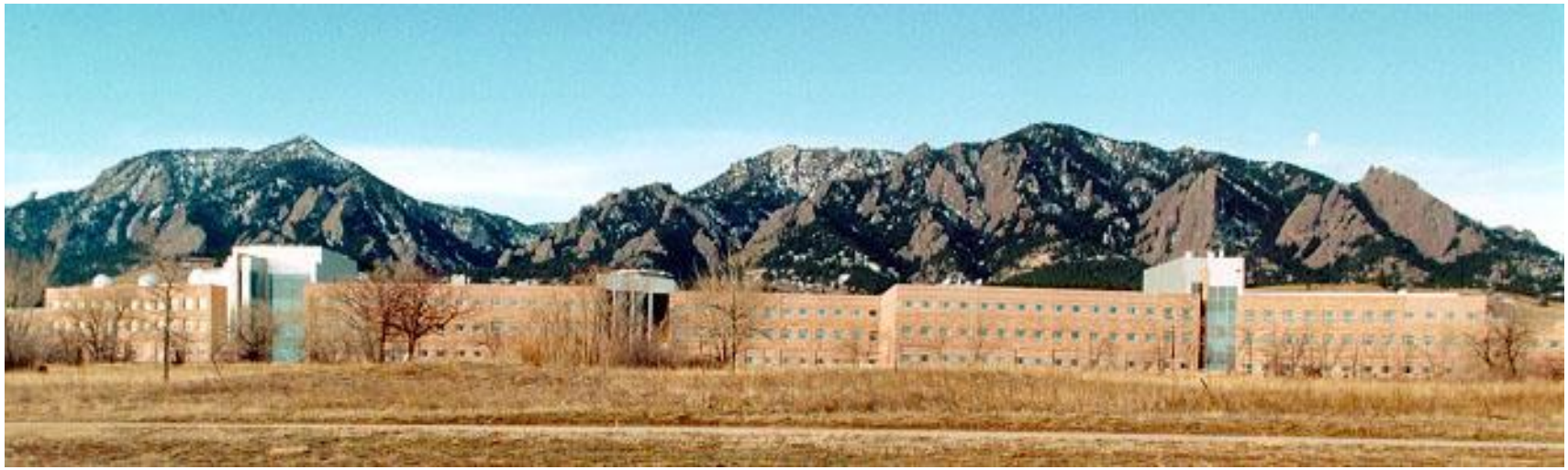


Quarterly Divisional Review

02 Oct 2008

4QFY08

Dr. William F. Denig, Chief

Solar & Terrestrial Physics Division

NOAA/NESDIS/NGDC

303 497-6323

William.Denig@noaa.gov

OUTLINE

Solar & Terrestrial Physics Division

- **STP Program Overview**
- **Milestones & Performance Measures**
- **Accomplishments**
- **Special Interest Items**
- **DMSP Real-time Services**
- **Issues & Summary**

STP Program Overview
Personnel

Solar & Terrestrial Physics Division
William Denig/F, Chief
Janet Brown/F, Secretary
Karen Horan/F, Physical Science Tech
Craig Clark/F, Scientific Data Tech

Space Environment Group (SEG)

Eric Kihn/F, Team Lead
- Terry Bullett/C
- Ray Conkright/C
- Ed Erwin/F
- Rob Redmon/F
- Herb Sauer/C
- Dan Wilkinson/F
- Jim Manley/C
- Erin Rowland/S

Earth Observation Group (EOG)

Chris Elvidge/F, Team Lead
- Kim Baugh/C
- Ben Tuttle/C
- Tilottama Ghosh/C
- David Ziskin/C

Earth Geophysics Group (EGG)

Vacant/F, Team Lead
- Patrick Alken/C
- Rob Prentice/C
- Fran Coloma/C
- Justin Mabie/C
- Dave Fischman/F
- Andrea Bilich/F, NGS

Key
F – Federal
C – CIRES/CIRA
S – Student

STP Program Overview
Personnel Changes

- **Gains**
  - None
- **Losses**
  - Don Herzog – Retired[2] – will convert to a visiting scientist position
- **Vacancies**
  - SEG Space Physicist – Paperwork in process; CIRES PRA
  - STP Real-time Data Manager – Paperwork in process; CIRES PRA
- **Inbound**
  - None
- **Pending**
  - Dave Fischman – Transfer to MGG (effective 12 October)
  - NGS – In discussion

STP Program Overview
Agreements – Status

STATUS

Scope	Team	Type	Partner	NOAA Legal	DOC Legal	NGDC Signed	Partner Signed	Start	End	Status	
DMSP Archive	SEG	MOA	DMSP	X	X	X	X	30-Mar-07	30-Sep-09	G	In place - nothing to report
SWx Climatology	SEG	MOU	AFCCC	X	X	X	X	27-May-04	01-Oct-14	G	In place - nothing to report
Ionospheric Data	SEG	MOU	AFWA	X	X	X	X	21-Aug-06	21-Aug-11	G	In place - nothing to report
Ionosonde Sites	SEG	MOU	USGS	X	X			*TBD*	*TBD*	G	*Back on track*
~~Ionosonde Deploy~~	~~SEG~~	~~MOU~~	~~USAFA~~					~~*TBD*~~	~~*TBD*~~	~~Y~~	~~*O.B.E. - To be removed*~~
NASIC	EOG	MOU	NASIC	X	X	X	X	09-Mar-06	01-Jan-11	G	In place - nothing to report
CORS Support	EGG	AGR	NGS	n/a	n/a	X	X	01-Oct-03	30-Sep-09	G	*Extension in process*
Earth Imagery	EOG	MOU	NGA					*tbd*	*tbd*	G	*Initial Discussions*

Updated: 29 Sep 08

STP Program Overview
CDMP – Status

Dataset	Funded in FY08	Submitted - FY09	POC	Contractor ($K)	NGDC ($K)	% Expended
Heat capacity mapping mission (L44)	X	X	Elvidge	60.0	6.0	0.0%
DMSP film scanning (L3)	X	X	Elvidge	825.0	82.5	54.2%
DMSP P/L activiation messages (L41)	X	X	Elvidge	30.0	3.0	97.8%
Historical solar spectral data (L16)	X	?	Denig/Coffey	65.0	6.5	30.0%
Cosmic rays - Forbush archives (L42)	X	X	Denig/Coffey	85.0	8.5	0.0%
Historical solar observations (L18)	X	X	Horan	90.0	9.0	45.6%
Historical ionosonde records (L7)	X	X	Redmon	75.0	7.5	0.0%

Updated: 30 Sep 08

OUTLINE
Solar & Terrestrial Physics Division

STP Program Overview

Milestones & Performance Measures

Accomplishments

Special Interest Items

DMSP Real-time Services

Issues & Summary

Milestones & Performance Measures

FY08 Milestones

	PPBES Program	STP FY08 Milestones	Status	Planned Completion Date	Actual Completion Date	Responsible Person
AOP	Space Weather	Integrate Mirrion real-time ionospheric data access system with the Space Physics Interactive Data Resource (SPIDR) - *Deferred FY07 Milestone*	C	(Q1) 12/31/2007	(Q1) 12/1/2007	Redmon
	Marine Transportation Systems	Improve crustal magnetic field model from degree 100 to degree 120 by minimizing the impact of spurious magnetic anomalies in satellite magnetic datasets.	C	(Q1) 12/30/2007	(Q1) 12/20/2007	Maus
	Marine Transportation Systems	Produce radiance-calibrated, cloud-free, nighttime-lights composites for 2005-2006 using Defense Meteorological Satellite Program (DMSP) earth-imagery data.	C	(Q1) 12/31/2007	(Q1) 12/20/2007	Elvidge
	Space Weather	Achieve Initial Operating Capability for the Space Environmental Integration System (SEIS) at the USAF Combat Climatology Center for use in battlespace M&S scenarios.	C	(Q2) 3/31/2008	(Q2) 3/31/2008	Kihn
	Space Weather	Develop Application Programming Interface (API) extensions for ordering datasets via the Comprehensive Large-data Array Steward System (CLASS).	C	(Q3) 6/30/2008	(Q3) 5/14/2008	Kihn
	Marine Transportation Systems	Implement an improved cloud-detection algorithm in real-time/static nighttime lights imagery products using 0.5-degree spatial resolution surface temperature grids.	C	(Q4) 9/30/2008	(Q4) 9/30/2008	Elvidge
	Marine Transportation Systems	Create station-level metadata records for 80% of all operating magnetic observatories providing data to NGDC in compliance with FGDC and emerging ISO standards.	C	(Q4) 9/30/2008	(Q4) 9/30/2008	Herzog / Fischman
AOP	Space Weather	Complete 15-year environmental climatology for the coupled Ionosphere-Thermosphere-Magnetosphere (ITM) system using the Space Weather Analysis (SWA) framework.	C	(Q4) 9/30/2008	(Q4) 9/30/2008	Mabie
AOP	Space Weather	Release internet-enabled tools to allow station operators to enter magnetic observatory station-level metadata through the Space Physics Interactive Data Resource (SPIDR).	C	(Q4) 9/30/2008	(Q4) 9/30/2008	Kihn
AOP	Space Werather	Incorporate MetOp Space Environmental Monitor (SEM) data into NGDC space weather archives and provide scientific datasterwaship of the SEM data.	C	(Q4) 9/30/2008	(Q4) 9/02/2008	Wilkinson
AOP	Marine Transportation Systems	Release version 2 of the degree-720 NGDC geomagnetic field model using a main magnetic field model plus contributions from the lithosphere and magnetosphere.	C	(Q4) 9/30/2008	*Reported by MGG*	Maus

AOP → AOP milestone

C **Complete**

G **On-track**

Y **Watch Item**

R **Issue**

FY08 Milestone
Improved Cloud Detection Algorithm

Milestone – Implement an improved cloud-detection algorithm in real-time/static nighttime lights imagery products using 0.5-degree spatial resolution surface temperature grids.

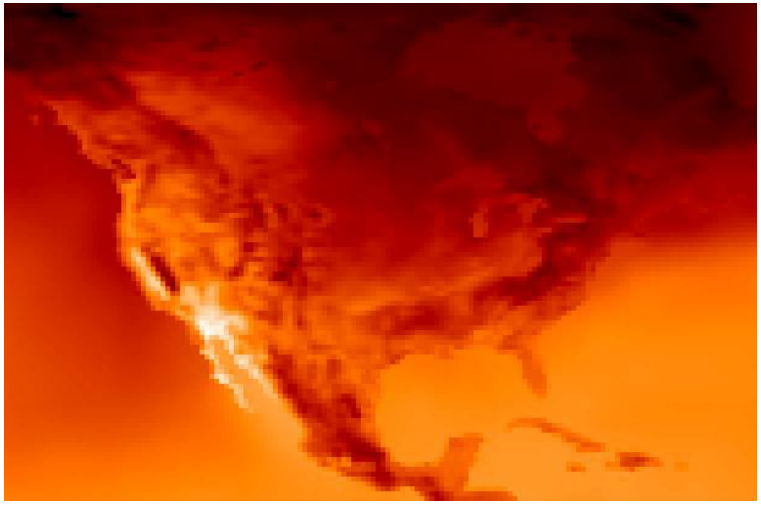
Background – The DMSP-OLS cloud-masking algorithm differences the NCEP surface temperatures and the thermal band of the DMSP-OLS. A threshold is applied to the difference image so OLS thermal data that is significantly colder than the NCEP surface temperature data is masked as a cloud. Prior to FY08 the cloud-masking algorithm used "00" hour forecasts, or "nowcast" surface temperatures at a 1° spatial resolution and a 6-hr temporal resolution. In FY08 the cloud-masking algorithm was rewritten to allow cloud-detection to be part of the near-real time processing of the DMSP-OLS data. This required the ability to work with NCEP forecasted surface temperature data as the latency of the "nowcast" surface temperature data was 12-24 hours. The new algorithm also makes use of the higher spatial (0.5^{o}) and temporal (3-hr) resolution of the NCEP forecasted surface temperature data.

Completion Date:

Planned: (4QFY08) 09/30/2008

Actual: (4QFY08) 09/30/2008

Significance – NGDC is the authoritative source of real-time, DMSP-OLS nighttime imagery products that serve the needs of the DoD, DHS and other authorized users.



FY08 Milestone
Create Geomag Station-level Metadata

Milestone – Create station-level metadata records for 80% of all operating magnetic observatories providing data to NGDC in compliance with FGDC and emerging ISO standards.

Background – NGDC receives data from ~120 magnetic observatories per year including those observatories which are part of the International *Inte*rnational *R*eal-time *Mag*netic Observatory *Net*work (INTERMAGNET). Through arrangement with INTERMAGNET, the NGDC archives and disseminates the definitive magnetic data. Metadata records have been created for 100% of the INTERMAGNET observatories (108 stations). NGDC also receives magnetic data from a number of other magnetic observatories for which metadata records are still needed. These other observatories represent less than 20% of the total NGDC collection.

Boulder Magnetic Observatory

Completion Date:

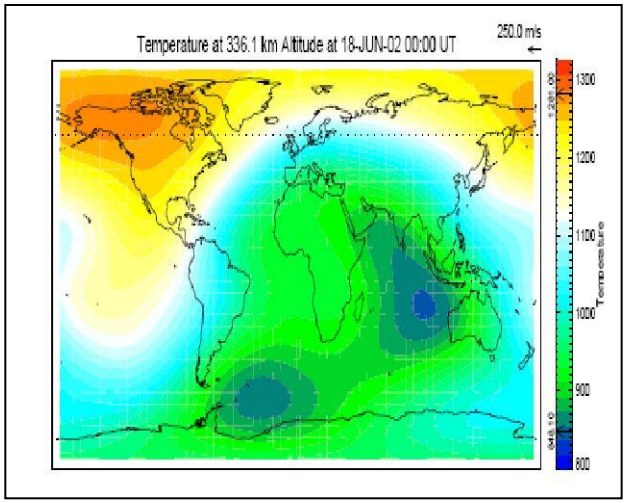
Planned:(4QFY08) 09/30/2008

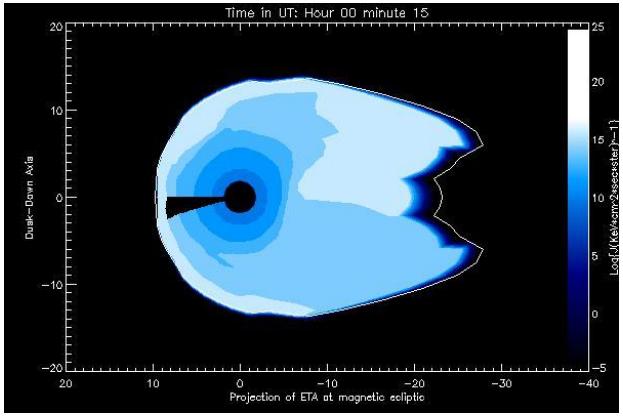
Actual: (4QFY08) 09/30/2008

Significance – NGDC and the co-located WDC-STP are working with the other WDCs in Scotland and Japan to normalize their respective data holdings to ensure consistency in the global magnetic record. The SPIDR access system is being evaluated as a potential tool to maintain consistency among the respective WDCs.

FY08 Milestone (AOP)
15-Year Space Weather Climatology

Milestone: Complete 15-year environmental climatology for the coupled Ionosphere-Thermosphere-Magnetosphere (ITM) system using the Space Weather Analysis (SWA) framework.





Background: Space Weather (SWx) climatologies are used by the Modeling & Simulation (M&S) community to provide environmental backgrounds and extremes that impact the performance of modern technology systems including satellites, GNSS navigation signals and radio-wave communication devices. The NGDC SWA effort provides the specification of long-term SWx conditions which is now available to the M&S community through the SPIDR portal.

Completion Date:

Planned: (4QFY08) 09/30/2008

Actual: (4QFY08) 09/30/2008

Significance – The NGDC SWA effort has provided the first ever long-term environmental climatology database that has now been incorporated into military war-game scenarios by the AF Combat Climatology Center (AFCCC).

FY08 Milestone (AOP)
Magnetic Observatory Metadata in SPIDR

Milestone – Release internet-enabled tools to allow station operators to enter magnetic observatory station-level metadata through the Space Physics Interactive Data Resource (SPIDR).

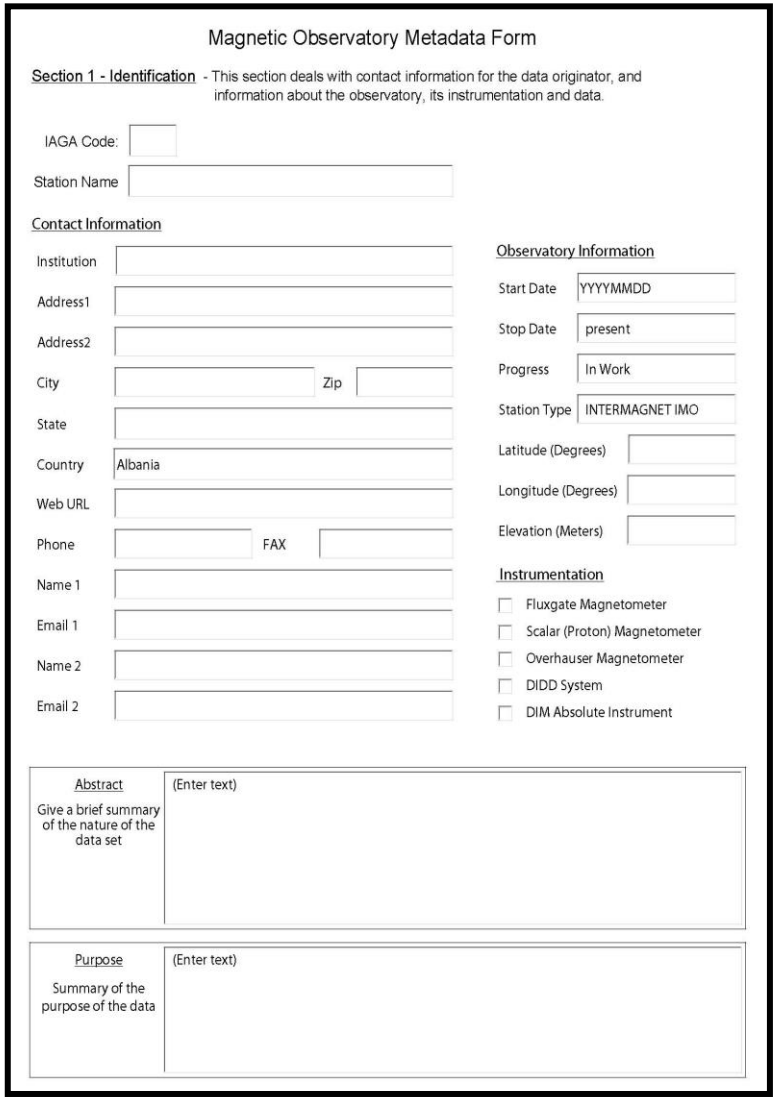
Background – Historic geomagnetic observatory metadata mostly exists in printed station survey annals which are not compliant with current environmental data search and discovery techniques. NGDC has developed tools to encourage observatory managers to create and edit station-level metadata via the SPIDR data access system.

Completion Date:

Planned: (4QFY08) 09/30/2008

Actual: (4QFY08) 09/30/2008

Significance – NGDC has assumed a leadership role within the geomagnetic observatory community by coordinating a draft data entry form and providing station-operator access to SPIDR.



Magnetic Observatory Metadata Form

Section 1 - Identification - This section deals with contact information for the data originator, and information about the observatory, its instrumentation and data.

IAGA Code:

Station Name

Contact Information

Institution

Address1

Address2

City Zip

State

Country Albania

Web URL

Phone FAX

Name 1

Email 1

Name 2

Email 2

Observatory Information

Start Date YYYYMMDD

Stop Date present

Progress In Work

Station Type INTERMAGNET IMO

Latitude (Degrees)

Longitude (Degrees)

Elevation (Meters)

Instrumentation

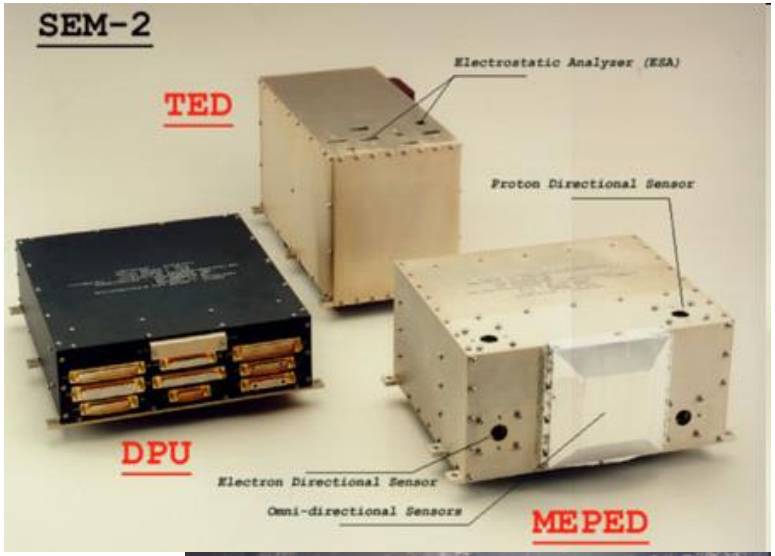
- Fluxgate Magnetometer
- Scalar (Proton) Magnetometer
- Overhauser Magnetometer
- DIDD System
- DIM Absolute Instrument

Abstract — Give a brief summary of the nature of the data set — (Enter text)

Purpose — Summary of the purpose of the data — (Enter text)

NGDC Milestone (AOP)
MetOp Space Environment Monitor (SEM)

Milestone – Incorporate MetOp Space Environment Monitor (SEM) data into NGDC space weather archives and provide scientific data stewardship of the SEM data for the scientific community.



Background – The European MetOp-A satellite was launched in Oct '06 into a mid-morning orbit. MetOp-A includes a SEM-2 sensor provided by NOAA to collect space weather data as part of the IJPS. NGDC receives SEM-2 data products from the NWS/SWPC on a daily basis and makes these data available to the public within minutes of receipt. NGDC generates 16-s averages from the full resolution data and provides them on-line as ASCII tables and CDF files. Quality control plots are also generated that provide information on data file integrity and continuity.

Completion Date:

Planned: (4QFY08) 09/30/2008

Actual: (4QFY08) 09/02/2008

Significance – SEM-2 measurements on MetOp provide 2-orbit continuity for NOAA's space weather satellite data products.

IJPS – Initial Joint Polar System

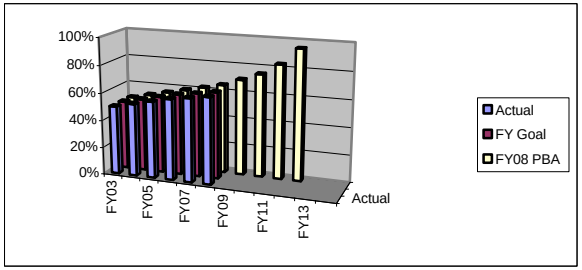
Milestones & Performance Measures

FY08 Performance Measures

Performance Measures

1 - Percentage of archived SWx data available to the public on-line

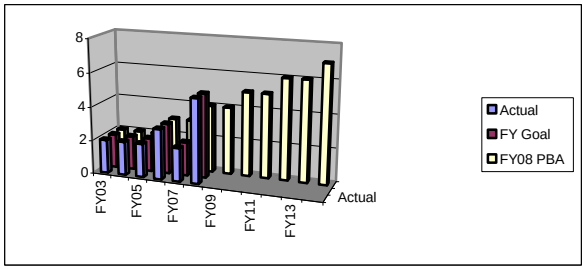
	Actual	FY Goal	FY08 PBA
FY03	50%	50%	**50%**
FY04	53%	53%	53%
FY05	56%	56%	56%
FY06	59%	59%	59%
FY07	61%	61%	62%
FY08	63%	63%	**65%**
FY09			70%
FY10			75%
FY11			83%
FY12			**95%**
FY13			
FY14			



Current Month: Sep 08		
This Q Planned	Actual This Q/Total	FY08 Target
63%	63%/63%	63%

2 - Improved retrospective products for understanding the space environment

	Actual	FY Goal	FY08 PBA
FY03	2	2	**2**
FY04	2	2	2
FY05	2	2	2
FY06	3	3	3
FY07	2	2	3
FY08	5	5	**4**
FY09			4
FY10			5
FY11			5
FY12			**6**
FY13			6
FY14			7



Current Month: Sep 08		
This Q Planned	Actual This Q/Total	FY08 Target
5	5/5	5

Updated: 10/2/08

The FY2008 Program Baseline Assessment (FY08 PBA) was released 08 Jun 2005

Milestones & Performance Measures

FY09 Milestones (Proposed)

	PPBES Program	STP FY09 Milestones (Proposed)	Status	Planned Completion Date	Actual Completion Date	Responsible Person
	Space Weather	Complete data rescue of available synoptic solar drawings from the Wendelstein Solar Observatory for the period 1946-1987.	G	(Q1) 12/30/2008		Horan / Fischman
AOP	Marine Transportation Systems	Develop a generalized methodology for the detection of coral reef bleaching from satellite-based imagery.	G	(Q1) 12/30/2008		Ziskin
	Marine Transportation Systems	Initiate reprocessing of Defense Meteorological Satellite Program (DMSP) imagery for the period 1992-2005 using new software procedures providing archival product consistency.	G	(Q2) 3/31/2009		Erwin
AOP	Space Weather	Implement new visualization product for energetic particle data from the POES Space Environment Monitor (SEM) that will provide a planetary perspective for this environment.	G	(Q2) 3/31/2009		Wilkinson
AOP	Space Weather	Release version 5 of the NOAA Space Physics Interactive Data Resource (SPIDR) utility including improved database access and metadata editing capabilities.	G	(Q2) 3/31/2009		Kihn
	Space Weather	Develop scripts to convert raw magnetometer data into WDC format and make those scripts available to the public to increase the useable of the NOAA data products.	G	(Q3) 6/30/2009		Mabie
AOP	Marine Transportation Systems	Estimate national and global gas flaring levels for 2007 using Defense Meteorological Satellite Program (DMSP) nighttime lights imagery.	G	(Q3) 6/30/2009		Elvidge
	Space Weather	Provide preliminary documentation to the CLASS Developmental Team for the Simple NOAA Archive Access Portal (SNAAP) API.	G	(Q3) 6/30/2009		Kihn
	Marine Transportation Systems	Complete development of a radiance calibrated global nighttime lights product set for Defense Meteorological Satellite Program (DMSP) spanning 1996-2006.	G	(Q4) 9/30/2009		Elvidge
AOP	Space Weather	Acquire and archive historical GOES 8-12 “raw” data files currently maintained by the NWS Space Weather Prediction Center (SWPC) on CD.	G	(Q4) 9/30/2009		Wilkinson
	Space Weather	Release version 2 of the MIRRION ionospheric sounding data collection, processing, and dissemination system for increased station capabilities and improved reliability.	G	(Q4) 9/30/2009		Redmon

AOP → AOP milestone

C Complete

G On-track

Y Watch Item

R Issue

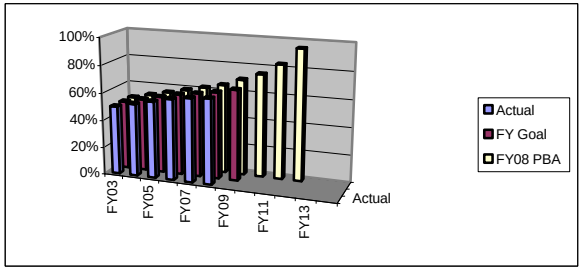
Milestones & Performance Measures

FY09 Performance Measures (Proposed)

Performance Measures

1 - Percentage of archived SWx data available to the public on-line

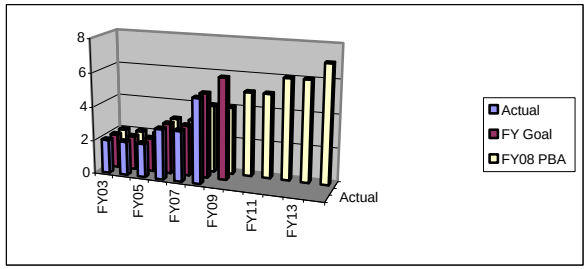
	Actual	FY Goal	FY08 PBA
FY03	50%	50%	**50%**
FY04	53%	53%	53%
FY05	56%	56%	56%
FY06	59%	59%	59%
FY07	61%	61%	62%
FY08	62%	63%	**65%**
FY09		66%	70%
FY10			75%
FY11			83%
FY12			**95%**
FY13			
FY14			



Current Month: *Preliminary*		
This Q Planned	Actual This Q/Total	FY09 Target
64%	64%/64%	68%

2 - Improved retrospective products for understanding the space environment

	Actual	FY Goal	FY08 PBA
FY03	2	2	**2**
FY04	2	2	2
FY05	2	2	2
FY06	3	3	3
FY07	3	3	3
FY08	5	5	**4**
FY09		6	4
FY10			5
FY11			5
FY12			**6**
FY13			6
FY14			7



Current Month: *Preminary*		
This Q Planned	Actual This Q/Total	FY09 Target
6	6/6	6

Updated: 10/2/08

The FY2008 Program Baseline Assessment (FY08 PBA) was released 08 Jun 2005

OUTLINE
Solar & Terrestrial Physics Division

STP Program Overview

Milestones & Performance Measures

Accomplishments

Special Interest Items

DMSP Real-time Services

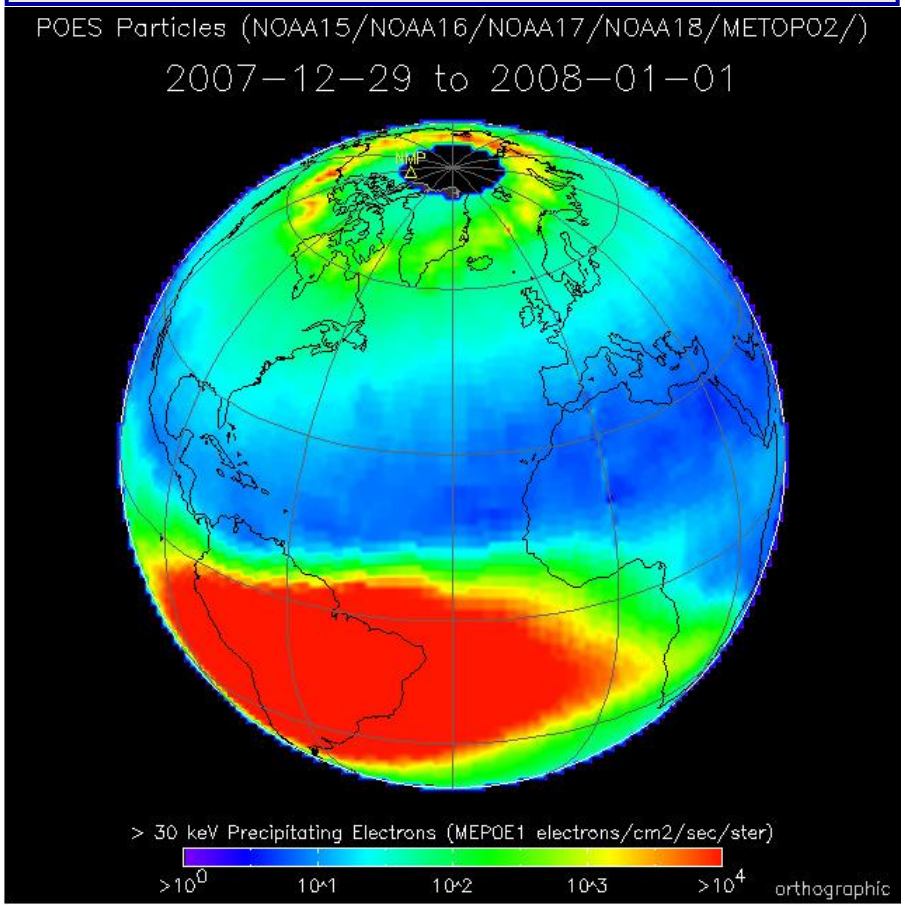
Issues & Summary

Accomplishments
1st Place Hollings Scholar Presentation

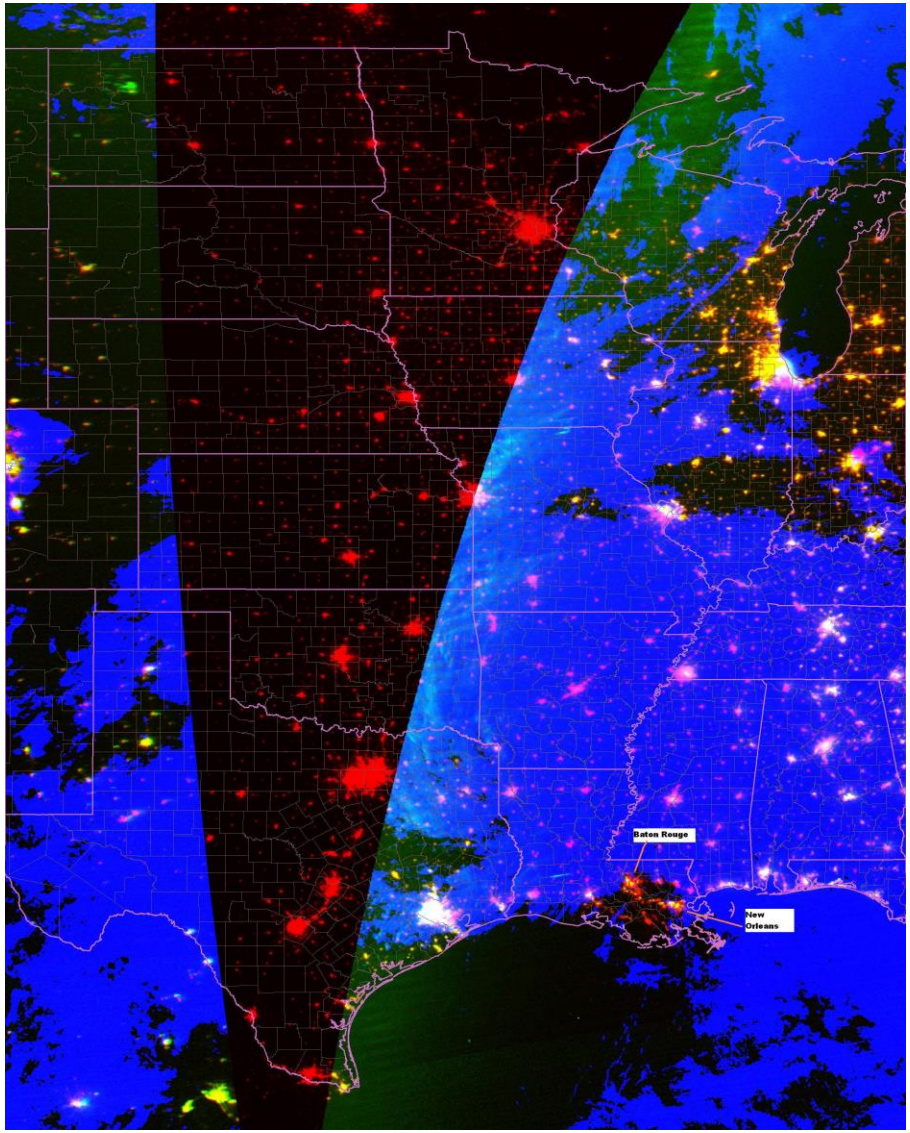
Hollings Scholar, Mr **Ethan Peck** from Cornell University won 1st place within NESDIS at the 2008 Student Scholarship Presentations, NOAA HQ. Ethan Peck spent the summer analyzing POES Space Environment Monitor (SEM) data under the direction of **Dan Wilkinson**. Expert advice was also provided by **Dr. Janet Green** from NWS/SWPC. Mr Peck is the lead author in a paper submitted for presentation at the Fall '08 American Geophysical Union (AGU) meeting in San Francisco.

OFFICE OF EDUCATION
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

Ernest F. Hollings Undergraduate Scholarship Program



Accomplishments
DMSP OLS Support for Hurricane Gustav



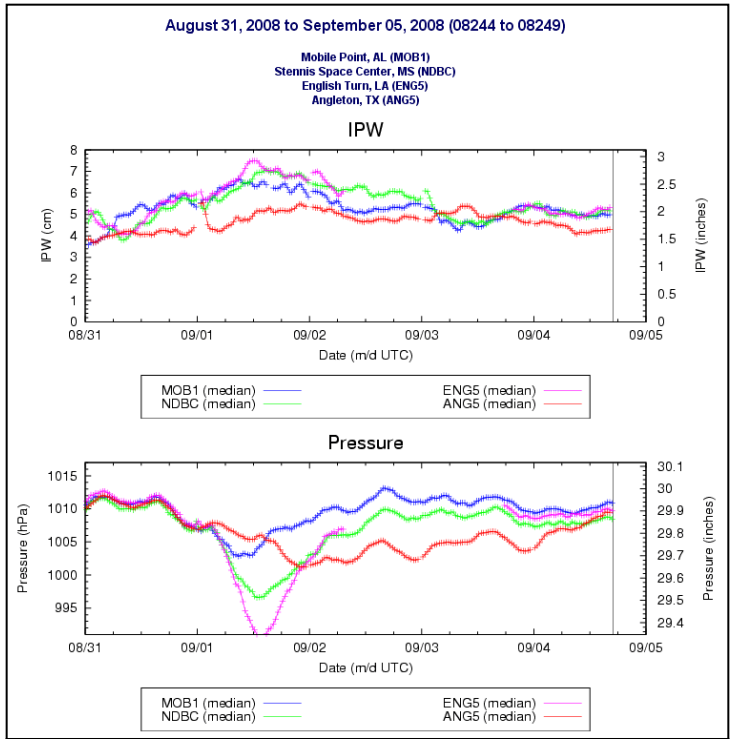
DMSP nighttime earth imagery was used to provide environmental disaster support to the gulf region in the aftermath of Hurricane Gustav. Cloud-free imagery provided to DHS/FEMA showed regions of significantly less lighting near New Orleans & Baton Rouge consistent with reported power outages. As of mid September most lighting had returned to the gulf except for some interesting exceptions.

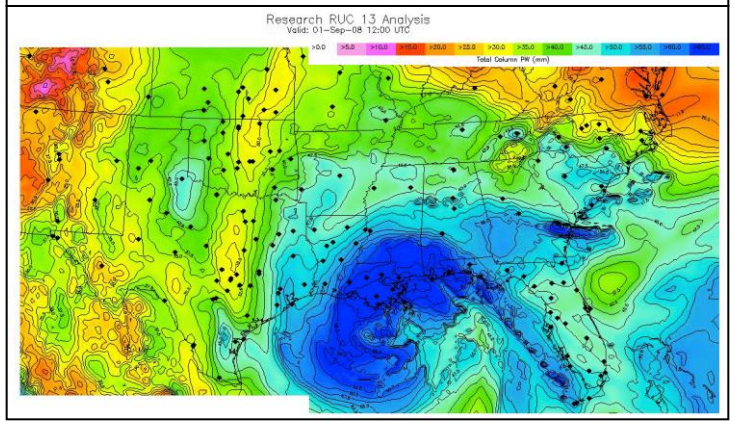
Patrick Dennis/The Advocate (02 Sep 08)

Accomplishments

CORS-West Support for Hurricane Gustav

NGDC operates the CORS-West mirror facility in coordination with the NOS/NGS. GPS receiver data from CORS collection sites along the gulf coast were used by NOAA research and the NWS during Hurricane Gustav for local weather predictions. The upper panel on the right includes time series plots of the integrated precipitable water (IPW) and barometric pressure near New Orleans. The lower panel is the model storm analysis from the NOAA Rapid Update Cycle (RUC) operational weather prediction model showing the IPW near the time of landfall. ***(Graphics courtesy of ESRL/GSD – Seth Gutman)***





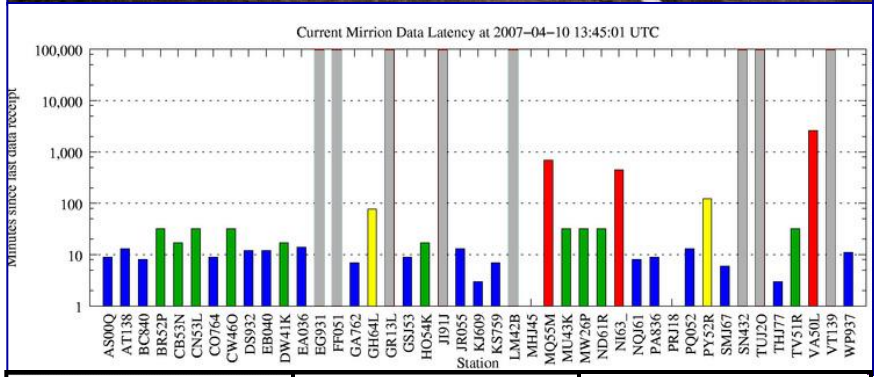
Water surges against the Inner Harbor Navigational Canal in New Orleans. (Photo: Lee Celano/Reuters)

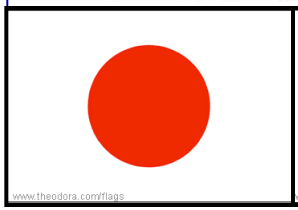
Accomplishments
Mirrion Recovery - Ionosondes

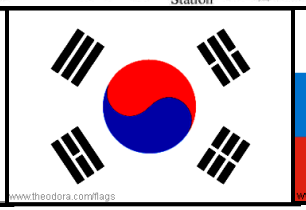
- **On Sep 18th at 1:00 am MDT the AFWA Space Weather Operations Center lost receipt of ionosonde data. Since AFWA was unable to contact the appropriate POC within NGDC the problem remained unresolved until later in the day. Once informed, the NGDC team quickly isolated the problem to the Mirrion acquisition, processing & distribution system and was re-started the system & data flow.**

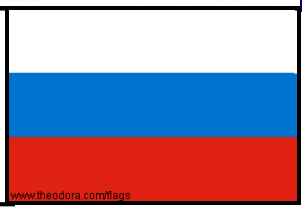
Lesson Learned – Review POC Procedures

- **AFWA recently allocated $400K to Terry Bullett for the ionosonde program. These funds will be partly used to improve the reliability and performance of Mirrion.**
- **In FY08 the number of Mirrion ionosonde stations increased from 36 to 45.**
- **We expect this trend to continue with new real-time data from Japan, Korea and Russia.**









OUTLINE
Solar & Terrestrial Physics Division

STP Program Overview

Milestones & Performance Measures

Accomplishments

→ **Special Interest Items**

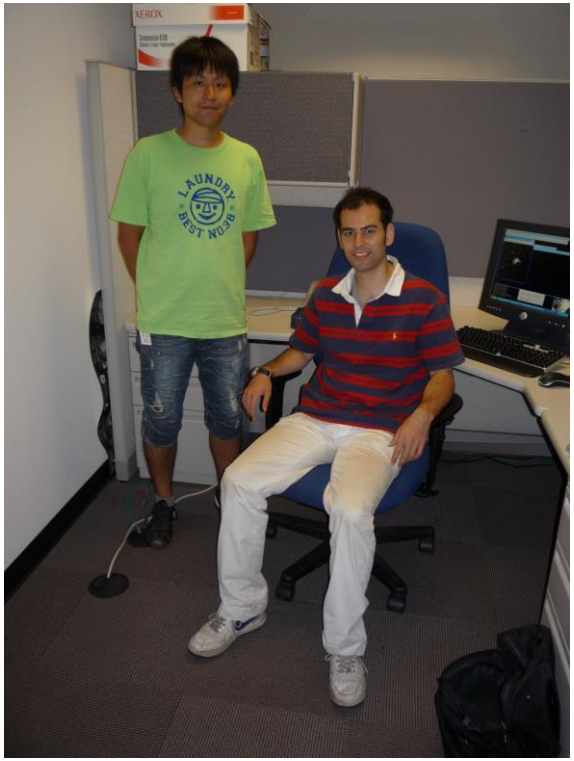
DMSP Real-time Services

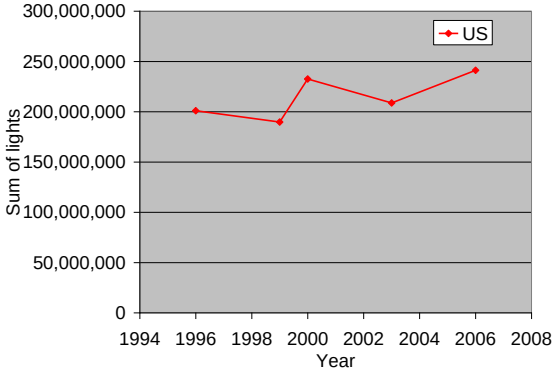
Issues & Summary

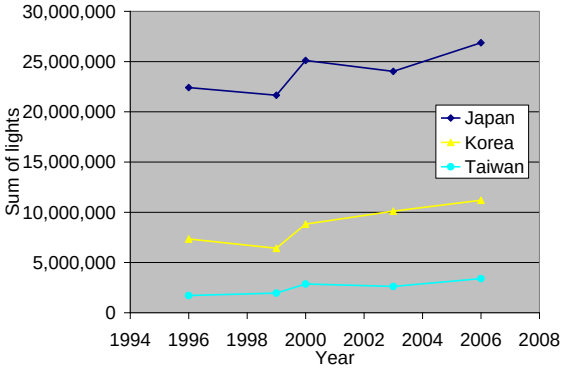
Special Interest Item

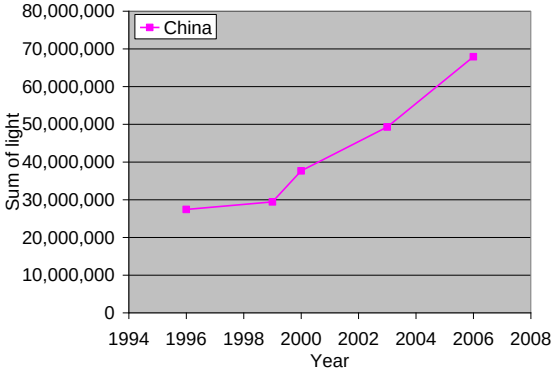
Guests: Kakiuchi-san & Terakado-san

Elijah Kakiuchi and **Ryutaro Terakado** from the Department of Materials Engineering at the University of Tokyo spent two months within STP working with Chris Elvidge's team creating DMSP composites with fixed-gain data. The researchers prepared inter-calibrated composites for 6 time intervals which were then used to study a variety of interesting phenomena including the series of plots shown below showing the per country "sum of lights" for the U.S., Japan, South Korea, Taiwan and China. Whereas these sample countries have shown nominal growth in nighttime lighting since 1994 the nighttime lighting for China has more than doubled.









Special Interest Item
Guest Scientist: FABIO Falchi

Italian astronomer **Dr Fabio Falchi** and colleagues have compiled the first global atlas on night-sky brightness using earth imagery data from the Defense Meteorological Satellite Program (DMSP). These studies indicate that the amount of light pollution generated per capita has tripled since 1970 [sic]. Dr. Falchi's work was cited in a recent report in the Science Journal of **The Wall Street Journal On-Line** (25 July 2008) which discusses the wide-ranging societal impacts of artificial light pollution. This summer Dr. Falchi continued his studies as a visiting scientist with the DMSP Nighttime Lights group within STP.

Dr Fabio Falchi

Soon after arriving at NGDC

Special Interest Item
Guest Scientist: FABIO Falchi

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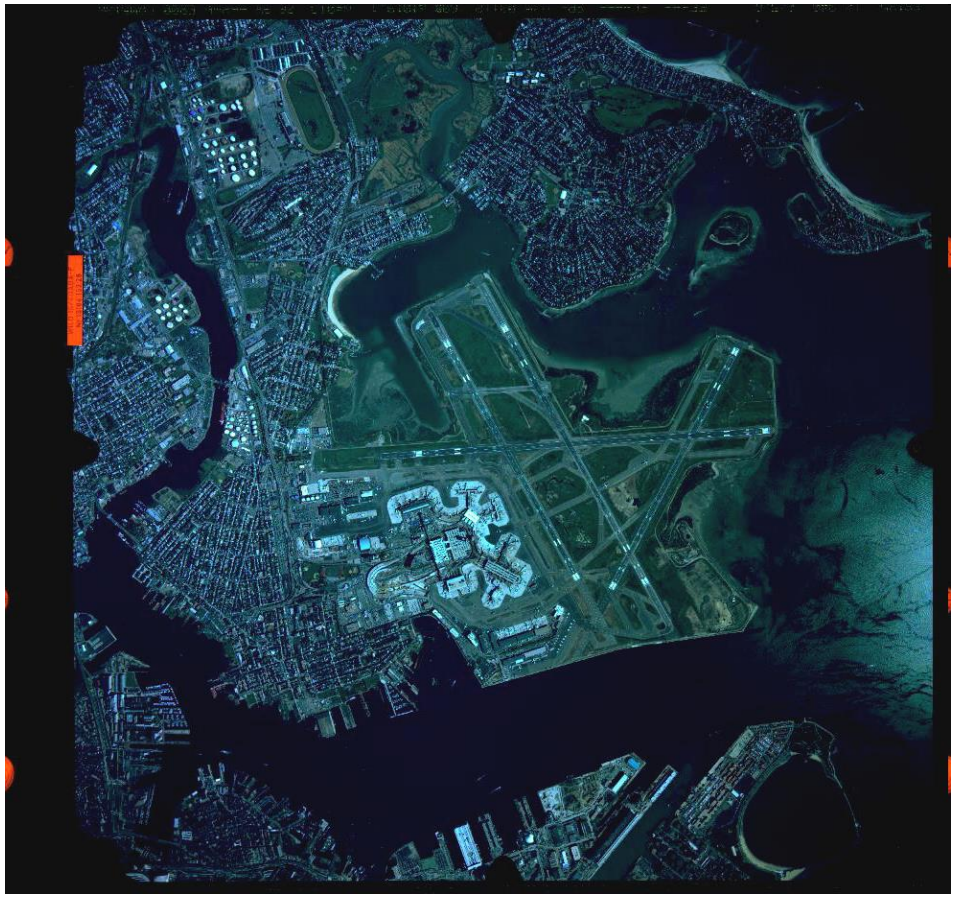
Dr Fabio Falchi

After a summer in Boulder

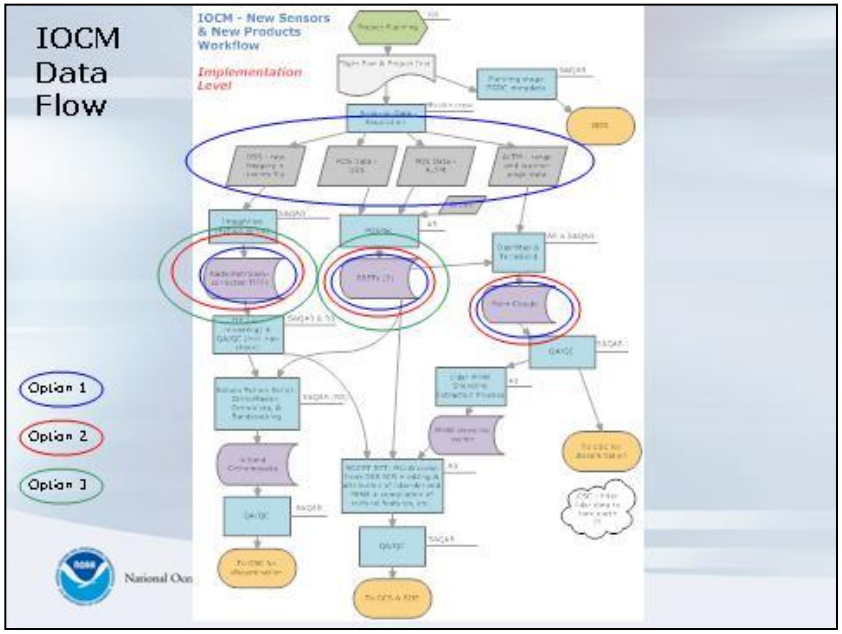
Special Interest Item
NGS Digital Photography – Status

Representatives from the NGS/Remote Sensing Division and STP (+ Dan Kowal) are continuing to discuss the possibility of NGDC providing permanent archive services for the NGS aerial photography collection. Initial discussions involve the Integrated Oceans and Coastal Mapping (IOCM) digital photographs @ 12 TB/year.



Boston, Massachusetts

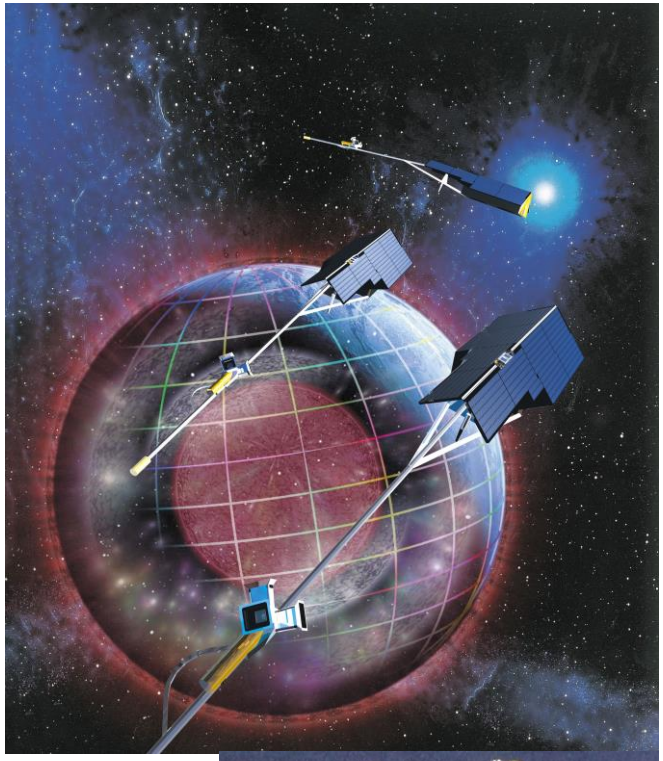
Initial estimates suggest that the in-house data management for IOCM plus the NGS Emergency Response Data and CDMP recovery of legacy film photos is ~1 MY data manager effort.



Special Interest Item
SWARM Magnetic Mission – Status

SWARM Real-time Operations: SWARM will have a Near Real-Time (NRT) capability limited to 1 telemetry download per 90-min orbit. Data latency to produce & deliver SWARM Level 1B products to NGDC is estimated to be 15 min. Level SWARM 1B products are:

- ✓ Geophysical: **B** (50 Hz) / $\mathbf{v_i}$, **E**,n_e, T_e & T_i (all 2Hz)
- ✓ Satellite: acceleration, linear and rotational (1Hz)

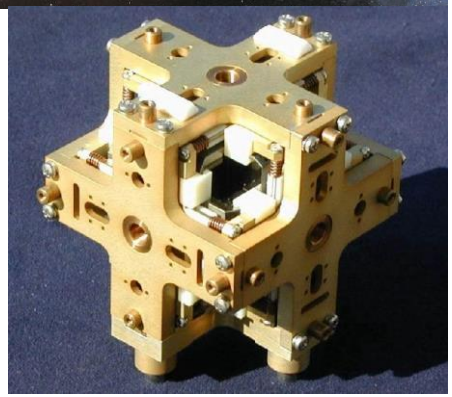


Potential Users Products:

- Satellite Drag Monitoring – Real-time monitoring of thermospheric density enhancements for improved satellite data specifications. (AFSPC / TRL: 8)

- E-Region Dynamo Electric Field – Real-time monitoring of E-Region zonal electric fields for assured communication and navigation. (AFWA / SWPC / TRL: 6)

- F-region Dynamo Electric Field – Real-time monitoring of F-Region electric fields for assured comm & nav.(AFWA / SWPC / TRL: 4)

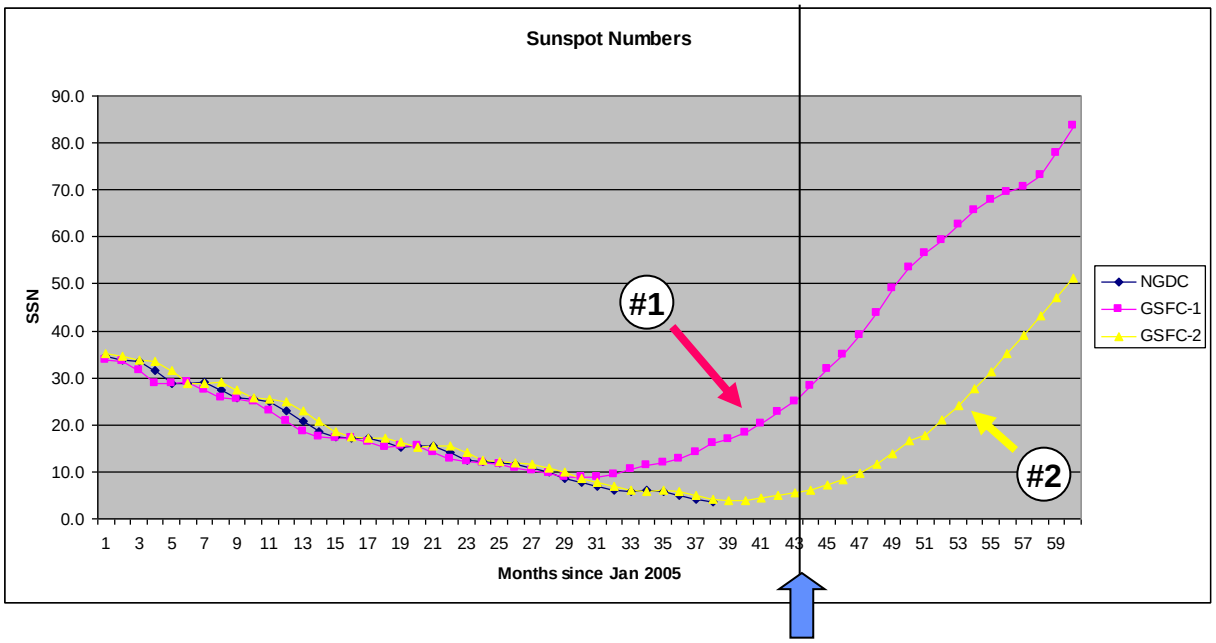


SWARM Launch: Oct 2010 **Mission Duration:** 51 months

Comment: The European community is looking for guidance from NOAA in the development of NRT data products for the SWARM mission data.

Special Interest Item
US-TEC Errors

In early Aug '08 the operational US-TEC product was taken off-line due to apparent modeling errors in regions where the data assimilation model relaxed to climatology. The error was initially attributed to bad predictive sunspot numbers (SSN) that were based on values acquired from NGDC. Ed Erwin reviewed the data and found no issues with the NGDC SSN *measured* values. Inconsistent, however, were the SSN *predictions* available from NASA GSFC (#1) which grossly over-estimated the SSN in the current epoch based on NGDC historical data – available approximately 6 months before present. GSFC (#2) has now revised their SSN predictions. SWPC also found additional issues with US-TEC which have since been corrected.

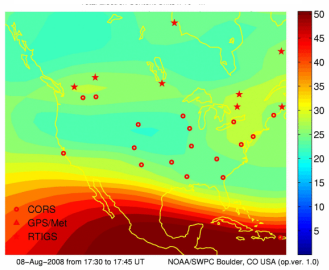


August 2008

08 Aug 2008

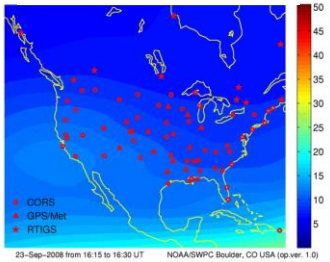
Poor Results US-TEC

Non-physical Results



23 Sep 2008

Improved US-TEC



Special Interest Item
Sunspots (1 of 2)

"August 2008 has made solar history. As of 00 UTC September 1st 2008 (5PM PST) we just witnessed the first spotless calendar month since June 1913. This was determined according to sunspot data from NOAA's National Geophysical Data Center, which goes back to 1749."

http://science.slashdot.org/science/08/09/02/142218.shtml

Special Interest Item
Sunspots (2 of 2)

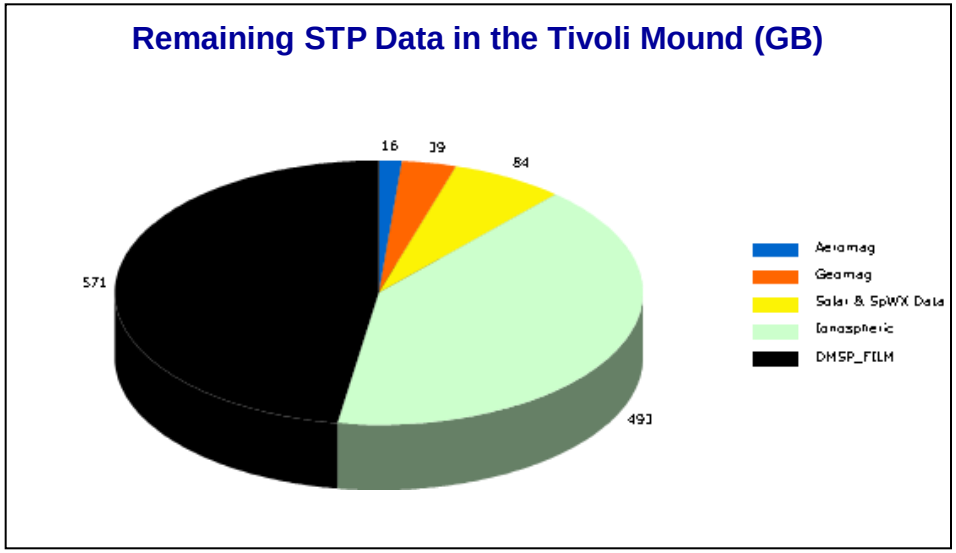
"I would be remiss if I didn't pass on to you a story from yesterday: *Sun Makes History: First Spotless Month in a Century -- Drop in solar activity has potential effect for climate on earth*. . . . Have you heard about this, folks? I'm asking you. Have you heard about the fact we have our first spotless sun in 100 years?" (02 Sep 08)

http://www.rushlimbaugh.com/home/daily/site_090208/content/01125104.guest.html

See also

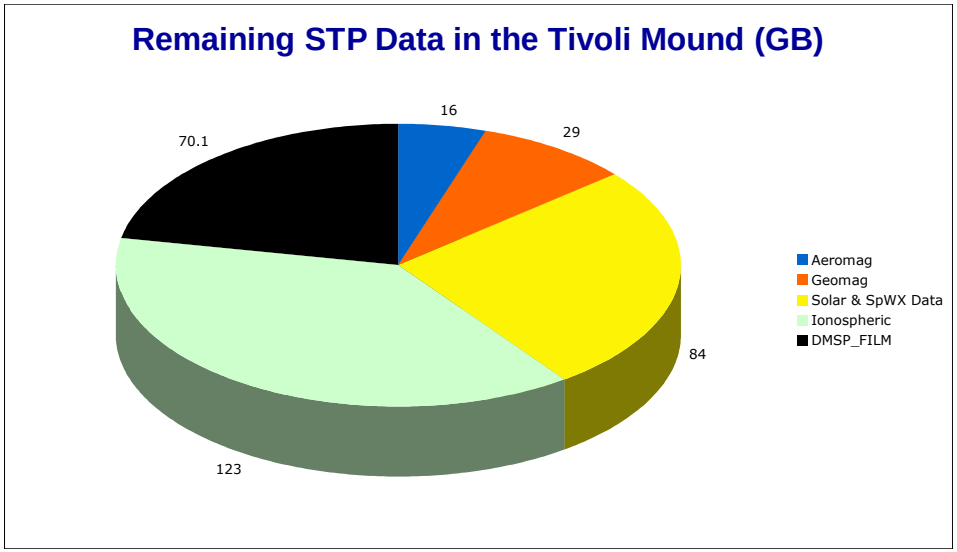
http://www.dailytech.com/Sun+Makes+History+First+Spotless+Month+in+a+Century/article12823.htm

Special Interest Item
Tivoli Mound



3QFY08

Total Size: 1,203 GB



4QFY08

Total Size: 322 GB

Breaking News
Satellite Imagery of Baghdad

Study Of Satellite Imagery Casts Doubt On Surge's Success In Baghdad - Mozilla Firefox

http://www.sciencedaily.com/releases/2008/09/080919074830.htm

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Study Of Satellite Imagery Casts Doubt On Surge's Success In Baghdad

ScienceDaily (Sep. 22, 2008) — By tracking the amount of light emitted by Baghdad neighborhoods at night, a team of UCLA geographers has uncovered fresh evidence that last year's U.S. troop surge in Iraq may not have been as effective at improving security as some U.S. officials have maintained.

Night light in neighborhoods populated primarily by embattled Sunni residents declined dramatically just before the February 2007 surge and never returned, suggesting that ethnic cleansing by rival Shiites may have been largely responsible for the decrease in violence for which the U.S. military has claimed credit, the team reports in a new study based on publicly available satellite imagery.

"Essentially, our interpretation is that violence has declined in Baghdad because of intercommunal violence that reached a climax as the surge was beginning," said lead author John Agnew, a UCLA professor of geography and authority on ethnic conflict. "By the launch of the surge, many of the targets of conflict had either been killed or fled the country, and they turned off the lights when they left."

The night-light signature in four other large Iraqi cities — Kirkuk, Mosul, Tikrit and Karbala — held steady or increased between the spring of 2006 and the winter of 2007, the UCLA team found. None of these cities were targets of the surge.

Baghdad's decreases were centered in the southwestern Sunni strongholds of East and West Rashid, where the light signature dropped 57 percent and 80 percent, respectively, during the same period.

By contrast, the night-light signature in the notoriously impoverished, Shiite-dominated Sadr City remained constant, as it did in the American-dominated Green Zone. Light actually increased in Shiite-dominated New Baghdad, the researchers found.

Until just before the surge, the night-light signature of Baghdad

See also:

Matter & Energy
- Optics
- Weapons Technology
- Energy Policy

Science & Society
- Conflict
- Political Science
- Disaster Plan

Reference
- Electricity
- Battery (electricity)
- Hurricane proof building
- Underwater explosion

enlarge

Satellite image of night lights in Baghdad. By tracking the amount of light emitted by Baghdad neighborhoods at night, a team of UCLA geographers has uncovered fresh evidence that last year's U.S. troop surge in Iraq may not have been as effective at improving security as some U.S. officials have maintained. (Credit: Image courtesy of University of California - Los Angeles)

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Why MDs Worry "This" Supplement Could Put Them Out Of Business!
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Chernobyl Fallout? Plutonium In Swedish Soil

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Light Up Tents
Material research scientists have made electroluminescent technology elastic and supple enough to be knitted and incorporated into canvas tent. ... > *full story*

- Human Factors Researchers Measure Attention Given To Walking
- Total Lunar Eclipse Casts Eerie Red And Orange Glow
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- Dark matter and nanotech may vie for Nobel prizes

REUTERS

Back to School!
How do I become a...
1. Med. Billing Specialist
2. Social Worker

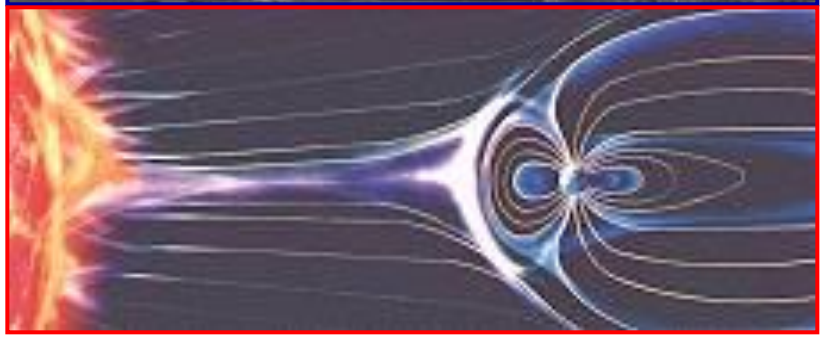
Done

start | Denig, William - 10-0... | Inbox for William.Den... | Study Of - NIGHTTIM... | Study Of Satellite Im... | 8:56 AM

Special Interest Item
SWPC-NGDC Summit

The annual SWPC-NGDC Summit is planned for 02 Oct. Critical areas of discussion include:

- Status of the SWPC reorganization and how it affects its strategic direction (Lead: Bogdan)
- Balancing organizational concerns and program responsibilities (Lead: Bogdan)
- Archiving NOAA satellite datasets & other datasets for internal and external use (Lead: Denig)
- Managing real-time data flows within a national critical environment (Lead: Denig)
- Determining how NGDC can best serve the SWx research community on which SWPC depends (Lead: Denig)
- FRODO & SEIS demonstrations



OUTLINE
Solar & Terrestrial Physics Division

STP Program Overview

Milestones & Performance Measures

Accomplishments

Special Interest Items

→ **DMSP Real-time Services**

Issues & Summary

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DMSP Real-time Services

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List of Issues from Prior Reviews

- **Refocus of NWS/SWPC Objectives (2QFY08) – Summit planned**
- **NightSat Mission Concept (1QFY08) – active**
- **NGS Aerial Photography (1QFY08) – under discussion**
- **DMSP Data in CLASS (1QFY08) – active**

✓ *Federal Enterprise Ionosonde Network (4QFY07) – NLAI*

✓ *Station-Level Metadata (4QFY07) – NLAI*

✓ *Boulder-StarLight-Moscow (3QFY07) – NLAI*

✓ *Manpower Investments in CLASS TET (3QFY07) – NLAI*

✓ *CIRES New Hires for EOG (2QFY07) – NLAI*

- **Migrate the DMSP OLS Archive to CLASS (2QFY07) – active**

✓ *Relocate National Park Service Nightsky Team (2QFY07) – NLAI*

✓ *Need for 20+ Tb of Spinning Disk (1QFY07) – NLAI*

- **ADIC-API Needed (1QFY07) – solution in the works**

✓ *Upcoming Retirement – Helen Coffey (1QFY07) – NLAI 2*

NLAI = No Longer An Issue

Issues & Summary

Solar & Terrestrial Physics Division

- **All 4QFY08 milestones met & performance measures achieved**
- **SWPC-NGDC Summit scheduled for today**
- **NGDC support to Hurricane Gustav**
- **Customer Issues: Ionosonde, Solar Databases, etc**
- **New hires for RT data manager / space physicist**
- **Published: STP – A Year in Review (draft)**

Metrics (FY08)

Papers published: 22	**Papers presented: 62**
Professional Societies:17	**Fellows: 1**

Awards: NOAA Silver Award; Len Curtis Award; Hollings Paper

QUESTIONS?