15th Annual Symposium on New Generation Operational Environmental Satellite Systems

The 15th Annual Symposium on New Generation Operational Environmental Satellite Systems at the 2019 AMS Annual Meeting in Phoenix, AZ on 6 – 11 January consisted of 20 oral sessions and three poster sessions. The Annual Meeting theme was "Understanding and Building Resilience to Extreme Events by Being Interdisciplinary, International, and Inclusive." The Symposium ran the entire week from Monday morning to the closing of the 2019 AMS Annual Meeting on Thursday afternoon. There were a total of 20 oral sessions with 111 presentations and three poster sessions with approximately 50 posters. The program co-chairs and organizing committee worked closely as a team to successfully mitigate the effects of the partial government shutdown by identifying substitute speakers and inviting poster presenters to give oral presentations in additional to their poster. As a result only 3 oral sessions had to be withdrawn and only 9 oral presentations were witdrwan during the entire Symposium. Several of the sessions were jointly hosted with the 9th Conference on Transition of Research to Operations, 9th Conference on the Meteorological Applications of Lightning Data, 7th AMS Symposium on Joint Center for Satellite Data Assimilation, 2nd Conference on Earth Observing Smallsats, and the 33rd Conference on Hydrology. Although attendance at sessions were somewhat less than during the 2018 Symposium they were remarkably good given the partial government shutdown.

During the Symposium four 30-minute AMS Fellow and awardee talks were given. Three of the talks were in recognition of being inducted as an AMS Fellow and one talk was in recognition for receiving the Verner E. Suomi Technology Medal. The fellows inducted included Mitch Goldberg, Tim Schmit, and Shawn Miller. Patrick Minnis was the recipient of the Suomi Technology Medal award.

The observing capabilities and data applications of the operational environmental satellite systems of the US and its international partners were discussed throughout the Symposium. In particular, the Special Sessions on the JPSS Series Satellite System and the GOES-R Series Satellite System and the sessions on Highlights of Operational Forecasting in the Era of a Robust Satellite Enterprise and Nighttime Environmental Monitoring highlighted GOES-R and JPSS capabilities and benefits to the user community. The JPSS and GOES-R Special Sessions began with an invited 30-minute new Fellow inductee presentation honoring Mitch Goldberg and Tim Schmit. Due to the partial government shutdown neither Mitch Goldberg (JPSS) nor Tim Schmit (GOES-R) could personally deliver their presentations but instead had their talks given by Bill Sjoberg and Jordan Gerth, respectively. Mitch Goldberg's presentation was on the Evolution of the Joint Polar System and How Satellites Transformed Weather Forecasting and Tim Schmit's presentation was on Monitoring Tropical Cyclones from satellites: Improvements from 1966 to 2018. These presentations were also given in recognition of the AMS centennial anniversary. The session on National and International Program Overviews for Environmental Satellites provided talks describing current and planned capabilities for the GOES-R, JPSS, EUMETSAT, the Korean Meteorological Administration, and the Chinese Meteorological Administration's FengYun satellite programs. Other session topics were dedicated to the GOES16/17 lightning

mapper, advanced planning and system architectures for the next generation weather enterprise from both the space and ground perspectives, algorithm development, calibration and validation, spectrum management, and national international education, training, and readiness activities.

Symposium related events began on Sunday with short courses on GOES-R and JPSS. The short courses were titled GOES-R Series: Forecasting Applications and Applying JPSS Data Products to Better Forecast Challenging Weather Events. The courses began with introductory information about the satellite programs and then immersed the students in different forecasting challenges. For example in the GOES-R course students received hands-on experience in using GOES-R data products to better forecast aviation weather, fire weather, and convective weather and in the JPSS course students received hands-on experience using JPSS data products to better forecast aviation weather, tropical cyclones, wildfires and their impact on air quality. The overarching goal for the courses were to introduce users to techniques and applications to improve observations, forecasting and warnings to help bridge the gap between old and new in the most efficient manner in a field where every minute counts. Instructors were subject matter experts from NOAA/NESDIS and the NOAA cooperative institutes.

On Monday evening the Satellite Symposium was the lead host for the 5th Annual Speed Networking Event for Students and Early Career Professionals. This event is an informal but highly-informative reception especially designed for students and early career professionals to network with a multitude of established mentoring scientists and other professionals in meteorology and related fields. Participants included 39 mentors and 107 mentees, breaking the 2018 attendance record of 115. Jenni Evans, the current AMS president and Mary Glackin, the AMS president-elect both visited the event and gave a short talk. In additional, Keith Seitter, the AMS executive director, was present for part of the meeting.

On Tuesday at lunchtime the Symposium hosted a Side Panel Discussion on the topic Building Resiliency to Extreme Weather Events through International Partnerships with the Application of Advanced Satellite Technology. The moderator was Lars Peter Riishojgaard, WMO, and panelists were Florence Rabier, ECMWF; Kenneth Holmlund, EUMETSAT; Naoyuki Hasegawa, Japan Meteorological Agency; and Hoon Park, Korea Meteorological Administration. The panelists described how satellite information is used to improve their observation and forecasting capabilities for extreme terrestrial and space weather events such as hurricanes, severe convective storms, geomagnetic storms, and the results of extreme weather such as flooding and wildfires. They also discussed how the recovery process from extreme weather events is aided by satellite observations and how the environmental satellite systems themselves are being made more resilient by means of improved architectural design and cooperation among partnering nations. Attendance was estimated at 125 and box lunches. Support for the Panel Discussion was provided by Ball Aerospace and Technology Corporation, Integrated Systems Solutions, Inc. and Science and Technology Corporation.