

New monitoring website

Chantal Côté

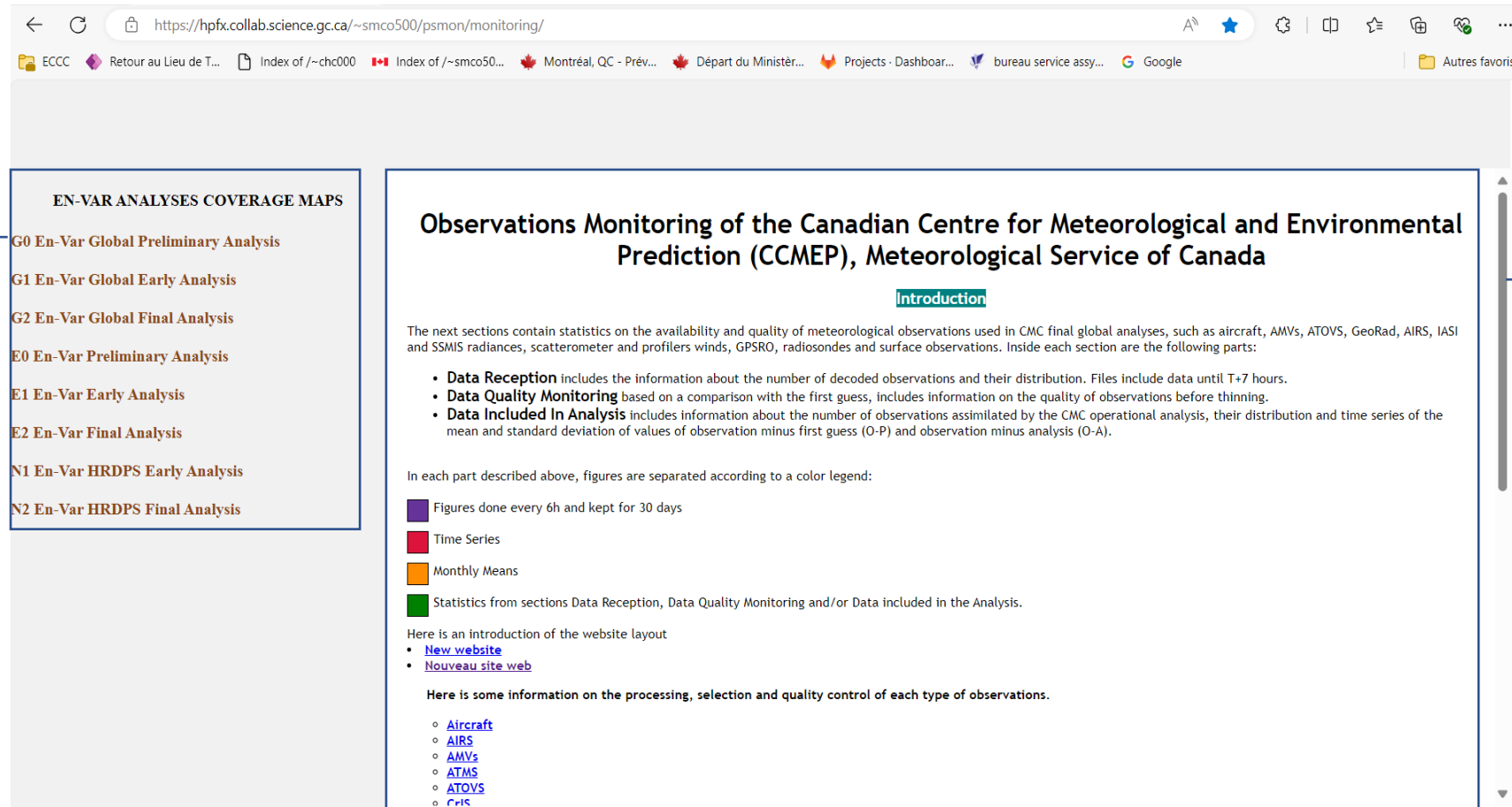
- [Aircraft](#)
- [AIRS](#)
- [AMVs](#)
- [ATMS](#)
- [ATOVS](#)
- [CrIS](#)
- [GeoRad](#)
- [GPSRO](#)
- [IASI](#)
- [Profiler](#)
- [Scatterometer](#)
- [TEMP & SYNOP](#)
- [Radiosondes](#)
- [GB-GPS](#)
- [SSMIS](#)

Assimilation des données et contrôle de la qualité, Direction de l'élaboration, Centre canadien de prévisions météorologiques et environnementales (CCMEP), Service météorologique du Canada, Environnement et Changement climatique Canada.
chantal.cote@ec.gc.ca

Overview

- This site provides information on the quality and availability of various types of observed meteorological data for use in the CMC's global, regional and national assimilation system.
- <https://hpfx.collab.science.gc.ca/~smco500/psmon/monitoring/>

Overview of the new website

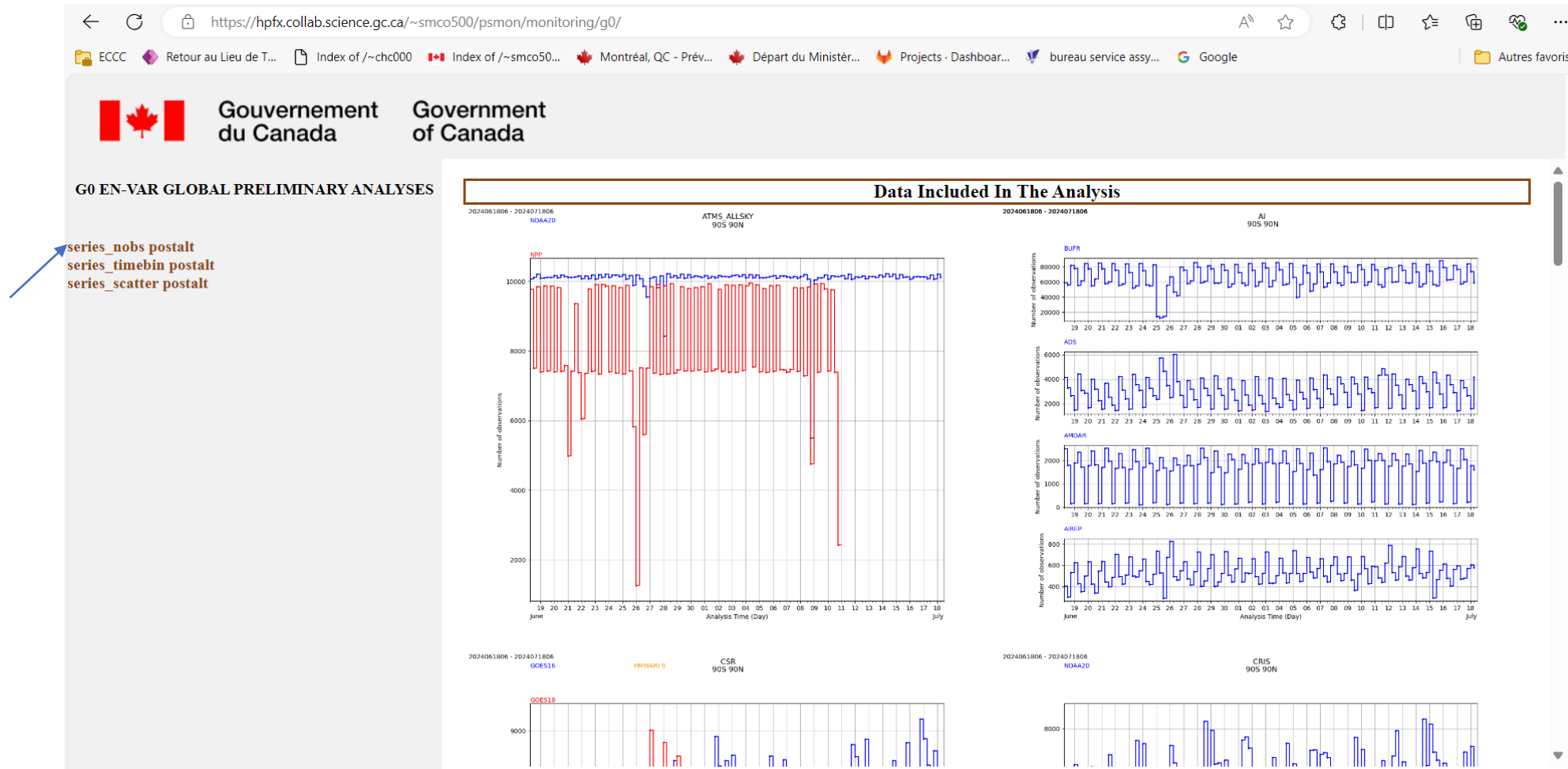


Side
navigation bar

Main window

Time series of the number of observations (series_nobs)

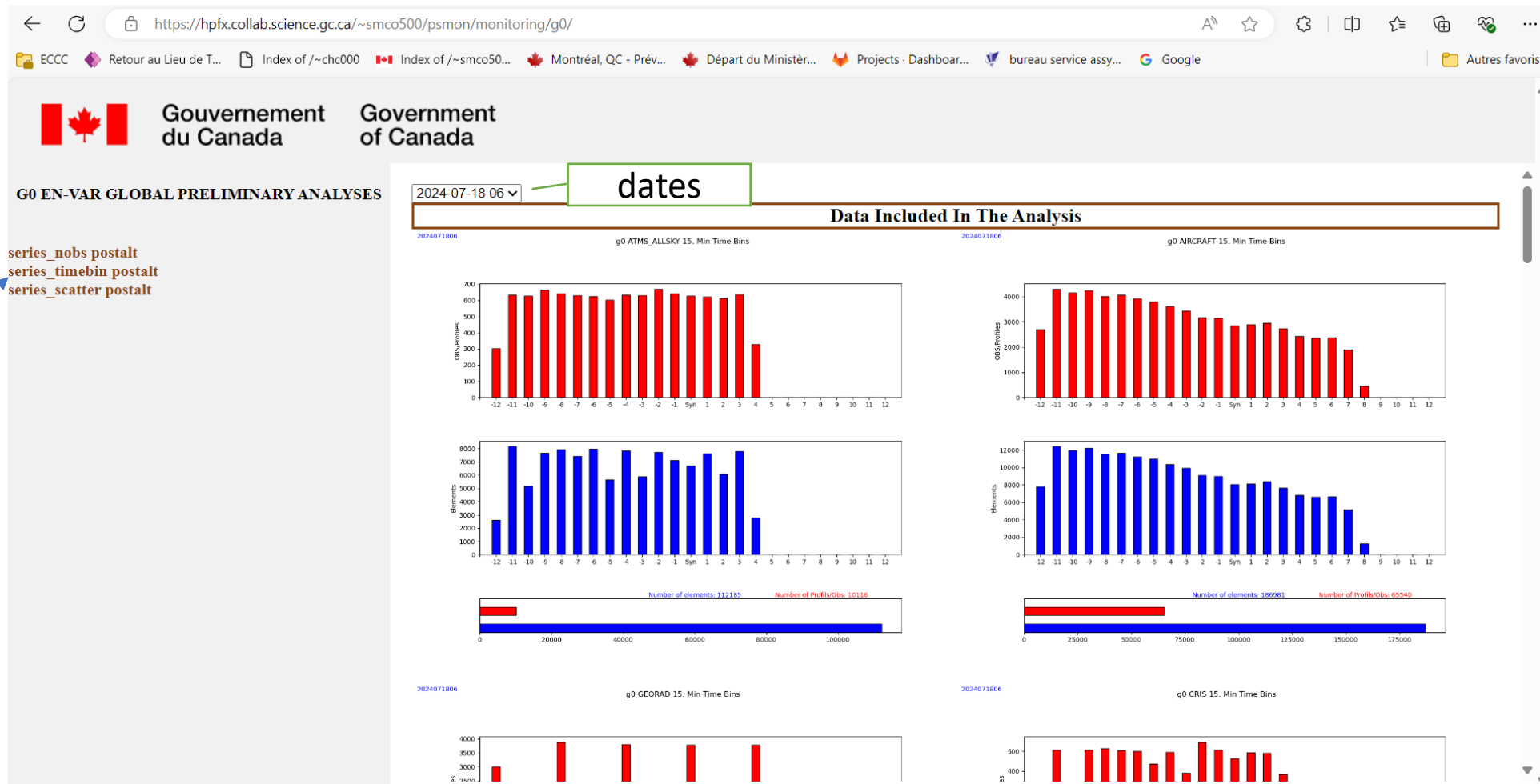
All observation families are on the same page.




Example for G0 G1 E0 E1 N1 N2

Figures of the number of observations by time bins (series_timebin)

All observation families are on the same page.



Example G2: Home Page



Gouvernement
du Canada

Government
of Canada

G2 EN-VAR ANALYSES OBSERVATIONS

AIRCRAFT

AMV

ATMS

ATOVS

CRIS

CSR

GPSRO

GROUND-BASED GPS

IASI

MWHS2

OZONE

SCATTEROMETER

SURFACE

SSMIS

RAOBS

series_nobs postalt

series_timebin postalt

Anomalies postalt

nobs difference postalt

series_nobs evalalt

series_timebin evalalt

series_nobs cutoff

series_timebin cutoff

Anomalies cutoff

nobs difference cutoff

Idem à
G0,G1,E0,E1
,N1 et N2

Cutoff, evalalt
et postalt

Postalt only

Observations Monitoring of the Canadian Centre for Meteorological and Environmental Prediction (CCMEP), Meteorological Service of Canada

Introduction

The next sections contain statistics on the availability and quality of meteorological observations used in CMC final global analyses, such as aircraft, AMVs, ATOVS, GeoRad, IASI and SSMIS radiances, scatterometer and profilers winds, GPSRO, radiosondes and surface observations. Inside each section are the following parts:

- **Data Reception** includes the information about the number of decoded observations and their distribution. Files include data until **T+7 hours.**
- **Data Quality Monitoring** based on a comparison with the first guess, includes information on the quality of observations before thinning.
- **Data Included In Analysis** includes information about the number of observations assimilated by the CMC operational analysis, their distribution and time series of the mean and standard deviation of values of observation minus first guess (O-P) and observation minus analysis (O-A).

In each part described above, figures are separated according to a color legend:

- Figures done every 6h and kept for 30 days
- Time Series
- Monthly Means
- Statistics from sections Data Reception, Data Quality Monitoring and/or Data included in the Analysis.

Here is an introduction of the website layout

- [New website](#)
- [Nouveau site web](#)

Here is some information on the processing, selection and quality control of each type of observations.

- [Aircraft](#)
- [AMVs](#)
- [ATMS](#)
- [ATOVS](#)
- [CrIS](#)
- [GeoRad](#)

The screenshot shows the 'Observations Monitoring' page of the Canadian Centre for Meteorological and Environmental Prediction (CCMEP). The page is in French and English. On the left, there is a sidebar with a list of observation types: AIRCRAFT, AMV, ATMS, ATOVS, GeoRad, IASI, MHS, MWHS2, OZONE, SCATTEROMETER, SURFACE, SSMIS, and RAOBS. The main content area is titled 'Observations Monitoring of the Canadian Centre for Meteorological and Environmental Prediction (CCMEP), Meteorological Service of Canada'. It includes an 'Introduction' section and a list of links for 'New website' and 'Nouveau site web'. Annotations are present: a blue box points to the 'New name (formerly Georad)' text; a blue box points to the 'Independent family (formerly in the Surface family)' text; a green box points to the 'Empty for now' text; and a green box points to the 'Upper air only (excluding surface data)' text.

Annotations:

- New name (formerly Georad)
- Independent family (formerly in the Surface family)
- Empty for now
- Upper air only (excluding surface data)

New name
(formerly Georad)

Independent family
(formerly in the Surface family)

Empty for now

Upper air only (excluding surface data)

Operations Monitoring of the Canadian Centre for Meteorological and Environmental Prediction (CCMEP), Meteorological Service of Canada

Introduction

The next sections contain statistics on the availability and quality of meteorological observations used in CMC final global analyses, such as aircraft, AMVs, ATOVS, GeoRad, IASI and surface observations. Inside each section are the following parts:

coded observations and their distribution. Files include data until T+7 hours. `mess`, includes information on the quality of observations before thinning.

- **Data included in Analysis** includes information about the number of observations assimilated by the CMC operational analysis, their distribution and time series of the mean and standard deviation of values of observation minus first guess (O-P) and observation minus analysis (O-A).

part described above, figures are separated according to a color legend:

Figures done every 6h and kept for 30 days

The Series

Monthly Means

Statistics from sections Data Reception, Data Quality Monitoring and/or Data included in the Analysis.

Here is an introduction of the website layout

- New website
- Nouveau site web

Here is some information on the processing, selection and quality control of each type of observations.

- Aircraft
- AMVs
- ATMS
- ATOVS
- CrIS
- GeoRad

Overview of an observation family (aircraft)

The screenshot shows the 'Aircraft Data Reception' section of the CMC Monitoring website. The page is in French and English. The left sidebar lists various data series like AIRCRAFT, AIRS, AMV, etc. The main content area has several sections: 'Number of observations', 'Distribution maps', 'Number of observations per time bin', 'Monthly Means geographic distribution', 'Monthly Number of observations', and 'Number of observations per month'. Each section has a 'View' button. A blue box labeled 'Figure temporal series' points to the 'Number of observations' section. A blue box labeled 'Figure made every 6 hours' points to the 'Distribution maps' section. A blue box labeled 'Monthly Figure' points to the 'Monthly Means geographic distribution' section. A blue box labeled 'Monthly Number of observations' points to the 'Monthly Number of observations' section. A blue box labeled 'Number of observations per month' points to the 'Number of observations per month' section. A blue box labeled 'Aircraft Data Quality Monitoring' points to the bottom section. A blue box labeled 'Cutoff and evalalt sections (postalt is under evalalt)' points to the 'series_nobs postalt' and 'series_scatter postalt' links in the sidebar.

Overview of an observation family (continued)

CMC Monitoring

CMC Data Monitoring G2

https://hpfx.collab.science.gc.ca/~smco500/psmon/monitoring/g2/

A

ECCC

Retour au Lieu de T...

Index of /~chc000

Index of /~smco50...

Montréal, QC - Prév...

Départ du Ministèr...

Projects · Dashboar...

Google

Autres favoris

Gouvernement
du Canada

Government
of Canada

G2 EN-VAR ANALYSES OBSERVATIONS

AIRCRAFT

AIRS

AMV

ATMS

ATOVS

CRIS

CSR

GPSRO

GROUND-BASED GPS

IASI

MWHS2

OZONE

SCATTEROMETER

SURFACE

SSMIS

RAOBS

series_nobs postalt

series_timebin postalt

series_scatter postalt

Aircraft Data Reception

Number of observations

Plots of the number of records decoded for aircraft reports at CMC in 6-hour periods, divided by format of aircraft report:AIREP/ADS (ICAO), AMDAR (OMM FM42), BUFRS (WMO FM94).

2023-04-30 06 - 2023-05-30 06

AIRCRAFT_DBASE

View

Distribution maps

Distribution maps of observation points decoded for aircraft reports

2023-05-30 06

AIRCRAFT_DBASE

cyl

View

Number of observations per time bin

Plots of the number of observations decoded per time bin (15 min.).

2023-05-30 06

AIRCRAFT_DBASE

cyl

View

Monthly Means geographic distribution

Plots of the distribution maps of the monthly mean number of observations decoded per 24-hour period. The maps shows the 10 X 10 degrees distribution of the monthly mean values.

April2023

AIRCRAFT_DBASE

AMDAR

AI

NO ELEM

View

Monthly Number of observations

Trace of the mean number of elements assimilated per 24-hour periods

April2023

AIRCRAFT_DBASE

AMDAR

AI

NO ELEM

View

Number of observations per month

pas de description pour l'instant

April2023

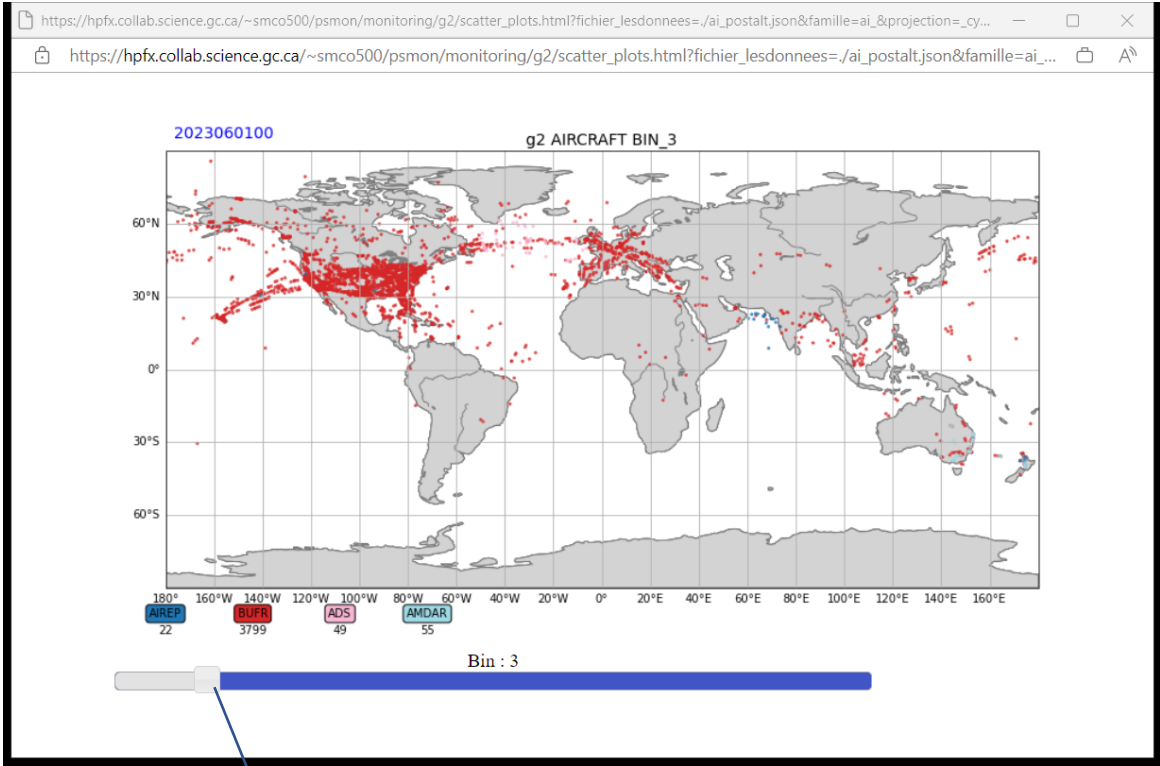
AIRCRAFT_DBASE

View

Aircraft Data Quality Monitoring

Be careful, there is no longer a separate amdar section

Overview of an observation family (continued)



Selection of the time bin by the horizontal cursor

Vertical Level Selection by the Vertical Slider



Overview of an html table

Vertical Level Selection

Canadian Meteorological Centre

List of AIRCRAFT stations with suspect observations.
April2023
WIND codtyp=157
301-700hPa

To be considered as suspect, the number of observations must meet minimal counts (50)
and the data statistics versus the guess must exceed at least one criterion:
abs(bias) >= 2.5 or rms >= 8. or 100.* (NG*1.0)/NA >= 2.

NA = Total number of available observations
NT = Number after data thinning for assimilation
NG = Observations differing from the guess by amounts larger than gross check limits (30.)
% Gross = NG/NA * 100
NR = The number of rejected observations excluding thinning
% NR = NR/NA * 100
NC = The number of exactly calm winds (obs < 1.) m/s
Wind speed (elem BUFR 11002) used in calculation

Click to order


STN	ELEM	LEVEL	NA	NT	NG	% GROSS	NR	% NR	NC	RMS	BIAS
CNQMRL	WIND	301-700hPa	686	493	22	3.2	17	2.5	0	4.09	-0.87
D0UYBZRA	WIND	301-700hPa	56	0	0	0.0	0	0.0	0	8.29	4.25

Anomaly Section (G2 only)

The screenshot shows a web browser window with the URL <https://hpfx.collab.science.gc.ca/~smco500/psmon/monitoring/g2/>. The page header features the Government of Canada logo and the title "Observations Monitoring of the Canadian Centre for Meteorological and Environmental Prediction (CCMEP), Meteorological Service of Canada". The main content area is titled "G2 EN-VAR ANALYSES OBSERVATIONS" and includes a sidebar with a list of observation types: AIRCRAFT, AMV, ATMS, ATOVS, CRIS, CSR, GPSRO, GROUND-BASED GPS, IASI, MWHS2, OZONE, SCATTEROMETER, SURFACE, SSMIS, and RAOBS. Below this list are links for "series_nobs postalt", "series_timebin postalt", "Anomalies postalt", and "nobs difference postalt". The main content area has a heading "Introduction" and a paragraph explaining the purpose of the site. It lists three main sections: Data Reception, Data Quality Monitoring, and Data Included In Analysis. A color legend is provided, showing that purple represents figures done every 6h and kept for 30 days, red represents Time Series, orange represents Monthly Means, and green represents statistics from the Data Reception, Data Quality Monitoring, and/or Data Included in the Analysis sections. The page also includes links for "New website" and "Nouveau site web".

← ↻ 🔒 <https://hpfx.collab.science.gc.ca/~smco500/psmon/monitoring/g2/> 🔊 ☆ 🔄 | 📄 ☆ 📁 📌 📌 📌 ...

ECCC 📄 Retour au Lieu de T... 📄 Index of /~chc000 🇨🇦 Index of /~smco50... 🇨🇦 Montréal, QC - Prév... 🇨🇦 Départ du Ministère... 🦋 Projects - Dashboar... 📧 bureau service assy... 🌐 Google | 📁 Autres favoris

 **Gouvernement du Canada** **Government of Canada**

G2 EN-VAR ANALYSES OBSERVATIONS

AIRCRAFT
AMV
ATMS
ATOVS
CRIS
CSR
GPSRO
GROUND-BASED GPS
IASI
MWHS2
OZONE
SCATTEROMETER
SURFACE
SSMIS
RAOBS

series_nobs postalt
series_timebin postalt
Anomalies postalt
nobs difference postalt

series_nobs evalalt
series_timebin evalalt

series_nobs cutoff
series_timebin cutoff
Anomalies cutoff
nobs difference cutoff

Observations Monitoring of the Canadian Centre for Meteorological and Environmental Prediction (CCMEP), Meteorological Service of Canada

Introduction

The next sections contain statistics on the availability and quality of meteorological observations used in CMC final global analyses, such as aircraft, AMVs, ATOVS, GeoRad, IASI and SSMIS radiances, scatterometer and profilers winds, GPSRO, radiosondes and surface observations. Inside each section are the following parts:

- **Data Reception** includes the information about the number of decoded observations and their distribution. Files include data until T+7 hours.
- **Data Quality Monitoring** based on a comparison with the first guess, includes information on the quality of observations before thinning.
- **Data Included In Analysis** includes information about the number of observations assimilated by the CMC operational analysis, their distribution and time series of the mean and standard deviation of values of observation minus first guess (O-P) and observation minus analysis (O-A).

In each part described above, figures are separated according to a color legend:

- Figures done every 6h and kept for 30 days
- Time Series
- Monthly Means
- Statistics from sections Data Reception, Data Quality Monitoring and/or Data included in the Analysis.

Here is an introduction of the website layout

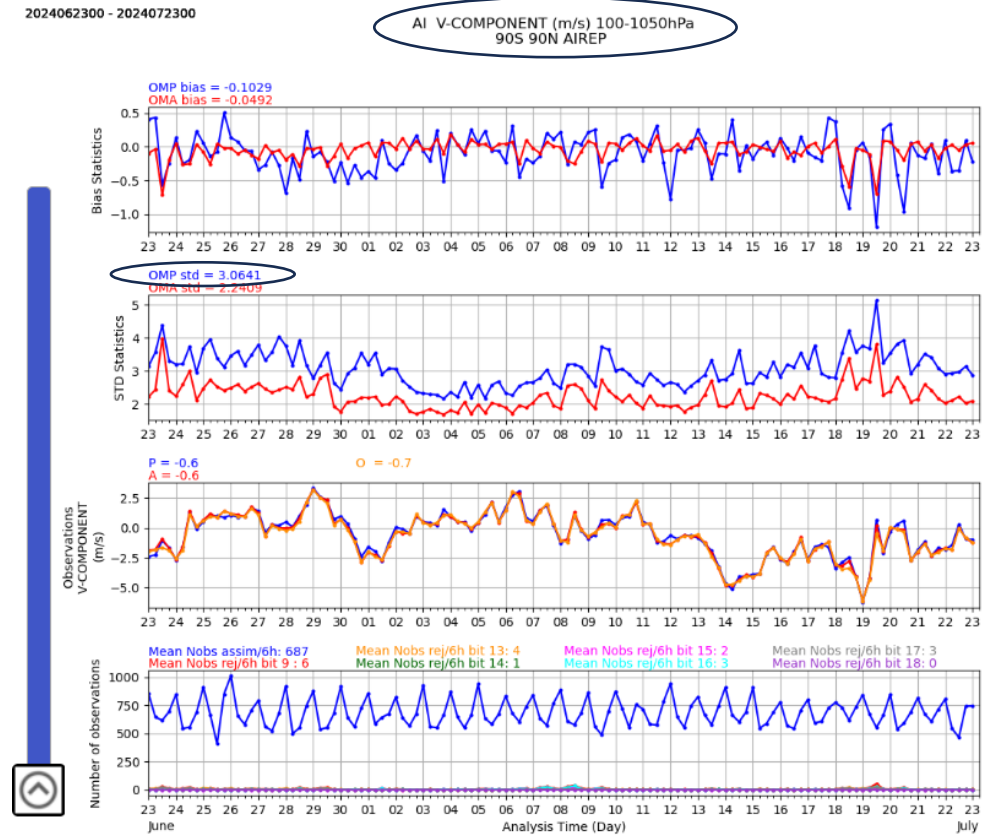
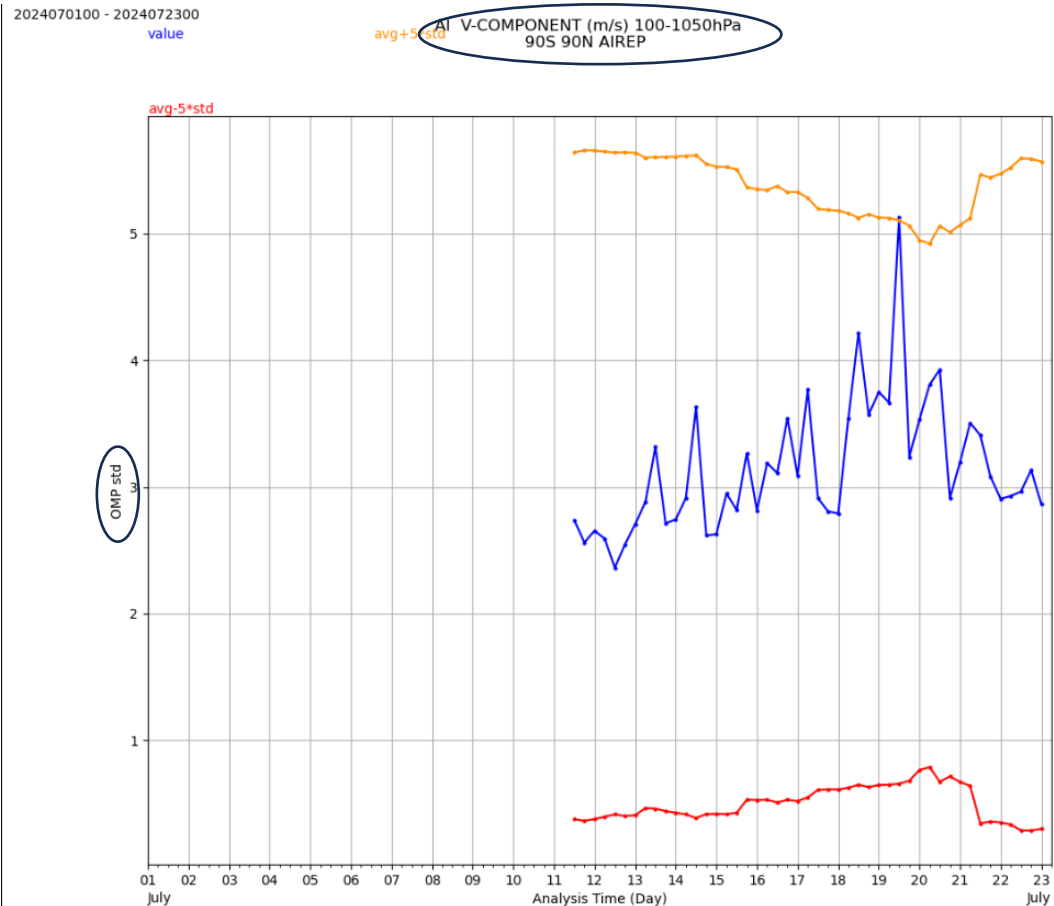
- [New website](#)
- [Nouveau site web](#)

Here is some information on the processing, selection and quality control of each type of observations.

- [Aircraft](#)
- [AMVs](#)
- [ATMS](#)
- [ATOVS](#)
- [CrIS](#)
- [GeoRad](#)

Figures Anomalies postalt, cutoff

The calculation of anomalies comes from the figures **O-P** and **O-A Statistics and Number of observations**



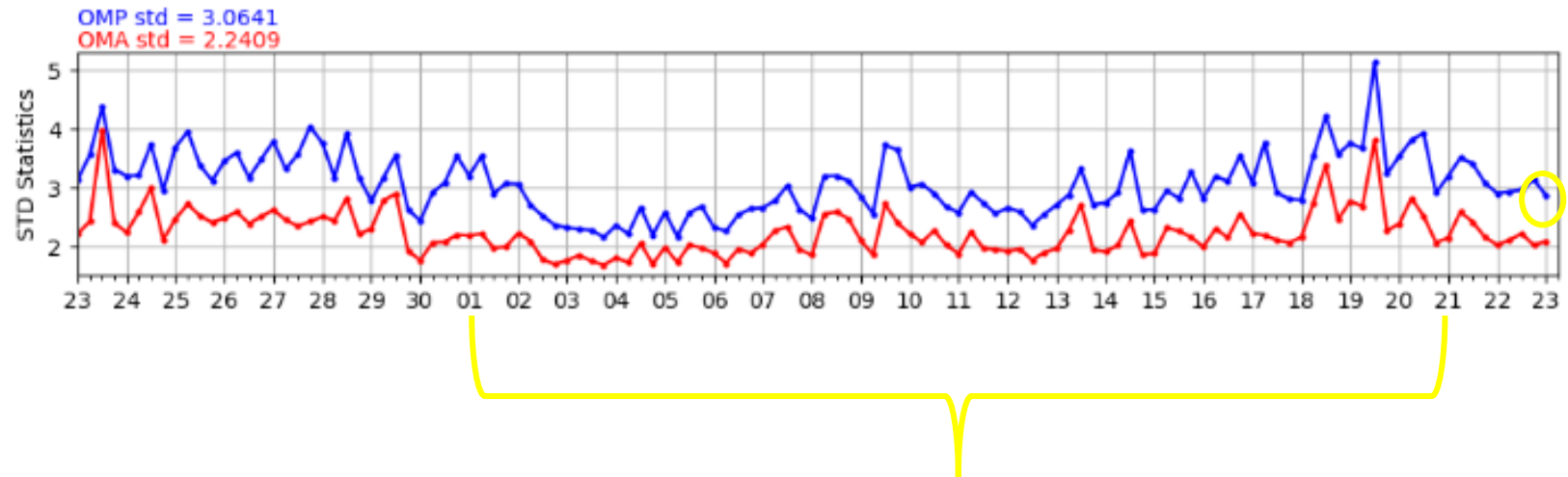
VCOORD : 100-1050hPa

The limits are calculated by the mean plus or minus 5 times the standard deviation over a period from t-22 days to t-2 days. This method comes from <https://www.ecmwf.int/sites/default/files/elibrary/2014/17338-automatic-checking-observations-ecmwf.pdf>

To produce the mean and standard deviation, a minimum of 10 data points are required over the 20 days used (80 cases) for the calculation. For some families, missing data (ai and ua) are not checked.



Anomaly Figure Zoom



Mean and standard deviation are calculated over this period.

The orange and red curves are respectively mean \pm (5 * standard deviation)

Nobs difference postalt et cutoff

Canadian Meteorological Centre

Avg of nobs profiles per 6h
in postalt file.
today= date > 2024072206 and date <= 2024072306
yesterday=date > 2024072006 and date <= 2024072106
this week=date > 2024071606 and date <= 2024072306
last week=date > 2024070806 and date <= 2024071506

Difference 1 day = (Today - Yestertay) / Yesterday * 100
Difference 1 week = (This_week - Last_week) / Last_week * 100

FAMILLY	ID_STN	CODTYP	NB PROFILS TODAY	NB PROFILS YESTERDAY	DIFFERENCE 1 DAY (%)	NB PROFILS THIS WEEK	NB PROFILS LAST WEEK	DIFFERENCE 1 WEEK (%)
AI	AI	AMDAR	1527.50	1547.25	-1.28	1665.71	2170.61	-23.26
AI	AI	AIREP	630.50	696.25	-9.44	677.93	697.18	-2.76
AI	AI	BUFR	84733.25	81494.75	3.97	84213.75	83776.11	0.52
AI	AI	ADS	3325.00	3153.00	5.46	3352.54	3822.50	-12.29
AI	ALL	ALL	90216.25	86891.25	3.83	89909.93	90466.39	-0.62
ATMS_ALLSKY	NOAA20	ALL	15212.50	15183.75	0.19	15197.68	15189.71	0.05
ATMS_ALLSKY	NPP	ALL	3705.50	14919.50	-75.16	8325.64	4838.64	72.07
ATMS_ALLSKY	ALL	ALL	18918.00	30103.25	-37.16	23523.32	20028.36	17.45
CRIS	NOAA20	ALL	11535.75	11588.50	-0.46	11486.14	11510.07	-0.21
CRIS	ALL	ALL	11535.75	11588.50	-0.46	11486.14	11510.07	-0.21
CSR	GOES16	ALL	10346.00	9795.75	5.62	10060.39	9603.68	4.76
CSR	GOES18	ALL	8833.00	7992.50	10.52	8333.75	7326.21	13.75
CSR	HMWARI-9	ALL	9208.25	8973.00	2.62	8203.18	8674.18	-5.43
CSR	ALL	ALL	28387.25	26761.25	6.08	26597.32	25604.07	3.88
--	--	GROUND BASED	-----	-----	--	-----	-----	---

Other information

The code for the web page can be found in the branches of the different passes at CMDA_MONITORING / monitoringGraphs · GitLab (science.gc.ca)

https://gitlab.science.gc.ca/CMDA_MONITORING/monitoringGraphs

For all requests for changes, (e.g. adding a family, changing the website, etc.) please open a ticket at CMDA_MONITORING / monitoringGraphs · GitLab (science.gc.ca)

https://gitlab.science.gc.ca/CMDA_MONITORING/monitoringGraphs