



# **Solar Space Weather Operational Needs – non- agency perspective**

**SDO EVE Science Team  
Issues for consideration**

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# Solar data being used for ops

- **Which data are currently required for ops (2005)?**
  - Measurements and users
    - $F_{10.7}$  (Penticton primary): AFSPC, AFWA, SET, most aerospace operations (sometimes  $R_z$  is used for ionospheric applications)
    - MgII (NOAA 16,17/SBUV primary, SORCE/SOLSTICE secondary): SET, NOAA NWS(?)
    - GOES 0.1-0.8 nm (GOES-10,-12 primary): EXPI (HAF model), SET (SFLR model), aerospace and aviation operations (flare monitoring)
- **Which additional data will be required in the immediate future (2007–)?**
  - Indices and users
    - $S_{EUV}$  (SOHO/SEM primary, GOES-N/EUVS & TIMED/SEE & SDO/EVE (ESP 1st order subset secondary): AFSPC, AFWA
    - Mg<sub>10.7</sub> (NOAA 16,17/SBUV primary, SORCE/SOLSTICE secondary): AFSPC, AFWA



# Topics for consideration

- **Cooperation between entities (agency, university, companies)?**
  - **Contracts** (services performed, data provided)
  - **Cooperative Agreements** (models provided)
  - **Collaborative Agreements** (data/model exchange)
- **Do we formalize the processes of creating and distributing data with common data formats, archival, server/web distribution?**
  - **Standards organizations:** ISO, ANSI (AIAA, ASTM), NASA (solar standards)
  - **Reference guides:** COSPAR, AIAA (solar references)
  - **Collaborative programs:** LWS FST, TIMED & SDO SWG
  - **Proprietary servers:** NOAA SEC, NASA GSFC & MSFC, SPENVIS, university and UCAR, company
- **What are the requirements for data accessibility?**
  - **Restricted:** AF Space Command and AFWA data systems
  - **Proprietary:** commercial operational systems (contract-based access systems throughout aerospace industry)
  - **Research:** international, open access with customary registration
  - **Public:** unrestricted education, professional development access



# Anticipated AFSPC use of solar data

Time frame	Improvement goal, cadence	Solar input	Atmosphere (alt, layer, spatial res)	Atm model	Uncert %1-σ
2004	Current epoch nowcast, 3-hr	$EUV_{ch+cr} : F_{10.7}$	200-800 km, therm-exo, 8th order SH	J70DCA	15, <5-30
2006	72-hr fcast, 3-hr	$EUV_{ch} : S_{EUV},$ $FUV_{ph} : Mg_{10.7},$ $EUV_{cr} : F_{10.7}$	100-800 km, low therm-exo, 8th order SH	JBH05DCA	8, <5-10
2010	7-dy fcast, 3-hr (72 hr) + daily	$EUV : S_{EUV},$ $FUV_{ph} : SRC_{10.7},$ $EUV_{cr} : TRCC_{10.7}$	100-800 km, low therm-exo, 8th order SH	JBH09DCA	6, <5-8
2015	30-dy fcast, 1-min (6 hr) + 3-hr (72 hr) + daily	$EUV : S_{EUV},$ $FUV_{ph} : SRC_{10.7},$ $EUV_{cr} : TRCC_{10.7},$ $EUV_{cr} : HC_{10.7}$	90-1000+ km, low therm-exo, higher order SH	JBH14DCA	<5, <5-5