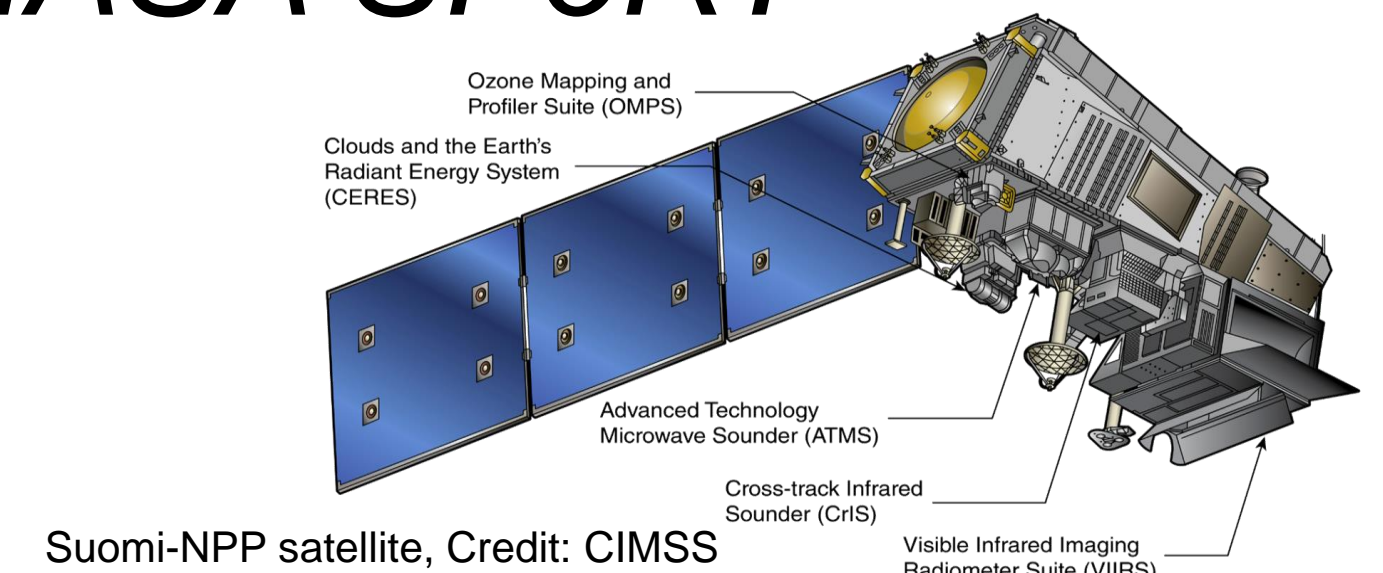


Verification and Enhancement of VIIRS Day-Night Band (DNB) Power Outage Detection Product

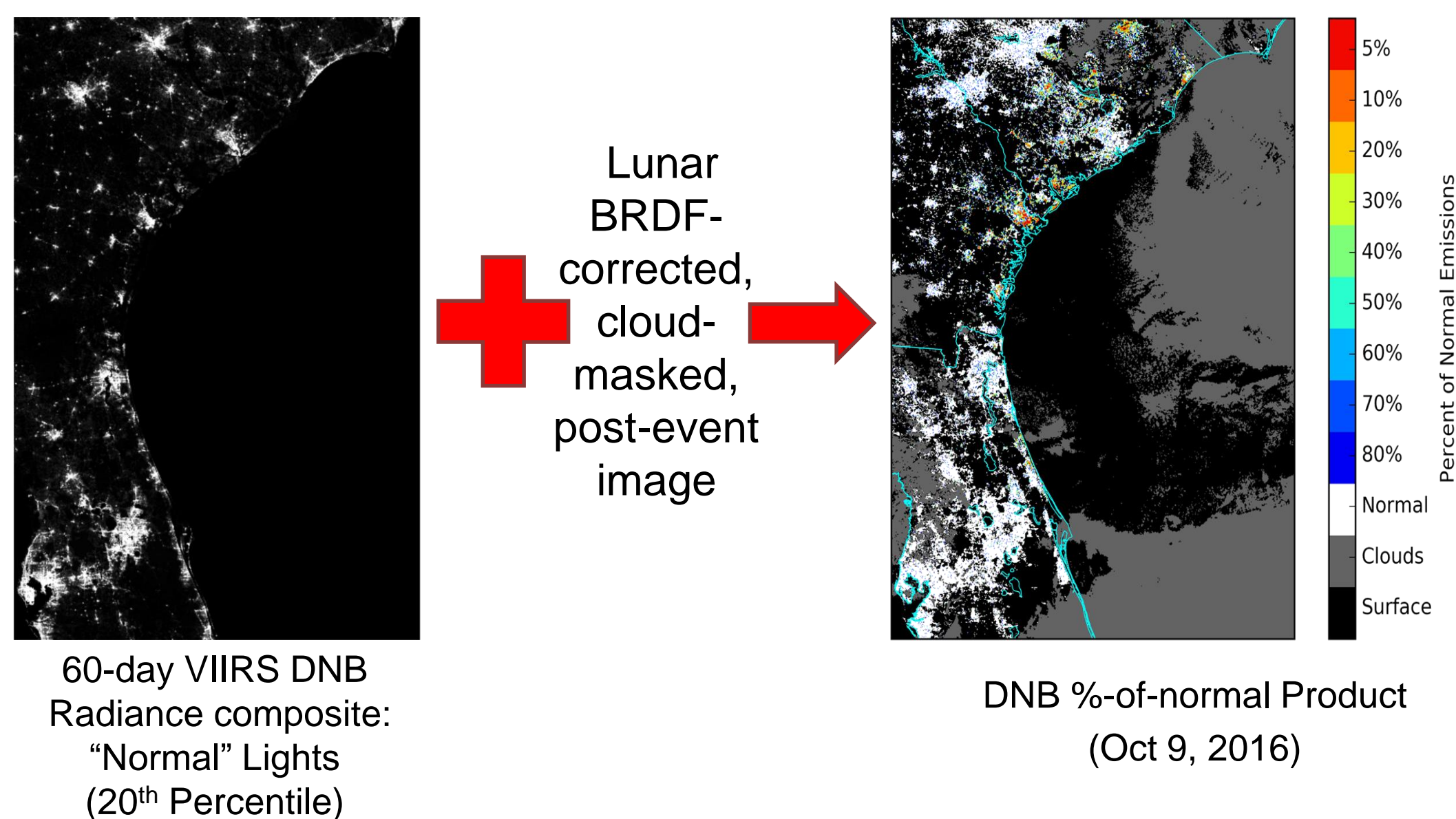
Angela Burke, Dr. Robert Griffin – Atmospheric Science Department
Lori Schultz, Dr. Andrew Molthan – NASA SPoRT

Overview

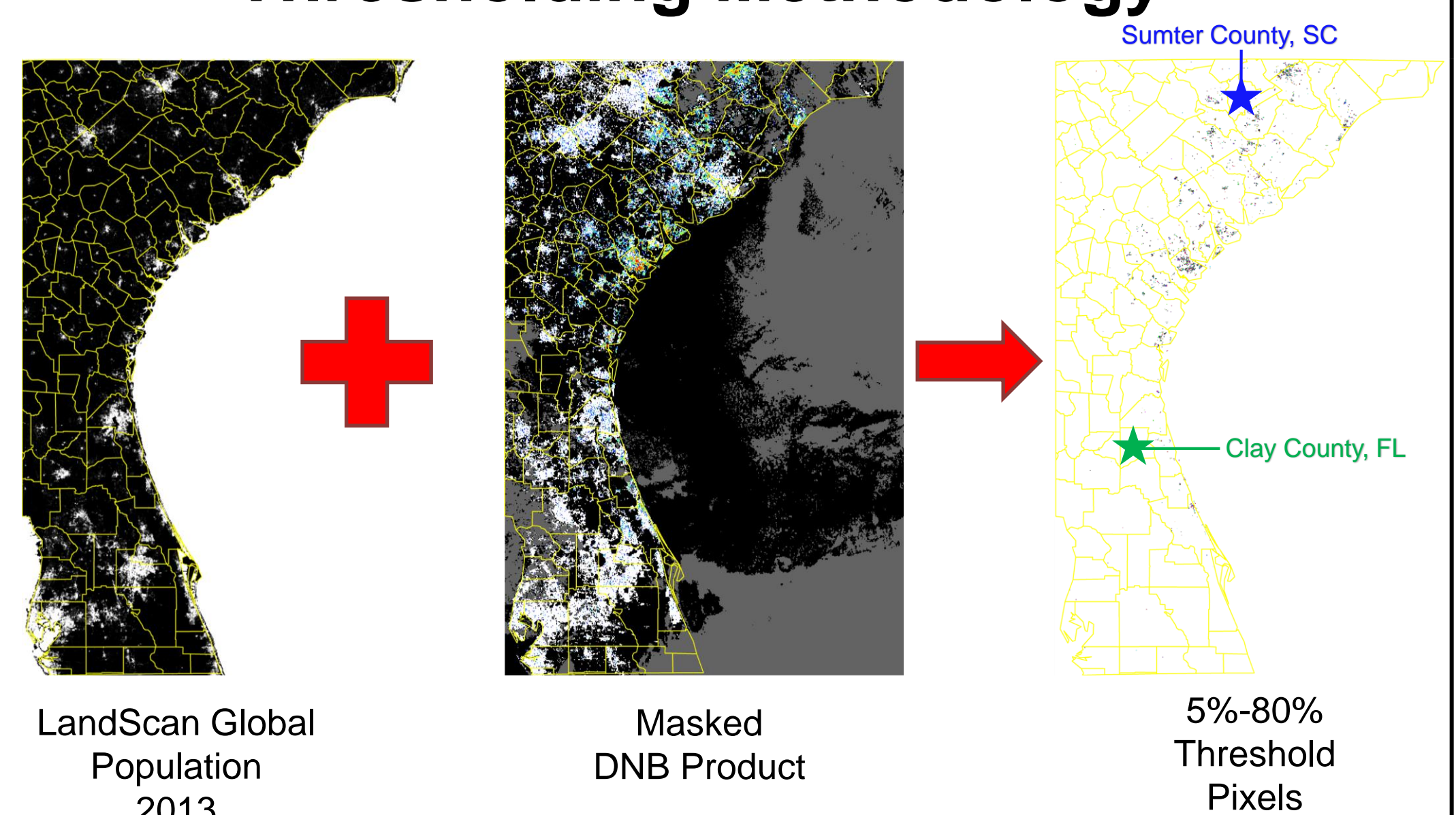
This case study of Hurricane Matthew (October 2016) uses the NASA Short-term Prediction Research and Transition (SPoRT) Center DNB power outage product and 2013 LandScan Global population data to look for a correlation between the post-event %-of-normal radiance and the utility company-reported outage numbers (obtained from EAGLE-I).



Day-Night Band Product

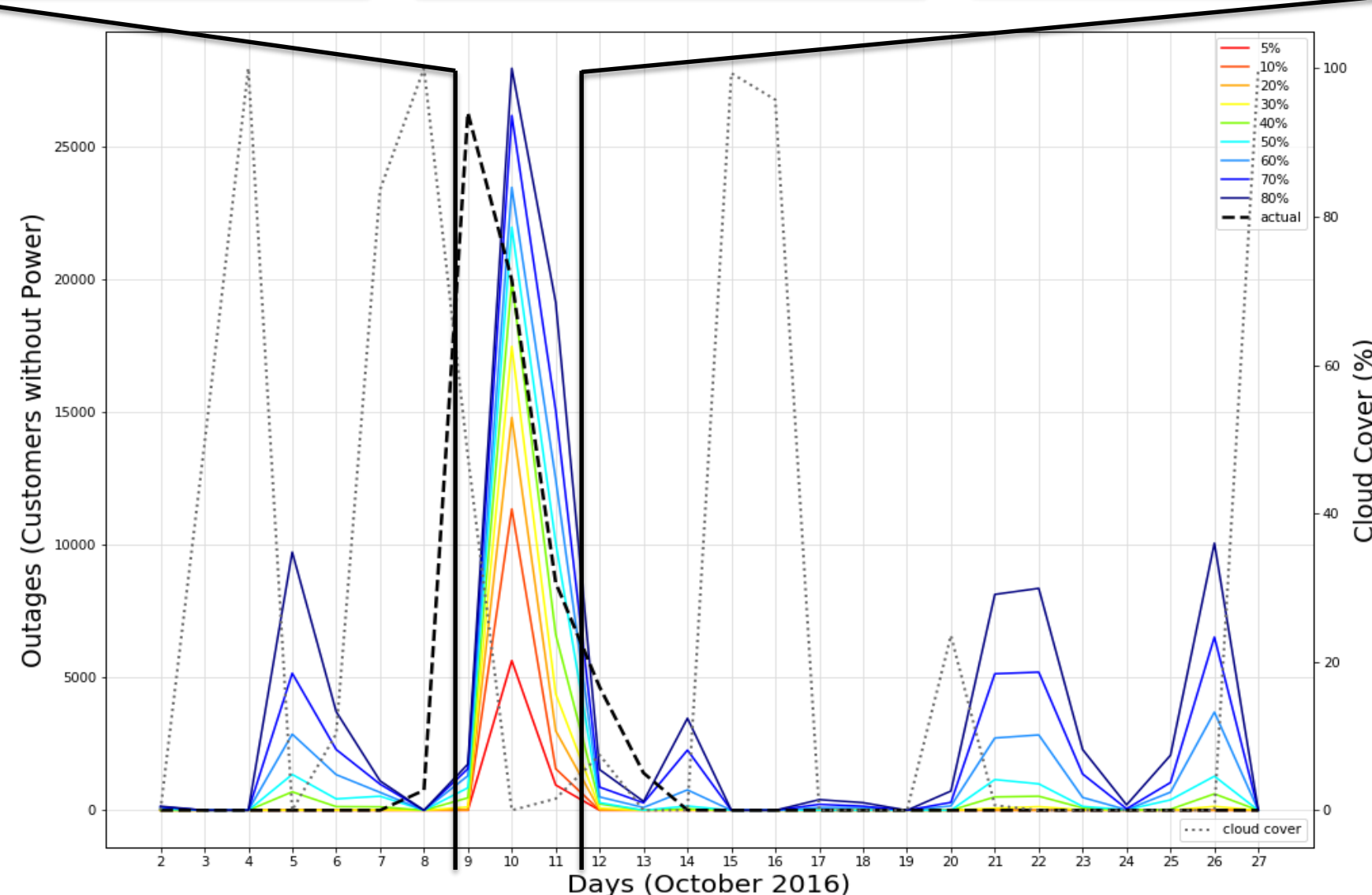
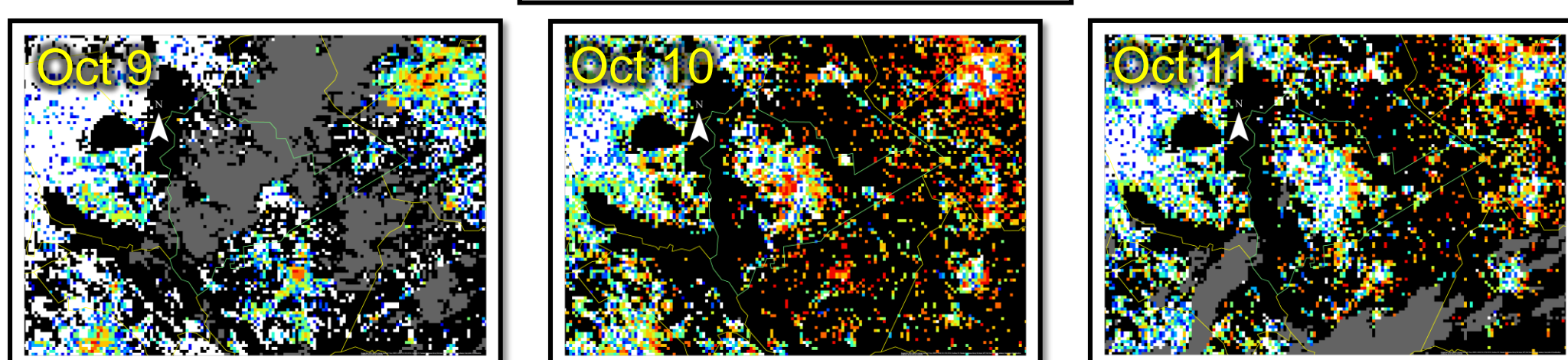


Thresholding Methodology



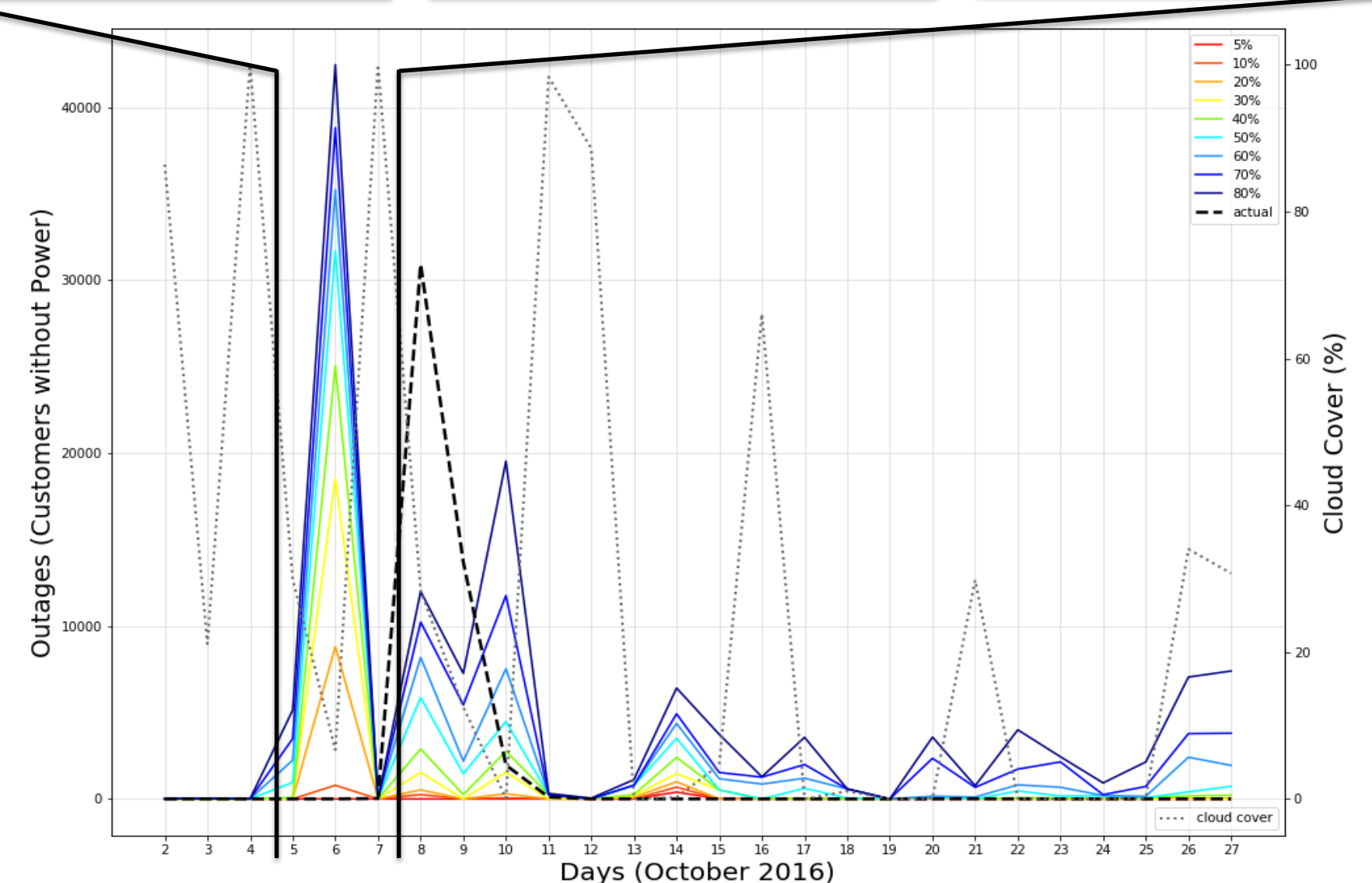
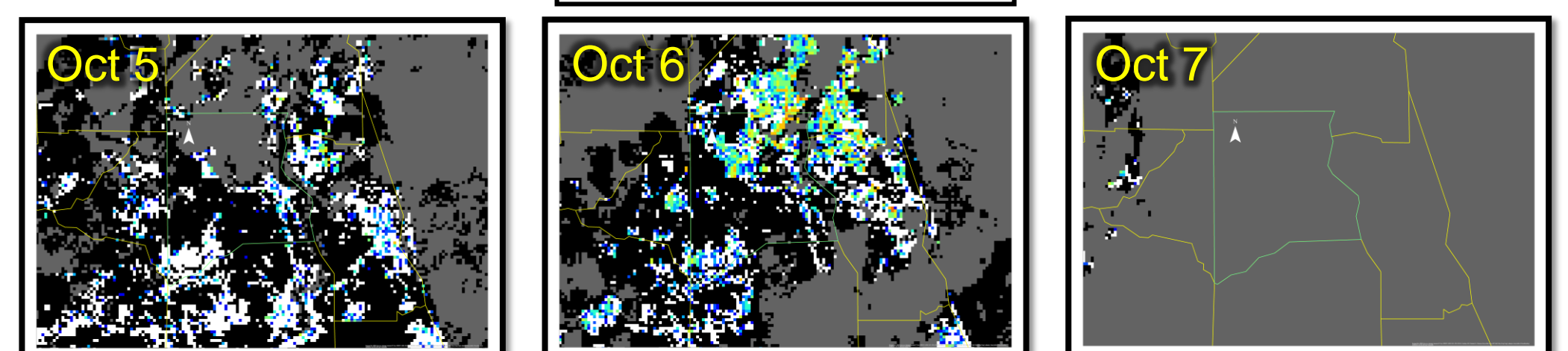
Initial Results

Sumter County, SC



- Cloud cover on Oct 9 accounts for "lag" in %-of-normal threshold outages
- 40%-50% thresholds in agreement with reported outages

Clay County, FL



- No thresholds in agreement with reported outages
- VIIRS cloud mask possibly missing clouds, causing radiance to seem "dimmer" – resulting in "outage" spike

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- Mentorship from Dr. Olufemi Omitaomu – Oak Ridge National Laboratory, Critical Infrastructures Team
- LandScan Global 2013 & EAGLE-I Utility Customer Outage Data – Oak Ridge National Laboratory
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