucla.edu/forms/stereo/heliocentric.html>
- ❖ **Carrington Rotation In-situ Browser** (*J. Luhmann, P. Schroeder UCB*)  
[http://sprg.ssl.berkeley.edu/impact/data\\_browser.html](http://sprg.ssl.berkeley.edu/impact/data_browser.html).
- ❖ **JAVA-3D Synoptic Information Viewer** (*J. Luhmann, P. Schroeder UCB*)
- ❖ **Radio Monitoring and CME Data Pages** (*M. Pick et al.*)  
<http://secchirh.obspm.fr>.

**THE END**

# Incorporating Data from Other Sources

- **Existing Data:** ACE, Wind WAVES & EPACT (MeV protons), SOHO, TRACE, (SXI), Hinode, Ulysses, SMEI, IPS
  - **Near-future Data:** SDO, MWA/IPS (Faraday rotation), FASR, new heliospheric imagers, Sentinels & Solar Orbiter (HELIX)  
**Are special arrangements needed?**
- **CCMC use of STEREO data as inputs to models**
  - Clearly has space weather context
- **Future SWx meetings:**
  - Updates at all SWGs & SECCHI Consortia
  - Separate Space Weather workshop?
- **Interfaces with:**
  - 3D Reconstruction & Visualization Team
  - Virtual observatories
  - IHY (CIPs related to STEREO data & analyses)
  - Outreach aspects
    - With NASA EP/O & PAO efforts; Press Releases?
    - A feature article in Space Weather journal?
- **Other ideas; changes???**