• **Snowfall Rate Product Approved for Operations!**
A SPSRB briefing was held on November 28 to declare the S-NPP ATMS Snowfall Rate (SFR) product operational. Limin Zhao of OSPO led the briefing and Huan Meng presented the section about product quality. The JPSS PGRR program supported the development of the S-NPP SFR algorithm. A comprehensive calibration and validation study was conducted on the product so that it reached Provisional Maturity with the support of the STAR JPSS program. A PSDI project spun up about a year ago to transition the S-NPP SFR product to operation. Since then, the product has been successfully integrated in the MiRS processing system and tested both at STAR and NDE. In addition, it has undergone a series of mandatory reviews. The SPSRB briefing was the final step in the review process. All SPSRB members presented at the briefing agreed that the S-NPP SFR product can start operational production at NDE pending the resolution of a minor user readiness issue. The planned operational phase begins on December 12, 2018. The figure below shows a recent S-NPP SFR orbit that captured the East Coast snowstorm on November 15, 2018.
Importance: Support NOAA mission by transitioning new satellite product to operation and meeting user need. POC: H. Meng, J. Dong, C. Kongoli

- **Mapping Lightning Flashes from Orbit:**
  SCSB Scientist Scott Rudlosky and former CICS-MD Scientist Michael Peterson have a new article in *Journal of Geophysical Research: Atmospheres* based on their analysis of data from the Lightning Imaging Sensor (LIS). LIS is a space-based lightning sensor aboard the Tropical Rainfall Measuring Mission (TRMM) satellite. The LIS instrument records the time, radiant energy and location of lightning during both day and night conditions with a high probability of detection. The researchers studied the horizontal development (branching) of individual lightning flashes in both time and space. They were able to identify examples of complex 2D flash structure that can extend 80 km in length with dozens to hundreds of visible branches. An example is shown below, with branches of lightning color-coded and numbered.

![Lightning Flashes Example](image)

A particular lightning flash could be described using its speed and direction of motion, whether the development extends the overall length of the flash or reilluminates an existing segment, and whether it is directed inbound or outbound with respect to the origin. In their dataset, 65% of propagating groups are directed outbound from the origin, 22% extend the length of the flash, and 3–5% reilluminate an existing branch. The results are consistent with known lightning physics so suggest that Lightning Imagers can be used to study unanswered questions in lightning physics. The imagers also provide a way to study lightning globally, particularly over the ocean where there are few sensors. Peterson, Michael, Scott Rudlosky and Wiebke Deierling, 2018: Mapping the lateral development of lightning flashes from orbit, *J. Geophys. Res. Atmos.*, 123(17), 9674–9687. [https://doi.org/10.1029/2018JD028583](https://doi.org/10.1029/2018JD028583).
**Importance:** Space based lightning measurements provide new information about lightning formation and structure. **POC:** S. Rudlosky

- **Climate Literacy: Wildfires and Climate**
  CICS-MD Scientist Louis Giglio from the UMD Department of Geography provided satellite data on the global distribution of wildfires for a recent article in *The Economist*, an international news magazine (17 November 2018 issue).

  The article explains that while wildfires are increasing significantly in the Western U.S., the global data shows that wildfires are actually decreasing overall. Deforestation due to the increase in land used for agriculture reduces the fuel available for such fires in the future. This phenomenon plays a much more important role globally. The full article is at [https://www.economist.com/graphic-detail/2018/11/17/despite-californias-inferno-global-wildfires-are-fizzling-out](https://www.economist.com/graphic-detail/2018/11/17/despite-californias-inferno-global-wildfires-are-fizzling-out).

  **Importance:** NOAA satellite wildfire information is yielding important insight into global properties of this phenomenon. **T. POC:** L. Giglio