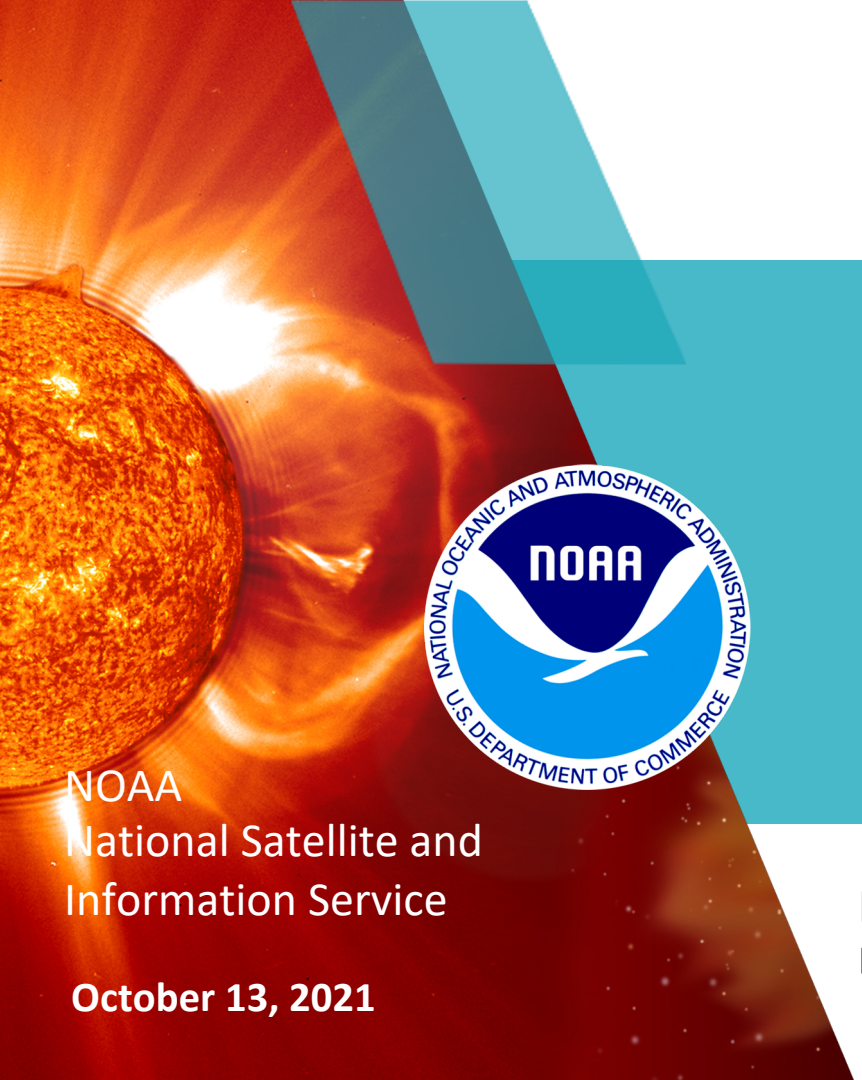


NESDIS Update on PROSWIFT Act Implementation

NOAA
National Satellite and Information Service

October 13, 2021

Dr. Elsayed Talaat
Director, Office of Projects, Planning, and Analysis (OPPA)

Agenda

- Bottom Line Up Front
- NESDIS PROSWIFT Act Implementation
  - Coordination, Collaboration & Cooperation
  - Sustaining and Advancing Observations
  - Data Access and Information Sharing

Bottom Line Up Front

- NESDIS' space weather strategy emphasizes and aligns with the PROSWIFT Act's focus on **continuity, innovation, and partnerships**.
- NESDIS' is implementing the PROSWIFT Act by:
  - Fulfilling SWFO Program responsibilities & data continuity requirements.
  - Advancing space weather requirements identified by NSOSA & SWORM.
  - Standing up the SWO Program to define and establish a comprehensive observational capability for several orbital regimes.
  - Developing partnerships and leveraging resources across international, academic, commercial, and Federal agency communities to provide space weather observations to NWS/SWPC, NASA, and DoD and other users.

PROSWIFT Act

Promoting **R**esearch and **O**bservations of **S**pace **W**eather to **I**mprove the **F**orecasting of **T**omorrow (**PROSWIFT**) Act

Updates

- **Coordination, Cooperation, & Collaboration (§ 60601)**
- Integrated Strategy for Coordinated Observation
- **Sustaining and Advancing Observations (§ 60603)**
- Research Activities
- **Data Access and Information Sharing (§ 60605-07)**

Coordination, Cooperation & Collaboration

External Partnerships & Activities

International

- Space weather agreement with European Space Agency (ESA) *(pending)*

Academic

- Cosponsoring National Academy of Sciences Workshops with NASA & NSF
- Cosponsoring Solar and Space Physics Decadal Survey with NASA & NSF

Commercial

- Space-Based Commercial Weather Data RFI and RFP

Coordination, Cooperation & Collaboration

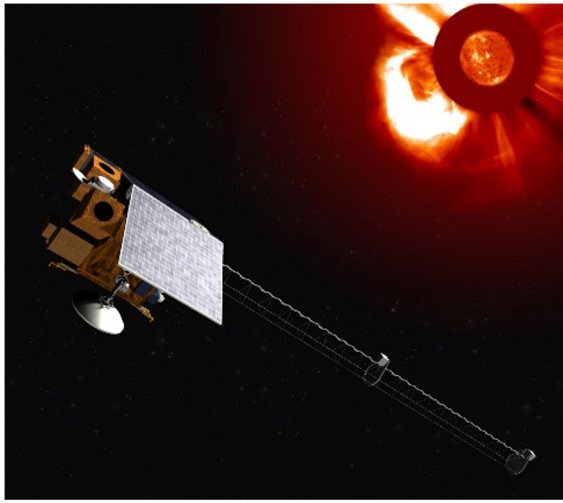
Interagency Agreements

SWFO Program IAAs

- **NOAA-NASA:** supports SWFO Program formulation, ground segment support, *and* SWFO-L1 Project (rideshare on NASA's IMAP mission)
- **NOAA-DOD:** supports building of two compact coronagraphs

SWO Program IAAs

- **NOAA-NASA:** support SWO Program formulation and implementation, Ground Segment support.
- **NOAA-DoD:** discussions initiated



SWFO-L1 - Operational Observatory at Earth-Sun Lagrange Point 1

Image credit: Ball Aerospace

Sustaining & Advancing Observations

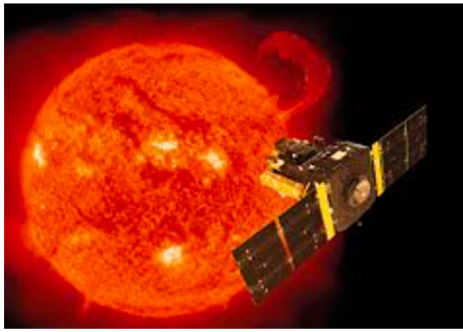
Baseline Capabilities

NOAA secured NASA's commitment to:

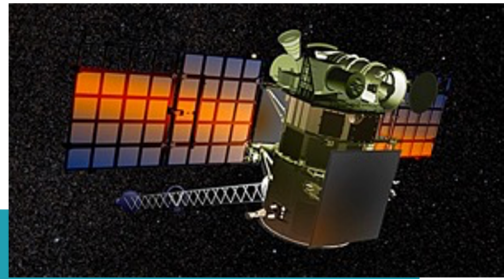
- Continue supporting SOHO and ACE
- Remove SOHO and ACE from its tri-annual Senior Review of legacy programs

NOAA is providing adequate resources to:

- Maintain legacy space weather instrumentation on Metop series, legacy POES and GOES-N Series, GOES-R series, and DSCOVR
- Integrate space weather instruments into GOES-T and GOES-U to maintain continuity of space weather operations



SOHO (above)
DSCOVR (below)



(Image credit: NASA)

Sustaining & Advancing Observations

Backup Capabilities

To secure backup baseline capability:

- Developed SWFO Program to ensure SOHO & DSCOVR observat. capability.
- Included coronal imagery instrument on GOES-U for operational resiliency.

To meet observational requirements:

- Exploring Federal partnerships with NASA and DoD (e.g., PUNCH).
- Expanding and exploring partnerships with EUMETSAT, ESA, CSA, and ISRO.

Sustaining & Advancing Observations

SOHO/LASCO Operational Contingency Plan

GOES-R Series

- SUVI can detect CME but can not track far enough for operations

STEREO-A

- Includes coronagraphs similar to SOHO/LASCO.
- Data available to NOAA/SWPC today, but with significant gaps in ground coverage.

PUNCH

- Includes a coronagraph broadly similar to SOHO/LASCO.
- Planned LRD of Oct 2023 with a nominal mission life of two years.
- Need additional tracking coverage to receive continuous data.

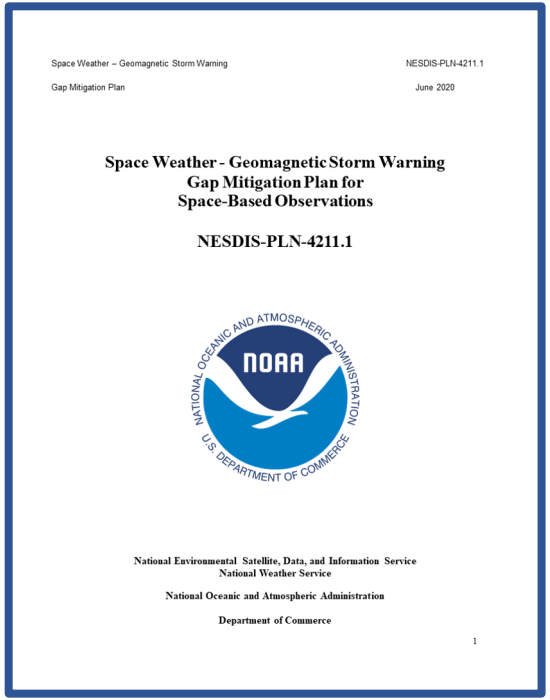
All contingency options (alone or in aggregate) recover only a fraction of SOHO/LASCO capabilities.

Sustaining & Advancing Observations

Space Weather Gap Mitigation Plan for Space-Based Observations

Plan's purpose is to identify:

- **Alternative measurements** that enable geomagnetic storm prediction,
- **Key risks** to space-based observations supporting geomagnetic storm prediction, *and*
- **Steps to mitigate** those risks.



Space Weather – Geomagnetic Storm Warning Gap Mitigation Plan

NESDIS-PLN-4211.1

June 2020

Space Weather - Geomagnetic Storm Warning Gap Mitigation Plan for Space-Based Observations

NESDIS-PLN-4211.1

National Environmental Satellite, Data, and Information Service
National Weather Service

National Oceanic and Atmospheric Administration

Department of Commerce

1

Sustaining & Advancing Observations

SWO Program

The **Space Weather Observations (SWO) Program** incorporates technological advances to improve space weather measurements and observations.

Coordinating activities include:

- NOAA, NASA, and DoD Tri-Agency discussion forum,
- Regular bilateral meetings with DoD, USSF, and NASA,
- NASA and DoD participation in NESDIS Space Weather Observations Requirements Working Group, *and*
- OSTP Space Weather Operations, Research, and Mitigation (SWORM) Working Group.

Commercial Data Pilot Program

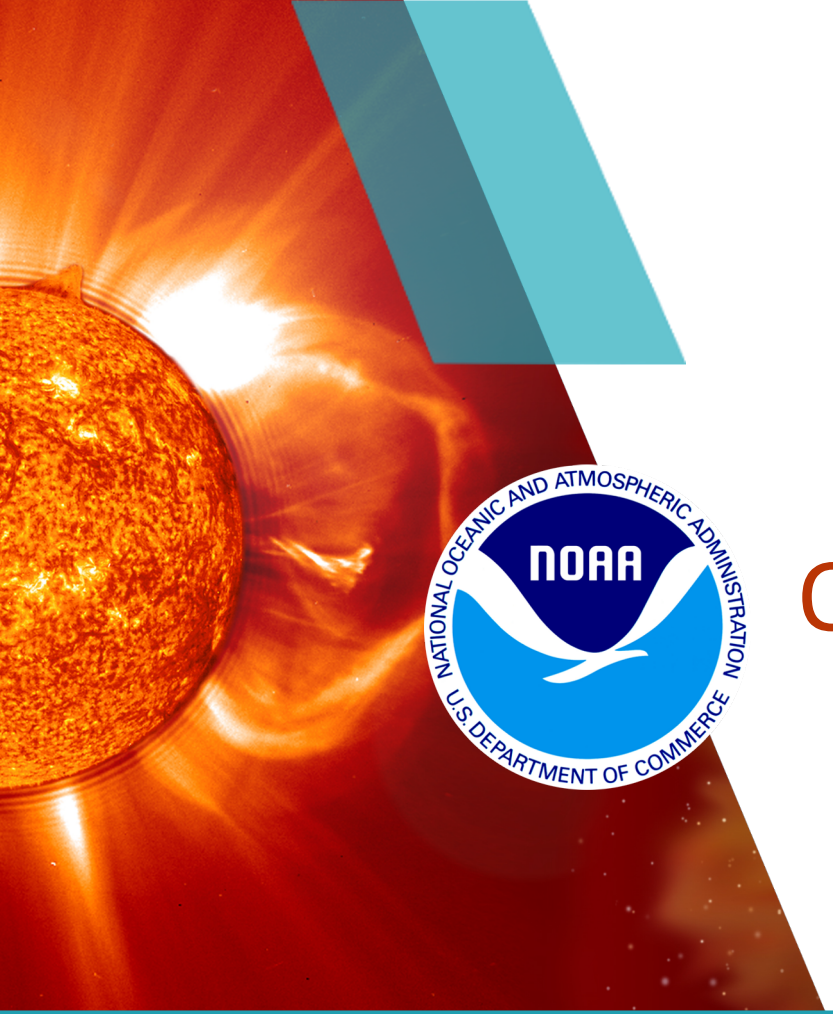
RFI & Standards/Specifications

Commercial Satellite Data RFIs

- September 2020 RFI solicited capability statements on existing and planned commercial data addressing *NESDIS Level Requirements* for Space Weather.
- **Next Steps**: Committed to exploring future RFIs and potential RFPs for space weather data to implement PROSWIFT Act direction.

NESDIS Activities

- Coordination Group for Meteorological Satellites (CGMS)
- World Meteorological Organization (WMO)



Questions?