

# High Latitude Proving Ground GINA Update Summary of Activities Roadmap for the Future

Proving Ground All-Hands Meeting

March 4<sup>th</sup>, 2013

Presented by Eric Stevens

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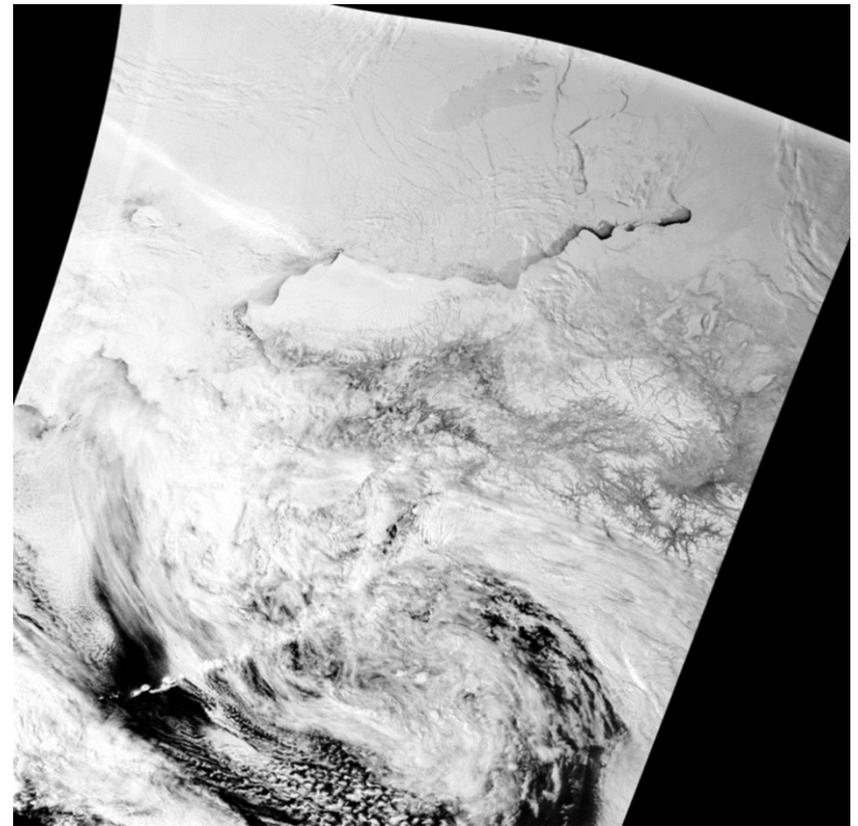
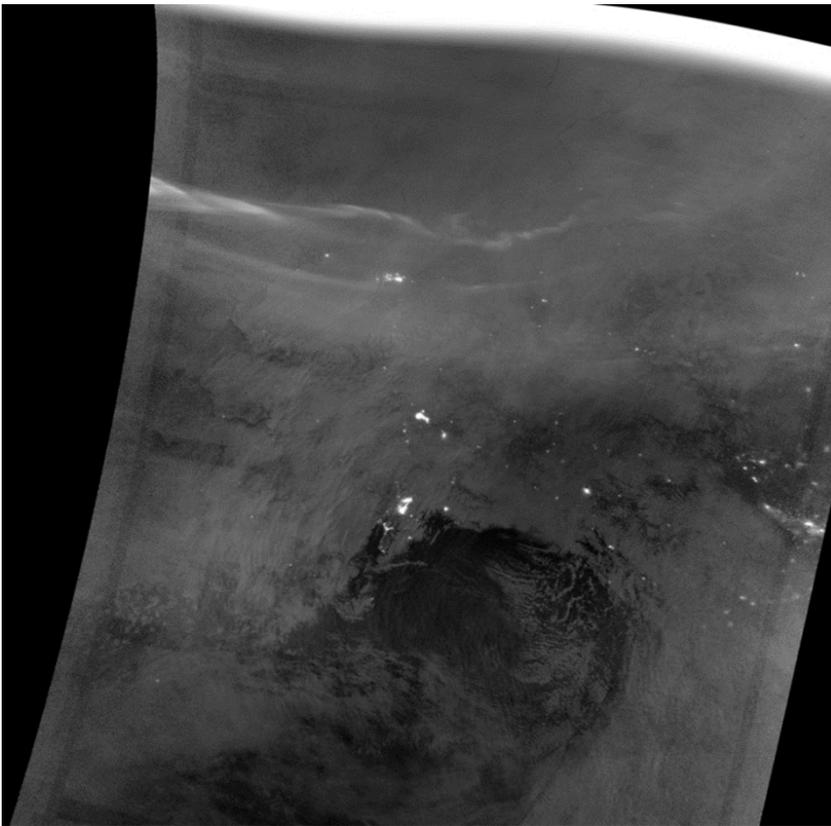
# Proving Ground Activities: January

- JPSS Proving Ground Seminar, “VIIRS Direct Broadcast Use in Alaska”
  - Production of presentation was collaborative effort between GINA and NWS in Alaska
  - Emphasized examples of VIIRS imagery used in real-time on the forecast desk
    - Primarily via AWIPS
    - But also via Internet, as per WFO Anchorage Ice Desk

# A Difference of Night and ...Night

VIIRS DNB 3am Dec 14, 2012

VIIRS DNB 3am Dec 27, 2012



# Proving Ground Activities: February

- Presentation at WFO Fairbanks, “VIIRS on the Forecast Desk” drawn from the JPSS seminar
- Visit to NWS Pacific Region HQ to meet with Bill Ward and Eric Lau
  - Demonstration of display of satellite imagery in AWIPS 2
  - Discussion of OCONUS meeting in June

# Proving Ground Activities: February

- Bill Smith of CIMSS met with NWS Fairbanks and GINA staff
  - Bill highlighted the capabilities of the SNPP CrIS data in the forecast process
    - Conference call included NWS Anchorage and Juneau
    - Can GINA bring SNPP CrIS data to NWS Alaska via method similar to what is used with VIIRS?

# Proving Ground Activities: February

- Bill Smith of CIMSS met with NWS Fairbanks and GINA staff
  - Discussed including CrIS soundings into data assimilation schemes for NWP models
    - GINA expert is Jiang Zhu, also Don Morton from UAF's Arctic Region Supercomputing Center
  - Dan Hancock, WFO Fairbanks' satellite focal point, demo'ed VIIRS imagery in AWIPS for Bill
  - Melissa Kreller, WFO Fairbanks' SOO, demo'ed the GFE for Bill

# WFO Anchorage Ice Desk

- WFO Anchorage uses SNPP and MODIS imagery delivered by GINA to produce ice analysis for the public
- The following examples are from WFO Anchorage's web site





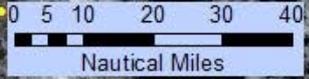
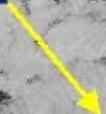
SNPP VIIRS SATELLITE  
DAY/NIGHT BAND UAF GINA  
28 February 2013 1259Z

170°W

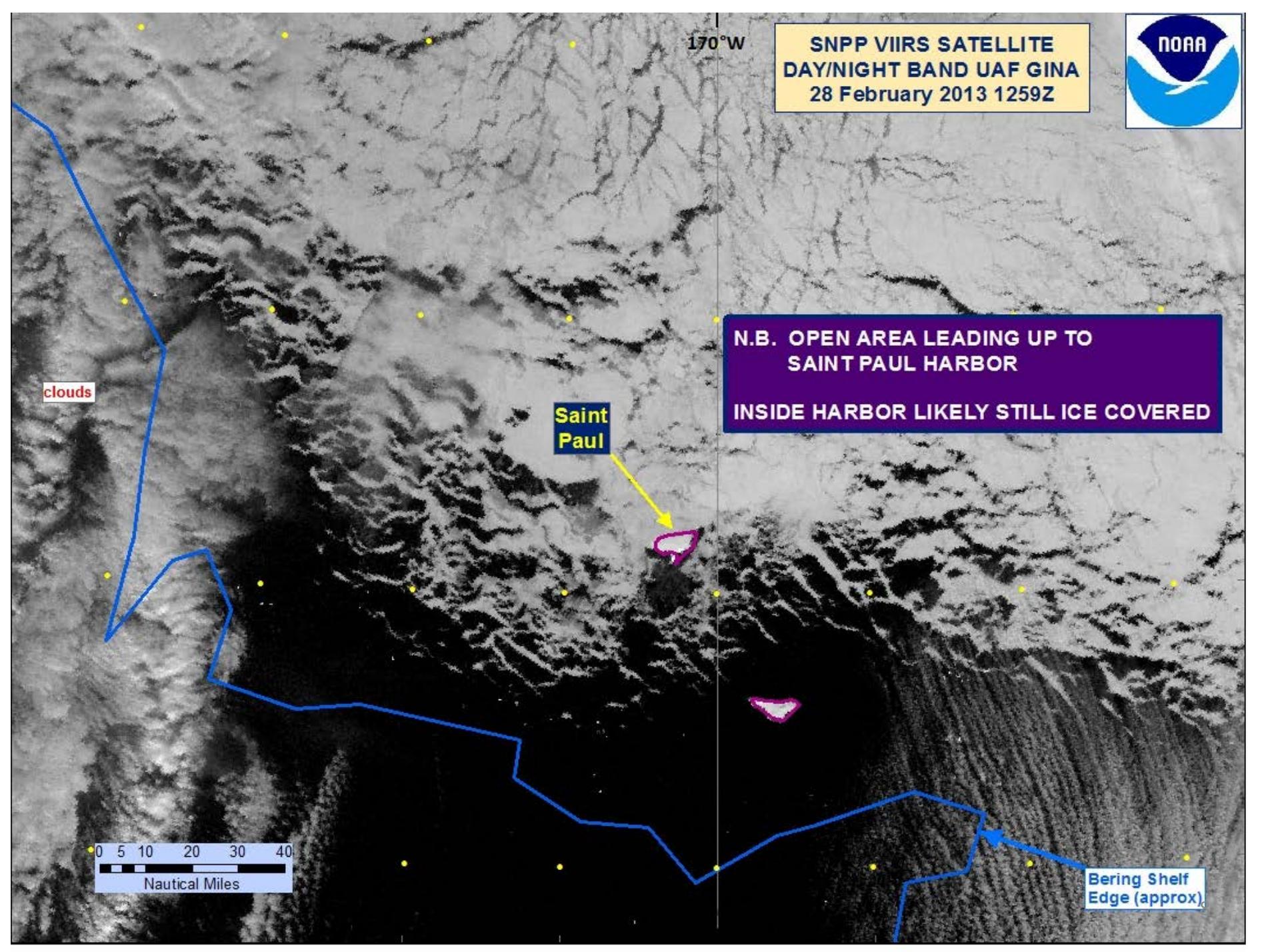
N.B. OPEN AREA LEADING UP TO  
SAINT PAUL HARBOR  
INSIDE HARBOR LIKELY STILL ICE COVERED

clouds

Saint Paul



Bering Shelf  
Edge (approx)





152° W

151° W

150° W

MODIS Visible Satellite  
True Color  
2119Z 11Feb13

Image provided by UAF GINA

Sea Ice

Kalgin Island

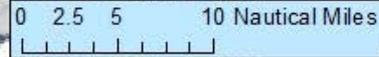
Is it ice or clouds?

60° N

60° N

Satellite images are one of the major tools used by the NWS AK Sea Ice Program to determine ice locations. This clear sky image of Cook Inlet is an excellent example, but it's not always easy to identify ice vs. clouds.

Homer



153° W

152° W

151° W



152° W

151° W

150° W

MODIS Visible Satellite  
False Color  
2119Z 11Feb13

Image provided by UAF GINA

Sea Ice

Kalgin Island

60° N

It's clouds!

60° N

This is the same satellite image color enhanced to differentiate between sea ice and cloud cover. Snow and ice are the blue color. Clouds appear with a red color. It is easy to determine the features in Kachemak Bay near Homer are clouds. Low cloud cover can even be seen over the land. Can you see this cloud layer on the visible image? Probably only if you know where to look.

Homer



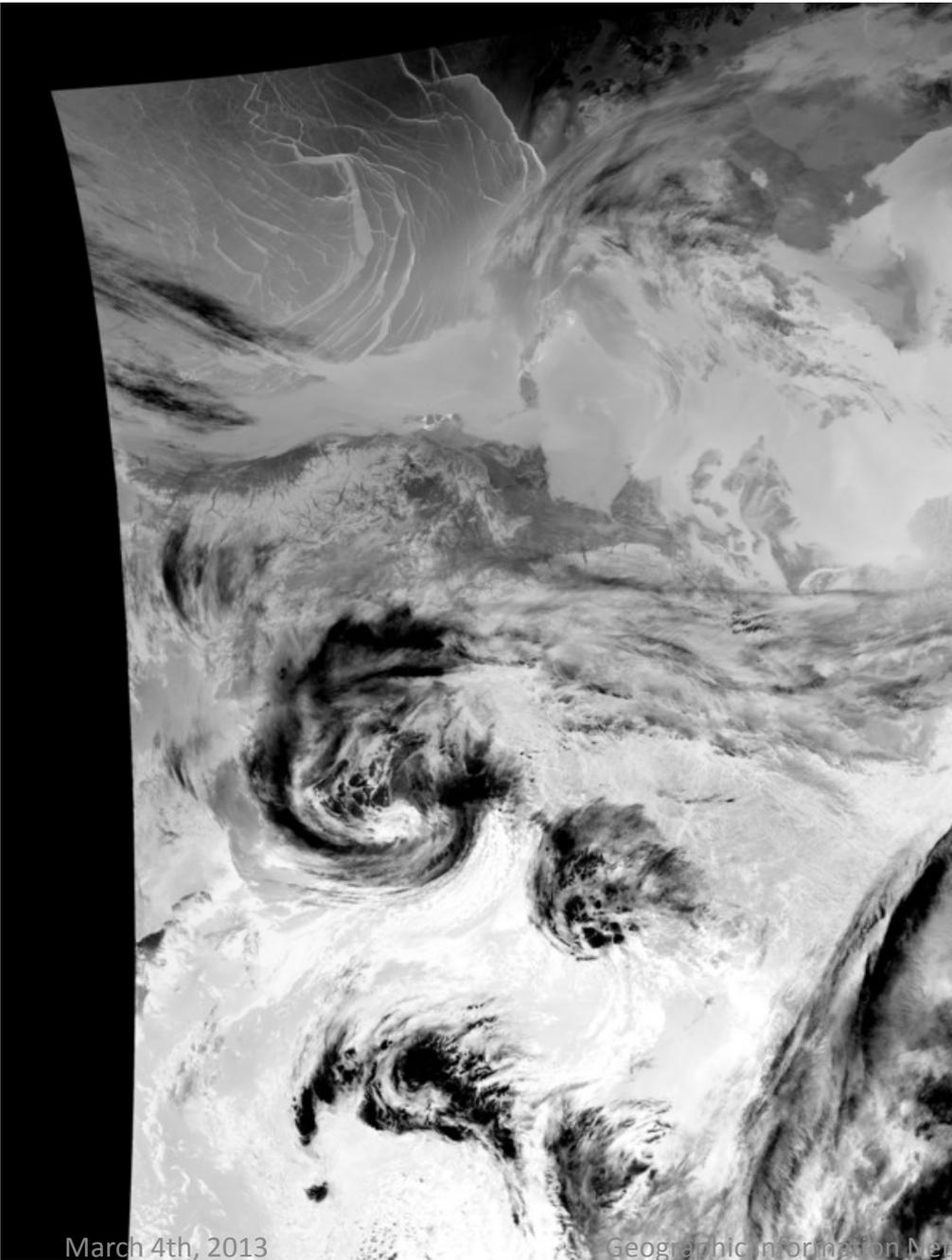
153° W

152° W

151° W

# VIIRS I05 Long-wave IR added to Feeder

- Had already been delivered to NWS for use in AWIPS
- Request to include 11.45 $\mu\text{m}$  in Feeder web site came from National Ice Center and WFO Anchorage's Ice Desk



- SNPP VIIRS I05  
from Feeder web  
site 1058Z, March  
1<sup>st</sup>, 2013

# CSPP Update

- GINA now running CSPP 1.3 on the “warm spare” in support of active fires and cloud masks
- Further testing regarding generation of images will be required to ensure data flow to Feeder and AWIPS will be stable

# Proving Ground Activities: The Future

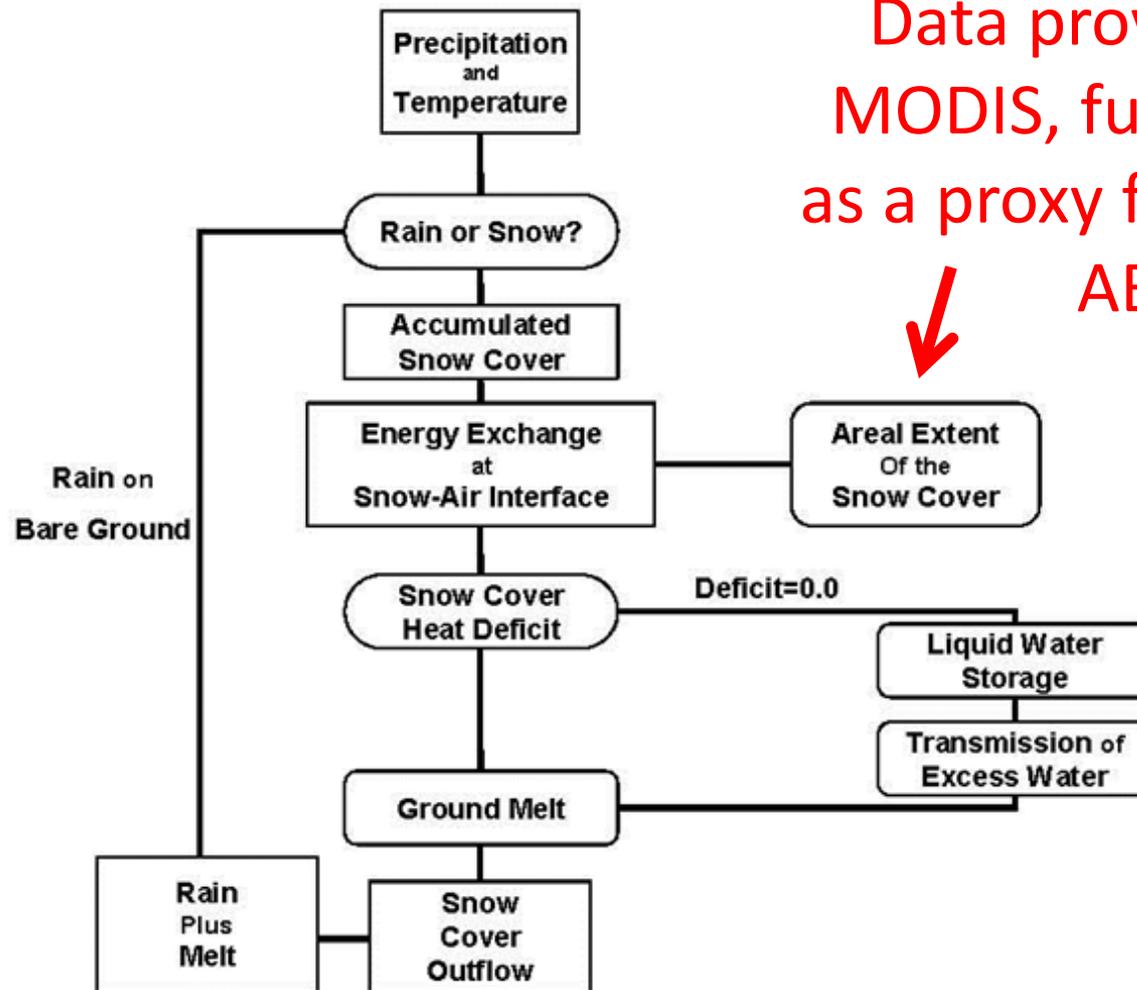


# High Latitude Proving Ground and “Spring Breakup”

- Imagery can differentiate between snow-covered ground and dry ground
  - Method initially developed for use with MODIS imagery is transferable to VIIRS imagery
- Such data is fed into snowmelt-runoff models
- Collaborative effort between Katrina Bennett and Dr. Jessica Cherry at UAF IARC and the NOAA/NWS River Forecast Center in Anchorage



# GOES-R and Modeling of Spring Breakup in Alaska



Data provided by MODIS, functioning as a proxy for GOES-R ABI



# Proving Ground Activities: March

- Alaska Weather Symposium March 12/13
- NOAA Satellite Week March 18-22
- Travel to Juneau March 28/29
  - WFO Juneau
  - University of Alaska Southeast
  - NOAA's Auk Bay Laboratory

# Proving Ground Activities: April-June

- NOAA Satellite Conference April 8-12
- CSPP/IMAPP User's Group at CIMSS May 21-24
- OCONUS Workshop, Anchorage and Fairbanks, June 17-21

# The End



- Any questions, comments?
- <http://feeder.gina.alaska.edu>
- <http://uafgina.tumblr.com>