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North Slope of Alaska ARM Facilities
Monthly Status Update
Sandia National Labs

February 2018

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1 North Slope Facilities Management Executive Summary and Major Issues

This monthly report is intended to communicate the status of North Slope ARM facilities managed by Sandia National Labs.

Operations Team

* Mark Ivey- ARM Alaska Sites Manager (SNL)
* Fred Helsel- Barrow and AMF3 Site Manager (SNL)
* Darielle Dexheimer- Tethered Balloon Operations (SNL)
* Valerie Sparks- ARM Project Office (SNL)
* Martin Stuefer- Rapid Response Team (UAF)
* Randy Peppler- ARM DQ Office Manager (OU)

2 Budget

FY2017 Financials (as of February 23, 2018)

	February	YTD
Carryover funds	$5,078,053	
Funds Allocated YTD	$2,786,000	
Carryover plus YTD funds	$7,864,053	
Cost, burdened amount	$2,651,253	
Uncosted Funds	$5,212,800	
Commits, burdened total	$2,254,792	
Current fiscal year uncommitted funds	$2,958,008	
Subsequent fiscal year (SFY)commits	$284,344	
Total uncommitted funds, including SFY commits	$2,673,664	
Fully Burdened Staff Costs	$228,000	
Fully Burdened Contract Costs	$203,000	
Fully Burdened Total Costs	$431,000	$2,651,000

3 Safety

AMF3- No incident/Injury

Barrow - No Incident/Injury

4 Instrument Status – Provided by Martin Stuefer

AMF3

INFORMAL AMF3 INSTRUMENT STATUS REPORT FOR February 23 - March 02, 2018
BRIEF STATUS OF INSTRUMENTS AND SITE IN OLIKTOK AS OF 2018/03/02:

Facilities Operational
Data Systems Operational
Vehicles Operational
Desktop Computers Operational
SKYRAD - SKY Radiometer on Stand for downwelling Operational
MFRSR - Multifilter Rotating Shadowband Radiometer Operational
GNDRAD - Ground Radiometer on Stand for Upwelling Operational
MFR2.5m - Multifilter Radiometer at 2.5m height Operational
MAWS - Automatic Weather Station Operational
MET - Surface & Tower Meteorological Instruments Operational
CMH - Chilled Mirror Hygrometer Operational
AMC - Soil, up/downwelling radiation measurements Operational
ECOR - Eddy Correlation Flux System Operational
MWR3C - Three Channel Microwave Radiometer Operational
MPL - Micropulse Lidar Operational
DL - Doppler Lidar Operational
CEIL - Vaisala Ceilometer Operational
KAZR - Ka ARM Zenith Radar Operational as per warno.arm.gov
BBSS - Balloon Borne Sounding System Operational
TSI - Total Sky Imager Operational
AOS - Aerosol Observing System Partly Operational
AOSMET - AOS Meteorological Measurements Operational
CO - AOS Carbon Monoxide Analyzer Operational
CPC - Condensation Particle Counter Operational
CAPS - Cavity Attenuated Phase Shift Extinction Monitor Not Operational
ACSM - Aerosol Chemical Speciation Monitor Operational
HTD-MA - Humidified Tandem Differential Mobility Analyzer Not Operational
GHG - PICARRO Not Operational
NEPH - Nephelometer Operational
PSAP - Particle Soot Absorption Photometer Operational
UHSAS - Ultra-High Sensitivity Aerosol Spectrometer Operational
IMPACTOR - AOS Impactor Operational
OZONE - AOS Ozone Operational
CCN - Cloud Condensation Nuclei Particle Counter Not Operational
MASC - Multi Angle Snowflake Camera Operational
PIP - Precipitation Imaging Package Operational

LPM - Laser Precipitation Monitor Operational
GEONOR - Geonor Weighing Gauge Operational
SRS - Snow Depth Sensor Operational
AERI - Atmospheric Emitted Radiance Interferometer Operational
CIMEL - Cimel Sunphotometer Not Operational
MET-AIR - DataHawk Unmanned Aerial System Operational
TBS - Tethered Balloon System Not Operational
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* Oliktok Instruments in Detail: *
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INFRASTRUCTURE --- Facilities --- Operational.
INFRASTRUCTURE --- Data Systems --- Operational.
2018/03/01, CM-2018-AMF3-VSN-2354: HDD S/N NA7Q2CPN was filled, so it was replaced with HDD S/N NA7Q2CSD. Site ops will ship HDD S/N NA7Q2CPN via USPS tracking # 9114 9014 9645 0852 3625 48.
2018/02/26, CM-2018-AMF3-VSN-2350: HDD S/N NA7Q2CQ8 was filled, so it was replaced with HDD S/N NA7Q2CPN. Site ops will ship HDD S/N NA7Q2CQ8 via USPS tracking # 9114 9014 9645 0852 3625 48.
2018/02/23, CM-2018-AMF3-VSN-2346: HDD S/N NA75FDE was filled, so it was replaced with HDD S/N NA7Q2CQ8. Site ops will ship HDD S/N NA75FDE via USPS tracking # 9114 9014 9645 0852 3625 24.
INFRASTRUCTURE --- Vehicles --- Operational.
INFRASTRUCTURE --- Desktop Computers --- Operational.
SKYRAD --- SKYRAD general --- Operational.
SKYRAD --- IRT --- Operational.
SKYRAD --- PIR 1 shaded --- Operational.
SKYRAD --- PIR 2 shaded --- Operational.
SKYRAD --- SOLAR Tracker --- Operational.
SKYRAD --- B&W diffuse --- Operational.
SKYRAD --- NIP --- Operational.
SKYRAD --- PSPg --- Operational.
SKYRAD --- MFRSR --- Operational.
2018/02/27, CM-2018-AMF3-VSN-2351: Site ops were requested to install the MFRSR after receiving it from seasonal calibration with the mentors. Site ops mounted the instrument, connected the sensor wires, and powered on the system at 18:35 UTC on 2018/02/27.
2017/11/11, DQPR-6657: MFRSR SN #199 was removed for winter calibration. It will be shipped to James Martin at SGP for calibration. FedEx tracking # 812187584198.
TIPTWR --- GNDRAD general --- Operational.
TIPTWR --- MFR2.5m --- Operational.
2018/02/27, CM-2018-AMF3-VSN-2352/DQPR-6658: Site ops were informed to install the MFR sensor head S/N 925 after receiving it from seasonal calibration with the mentors. Site ops mounted the instrument, connected the sensor wires, and powered on the system at 22:20 UTC on 2018/02/27.
TIPTWR --- PIRgnd --- Operational.
TIPTWR --- IRTgnd --- Operational.
TIPTWR --- PSPgnd --- Operational.
MAWS --- Automatic Weather Station --- Operational.
MET --- METTOWER general --- Operational.
MET --- CMH --- Operational.
MET --- Barometer --- Operational.
MET --- TEMPERATURE / HUMIDITY --- Operational.
MET --- WIND INSTRUMENTS (SONIC) --- Operational.
MET --- PWD --- Operational.
MET --- AMC --- Operational.
ECOR --- ECOR --- Operational.
ECOR --- SEBS --- Operational.
MW RADIOMETERS --- MWR3C --- Operational.
LIDAR --- MPL --- Operational.
LIDAR --- Doppler LIDAR --- Operational.
LIDAR --- CEIL --- Operational.
RADAR --- KAZR --- Operational as per warno.arm.gov.

Sonde --- BBSS --- Operational.2018/03/03, CM-2018-AMF3-VSN-2356: Technicians were unable to launch the 23:30 UTC balloon on 2018/03/03 due to high wind conditions. Winds were >30 mph sustained. Launches will resume when weather conditions permit.
2018/03/02, CM-2018-AMF3-VSN-2355: Technicians were unable to launch the 17:30 UTC balloon on 2018/03/02 due to high wind conditions. Winds were >30 mph sustained. Launches will resume when weather conditions permit.
2018/02/25, CM-2018-AMF3-VSN-2349: Site ops were unable to launch the 23:30 UTC balloon on 2018/02/24 due to high wind conditions (sustained wind speeds above 30mph, gusting over 40mph). Launches will resume when conditions permit.
2018/02/24, CM-2018-AMF3-VSN-2348: Site ops were unable to launch the 23:30 UTC balloon on 2018/02/23 due to high wind conditions (sustained wind speeds above 30mph, gusting over 40mph). Launches will resume when conditions permit.
2018/02/23, CM-2018-AMF3-VSN-2347: Site ops were unable to launch the 17:3O UTC balloon on 2018/02/23 due to sustained wind speeds above 30mph (13.1 m/s). Launches will resume when conditions permit.
IMG --- TSI --- Operational.
AOS --- General --- Partly Operational, Some Instruments Shut Down for Winter. Some Network Issues with the Switch.
2018/02/26, DQPR-6863: It was reported that the AOS network switch was down from 3:00 UTC on 2018/02/25 to 11:02 UTC on 2018/02/28. Adam Theisen commented that this issue looks to have been resolved, and asks if there are ongoing issues. The most recent DQPR status is “open - requires action.”
2017/07/28, DQPR-5858: Unless there are objections from Cindy or the PRB, Joshua King proposes that we abandon this DQPR. The most recent DQPR status is "in progress - assignments."
2017/06/23, DQPR-5858: Richard Wagener asked if anyone has looked at the VM's clock. Could it be that the time lags behind, and then jumps (resyncs), creating gaps in the time record? Richard suggests adding an assignment to Brent to look into possible system level causes for this behavior. The most recent DQPR status is "in progress - assignments."
AOS --- AOSMET --- Operational.
AOS --- CO - Analyzer --- Operational.
AOS --- CPC --- Operational.
AOS --- CAPS --- Not Operational, Instrument at BNL Due to Incorrect Data.
2017/11/22, DQPR-6680: Since 2017/08/29 at 22:07 UTC, the 1-um switch on the Impactor is not working when the Impactor goes to the 1 um position. So the 'read' signal is reporting 3 (indeterminate) in this position. We have verified that the Impactor is working correctly. The mentor was contacted and will work with Operations to fix the signal. This affects processing for PSAP, CAPS and Nephelometer. Mentor (Uin) should close this DQPR once fixed.
2017/08/07, DQPR-5816: The red channel should be usable once the mentor can look at the entire OLI dataset. Related to this issue, the mentor has been informed by the manufacturer that a fix to the ongoing problem with the 3W unit regarding the need for a PSL calibration is being finalized. This fix will require swapping out the 3 DAQ cards. New cards are currently being created by a third party for the manufacturer (Aerodyne). Given this, the OLI CAPS will remain at BNL until the three new cards can be installed. The most recent DQPR status is "in progress - assignments."
2017/07/27, DQPR-5816: From the raw data record, it looks like the CAPS was back in service on 2017/06/26. Joshua King asked Ken Burk if the ingests can be turned back on. Arthur Sedlacek has an assignment to write a DQR. The most recent DQPR status is “in progress - assignments.”
2017/05/08, DQPR-5816: The OLI CAPS is at BNL, where one of the sample pumps was replaced, the 3- DAQ cards were mounted with screws, and optics were cleaned. The system is currently undergoing a performance test, and as part of this check, some irregularities (signal fluctuations) were observed. The mentor is in contact with the manufacturer. Once the signal fluctuations are resolved, a PSL calibration will be performed prior to shipment back to OLI. This PSL calibration is necessary due to a firmware issue. While Aerodyne is testing a new card that corrects the issue, it is not yet ready for prime time.
AOS --- ACSM --- Operational.
2018/03/02, DQPR-6849: There is currently no ingest running for the ACSM, so it is up to the mentor on whether a DQR is necessary. The most recent DQPR status is “open - requires action.”
2018/02/28, DQPR-6849/CM-2018-AMF3-VSN-2353: After a power failure, the high pressure interlock on the Tof ACSM kicked in, shutting the instrument down. The problem began on 2018/02/17 at 08:50 UTC, and the pressure remained high with the roughing pump not bringing it down. It was determined that the roughing pump failed. The replacement pump arrived to the site on 2/27/18. Site ops shut down the instrument on 2/28/18 and proceeded to switch the pump. The instrument's power was restored at 18:10 UTC.
AOS --- GHG-Picarro --- Not Operational. Bad Vacuum Pump, Replacement on Way to Site.
AOS --- HT-DMA --- Not Operational. Shut Down for Winter.
AOS --- UHSAS --- Operational.
2018/02/05, DQPR-6618: Robert Records suggests putting data that needs to be collected into the normal directory that site transfer picks up the file, which he assumes would be the C:\ftphome directory. If any of these files are duplicates (names/MD5's) of what has already been sent, then they will halt the ingest process. If not, then no problem. The most recent DQPR status is “open - requires action.”

2017/10/31, DQPR-6618: There was data missing from 2017/10/06 at 17:00 UTC to 2017/10/08 at 20:07 UTC. The missing files were processed and collected. Joshua King added that he is now not seeing data from the 2017/10/12 - 10/15 period. The most recent DQPR status is “open - requires action.”
AOS --- NEPH --- Operational, but ‘Pressure Difference’ for Wet and Dry Below Tolerance. Troubleshooting Ongoing.
2017/12/01, DQPR-6681: Janek Uin has an assignment to write DQR D171201.4 on the Impactor datastreams. This DQR would be for documenting the problem despite good data quality. The most recent DQPR status is "in progress - assignments."
2017/11/22, DQPR-6681: Since 2017/08/29 at 22:07 UTC, the 1-um switch on the Impactor is not working when the Impactor goes to the 1 um position. So the 'read' signal is reporting 3 (indeterminate) in this position. We have verified that the Impactor is working correctly. The mentor was contacted and will work with Operations to fix the signal. This affects processing for PSAP, CAPS and Nephelometer. The mentor (Uin) should close this DQPR once fixed. Janek commented that the limit switch was misaligned, and this was fixed. This issue affected only the impactor position reading, and the impactor was switching properly. He is not sure if the limit switch readings are ingested, and asks what the best course of action is for filing a DQR. The most recent DQPR status is "open - requires action."
AOS --- IMPACTOR --- Operational.
2018/03/01, DQPR-6886: AOSIMPACTOR impactor particle size cut drops from 1-um or 10-um to 0 during this time. As a result, the hourly pressure differential values are flagged as missing. Adam Theisen commented that he was not able to find a CM report for this older problem, so he asked Janek for more details and whether the issue should get a DQR. The most recent DQPR status is “open - requires action.”
AOS --- Ozone --- Operational.
AOS --- PSAP --- Operational. Pentras was Shut Down for the Winter.
2017/11/22, DQPR-6682: Since 2017/08/29 at 22:07 UTC, the 1-um switch on the Impactor is not working when the Impactor goes to the 1 um position. So the 'read' signal is reporting 3 (indeterminate) in this position. We have verified that the Impactor is working correctly. The mentor was contacted and will work with Operations to fix the signal. This affects processing for PSAP, CAPS and Nephelometer. The mentor (Uin) should close this DQPR once fixed. The most recent DQPR status is "open - requires action."
AOS --- IMPACTOR --- Operational.
AOS --- CCN --- Not Operational.
Precip --- MASC --- Operational.
2018/03/02, DQPR-6859: A power outage at AMF3 took away power to the MASC computer at 14:05 UTC on 2018/02/17. The program was supposed to have autostarted upon repowering of the MASC computer, but the program failed, requiring manual restart. Telayna Gordon submitted DQR D180302.15 regarding this outage period. The most recent DQPR status is “open - requires action.”
Precip --- PIP --- Operational.
Precip --- LPM --- Operational, Ingest is Beginning.
Precip --- GEONOR --- Operational.
Precip --- SRS --- Operational, but Some Noise Issues.
2018/01/19, DQPR-6717: Adam Theisen posted an image from the Plot Browser website of the latest problematic data. The most recent DQPR status is “open - requires action.”
2017/12/20, DQPR-6717: James Tonkin ran the ingests and opened a data review on SRS for both OLI.M1 and NSA.C1. They have been assigned to Adam. The NSA data review is EWO0021847, and the OLI data review is EWO0021848.
2017/12/15, DQPR-6717: Once we have the exact periods of data outage, a DQR will be submitted to flag the data and inform end users. Adam Theisen added that it looks like ingests are not running for the SRS data. He asked Rob to look into this.
2017/12/12, DQPR-6717: Since 2017/11/22, there have been intermittent periods of noisy measurements/data dropouts. The 3 sensors do not exhibit the issue at the same time; instead, the sensors have sporadic problems. Jennifer Delamere plans to work with the OLI site operators to do some experiments to see if they can isolate the source of the problem.
Other --- AERI --- Operational.
Other --- CIMEL --- Not Operational.
Other --- DataHawk Unmanned Aerial System --- Operational, not a full time instrument.
Other --- TBS --- Not Operational. Datalogger is Not Connected to Network.
2018/03/02, DQPR-6898: TBSground data is missing since 02/25 due to the datalogger losing it’s programming and connection to the network. The most recent DQPR status is "open - requires action."

Barrow

INFORMAL NSA INSTRUMENT STATUS REPORT FOR February 23, 2018 - March 02, 2018
BRIEF STATUS OF INSTRUMENTS AND SITE IN BARROW (C1) AS OF 2018/03/02:
Facilities Operational
Data Systems Operational
Vehicles Partly Operational
Desktop Computers Operational
SKYRAD - SKY Radiometer on Stand for Downwelling Operational
MFRSR - Multifilter Rotating Shadowband Radiometer Not Operational
NIMFR - Normal Incidence Multifilter Radiometer Not Operational
GNDRAD - Ground Radiometer on Stand for Upwelling Operational
MFR10m - Multifilter Radiometer at 10m height Not Operational
MET - Surface & Tower Meteorological Instruments Operational
AMC - Soil, up/downwelling radiation measurements Operational
ECOR-twr - Eddy Correlation Flux System Operational
MWR - Microwave Radiometer Operational
MWRP - Microwave Radiometer Profiler Operational
MWRHF - Microwave Radiometer High Frequency Operational
GVR - G-band Vapor Radiometer Operational
GVRP - G-band Vapor Radiometer Profiler Operational
HSRL - High Spectral Resolution Lidar Operational
MPL - Micropulse Lidar Operational
CEIL - Vaisala Ceilometer Operational
DL - Doppler LIDAR Operational
KAZR - Ka ARM Zenith Radar Operational as per warno.arm.gov
KaWSACR - Ka-Band Scanning ARM Cloud Radar Not Operational as per warno.arm.gov
XSAPR - X-Band Scanning ARM Precipitation Radar Not Operational as per warno.arm.gov
BBSS (Autosonde) - Balloon Borne Sounding System Partly Operational
AOS - Aerosol Observing System Operational
CLAP - Continuous Light Absorption Photometer Operational
CPC - Condensation Particle Counter Operational
NEPH - Nephelometer Operational
IMPACTOR - AOS Impactor Operational
TSI - Total Sky Imager Not Operational
TOWERCAM - 40m tower camera Operational
Great White Camera Operational
LPM - Laser Precipitation Monitor Partly Operational
SRS - Snow Depth Sensor Operational
AERI - Atmospheric Emitted Radiance Interferometer Operational
CIMEL - Cimel Sunphotometer Not Operational
IOP - OYESNSA Operational
IOP - RIVAL Not Operational
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* Barrow Instruments in Detail: *
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INFRASTRUCTURE --- Facilities --- Operational.
INFRASTRUCTURE --- Data Systems --- Operational.
2018/02/26, CM-2018-NSA-VSN-4547: A data disk was removed, replaced, mailed out. There are 76 more available.
INFRASTRUCTURE --- Vehicles --- Partly Operational. Telehandler Issues and Kubota Shipped to MFG.
INFRASTRUCTURE --- Desktop Computers --- Operational.
SKYRAD --- SKYRAD General --- Operational.
SKYRAD --- IRT --- Operational.
SKYRAD --- PIR 1 Shaded --- Operational.
SKYRAD --- PIR 2 Shaded --- Operational.
SKYRAD --- SOLAR Tracker --- Operational.
SKYRAD --- B&W diffuse --- Operational.
SKYRAD --- NIP --- Operational.
SKYRAD --- PSPg --- Operational.

SKYRAD --- MFRSR --- Not Operational. Shipped Back to Site for Reinstall.
2017/12/01, DQPR-6694: On 2017/11/17 at 18:02 UTC the instrument was removed for the winter and data unavailability begins. The most recent DQPR status is "waiting - for spares."
SKYRAD --- NIMFR --- Not Operational. Shipped Back to Site for Reinstall.
2017/12/11, DQPR-6709: The instrument was taken down for the winter on 2017/11/17 at 18:02 UTC. The most recent DQPR status is "waiting - for spares."
TIPTWR --- GNDRAD general --- Operational.
TIPTWR --- MFR10m --- Not Operational. Shipped Back to Site for Reinstall.
2018/01/05, DQPR-6747: The MFR10m was taken down at approximately 20:00 UTC for the winter. The most recent DQPR status is “waiting - for spares.”
TIPTWR --- PIRgnd --- Operational.
TIPTWR --- IRTgnd --- Operational.
TIPTWR --- PSPgnd --- Operational.
MET --- METTOWER general --- Operational.
MET --- CMH --- Operational.
MET --- Barometer --- Operational.
MET --- TEMPERATURE / HUMIDITY --- Operational.
MET --- WIND INSTRUMENTS (SONIC) --- Operational.
MET --- PWD --- Operational.
MET --- AMC --- Operational.
2018/02/16, DQPR-5694: Adam Theisen updated the DQPR status to “open - escalated to PRB attention” as to discuss and recommend closing out and deleting the DQR.
2018/02/09, DQPR-5694: Andrew Moyes thinks this DQPR can be closed with a single note documenting the range and sensitivities of the sensors. This issue is exactly the same as the OLI AMC issue covered in DQPR 6589. These are the same measurements made with the same sensors in a very similar environment (Arctic coast of Alaska). The comments from DQPR 6589 are valid here as well. The information in the AMC instrument handbook can take care of this as it already lists that the VWC range is 5-50% (bottom of page 7). The most recent DQPR status is “in progress - assignments.”
2017/10/20, DQPR-6589: A lack of sufficient factory calibrations is causing missing and flatlined values in the volumetric water content fields since 2017/06/18. An example plot is posted on the DQPR. The most recent DQPR status is “open - requires action.”
2016/10/10, DQPR-5694: Joshua King adds that vmc from sensor 4 was missing from 14:30 UTC 2016/07/12- 15:30 UTC 2016/09/25. Since returning 2016/09/25, vmc has been decreasing to below 0.3. He is asking mentors if they have thoughts on what is causing this behavior. An attached image can be found on the DQPR page. IM Ken Reichl responds that this is an issue outlined in DQPR-4793 for the analogous site, OLI. The instrument reports soil data as 9999999, or a non-numerical character (for data SGP) for soil systems. The AMC systems may report missing data during warm seasons for instruments that are not sufficiently calibrated. The OLI datastream has an open-ended DQR D151023.3. Ken asks if he should make one for the NSA data as well, and is the DQR system the best way to characterize this issue?
ECOR --- ECOR-twr --- Operational. Licor 7700 Removed for winter.
MW RADIOMETERS --- MWR --- Operational.
MW RADIOMETERS --- MWRP --- Operational.
MW RADIOMETERS --- MWRHF --- Operational, but Still Excessive Noise Conditions.
2018/02/09, DQPR-4165: Adam Theisen asked Maria Cadeddu if there has been any discussions on the future of the MWRHF. The current DQPR status is “in progress- assignments.”
2016/09/30, DQPR-4165: The 150 GHz channel was showing high noise levels probably because of an external source of interference. Adam inquires if there is a path forward to solve the interference issues?
MW RADIOMETERS --- GVR --- Operational.
MW RADIOMETERS --- GVRP --- Operational.
2018/02/26, DQPR-6647: Adam Theisen commented that data are looking better, and Maria will submit DQR D180226.1 in order to close the DQPR. The most recent DQPR status is “in progress - assignments.”
2018/02/13, DQPR-6647: The instrument is running. Maria Cadeddu added that we should plan for a LN2 calibration for the GVRP and MWRP.
2017/11/09, DQPR-6647: All variables were not available intermittently starting 2017/10/29, followed by consistent data loss on 2017/11/04. Tim Grove was working on ARM coring the computer on November 1st - 2nd. However, the primary issue was the software crashing. Something must have gotten corrupted last week. Maria is working with Radiometrics now to figure out how to keep the software running properly and to trigger auto restarts. The ''vizmet'' interface should always run in the background on the computer and will take care of daily starts. Once the program starts operating regularly, the end date will need to be updated.
LIDAR --- HSRL --- Operational, but the Laser is Double-Pulsing and in Need of Repair.
2018/02/20, DQPR-6826: John submitted draft DQR D180216.1. The most recent DQPR status is “in progress - assignments.”

2018/02/16, DQPR-6826: John Goldsmith has an assignment to write a DQR. Adam Theisen commented that since it may be a little while before the double-pulsing of the laser is fixed, he asks that John submit an open-ended DQR to alert the end users to this issue. Once it's resolved, he will just need to add an end date in, and it will close everything out.
2018/02/13, DQPR-6826: There is a consistent layer of increased particulate backscatter between about 1 to 2 km in height since 2018/01/19. This is not matched by any of the comparisons; a link to sample metrics has been linked to the DQPR. Instrument Mentor John Goldsmith believes that this artifact is caused by double-pulsing of the laser, which was previously flagged as happening between 2017/11/22 - 2017/11/28. Until the system is repaired, the apparent thin aerosol layer (~1.6 km) will need to be removed manually.
LIDAR --- MPL --- Operational. Unresolved Data Quality Issue Until Afterpulse Corrections are Applied.
2018/02/16, DQPR-6328: Paytsar would like to document that we are not waiting for spares, and that we currently have an operational MPL with no identified problems. Paytsar has been assigned a DQR for the LDR values. Adam will put in the 12/15 date, but that can be adjusted as needed. The start date for the DQR is hard to determine, but will be up to Paytsar to determine. The most recent DQPR status is "in progress - assignments." Paytsar Muradyan's solution assignment status has been set to reviewed/completed.
2017/10/03, DQPR-6328: Donna Flynn posted some responses to Rich's analysis of data quality. Adam posted a figure of 'Afterpulse Comparison Polarization failing/working for ENA MPL.'
2017/09/29, DQPR-6328: Donna Flynn submitted a summary of her findings of the MPL system at NSA. Richard Coulter added that afterwards that it is not likely that applying the after pulse correction created negative backscatter, but it is more likely the background value that is causing any negative values. The SNR is a highly variable variable, affected by multiple elements, and is and not likely to be useful for system evaluation. The afterpulse measurement process is well established and works well when done properly. More discussion is needed, and the details can be found on the DQPR page. The most recent DQPR status is "waiting - for spares."
2017/09/13, DQPR-6328: There are no spare MPLs right now. We are planning on sending the NSA MPL for repairs once we have a replacement (probably next month). So Paytsar's suggestion at this point is to wait until the replacement gets to NSA, then we will be able to properly identify the affected periods. The most recent DQPR status is "waiting - for spares."
2017/08/02, DQPR-6328: DQR D170802.9 has been submitted for AWR.M1. When start and end dates for NSA.C1 problems are identified, this DQR can be used as a template. The most recent DQPR status is "open - requires action."
2017/07/07, DQPR-6328: During the investigation into the MPLCMASK problem, it was determined that there are potential problems with the NSA C1 and AWR M1 polarizations. From Donna Flynn: The AWR.M1 instrument polarization is off. The values for the linear depolarization ratio are too high. If you compare the water clouds at both AWR.S1 (reasonable values) and AWR.M1(high) on 20151210, this is evident. Additionally, the NSA.C1 data looks suspicious. I have only looked at a few days, but I have found poor agreement with HSRL and clear sky profiles when compared to Rayleigh, which suggests either an overly strong afterpulse or a collimation problem. The most recent DQPR status is "open - requires action."
LIDAR --- CEIL --- Operational.
LIDAR --- Doppler LIDAR --- Operational.
2018/02/23, DQPR-6858: Ops noticed on Monday morning, February 19th, that the DL was not reporting data and the software was not updating. Site ops power cycled and restarted the software (CM-2018-NSA-VSN-4542), allowing for data collection to resume. The outage period occurred from 00:08 UTC on 2018/02/17 to 2018/02/19 at 20:38 UTC. A weekly diagnostic plot showing the outage period for the NSA DL was posted to the DQPR, and Rob Newson was assigned DQR D180223.1. The most recent DQPR status is "in progress - assignments."
2018/02/23, CM-2018-NSA-VSN-4546: Tim Grove instructed site ops that the computer would need to be rebooted for a monthly software update. The computer was rebooted from 18:45 UTC to 19:20 UTC on 2018/02/23.
RADAR --- KAZR --- Operational as per warno.arm.gov.
2017/06/12, warno.arm.gov: The RDS1 power supply was replaced and the signal processor is operational. The system will be taken out for maintenance for a short time to replace a fan.
RADAR --- KaWSACR --- Not Operational as per warno.arm.gov.
RADAR --- XSAPR --- Not Operational as per warno.arm.gov .
2016/08/04, DQPR-4841: The elevation servo amplifier failed, the radar can not scan in elevation. The radar will be upgraded sometime, and will be turned off until then. A DQR was submitted and reviewed by PRB. The DQPR status is "in progress" due to it being open-ended. Adam Theisen's DQR D160719.1 has been reviewed and accepted by the PRB.
Sonde --- BBSS (Autosonde or Great White Manual Launches) --- Partly Operational. Software Needing Updates from Vaisala, but Launches Are Still Automatic.
2018/02/23, DQPR-6798: Adam Theisen needs to work with the ADC on the following 2 issues: 1. The Data Discovery and /data/archive only shows data up through 20160307, while /data/datastream shows data up to present day. 2. Ensure that all launches at 05:30 and 17:30 UTC have been moved over to the C1 facility, processed, and removed from the S01 facility before being archived. Adam is not sure if this is already an EWO. The most recent DQPR status is "open - requires action."
2018/02/23, CM-2018-NSA-VSN-4545: Tim Grove instructed site ops to reboot the Great White BBSS computer for monthly software patches. The computer was rebooted from 18:45 UTC to 19:00 UTC on 2018/02/23.

2018/02/02, DQPR-6798: Adam Theisen looked through the S01 data and found a lot of data for the 05:30 and 17:30 launches under this datastream. Adam will clean up this list of files. S02 data (and soon S02 for RIVAL) should be in an IOP location if it does not have a 05:30 or 17:30 launch time. 2018/01/22, DQPR-6798: Starting on 2018/01/21, the Autosonde software would not allow the minimum operation temperature to be set and saved. Vaisala tech support is working on a software bug and will remotely fix the issue one a solution is found. Until this is resolved, C1 operational launches are being done on S01. Donna Holdridge asks that S01 launches which occur at 05:30 and 17:30 GMT have their filenames changed to just 'C1'. S01 launches that occur at other times should be left as S01 files.
AOS --- General --- Operational.
2018/02/26, DQPR-6863: It was reported that the AOS network switch is down since 2018/02/25 at 00:00 UTC. The most recent DQPR status is "open - requires action."
AOS --- AETH --- Operational.
AOS --- CLAP --- Operational.
AOS --- CPC --- Operational.
AOS --- NEPH --- Operational.
AOS --- IMPACTOR --- Operational.
IMG --- TSI --- Not Operational. New Control Board Shipped to Site.
2017/12/22, DQPR-6743/6744: The TSI has not been operational for the winter since 2017/11/07. The most recent DQPR status is "open - requires action."
IMG --- TOWERCAM --- Operational.
IMG --- Great White Camera --- Operational.
Precip --- LPM --- Partly Operational, Heater is Not Working.
Precip --- SRS --- Operational, but Snow Depth Measurements Have a Lot of Noise.
2018/02/15, DQPR-6823: The spiking of the snow sensors is an ongoing issue with the SRS instruments at both OLI and NSA. In the case of NSA, the last few days have been particularly unstable. On February 5 (around 23:00 GMT), Walter checked the instruments at Jen Delamere's request, and noted the large amount of frost on the instrument sensors. He cleaned the frost off the sensors, as frost can impair the measurements. Since that cleaning, the sensor 1 and 3 have had more drop-outs than typical - but note that the dropouts are not consistent across time. The mentors will need to talk to the manufacturer to get a better handle on what's going on. If the instruments are frosted, the mentors would like a picture sent so they could match the photo with the sensor and see how that correlates with the data we are seeing. At this time, the instruments don't need to be cleaned. More instructions will be sent after the mentors talk to the manufacturer. The same instructions will be given to the operators in OLI. There is a version of the snow sensors that comes with a heater, and this heater prevents ice and rime from coating the transducer. The heater may need to be added to stabilize the snow depth record. The most recent DQPR status is "open - requires action."
2018/02/13, DQPR-6823: Snow sensors 1 and 3 look like they are spiking and drop out below 0 on 2018/02/05.
Other --- AERI --- Operational.
Other --- CIMEL --- Not Operational.

IOP --- OYESNSA --- Operational.
IOP --- RIVAL --- Not Operational.

5 North Slope Facilities

AMF3

Current and Upcoming Site Visits

Fred Helsel, Erik Webb - SNL	2/21/2017	SNL management visit

Current and Upcoming IOPs

De-Icing Comparison Experiment (DICE)
AXIS camera was relocated for Chuck Longs De-Icing Comparison Experiment (DICE).
This will enable Chuck to observe the AMF3 radiometers. Martin Stuefer setup a script to take a photo every 10 minutes they can be viewed at:
http://nanuna.gi.alaska.edu/media/cam/oli_psp/
http://nanuna.gi.alaska.edu/media/cam/oli_skyrad/

Snowflake Settling Speed Experiment: MASC (upcoming) Timothy Garrett- University of Utah

Evaluate NASA PIP Instrument at Oliktok - **ENG0003203**

POPEYE (upcoming) July – September 2018 Gijs de Boer

Site and Safety Issues

Radiometer ventilators are having issues of filling with snow due to mentor changing fans across all ARM facilities to all be the same. **ENG0003807** has options to try and mitigate the issues of the ventilators filling with snow.

1. Increasing the hole diameter in the sunshield.
2. Adding 3 pad heaters to the sunshield.

These options are being tested at Oliktok.

Presently snow clearing for the site, provided by the Air Force contractor (ARCTEC), has degraded due to the current operator onsite. Unfortunately, snow clearing is not a priority to him; winds and snowfall have been above average this year, making travel to the site a challenge.

One of the Site's diesel generators has failed beyond field repair, it has been replaced. Unfortunately, the new generator is not plumbed for fueling from the fuel tank and must be filled manually daily. The permanent replacement generator will be modified to feed from the 5000 gallon tank; if there is a storm and the observers were unable reach the site, there wouldn't be an issue of the generator running out of fuel.
Erik Webb, Sandia National Laboratory's level II manager, visited the site for an ES&H walk through. He wanted to see firsthand our winter safety challenges, and what the observers do to stay safe during

when temperatures can dip below -40. Unfortunately, we experienced an abnormally warm week and temperatures were in the 20's. Erik was able to see the massive amounts of snow, drifting, flat light and winds. He had discussions with observers to help him understand some of the difficulties of winter operations in the Arctic. This is the first manager that has taken me up on a winter visit when the temperatures are normally the coldest. Next year we'll try January where it's cold and dark. Erik stated it was a good trip and helped him understand some of the difficulties faced, first hand.

Unmet Needs

We are running on leased diesel generators while other options are explored.

Site News

MFRSR, MFR, TSI, and Cimel have been removed for the winter. The instruments requiring calibrations have been sent out for calibration. The instruments will be reinstalled in the spring of 2018 when the sun is above the horizon.

Site Staffing

N/A

Tethered Balloon Operations

During the Month of February, the TBS crew constantly made progress on the winch trailer rebuild. The upgrades to the Alaska and ABQ winch were completed and the Alaska winch's tether was spooled on to the winch drum. The electrical was all run into the control box and tested for functionality. All parts of the winch and electrical system worked flawlessly and were tested as the tether was spooled onto the winch. The balloon resting arms were shortened 14 inches to compensate for dropping the winch down lower on the trailer. With the shorter arms we should eliminate any issues or chances for entanglement when flying the balloon at steep tether angles. The balloon trailer upgrade is expected to be completed the week of 3/12/18.

Figure 1: Electronics enclosure with gas shocks and latches installed.

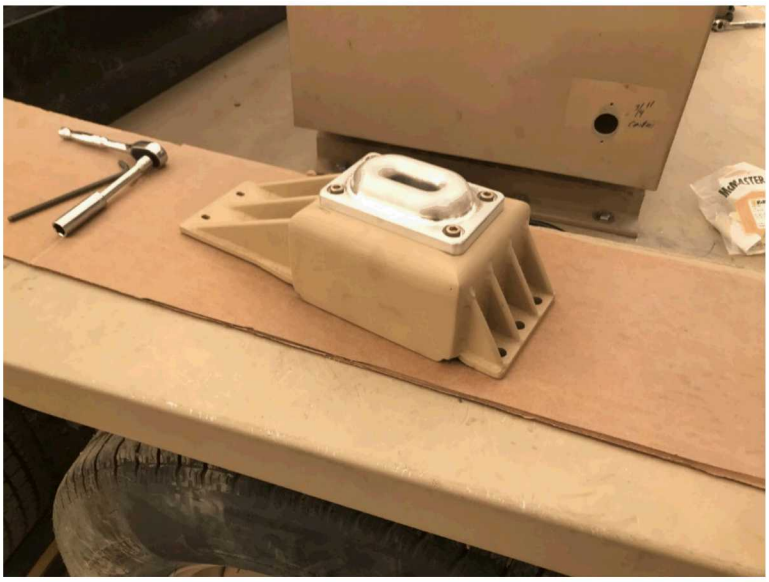


Figure 2: Levelwind bracket after painting. Grade 9 hardware was used to withstand up to 6000 lbf side load.

Figure 3: With new gear reduction levelwind lays tether with minimal overlap. In turn, this save space on the drum to allow for a longer length of tether to be used, and for the balloon to potentially be flown to higher altitudes.

Figure 4: Electronics enclosure with new panels painted to match rest of the trailer.

Figure 5: Current set up of the Oliktok TBS trailer. Arms have been shortened to prevent any entanglement with the tether during flight.

Barrow

Current and Upcoming Site Visits

Fred Helsel, Erik Webb-SNL	2/22/2017	SNL management visit

Current and Upcoming IOPs

De-Icing Comparison Experiment (DICE)
AXIS camera was relocated for Chuck Longs De-Icing Comparison Experiment (DICE).
This will enable Chuck to observe the AMF3 radiometers. Martin Stuefer setup a script to take a photo every 10 minutes they can be viewed at:
http://nanuna.gi.alaska.edu/media/cam/oli_psp/
http://nanuna.gi.alaska.edu/media/cam/oli_skyrad/

SNPP/NPOESS Ground Truth Sonde Launch, Phase 5 – Started Oct 1, 2016

Seismic Probes for NSF– POP Ends, Oct 31, 2018

OYES-Electric Field Study, Texas A&M, Started June 2017

Global Navigation Satellite System (GNSS) – Started July 2017

RIVAL - Sonde RS92 RS41 comparison. (Donna Holdridge) Will start when the weather permits; waiting on the mass flow meter, which has been ordered, needed to fill the balloons.

Site and Safety Issues

Kubota not operational, bad bearing/ roller on track. Shipped tracks to Equipment Source for rebuild.

Radiometer ventilators are having issues of filling with snow due to mentor changing fans across all ARM facilities to all be the same. **ENG0003807** has options to try and mitigate the issues of the ventilators filling with snow.

1. Increasing the hole diameter in the sunshield.
2. Adding 3 pad heaters to the sunshield.

These options are being tested at Oliktok.

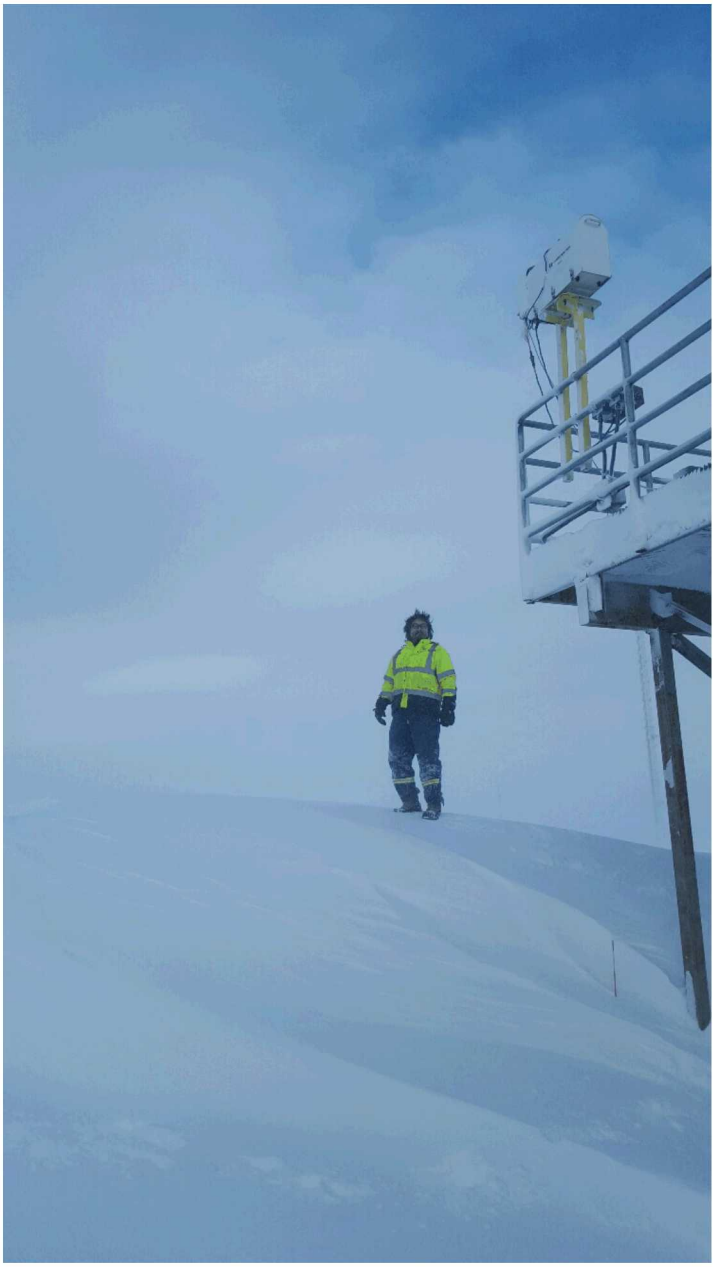
The telehandler is broken and waiting for the UIC shop to schedule the repairs. Clearing snow over the years has taken its toll on the telehandler and break downs are becoming more frequent. Purchasing a low hour mid-size loader with forks and a bucket has been proposed. Purchasing a loader would be a more efficient method of clearing snow and relieve the undo wear and tear on the telehandler. ~ cost 150K.

Erik Webb, Sandia National Laboratory's level II manager, visited the site for an ES&H walk through. He wanted to see firsthand our winter safety challenges, and what the observers do to stay safe during when temperatures can dip below -40. Unfortunately, we experienced an abnormally warm week and temperatures were in the 20's. Erik was able to see the massive amounts of snow, drifting, flat light and winds. He had discussions with observers to help him understand some of the difficulties of winter operations in the Arctic. This is the first manager that has taken me up on a winter visit when the temperatures are normally the coldest. Next year we'll try January where it's cold and dark. Erik stated it was a good trip and helped him understand some of the difficulties faced, first hand.

Unmet Needs

Duplex bathrooms need upgrades and made to meet ADA standards; showers and floors are worn out. Mark Ivey is working with UIC Real Estate and SFO for a solution.

Site News



Josh standing on 8ft snowdrift where site access road is located.

Winter winds and snowfall have been above average this year. At times, the site has only been accessible by Kubota or Polaris with tracks.

Site Staffing

NA

Distribution

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