New monitoring website

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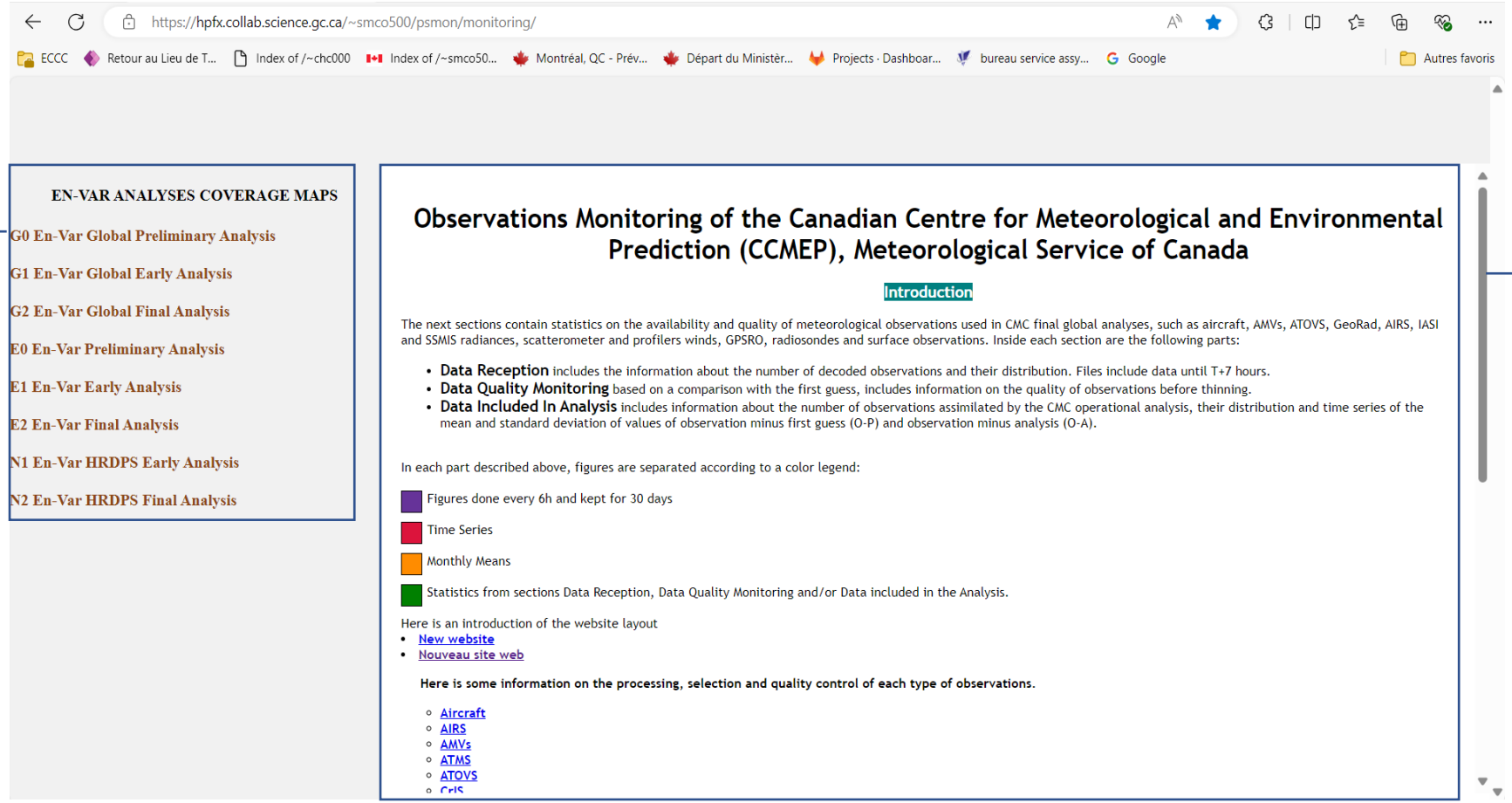
Overview

- 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

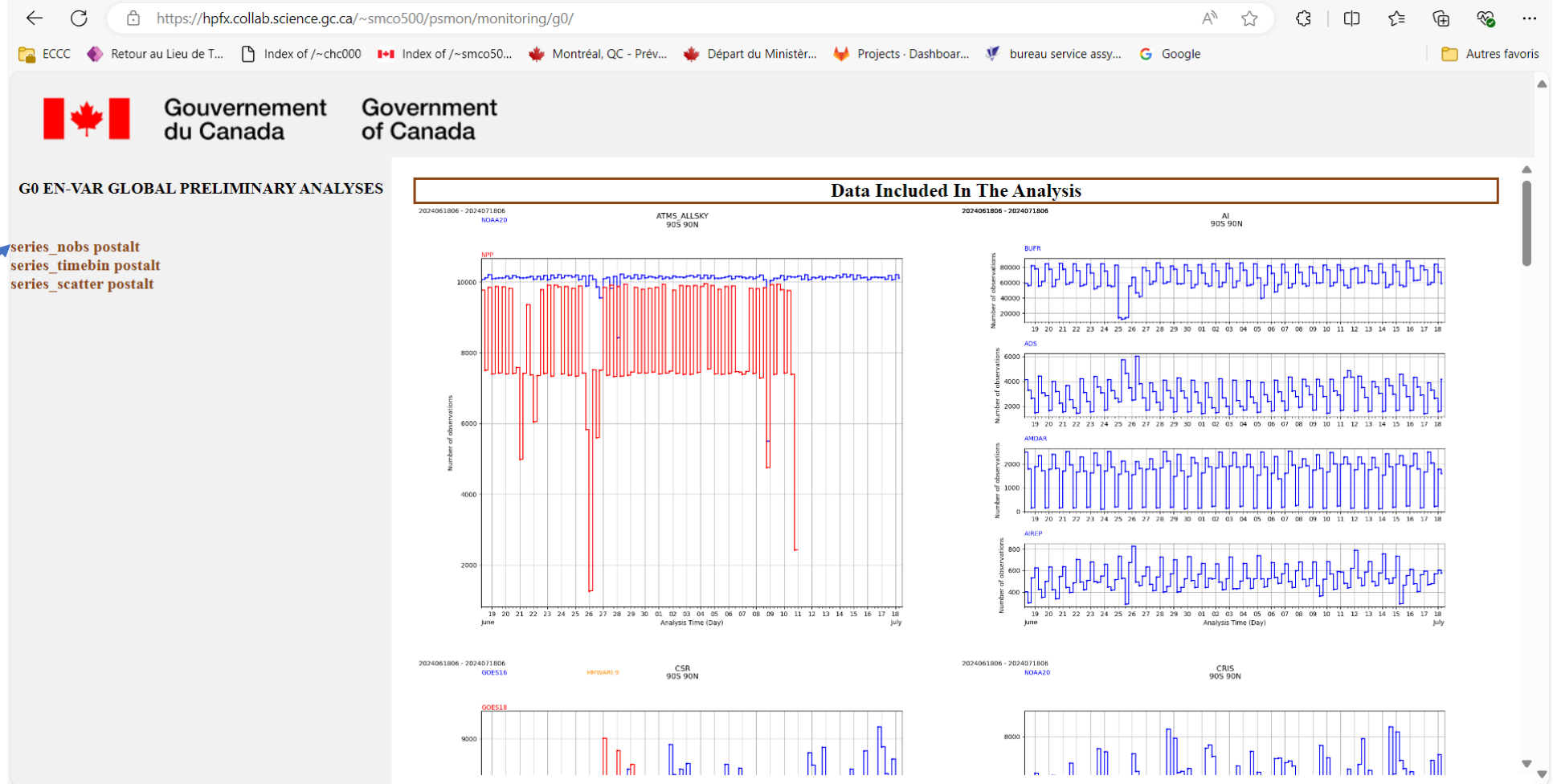


Side navigation bar

Main window

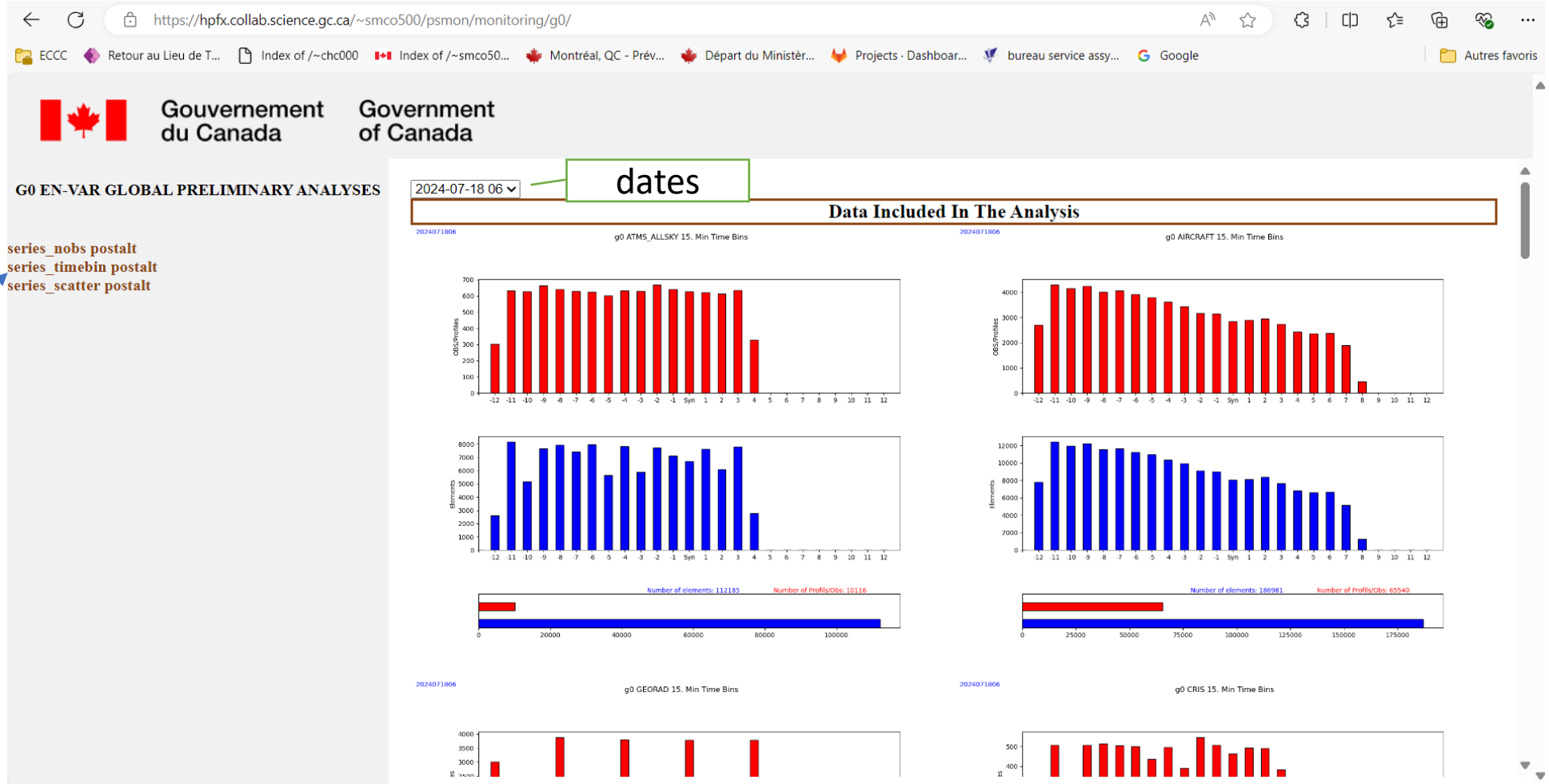
Example for G0 G1 E0 E1 N1 N2
Time series of the number of observations (series_nobs)

All observation families are on the same page.



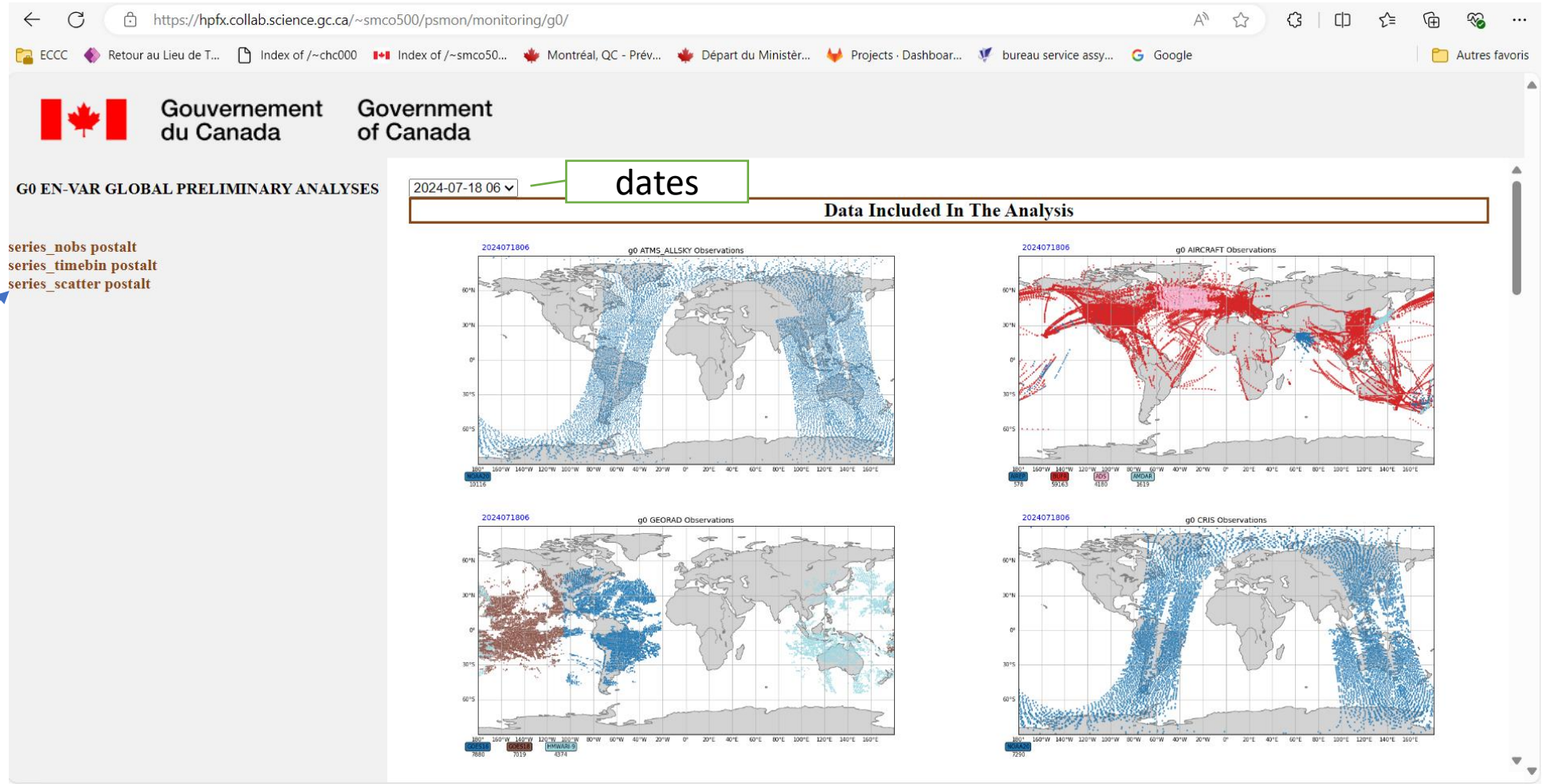
Example for G0 G1 E0 E1 N1 N2
Figures of the number of observations by time bins (series_timebin)

All observation families are on the same page.

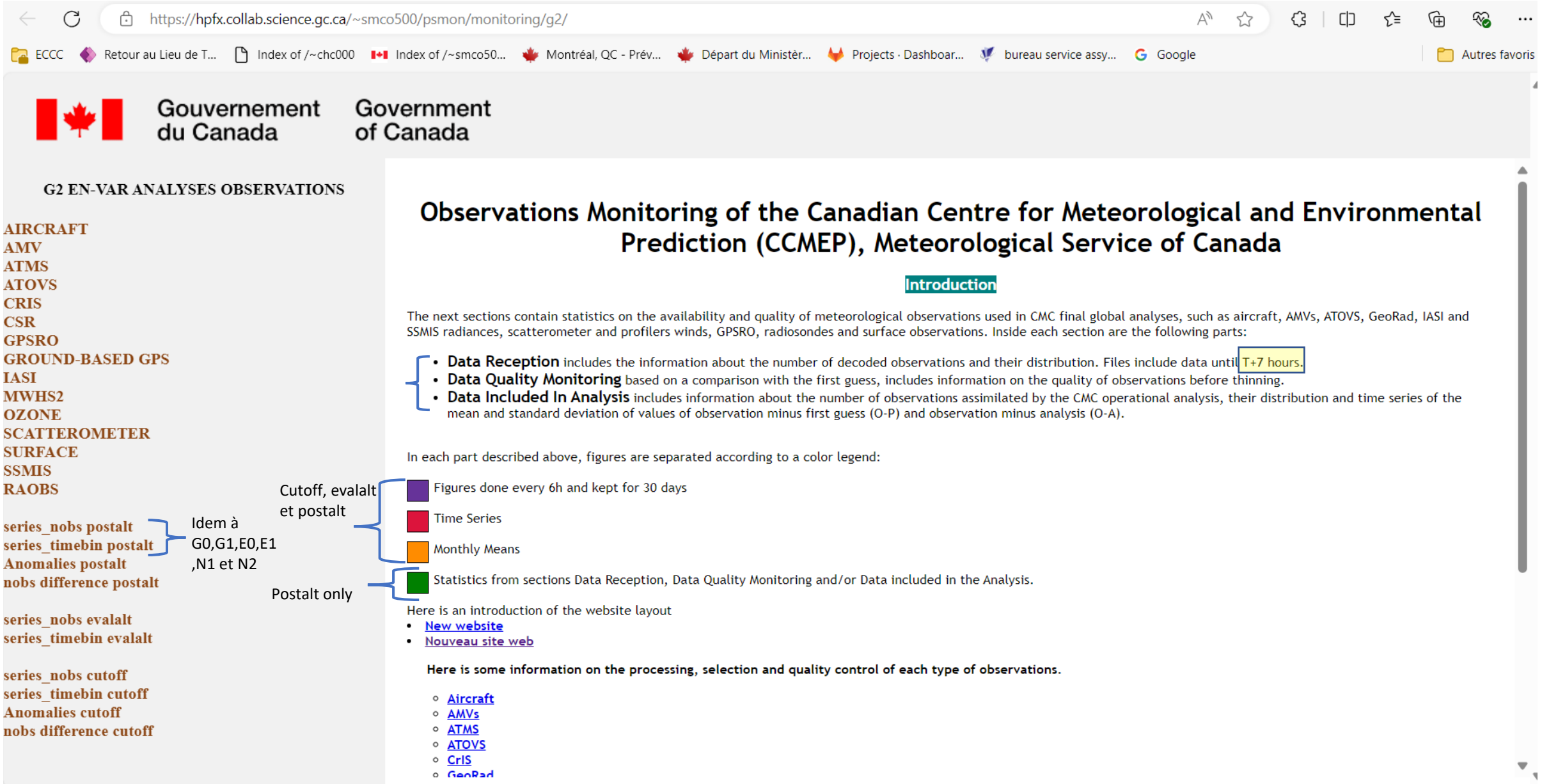


Example for G0 G1 E0 E1 N1 N2 Geographic Distribution Maps (series_scatter)

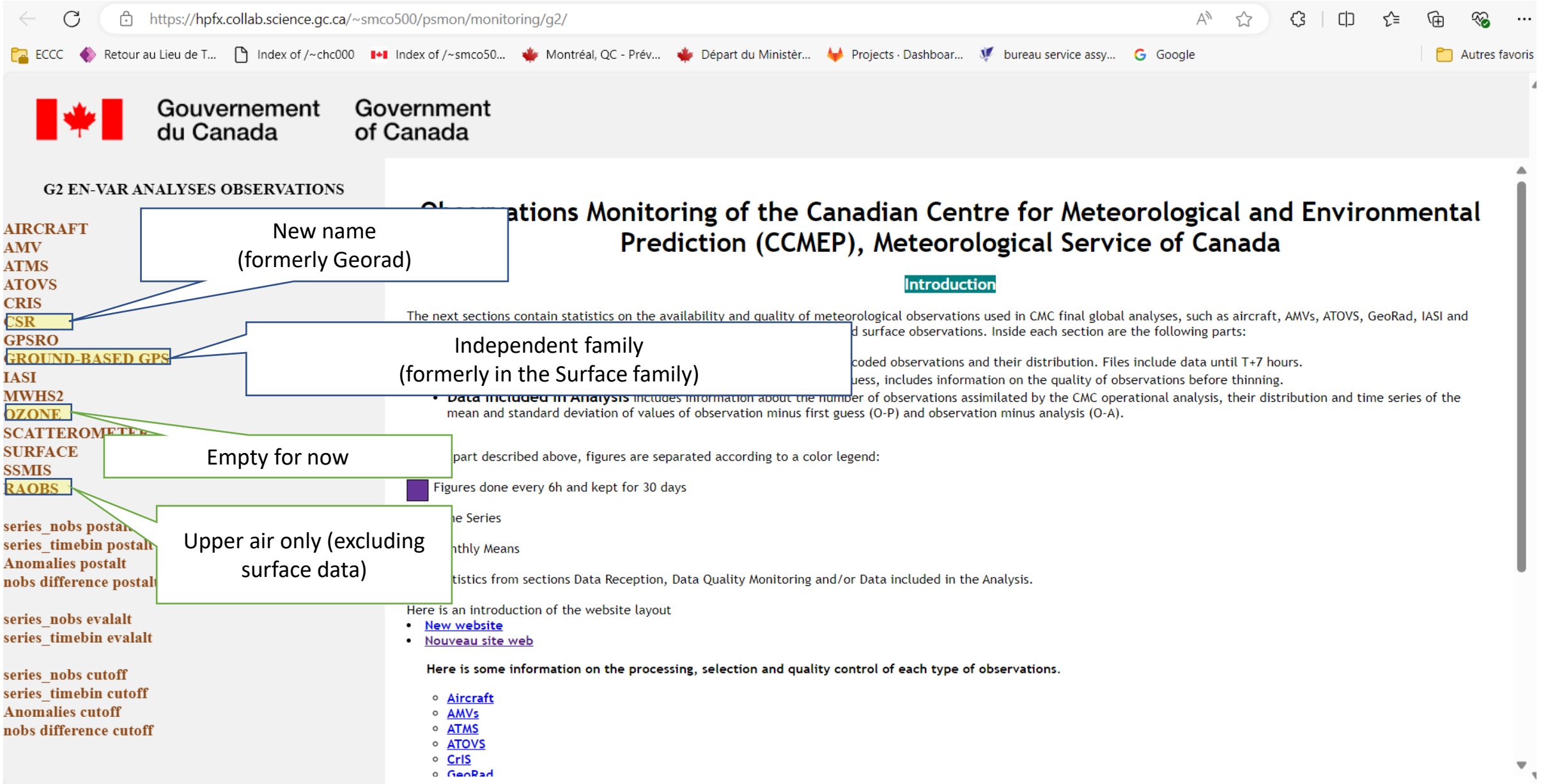
All observation families are on the same page.



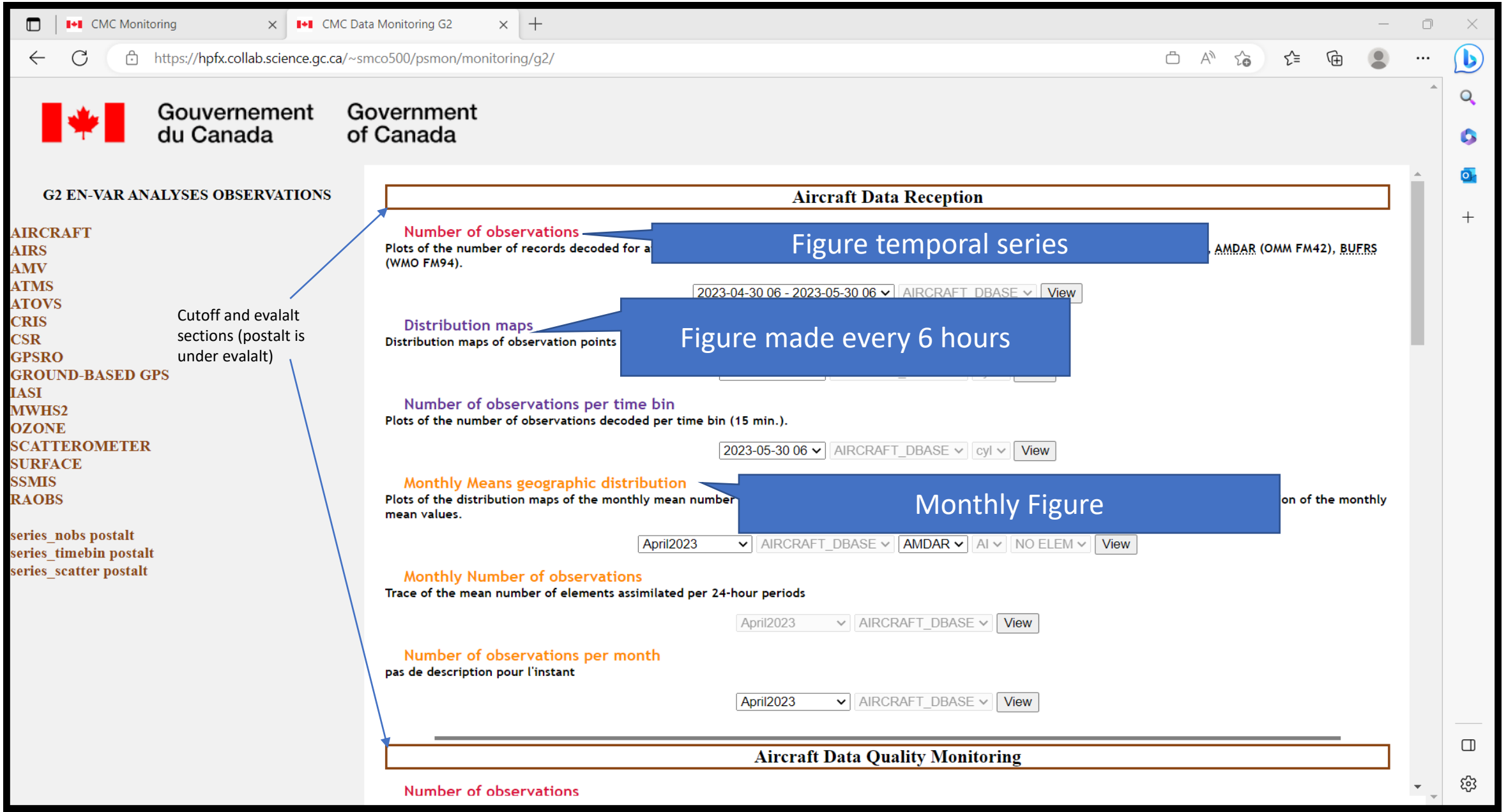
Example G2: Home Page



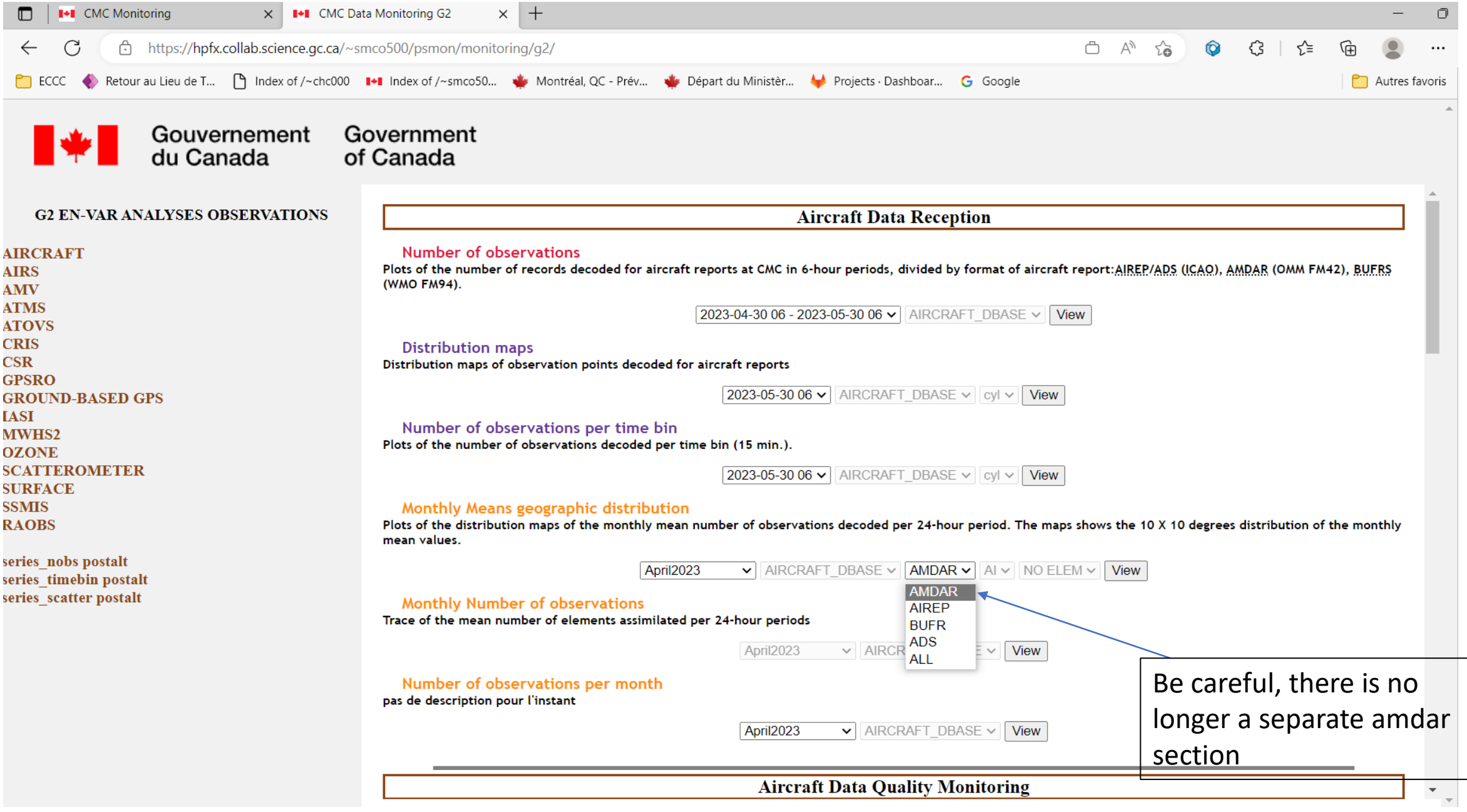
Example G2: Home Page (continued)



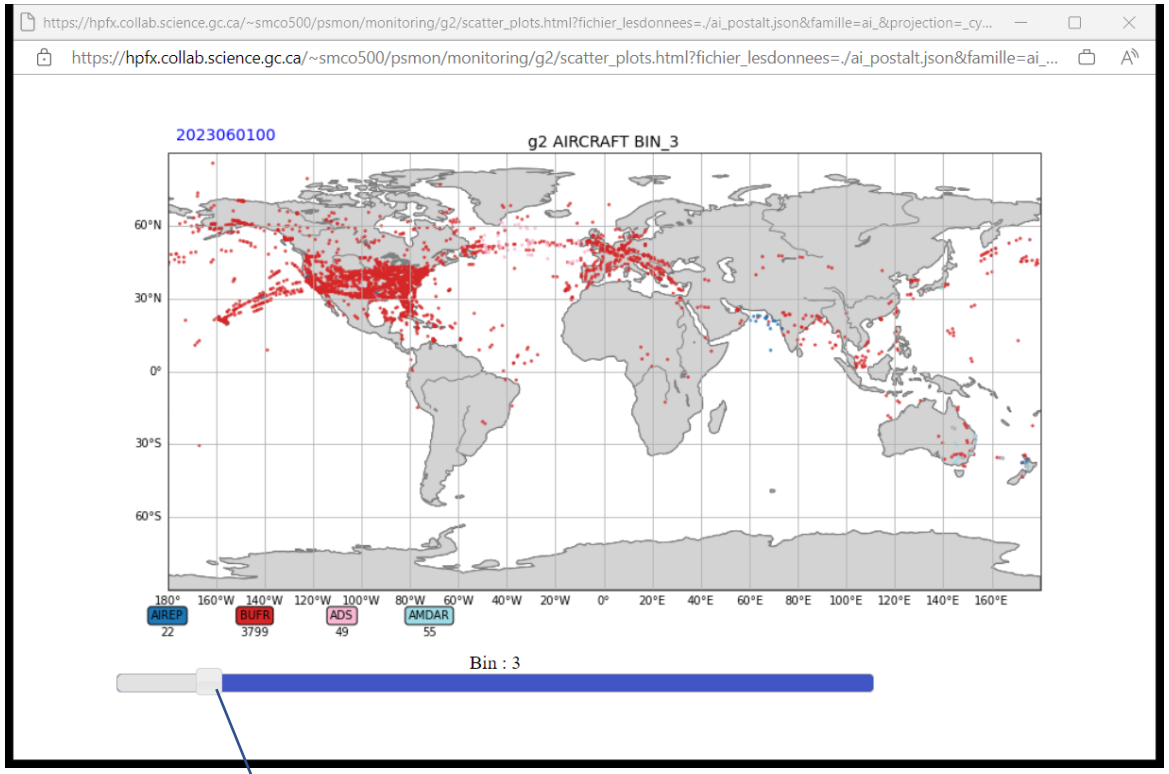
Overview of an observation family (aircraft)



Overview of an observation family (continued)

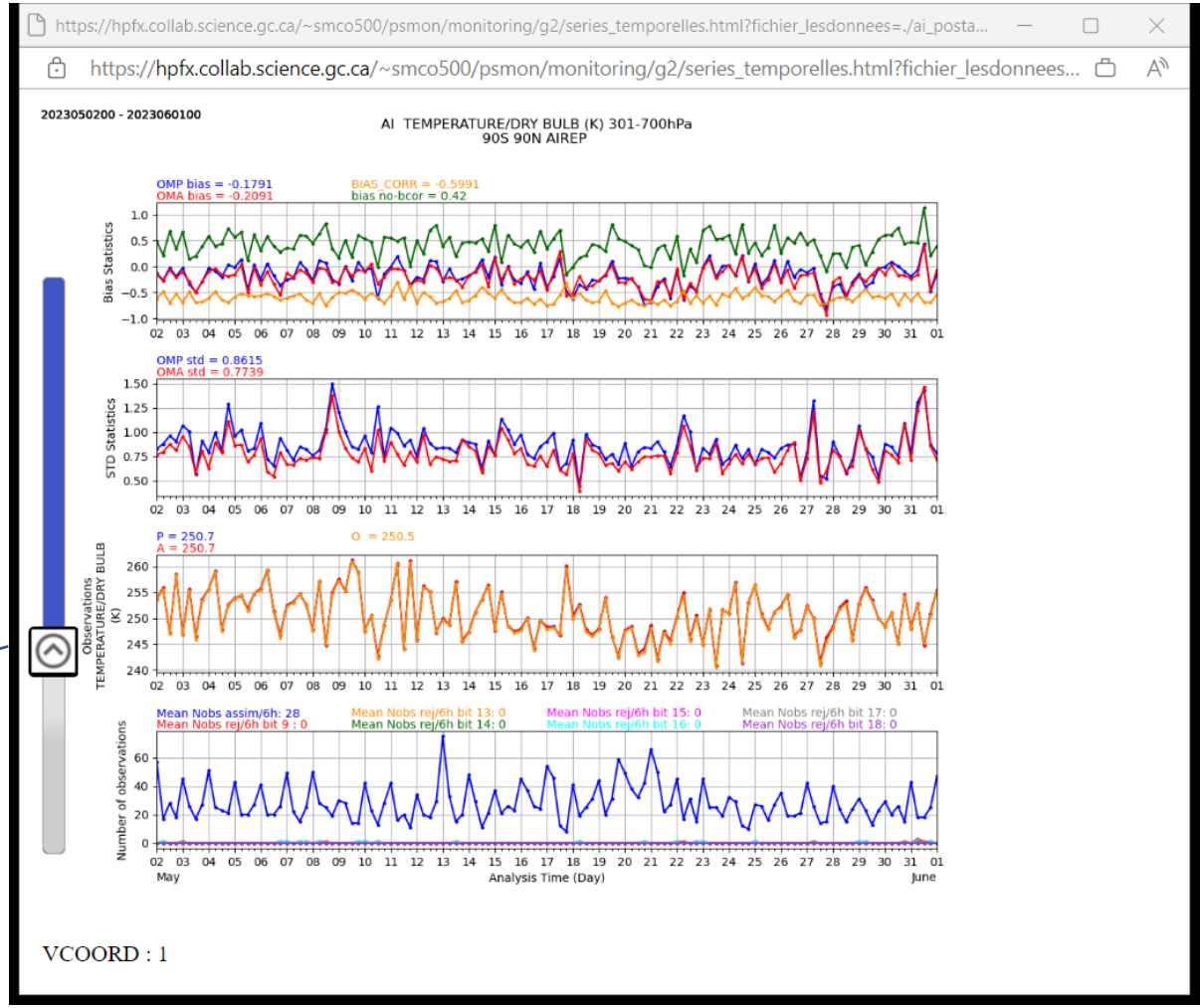


Overview of an observation family (continued)



Selection of the time bin by the horizontal cursor

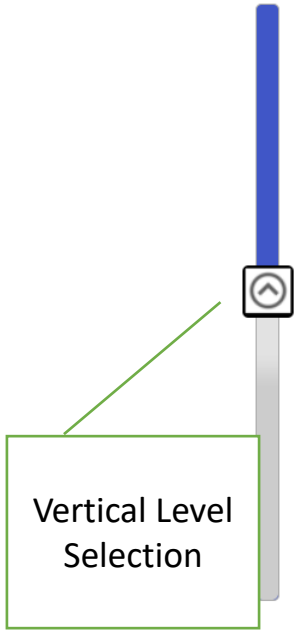
Vertical Level Selection by the Vertical Slider



Overview of an html table

https://hpfx.collab.science.gc.ca/~smco500/psmon/monitoring/g2/stations_suspectes.html?fichier_lesdonnees=./ai_postalt.json&famille=ai_&ladate=_April2023&cdt13=_157&varname=winds&vcoord_string=_0,_1,_2 - Travail – Microsoft Edge

https://hpfx.collab.science.gc.ca/~smco500/psmon/monitoring/g2/stations_suspectes.html?fichier_lesdonnees=./ai_postalt.json&famille=ai_&ladate=_April2023&cdt13=_157&varname=winds&vcoord_string=_0,_1,_2



Vertical Level Selection

Canadian Meteorological Centre

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

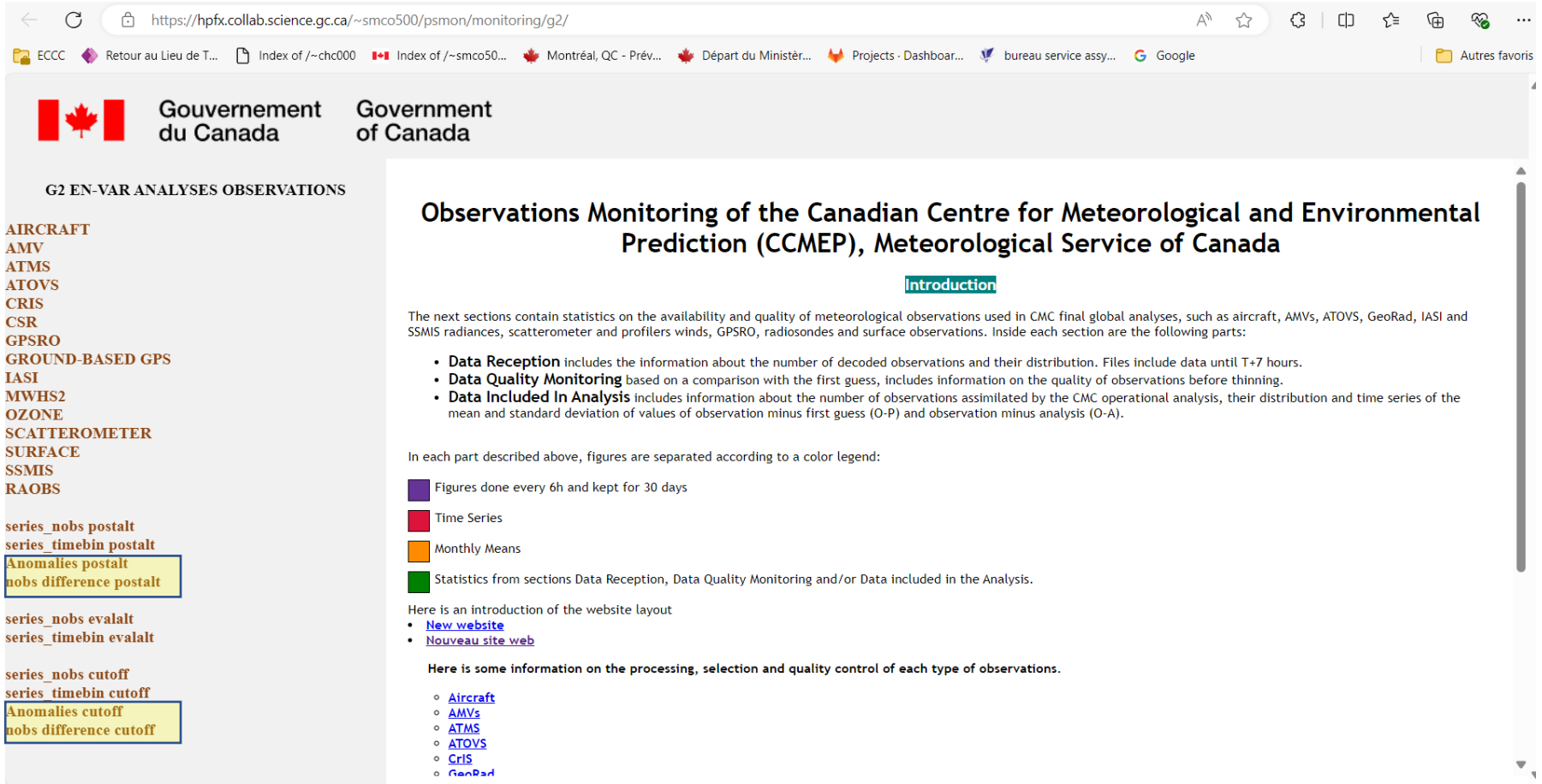
To be considered as suspect, the number of observations must meet minimal counts (50) and the data statistics versus the guess must exceed at least one criterion: abs(bias) >= 2.5 or rms >= 8. or 100.* (NG*1.0)/NA >= 2.

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

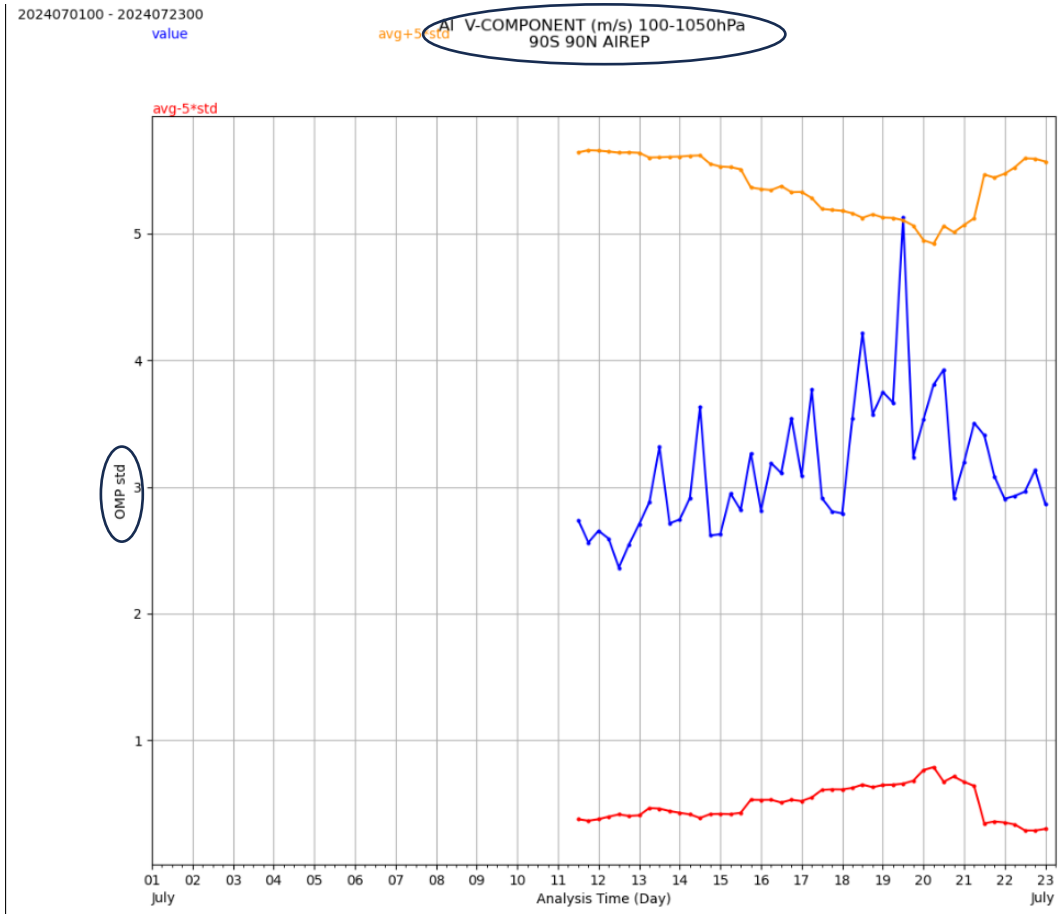
STN	ELEM	LEVEL	NA	NT	NG	% GROSS	NR	% NR	NC	RMS	BIAS
CNQMRL	WIND	301-700hPa	686	493	22	3.2	17	2.5	0	4.09	-0.87
D0UYBZRA	WIND	301-700hPa	56	0	0	0.0	0	0.0	0	8.29	4.25

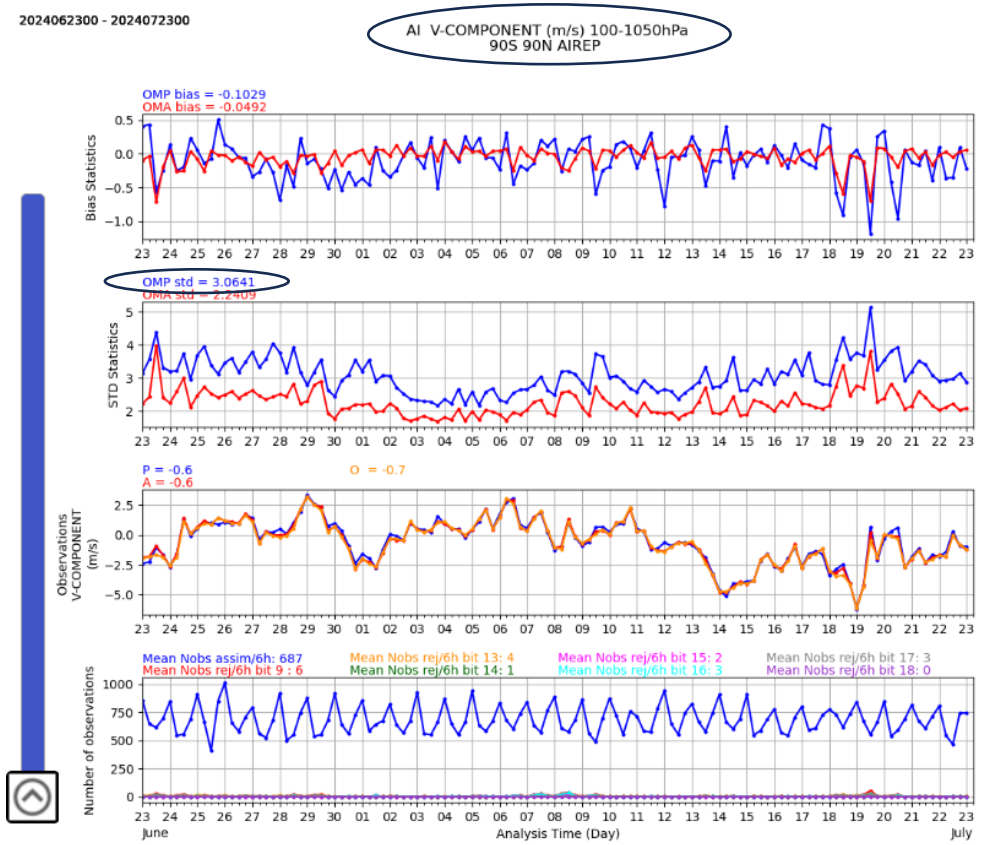
Anomaly Section (G2 only)



Figures Anomalies postalt, cutoff

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

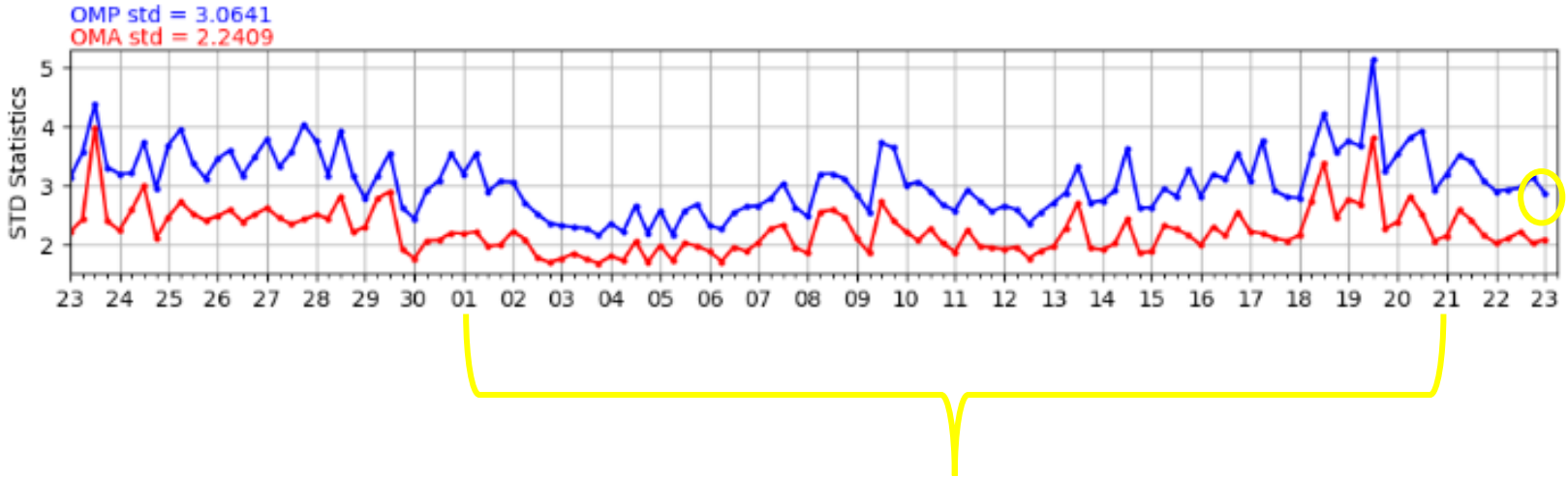




VCOORD : 100-1050hPa

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 +/- (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