1. FIELD SEASON OVERVIEW

The University of Wisconsin-Madison Automatic Weather Station (AWS) 2018-19 field season consisted of one field team of 5 people deployed between late November 2018 and February 2019 (Fig. 1). The group was led by Lee Welhouse and David Mikolajczyk, with assistance from Elina Valkonen, Forbes Filip, and Michael Penn. Michael Penn is a Teacher deploying with our group through Polar Teachers and Researchers Exploring and Collaborating (PolarTREC). Work was performed in three regions: McMurdo, West Antarctica and South Pole.

David Mikolajczyk and Elina Valkonen performed the work out of the United States Antarctic Program (USAP) summer field camp at West Antarctic Ice Sheet Divide (WAIS-D). Lee Welhouse and Michael Penn worked out of South Pole Station. The work out of McMurdo Station was a collaborative effort by all of the team members.

2. MCMURDO AREA

The entire team arrived in McMurdo in late November, and work began with the focus in this region being on preparing cargo for deep field activities, updating the “Freewave” network to Iridium SBD modems, and maintenance on a number of stations accessible by Twin Otter and helicopter. Due to the government shutdown, the Iridium modem installation process was delayed until late in the season. Attempts to install 4 prototype Polar Climate Weather Stations (PCWS) from Madison Area Technical College (MATC) were made, but ultimately only one board was installed in close proximity to Willie Field Test station. This collocated station is named Sarah PCWS. The primary goal of raising Alexander Tall Tower! to the nominal height of 30 meters was delayed, though preparation and install of additional dead men anchors were completed.

3. WEST ANTARCTICA

David and Elina deployed to WAIS-D field camp in late December. Initially, the field deployment was allotted 6 site visits. Despite this, due to flights of opportunity the team was able to accomplish 11 site visits. This successfully completed our task list for West Antarctica for the year and exceeded expectations. The primary goal of replacing the coastal stations’ wind monitors with high
wind speed versions was partially successful and will need to be continued during the next field season.

4. SOUTH POLE

Lee and Michael deployed to South Pole in mid-December for approximately a week to service Henry and Nico sites. Both of these stations were successfully recovered and replaced with functioning hardware.

5. CONCLUSION

Overall, this field season was successful, with 29 of 26 planned AWS serviced. A number of site visits were unable to be completed. Primary difficulties that arose during the field season were due to weather, mechanical issues, and impacts due to the US government shutdown. Through collaboration with the French Antarctic program Institut Polaire Français (IPEV), our joint stations in close proximity to Dumont d’Urville station and along their traverse route to Dome Concordia station were serviced.

6. ACKNOWLEDGMENTS

The authors appreciate the support of the Division of Polar Programs at the National Science Foundation under grant number ANT-1543305. The authors wish to thank Antarctic Support Contract, 109th New York Air National Guard, Ken Borek Air, and PHI Helicopters for their support.
Figure 1: The UW AWS network, as of the end of the 2018-19 field season.