

VIIRS Day/Night Band Off-CONUS Topics

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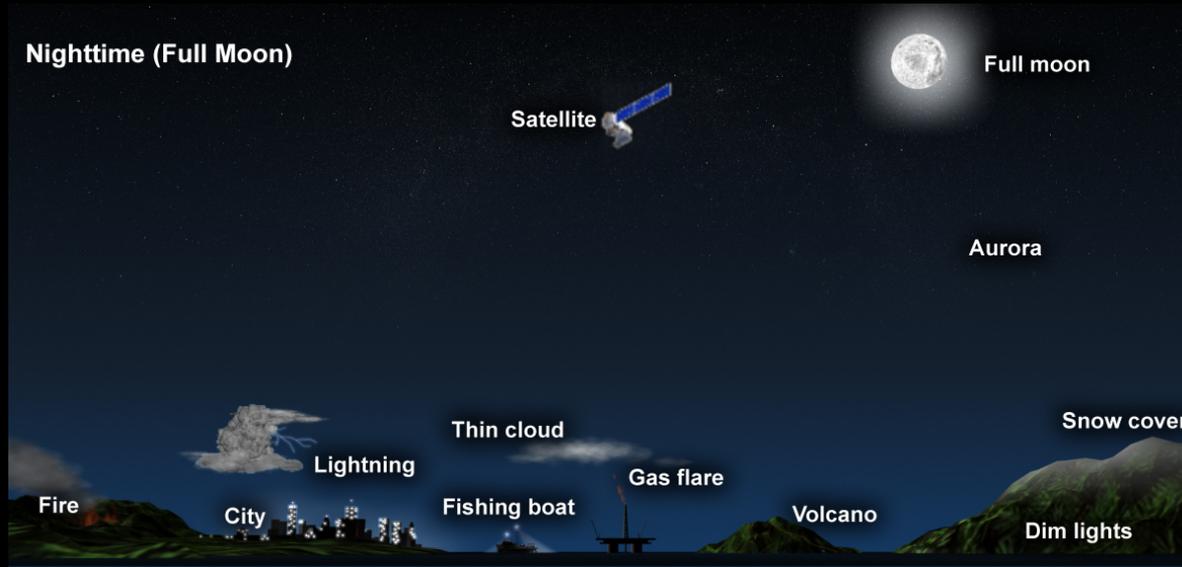
Off-CONUS Proving Ground Meetings

18 June 2013

Robert Arn

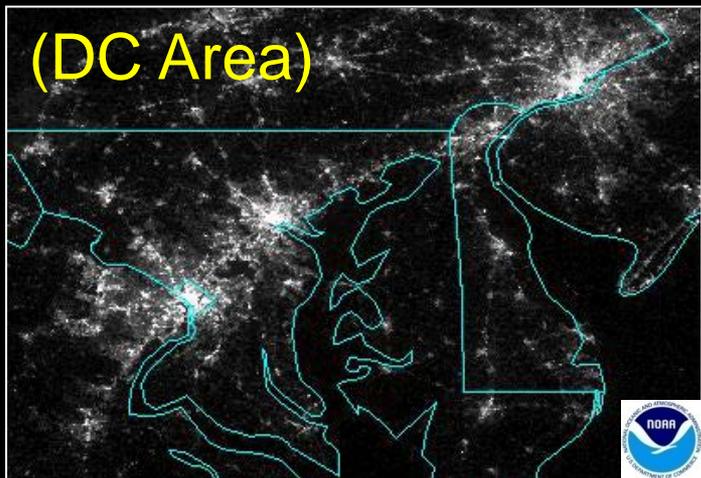


A New Sensing Paradigm

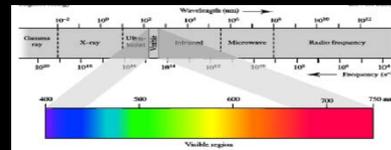


Courtesy: The COMET Program

SPATIAL



SPECTRAL



OLS: **2 Bands**
(VIS & IR)

VIIRS: **22 Bands**
(0.4 – 12.0 μm)

RADIOMETRIC

OLS 6-bit (64 shades)



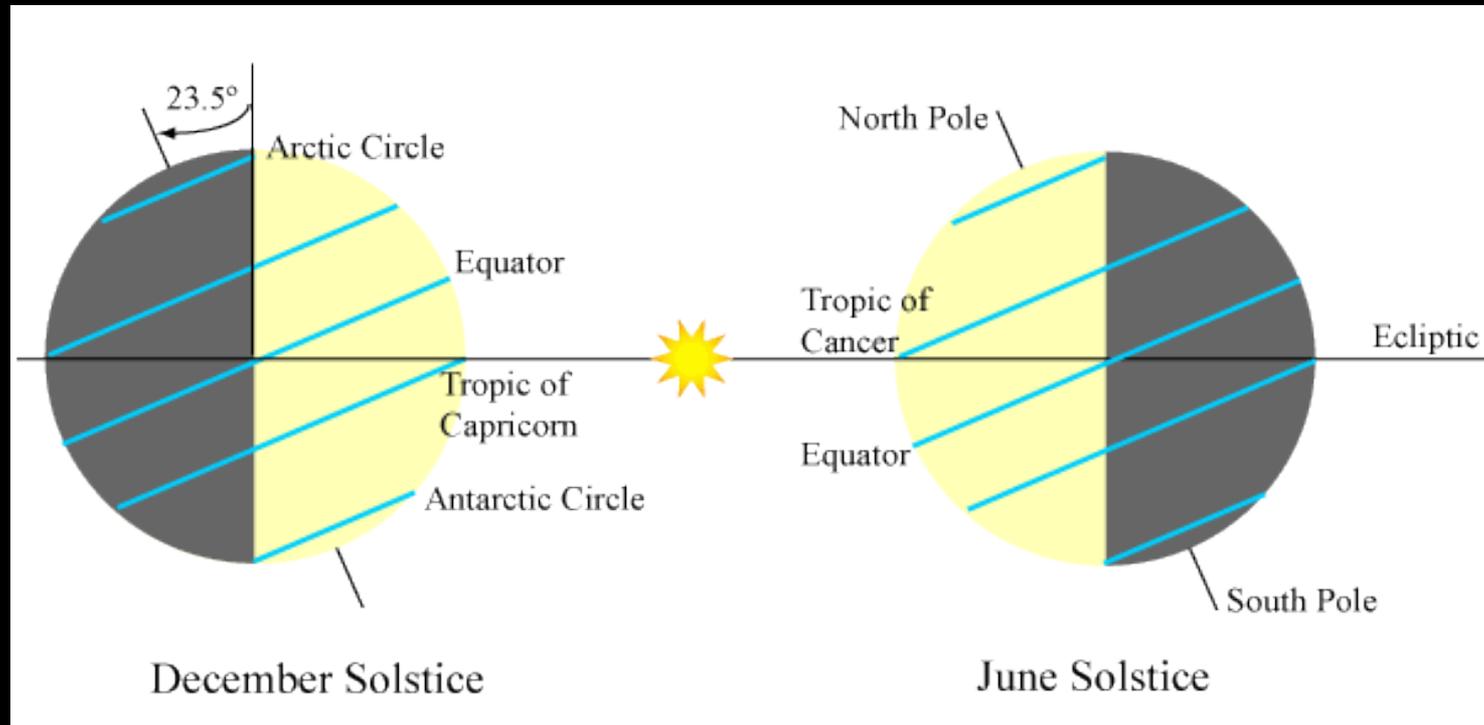
Min Max

DNB 14-bit (16,384)



Min Max

Solace for the Winter Solstice

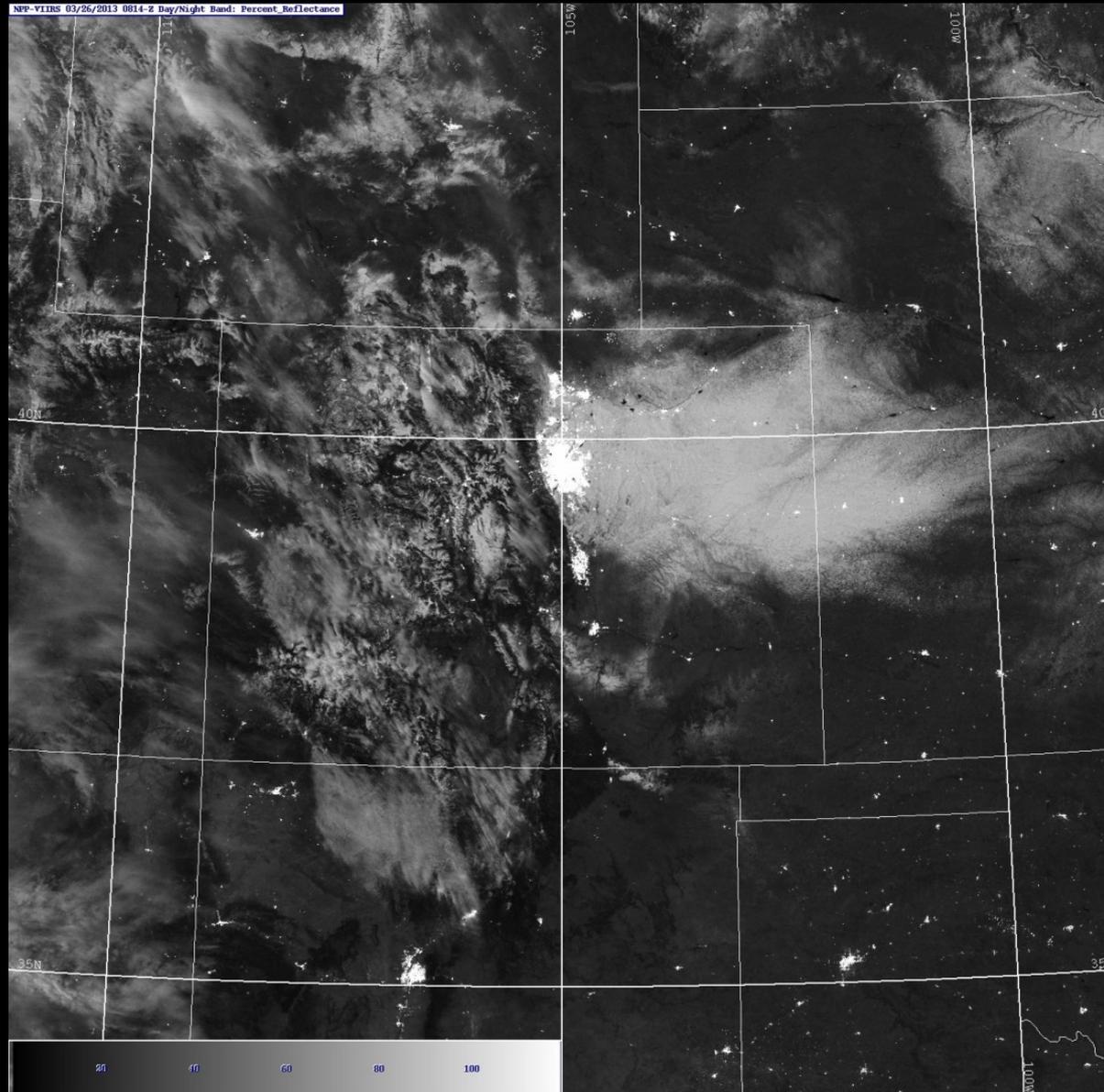


The lunar orbit is close to the ecliptic plane (5.1° inclination)

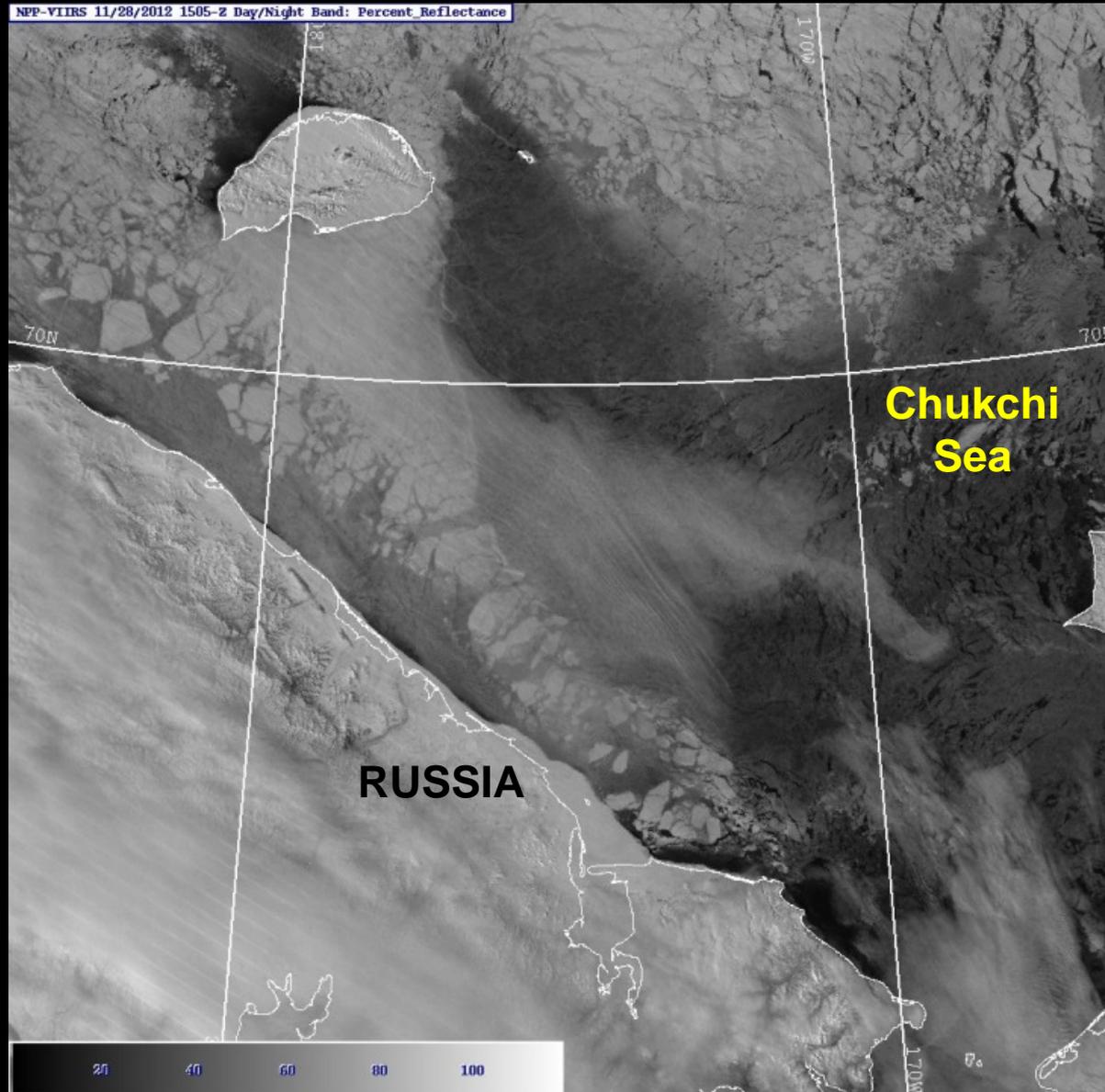
Winter moons are 'higher' in the sky than summer moons

→ *Stronger moonlight when it's needed the most!*

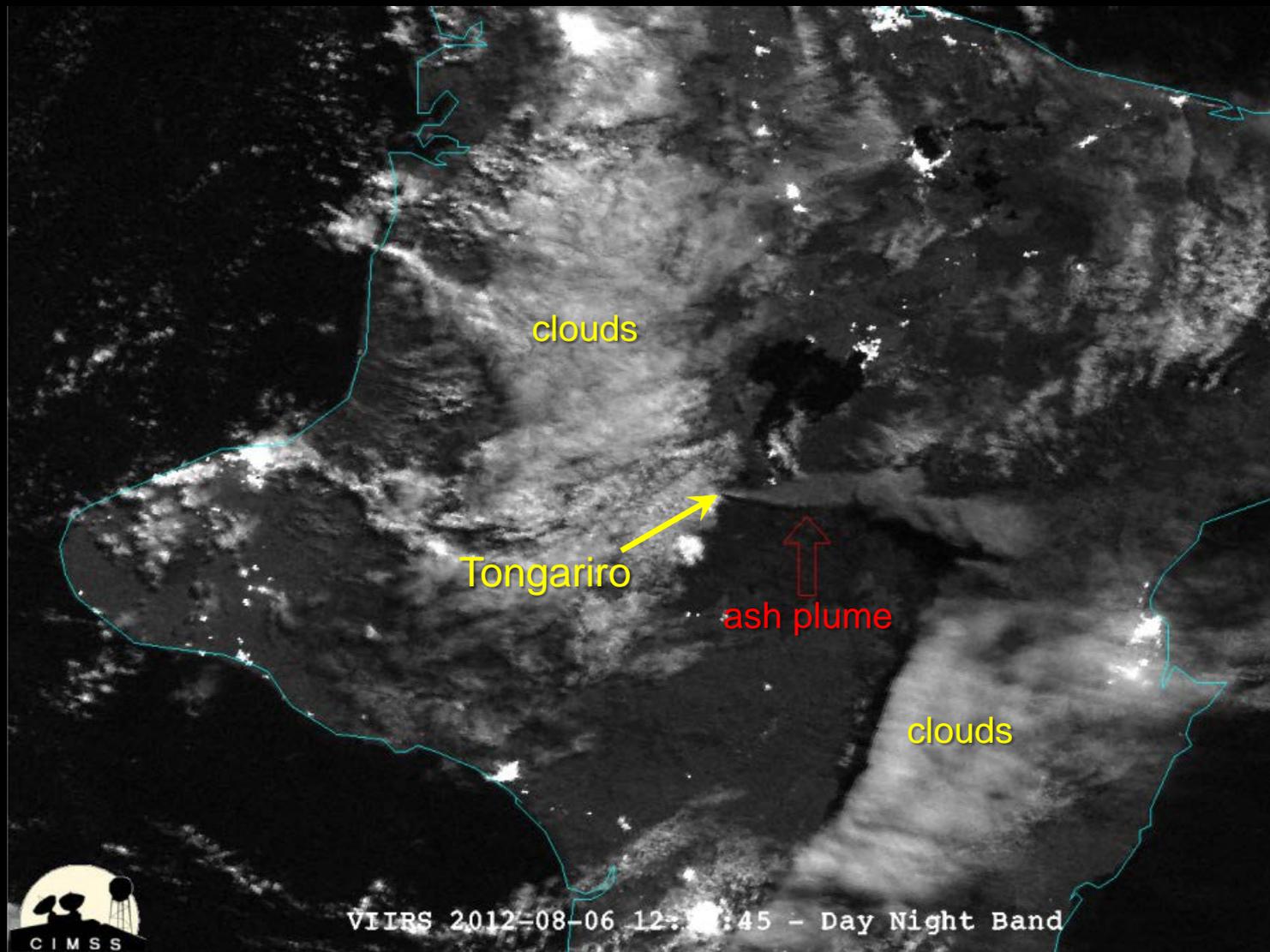
Snow Field Detection



Sea Ice Mapping



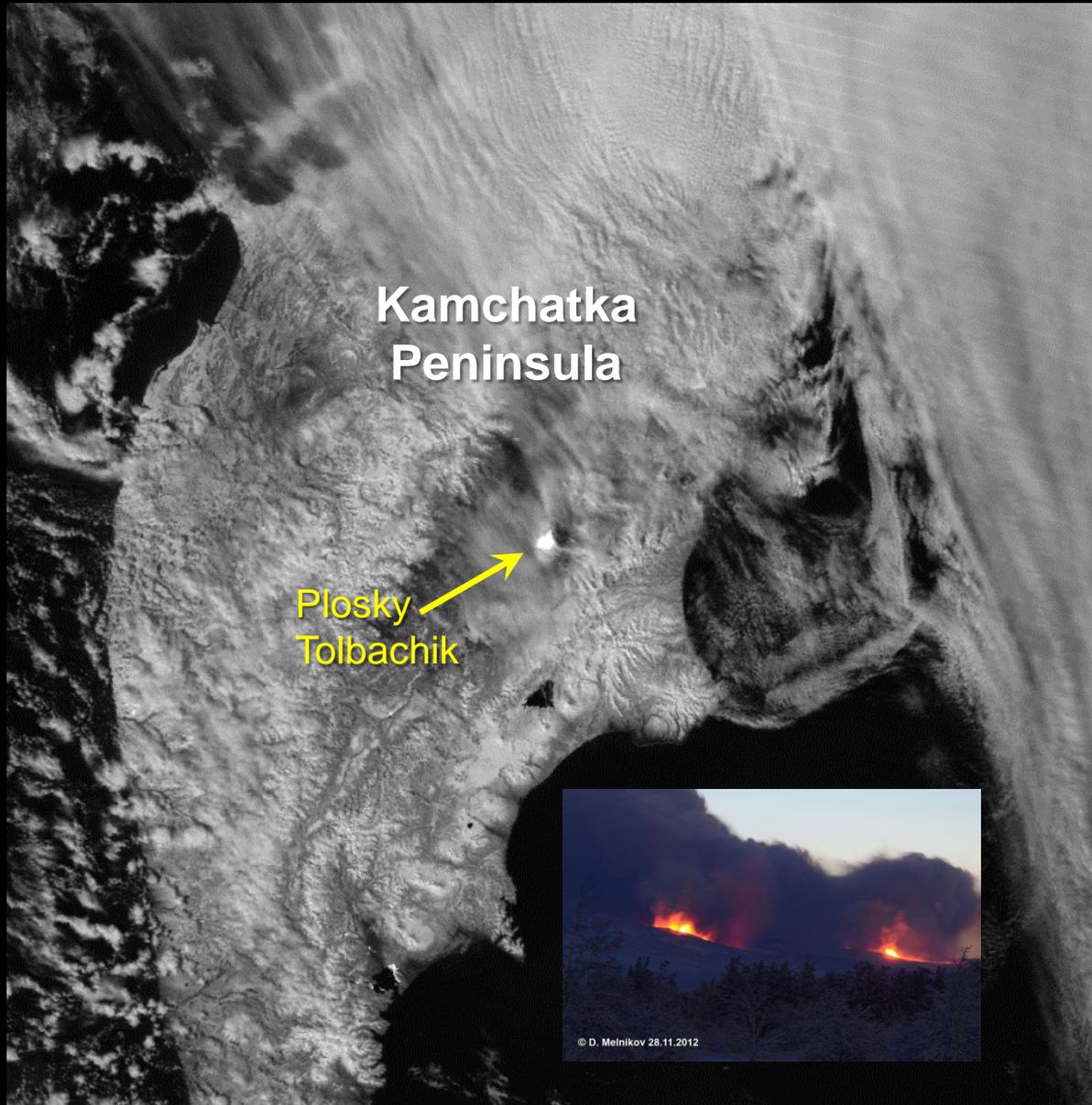
Volcanic Ash



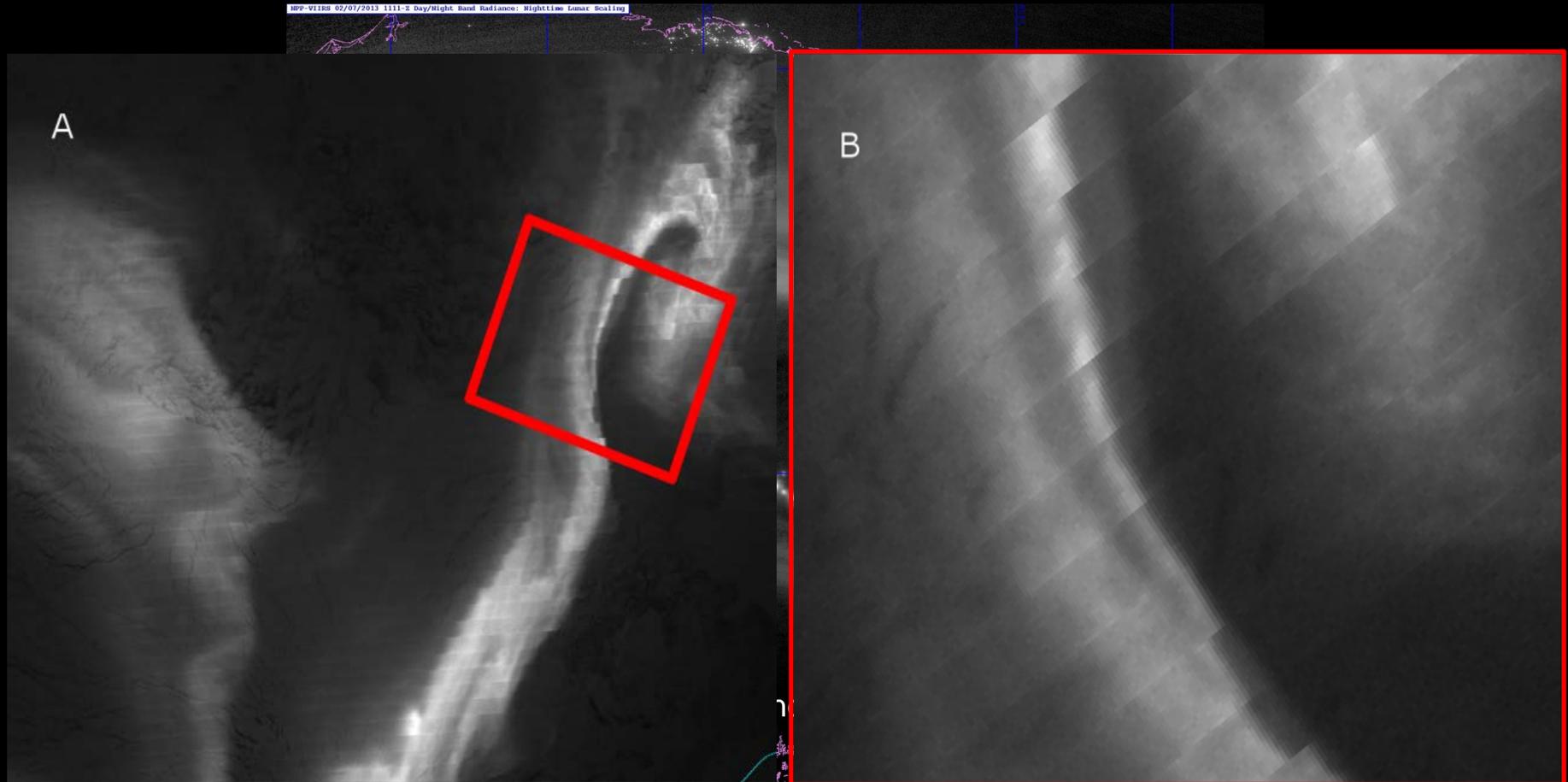
Courtesy, W. Straka (UW-CIMSS)

Volcanic Light

Nov 26-28, 2012



Auroral Boundaries & Motion



→ Rapid fluctuations of aurora between ~ 1.7 s scans leads to boundary discontinuities.

Tropical Cyclones: Exposed LLC

Remnants of Nadine

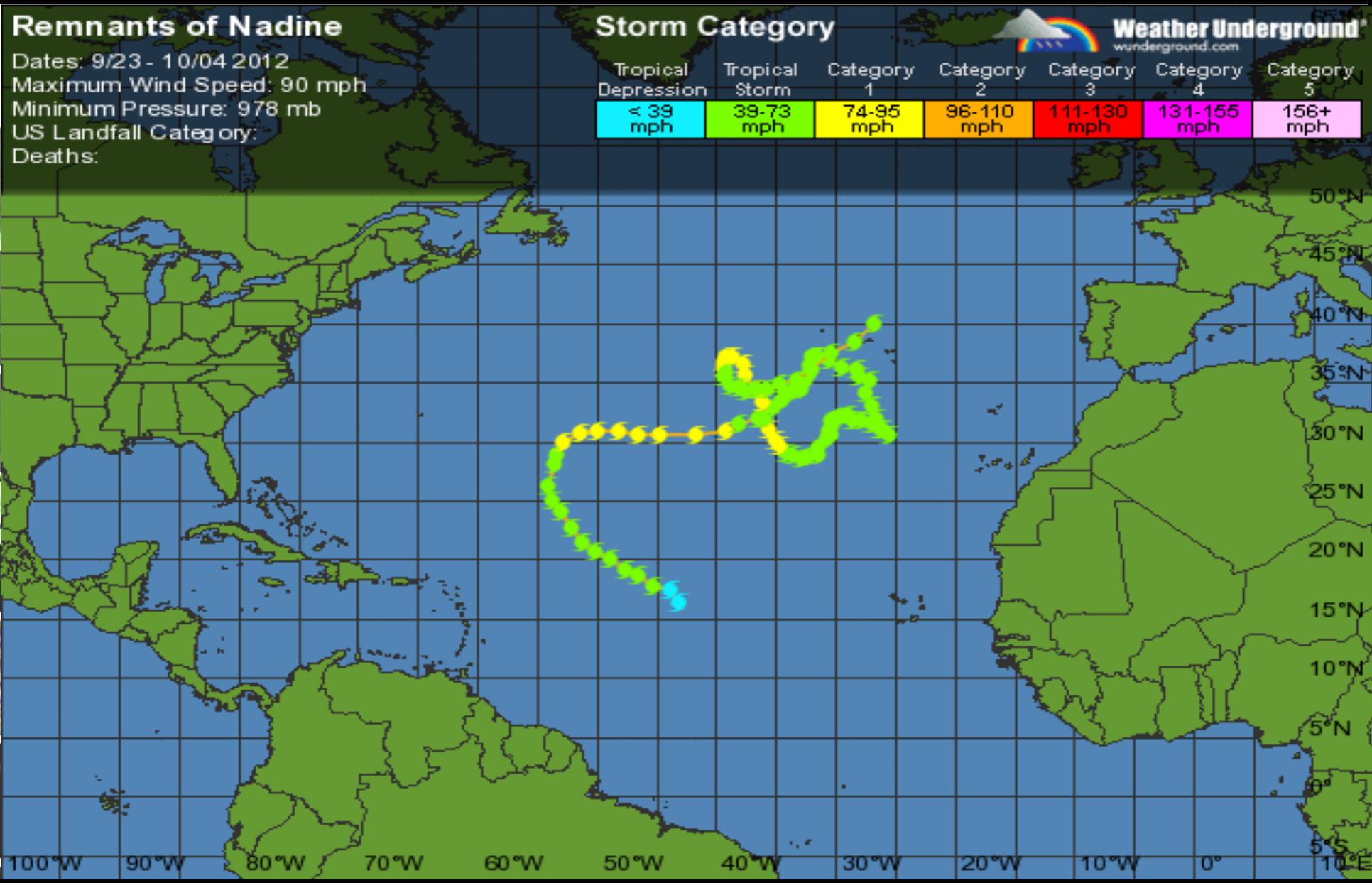
Dates: 9/23 - 10/04 2012
Maximum Wind Speed: 90 mph
Minimum Pressure: 978 mb
US Landfall Category:
Deaths:

Storm Category

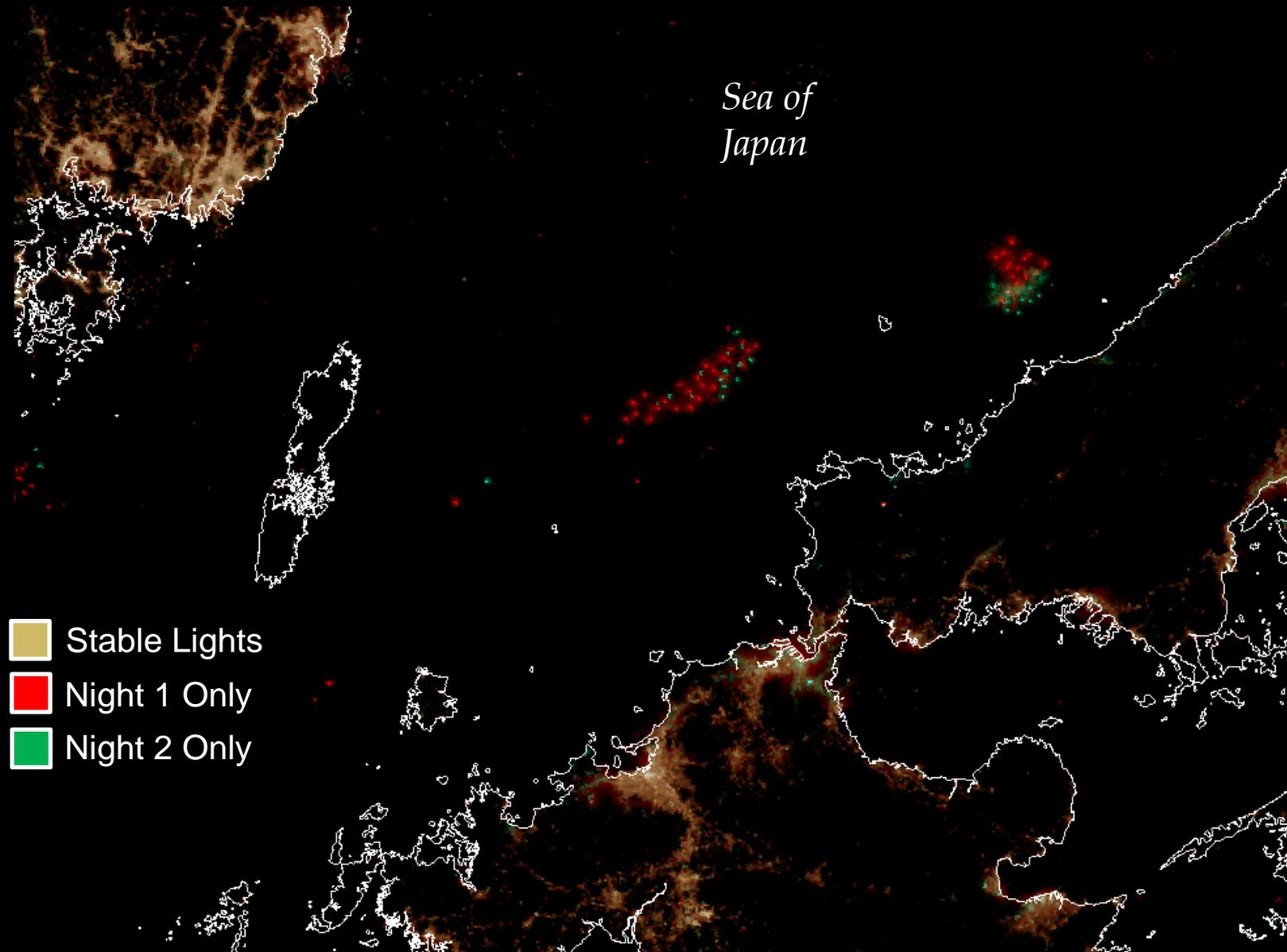
Tropical Depression	Tropical Storm	Category 1	Category 2	Category 3	Category 4	Category 5
< 39 mph	39-73 mph	74-95 mph	96-110 mph	111-130 mph	131-155 mph	156+ mph



Weather Underground
wunderground.com



Migratory Fishing Fleets



Data Issues & Status

Stray Light Correction



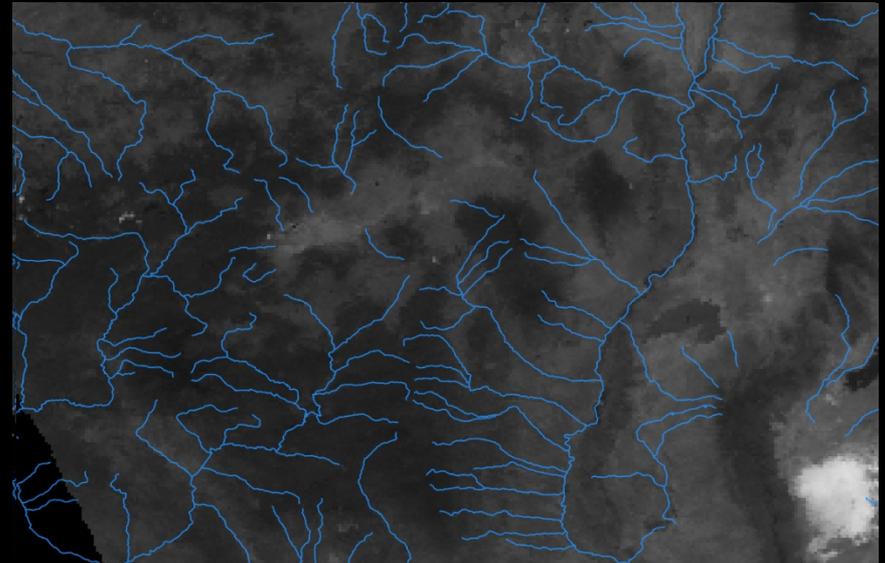
Northrop Grumman (S. Weiss & T. Ohnuki)

Sun shining into EV port...affects 9 min from terminator crossing for both northern and southern hemispheres (13% of orbit)

LUT-based correction designed (NGST)

IDPS delivery Build 7.2 ~mid-Aug 2013

Terrain-Corrected Geolocation



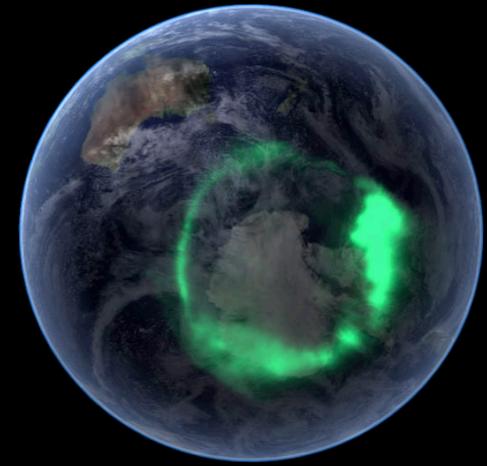
NASA/GSFC Land Science Team

Affects all DNB data, particularly noticed for higher elevation light sources

Geometry-based correction designed

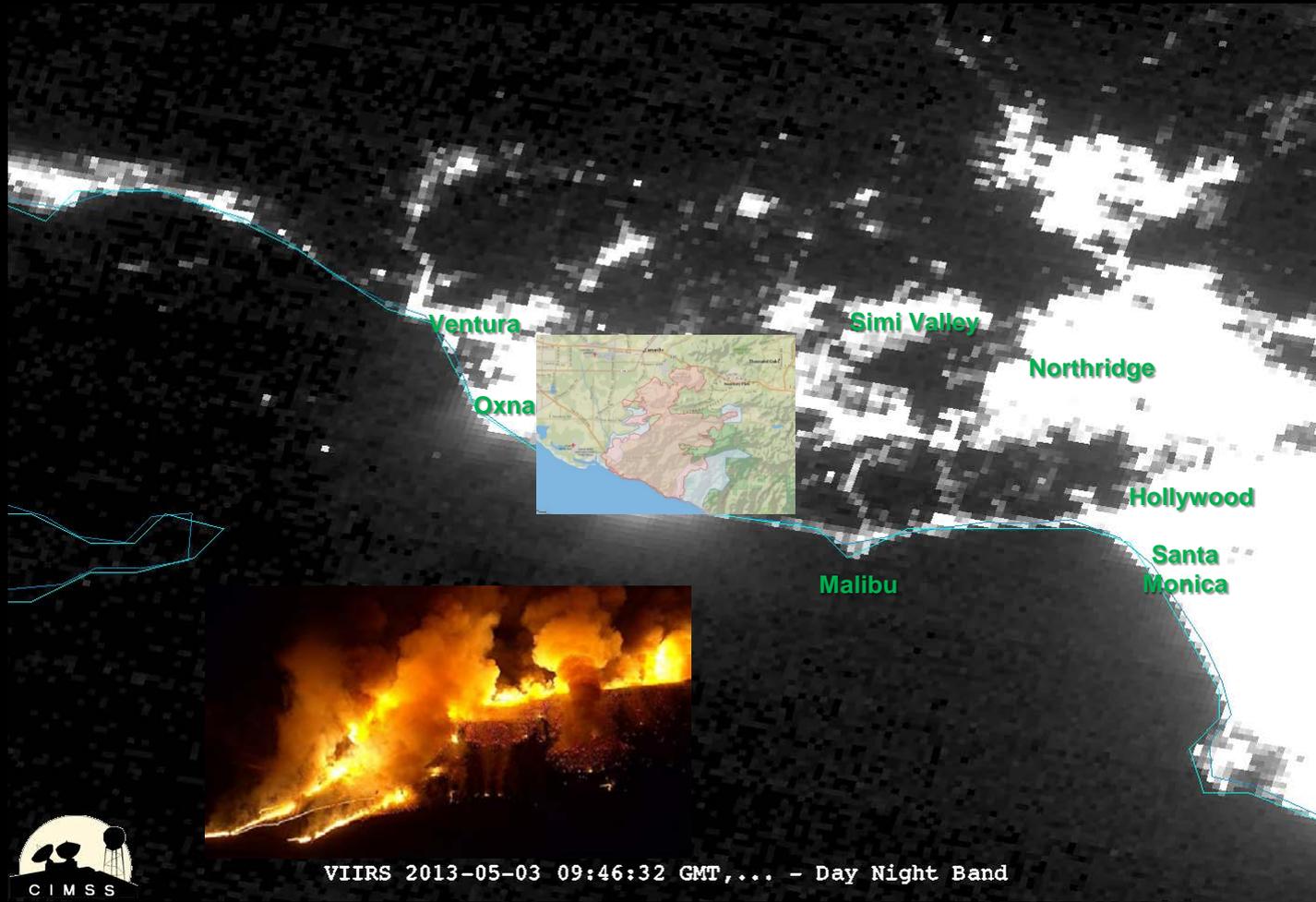
IDPS delivery pending Customer Forum review/approval (early 2014 ??)

Summary



- Multiple OCONUS benefits
- Reflectance and emission-based applications
- Increased high latitude revisit, and higher moons, benefit the Winter season
- Corrections for stray light and terrain adjusted geolocation are pending
- Proving Ground is an important vehicle for communicating capabilities to operational end-users

Springs Fire, Ventura County



Courtesy, W. Straka (UW-CIMSS)

Tropical Cyclones: Exposed Low-Level Circulation

