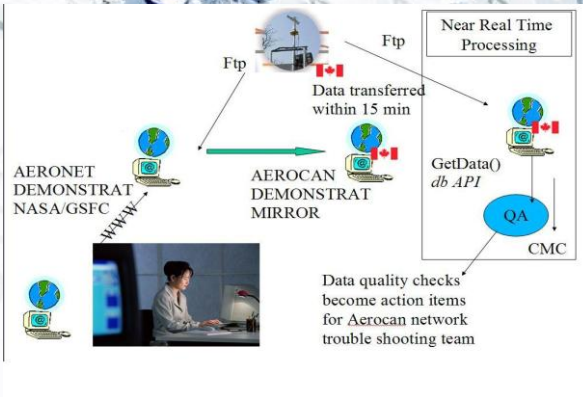
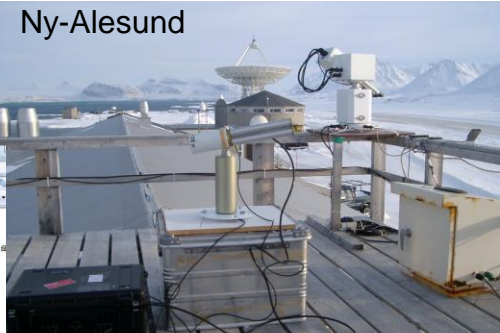




Software Tools to Monitor a Real Time Sunphotometer Network

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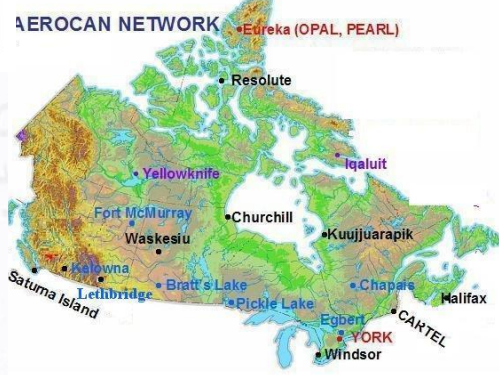


Real Time AEROCAN DATA 17:2:45 (GMT)

Click on instrument number for time series at all wavelengths; Time for spectral plot; Wavelength value for time series at that wavelength; Location for field Table updated every 15 minutes.

Instrument	Time (GMT)	1020 nm	940 nm	870 nm	670 nm	500 nm	440 nm	380 nm	Latitude	Longitude	Solar Angle	Air Mass
387 CARTEL	2008-04	0.221	0.299	0.162	0.157	0.261	0.135	0.292	45.3667	-71.9292	71.449	3.343
Stand. Dev:		0.33	0.88	0.67	1.53	1.20	0.33	0.33				
433 Burns Lake	21-50-24	0.107	0.518	0.058	0.155	0.291	0.372	0.689	50.2	-104.713	71.378	3.132
Stand. Dev:		12.74	39.60	21.37	24.33	15.81	11.61	15.95				
513 Egbert	20-24-09	0.268	1.456	0.249	0.056	0.941	1.011	1.059	44.2167	-79.7149	68.721	2.756
Stand. Dev:		477.22	362.06	651.08	1009.56	562.30	168.40	219.78				
511 Halifax	19-04-04	1.082	1.910	1.292	1.455	1.689	1.715	2.094	44.6333	-65.5917	72.237	3.278
Stand. Dev:		210.07	31.50	78.32	69.36	27.94	8.76	4.18				

Refresh time: March-01-09 12:00:43 PM



Problem:

- Aerocan network grew from about 7 active stations to 17 stations.
- Too many stations for simple manual Quality Assurance (QA).
- Requirement for increase in operational efficiency (ie. more data).

Solution:

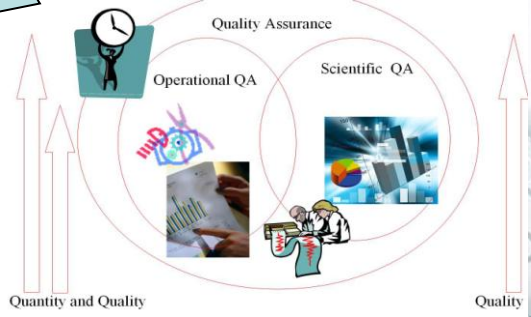
- Change QA methodology from "pull" to "push".
- Implement RSS feed giving status for each instrument in network.
- Add twitter feed for each site.
- Dynamically updated Web status page with latest aerosol optical depth, graphs and instrument status.
- MySQL database used to store raw data.
- Matlab to be used for scientific QA.
- Most software written in Perl with some javascript and c++

Result:

- Increase in operational efficiency due to quicker identification of instrument issues.
- Near realtime feedback to site managers and network operators.
- Use of standard formats allows use of existing software tools and allows user customization without additional effort.

Useful Software Links:

- www.twitter.com
- www.mysql.com
- www.rssboard.org
- www.wampserver.com



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