



PREDICT Near Real-Time and Science Satellite Data Products



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Organizations:

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Sponsor:

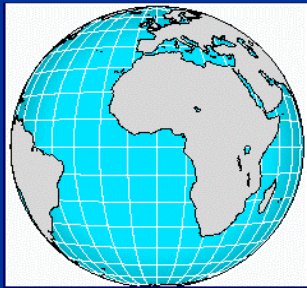
National Science Foundation (NSF)

PREDICT Science Meeting
June 8, 2011



GEO Satellites (7)

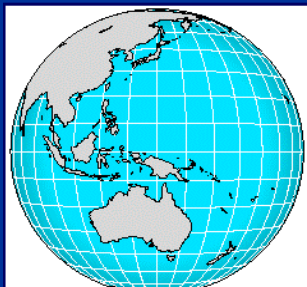
105 E



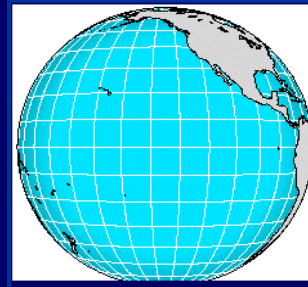
0 E **Meteosat-9**
European



57 E **Meteosat-7**
European



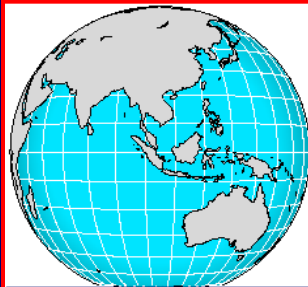
140 E **MTSAT**
Japan



135 W **GOES-10**
United States



75 W **GOES-12**
United States



105 E **FY-2D**
China

Polar Orbiting Satellites (28)

Imagers (Vis/IR):

- NOAA** - AVHRR (5)
- METOP** - AVHRR (1)
- DMSP** - OLS (4)
- NASA** - MODIS (2)
- Comm** - SeaWiFS

Microwave Imagers:

- DMSP** - SSM/I (1), SSMIS (3)
- NASA** - TMI, AMSR-E
- NRL** - WindSat

Microwave Sounders:

- NOAA** - AMSU-B (3), MHS (2)

Microwave Radar:

- NASA** - ASCAT, CloudSat, PR

Collaborations: FNMOC, AFWA, NASA, NOAA, NAVO, CIRA

Data latency: GEO < 1 hour
LEO 1-3 hours

Data volume: 250 – 300 GB/day

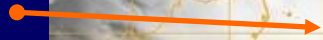


09/24/10 1300Z 46 PGI46L
09/24/10 1219Z F-16 OVERPASS
09/24/10 1215Z GOES-13 IR

09/24/10 1300Z 46 PGI46L
09/24/10 1219Z F-16 OVERPASS
09/24/10 1215Z GOES-13 VIS

Matthew

Good
central
mass



09/24/10 1300Z 46 PGI46L
09/24/10 1219Z F-16 91H
09/24/10 1215Z GOES-13 VIS

09/24/10 1300Z 46 PGI46L
09/24/10 1219Z F-16 COMPOSITE
09/24/10 1215Z GOES-13 VIS

Heavy
Conv



Remove
doubt
Exposed
LLCC



Naval Research Lab www.nrlmry.navy.mil/sat_products.html
85H Brightness Temp (Kelvin)



Naval Research Lab www.nrlmry.navy.mil/sat_products.html
Red=91PCT Green=91H Blue=91V



NRL PREDICT TC Web Resource

Storm Basins & Names

Privacy Policy

Disclaimer

NRL Monterey Marine Meteorology Division (Code 7500) PREDICT Page (Ver.4.46.00) Development Team

NOTE: this page is short lived (10 m) DO NOT bookmark it or save it to Favorites. Instead, bookmark <http://www.nrlmry.navy.mil/TC.html>

PREDICT 2010 Season Storms

All

Active

Year

Atlantic

51.PGI51L

49.PGI49L

48.PGI48L

Latest

Thumb

Pass_Mosaic

ATCF

Track&Image

Scatt

CloudSat

Environment

TPW

TPW&NOGAPS_TPW

TPW&NOGAPS_850_Winds

Wind_Shear

Aerosol_Optical_Depth

Sensor	% Cov	VIS	IR	IR-B	Multi	85GHz	85GHz weak	85GHz PCT	Color	Rain	Wind	37GHz Color	37GHz H	37GHz V	SSM/I Vapor
SSMI	66														
SSMIS	40														
TMI	43														
AMSRE	77														
WINDSAT	22														
AMSUB	74														

<= 6 hrs. old

<= 12 hrs. old

> 12 hrs. old

51.PGI51L, TRACK_VIS, 01 OCT 2010 2315Z 23:44:11 UTC (Z) Tutorials: Overview COMET

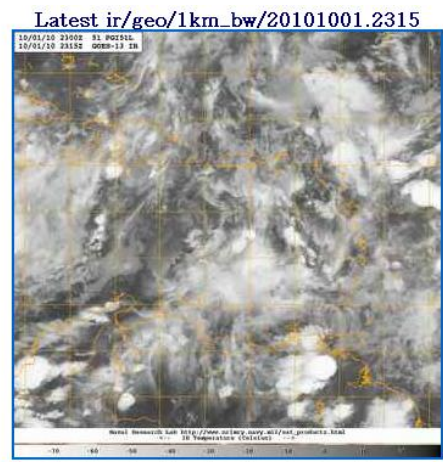
Scatterometer & CloudSat

Vis/IR imagery suite

Microwave imager/sounder product suite

Satellite Pass Info					
Sensor	Latest			Next (View All)	
SSMI	10/01 2114 Z	F-15	0191	10/01 2157 Z	F-13 0920
TC-SSMIS	10/01 2233 Z	F-17	1217	10/01 2344 Z	F-16 0951
TMI	10/01 2016 Z	TRMM	0546	10/02 1107 Z	TRMM 0312
AMSRE	10/01 1805 Z	AQUA-1	0315	10/02 0620 Z	AQUA 0224
WINDSAT	09/30 2117 Z	CORIOLIS	0000	09/30 2120 Z	WIND 1471
AMSUB	10/01 1847 Z	N-18	0718	10/01 1902 Z	N-19 1790
SCATT	10/01 1427 Z	ASCAT	0000	/ Z Z	0000

Satellite Overpass Time Table



Latest 1-km Visible/IR imagery (GEO/LEO)

30 minute MTSAT refresh with AVHRR/OLS as available

<http://www.nrlmry.navy.mil/PREDICT.html>



PREDICT Satellite Support



NPS operations team flexibility:

- Turn on/off for any “invest” area in PREDICT area.
- Full suite of NRL TC products produced: near real-time.
- Focus: microwave sensors- see through non-rain clouds.
 - Imagers: SSM/I, SSMIS, AMSR-E, TMI , and WindSat
 - Sounders: AMSU, MHS
 - Radars: TRMM PR, CloudSat

PREDICT invests to NOT show up on regular NRL TC public web site

<http://www.nrlmry.navy.mil/PREDICT.html>



NRL PREDICT Satellite Web Page



NRL Monterey Tropical Cyclone Homepage - Windows Internet Explorer

http://www.nrlmry.navy.mil/predict-bin/tc_home2.cgi

Google

Favorites Index of -archdat-test-me... NRL Base Program Learn where menu and to... Garnet and Great Gene an... MIMIC Archive MADRAS on MEGHA-TRO...

NRL Monterey Tropical Cyclone Homepage

PREDICT
2010 Season
Storms

All Active Year

Atlantic

68PG168L **KML**
67PG167L **KML**
66PG166L **KML**
65PG165L **KML**
64PG164L **KML**
63PG163L **KML**
62PG162L **KML**
61PG161L **KML**
60PG160L **KML**
59PG159L **KML**
58PG158L **KML**
57PG157L **KML**
55PG155L **KML**
54PG154L **KML**
51PG151L **KML**
50PG150L **KML**
49PG149L **KML**
48PG148L **KML**
47PG147L **KML**
46PG146L **KML**
45PG145L **KML**
44PG144L **KML**
43PG143L **KML**
42PG142L **KML**
41PG141L **KML**
40PG140L **KML**
39PG139L **KML**
38PG138L **KML**
37PG137L **KML**
36PG136L **KML**
35PG135L **KML**
34PG134L **KML**
33PG133L **KML**
32PG132L **KML**
31PG131L **KML**
30PG130L **KML**
29PG129L **KML**
28PG128L **KML**
27PG127L **KML**
26PG126L **KML**
25PG125L **KML**

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NOTE: this page is short lived (10 m). **DO NOT** bookmark it or save it to Favorites. Instead, bookmark <http://www.nrlmry.navy.mil/TC.html>

NOTE:

No Active Storms

<-- You may select a previously archived storm from the list in the left frame.

Sat_Home **East_Pacific&WestCoast** Global CONUS ModelOver RainRate CloudTops Training

TropCyclones NexSat ColorComposite SSMI-Comp2 Tropics CloudWinds ScattWinds CloudClass

Invests 25-68 currently online

Select storm to access products

Select red “kml” link for Google Earth products

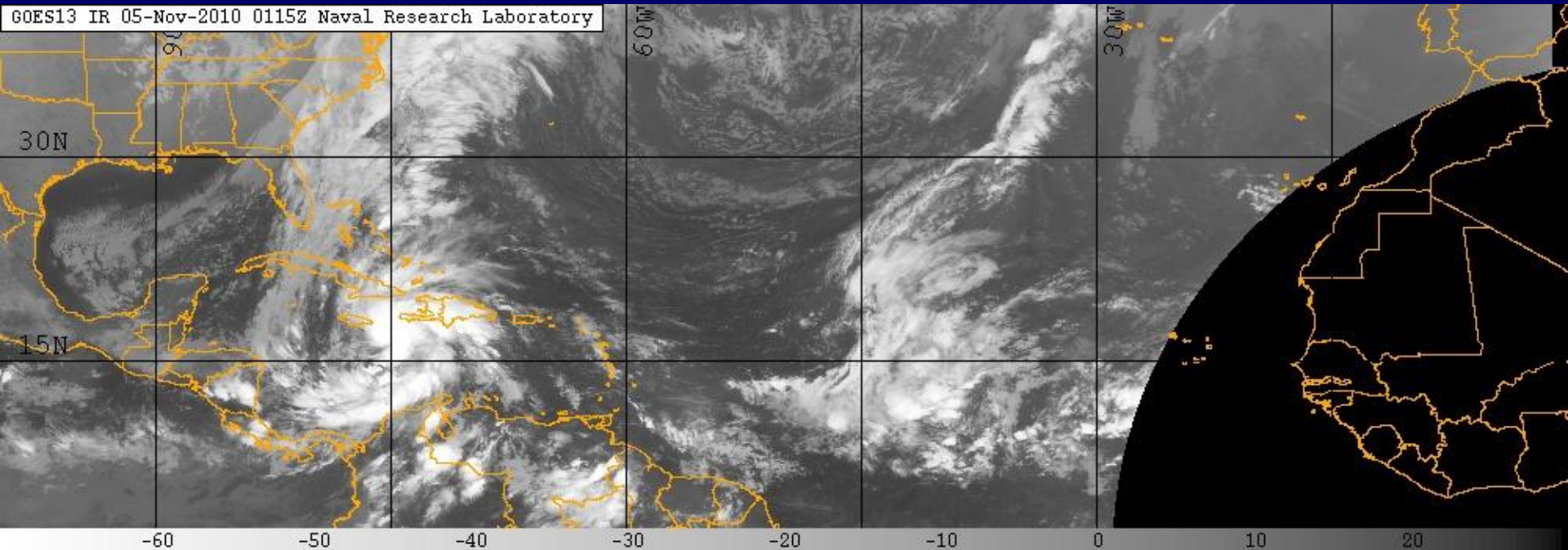
<http://www.nrlmry.navy.mil/PREDICT.html>



PREDICT Satellite Support



Atlantic-basin Wide View



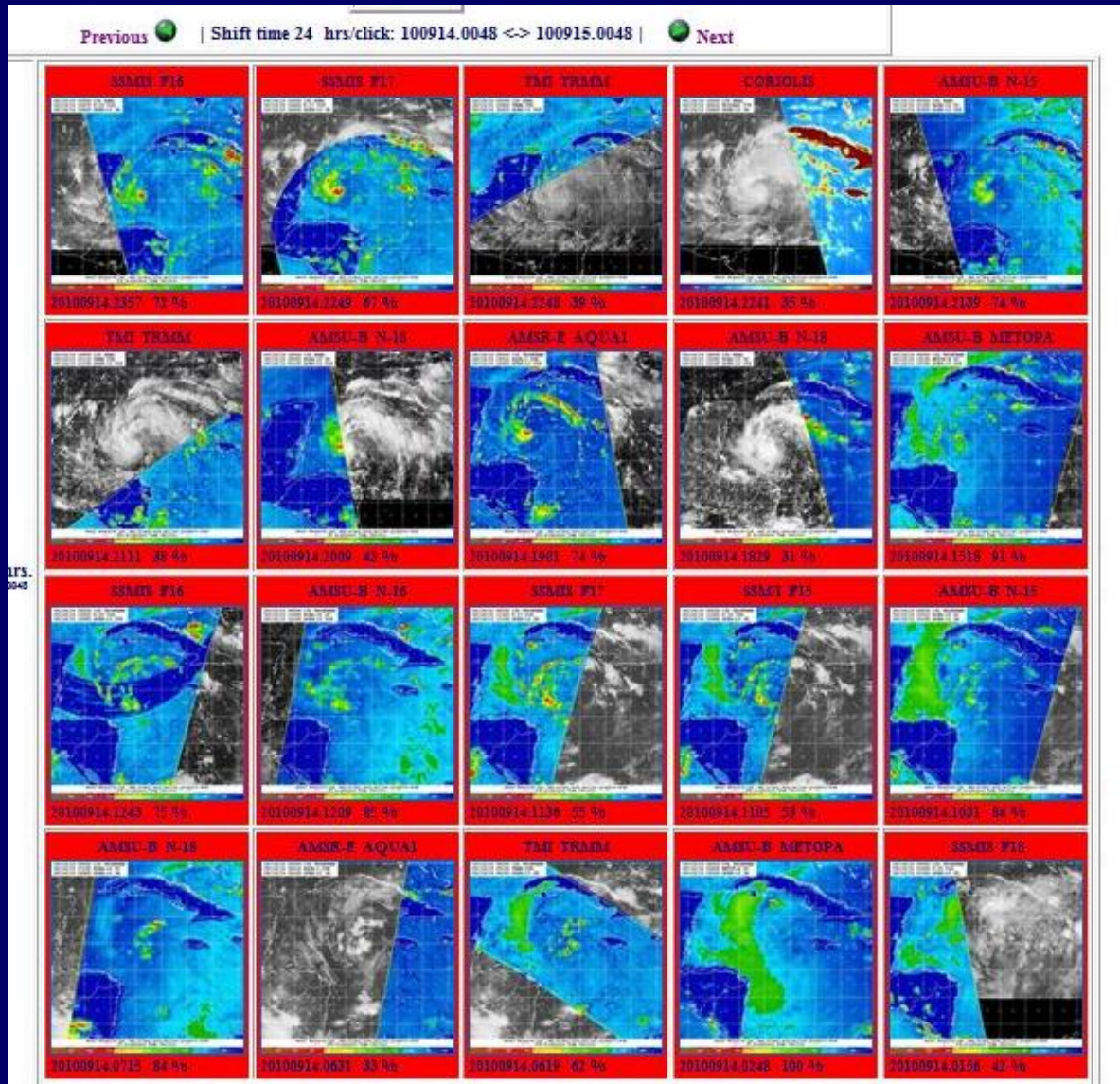
Animation Capability in Real-time



PREDICT Microwave Capabilities



Hurricane Karl Microwave Imagery (85 GHz) Pass_Mosaic

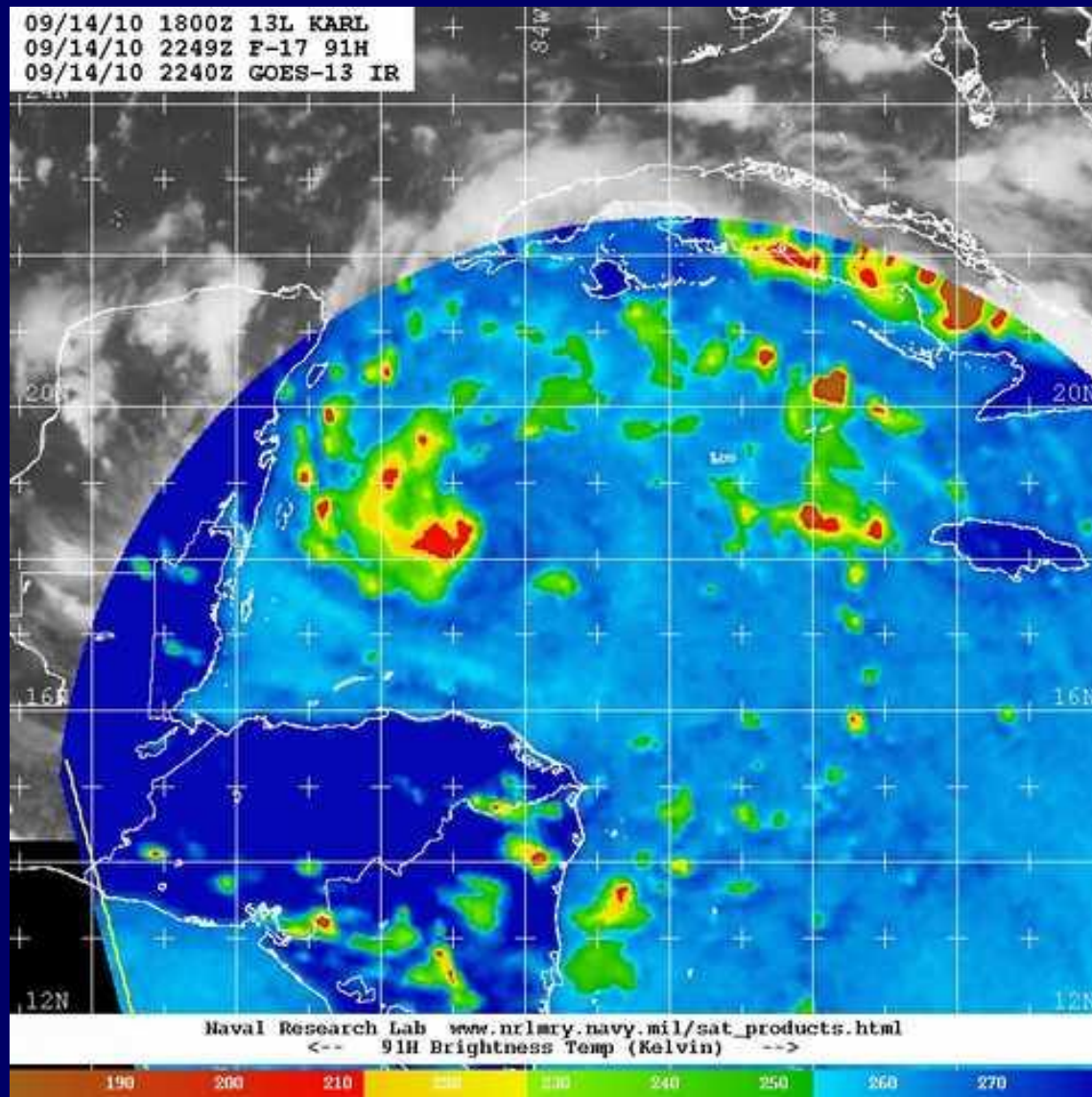




PREDICT Satellite Products



Rainrate SSMIS: 09-14-10 2249Z



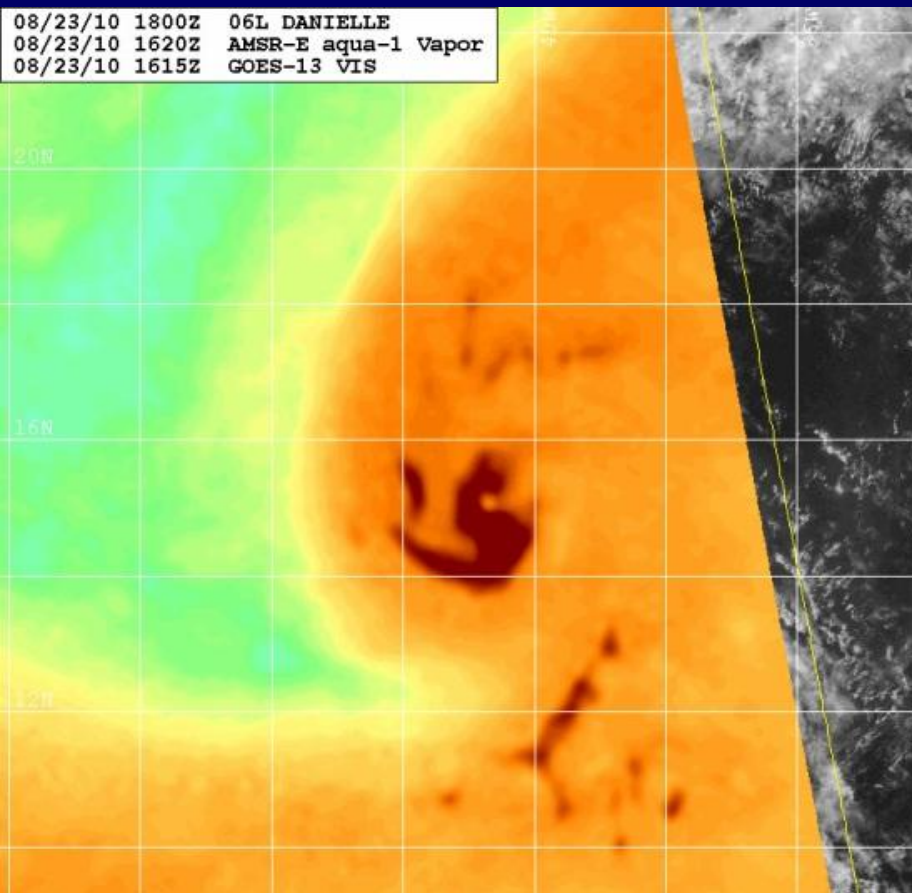


PREDICT Satellite Products

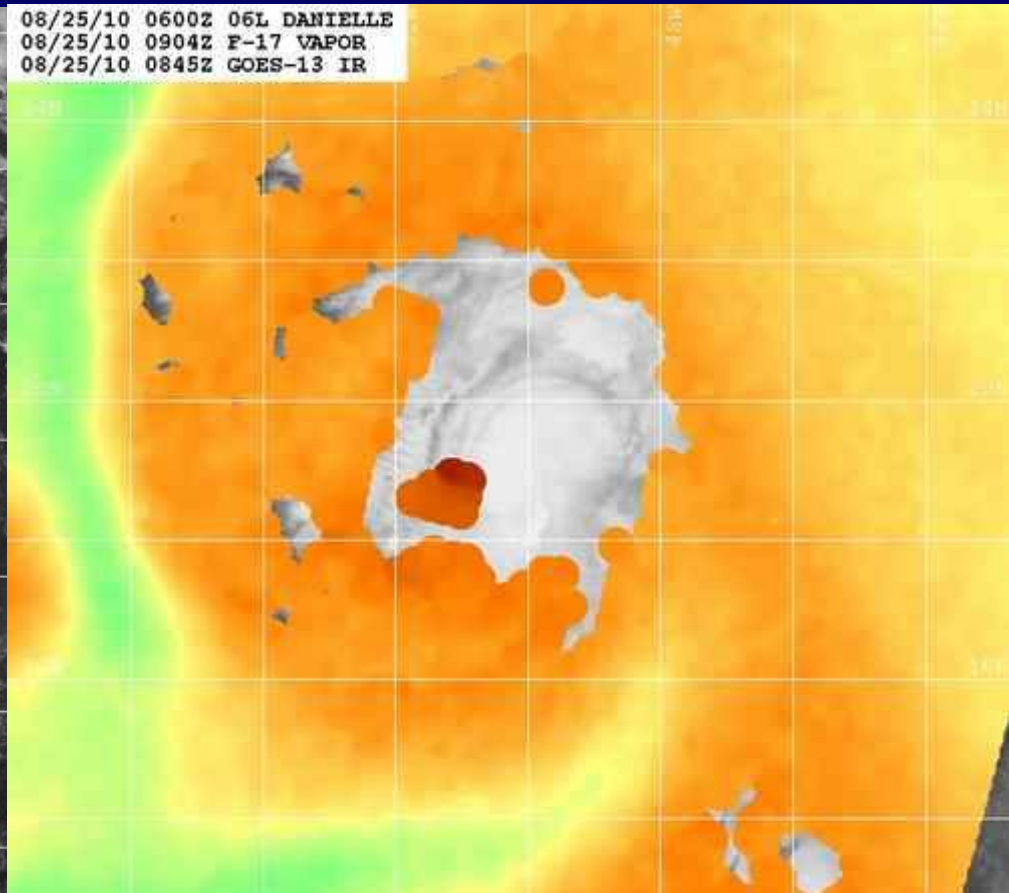


Total Precipitable Water (TPW – mm) 08-23/2510 PGI31L DANIELLE

08/23/10 1800Z 06L DANIELLE
08/23/10 1620Z AMSR-E aqua-1 Vapor
08/23/10 1615Z GOES-13 VIS



08/25/10 0600Z 06L DANIELLE
08/25/10 0904Z F-17 VAPOR
08/25/10 0845Z GOES-13 IR



Naval Research Laboratory http://www.nrlmry.navy.mil/sat_products.html
<-- Precipitable Water (mm) -->

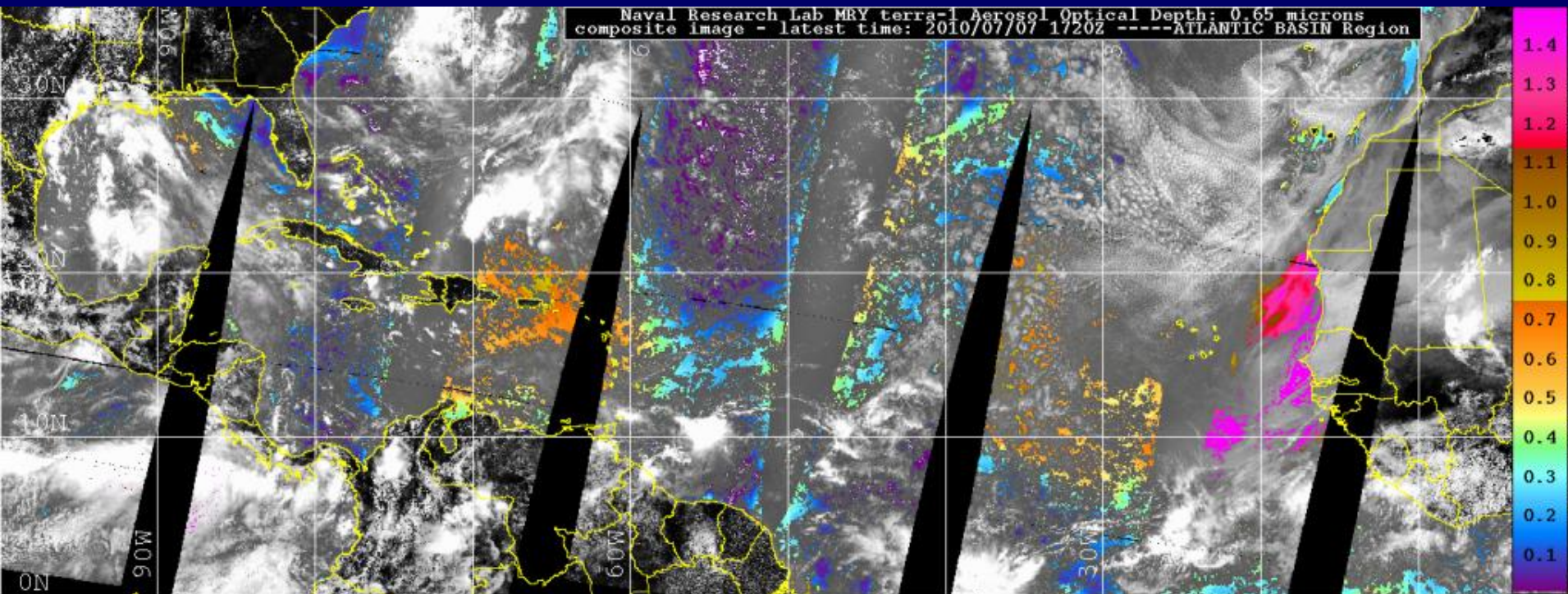




PREDICT Satellite Products



MODIS AOD Basin-Wide Composite



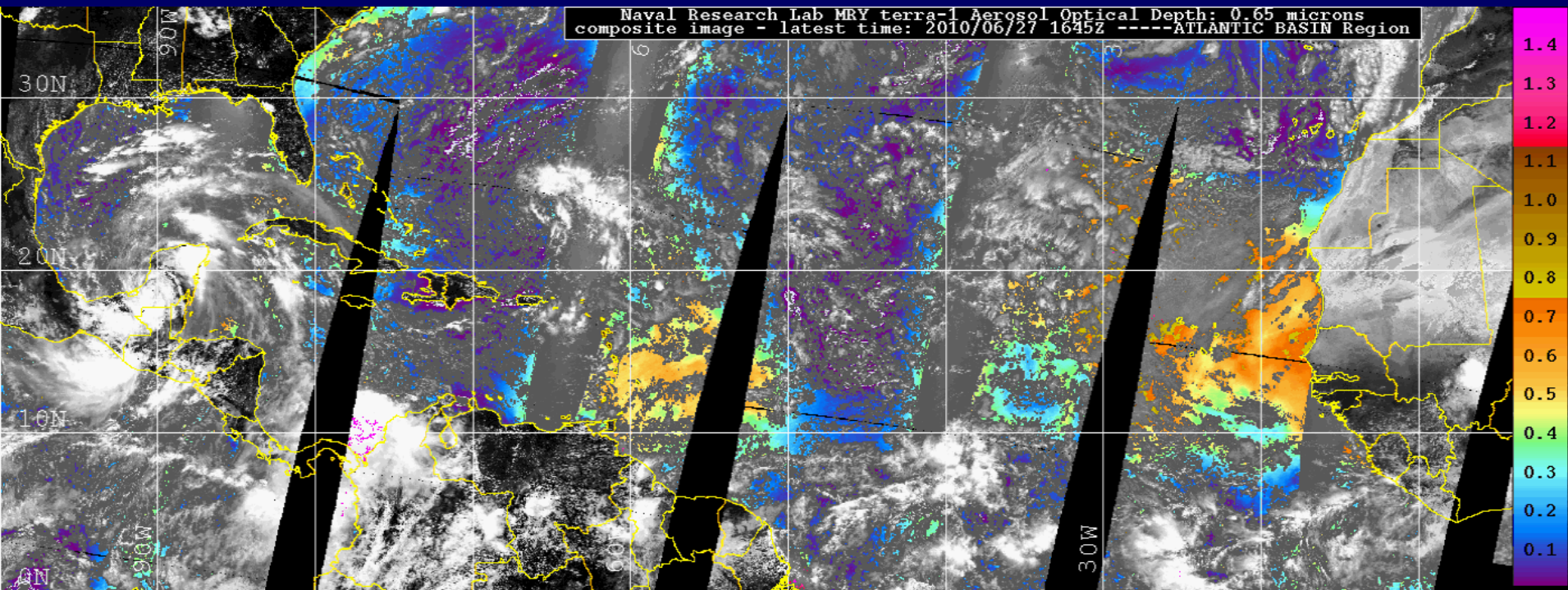
Animate Daily Composites to Help Track SAL



PREDICT Satellite Products



MODIS AOD Basin-Wide Composite



Animate Daily Composites to Help Track SAL



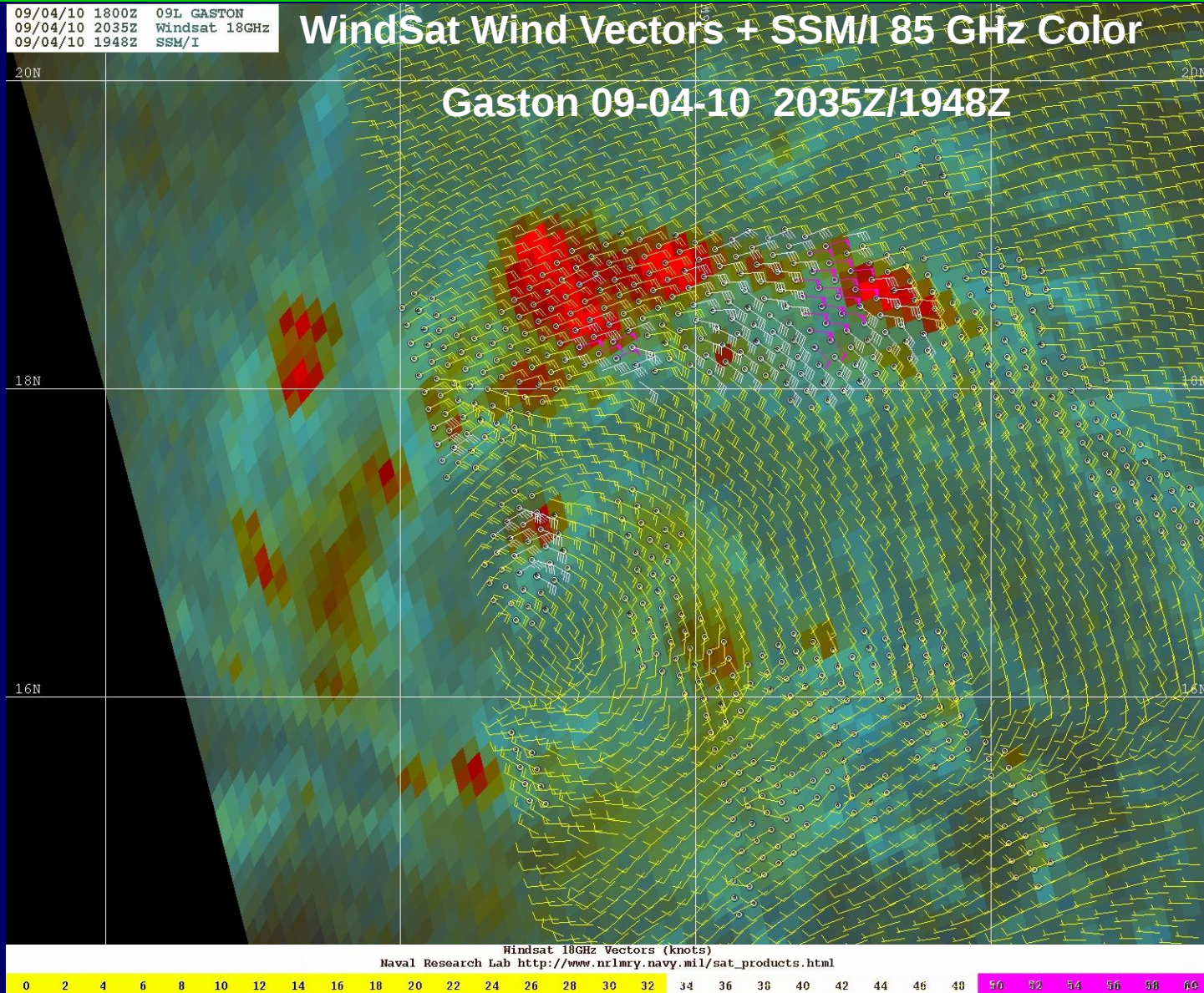
PREDICT Satellite Products



09/04/10 1800Z 09L GASTON
09/04/10 2035Z Windsat 18GHz
09/04/10 1948Z SSM/I

WindSat Wind Vectors + SSM/I 85 GHz Color

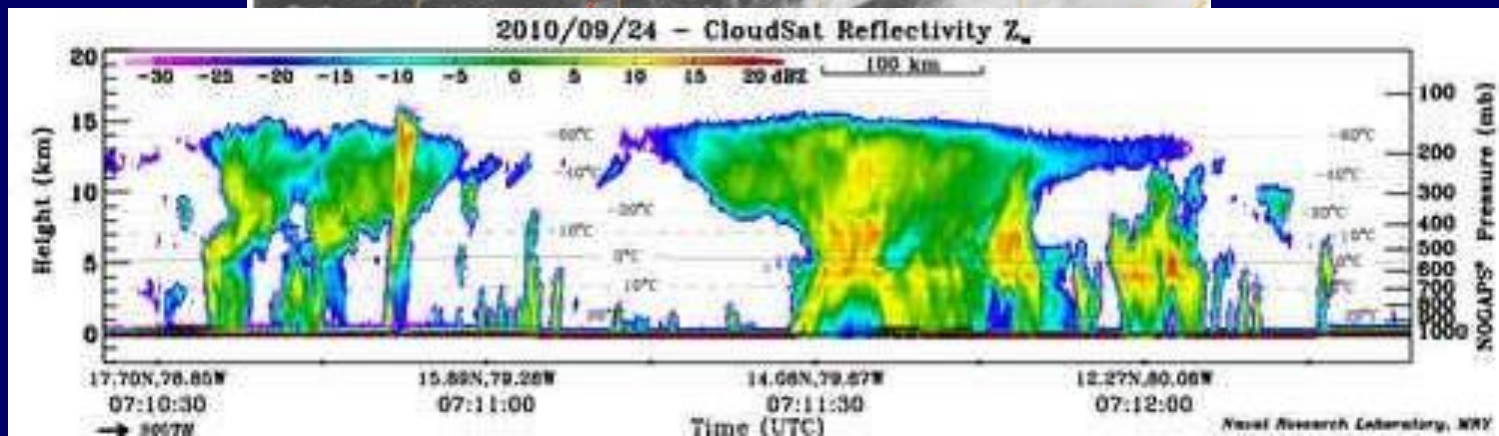
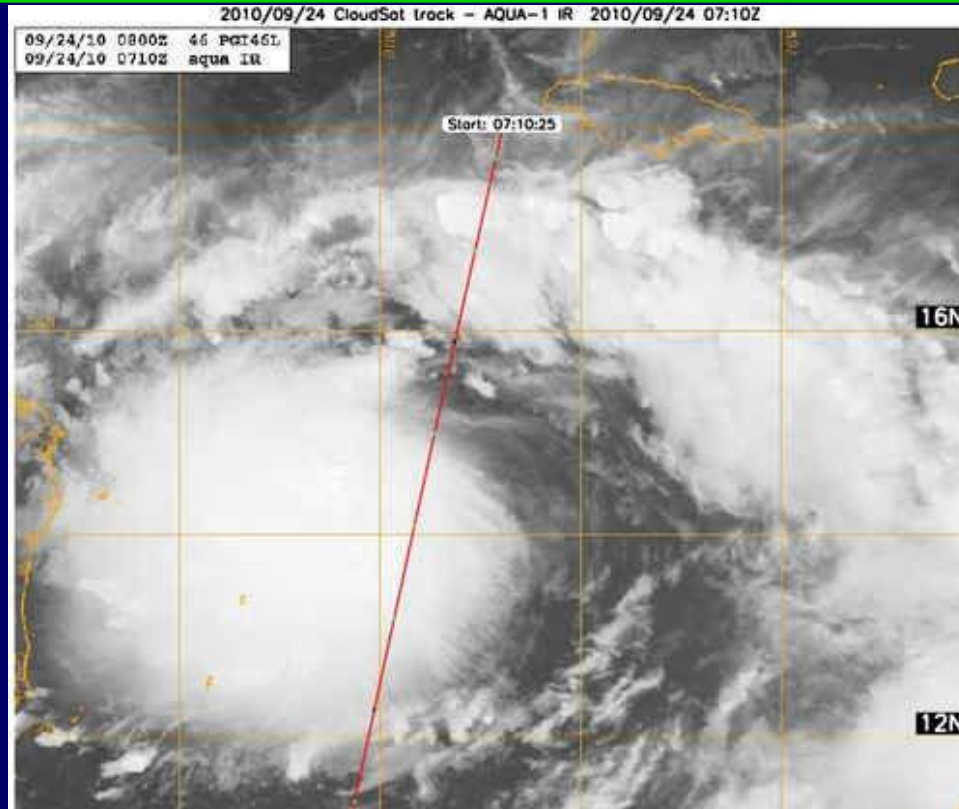
Gaston 09-04-10 2035Z/1948Z



PREDICT Satellite Products

CloudSat Cross Section

PGI46 - Matthew
(09-24-10 0710Z)





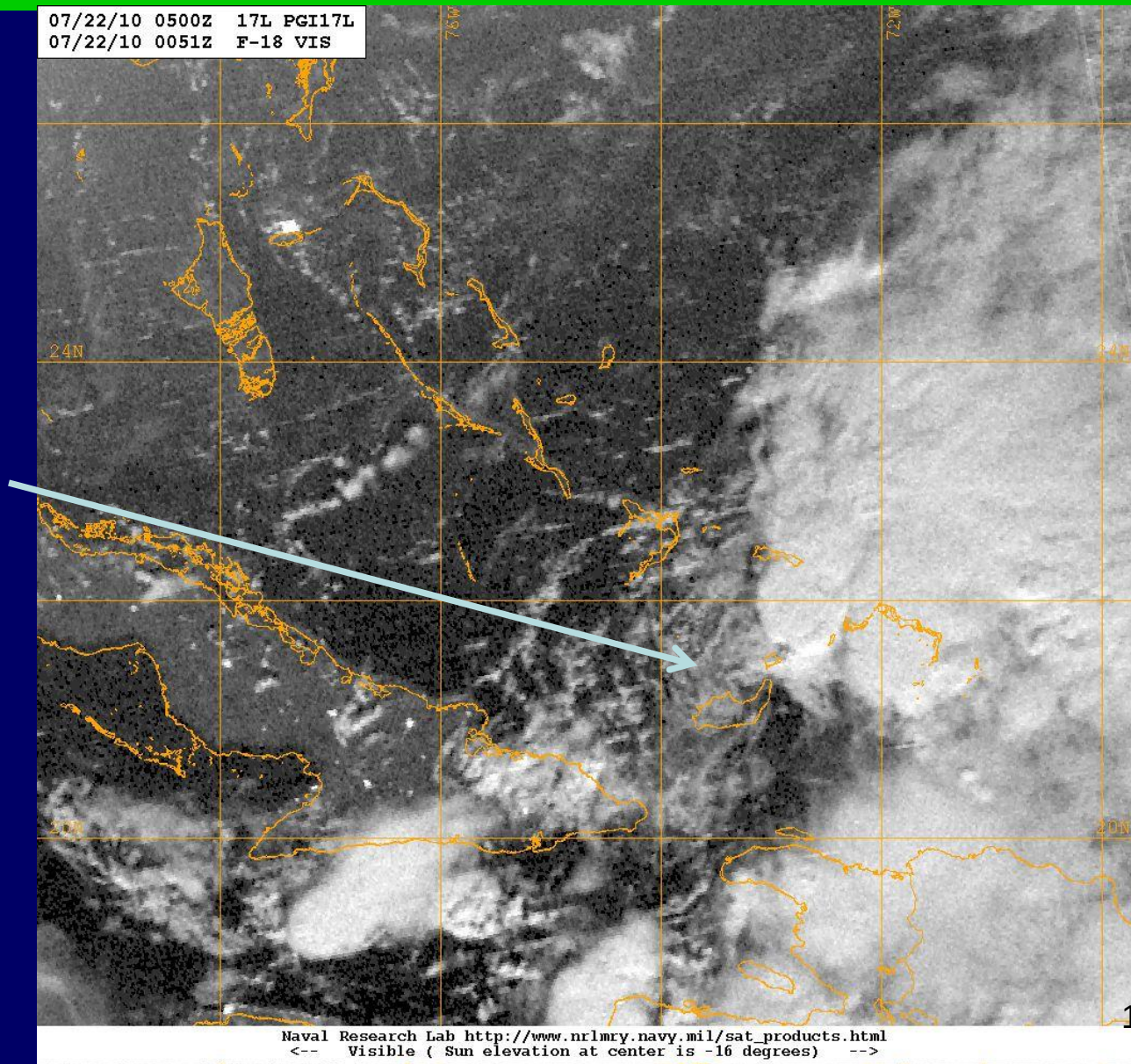
PREDICT Satellite Products



07/22/10 0500Z 17L PGI17L
07/22/10 0051Z F-18 VIS

DMSP F-18 OLS
night time visible
imagery

PGI17 - Bonnie
(07-22-10 0051Z)

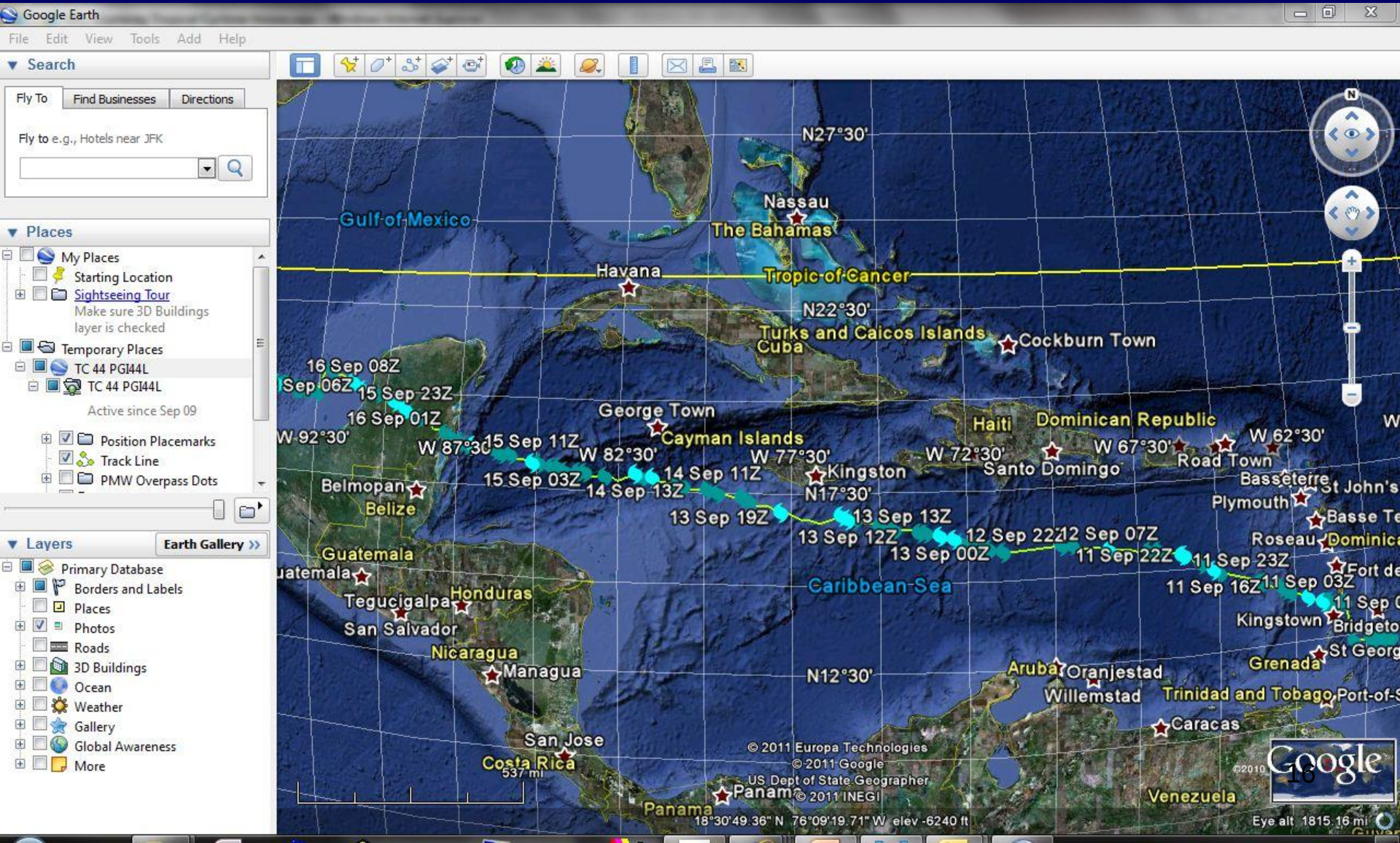




PREDICT Satellite Products

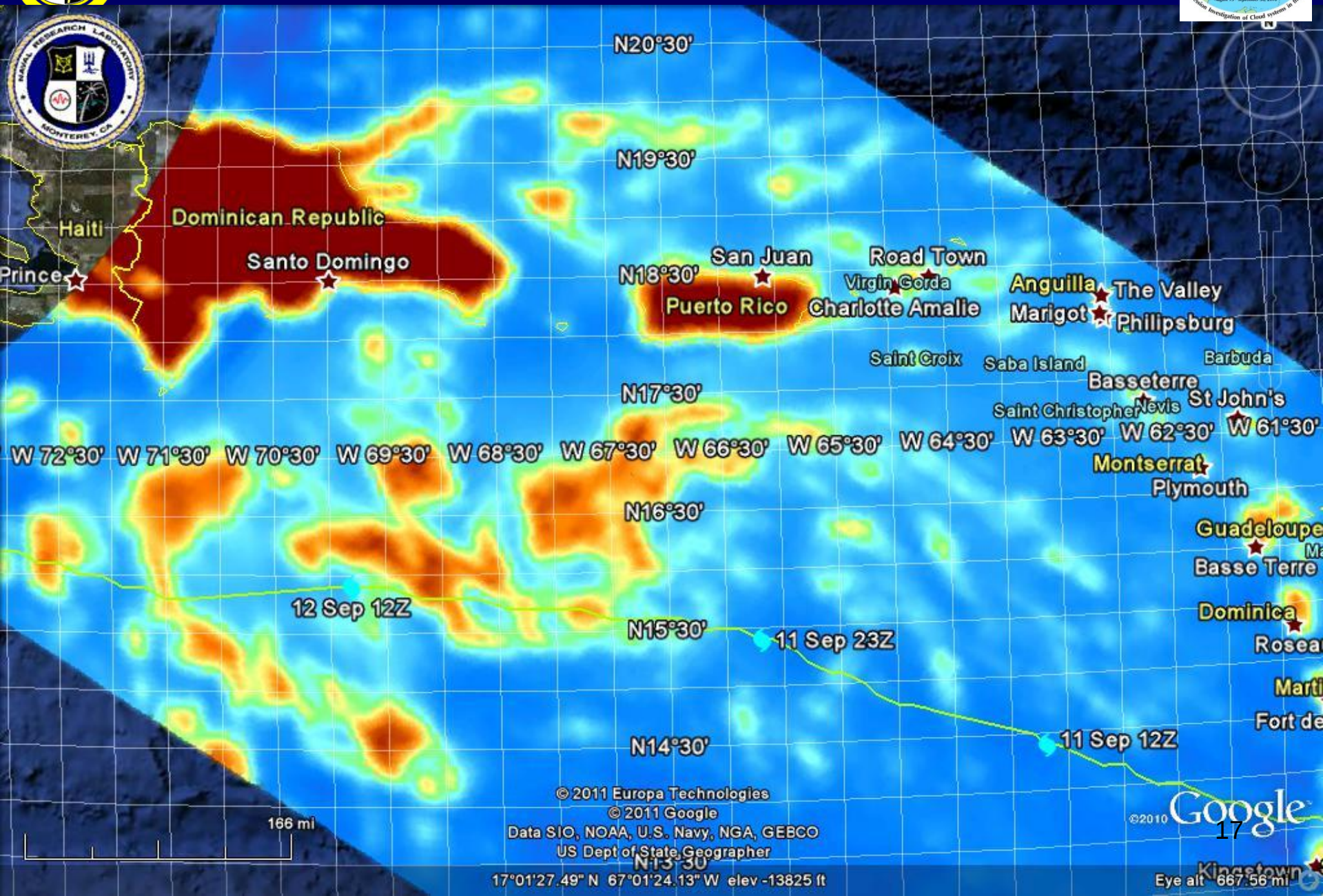


Google Earth Applications





PREDICT Satellite Products



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Data SIO, NOAA, U.S. Navy, NGA, GEBCO

US Dept of State, Geographer

17°01'27.49" N 67°01'24.13" W elev -13825 ft

© 2010 Google

Eye alt 667.56 mi



PREDICT Satellite Products

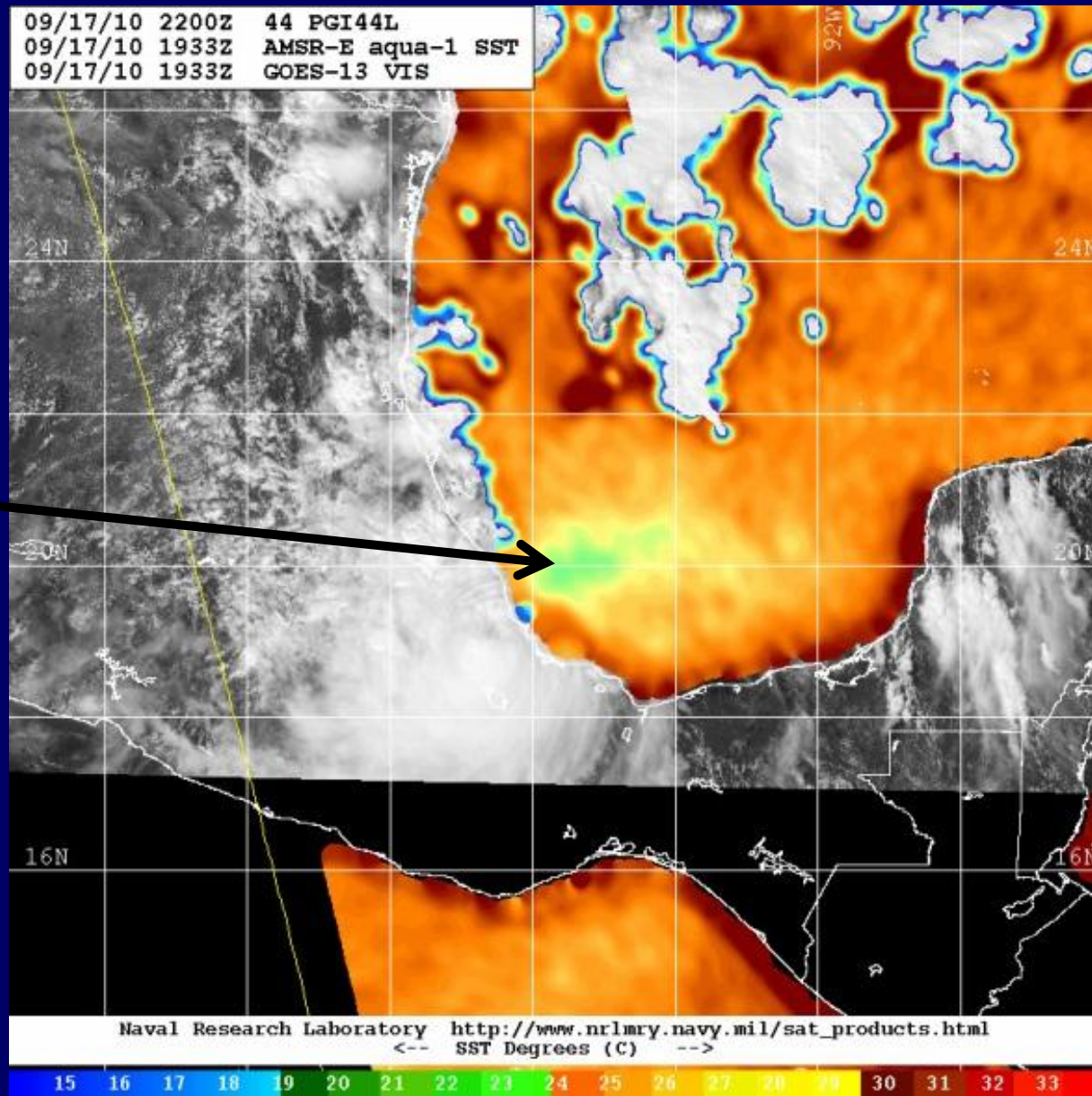


Date/Time

AMSR-E

SSTs

Upwelled
Cooler Waters



Data Source:
NASA LANCE



PREDICT Satellite Products



Data Availability

- All jpeg and Google Earth products archived online
- All jpeg products archived at EOL/NPS
- All digital satellite products archived at NRL

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<http://www.nrlmry.navy.mil/PREDICT.html>