



# *Coming Out of the Dark: Enlightening Capabilities of the Suomi NPP VIIRS Day/Night Band*

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*Colorado State University, Fort Collins*

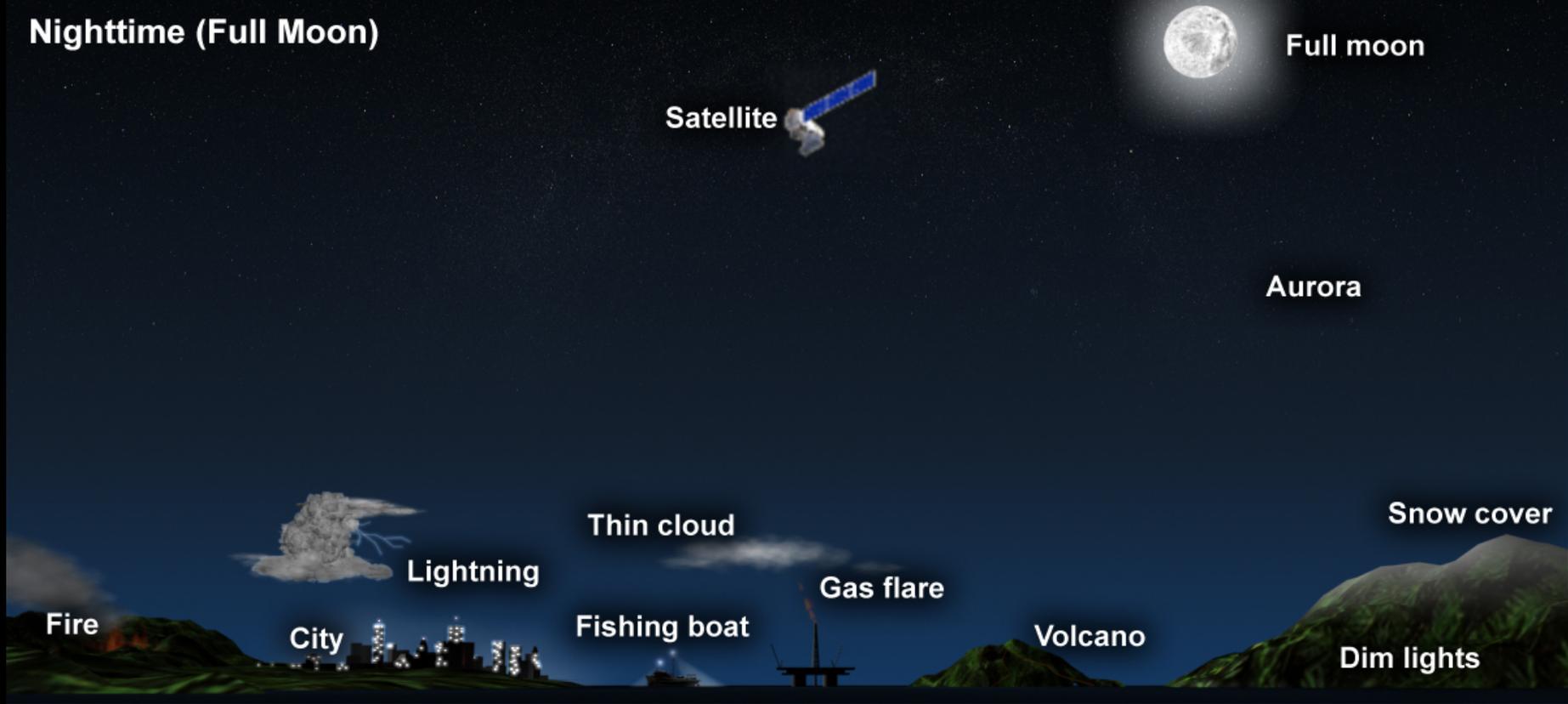
**American Meteorological Society**  
**Austin, TX**

**7 January 2013**



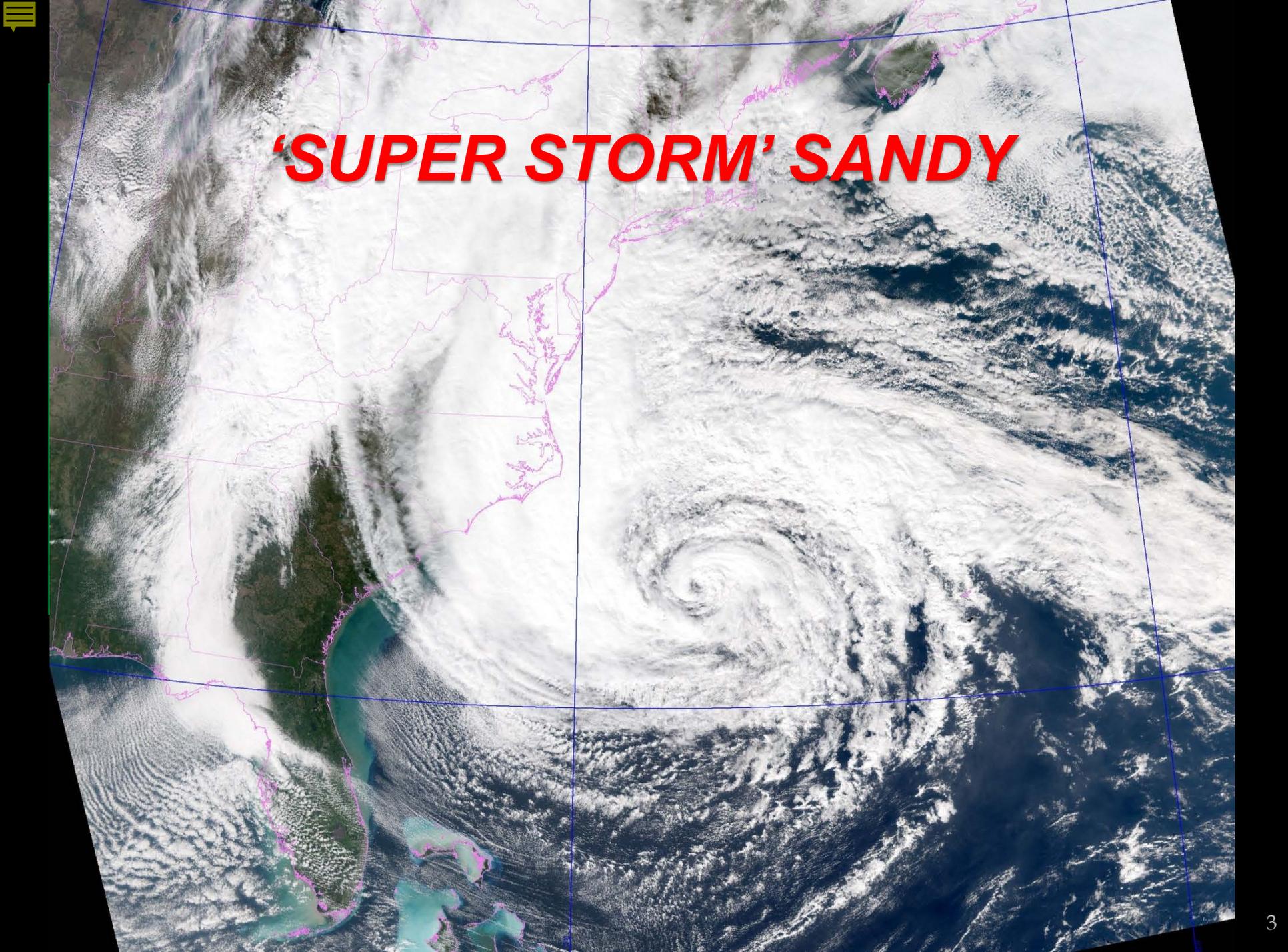
# Nighttime Lights

Nighttime (Full Moon)



*Courtesy: The COMET Program*

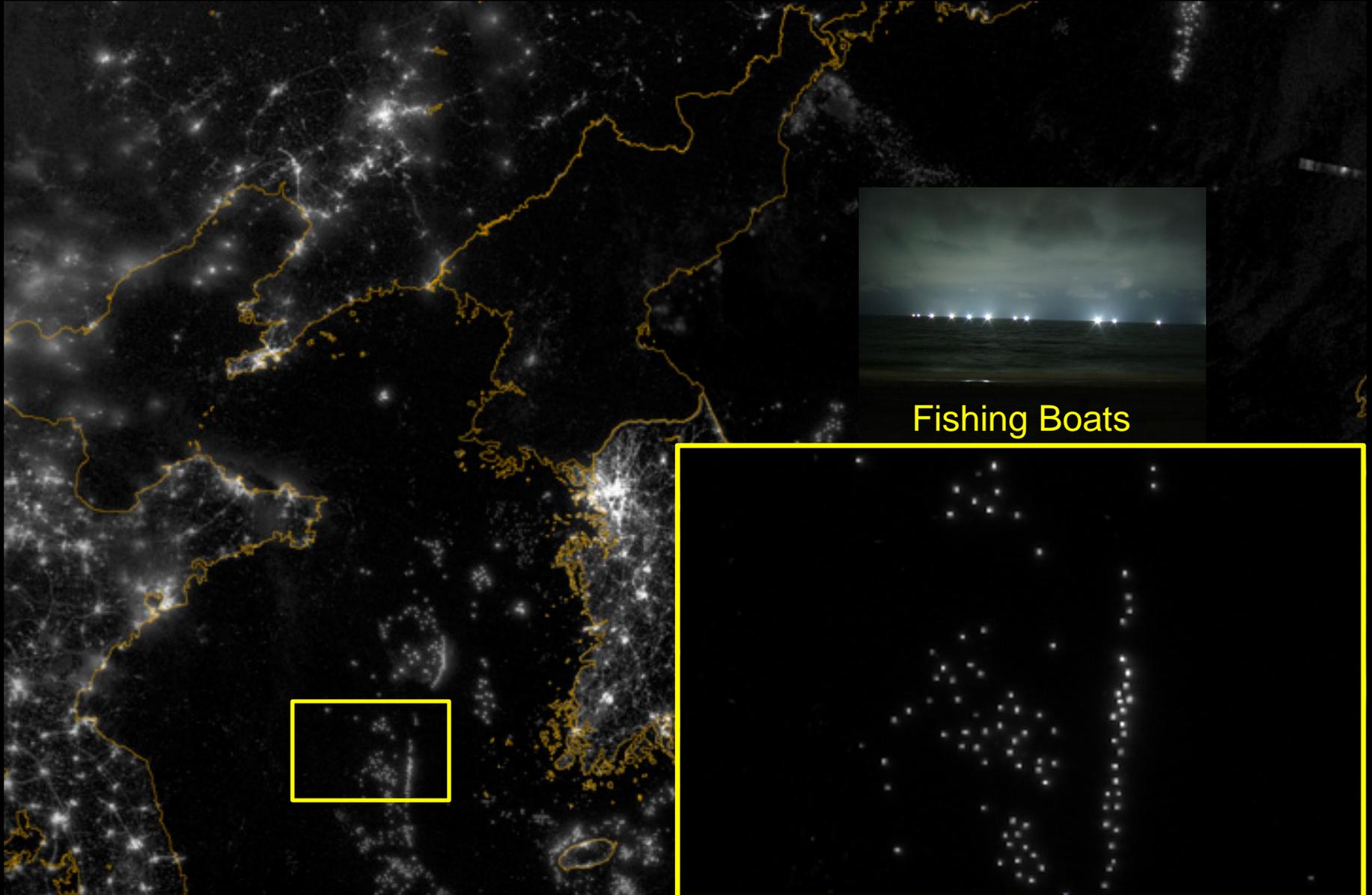
→ The Day/Night Band offers many new and improved nighttime capabilities, both with and without moonlight.

A satellite image of Hurricane Sandy, showing a well-defined eye and spiral cloud bands. The storm is positioned over the Eastern United States, with the coastline of the Atlantic seaboard visible. The image includes a blue grid overlay and pink state boundaries. The text 'SUPER STORM SANDY' is overlaid in red.

# ***'SUPER STORM' SANDY***

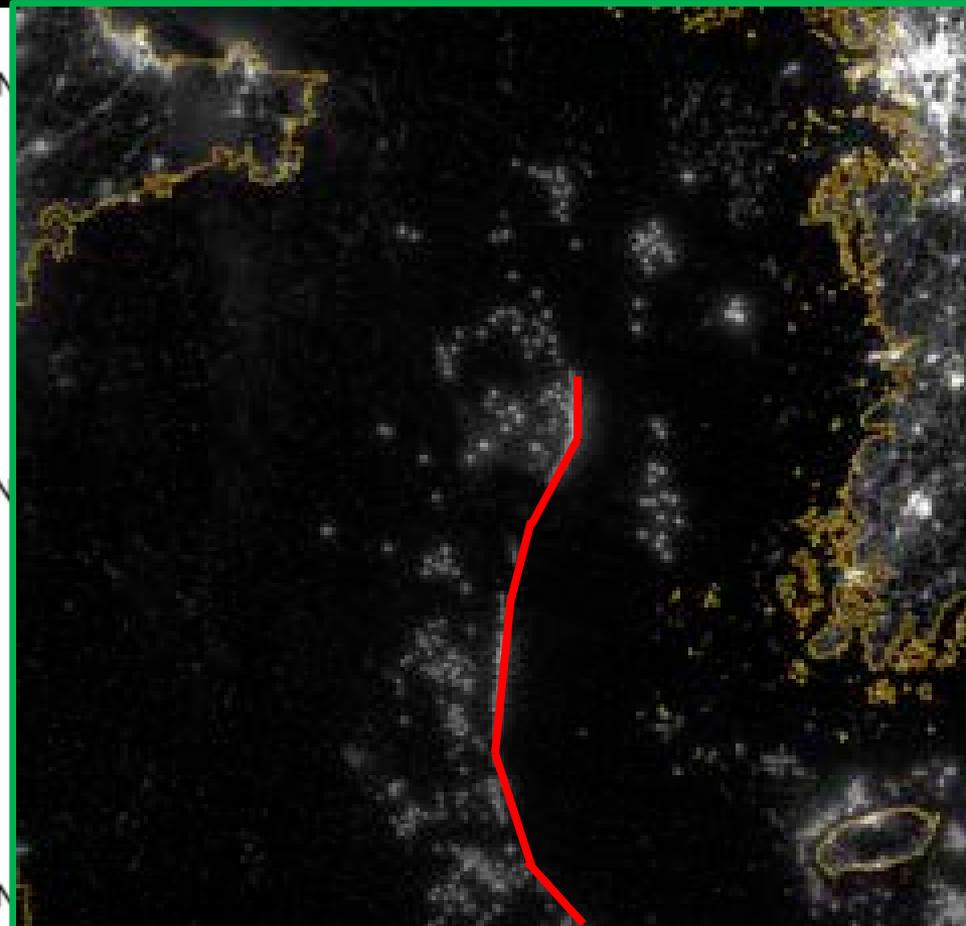
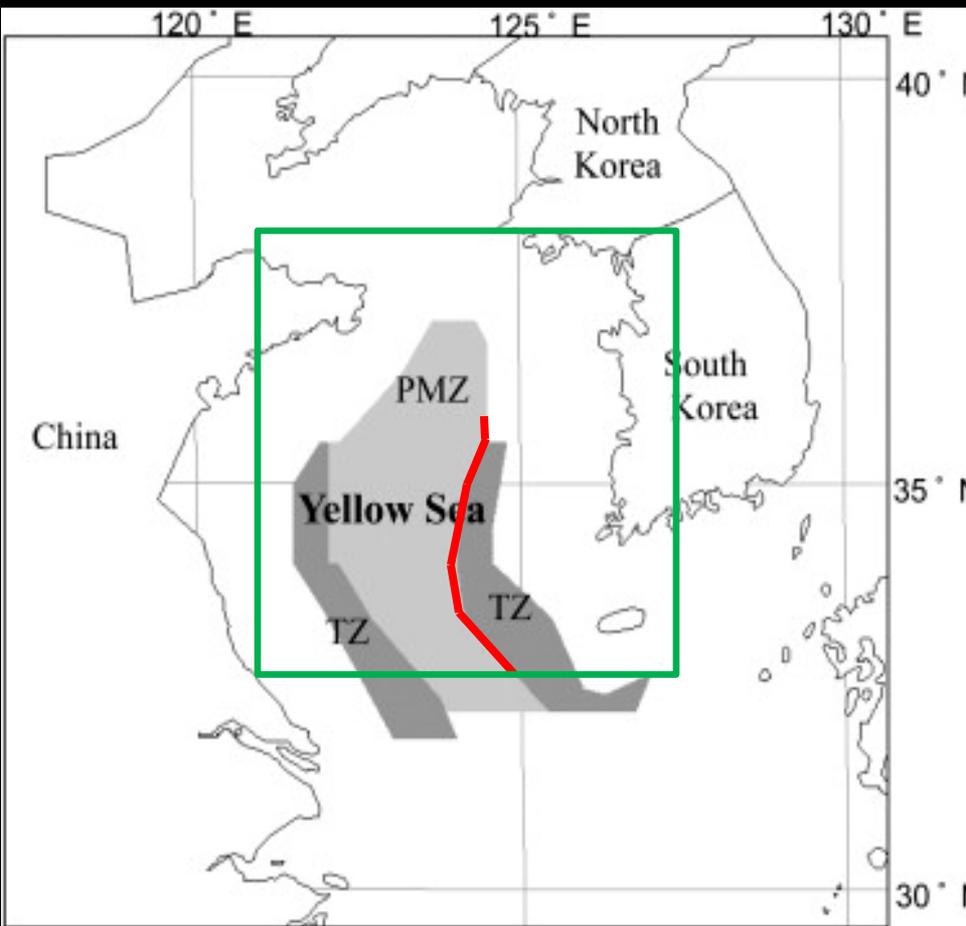
# Lights on the Seas

Sep 24, 2012

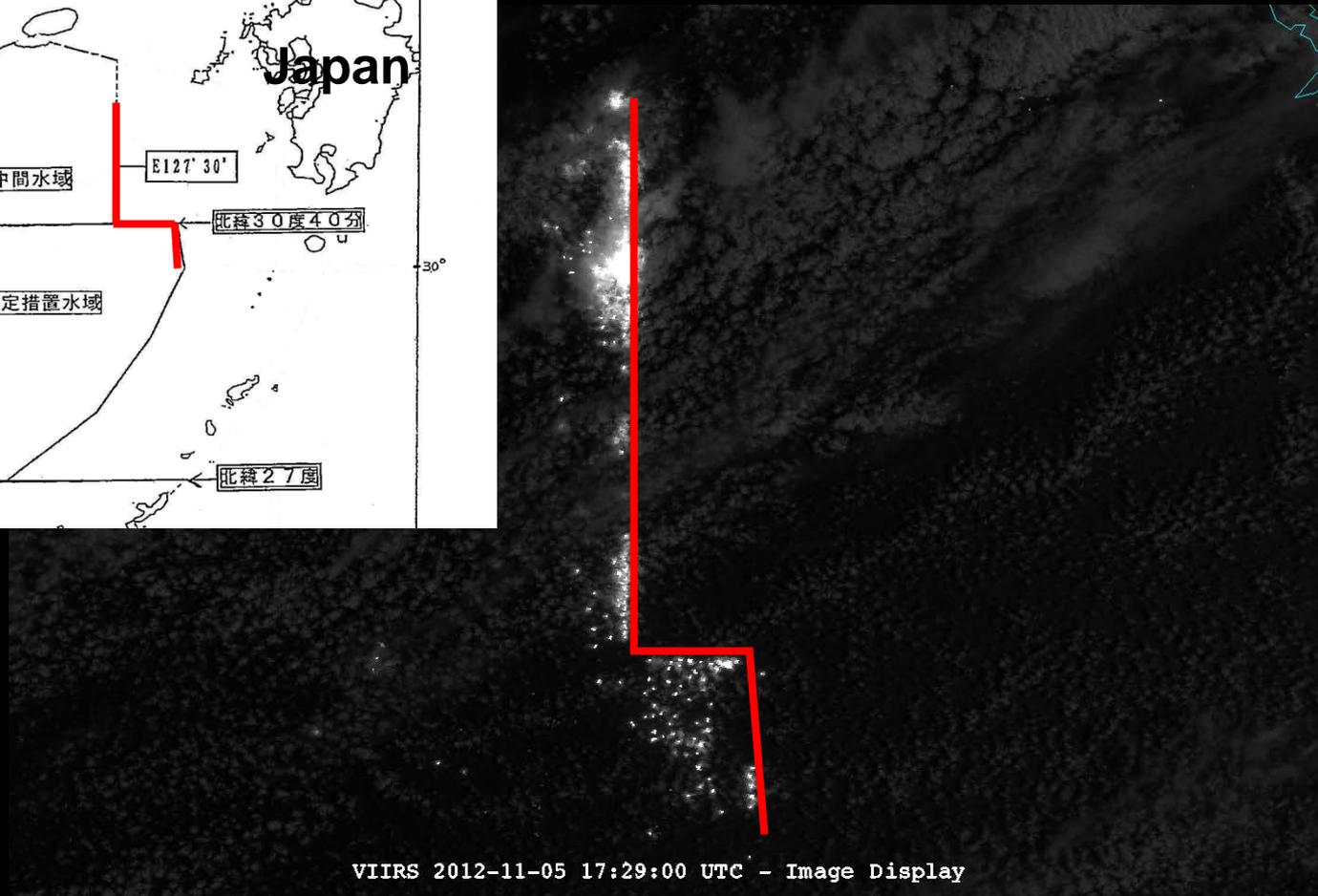
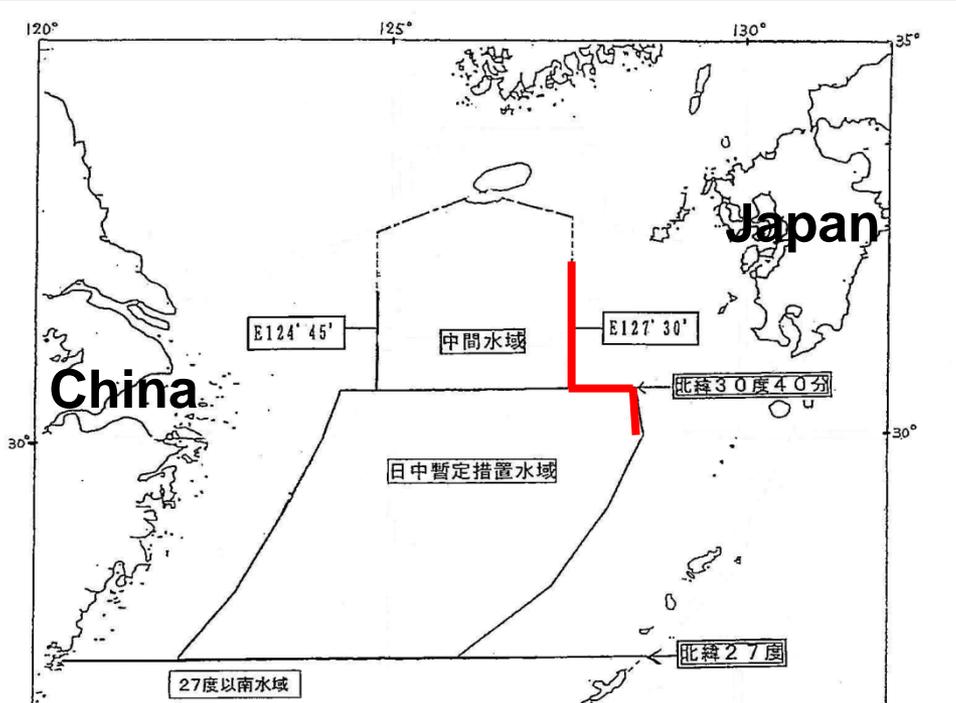


Fishing Boats

# The Politics of Fishing



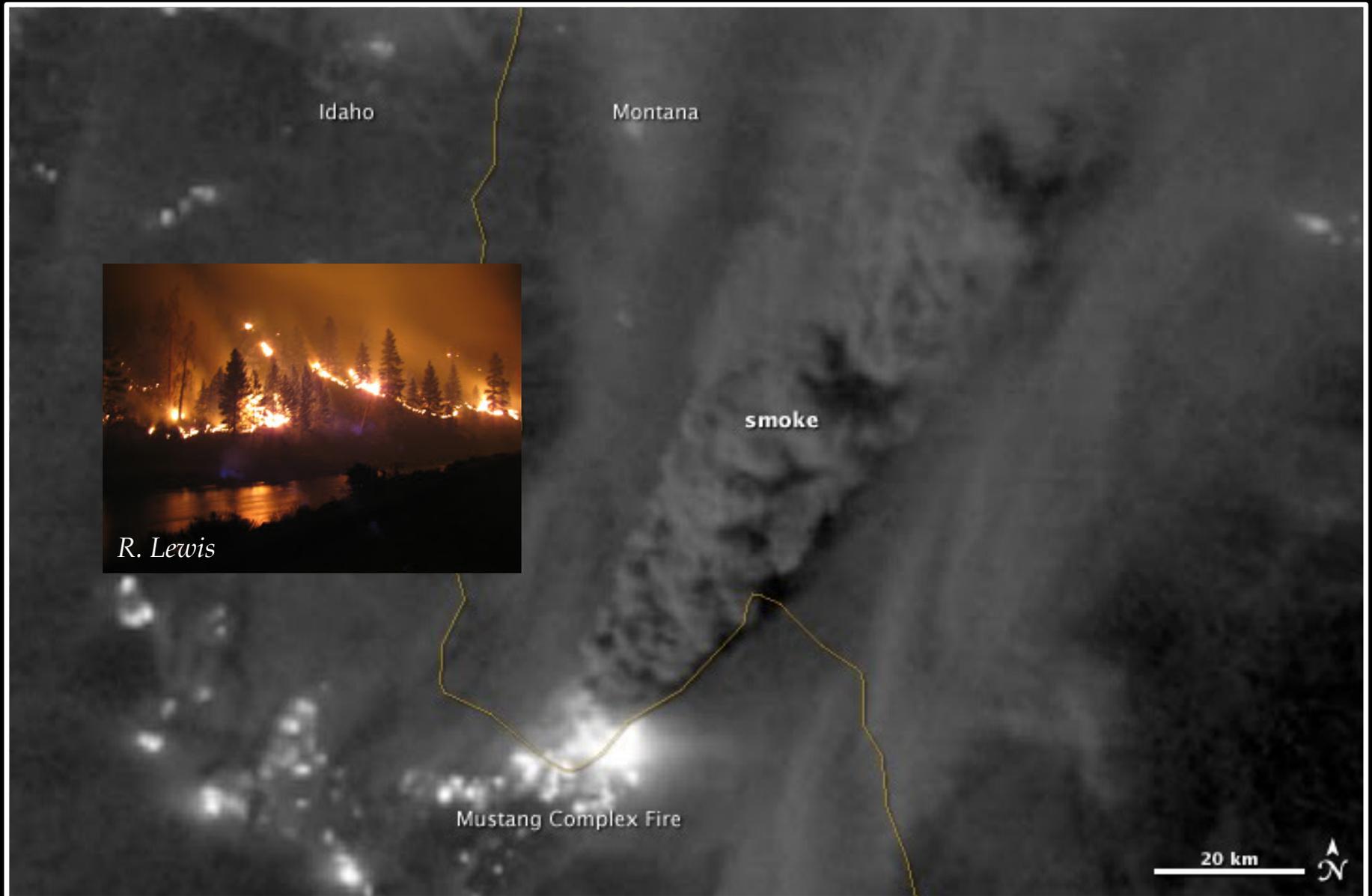
# The Politics of Fishing



VIIRS 2012-11-05 17:29:00 UTC - Image Display

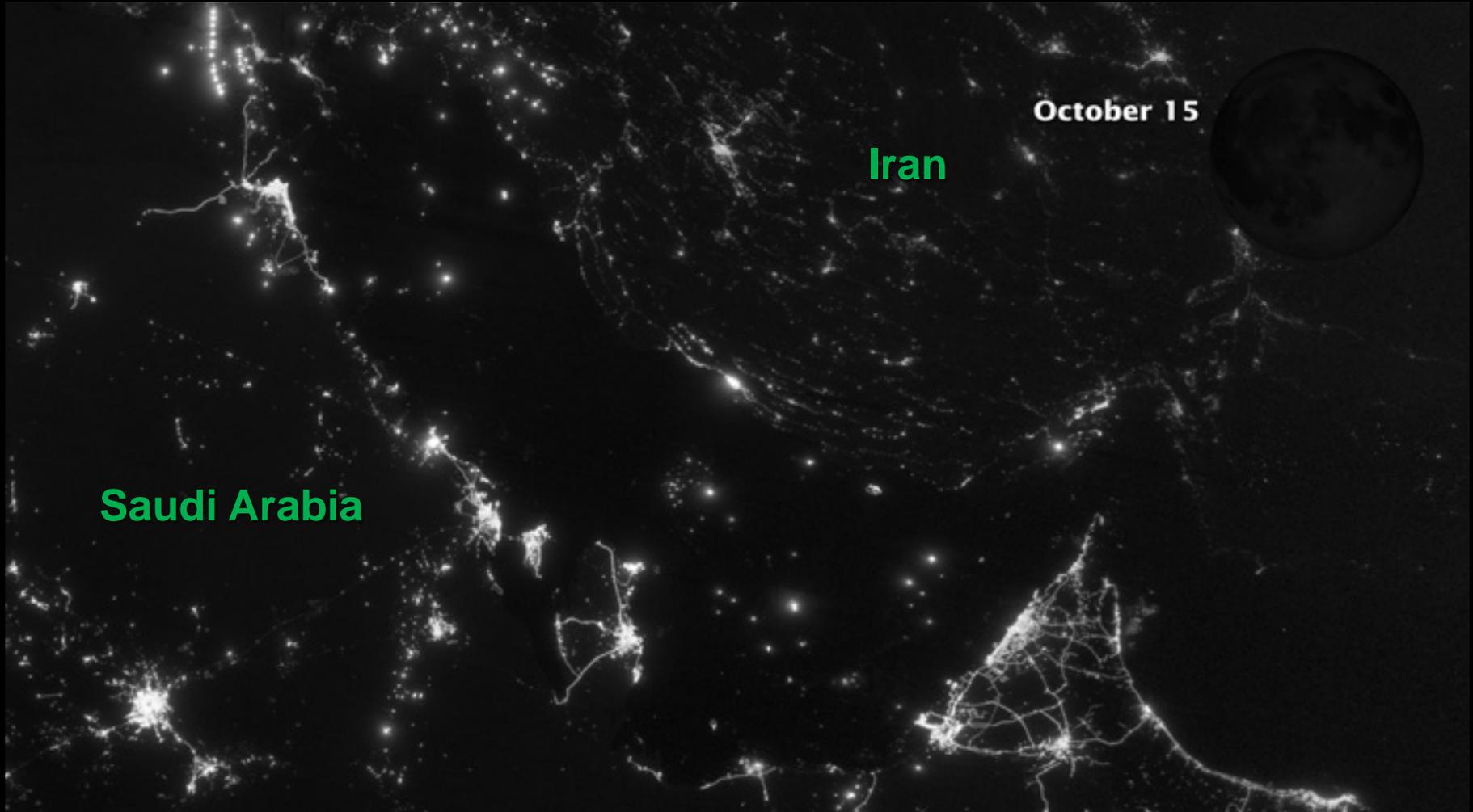
# Where There's Smoke...

Aug 29, 2012



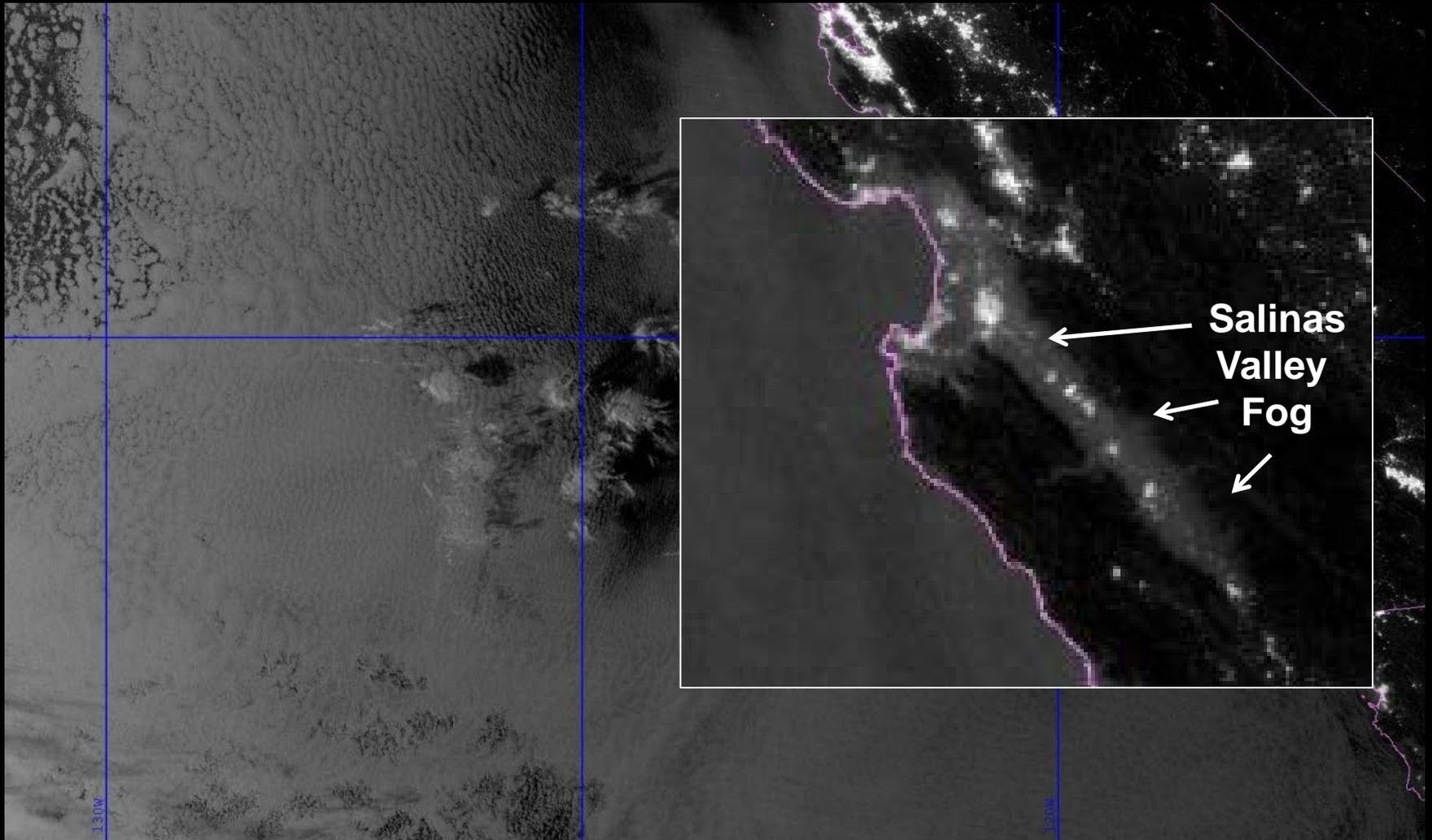
# As the Moon Turns...

Sep 30 – Oct 15, 2012



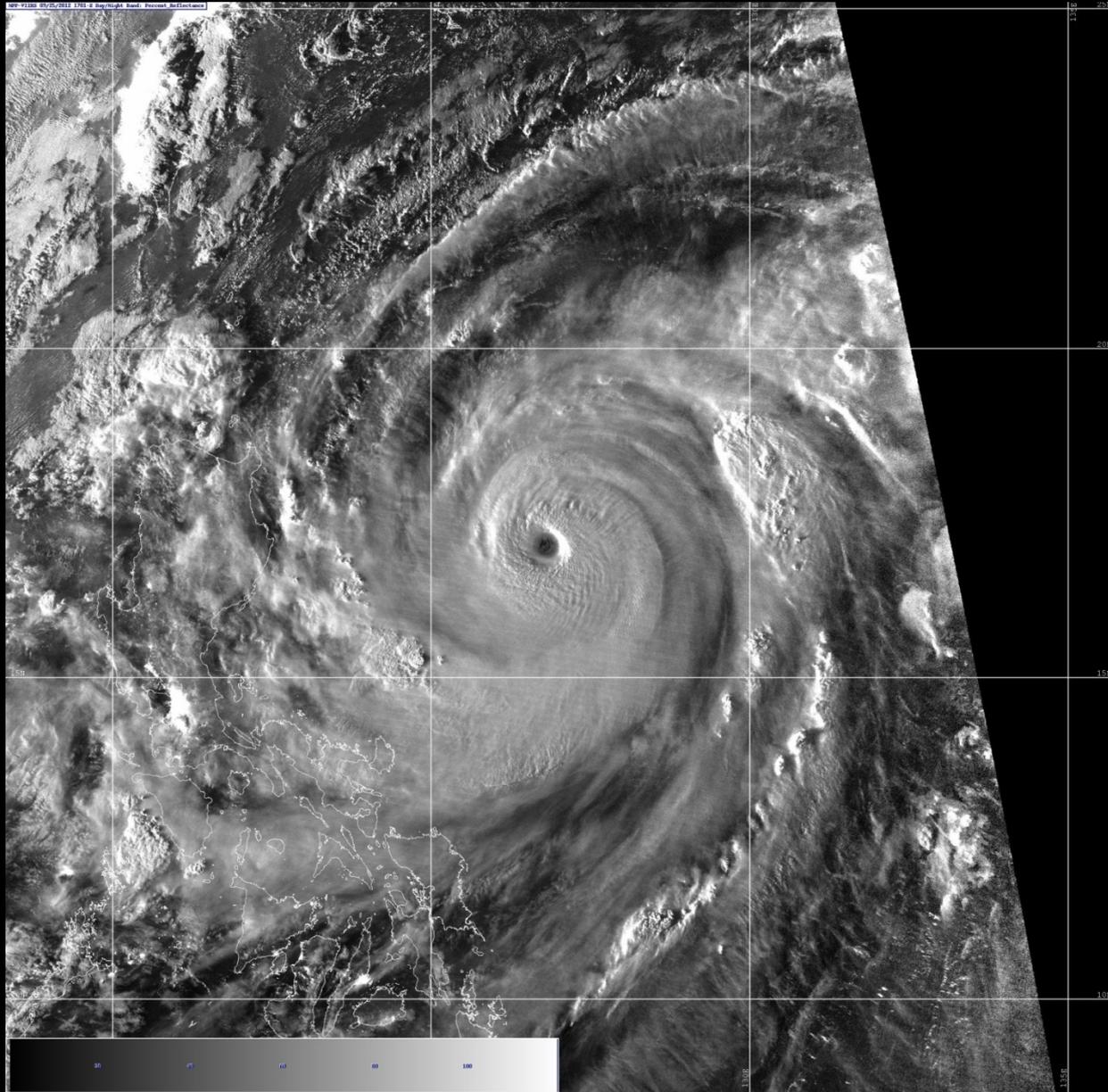
# Clouds by Moonlight

Sep 26 2012



# Lunar Reflectance Calculations

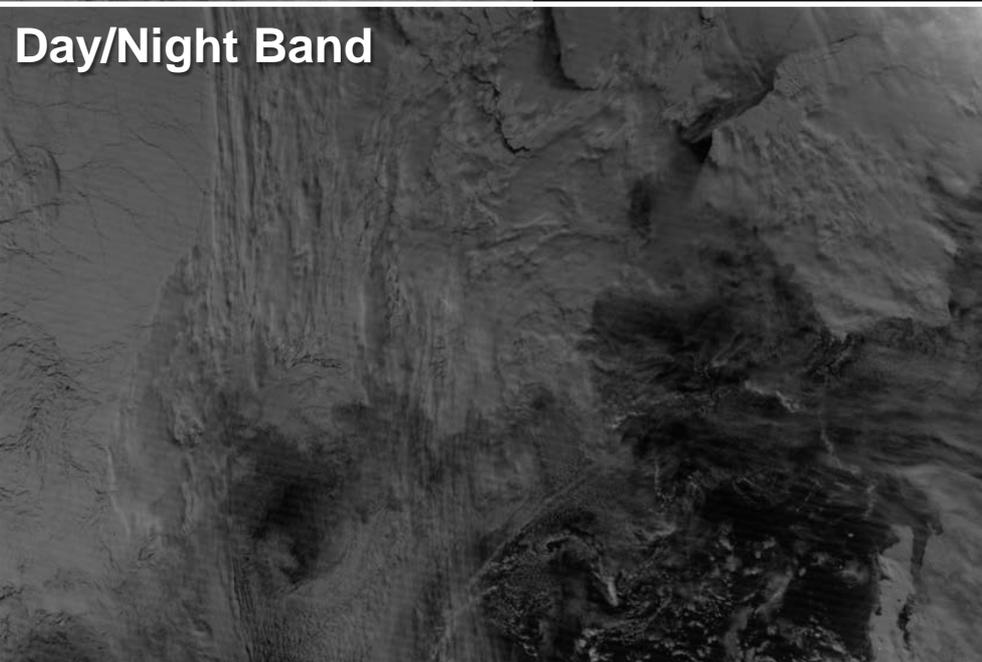
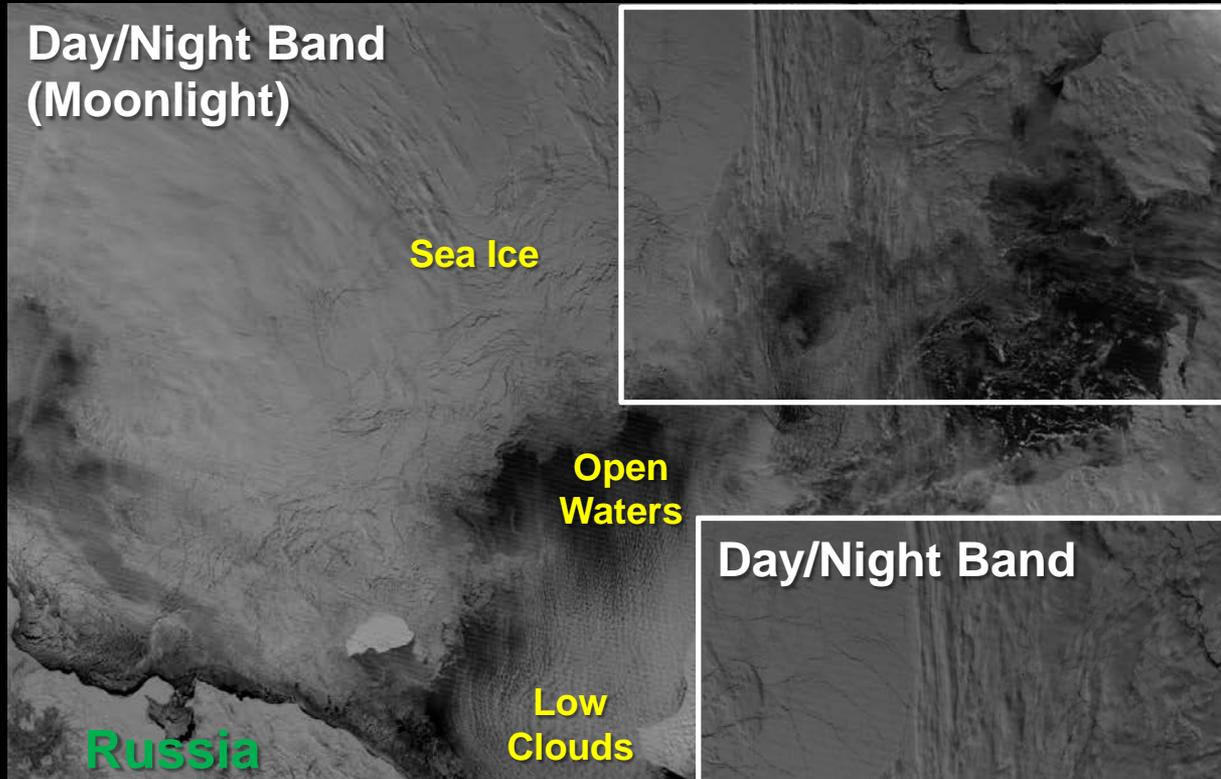
*Typhoon Jelawat: 9/25/2012 ~1700Z*



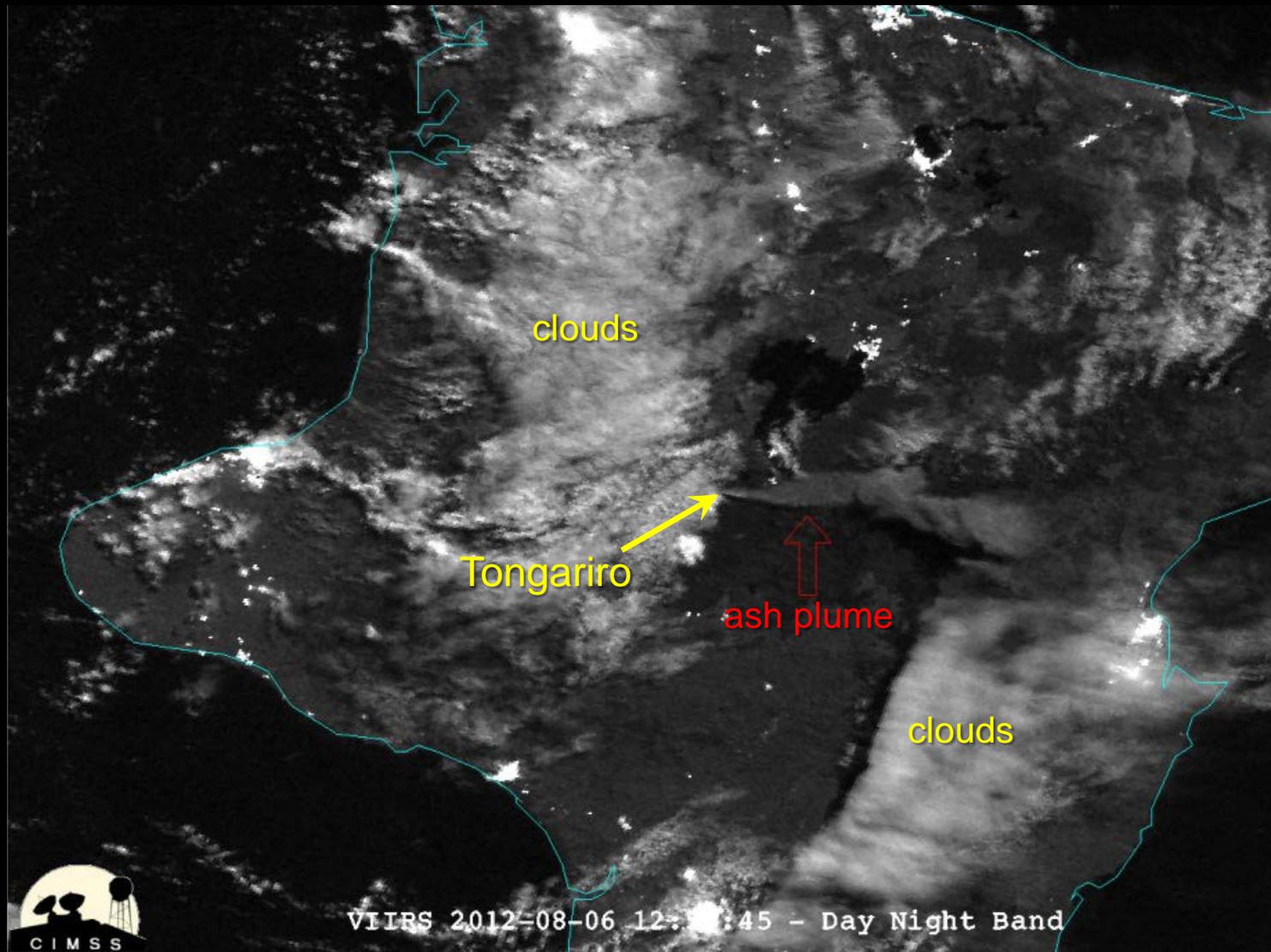
# Into the 'Great Darkness'

Oct 30 2012

Day/Night Band  
(Moonlight)

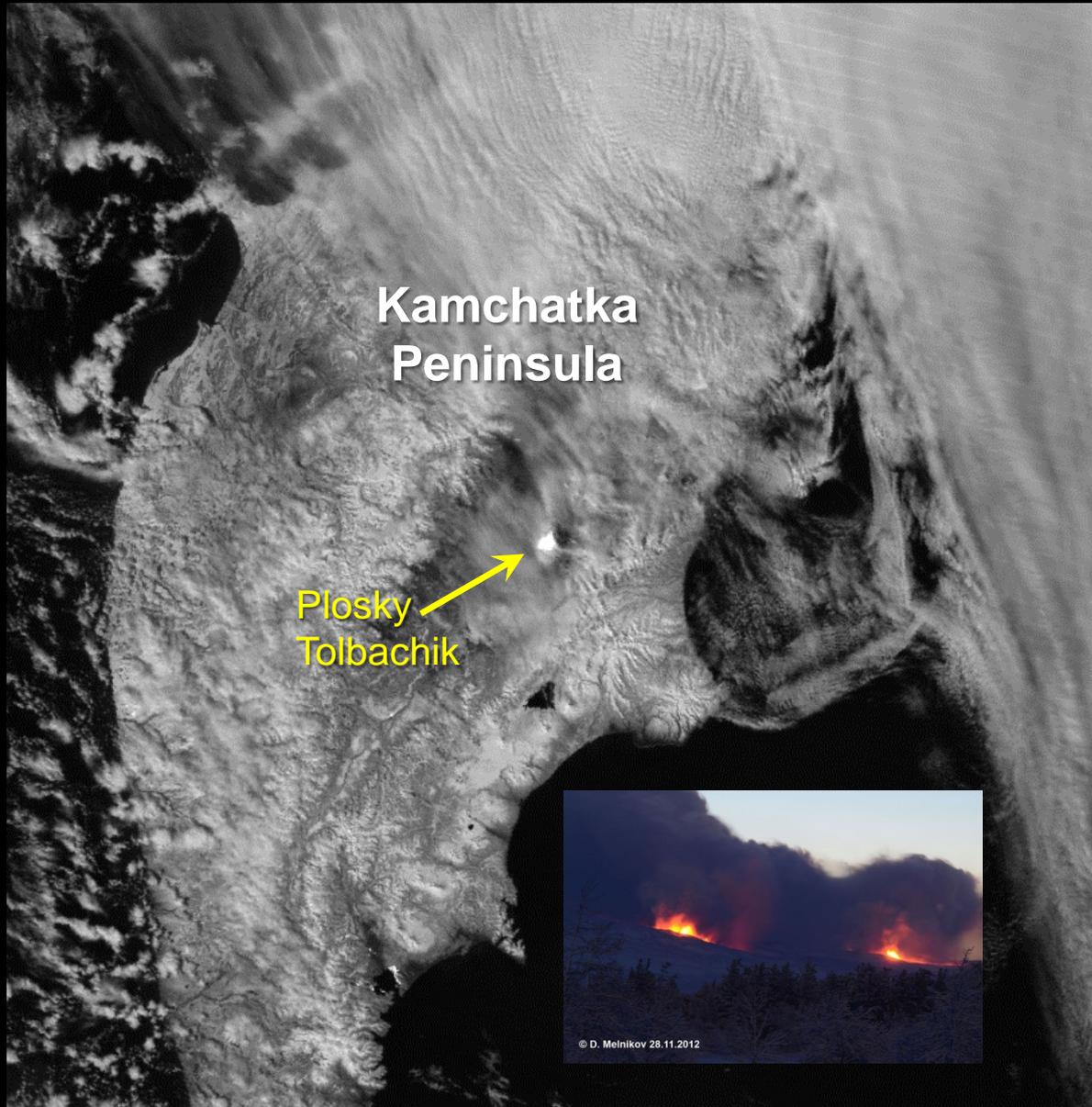


# Volcanic Ash

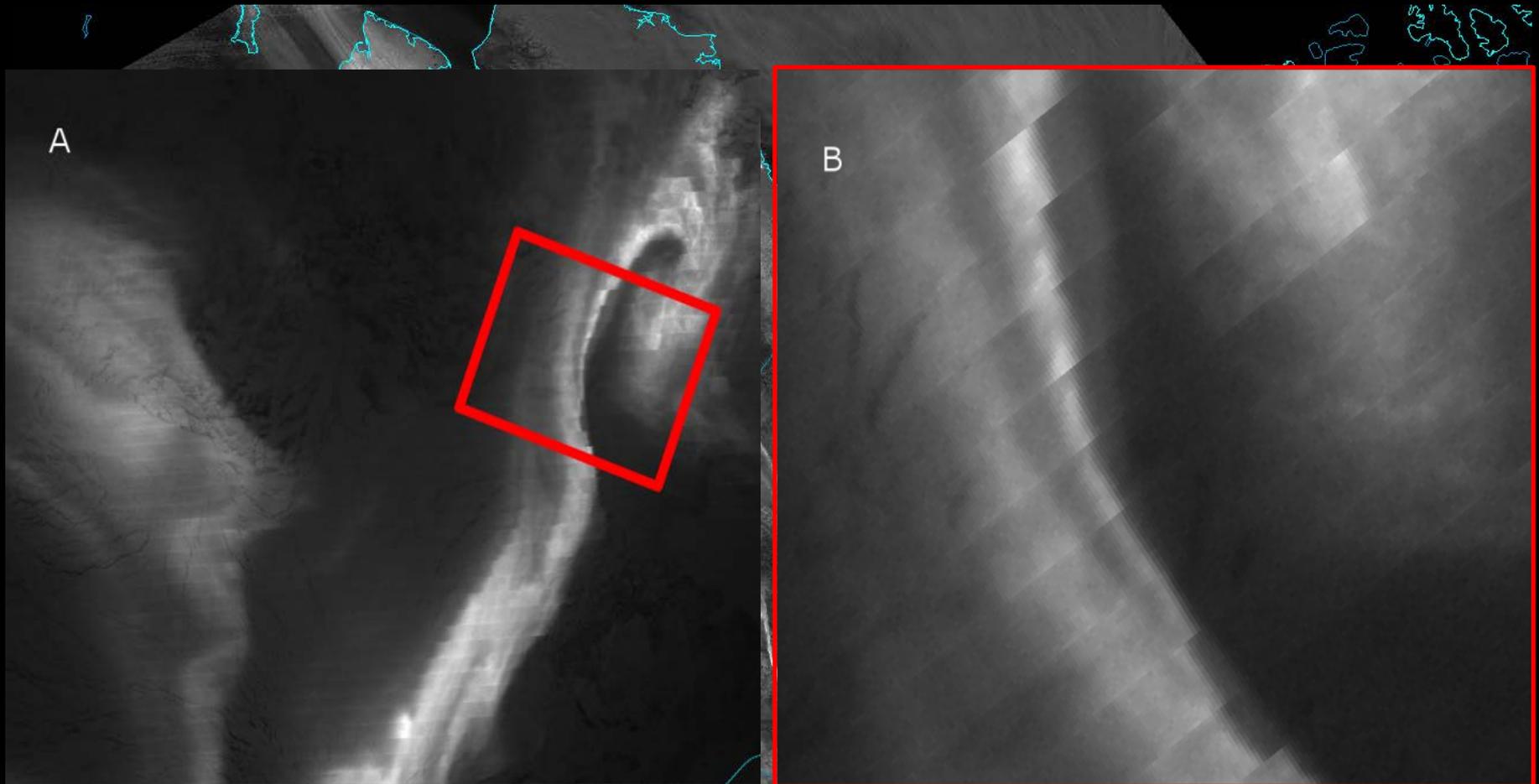


# Volcanic Light Emission

Nov 26-28, 2012



# Auroral Boundaries & Motion



→ Rapid fluctuations of aurora between  $\sim 1.7$ s scans leads to boundary discontinuities.

# Assessment

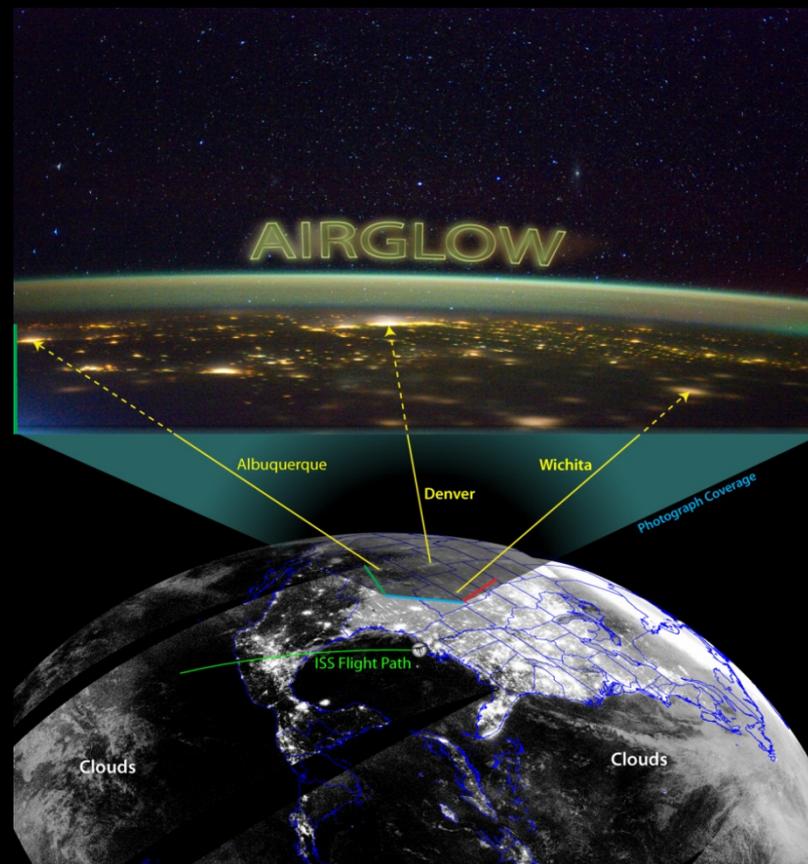
- The night is not as dark as it may seem...
- DNB offers significant advances to legacy



- We've only scratched the surface of the capabilities.
- New operational applications abound!

*Thanks!*

# Please Come Visit Our Poster!



**Poster 335:** Monday, 2:30-4:00 PM, Exhibit Hall 3  
“A New Frontier of Nighttime Environmental Sensing, Brought to Light by the Suomi NPP VIIRS Day/Night Band”

**Town Hall Meeting:** Tuesday, 12:15 PM, Ballroom G  
“Early Successes from the Suomi-NPP Mission”