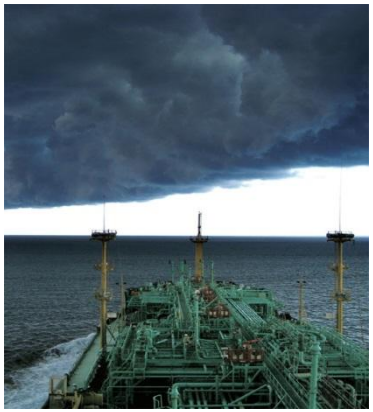
# Voluntary Observing Ship (VOS) Program

**Ron Williams**

**Port Meteorological Officer (PMO)**

# VOS Program




**Successful program over the past few years with getting real-time weather data from vessels to utilize for the issuance of accurate weather forecasts.**

# VOS Program

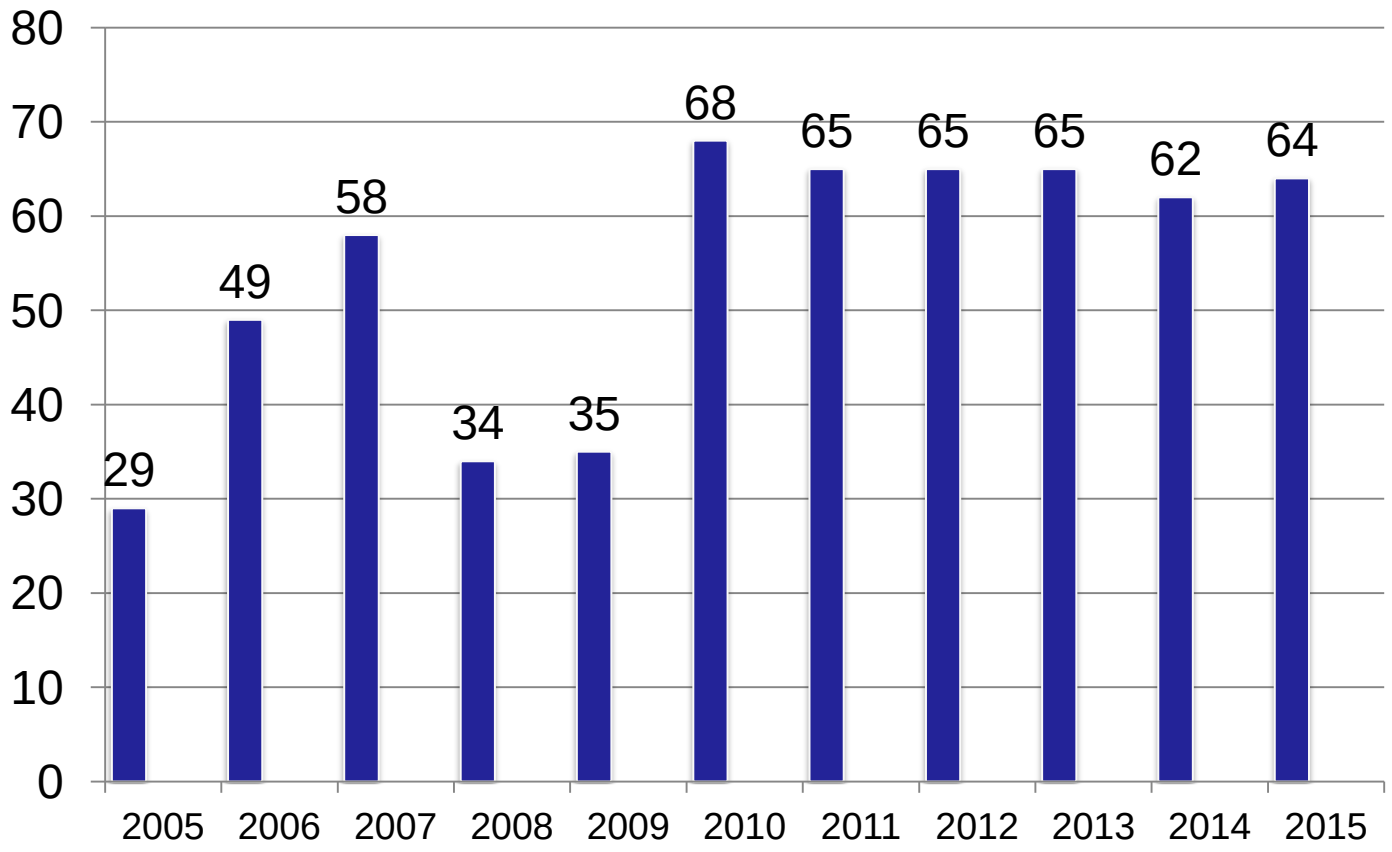
A worldwide program of the World Meteorological Organization (WMO) to recruit ships & platforms to voluntarily observe and report marine meteorological and oceanographic conditions to ensure ***Safety Of Life At Sea*** **(SOLAS),** and reduce commercial loss.

23 Countries Currently Participate

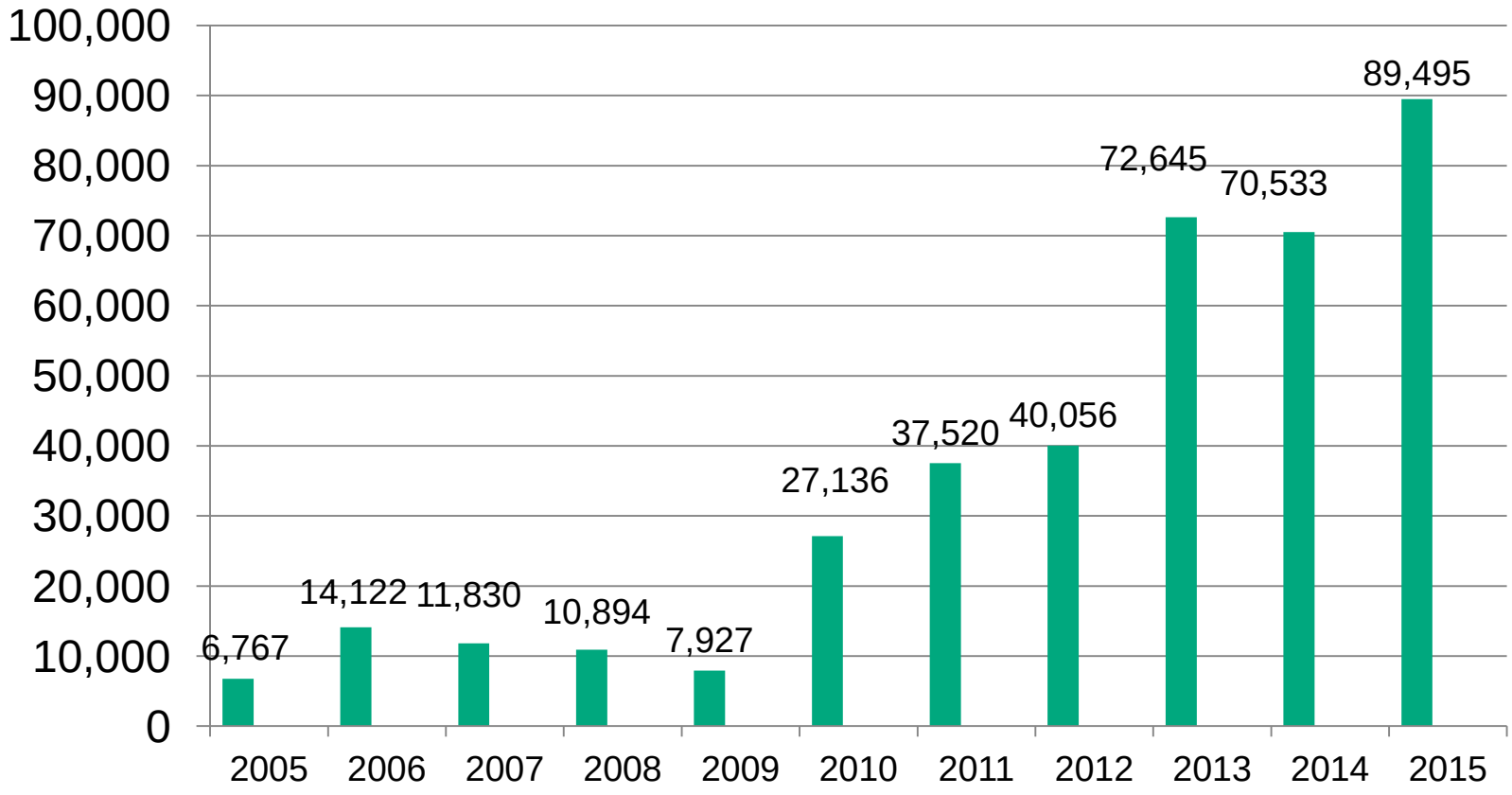
# Port Meteorological Officer's

Recruit, support and provide training for crewmembers of ships that participate in the VOS program

# Great Lakes VOS Reporting Ships



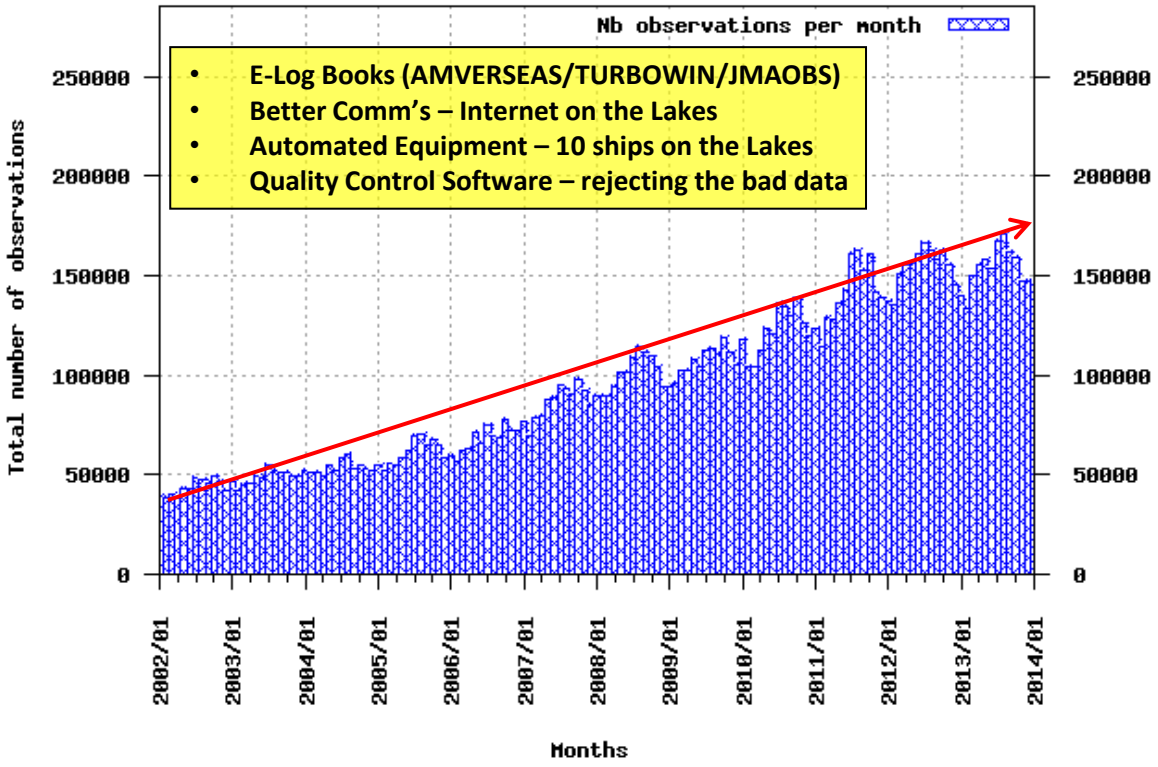
# Great Lakes Submitted Observations

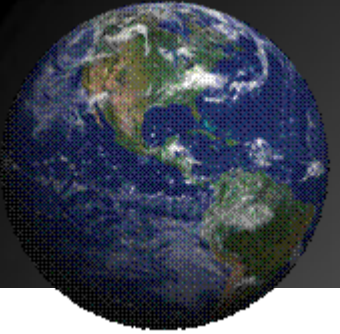


# Ship Observations

A Contributing Factor to Why Marine Forecast Have Improved Over Past 10 Years.

Increased Quality and Quantity of Marine Observations





# Importance of Ship Obs

## SHIP OBSERVATIONS ARE AN IMPORTANT INGREDIENT FOR NUMERICAL FORECAST MODELS

They provide:

Ground Truth

Verify Satellite data (adjustments are made based on ship observations)

Verify Buoy data / Winds and Waves

Verify Model data output

We go to great lengths to **UTILIZE** every reported element.

# Marine Weather Forecasting

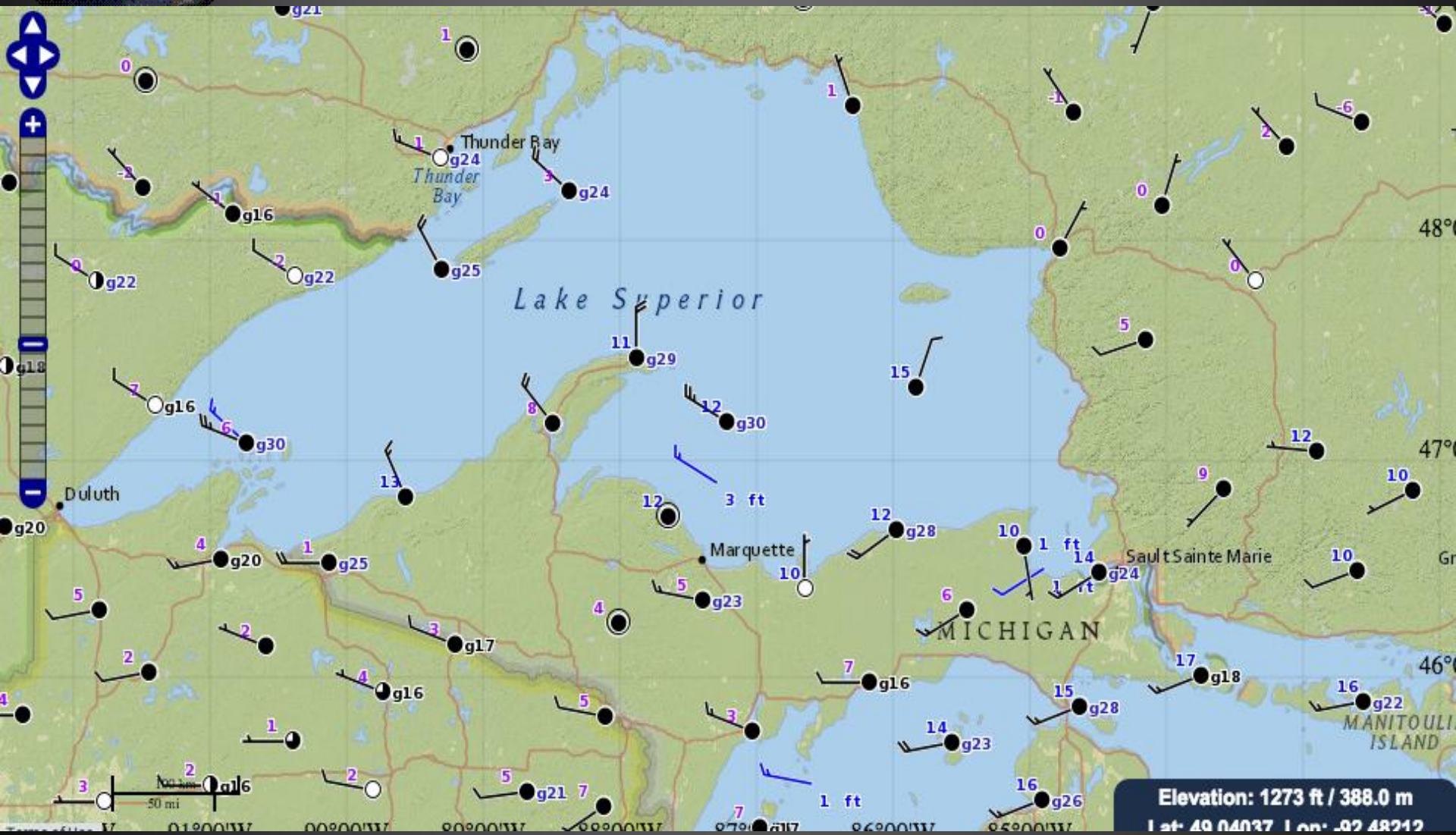
## How does the forecaster use the observation?

- Looks for observations that tell the Meteorologist his current forecast is accurate / inaccurate.
- Looks for observations containing information about the location of fronts, dense fog or other hazards important to the Marine community.

## How the Mariner can help?

- Take and transmit weather observations

# Open Water Data Gaps



# Weather Reporting Webpage

## www.weather.gov/dmawds

NATIONAL WEATHER SERVICE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

### Ship Observation Entry Form

Welcome to the Voluntary Observing Ship data entry page. Thank you for taking the time to submit your observation. The data you enter here plays a major important role in producing accurate weather and wave forecasts. Your observation is included in the computer models that create weather and wind forecasts. The more initial data in the model, the better the forecast; especially over the data sparse open waters of the Great Lakes.

If you need to make a correction to your observation, click on the back button after you transmitted your observation and make the final correction and retransmit your observation.

Your ship's radio callsign (which is also your login ID here) must be registered with DMAWDS in order to send an observation.

**Note: Any element in red denotes mandatory observed entry.**

What is the radio call sign (ID) of your ship? (NOTE: USE LETTERS AND NUMBERS ONLY. NO SPACES.)

What is your DMAWDS password?

Day of the month in UTC: 08

Actual Time of Observation to the Nearest Whole Hour in UTC: 20

What is the latitude in tenths of a degree (example: 42.8)?

What is the longitude in tenths of a degree (example: 82.1)?

Enter the wind speed to the nearest knot (example: 12)?

Enter the wind direction in degrees (example: 90, 270):

Enter the wave height in feet (example: 6, 12)?

# Observation Quality Control

METEO FRANCE
Toujours un temps d'avance

EUMETNET

## MARINE OBSERVATION MONITORING
## Quality Control Tools : VOS Blacklists

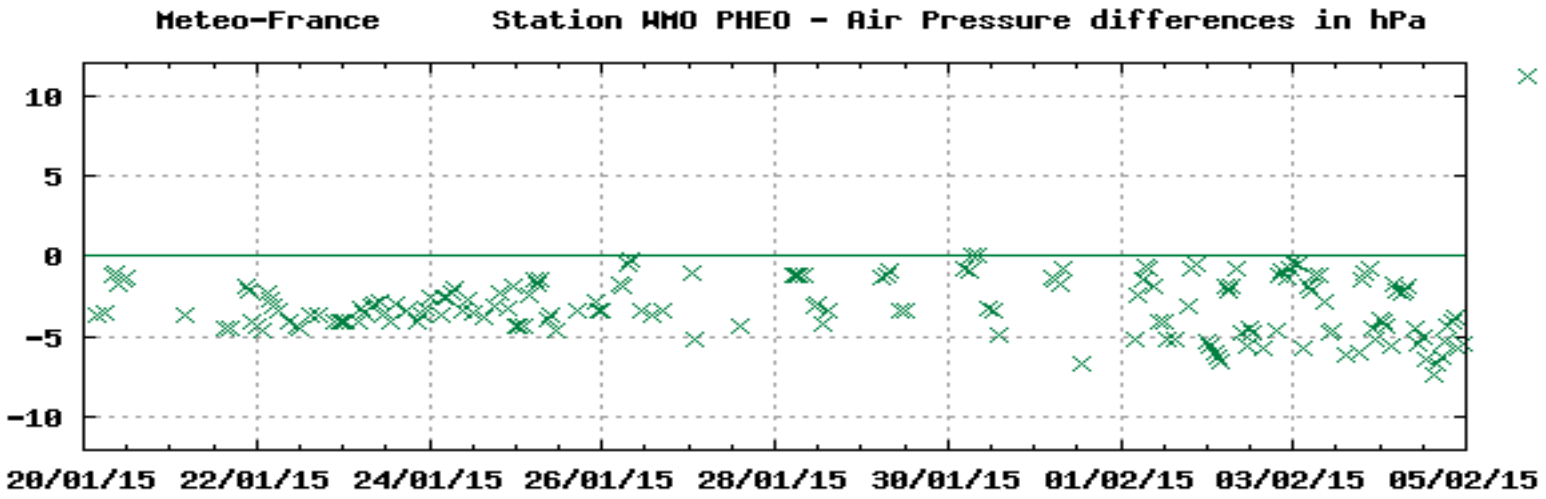
### QC Statistics - VOS ships providing dubious AP values

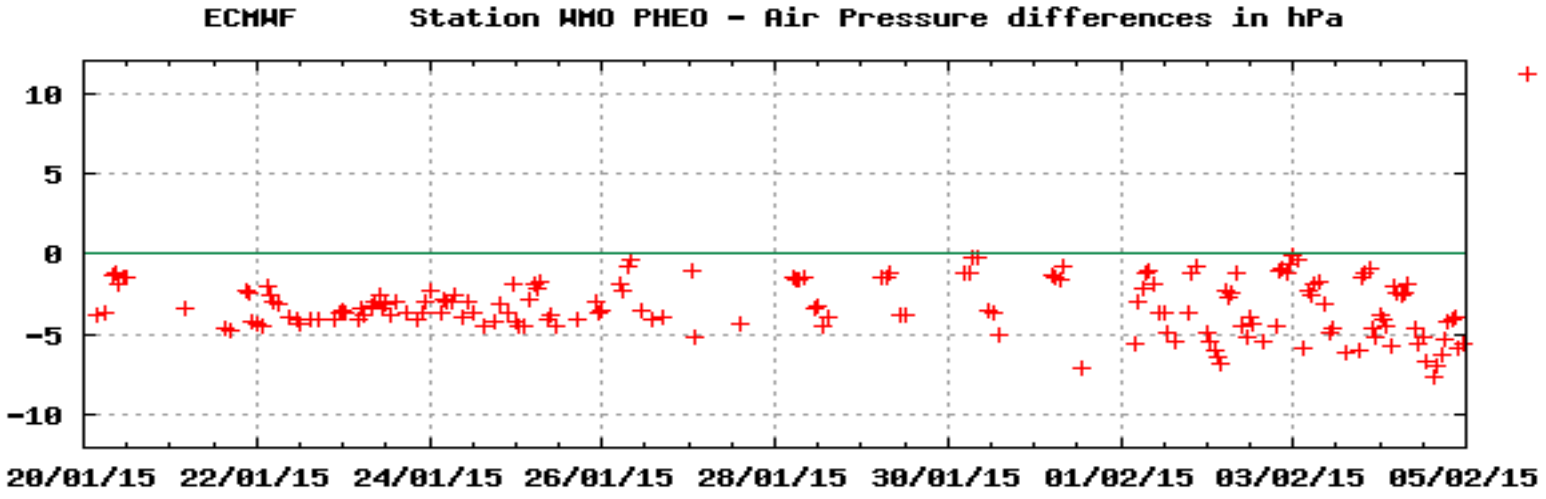
*List of the 40 ships for which, over the past two weeks, their wrong data had the highest weight in the RMS computation of differences between observations and model outputs, and for which:*
- *the number of gross errors was higher than 2 and higher than 3%,*
- *or the standard deviation was higher than 1.5 hPa*
- *or the bias was higher than 1.2 hPa in absolute value*

*Last update : Thu Feb 5 11:59:47 2015*

| Ship | Name ship | Cntr | End Date | Lat | Lon | Nobs | GE | Bias | Sd | Stat | Data | Comp | Map |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VOCJ | LEIF ERICSON | CA | 20150204 | 47.5 | -59.1 | 381 | 62 | -0.2 | 1.6 | | | | |
| PBWQ | NIEUW AMSTERDAM | US | 20150204 | 19.4 | -81.8 | 138 | 0 | -4.7 | 1.3 | | | | |
| PBGH | PRINSENDAM | US | 20150204 | -55.4 | -57.5 | 56 | 1 | 7.2 | 0.7 | | | | |
| VRED4 | SAGA PIONEER | US | 20150204 | 22.2 | -18.6 | 274 | 13 | -0.1 | 2.3 | | | | |
| UFLT | KAPITAN KREMS | RU | 20150204 | 44.5 | 138.0 | 26 | 20 | 9.7 | 0.3 | | | | |
| S6ES6 | SIGAS SILVIA | US | 20150204 | 36.8 | 15.2 | 322 | 5 | 0.1 | 2.4 | | | | |
| PHEO | VEENDAM | US | 20150204 | 27.9 | -129.1 | 176 | 0 | -3.1 | 1.7 | | | | |
| 9V9132 | SHANDONG DA ZHI | US | 20150204 | -31.6 | 35.6 | 47 | 0 | 6.3 | 1.0 | | | | |
| IBJD | COSTA DELIZIOSA | US | 20150203 | -55.2 | -65.6 | 37 | 16 | -2.4 | 2.8 | | | | |
| IBCX | | | 20150204 | 39.7 | 11.6 | 73 | 3 | -3.4 | 3.2 | | | | |
| C6JS | DUNCAN ISLAND | US | 20150204 | 26.3 | -54.7 | 18 | 15 | -9.6 | 0.2 | | | | |
| 9HRJ9 | CELEBRITY SOLSTICE | US | 20150204 | -39.2 | 178.2 | 187 | 2 | -2.6 | 1.1 | | | | |
| KRGB | HORIZON ENTERPRISE | US | 20150204 | 30.8 | -149.4 | 46 | 0 | -5.1 | 0.7 | | | | |
| VRJT8 | COSCO EXCELLENCE | US | 20150204 | 53.2 | 173.1 | 21 | 1 | 7.0 | 2.0 | | | | |
| VCJM | CANADIAN ENTERPRIS | US | 20150204 | 43.2 | -79.2 | 383 | 0 | -1.6 | 0.7 | | | | |
| LAQQ7 | STAR LYSEFJORD | US | 20150202 | 7.2 | -112.9 | 31 | 0 | 5.3 | 2.9 | | | | |
| C6YM6 | SONANGOL SAMBIZANG | US | 20150204 | -23.1 | 10.9 | 29 | 0 | 6.1 | 1.1 | | | | |

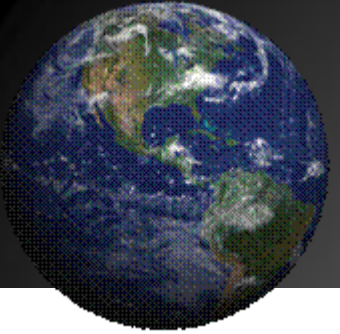
# Observation Quality Control



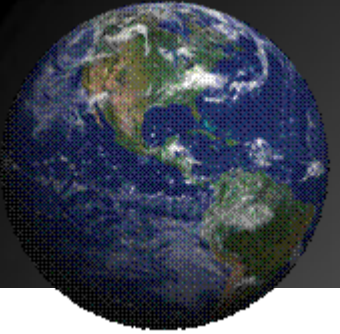
# Weather Equipment

- 2016 temperature sensors will be handheld on ships without an MMTS unit.
- Digital and aneroid barometers available for broken or ship issued original equip.
- NWS F420 wind units are dated, but accurate devices to serve as back-up.
- Nimbus/MMTS temperature standard still operational. If not working, contact me.

# How do I become active in VOS?

- Contact PMO Ron Williams
- Will assess your weather equipment for accuracy
- Assign login/password for online entry
- PMO will adjust barometer and visit ship to train observers
- 20 observations per month to stay active in VOS



# PMO CONTACT INFORMATION

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**Questions?**