STP Quarterly Review

06 Nov 2014

4QFY14

William Denig

Solar & Terrestrial Physics Division

NOAA/NESDIS/NGDC

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OUTLINE
Solar & Terrestrial Physics Division

- STP Division Overview
- Milestones & Metrics
- Program Updates
- Special Interest Items
- Publications and Presentations
- Issues & Summary

STP Division Overview

STP Organizational Chart

Solar & Terrestrial Physics Division
Bill Denig, Chief
Janet Brown, Admin

Key
F – Federal
C – CIRES
S – Student
V – Vacancy

Earth Observation Group
Chris Elvidge/F
Kim Baugh/C
Tilo Ghosh/C (remote)
Mikhail Zhizhin/C
David Hsu/C
Michael VonHendy/S

Space Weather
Dan Wilkinson/F
Rob Redmon/F
Juan Rodriguez/C
Dominic Fuller-Rowell/S
Solar Physicist/F-V[1]
Margaret Tilton/C[2]
Stefan Codrescu/S

CORS GPS
Fran Coloma/C
Ernie Joynt (ISD@35%)

Ionospheric Sounding
Terry Bullett/C
Jim Manley/C (80%)
Justin Mabie/C (50%)
Ray Conkright/C
John Demopoulos/S

GOES-R
W Rowland/C (75%)
Jonathan Darnel/C
Janet Machol/C
Paul Lotoaniu/C (50%)
Jim Manley/C (20%)
Brian Kress/C

WDS for Geophysics
Justin Mabie/C (50%)
Karen Horan/F
Craig Clark/F

DSCOVR
W. Rowland/C (25%)
Paul Lotoaniu/C (50%)

Agile S/W Developmnt
Rob Prentice/C

[1]Pending FY15 Funding

STP Division Overview

Hail and Farewell

Meg Tilton
GOES-R Data Manager

Dr. Brian Kress
SEISS Instrument Mngr

STP Division Overview
Awards

Dr. Juan Rodriguez
NOAA Affiliate of the Month
November 2014

Dr. Rob Redmon
WDS Data Stewardship Award
2014

STP Division Overview
NOAA Affiliate of the Month

Dr. Juan Rodriguez
NOAA Affiliate of the Month
November 2014

Cited for
"Outstanding support of NOAA's space weather mission"

Also featured in CIRES

October 31, 2014

CIRES' Juan Rodriguez, NOAA team member of the month

https://www.facebook.com/CIRESnews
(direct link:http://cires.colorado.edu/news/announcements/2014/rodriguez.html)

STP Division Overview
WDS Data Stewardship Award

Dr. Rob Redmon
WDS Data Stewardship Award
2014

Cited for

"*Exceptional contributions to the improvement of scientific data stewardship by early career researchers*"

Also

Notification of Rob's award
will be included as a news item in the
Space Weather Journal

Rob received his award at the SciDataCon 2014, Jawaharlal Nehru University Convention Centre, New Delhi, India

SciDataCon 2014
International Conference on
Data Sharing and Integration for Global Sustainability

ICSU WORLD DATA SYSTEM

OUTLINE
Solar & Terrestrial Physics Division

STP Division Overview

Milestones & Metrics

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Publications and Presentations

Issues & Summary

Milestones and Metrics
STP FY14 Milestones

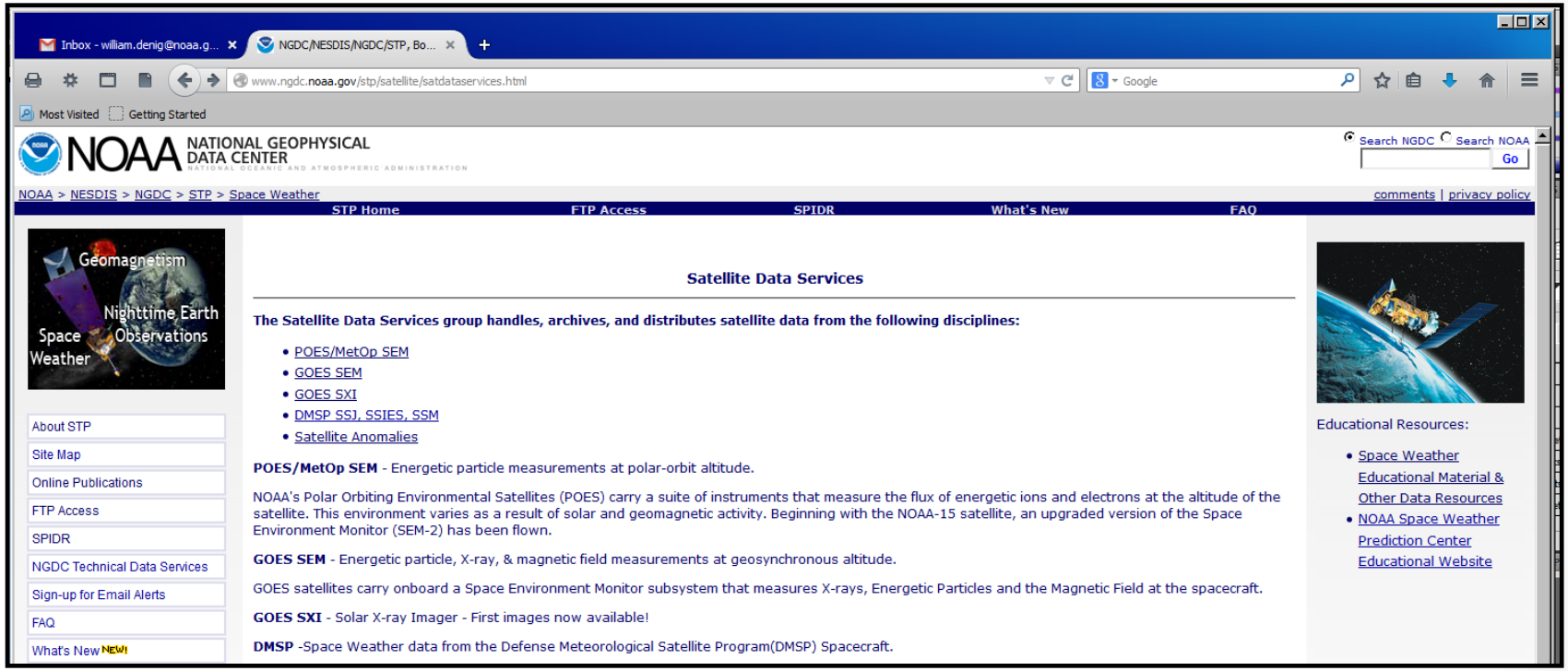
Quarter	FY14 Milestones	AOP	Status
Q1	Produce Radiation Belt Indices for satellite situational awareness as requested by the Air Force Weather Agency. (Green)	NO	C
Q2	Ensure required infrastructure is in place to receive, archive and disseminate Deep Space Climate Observatory (DSCOVR) solar-wind data products prior to the DSCOVR launch readiness date. (Denig)	YES	C
Q2	Return the Ap* geomagnetic index to operations. (Mabie)	NO	C
Q2	Implement ingest of the NOAA Space Environment Monitor data into the NASA Coordinated Data Analysis web to increase public access to the data. (Redmon)	NO	C
Q3	Complete delivery of Level 2+ product Algorithm Theoretical Basis Documents for the Geostationary Operational Environmental Satellite series-R space weather products. (Rowland)	NO	C
Q3	Deliver to the GOES-R Program Office an initial set of calibration and validation tools for Post-Launch Testing of the space weather sensors on the GOES-R series spacecraft. (Rowland)	NO	Y
Q4	Complete an initial re-design of the Space Physics Interactive Data Resource to enable more efficient processing and enhanced usability. (Zhizhin)	NO	R
Q4	Recalibrate the NOAA solar irradiance data product from the Extreme Ultraviolet Sensors on the GOES-13, GOES-14 and GOES-15 satellites and provide public access to the data. (Machol)	NO	C
Q4	Initiate construction of a state-of-the-art ionospheric sounder in the Antarctic for the Korean space weather program. (Bullett)	NO	C
Q4	Create initial "Cloud-free Composite of Nightlights of the World" product using data from the NOAA Visible Infrared Imaging Radiometer Suite. (Elvidge)	YES	C
			As of 28 Oct 2014

Q3 milestone not fully achieved due to funding shortfall. Rating assessed in coordination with the GOES-R stakeholder

Milestones and Metrics

Milestone: SPIDR Re-design

Milestone: Complete an initial re-design of the Space Physics Interactive Data Resource to enable more efficient processing and enhanced usability.



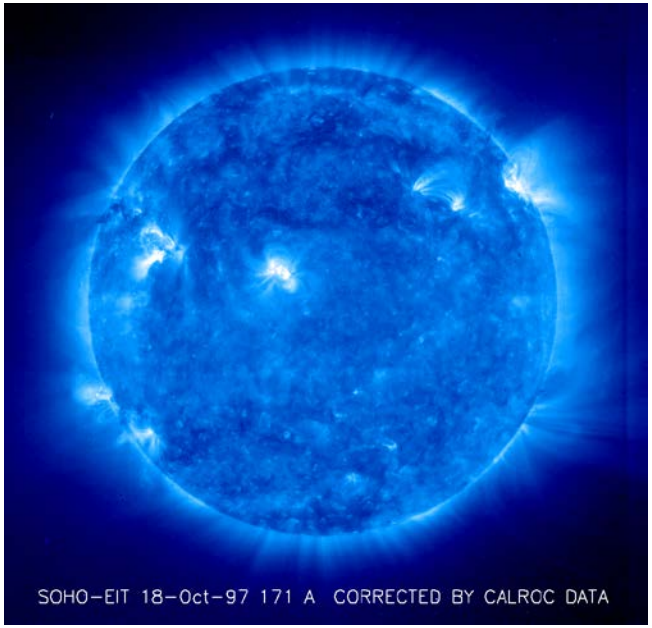
Completion: Planned: 30 Sep 2014 Actual: *n/a*

Status: R Agile project was deferred in FY14 and then cancelled in the FY15 planning. NOAA (and USAF) satellite data remain accessible via the NGDC website. WDS holdings remain accessible via http. Future access to ionospheric data remains to be worked.

Milestones and Metrics

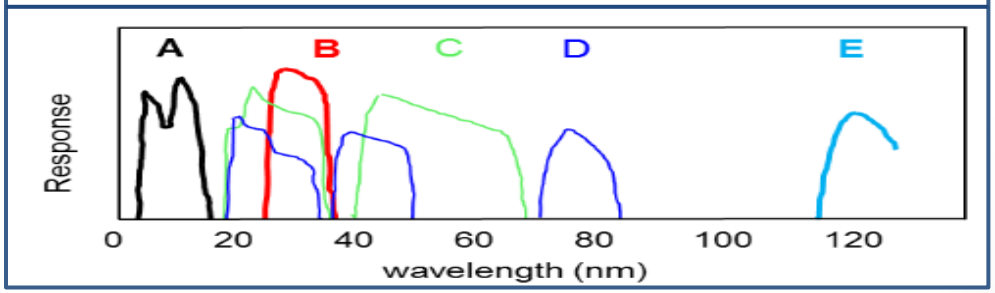
Milestone: GOES-13-15 EUVS Re-cal

Milestone: Recalibrate the NOAA solar irradiance data product from the Extreme Ultraviolet Sensors on the GOES-13, GOES-14 and GOES-15 satellites and provide public access to the data. (Machol)



Applications:

- *U.S. Air Force satellite drag models*
- *Quantify EUV solar flare radiances*
- *Provide standard reference for satellite sensor inter-calibrations*



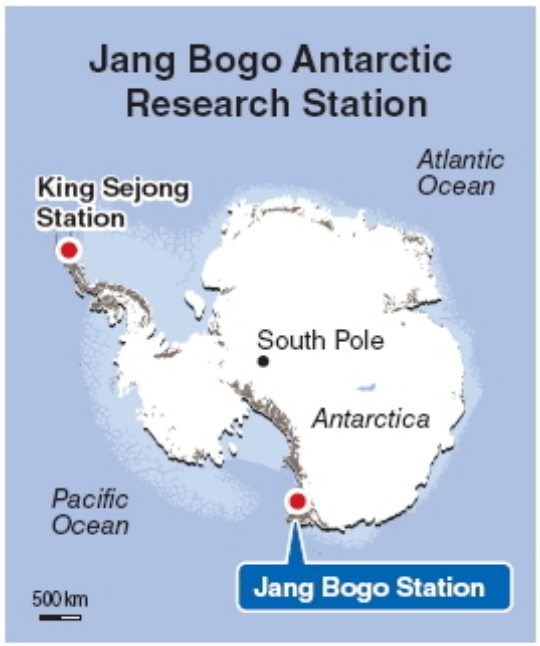
Completion: Planned: 30 Sep 2014 Actual: 30 Sep 2014

- Status: C Corrections to the GOES EUV channel radiances were determined and implemented for the SWPC real-time product. Historical data for April 2006 – April 2014 (1-min and daily files) are available along with relevant documentation.

Milestones and Metrics

Milestone: Antarctic VIPIR

Milestone: Initiate construction of a state-of-the-art ionospheric sounder in the Antarctic for the Korean space weather program. (Bullett)



Source: Ministry of Oceans and Fisheries

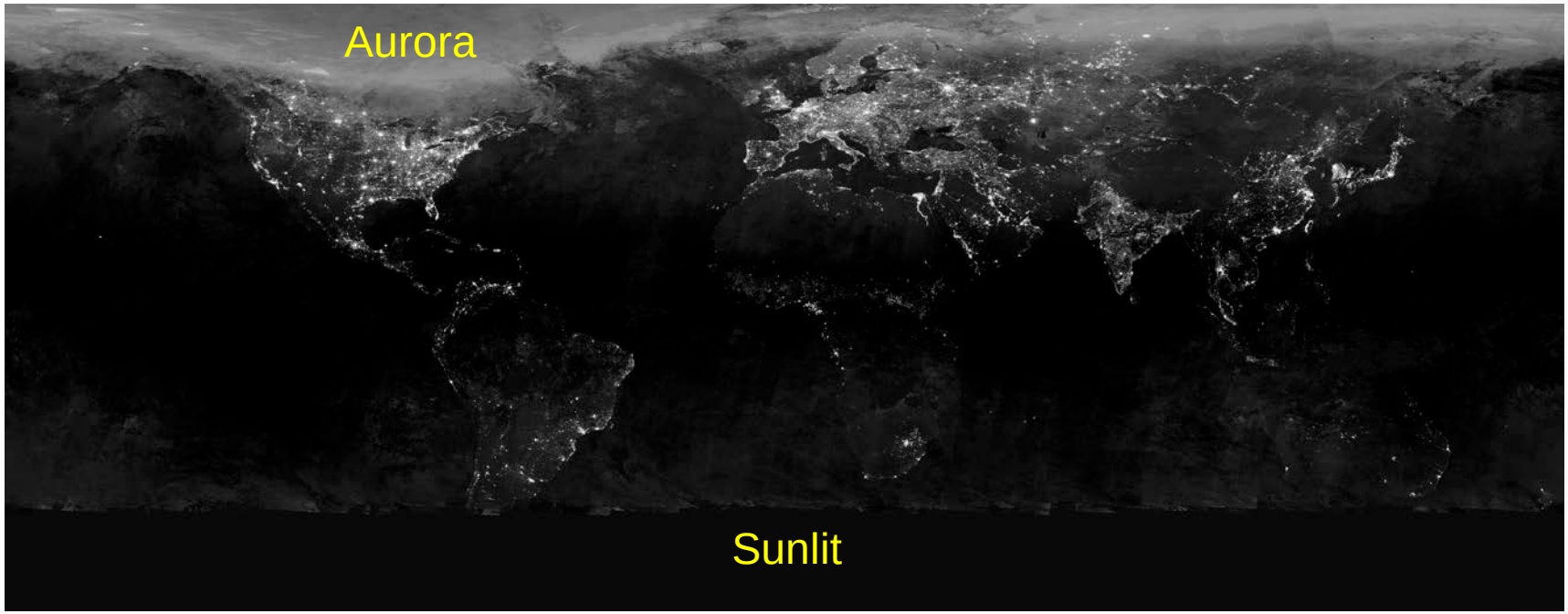
Completion: Planned: 30 Sep 2014 Actual: 30 Sep 2014

Status: C Terry Bullett and Justin Mabie are packed and ready to leave on 18 Nov for a 2-to-3 month field campaign to the Korean Jang Bogo Station, Antarctica.

Milestones and Metrics

Milestone: VIIRS Cloud-free Composite

Milestone: Create initial "Cloud-free Composite of Nightlights of the World" product using data from the NOAA Visible Infrared Imaging Radiometer Suite. (Elvidge)



Completion: Planned: 30 Sep 2014 Actual: 30 Sep 2014

Status: C Average VIIRS DNB composite for January 2013 with contrast enhanced to exaggerate flaws in the removal of background noise, aurora, fires, and fuzzy lights.

Milestones and Metrics

STP FY15 Milestones

Quarter	FY15 Milestones	AOP	Status
Q1	Conduct a successful Preliminary Design Review (PDR) for the Satellite Product Analysis and Distribution Enterprise System (SPADES)	YES	
Q1	Contribute to the development of the Level 1 Requirements Document (L1RD) for the Total and Spectral solar Irradiance Sensor (TSIS) project	NO	
Q2	Support launch operations for and initial testing of the Deep Space Climate Observatory (DSCOVR) satellite	YES	
Q2	Establish near real time VIIRS lit fishing boat reporting system for Indonesia	NO	
Q2	Establish near real time global VIIRS nighttime fire detection and reporting system	YES	
Q3	Complete interface testing for the Product Distribution and Access (PDA) system for acquiring GOES-R space weather products	NO	
Q3	Install state-of-the-art ionospheric sounder at Jang Bogo Station, Antarctica for the Korean Polar Research Institute (KOPRI)	NO	
Q3	Provide public access to operational space weather products from the Deep Space Climate Observatory (DSCOVR)	YES	
Q4	Complete algorithm development for filtering background noise and extraneous features from VIIRS DNB monthly and annual cloud-free composites	NO	
Q4	Leverage the NGDC Common Ingest (CI) system for acquiring and archiving selected GOES-R Level-0 data products	NO	
Q4	Complete estimate of national and site specific flared gas volumes from 2012 VIIRS data	NO	

As of 28 Oct 2014

Milestones and Metrics

FY14 Metrics Overview

Space Weather Metric							
Goal	Objective	Performance Measure	POC	1QFY14	2QFY14	3QFY14	4QFY14
Weather-Ready Nation (NWS)	A More Productive and Eficient Economy Through Environmental Information Relevant to Key Sectors of the U.S. Economy	Maintain a greater than 97% (2-sigma, cumulative distribution) of available Space Environment Monitor (SEM) data from the Geostationary Operational Environmental Satellites (GOES) archived on an annual basis	Wilkinson	100%	100%	100%	100%
Ionosonde							
Goal	Objective	Performance Measure	POC	1QFY14	2QFY14	3QFY14	4QFY14
Weather-Ready Nation (NWS)	Resilient Coastal Communities That Can Adapt To The Impacts Of Hazards And Climate Change	Acquire, process and disseminate > 97% (2-sigma, cumulative distribution) of available real-time ionosonde data within 1 hour [TBD] of receipt	Bullett	100%	100%	100%	98.8% see note
Nightime Lights Metric							
Goal	Objective	Performance Measure	POC	1QFY14	2QFY14	3QFY14	4QFY14
Climate Adaptation and Mitigation (CS)	Improved Scientific Understanding of the Changing Climate System and Its Impacts	Acquire, process and disseminate >97% (2-sigma, cumulative distribution) of available real-time nighttime lights imagery within 3 hours of receipt	Elvidge	100%	100%	100%	100%
CORS (See Note)							
Goal	Objective	Performance Measure	POC	1QFY14	2QFY14	3QFY14	4QFY14
Resilient Coastal Communities and Economics (NOS)	Resilient Coastal Communities That Can Adapt To The Impacts Of Hazards And Climate Change	Provide a >97% (2-sigma, cumulative distribution) availability for CORS near-real-time data to the NWS Space Weather Prediction Center (SWPC) as per the '4-way' Memorandum of Agreement and subject to normal business-hour response times.	Coloma	100%	100%	99%	100%
							As of 05 Nov 2014

- Greater than 99% (3-sigma) Cumulative Distribution
- Greater than 97% (2-sigma) Cumulative Distribution
- Greater than 84% (1-sigma) Cumulative Distribution
- Below 84.1% (1-sigma) Cumulative Distribution

Note: 27-hour loss of capacity to disseminate data due to a Mirrion database issue on 04 Sep

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Space Weather Team

Roles and Responsibilities

- Provide long-term scientific stewardship of NOAA's SWx data
- Assess and improve satellite operational environmental products
- Monitor the performance of current geostationary/polar SWx sensors
- Support the acquisition/execution of the GOES-R & DSCOVR satellites

Space Weather Team

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- Provide long-term scientific stewardship of NOAA's SWx data
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- Support the acquisition/execution of the GOES-R & DSCOVR satellites

Space Weather Team

Status: GOES-R Status – SME Assessments

SME assessments do not represent Program views

FOUO

EXIS

- H/W (G) No Issues
- L1b (G) No Issues
- L2+ (G) No Issues

MAG

- H/W (Y/G) Less mature design – actual performance may not be as predicted
- L1b (R/Y) Impending waivers will likely result in inferior products
- L2+ (G) No Issues

SEISS

- H/W (Y/G) Hardware waivers will impact overall product performance
- L1b (G) No issues
- L2+ (G) No issues

SUVI

- H/W (G) No issues
- L1b (G) No issues
- L2+ (G) No Issues

Products

- L0 (Y/G) LZSS access firming up; Interface development separately funded[1]
- L1b (Y) Limited independent development; Unfunded Cal-Val tool development[1]
- L2+ (Y) AA decision to implement L2+ processing within IDP; FY16 PCS submitted

Access

- PDA, SPADES (Y/G) PDA is path forward for SPADES IOC; Testing delays; Prototype data uncertain
- GRB, SPADES (Y/G) GRB base-lined for SPADES FOC; Uncertain access to prototype L1b data[1+]
- CLASS (G) No issues
- SPADES (G) No issues
- GRB&PDA, PLT (R) Severe impact to first 3 months of PLT; No work-around identified[1]

[1]Assessment or text updated

Space Weather Team

Status: GOES-R Status – History

FOUO

	4QFY14	3QFY14	2QFY14	1QFY14
EXIS				
H/W	G	G	G	G
L1b	G	G	G	G
L2+	G	G	G	G
MAG				
H/W	Y/G	Y/G	Y/G	Y/G
L1b	R/Y	R/Y	R/Y	R/Y
L2+	G	G	G	G
SEISS				
H/W	Y/G	Y/G	Y/G	Y/G
L1b	G	G	G	G
L2+	G	G	G	G
SUVI				
H/W	G	G	G	G
L1b	G	G	G	G
L2+	G	G	G	G
Products				
L0	Y/G	Y/G	Y/G	Y
L1b	Y	Y	Y	Y
L2+	Y	Y	Y	R
Access				
PDA, SPADES	Y	Y/G	Y	G
GRB, SPADES	Y/G	Y/G	Y	G
CLASS	G	G	G	G
SPADES	G	G	G	Y
GRB&PDA, PLT	R			

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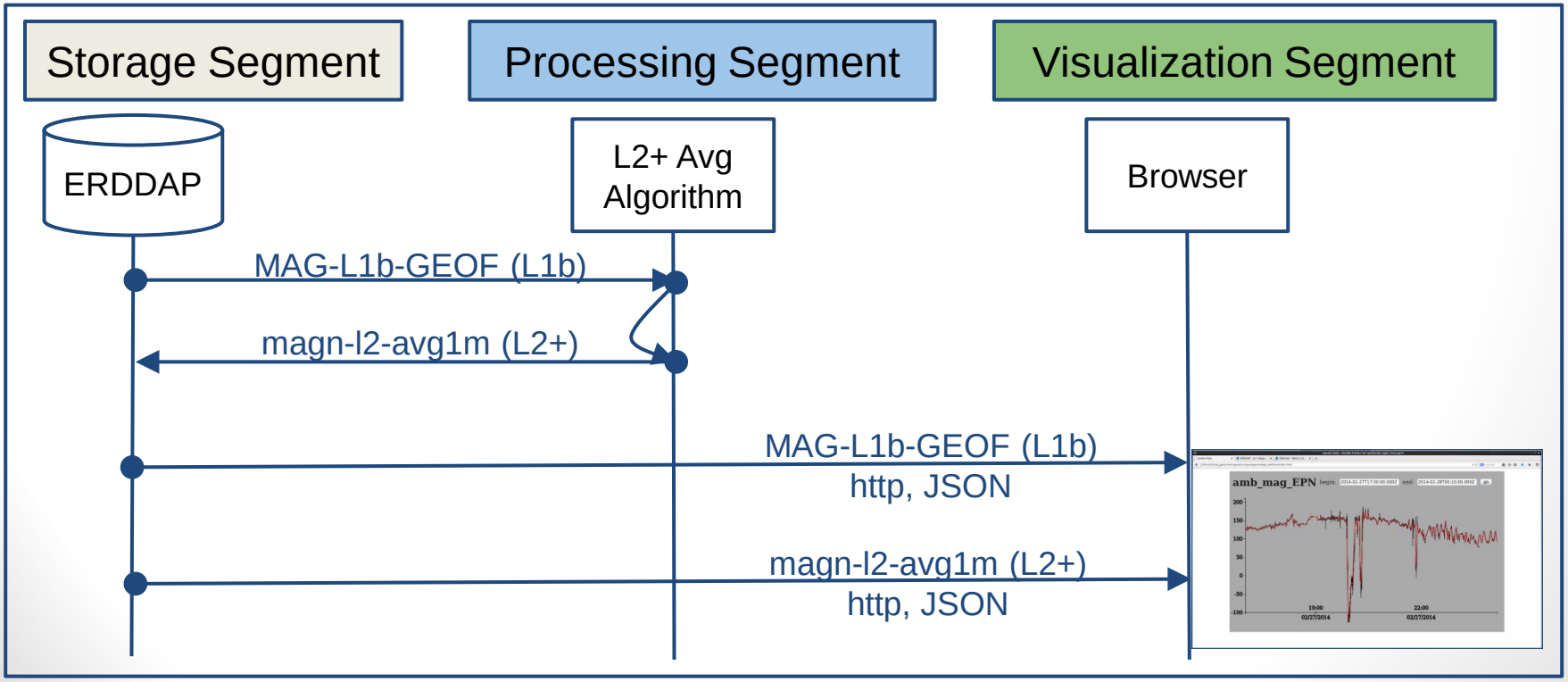
Space Weather Team

SPADES: PDR – 30 Oct 2014

Satellite Product Analysis and Distribution Enterprise System

SPADES is a demonstration system for producing GOES-R L2+ SWx products. This 3-year project is funded through the GOES-R Risk Reduction program and can be considered the prototype for an operational capability deployed on NWS systems. SPADES IOC is planned for 1QFY16 with FOC in 2QFY17.

SPADES Working Demo



Space Weather Team

SPADES: PDR – ERDDAP

Environmental Research Division's Data Access Program (ERDDAP)

- ERDDAP is a data server that gives the user a simple, consistent way to download subsets of gridded and tabular scientific datasets in common file formats and make graphs and maps.
- ERDDAP developed and maintained by the NOAA National Marine Fisheries Service (NMFS). POC: Bob Simons (NMFS/SWFSC/ERD)

Instances	1 min	10 min	1 hour	1 day	10 day
1	0.0547	0.1637	0.5417	8.8033	91.657
2	0.0443	0.1373	0.5269	8.1265	-
4	0.0932	0.1649	0.5971	14.617	-
8	0.0777	0.2043	1.0060	29.572	-
16	0.3044	0.4342	2.4698	64.889	-

ERDDAP is a critical element in the SPADES design

ERDDAP Video

Space Weather Team

DSCOVR: Awaiting Launch

Program Status:

- Program is a go with no known (serious) impediments
- NGDC is all set[1] to support DSCOVR

Near-term Schedule:

- Operational Readiness Review (ORR) – 15-16 Nov 2014
- Launch – 15 Jan 2015
- On Station – xx Apr 2015

Current Access Modes:

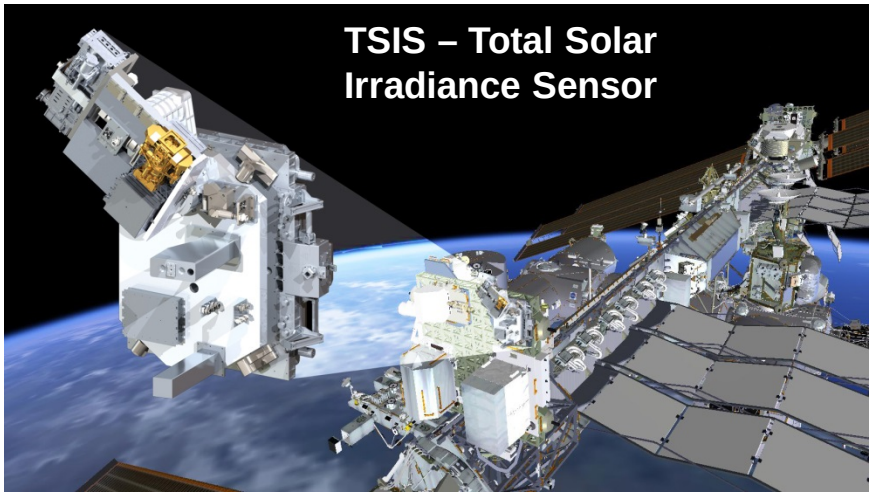
- NEXT
- GUI

Note: Rob Redmon is polling the scientific community regarding preferred access to DSCOVR solar wind/IMF data.

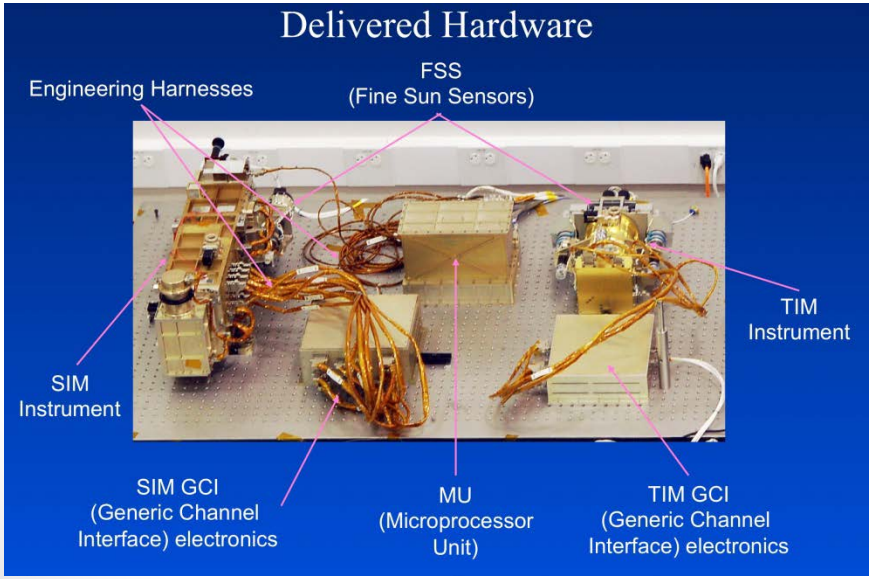
[1]One outstanding requirement for system monitoring awaiting closure.

Space Weather Team

TSIS: Team Remains Cautiously Optimistic

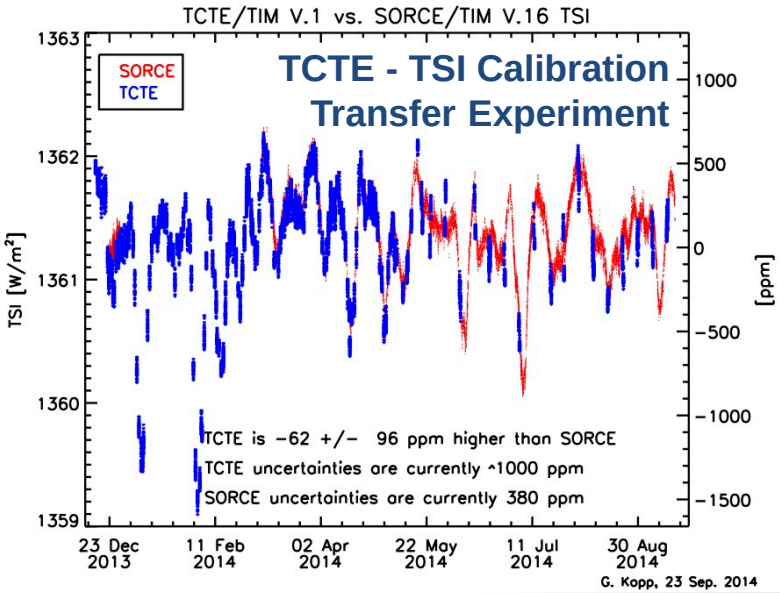


TSIS Deployed on ISS



Time is running out for program continuity into FY15. President's FY budget request contained $15M for TSIS although House & Senate mark-ups contained NO funding. NASA and LASP closeout activities will start after 31-Dec-14 unless otherwise directed impacting the FY17 launch readiness.

TCTE data are looking great!



At risk is $200K funding for NGDC

Space Weather Team

TSIS: TCTE in the News

NEWS
News, features & press releases

MISSIONS
Current, future, past missions & launch dates

MULTIMEDIA
Images, videos, NASA TV & more

CONNECT
Social media channels & NASA apps

ABOUT NASA
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Missions

Find a Mission

Launch Schedule

Text Size 3 4

Spare Off-the-Shelf Instrument Continues Solar Output Data with Excellent Results

August 21, 2014

When the National Oceanic and Atmospheric Administration, or NOAA, sponsored the Total solar irradiance Calibration Transfer Experiment, or TCTE, project launched November 2013, the solar science community was relieved a critical 36-year continuity of solar irradiance measurements was saved. This was accomplished by swiftly preparing a spare solar irradiance instrument for spaceflight.

The building process of the Total solar irradiance Calibration Transfer Experiment (TCTE) instrument at Ball Aerospace.

Image Credit: Ball Aerospace

"Initial results from TCTE are excellent," said William Denig, NOAA's project scientist for the first Total and Spectral Solar Irradiance Sensor, or TSIS-1, at Boulder. TSIS-1 is currently planned for launch in 2017 to the International Space Station.

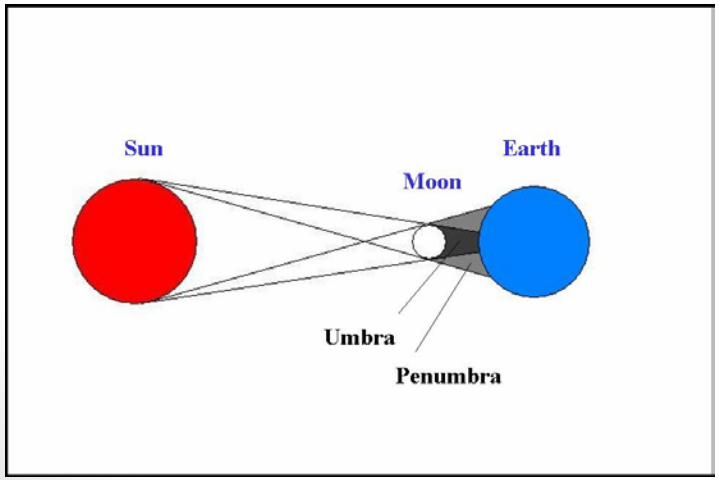
NOAA is supporting TSIS-1 which will measure spectral distribution of the solar irradiance as well as the total solar irradiance measurements that are now made by the Total Irradiance Monitor, or TIM instrument, on TCTE. Following TSIS-1, NASA intends to resume support for the continuity of both total and spectral solar irradiance measurements with future TSIS missions.

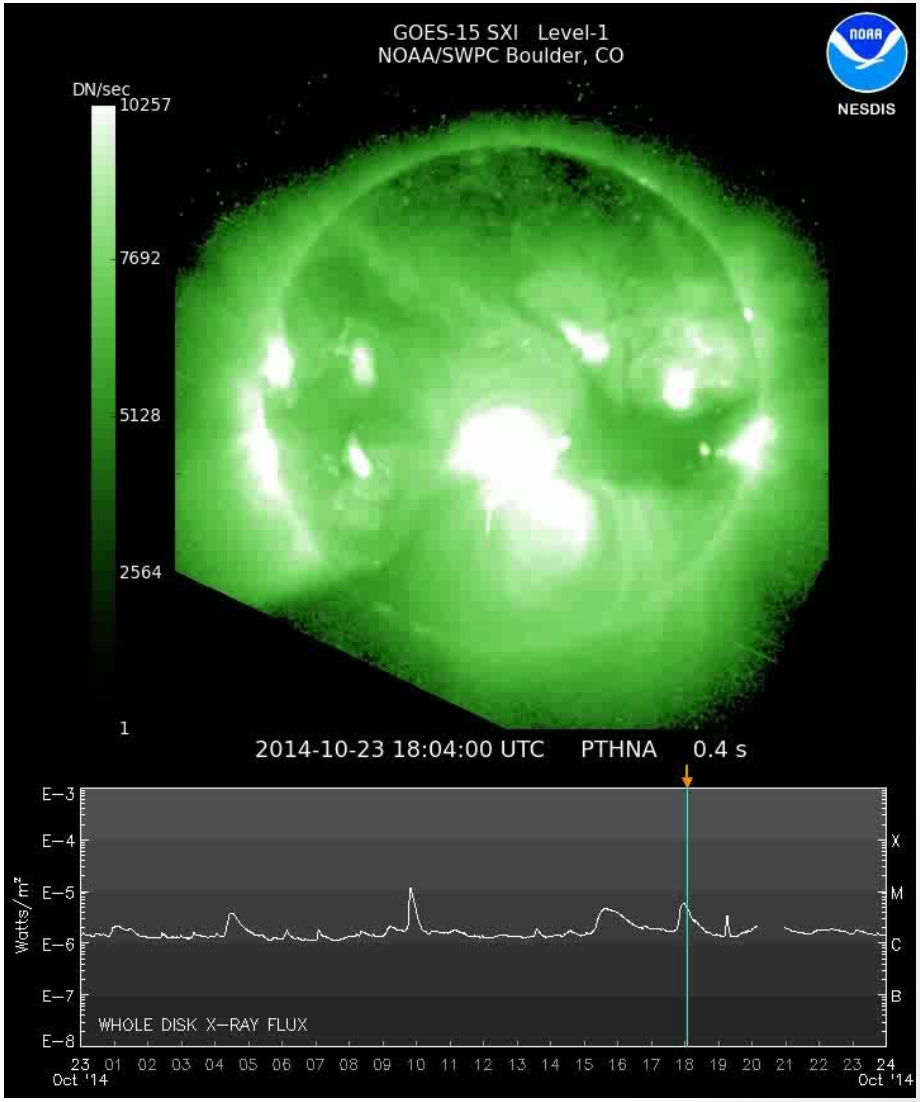
Space Weather Team

GOES-15: SXI Partial Solar Eclipse

23 Oct 14 / 19:38 – 23:52 UTC

GOES-15 SXI captured this partial solar eclipse on 10/23. Power cycling redulted in loss of XRS signal during eclipse.





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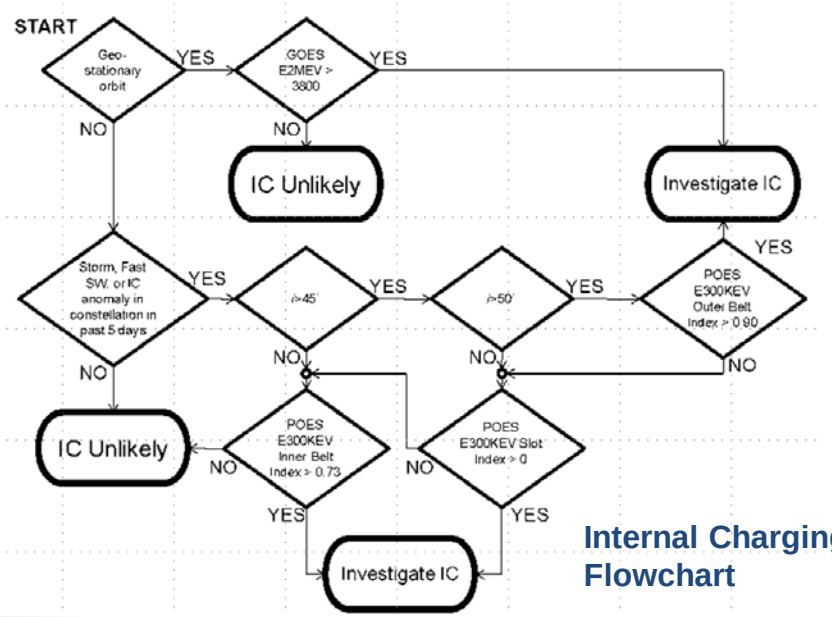
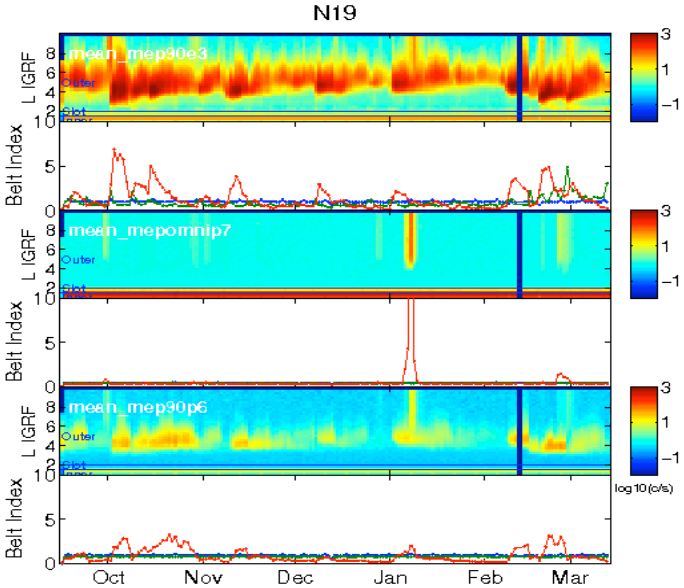
Space Weather Team

Spacecraft Anomalies: FY15 Program Initiative

Juan Rodriguez attended this NRO-sponsored workshop in Chantilly (VA) on 24-25 Jul 14. Mark Mulholland (OSD) helped drum up considerable interest in NGDC's new program initiative focus "***Safeguarding Satellites from Space Weather***" including developing decision tools, fostering anomaly reporting and providing space environmental assessments.



Internal Charging Flowchart



Initiative: $366K (year 1)

World Data System Team

GIB: Transfer of Function

GEOMAGNETIC INDICES BULLETIN

JUNE 2014

National Geophysical Data Center
Solar-Terrestrial Physics Division
325 Broadway (E/GC2)
Boulder, CO 80305-3328

Telephone: 303-497-6135
fax: 303-497-6513
www.ngdc.noaa.gov

THE GEOMAGNETIC FIELD. The geomagnetic field measured at any point on the Earth's surface at any time is a combination of the MAIN field internal to the planet,of fields arising from electrical currents flowing in the ionized upper atmosphere, and of fields induced by currents flowing within the Earth's crust. The main field component varies slowly in time and can be grossly described as that of a bar magnet with north and south poles deep inside the Earth and magnetic field lines that extend out into space.

The main field creates a cavity in interplanetary space called the magnetosphere, where the Earth's magnetic field dominates the magnetic field of the solar wind. The magnetosphere is shaped somewhat like a comet in response to the dynamic pressure of the solar wind. It is compressed on the side toward the sun to about 10 Earth radii and is extended tail-like on the side away from the sun to more than 100 Earth radii. The magnetosphere deflects the flow of most solar wind particles around the Earth, while the geomagnetic field lines guide charged particle motion within the magnetosphere.

The differential flow of ions and electrons inside the magnetosphere and in the ionosphere form current systems, which cause variations in the intensity of the Earth's magnetic field. These EXTERNAL currents in the ionized upper atmosphere and magnetosphere vary on a much shorter time scale than the INTERNAL main field and may create magnetic fields as large as 10% of the main field.

Daily regular magnetic field variations arise from current systems caused by regular solar radiation changes. Other irregular current systems produce magnetic field changes caused by the interaction of the solar wind with the magnetosphere, by the magnetosphere itself, by the interactions between the magnetosphere and ionosphere, and by the ionosphere itself. Magnetic activity indices, including those below, are designed to describe variations in the geomagnetic field caused by these irregular current systems.

MONTHLY SUMMARY OF GEOMAGNETIC ACTIVITY FOR JUNE 2014

Day			Rank	Kp Three-Hour Indices								Kp			Sc*				aa Provisional				
Cal	Year	Bart	Q/D	1	2	3	4	5	6	7	8	Sum	Ap	Cp	(UT)	An	As	Am	N	S	M1	M2	
1	152	7	Q1	1-	0	1-	1	0+	1-	0+	1-	4+	2	0.0		6	3	4	6	6	8	5	C C
2	153	8	Q6	0+	1-	0+	0+	0+	1-	1+	2+	6+	4	0.1		7	3	5	10	4	4	10	C C
3	154	9		3+	2	1-	1	1-	1+	1+	1-	11	6	0.3		14	6	10	14	8	14	8	C C
4	155	10		1+	1+	1+	1	1	1+	1	2	10+	5	0.2		10	6	8	12	7	7	12	C C
5	156	11		2-	1	1+	2+	1+	1	2+	3-	14-	7	0.3		14	9	12	18	8	11	16	C C
6	157	12		2	1+	0+	0	0+	2-	2-	2-	9	4	0.1		10	6	8	13	5	7	12	C C
7	158	13	D3	1+	1+	2	1+	2-	4	4-	4	19+	13	0.7	1652	23	17	20	36	18	12	42	
8	159	14	D1	3	6-	6+	5	5-	4	3-	2-	33	38	1.4		59	49	54	55	53	73	35	
9	160	15		0+	1-	2	2-	1-	1-	2+	1-	9	4	0.2		10	8	9	12	8	11	10	C
10	161	16		1-	1	1+	2	2+	2	2	2	13+	6	0.3		15	8	11	19	10	9	19	K
11	162	17		2-	2-	1	2+	2	2	1+	1	13	6	0.3		14	10	12	14	11	12	13	C K
12	163	18	Q2	1-	1+	0+	0+	0+	1-	1-	1-	5	3	0.1		6	2	4	7	3	5	5	C C
13	164	19	Q9	1	0+	1-	1-	2-	1+	1+	1+	8+	4	0.1		10	2	6	10	3	4	9	C C
14	165	20		2	2	3-	1+	1	1+	2	1	13+	6	0.3		15	8	11	17	10	16	11	C C
15	166	21	Q4	1	0+	1	1	1	1-	0+	1-	6	3	0.1		7	4	5	6	6	8	5	C C
16	167	22	Q10	1-	1+	1	1-	2	2-	1	1	9+	4	0.2		10	5	7	11	8	6	13	C C
17	168	23		2	1+	2+	1	1+	1	2+	3+	15-	8	0.4		17	14	15	18	14	15	17	
18	169	24	D2	3	2	2+	2	2-	3+	4	5-	23	16	0.9		27	21	24	34	25	17	41	
19	170	25	D4	3-	3	3-	1+	1+	2-	2	2	17-	9	0.5		17	22	20	21	18	25	14	
20	171	26	D5	1+	1	2+	2	3-	3	1+	2	16-	8	0.4		17	13	15	17	19	16	20	
21	172	27		2-	2	2	2-	1-	1-	0	1-	9+	4	0.2		10	6	8	10	10	15	5	C K
22	173	1	Q5	0+	1	1-	0+	1-	1-	1	1+	6	3	0.1		6	4	5	7	7	5	9	C C
23	174	2	Q8	0+	0+	0+	0+	0+	0+	0+	3	5+	4	0.1	2308	6	3	5	8	4	3	9	C K
24	175	3		2+	3-	2-	1-	0+	1-	2-	1-	11-	6	0.2		12	8	9	18	7	19	7	K K
25	176	4		1-	1-	1+	1	1	2-	1	2	9+	4	0.2		11	7	9	15	10	8	17	C C
26	177	5	Q7	0+	0+	1-	1+	2+	1	1-	0	7-	4	0.1		7	3	5	11	7	8	11	C C
27	178	6	Q3	1	0+	0	0+	1-	1-	1+	1-	5	3	0.0		5	1	3	7	3	3	7	C C
28	179	7		1	1+	1-	1	3-	2+	1	1-	11-	6	0.2		11	9	10	13	13	8	18	K K
29	180	8		3-	1+	1	1-	1-	0+	2-	3	11+	6	0.3		12	7	9	15	7	11	12	C K
30	181	9		3	1	1-	0+	1-	1+	1	1-	9-	5	0.2		12	5	8	12	6	11	7	C C
Mean													7	0.28		13	9	11	16	11		13	

*preliminary

Column headings defined on back side.

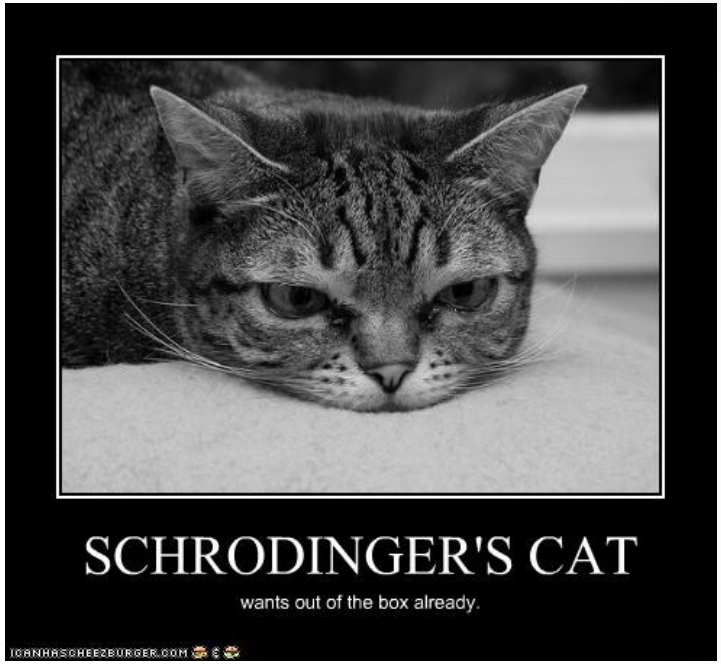
Craig Clark has taken over publishing the monthly Geophysical Indices Bulletin (GIBs). Bulletins from Jun'85 to present are currently available online. Craig will now work to assume responsibility for the Solar Indices Bulletin (SIB). Many thanks to Justin Mabie for past stewarding of the GIBs and SIBs.

World Data System Team

Archive: Looking Under the Cover

The archive is "purrfect" until you look.

Karen Horan continues to find errors and inconsistencies with the solar-image data sets within the archive. After extensive work, the on-line datasets are just about as perfect as can be. Unfortunately the same cannot be said of the datasets within the archive. Using the on-line datasets as a basis, efforts are continuing to identify/correct the known problems.



Example:

Issue: Data Type - h_alpha image has mcmath as station yet boul in file name whereas another entry, same data/time but with boulder as station

Root: /stornext/ngdc/archive/insitu_surface/solar/solar_images/

h_alpha/data/mcmath/1989/06/boul_halph_fp_19890601_1430ax.tif.gz

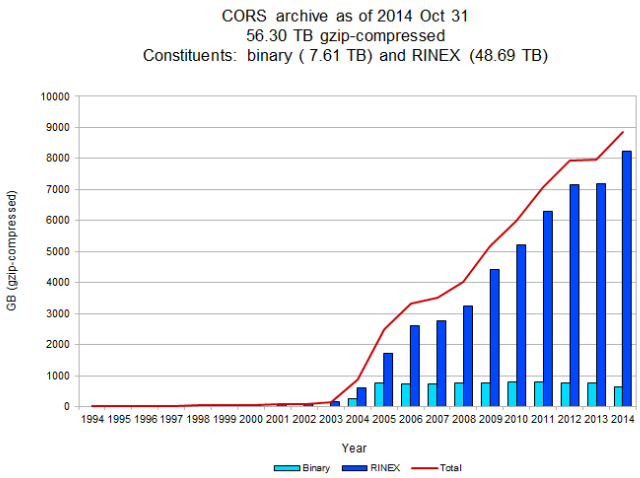
and/or

h_alpha/data/boulder/1989/06/boul_halph_fp_19890601_1430ax.tif.gz

CORS-GPS Team

CORS : GPS Stations at Risk

Big Island, Hawaii: The two US Coast Guard GPS stations, PAH5 and PAH6, are currently at risk due to the lava flows that threaten the community of Puna. The stations are currently ~2.6 km away from lava flow front



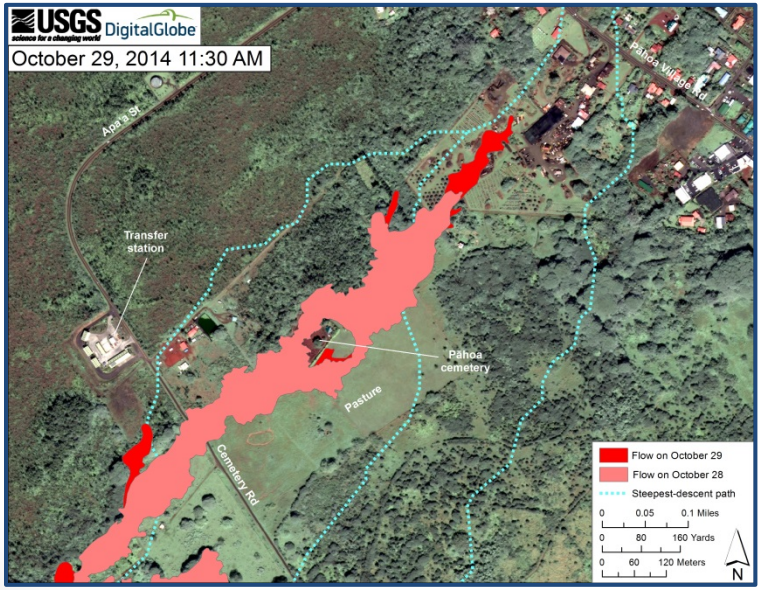


Photo by Mileka Lincoln

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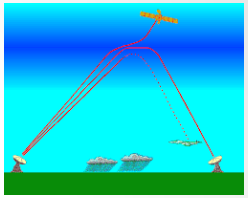
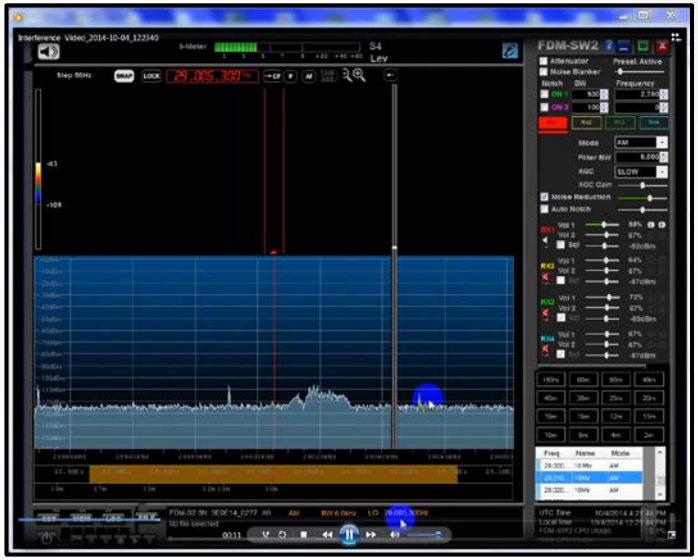
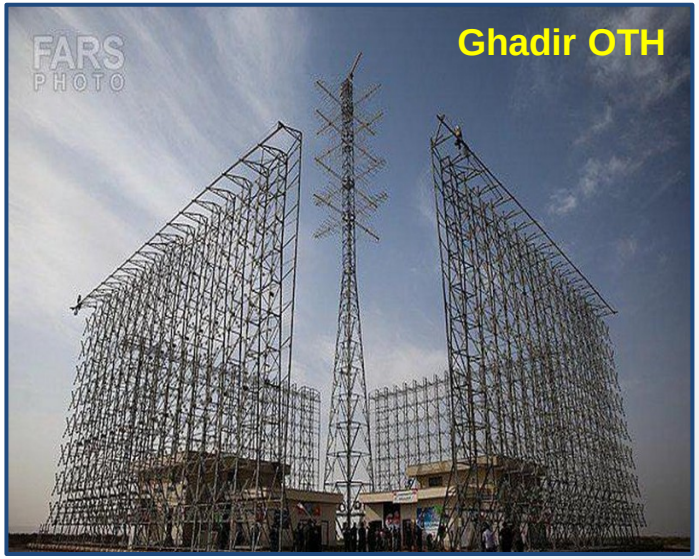
IONO Team

HAM: Mystery Interference Revealed



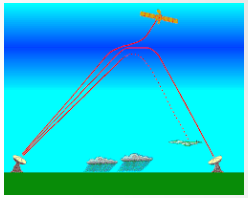
IONO team was contacted to help resolve interference in HAM channels. The source of the noise was traced to a known *Ghadir* Over The Horizon (OTH) radar operated by the Iranian military. Modest by current standards, the radar can nevertheless detect U.S. stealth aircraft within 1,100 km.





Ionospheric Sounding Team

Interest Item: Wallops Ionosponde Repair

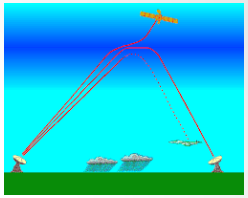


Wallops ionosonde was severely damaged in August '14 when an mower hit an antenna guide wire. Now repaired.

Rare Photograph – Snowy Antennas

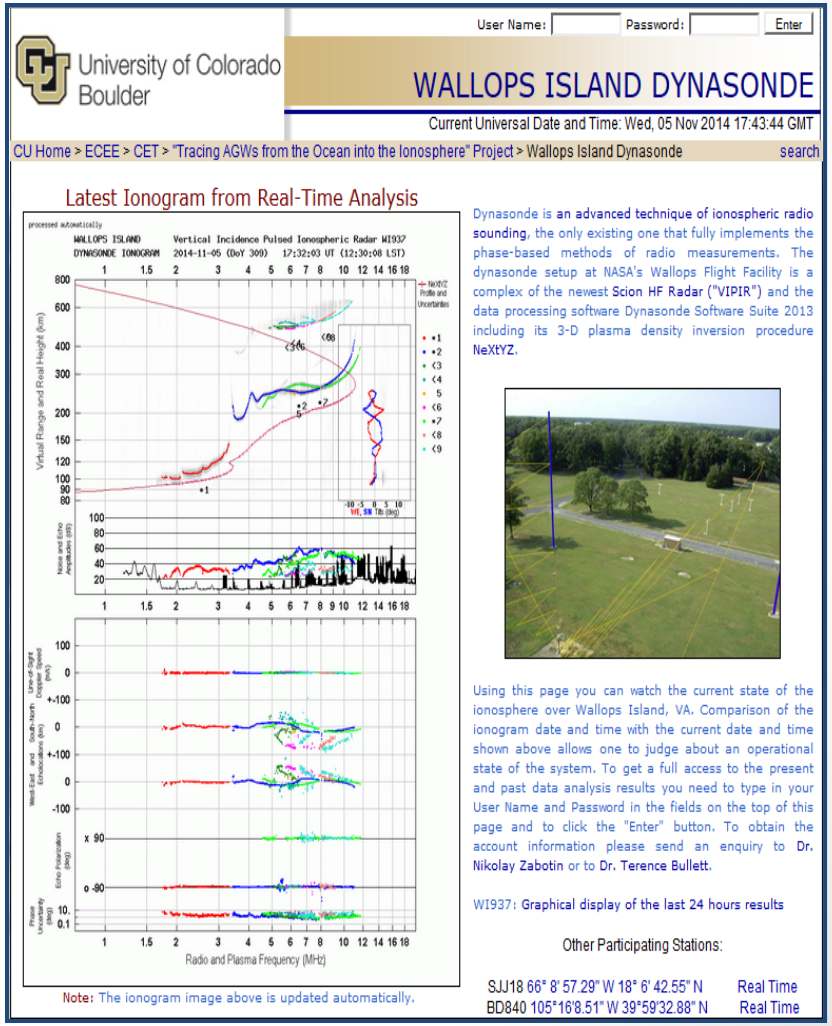
IONO Team

VIPIR: Where were you when . . . .



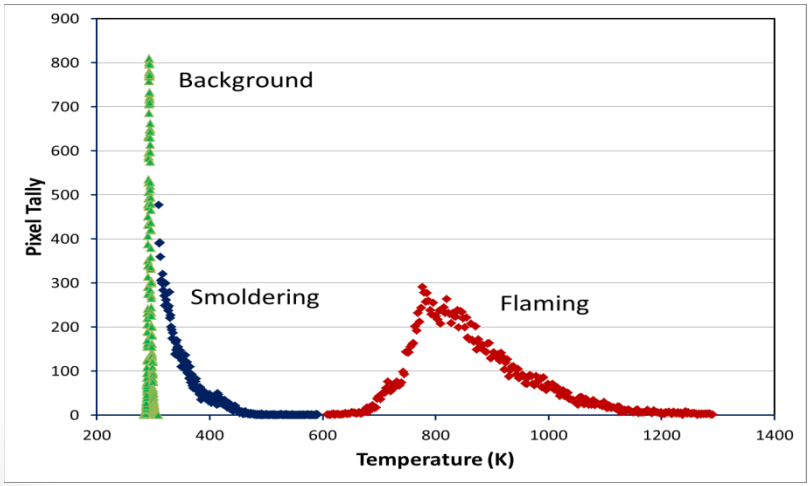
NASA Rocket Explodes During Launch

On 28 Oct 14, Justin Mabie was monitoring the Wallops Island dynasonde looking for ionospheric signatures from Orbital Sciences Antares rocket launch. At 2222 GMT the rocket unexpectedly exploded causing no deaths or injuries. The IONO team is looking for evidence of the explosion in the sounding data.



Earth Observation Group

Peat Fires: Planck Curve Modeling



Challenge is to discriminate flaming peat fires from smoldering fires at the pixel resolution size. The wide temperature separation between these two classes facilitates Planck curve spectral mixture modeling in multi-spectral data. Environmental impacts from flaming vs smoldering peat fires are distinct.

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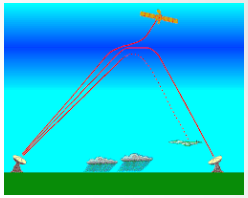
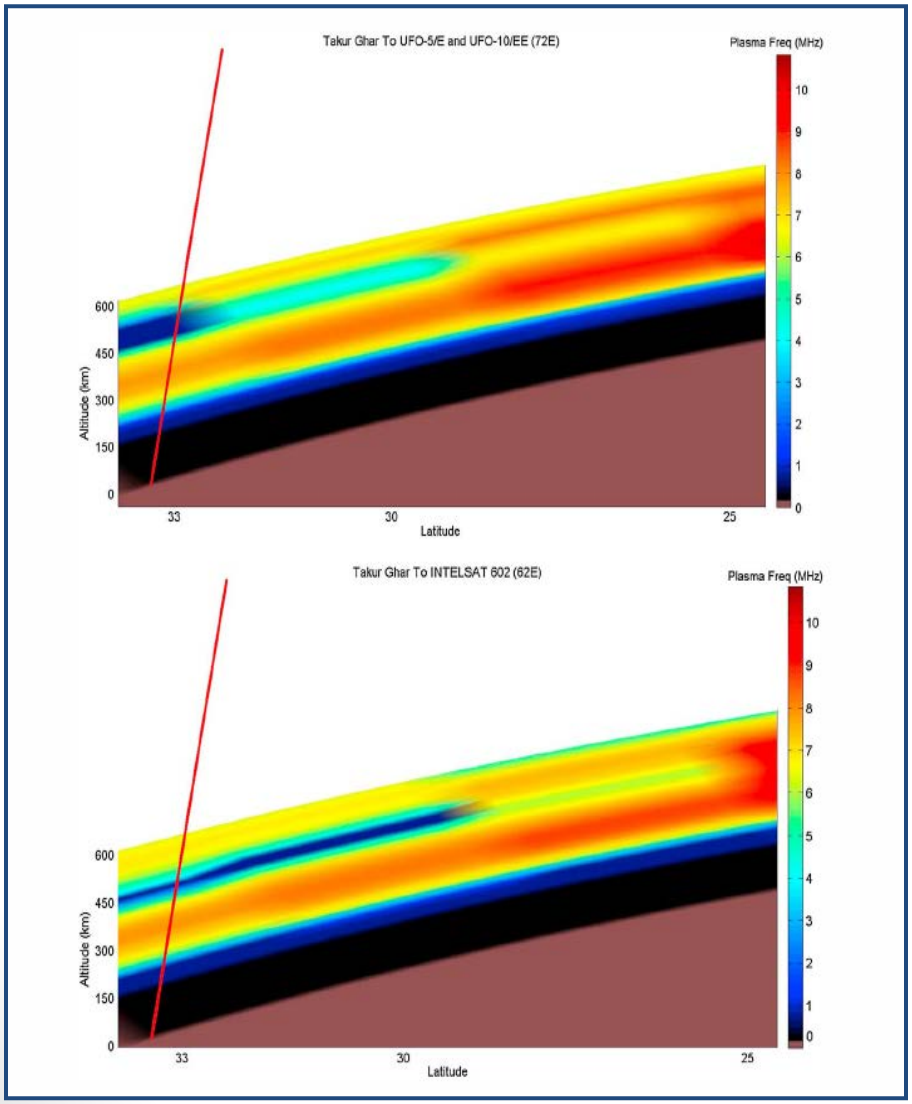
Ionospheric Sounding Team

Interest Item: Degraded Battle Capability

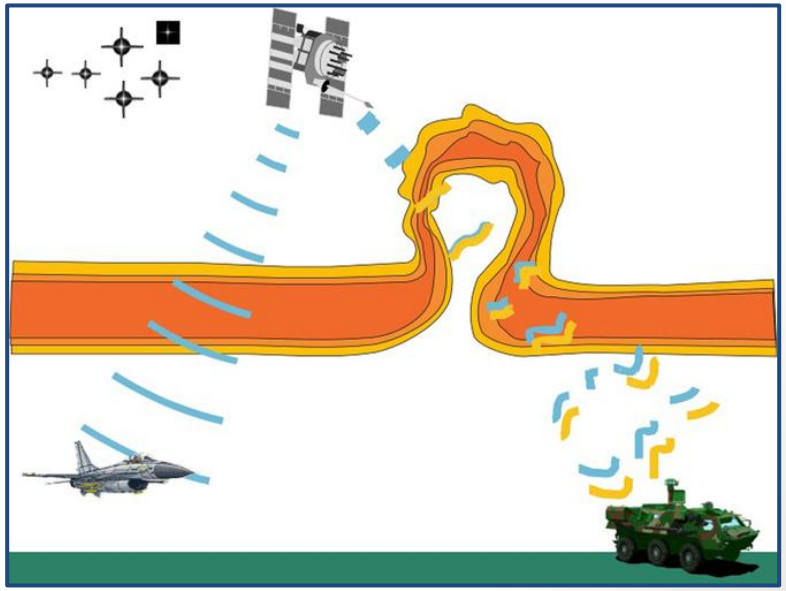




Lines of sight from gnd to SatCom

Operation Anaconda in Afghanastan (2002) suffered loss of communication that contributed to the loss of U.S military personnel. The combined effects of scintillation along with multipath caused signal fades of up to 40 dB at UHF SATCOM frequencies.

Kelly, M. A. et al (2014), Progress toward forecasting of space weather effects on UHF SATCOM after Operation Anaconda, *Space Weather, 12*, doi:10.1002/2014SW001081.

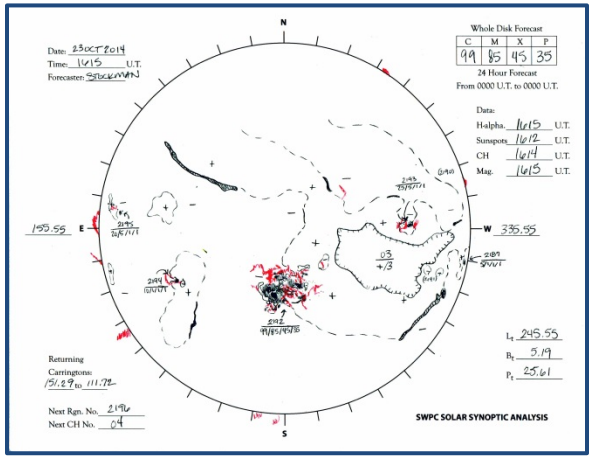


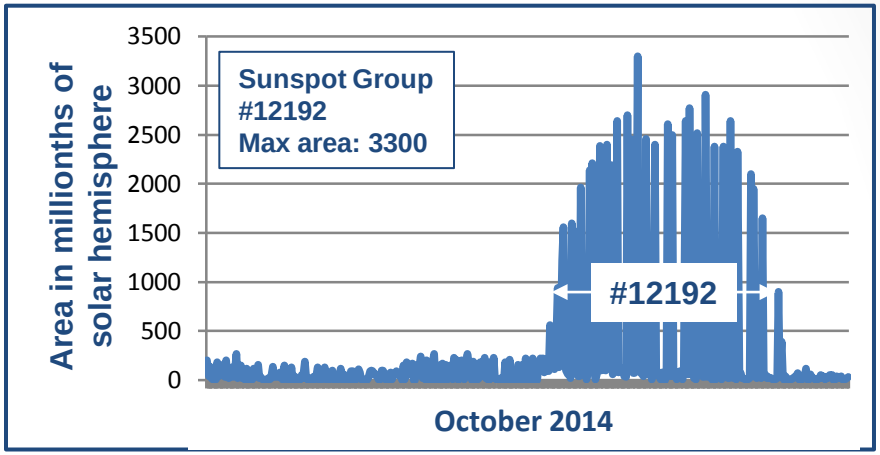
World Data System Team

Interest Item: Sunspot Region 12192

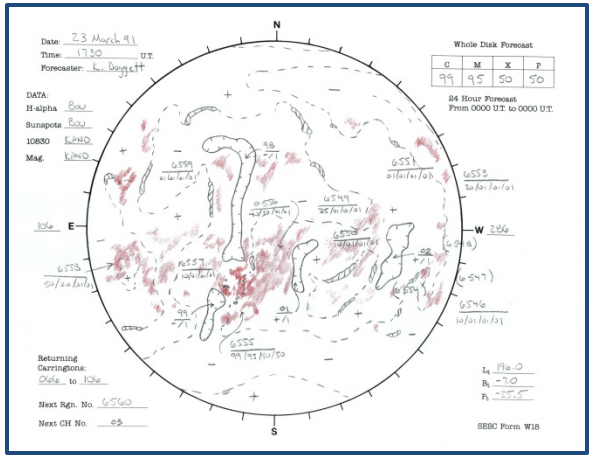
ICSU WORLD DATA SYSTEM

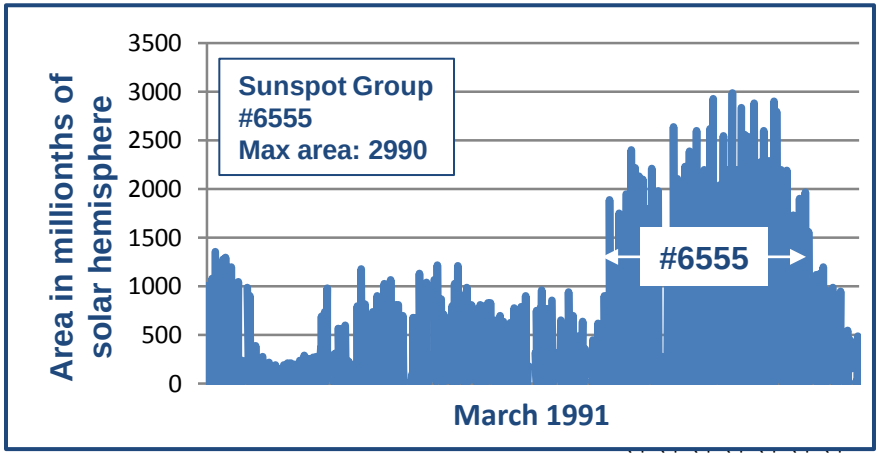
2014





1991





Solar Data from the Archives

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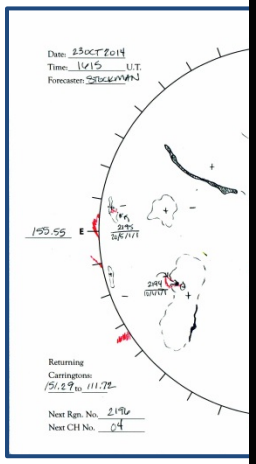
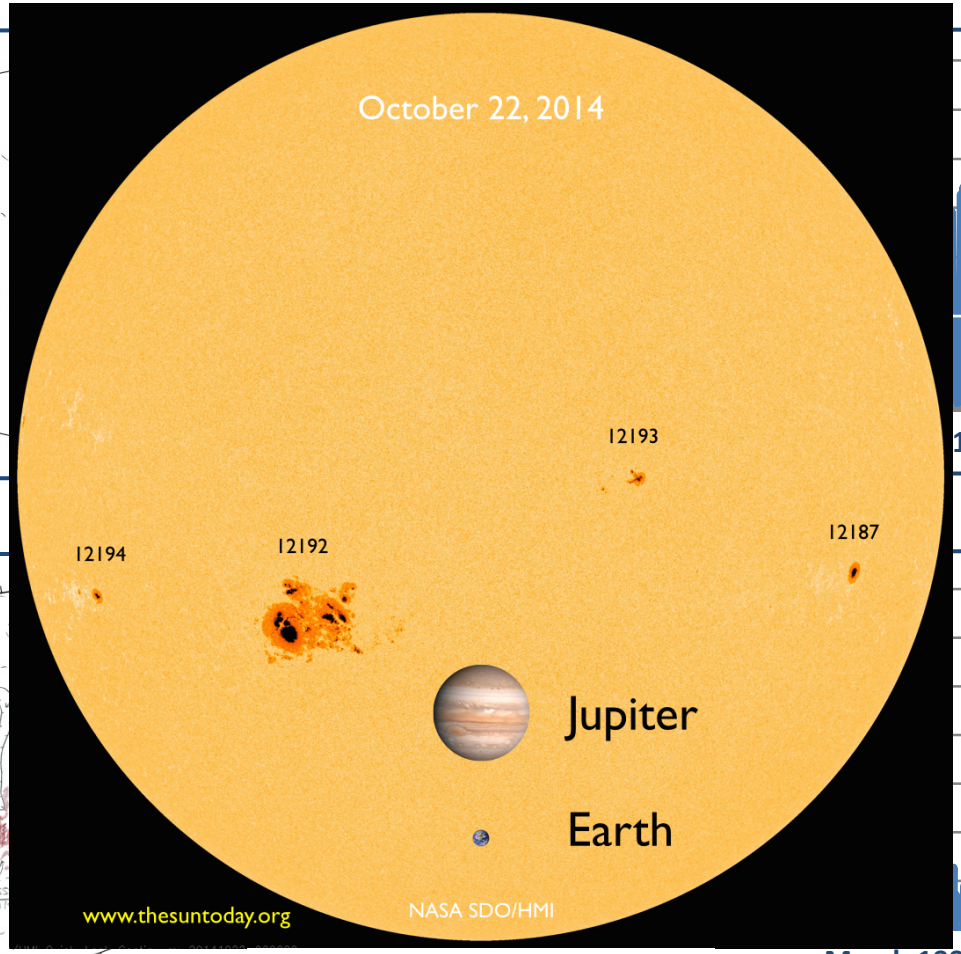
World Data System Team

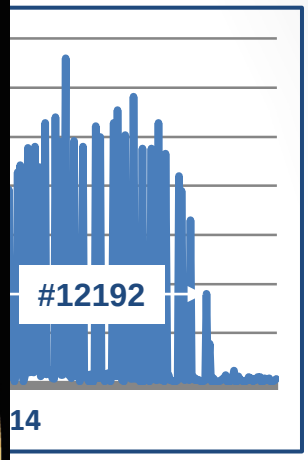
Interest Item: Sunspot Region 12192

ICSU WORLD DATA SYSTEM

2014







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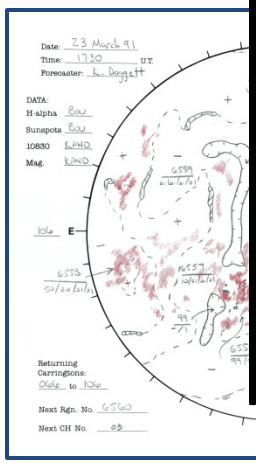

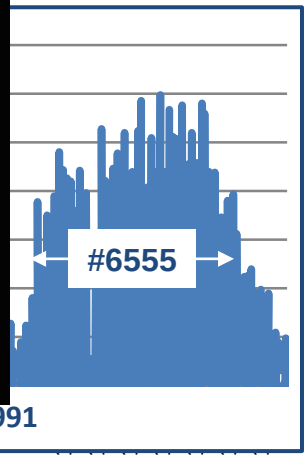

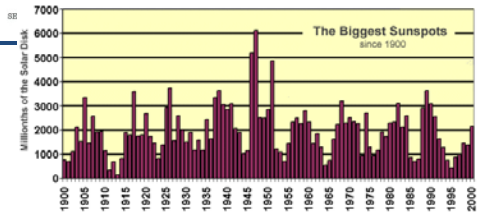

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CORS-GPS Team

Interest Item: USCG CWO Visit to Boulder

As a follow-on to the CGSIC meeting in Tampa, FL on Sept 22 the new CWO to Air Force 2 SOPS (Mike Stone) visited the Boulder NOAA Campus for familiarization with SWPC, CORS and NIST (GPS timing: atomic clocks and masers).

LCDR Paul Hemmick (NOAA Corps), Fran Coloma (CORS), Bob Rutledge (SWPC), CWO Mike Stone (USCG), and Capt. William Frey (AFWA)

Victor Zhang (NIST) and CWO Mike Stone

Space Weather Team

Interest Item: Site Visits

GOES MAG to NGDC (Aug '14)

GOES-R Flight to NGDC (Sep '14)

NGDC to DSCOVR (Jul '14)

NGDC to GOES-R CWG (Jul '14)

Space Weather Team

Interest Item: Outreach in Japan

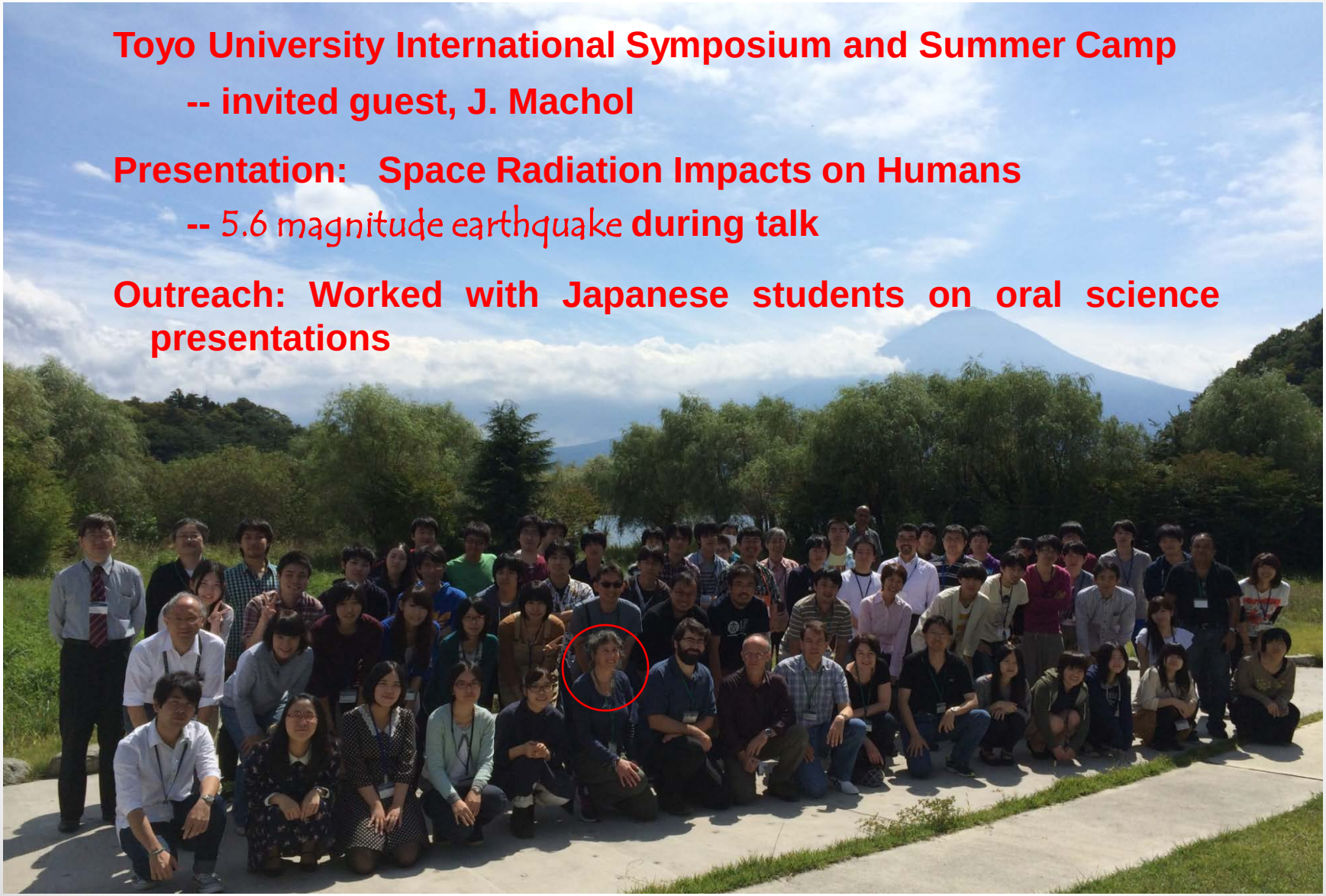
Toyo University International Symposium and Summer Camp

-- invited guest, J. Machol

Presentation: Space Radiation Impacts on Humans

-- 5.6 magnitude earthquake during talk

Outreach: Worked with Japanese students on oral science presentations



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Publications & Presentations

STP YTD FY14 Publications – 28 (1 of 4)

Publications (YTD):

Alken, P., S. Maus, H. Lühr, **R.J. Redmon**, F. Rich, B. Bowman, and S. M. O'Malley (2014), Geomagnetic main field modeling with DMSP, J. Geophys. Res. Space Physics, 119, 4010–4025, doi:10.1002/2013JA019754. **Peer reviewed**]

Asefi-Najafabady S., P. J. Rayner, K. R. Gurney, A. McRobert, Y. Song, K. Coltin, J. Huang, **C. Elvidge** and **K. Baugh** (2014) A multiyear, global gridded fossil fuel CO2 emission data product: Evaluation and analysis of results. Journal of Geophysical Research – Atmospheres. Published online September 10, 2014. DOI: 10.1002/2013JD021296 [**Peer reviewed**]

Bordikar, M.R., W.A. Scales, A. Mahmoudian, H. Kim, P.A. Bernhardt, **R. Redmon**, A.R. Samimi, S. Brizcinski, and M.J. McCarrick (2014), Impact of active geomagnetic conditions on stimulated radiation during ionospheric second electron gyroharmonic heating, *J. Geophys. Res. Space Physics, 119*, pp. 548–565, doi:10.1002/2013JA019367. [**Peer reviewed**]

Chowdhury, S., T. Shipman, D. Chao, **C.D. Elvidge**, M. Zhizhin and F-C Hsu (2014), Daytime Gas Flare Detection using Landsat-8 Multispectral, Proc. IGRASS 2014 / 25th Canadian Symposium on Remote Sensing, 13-18 July 2014, Quebec, Canada.

Clilverd, M.A., N. Cobbett, C.J. Rodger, J.B. Brundell, M.H. Denton, D.P. Hartley, **J.V. Rodriguez**, D. Danskin, T. Raita, and E.L. Spanswick (2013), Energetic electron precipitation characteristics observed from Antarctica during a flux dropout event, *J. Geophys. Res. Space Physics*, 118, 6921–6935, doi:10.1002/2013JA019067. [**Peer reviewed**]

Coscieme, L., F.M. Pulselli, S. Bastianoni, **C.D. Elvidge**, S. Anderson and Paul C Sutton (2013), A Thermodynamic Geography: Night-Time Satellite Imagery as a Proxy Measure of Energy, *AMBIO A Journal of the Human Environmen*t. DOI: 10.1007/s13280-013-0468-5. [**Peer reviewed**]

Denig, W.F., **R.J. Redmon**, **J.V. Rodriguez**, and **J.H. Allen**, "Book Report: "Satellite Anomalies - Benefits of a Centralized Database and Methods for Securely Sharing Information Among Satellite Operators" by David A Galvan, Brett Hemenway, William Welser IV and Dave Baiocchi", *Space Weather Journal*, Accepted 31 Jul 14.

Elvidge, C.D. (2013), Space Based Surveillance Tools for Monitoring of Fisheries, Proceedings of the Asian Conference on Remote Sensing, Bali, India, 20-24 Oct 2013.

Publications & Presentations

STP YTD FY14 Publications – 28 (2 of 4)

Publications (continued):

Elvidge, C.D., **K. Baugh**, **F-C Hsu** and **M. Zhizhin** (2013), SNPP Data Access of Agricultural Monitoring, Proceedings of the Asian Conference on Remote Sensing, Bali, India, 20-24 Oct 2013.

Erwin, E.H., **H.E. Coffey**, **W.F. Denig**, D.M. Willis, R. Henwood and M.N. Wild (2013), The Greenwich Photo-heliographic Results (1874 – 1976): Initial Corrections to the Printed Publications, *Solar Physics, 288*, pp. 157-170. doi: 10.1007/s11207-013-0310-z [**Peer reviewed**]

Hartley, D.P., M.H. Denton, **J.C. Green**, T.G. Onsager, **J.V. Rodriguez** and H.J. Singer (2013), Case Studies of the Impact of High-speed Solar Wind Streams on the Electron Radiation Belt at Geosynchronous Orbit: Flux, Magnetic Field and Phase Space Density, *J. Geophys. Res., 118*, pp. 6964–6979, doi:10.1002/2013JA018923. [**Peer reviewed**]

Hartley, D.P., M.H. Denton, and **J.V. Rodriguez** (2014), Electron Number Density, Temperature and Energy Density at GEO and Links to the Solar Wind: A Simple Predictive Capability, *J. Geophys. Res., 119,* pp. 4556-4571. doi:10.1002/2014JA019779 [**Peer reviewed**]

Knipp, D.J., T. Matsuo, L. Kilcommons, A. Richmond, B. Anderson, H. Korth, **R. Redmon**, B. Mero, and N. Parrish (2014), Comparison of Magnetic Perturbation Data from LEO Satellite Constellations: Statistics of DMSP and AMPERE, *Space Weather, 12*, pp. 2–23, doi:10.1002/2013SW000987. [**Peer Reviewed**]

Kress, B.T., **J.V. Rodriguez**, J.E. Mazur and M. Engel (2013), Modeling Solar Proton Access to Geostationary Spacecraft with Geomagnetic Cutoffs, *Adv. Space Res., 52*, 1939-1948. http://dx.doi.org/10.1016/j.asr.2013.08.019 [**Peer reviewed**]

Muzamil, F.M., C.J. Farrugia, R.B. Torbert, P.R. Prichette, F.S. Mozer, J.D. Scudder, C.T. Russell, P.E. Sandholt, **W.F. Denig** and L. Wilson III (2014), Structure of a reconnec□on layer poleward of the cusp: Extreme density asymmetry and a guide field, J. Geophys. Res. (accepted 19-Aug-14). [**Peer Reviewed**]

Redmon, R. J., W. K. Peterson, L. Andersson, P. G. Richards, and A. W. Yau (2014), An assessment of the role of soft electron precipitation in global ion upwelling, J. Geophys. Res. Space Physics, 119, 7665–7678, doi:10.1002/2014JA020061 **[Peer Reviewed]**

Publications & Presentations

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Publications (continued):

Rice, D. D., J. J. Sojka, J. V. Eccles, **R. Redmon**, and R. D. Hunsucker (2014), Characterizing the pre–Space Age ionosphere over Washington, DC, Radio Sci., 49, 616–629, doi:10.1002/2014RS005427. **[Peer Reviewed]**

Rodriguez, J.V. , J.C. Krosschell and J.C. Green (2014), Intercalibration of GOES 8-15 Solar Proton Detectors, *Space Weather, 12*, 92-109. doi: 10.1002/2013SW000996. **[Peer reviewed]**

Rodriguez, J.V., and T.G. Onsager (2014), Solar Energetic Particle Measurements Intercalibration Workshop, 11 April 2014, *Space Weather, 12,* 129–130, doi:10.1002/2014SW001048.

Sandholt, P.E., C.J. Farrugia and **W.F. Denig** (2014), M-I Coupling Across the Auroral Oval at Dusk and Midnight: Repetitive Substorm Activity Driven by Interplanetary Coronal Mass Ejections (CMEs), *Ann. Geophys., 32*, 333-351. doi: 10.5194/angeo-32-333-2014 **[Peer Reviewed]**

Simon Wedlund, M., M.A. Clilverd, C.J. Rodger, K. Cresswell-Moorcock, N. Cobbett, P. Breen, D. Danskin, E. Spanswick, and **J.V. Rodriguez** (2014), A Statistical Approach to Determining Energetic Outer Radiation Belt Electron Precipitation Fluxes, *J. Geophys. Res., 119*, pp. 3961–3978. doi:10.1002/2013JA019715 [**Peer reviewed**]

Snow, M., M. Weber, **J. Machol**, R. Viereck and E. Richard (2014) Comparison of Magnesium II Core-to-Wing Ratio Observations During Solar Minimum 23/24, *J. Space Weather Space Clim., 4*, A04, doi:10.1051/swsc/2014001. [**Peer reviewed**]

Soloviev, A., A. Khokhlov, E. Jalkovsky, A. Berezko, A. Lebedev, E. Kharin, I. Shestolaplv, M. Mandea, V. Kuznetsov, T. Bondar, **J. Mabie**, M. Nisilevich, V. Nechitailenko, A. Rybkina, O. Pyatygina and A. Shibaevo (2013), The Atlas of the Earth's Magnetic Field, eds. A. Gvishiani, A. Frolov and V. Lapshin, Pulb. GC RAS, Moscow, 361 p. doi:10.2205/2013/BS011_Atlas_MPZ

Turner, D.L., V. Angelopoulos, S.K. Morley, M.G. Henderson, G.D. Reeves, W. Li, D.N. Baker, C.-L. Huang, A. Boyd, H.E. Spence, S.G. Claudepierre, J.B. Blake and **J.V. Rodriguez** (2014), On the Cause and Extent of Outer Radiation Belt Losses During the 30 September 2012 Dropout Event, *J. Geophys. Res., 119,* pp. 1530–1540, doi:10.1002/2013JA019446. [**Peer Reviewed**]

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STP YTD FY14 Publications – 28 (4 of 4)

Publications (continued):

Turner, D.L., V. Angelopoulos, W. Li, J. Bortnik, B. Ni, Q. Ma, R.M. Thorne, S.K. Morley, M.G. Henderson, G.D. Reeves, M. Usanova, I.R. Mann, S.G. Claudepierre, J.B. Blake, D.N. Baker, C.-L. Huang, H. Spence, W. Kurth, C. Kletzing and **J.V. Rodriguez** (2014), Competing Source and Loss Mechanisms Due to Wave-Particle Interactions in Earth's Outer Radiation Belt During the 30 September to 3 October 2012 Geomagnetic Storm, *J. Geophys. Res., 119,* pp 1960–1979, doi:10.1002/2014JA019770. [**Peer Reviewed**]

Willis, D.M., **H.E. Coffey**, R. Henwood, **E.H. Erwin**, D.V. Hoyt, M.N. Wild and **W.F. Denig** (2013), The Greenwich Photo-heliographic Results (1874 – 1976): Summary of the Observations, Applications, Datasets, Definitions and Errors, *Solar Physics, 288*, pp. 117-139. doi 10.1007/s11207-013-0311-y [**Peer reviewed**]

Willis, D.M., R. Henwood, M.N. Wild, **H.E. Coffey**, **W.F. Denig**, **E.H. Erwin** and D.V. Hoyt (2013), The Greenwich Photo-heliographic Results (1874 – 1976): Procedures for Checking and Correcting the Sunspot Digital Datasets, *Solar Physics , 288*, pp. 141-156. doi 10.1007/s11207-013-0312-x [**Peer reviewed**]

Yuyu Zhou, Y., S.J. Smith, **C.D. Elvidge**, K. Zhao, A. Thomson and M. Imhoff (2014), A Cluster-based Method to Map Urban Area from DMSP/OLS Nightlights, *Remote Sensing of Environment*, *147*, pp. 173-185. [**Peer reviewed**]

Total accepted or published: 28
Peer Reviewed: 22

FY15 Publications

Ieda, A., S. Oyama, H. Vanhamaki, R. Fujii, A. Nakamizo, O. Amm, T. Hori, M. Takeda, G. Ueno, A. Yoshikawa, **R. J. Redmon**, **W. F. Denig**, Y. Kamide and N. Nishitani (2014), Approximate forms of daytime ionospheric conductance, J. Geophys. Res., in press. Accepted for publication in JGR. [**Peer Reviewed**]

Woods, T., R. Cahalan, **W. Denig**, G. Kopp, P. Pilewskie and T. Sparn (2014), New Space Measurements Extend Sun-Climate Record, Accepted for publication in EOS. [**Peer Reviewed**]

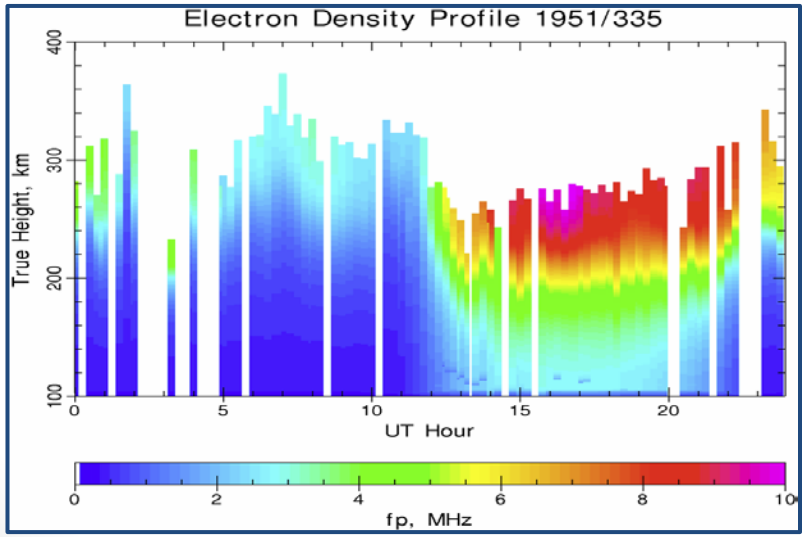
Publications & Presentations

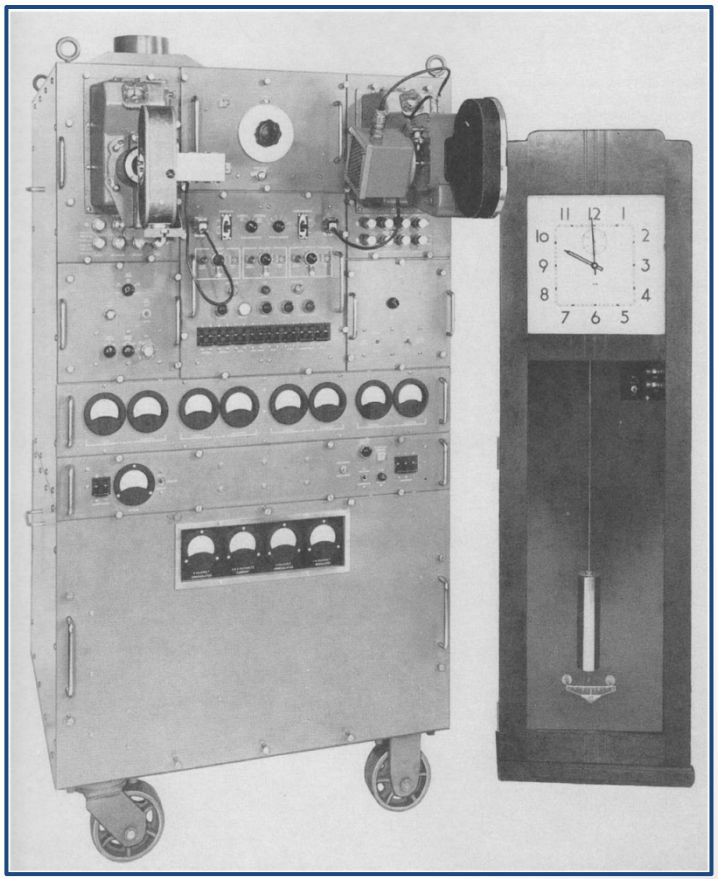
Featured Publication

Rice, D. D., J. J. Sojka, J. V. Eccles, **R. Redmon**, and R. D. Hunsucker (2014), Characterizing the pre–Space Age ionosphere over Washington, DC, Radio Sci., 49, 616–629, doi:10.1002/2014RS005427.

Key Points:

- Ionograms recorded prior to the Space Age are available from NGDC.
- Historical data may hold clues to long-term trends in space weather.
- Modern methods can extract detailed ionospheric information.





Publications & Presentations

STP FY14 Presentations – 56 (Pg 1 of 5)

YTD Presentations (FY14):

Asian Conference on Remote Sensing, 20-4 October 2013, Bali, India

- Space Based Surveillance Tools for Monitoring of Fisheries [Oral], **C.D. Elvidge**
- SNPP Data Access of Agricultural Monitoring [Oral],C.D. **Elvidge**, **K. Baugh**,, **F-C Hsu** and **M. Zhizhin**

American Geophysical Union, 09-13 December 2013, San Francisco, CA

- VIIRS Nightfire: Multispectral Satellite Pyrometry at Night [IN11B-1526/Poster], **M.N. Zhizhin, C.D. Elvidge, K. Baugh** and **C-H Feng**
- Day-to-day Monitoring of the Comparisons Between UHF Scintillation Forecasts and GNSS Observations [SA12A-04/Oral], D.N. Anderson, Yu Morton, Yu Jiao, **R.J. Redmon**
- Structure of a Reconnection Layer Poleward of the Cusp Under Extreme Density Asymmetry [SM13B-2144/Poster], F.M. Muzamil, C.J. Farrugia, R.B. Torbert, F. Mozer, P.L. Pritchett, J.D. Scudder, P.E. Sandholt, C.T. Russell and **W.F. Denig**
- Observations from the GOES Space Environment Monitor and Solar X-ray Imager are now available in a whole new way! [IN21C-1400/Poster], **D.C. Wilkinson**
- In Situ and Ground-Based Observations of a Long-Duration Pulsating Aurora Event [SM21D-02/Oral], E.J. Lund, **J.V. Rodriguez**, C-L. Huang, M. Lessard, K.W. Paulson, J. F. Fennell, H.O. Funsten, G.B. Hospodarsky, C. Kletzing, W.S. Kurth, E.MacDonald, G.D. Reeves, R.M. Skoug, C.W. Smith, and H. Spence
- NOAA People Empowered Products (PeEP): Combining social media with scientific models to provide eye-witness confirmed products [SM23A-2226/Poster], **S. Codrescu**, **J.C. Green**, **R.J. Redmon**, K. Minor, **W.F. Denig** and **E.A. Kihn**
- Simultaneous Observations of Pc5 Magnetic Field Pulsations and Associated GPS TEC Variations in the Auroral Ionosphere [SA31A-1955/Poster], C.Watson, P.T. Jayachandran, H.J. Singer, **R.J. Redmon** and D.W. Danskin
- Historical Space Weather Datasets within NOAA [SA33A-1988/Oral], **W.F. Denig**, **J.J. Mabie**, **K. Horan** and **C. Clark**
- Predicting Electron Energy Flux Using Ground-Based Multi-Spectral Auroral Imaging [SA33A-1989/Oral], G.A. Grubbs, M. Samara, R. Michell, and **R.J. Redmon**
- Simulation of Radiation Belt Electron Dynamics Using In-situ Global Model of Chorus Waves Inferred from the Low-altitude Electron Precipitation [SM33C-03/Oral], W. Li, R.M. Thorne, B. Ni, J. Bortnik, Q. Ma, L. Chen, C. Kletzing, W.S. Kurth, G.B. Hospodarsky, **J.C. Green**, D.N. Baker, S.G. Kanekal, G.D. Reeves, M.G. Henderson, H. Spence, J.B. Blake, J.F. Fennell, and S.G. Claudepierre
- A Quantitative Assessment of the Role of Soft Electron Precipitation on Global Ion Upwelling[SA41A-2099/Poster], **R.J. Redmon**, W.K. Peterson, L.Andersson, and P.G. Richards

Publications & Presentations

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YTD Presentations (continued):

American Geophysical Union, 09-13 December 2013, San Francisco, CA

- Comparison of Magnesium II Core-to-Wing Ratio Measurements During Solar Minimum 23/24 [GC51C-0975/Poster], **J.L. Machol**, M.A. Snow, R.A. Viereck, M. Weber, E.C. Richard and L.C. Puga
- SOLSTICE II -- Magnesium II Index [GC51C-0979/Poster], M.A. Snow, **J.L. Machol**, R.A. Viereck and E.C. Richard
- Spatio-Temporal Evolution and Scaling Properties of Human Settlements [GC51E04/Invited Oral], C. Small, C. Milesi, **C. Elvidge**, **K. Baugh**, G.M. Henebry and S.V. Nghiem
- Wave activity in the Thermosphere-Ionosphere system as determined from Dynasonde data [SA51B-2073/Poster], C. Negrea, N.A. Zabotin, **T.W. Bullett** and O.A. Godin
- VIIRS Nighttime Lights: Advances in Satellite Low-Light Imaging [GC53A-1049/Poster], **F.C. Hsu**, **K. Baugh**, **C. Elvidge** and **M.N. Zhizhin**
- M-I Coupling Across the Harang Reversal During Storm-Substorm Activity Driven by an Interplanetary ICME [SM51C-2197/Poster], C.J. Farrugia, P.E. Sandholt and **W.F. Denig**
- From Scientific Understanding to Operational Utility: New Concepts and Tools for Monitoring Space Weather Effects on Satellites [SM52C-06/Oral], **J.C. Green**, **J.V. Rodriguez**, **W.F. Denig**, **R.J. Redmon**, J.B. Blake, J.E. Mazur, J.F. Fennell, T.P. O'Brien, T.B. Guild, S.G. Claudepierre, H.J. Singer, T.G. Onsager and **D.C. Wilkinson**
- Geomagnetic Field Modeling with DMSP [GP53C-1158/Poster], P.Alken, **R.J. Redmon**, F.J. Rich, S.Maus and H. Luhr
- Tracing Acoustic-Gravity Waves from the Ocean into the Ionosphere [SA53A-04/Oral], N.A. Zabotin, O.A. Godin, **T.W. Bullett** and C. Negrea
- A Statistical Examination of Magnetic Field Model Accuracy for Mapping Geosynchronous Solar Energetic Particle Observations to Lower Earth Orbits [SM53D-2253/Poster], S.L. Young, B.T. Kress, **J.V. Rodriguez** and J.P. McCollough

National Cheng Kung University, 12 December 2013, Tainan, Taiwan

- Satellite Observation at Night [Invited Lecture], **F-C Hsu**

National Radio Science Meeting, 08-11 January 2014, Boulder, CO

- Wave Activity in the Thermosphere-Ionosphere System as Determined from Dynasonde Data [Oral], C. Negrea, N. Zabotin, **T. Bullett** and O. Godin
- HF Radar Measurement Techniques in the Thermosphere-Ionosphere Using Dynasonde Methods [Oral], **T. Bullett**, N. Zabotin, **J. Mabie** and C. Negrea

Publications & Presentations

STP FY14 Presentations – 56 (Pg 3 of 5)

YTD Presentations (continued):

American Meteorological Society, 02-06 February 2014, Atlanta, GA

- NOAA Operational Space Environmental Monitoring—Current Capabilities and Future Directions [Oral], **W.F. Denig** and P. Mulligan
- Stewardship of NOAA Space Environmental Data ([nvited Oral], **W.F. Denig**
- Extreme Space Weather Events Measured by GOES, 1974 – 2013 [Poster], **D.C. Wilkinson** and **W.F. Denig**

Astrodynamics 5300, 04 March 2014, University of Colorado, Boulder, CO

- State of the Art in Ion Outflow [Invited Lecture], **R. Redmon**.

Boulder Solar Day, 18 March 2014, Boulder, CO

- GOES Solar EUV Spectral Irradiance Observations and EUV Proxy Model [Poster], R.A. Viereck, **J.L. Machol** and W. Suess

Space Weather Workshop, 08-11 April 2014, Boulder, CO

- GOES Solar EUV Spectral Irradiance Observations and EUV Proxy Model [Poster], R.A. Viereck, **J.L. Machol** and W. Suess
- Solar Energetic Particle Measurements Intercalibration Workshop: Today's Topics and Long Term Goals [Oral Invited], **J. Rodriguez** and T. Onsager
- The GOES-R Spacecraft Space Weather Instruments and Cal/Val Efforts [Poster], **P. Loto'aniu**, **W.F. Denig**, **J. Darnel**, **J. Machol**, **R. Redmon**, **J. Rodriguez**, **W. Rowland**, S. Hill, A. Reinard, H. Singer and R. Viereck

Interdisciplinary Biomass Burning Initiative (IBBI), 23-26 April 2014, Munich, Germany

- VIIRS Nightfire [Oral], **F-C, Hsu**, **C.D. Elvidge**, **M. Zhizhin** and **K. Baugh**

European Geosciences Union, 27 April – 02 May 2014, Vienna, Austria

- NOAA Operational Space Environmental Monitoring – Current Capabilities and Future Directions [EGU2014-4525/Oral], **W.F. Denig**, **R.J. Redmon** and P. Mulligan
- Multi-Instrumental Vector Magnetic Observations and Techniques for Investigating Auroral Dynamics [EGU2014-8177/Oral], **R.J. Redmon**, D. Knipp, L. Kilcommons, A. Richmond, T. Matsuo, B. Anderson, H. Korth, J. Slavin, G. Le, G. Wilson, F.J. Rich and **W.F. Denig**
- Energy Coupling Between the Solar Wind and Ionosphere-Thermosphere System in HSS Events of the Ascending Phase of the Solar Cycle [EGU2014/7789/Poster], O. Verkhoglyadova, A. Mannucci, B. Tsurutani, M. Mlynczak, L. Hunt, **R.J. Redmon**, D. Knipp and J.C. Green

Publications & Presentations

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YTD Presentations (continued):

Group on Earth Observations 2014 Implementation Planning Workshop, 28 April 2014, Geneva, Switzerland

- Progress Towards a VIIRS Nighttime Lights Product [Oral], **C.D. Elvidge**

Global Gas Flaring Reduction 2014 Steering Committee Workshop., 30 April 2014, Vienna, Austria

- Preliminary Estimates of 2012 Flared Gas Volumes from VIIRS [Oral], **C.D. Elvidge**

NOAA ESRL Global Monitoring Annual Conference, 21 May 2014, Boulder, CO

- Development of a Calibration for Estimating Flared Gas Volumes from Nighttime VIIRS Data [Oral], **C.D. Elvidge**

Workshop on Inter-Calibration and Degradation of EUV Instruments, 10-13 June 2014, Brussels, Belgium

- GOES 13-15 EUV [Oral], **J. Machol**, R. Viereck and A. Jones

16th Global Emissions InitiAtive (GEIA) Conference, 10-11 June 2014, Boulder, CO

- Estimates of 2012 Gas Flaring Using VIIRS Nightfire Data [Poster] ,**M. Zhizhin**; **F-C Hsu**, **C. Elvidge** and **K.Baugh**

Third International Workshop on Earth Observation and Remote Sensing Applications, 12 June 2014, Changsha, China

- Progress Towards a Global VIIRS Nighttime Lights Product [Oral], **C.D. Elvidge**

Geospace Environment Modeling (GEM) Summer Workshop, 15-20 June 2014, Portsmouth, VA

- The GOES-R Spacecraft Space Weather Instruments and Cal/Val Efforts [Poster], **Paul Loto'aniu**, **W.F. Denig**, **J. Darnel**, **J. Machol**, **R.J. Redmon**, **J.V. Rodriguez** and **W. Rowland**

National Institute of Aeronautics and Space (LAPAN), 16 June 2014, Jakarta, Indonesia

- Preliminary Results on 2013 Burn Scar Mapping and Active Fire Characterization in Sumatra [Oral], **C.D. Elvidge**

Center for International Forestry, 20 June 2014, Bogor, Indonesia

- Preliminary Results on 2013 Burn Scar Mapping and Active Fire Characterization in Sumatra [Oral], **C.D. Elvidge**

Indonesia Climate Change Center, 23 June 2014, Jakarta, Indonesia

- Preliminary results on 2013 burn scar mapping and active fire characterization in Sumatra [Oral], **C.D. Elvidge**

Publications & Presentations

STP FY14 Presentations – 56 (Pg 5 of 5)

YTD Presentations (continued):

Spacecraft Charging Technology Conference, 23-27 June 2014, Pasadina, CA

- Safeguarding Satellites from Space Weather: NOAA Satellite Anomaly Tools and Services [Poster], **R.J. Redmo**n, **J.V. Rodriguez**, **W.F. Denig**, **P. Loto'aniu** and **J.C. Green**

International Workshop on Air Quality in Asia, 25 June 2014, Hanoi, Vietnam

- Peat Fire Remote Sensing with Nighttime Landsat Data [Oral], **C.D. Elvidge**

Solar Heliospheric & INterplanetary Environment (SHINE) Conference, 23-27 June 2014, Terruride, CO

- NOAA Solar Imagery Products for the GOES-R Era [Poster], **J. Darnel**, S. Hill, **W. Denig**
- Classification of EUV Solar Features [Oral], **J. Darnel**

Spacecraft Anomalies and Failures Workshop II, 24-25 July 2014, Chantilly, VA

- Safeguarding Satellites from Space Weather: NOAA Satellite Anomaly Tools and Services [Invited Oral], **J. Rodriguez, R. Redmon** and **W. Denig**

54th Meeting of the Civil GPS Service Interface Committee, 8-9 September 2014, Tampa, FL

- CORS Status [Oral], **F. Coloma** and G.Sella

Air Force Weather Agency (AFWA) Global Assimilation of Ionospheric Measurements (GAIM) summit, 9-10 September 2014

- SWPC, GAIM, CORS, GOLD, and More"[Oral], M. Codrescu, W.R. Frey and **F. Coloma**

International Symposium of Life Sciences at Toyo University, 15-16 September 2014, Itakura, Japan

- Impacts of Space Radiation on Humans [oral], **J. Machol**

Publications & Presentations

AGU-2014 (15 Presentations, 1 Invited)

Presentations:

- Comparison of GOES Space Environment Monitor Data Collected During Solar Cycles 22, 23, and 24 [SH13B-4088, Poster], Daniel C Wilkinson
- Mapping Geosynchronous Solar Energetic Particle Observations to Lower Earth Orbits [SM31A-4157, Poster], S.L. Young and B.T. Kress
- Improved in Situ Space Weather Data Services from the NOAA National Geophysical Data Center [SM31A-4181, Poster], J.V. Rodriguez, W.F. Denig, J.C. Green, T.M. Lotoaniu, R.E. McGuire, R.J. Redmon, W.F. Rowland, D.L. Turner, R.S. Weige and D.C. Wilkinson
- Forcasting Equatorial Spread-F on a Night to Night Basis in 5 Longitude Sectors [SA11D-01, Oral], D.N. Anderson, R.J. Redmon and T.W. Bullett
- A Real-Time Technique for Sudden Commencement Detection [SM31A-4187, Poster], W.F. Rowland, R.J. Redmon and H.J. Singer
- Evidence of Dayside Asymmetries in High-Latitude Magnetic Perturbations Measured By ST5 and DMSP [SA23D-05, Oral], D.J. Knipp, L.M. Kilcommons, J.A. Slavin, G. Le, J.W. Gjerloev and R.J. Redmon
- Localized High-Latitude Ionosphere-Thermosphere Ionization Events during the High Speed Stream Interval of 29 April – 5 May 2011 [SA21B-05, Oral], O.P. Verkhoglyadova, A.J. Mannucci, B.T. Tsurutani, M.G. Mlynczak, L.A. Hunt, R.J. Redmon and J.C. Green
- On the Cross-Energy Cross-Pitch-Angle Coherence of Electrons in the Outer Radiation Belt [SM31A-4163, Poster], Y. Chen, G.D. Reeves, W. Tu, G. Cunningham, M.G. Henderson, C. Kletzing and R.J. Redmon
- Space Weather Conditions During the February 2014 Wide Area Augmentation System GPS Degradation [SM31A-4188, Poster], T.M. Lotoaniu, R.J. Redmon, M. Codrescu, H.J. Singer, R.A. Viereck and W.F. Denig
- Real-Time Monitoring of the Dayside Geosynchronous Magnetopause Location [SM31A-4164, Poster], R.J. Redmon, T.M. Lotoaniu, M. Berguson, United States, S.M. Codrescu, J-H. Shue, H.J. Singer, W.F. Rowland and W.F. Denig
- GOES-R Rapid Refresh Imagery Advancements for the Earth and Space Weather Enterprise [IN42A-05, Oral], S.J. Goodman, T.J. Schmit, D.T. Lindsey and W.F. Denig
- A Statistical View of the Effect of Density Asymmetry and Guide Field on the Structure of the Reconnection Layer Poleward of the Cusp [SM12B-08, Oral], F.M. Muzamil1, C.J. Farrugia1, R.B. Torbert1, P.L. Pritchett, F. Mozer, J.D. Scudder, C.T. Russell, P.E. Sandholt, W.F. Denig and L.B. Wilson III
- Extreme Space Weather Events Observed Through the Decades [SH41D-06, Invited Oral], W.F. Denig
- Rescuing NOAA's Earliest Airphoto Archive [IN43E-06, Oral], F.C. Hsu, K. Baugh, C. Elvidge and M. vonHendy
- Global Urbanization Modeling Supported by Remote Sensing [B33J-03, Oral], Y. Zhou1, S. Smith, K. Zhao, M.L. Imhoff, A.M. Thomson, B.P. Bond-Lamberty and Christopher Elvidge

OUTLINE
Solar & Terrestrial Physics Division

STP Division Overview

Milestones & Metrics

Program Updates

Special Interest Items

Publications and Presentations

Issues & Summary

Issues & Summary
Solar & Terrestrial Physics Division

- ✓ NGS Aerial Photography (4QFY13) – ***Unknown Status***
- ✓ GOES-R SWx Algorithm Risks (4QFY13) – ***Some new issues***
- ✓ Fed hiring restrictions having mission impact (3QFY12) – ***Better***
- ✓ GOES-R L2+ SWx algorithms (3QFY11) – *Path to operations defined*
  - ➢ Frozen Baseline / Algorithm Readiness – Waivers – ***Watch Item***
  - ➢ GOES L0 Data Not in CLASS – ***Solved***
  - ➢ GOES-R Data Management Tasks – GOES-R Data Mngr – ***NLAI***

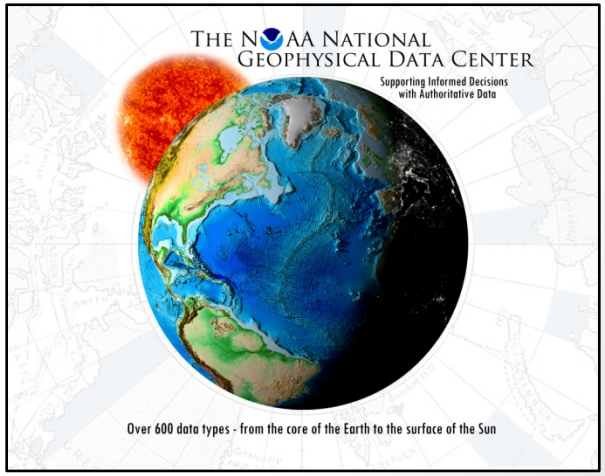
<u>Metrics</u>

Papers (FY14): 28

✓ Peer Reviewed: 22

Monthly GIBs/SIBs: 26

Presentations (FY14): 56



QUESTIONS?