



ECMWF Global Data Monitoring Report

March 2023

*This paper has not been published
and has only a very limited circulation.*

*Permission to quote from it should be
obtained from the ECMWF.*

**European Centre for Medium-Range Weather Forecasts
Europäisches Zentrum für mittelfristige Wettervorhersage
Centre européen pour les prévisions météorologiques à moyen terme**

Contents

1	Introduction	4
2	Data summary - History of events	5
2.1	Radiosondes	5
2.2	Drifting Buoys	7
3	Global monitoring statistics	7
3.1	Data Availability	7
3.2	Data Quality	7
3.2.1	Figure 1 - Availability - SYNOP PRESSURE	9
3.2.2	Figure 2 - Availability - DRIFTER PRESSURE	10
3.2.3	Figure 3 - Availability - TEMP 500 hPa geopotential	11
3.2.4	Figure 4 - Availability - TEMP/PILOT 300 hPa wind	12
3.2.5	Figure 5 - Availability - AIRCRAFT winds 300-150 hPa	13
3.2.6	Figure 6 - Availability - SATOB winds 400-150 hPa	14
3.2.7	Figure 7 - Availability - SATOB winds 1000-700 hPa	15
3.2.8	Figure 8 - Availability - NOAA15 ATOVS : AMSU-A	16
3.2.9	Figure 9.1 - Availability - NOAA18 ATOVS : AMSU-A	17
3.2.10	Figure 9.2 - Availability - AQUA ATOVS : AMSU-A	18
3.2.11	Figure 9.3 - Availability - METOP ATOVS : AMSU-A	19
3.2.12	Table 1 - Suspect ships and fixed marine platforms: Surface pressure - (hPa)	20
3.2.13	Table 2 - Suspect ships and fixed marine platforms: Wind speed (m/s)	22
3.2.14	Table 3 - Suspect ships and fixed marine platforms: Wind direction (DEGREES)	23
3.2.15	Table 4 - Suspect drifters: Surface pressure (HPA)	24
3.2.16	Table 5 - Suspect drifters: Wind speed (m/s)	25
3.2.17	Table 6 - Suspect drifters: Wind direction (degrees)	26
3.2.18	Table 7 - Suspect radiosondes: Geopotential height (metres)	28
3.2.19	Table 8 - Suspect radiosondes: Wind (m/s)	30
3.2.20	Table 9 - Suspect radiosondes: Wind direction (degrees)	31
3.2.21	Figure 10 - Suspect TEMP observations - geopotential : 00 UTC	32
3.2.22	Figure 11 - Suspect TEMP observations - geopotential : 12 UTC	33
3.2.23	Figure 12 - Suspect TEMP/PILOT observations - wind : 00 UTC	34
3.2.24	Figure 13 - Suspect TEMP/PILOT observations - wind : 12 UTC	35
3.2.25	Table 10 - Radiosonde monitoring statistics (SHIPs): Geopotential height (metres)	36
3.2.26	Table 11 - Radiosonde monitoring statistics (SHIPs): Wind (m/s)	37
3.2.27	Figure 14 - SATOB Winds: 700-1000hPa	38
3.2.28	Figure 15 - SATOB Winds: 150- 400hPa	39
3.2.29	Figure 16 - SATOB Winds: 700-1000hPa	40
3.2.30	Figure 17 - SATOB Winds: 150- 400hPa	41
3.2.31	Figure 18 - AIRCRAFT Winds: 150- 300hPa	42
3.2.32	Table 12 - Airep Monitoring Statistics For Airline Carriers (Global)	43
4	EUCOS Area Monitoring Statistics	51
4.1	Table 13 - Radiosonde Monitoring Statistics (EUCOS): 50 hPa Geopotential height (metres)	52
4.2	Table 14 - Radiosonde Monitoring Statistics (EUCOS):50 hPa Wind (m/s)	55
4.3	Table 15 - Radiosonde Monitoring Statistics (EUCOS): 100 hPa Geopotential height (metres)	58
4.4	Table 16 - Radiosonde Monitoring Statistics (EUCOS): 100 hPa Wind (m/s)	61
4.5	Table 17 - Radiosonde Monitoring Statistics (EUCOS): 500 hPa Geopotential height (metres)	64
4.6	Table 18 - Radiosonde Monitoring Statistics (EUCOS): 500 hPa Wind (m/s)	67
4.7	Table 19 - Radiosonde Monitoring Statistics (EUCOS): 850 hPa Geopotential height (metres)	70
4.8	Table 20 - Radiosonde Monitoring Statistics (EUCOS): 850 hPa Wind (m/s)	73
4.9	Table 21 - Drifter Monitoring Statistics (EUCOS): Surface pressure (hpa)	76
4.10	Table 22 - Drifter Monitoring Statistics (EUCOS): Wind speed (m/s)	86
4.11	Table 23 - Drifter Monitoring Statistics (EUCOS): Wind direction	90
4.12	Table 24 - List of Assimilated BUFR Encoded Radiosonde Stations	95
4.13	Table 25 - List of BUFR Encoded Radiosonde Stations with no TAC Counterpart	96

5 Annex - Explanations of figures and tables	97
5.1 General	97
5.2 Data Availability	97
5.3 Data Quality	97

Summary of Revisions (in reverse order)

- Revision 29 (Dec 22) - Coverage charts for ATOVS AMSU-A updated:
METOP-C replaces Aqua-ATOVS (Figure 9.2)
METOP-B replaces METOP-ATOVS (Figure 9.3)
SATOBS figures updated with METEOSAT-9, Dual-Metop,
METEOSAT-11, GOES-16, HIMAWARI-9, GOES-17 satellites
- Revision 28 (Jun 15) - Monitoring of SYNOP and SYNOP-SHIPs now includes BUFR encoded observations for those which were assimilated as well as for those without TAC counterpart.
- Revision 27 (Feb 15) - Selection criteria for SHIPs are modified as per SOT-7/Doc.9.1.1.
Different criteria applied to Manual and Automatic SHIPs.
- Revision 26 (Dec 14) - Coverage chart for ATOVS AMSU-A for NOAA_16 removed
- Revision 25 (Mar 13) - Monitoring of Radiosondes and ASAPS now includes BUFR encoded observations for those which were assimilated as well as for those without TAC counterpart.
Tables 24 and 25 are also added to show the identifiers of these BUFR observations separately.
- Revision 24 (Aug 06) - North Atlantic Monitoring statistics replaced by EUCOS Area Monitoring Statistics (tables 13 to 23).
Airep tables removed from this section.
- Revision 23 (Dec 00) - Coverage charts for NOAA_14 MSU replaced by ATOVS AMSU-A for NOAA_16.
- Revision 22 (Aug 99) - Coverage charts for TOVS thickness 300-100 hPa replaced by (A) TOVS AMSU-A and MSU (NOAA_15 and NOAA_14).
- Revision 21 (May 99) - Monitoring statistics ceased for NOAA_11 as satellite is no more available.
- Revision 20 (Sep 98) - Changes to tables and annex to remove all mention about data usage. Two more levels (50 and 850 hPa) added to the COSNA statistics for Sondes.
- Revision 19 (Jul 98) - From June 29th, 1998 ECMWF model assimilates temperature data instead of geopotential from radiosondes. As a consequence the number of used geopotential data drops to zero in tables 7, 10, 13 and 15.
- Revision 18 (Apr 98) - Changes to tables and annex to introduce the usage of accepted numbers and observations instead of percentage of rejection.

1 Introduction

The ECMWF global data monitoring report is a monthly publication intended to give an overview of the availability and quality of observations from the Global Observing System within the World Weather Watch of the World Meteorological Organisation. It should be recognised that the statistics given in this report refer to data as received at ECMWF in time for the appropriate analysis. The annex of the report gives further explanations of the methods applied to compile the statistics and on the reference used to establish the quality of observations.

The information presented on data quality is based on differences between observations and the values of the most recent ECMWF forecast ("first guess") of the same parameter. Depending on the time of the observation, the forecast range is between 9 and 15 hours. It should be recognised that although the quality of the first-guess is of a generally high standard this is only true to a limited extent in certain areas, such as the tropics and data-sparse areas of both northern and southern hemispheres. The data quality results should therefore be used with care when assessing the absolute quality of a particular observing platform. Other indicators such as long-term trends of station performance, particularly in comparison with nearby stations, can be more useful in this respect.

The global monitoring results presented in this report are meant to serve a wider meteorological community as well as to support special WMO programmes such as TOGA and EUCOS. The contents of the report may therefore be adapted for special requirements as necessary.

As recommended at the ninth session of the Commission for Basic Systems at Geneva 1988, lead centres have been appointed for each main type of observation which should liaise with the participating centres and co-ordinate all the results, inform the WMO Secretariat immediately of obvious problems, and produce every six months a consolidated list of observations of that particular type believed to be of low quality. The presently nominated centres are: RSMC Exeter for marine surface observations; RSMC ECMWF for radiosonde and pilot observations; WMC Washington for aircraft and satellite observations.

ECMWF produces this monthly report as part of its routine monitoring activity in order to facilitate the exchange of monitoring information. Tables are presented according to the CBS recommended standards for the exchange of monitoring results. Copies of the report will be provided to major GDPS centres participating in data monitoring activities as initiated and recommended at the ninth session of the Commission for Basic Systems in Geneva 1988, and to the WMO Secretariat and the International TOGA office in Geneva.

Any comments on the contents and the format of the report are welcome and should be addressed to:

ECMWF
Attn. Head of Evaluation Section
Shinfield Park
Reading, Berkshire, RG2 9AX
United Kingdom

2 Data summary - History of events

2.1 Radiosondes

The following is a list of land-based stations showing a change in reporting frequency (of 500 hPa geopotential) of at least 10 observations compared with the average over the previous 3 months. The number of reports received at ECMWF for the current and previous month is shown in addition to the observation time.

Ident	Time	Feb	Mar	Ident	Time	Feb	Mar
26850	(00)	13	1	24908	(00)	4	31
32098	(00)	22	0	24908	(12)	4	31
32098	(12)	23	0	41256	(00)	11	29
40582	(12)	19	0	41316	(00)	13	31
43285	(00)	28	8	42079	(00)	11	32
47600	(00)	30	0	42339	(00)	4	16
47600	(12)	27	0	42348	(00)	1	26
48453	(00)	20	0	42361	(00)	16	31
72201	(00)	27	9	42667	(00)	0	16
72201	(12)	27	8	42874	(00)	0	11
78988	(00)	14	0	43041	(00)	0	11
78988	(12)	12	0	43049	(00)	0	23
82026	(00)	27	2	43185	(00)	0	11
82193	(12)	28	17	43279	(12)	0	31
82244	(00)	27	1	43295	(00)	0	12
82244	(12)	28	9	43346	(00)	0	22
82411	(00)	22	0	51431	(00)	12	31
82411	(12)	24	4	52203	(00)	16	31
82705	(12)	21	10	60253	(00)	0	12
82824	(00)	28	10	60760	(00)	26	38
83208	(00)	27	0	61442	(00)	5	24
83208	(12)	27	9	61442	(12)	4	25
89009	(12)	26	4	62414	(00)	7	22
89664	(12)	24	0	66285	(12)	0	15
91334	(00)	26	15	66390	(12)	0	15
91334	(12)	26	7	70414	(12)	0	23
91348	(12)	23	9	74005	(00)	16	36
91413	(12)	27	9	74005	(12)	3	14
91643	(00)	19	0	76405	(00)	1	28
91765	(00)	27	7	85586	(00)	6	30
91765	(12)	26	8	94578	(12)	0	30
-	-	-	-	97900	(12)	19	30
-	-	-	-	98433	(00)	19	31

2.2 Drifting Buoys

Surface pressure observations from **1397** drifting buoys were received during the month.

3 Global monitoring statistics

The following figures and tables provide information on both the availability and quality of various data types as received at ECMWF during the month. A brief description of each figure/table is given below. For a full explanation please refer to the Annex.

3.1 Data Availability

Figures 1-9 are global charts for each data type showing the average number of observations received in 24 hours in 5 degree boxes. The average daily number of observations (global) is also displayed with a breakdown, where appropriate, for each WMO region (figures 1, 3 and 4) and Ocean (figures 1-4).

Fig	Observation Type	Parameter	Level/Layer
1	SYNOP/SHIP	MSL Pressure	Surface
2	DRIFTER	MSL Pressure	Surface
3	TEMP	Geopotential	500 hPa
4	TEMP/PILOT	Wind	300 hPa
5	AIRCRAFT (AIREP/AMDAR etc.)	Wind	300-150 hPa
6	SATOB	Wind	400-150 hPa
7	SATOB	Wind	1000-700 hPa
9	TOVS (120 km) - NOAA14	Thickness	300-100 hPa

(Figure 1 includes data from fixed marine platforms e.g. moored buoys.)

3.2 Data Quality

Tables 1-8 contain lists of suspect stations in the format according to Recommendation 3 CBS-Ext(85).

Tab	Observation Type	Parameter	Level/Layer
1	SHIP	MSL Pressure	Surface
2	SHIP	Wind Speed	Surface
3	SHIP	Wind Direction	Surface
4	DRIFTER	MSL Pressure	Surface
5	DRIFTER	Wind Speed	Surface
6	DRIFTER	Wind Direction	Surface
7	TEMP	Geopotential	1000- 30 hPa
8	TEMP/PILOT	Wind	1000-100 hPa
9	TEMP/PILOT	Wind Direction	500-150 hPa

(SHIP tables include data from fixed marine platforms e.g. moored buoys.)

Figures 10-13 show the locations of suspect stations given in tables 7 and 8.

Fig	Observation Type	Parameter	Observation Time
10	TEMP	Geopotential	00 UTC
11	TEMP	Geopotential	12 UTC
12	TEMP/PILOT	Wind	00 UTC
13	TEMP/PILOT	Wind	12 UTC

Tables 10 and 11 provide quality statistics for all TEMPSHIPS and PILOTSHIPS received during the month.

Tab	Parameter	Observation Time
10	Geopotential	00 and 12 UTC
11	Wind	00 and 12 UTC

Figures 14-18 show global charts of SATOB and aircraft wind statistics in the form of wind vectors averaged over 5 degree boxes.

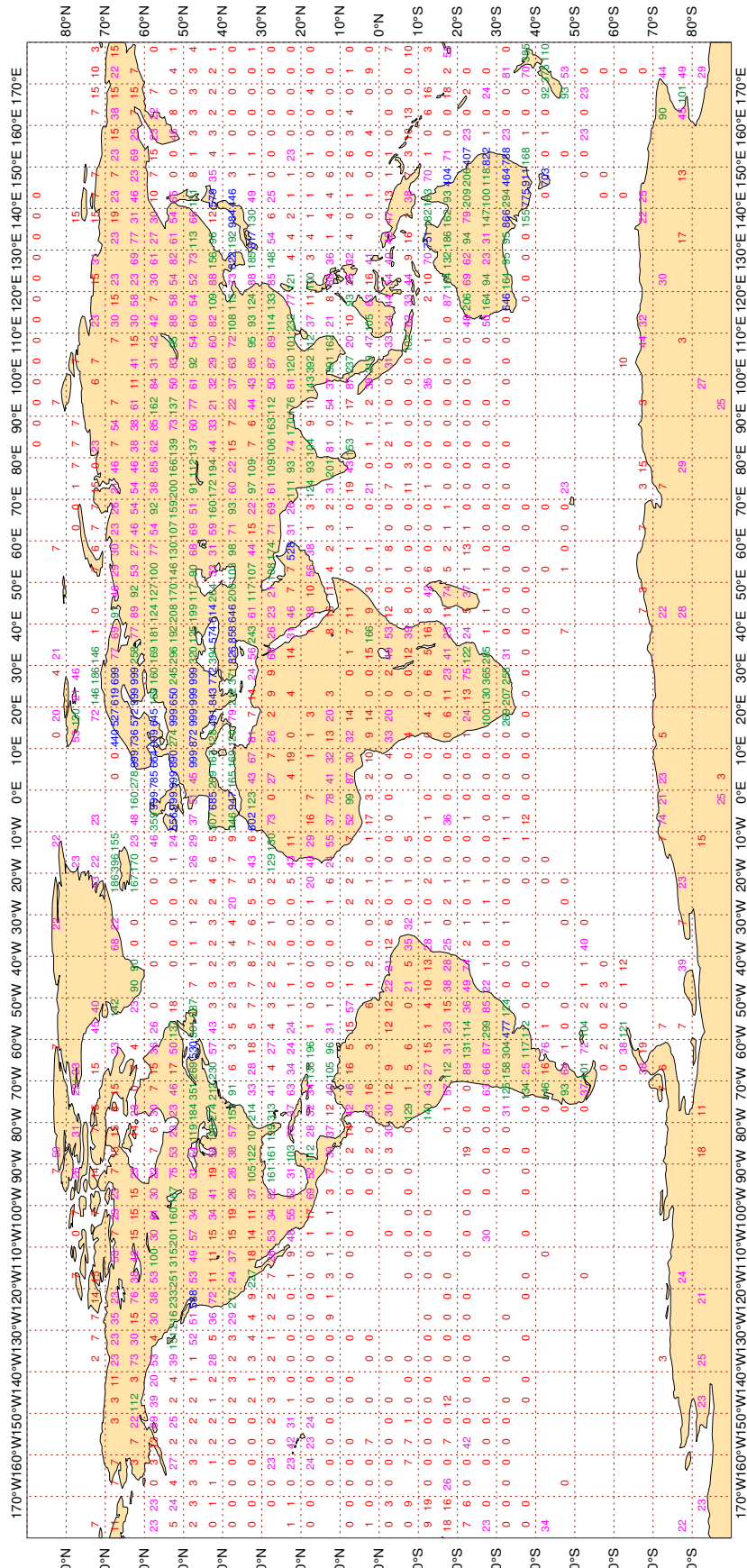
Fig	Parameter	Level/Layer
14	SATOB - Mean observed wind	1000-700 hPa
15	SATOB - Mean observed wind	400-150 hPa
16	SATOB - Mean observed minus first-guess wind	1000-700 hPa
17	SATOB - Mean observed minus first-guess wind	400-150 hPa
18	AIRCRAFT WIND - Mean observed minus first-guess	300-150 hPa

Table 12 provides quality statistics of aircraft wind observations stratified by airline carrier.

3.2.1 Figure 1 - Availability - SYNOP PRESSURE

ECMWF Monitoring Statistics - MAR 2023
Availability - SYNOP/SHIP (manual, auto) pressure
Average number of observations in 24 hours - 106647
LAND - WMO Region I: 5689 II:20334 III: 4773 IV: 7449
Region V:14838 VI:41402 Antarctic: 1350
Oceans - N. Atlantic 5746 S. Atlantic 207 Indian 662 Pacific 4197

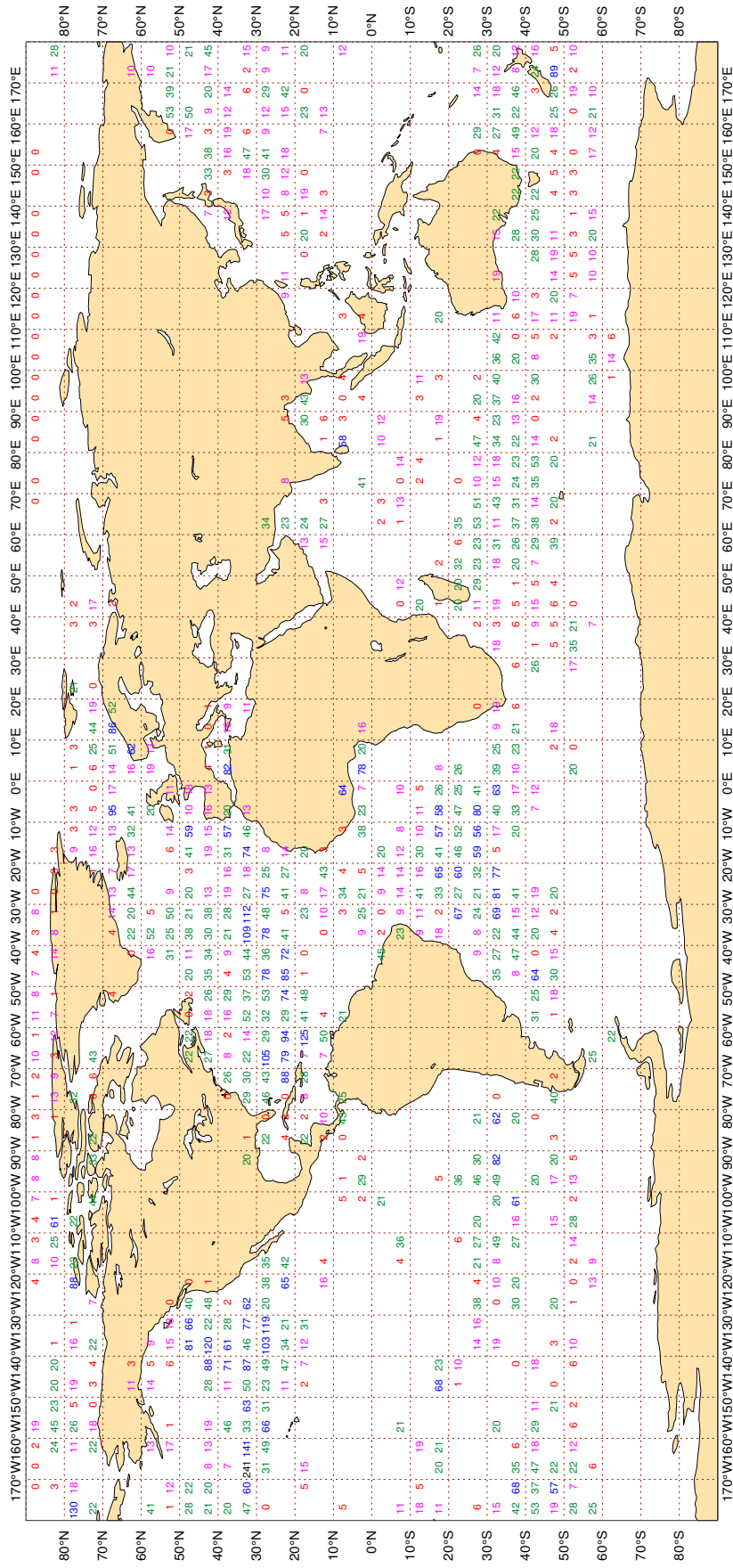
Figure 1



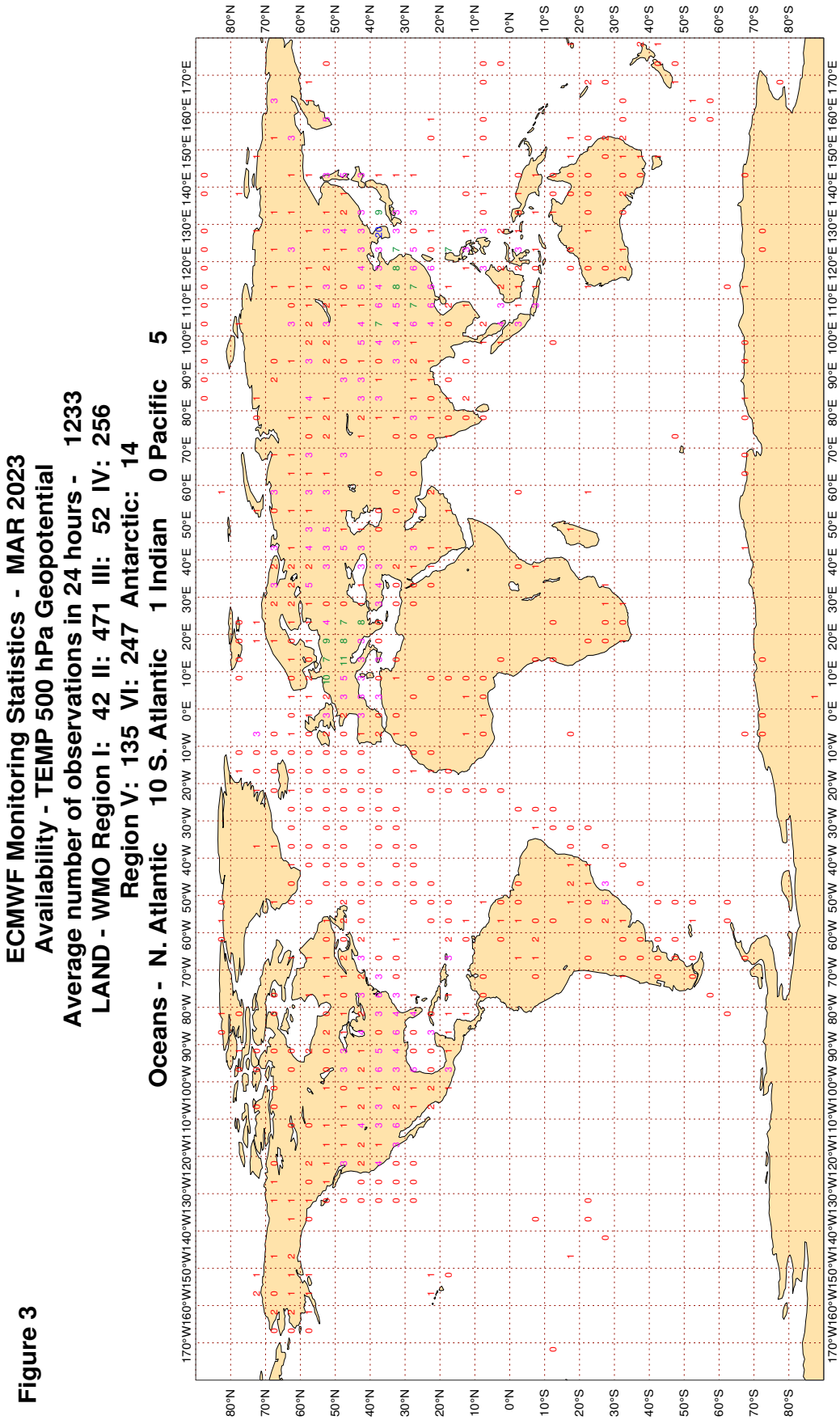
3.2.2 Figure 2 - Availability - DRIFTER PRESSURE

Figure 2

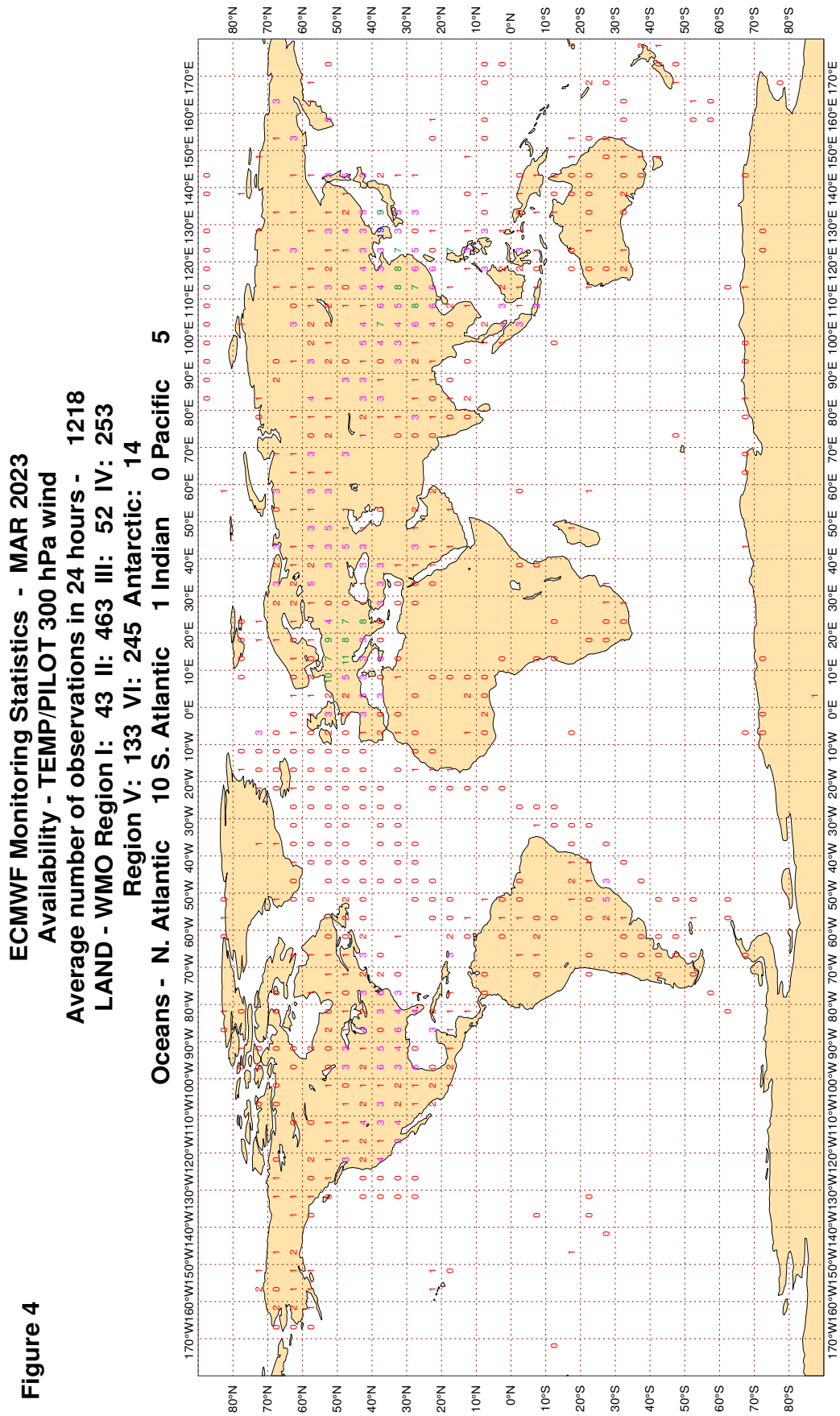
ECMWF Monitoring Statistics - MAR 2023
Availability - DRIFTER PRESSURE
Average number of observations in 24 hours - 18191
Oceans - N. Atlantic 5242 S. Atlantic 2526 Indian 2701 Pacific 7723



3.2.3 Figure 3 - Availability - TEMP 500 hPa geopotential



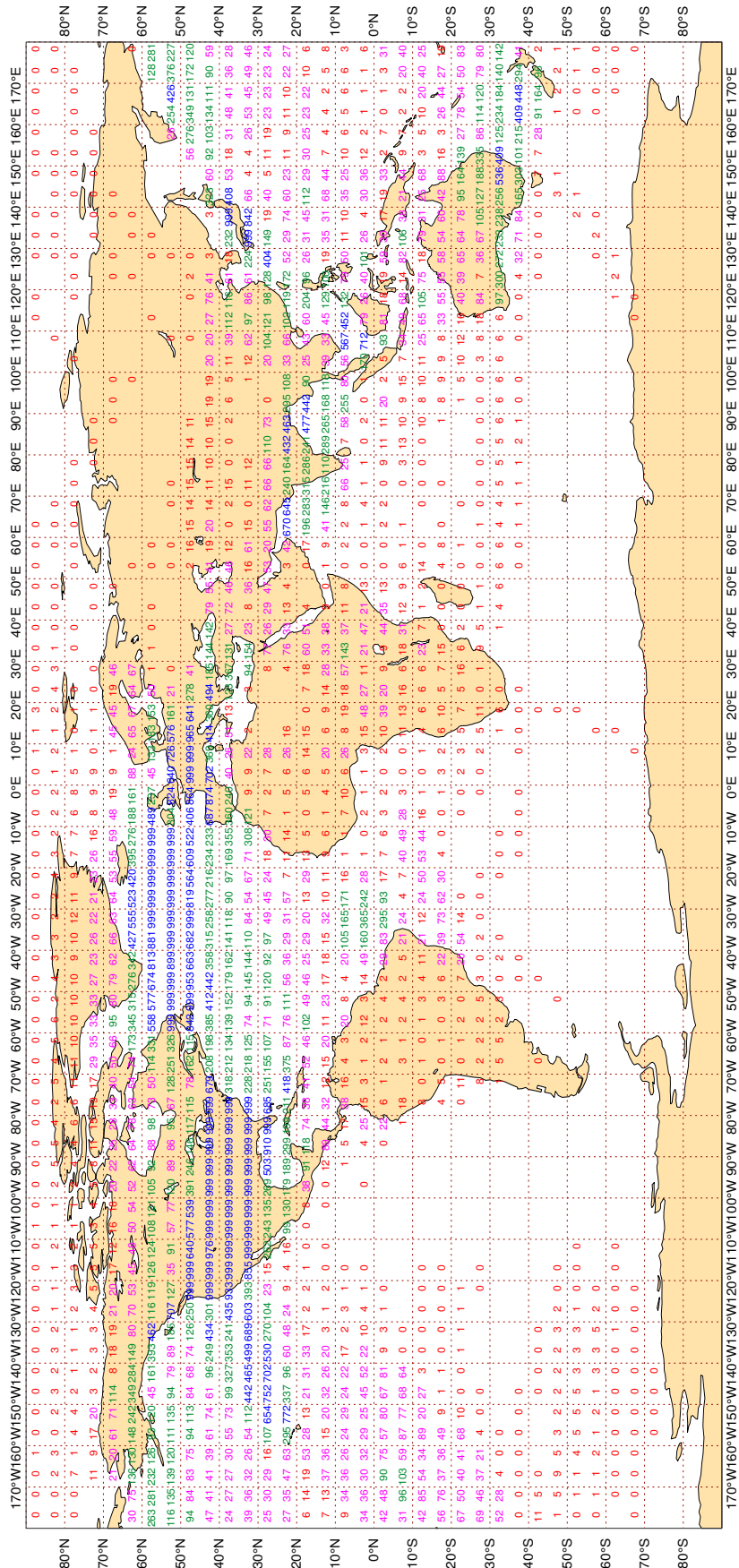
3.2.4 Figure 4 - Availability - TEMP/PILOT 300 hPa wind



3.2.5 Figure 5 - Availability - AIRCRAFT winds 300-150 hPa

Figure 5

ECMWF Monitoring Statistics - MAR 2023
Availability - Aircraft winds 300-150 hPa
Average number of observations in 24 hours - 209386

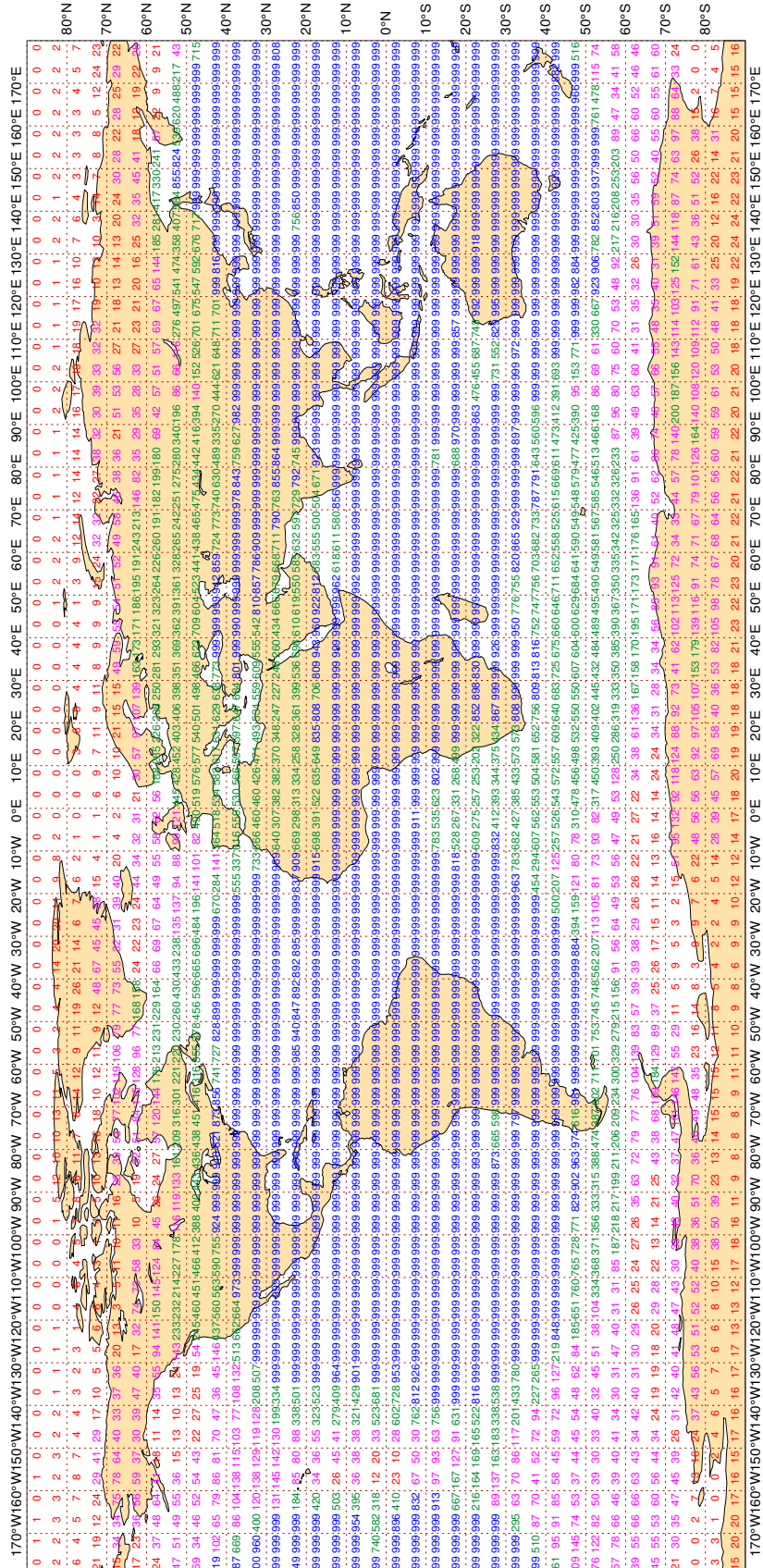


Magics 4.9.4

3.2.6 Figure 6 - Availability - SATOB winds 400-150 hPa

Figure 6

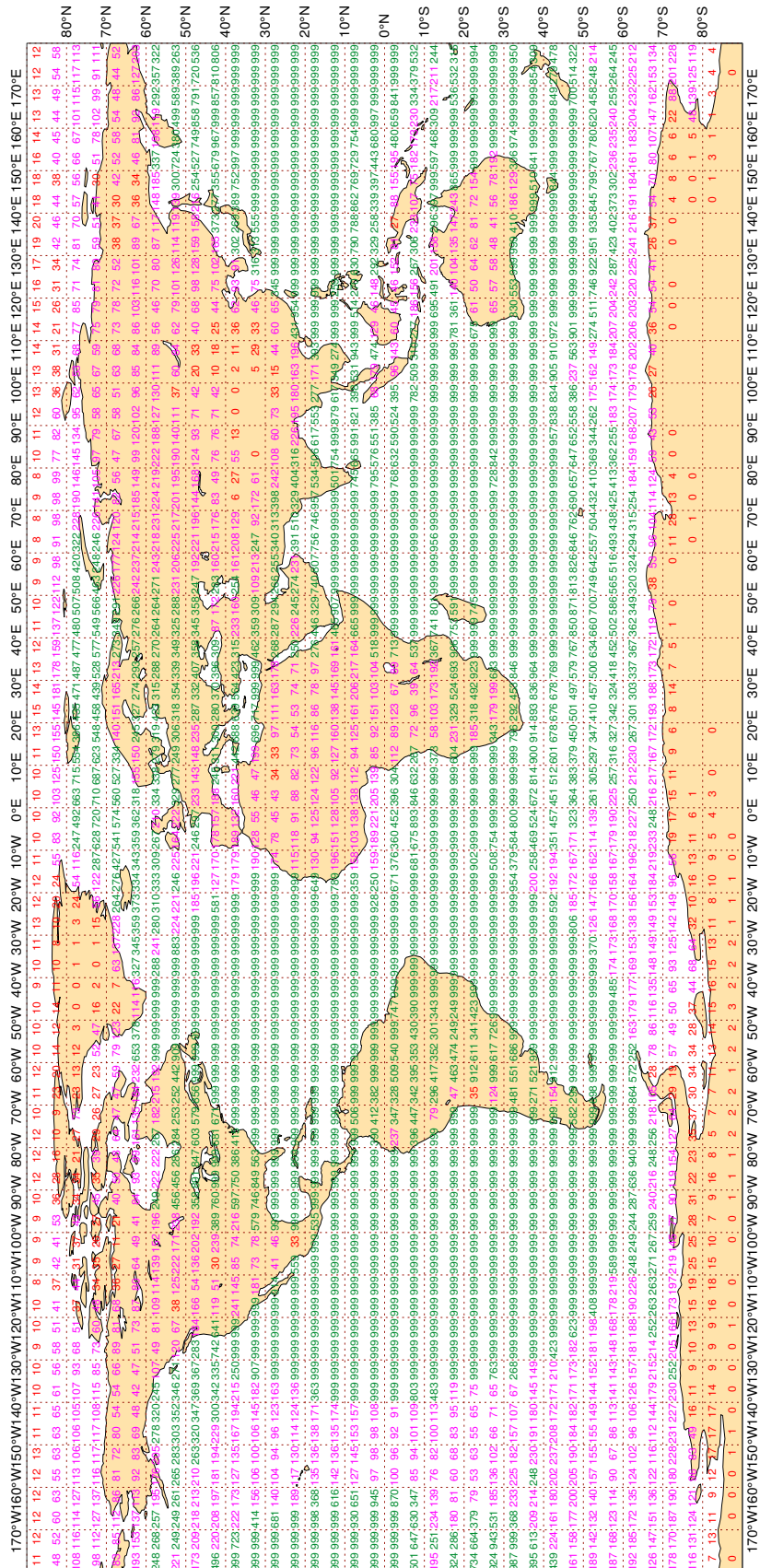
ECMWF Monitoring Statistics - MAR 2023
 Availability - AMV winds 400-150 hPa
 Average number of observations in 24 hours - 2475688



3.2.7 Figure 7 - Availability - SATOB winds 1000-700 hPa

Figure 7

ECMWF Monitoring Statistics - MAR 2023
Availability - AMV winds 1000-700 hPa
Average number of observations in 24 hours - 3183626



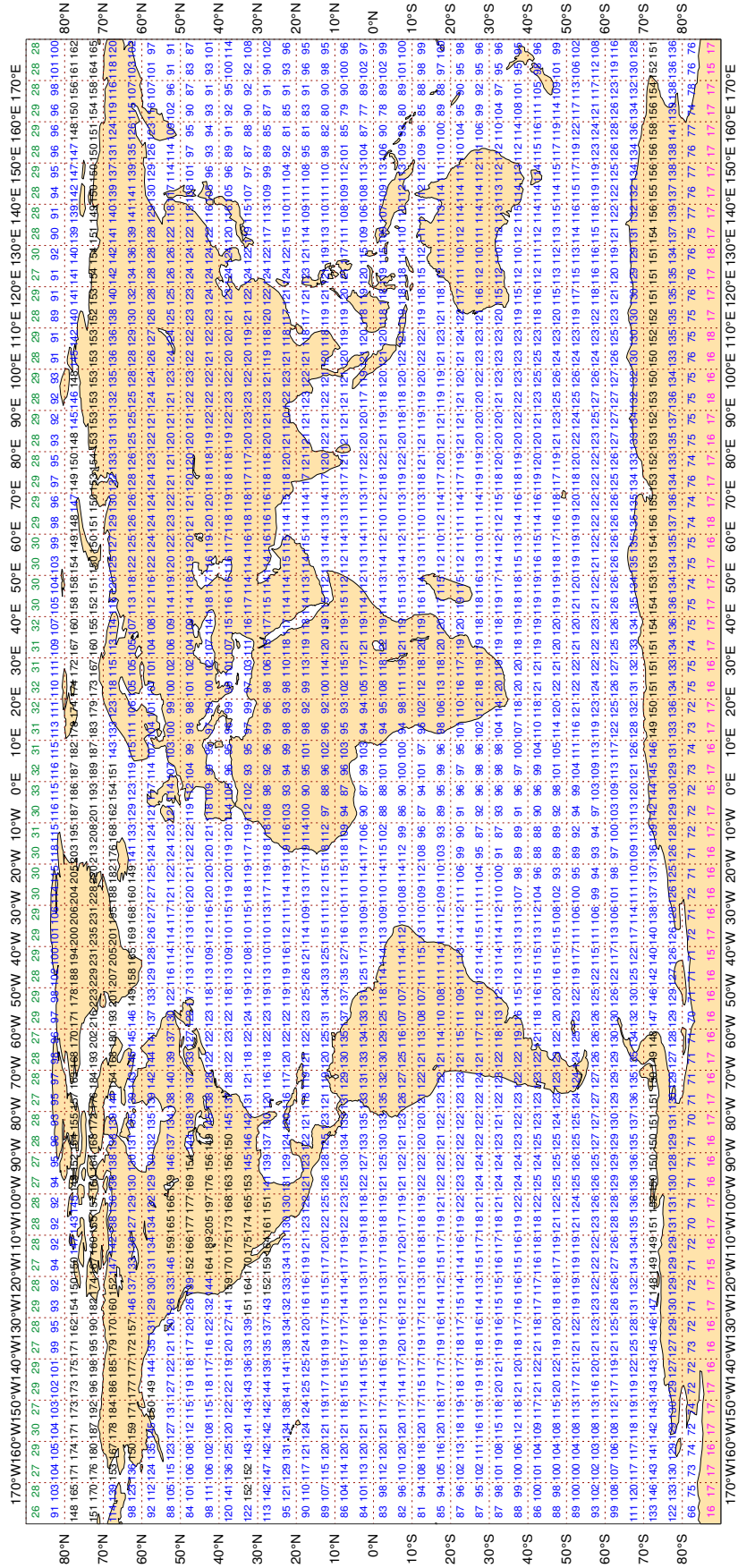
Magics 4.9.4



3.2.8 Figure 8 - Availability - NOAA15 ATOVS : AMSU-A

Figure 8

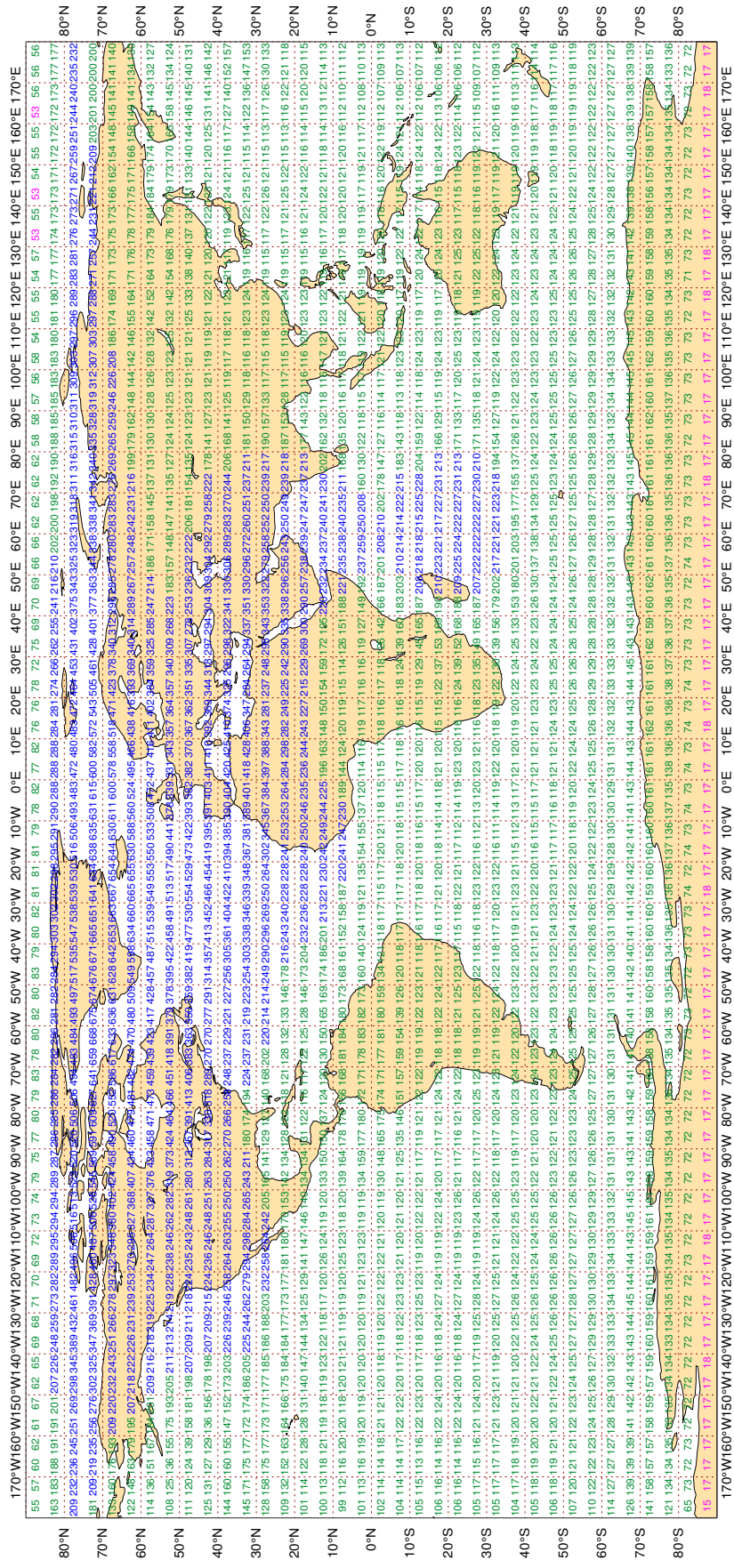
ECMWF Monitoring Statistics - MAR 2023
Availability - NOAA15 ATOVS : AMSU-A
Average number of observations in 24 hours - 300050



3.2.9 Figure 9.1 - Availability - NOAA18 ATOVS : AMSU-A

Figure 9.1

ECMWF Monitoring Statistics - MAR 2023
 Availability - NOAA18 ATOVS : AMSU-A
 Average number of observations in 24 hours - 468884



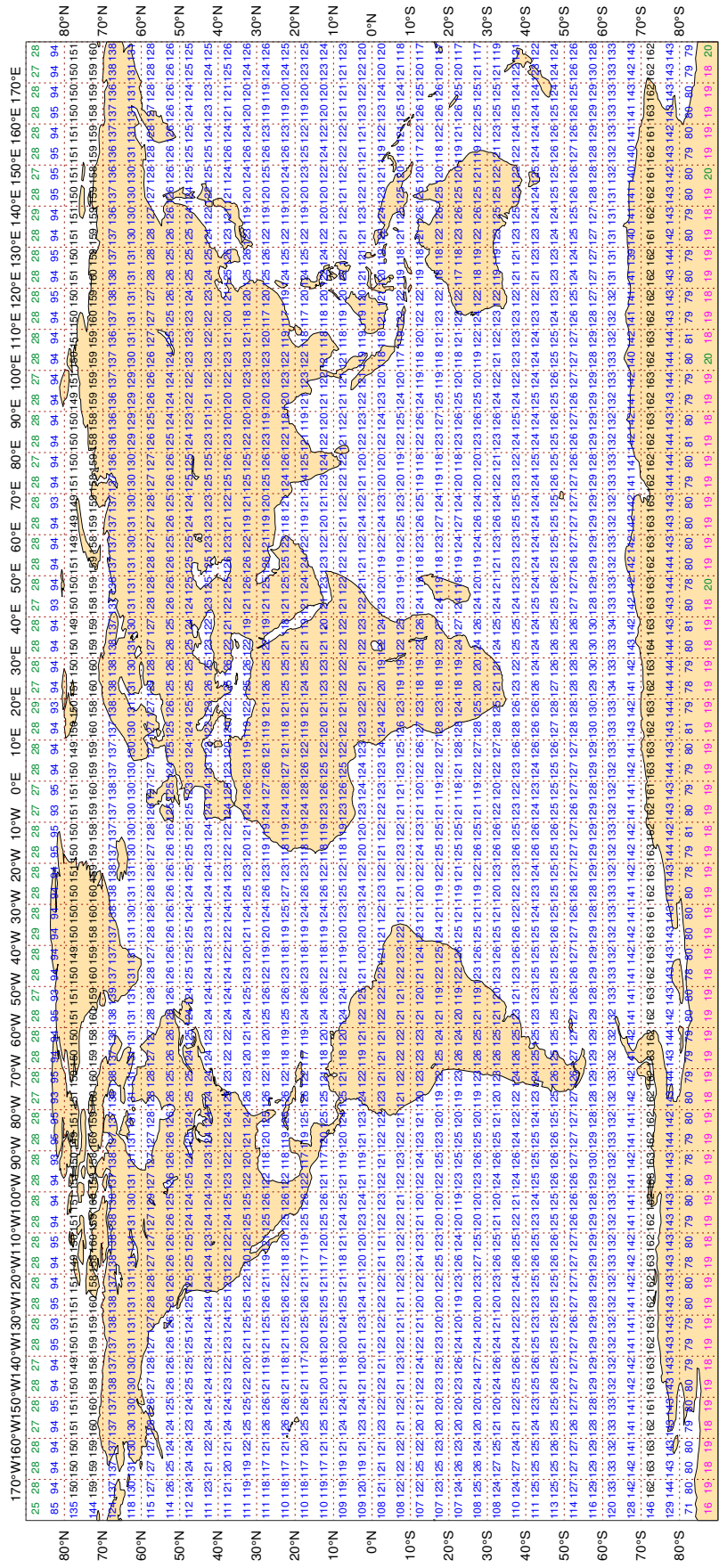
Magics 4.9.4



3.2.10 Figure 9.2 - Availability - AQUA ATOVS : AMSU-A

Figure 9.2

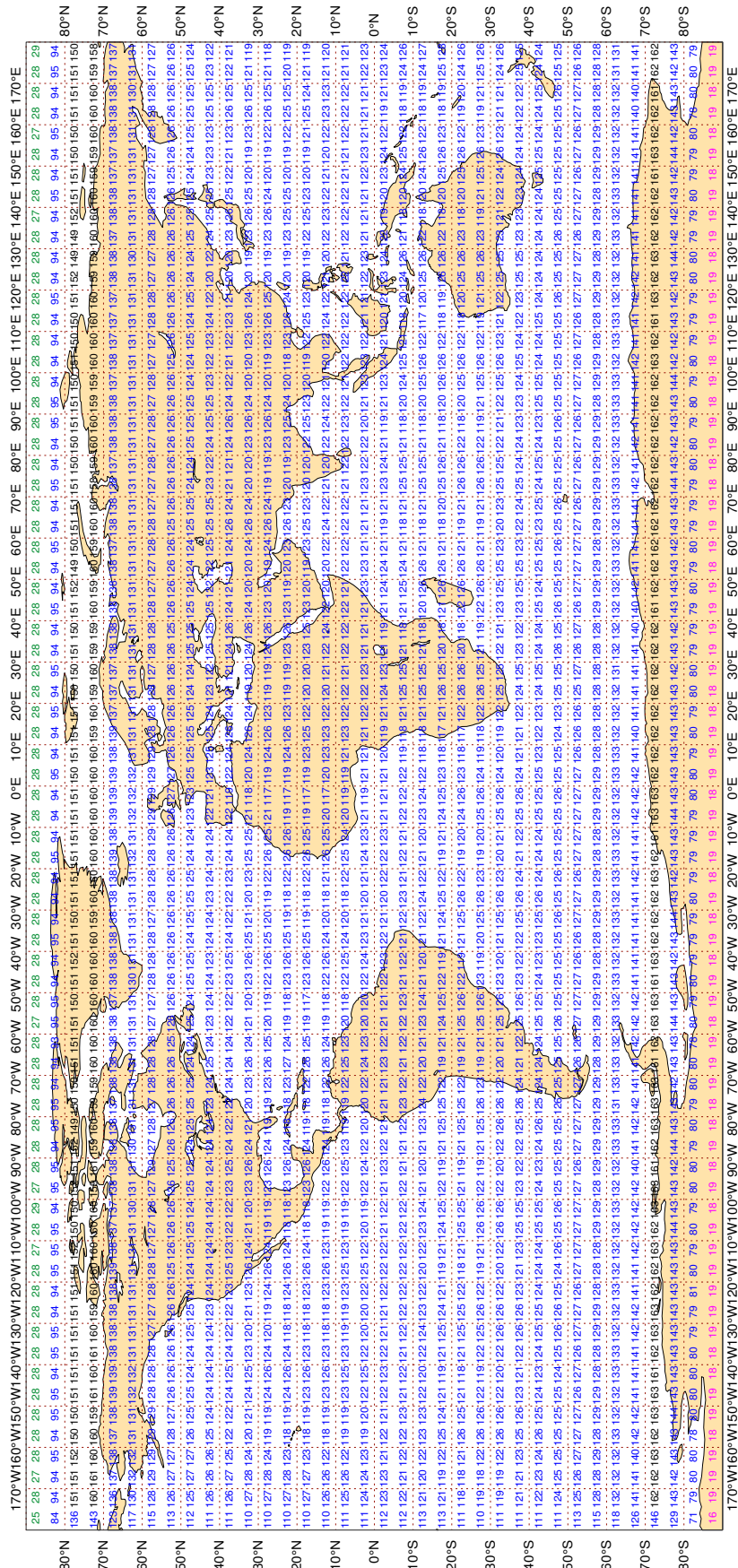
ECMWF Monitoring Statistics - MAR 2023
 Availability - METOP-C ATOVS : AMSU-A
 Average number of observations in 24 hours - 313508



3.2.11 Figure 9.3 - Availability - METOP ATOVS : AMSU-A

Figure 9.3

ECMWF Monitoring Statistics - MAR 2023
Availability - METOP-B ATOVS : AMSU-A
Average number of observations in 24 hours - 313834



Magics 4.9.4

3.2.12 Table 1 - Suspect ships and fixed marine platforms: Surface pressure - (hPa)

LIST OF SUSPECT STATIONS : SHIPS + FIXED MARINE PLATFORMS
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : SURFACE PRESSURE (HPA)
 AREA : GLOBAL
 PERIOD : MAR 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

SELECTION CRITERIA: NO. OF OBS. >= 15(50), AND,
 Manual (Automatic) ABSOLUTE BIAS >= 3(2) HPA, OR,
 STANDARD DEVIATION >= 5(4) HPA, OR,
 % GROSS ERROR >= 25(15)
 (GROSS ERROR LIMIT = 15 HPA)

TIME = 99 => AVERAGE OF 00, 06, 12 AND 18 UTC OBSERVATIONS

WMO IDENT	OBS TIME	ELM	LEVEL	NUM OBS	NUM GROSS	SD	BIAS	RMS
00000	99	P	SUR	55	3	0.5	-14.0	14.0
2EIF7	99	P	SUR	38	0	0.6	4.7	4.7
2HDG2	99	P	SUR	25	0	1.0	-4.3	4.4
3EBY2	99	P	SUR	18	0	1.7	8.7	8.9
3FJB3	99	P	SUR	81	0	1.3	3.3	3.5
9HA4638	99	P	SUR	81	0	1.0	5.3	5.4
9HA4902	99	P	SUR	24	0	1.6	4.8	5.1
9HA4986	99	P	SUR	47	0	2.1	10.0	10.2
9HA5397	99	P	SUR	22	0	4.6	4.6	6.5
9HRJ9	99	P	SUR	38	0	0.5	3.5	3.6
9V2728	99	P	SUR	16	0	1.0	3.5	3.6
9V3286	99	P	SUR	106	0	1.5	5.8	6.0
9V6408	99	P	SUR	102	0	1.9	3.0	3.6
9V8372	99	P	SUR	30	0	1.2	6.6	6.7
9V8839	99	P	SUR	26	0	1.6	3.5	3.8
9V9365	99	P	SUR	16	0	1.8	3.9	4.3
A8FG3	99	P	SUR	21	0	0.9	-6.2	6.3
AUVM	99	P	SUR	107	0	0.6	3.8	3.8
C6BQ8	99	P	SUR	25	0	3.2	3.2	4.5
C6FB3	99	P	SUR	34	0	1.9	-6.1	6.4
CQET6	99	P	SUR	16	0	0.5	4.5	4.5
JMJRCES	99	P	SUR	93	0	0.6	-6.2	6.2
LAJF7	99	P	SUR	81	0	1.2	3.0	3.2
LAPD7	99	P	SUR	43	0	2.6	4.1	4.9
LAPE7	99	P	SUR	16	0	1.1	5.2	5.3
LAQJ7	99	P	SUR	26	0	1.2	-4.5	4.7
LAQL7	99	P	SUR	76	0	0.7	3.0	3.1
LOCB	99	P	SUR	22	0	0.8	-3.8	3.9
OWLD2	99	P	SUR	15	0	2.0	-4.5	5.0
S6LT3	99	P	SUR	17	0	0.8	5.1	5.1
SHIP	99	P	SUR	266	3	5.7	-2.9	6.4
SXVX88	99	P	SUR	21	0	2.0	4.0	4.5

LIST OF SUSPECT STATIONS : SHIPS + FIXED MARINE PLATFORMS
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : SURFACE PRESSURE (HPA)
 (CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	NUM OBS	NUM GROSS	SD	BIAS	RMS
TBWUK31	99	P	SUR	22	0	1.0	4.8	5.0
TBWUK60	99	P	SUR	15	0	1.6	-3.9	4.2
V7A6081	99	P	SUR	105	0	1.8	3.0	3.5
V7DJ5	99	P	SUR	30	2	5.4	3.2	6.2
V7DQ3	99	P	SUR	50	0	1.3	4.9	5.1
V7QT7	99	P	SUR	41	0	2.1	3.9	4.4
V7TM3	99	P	SUR	15	0	1.6	-4.8	5.1
VRBQ6	99	P	SUR	21	0	0.8	-3.4	3.5
VRDJ3	99	P	SUR	24	0	1.3	-3.3	3.5
VRFU9	99	P	SUR	21	0	1.5	-4.9	5.2
VRIC6	99	P	SUR	27	0	1.0	-4.8	4.9
VRID6	99	P	SUR	43	0	2.2	6.9	7.2
VRJA4	99	P	SUR	19	0	1.9	5.5	5.9
VRJZ9	99	P	SUR	21	0	4.3	3.5	5.5
VRQX5	99	P	SUR	19	0	1.1	5.3	5.4
VRYB8	99	P	SUR	19	0	0.8	3.6	3.7
WDDI	99	P	SUR	26	0	0.8	-3.5	3.6
WDG8082	99	P	SUR	25	7	3.2	-1.3	3.5
WDI7757	99	P	SUR	28	0	5.9	-0.2	5.9
WGEB	99	P	SUR	16	0	3.9	8.0	8.9
WMCS	99	P	SUR	20	0	4.0	-3.3	5.2
WROT	99	P	SUR	25	1	5.4	0.3	5.4
WTEO	99	P	SUR	94	0	0.6	-3.0	3.1
ZCEV4	99	P	SUR	15	0	1.0	-4.3	4.4

3.2.13 Table 2 - Suspect ships and fixed marine platforms: Wind speed (m/s)

LIST OF SUSPECT STATIONS : SHIPS + FIXED MARINE PLATFORMS
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND SPEED (M/S)
 AREA : GLOBAL
 PERIOD : MAR 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

SELECTION CRITERIA: NO. OF OBS. >= 15(50), AND,
 Manual (Automatic) ABSOLUTE BIAS >= 4(4) M/S, OR,
 % GROSS ERROR >= 25(15)
 (GROSS ERROR LIMIT FOR VECTOR WIND = 25 M/S)

TIME = 99 => AVERAGE OF 00, 06, 12 AND 18 UTC OBSERVATIONS

WMO IDENT	OBS TIME	ELM	LEVEL	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
--------------	-------------	-----	-------	------------	--------------	------------	----	------	-----

3.2.14 Table 3 - Suspect ships and fixed marine platforms: Wind direction (DEGREES)

LIST OF SUSPECT STATIONS : SHIPS + FIXED MARINE PLATFORMS
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND DIRECTION (DEGREES)
 AREA : GLOBAL
 PERIOD : MAR 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

SELECTION CRITERIA: NO. OF OBS. >= 15 (50) (WIND SPEEDS > 3M/S), AND ,
 Manual (Automatic) ABSOLUTE BIAS >= 30 (25) DEGREES, OR,
 STANDARD DEVIATION >= 70 (50) DEGREES
 (GROSS ERROR LIMIT FOR VECTOR WIND = 25 M/S)

TIME = 99 => AVERAGE OF 00, 06, 12 AND 18 UTC OBSERVATIONS

WMO IDENT	OBS TIME	ELM	LEVEL	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
--------------	-------------	-----	-------	------------	--------------	------------	----	------	-----

3.2.15 Table 4 - Suspect drifters: Surface pressure (HPA)

LIST OF SUSPECT STATIONS : DRIFTER
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : SURFACE PRESSURE (HPA)
 AREA : GLOBAL
 PERIOD : MAR 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

SELECTION CRITERIA: NO. OF OBS. >= 20, AND,
 ABSOLUTE BIAS >= 4 HPA, OR,
 STANDARD DEVIATION >= 6 HPA, OR,
 % GROSS ERROR >= 25
 (GROSS ERROR LIMIT = 15 HPA)

TIME = 99 => AVERAGE OF ALL OBSERVATIONS

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
00000	99	P	SUR	44	-79	326	12	0.5	-14.0	14.1
1501696	99	P	SUR	-28	-12	664	0	0.0	-5.6	5.6
1501729	99	P	SUR	-19	-24	671	0	0.4	-6.5	6.5
1501732	99	P	SUR	-29	-21	41	16	3.4	1.9	3.9
3801550	99	P	SUR	86	-71	743	743	0.0	0.0	0.0
4402671	99	P	SUR	18	-63	442	0	0.0	-6.1	6.1
4602608	99	P	SUR	48	-139	651	0	2.1	4.5	5.0
4701658	99	P	SUR	72	-95	379	379	0.0	0.0	0.0
4701738	99	P	SUR	70	-67	721	721	0.0	0.0	0.0
4701744	99	P	SUR	78	-106	736	736	0.0	0.0	0.0
4701747	99	P	SUR	76	-124	741	741	0.0	0.0	0.0
4802592	99	P	SUR	82	-161	709	407	2.8	-0.7	2.9
4802655	99	P	SUR	77	-124	738	634	8.2	-4.0	9.1
5501567	99	P	SUR	-22	-96	658	658	0.0	0.0	0.0
6102804	99	P	SUR	40	3	144	0	0.0	-7.7	7.7
6401582	99	P	SUR	78	1	39	0	2.5	-7.3	7.7
6402587	99	P	SUR	46	-44	134	0	1.7	10.5	10.6

3.2.16 Table 5 - Suspect drifters: Wind speed (m/s)

LIST OF SUSPECT STATIONS : DRIFTER
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND SPEED (M/S)
 AREA : GLOBAL
 PERIOD : MAR 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

SELECTION CRITERIA: NO. OF OBS. >= 20, AND,
 ABSOLUTE BIAS >= 5 M/S, OR,
 % GROSS ERROR >= 25
 (GROSS ERROR LIMIT FOR VECTOR WIND = 25 M/S)

TIME = 99 => AVERAGE OF ALL OBSERVATIONS

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
--------------	-------------	-----	-------	-------------	--------------	------------	--------------	------------	----	------	-----

3.2.17 Table 6 - Suspect drifters: Wind direction (degrees)

LIST OF SUSPECT STATIONS : DRIFTER
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND DIRECTION (DEGREES)
 PERIOD : MAR 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

SELECTION CRITERIA: NO. OF OBS. >= 20 (WIND SPEEDS > 3M/S), AND ,
 ABSOLUTE BIAS >= 20 DEGREES, OR,
 STANDARD DEVIATION >= 60 DEGREES
 (GROSS ERROR LIMIT FOR VECTOR WIND = 25 M/S)

TIME = 99 => AVERAGE OF ALL OBSERVATIONS

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
00000	99	DIRN	SUR	44	-79	63	0	0	13.7	-41.1	43.3
2300091	99	DIRN	SUR	18	89	23	0	0	10.6	20.2	22.8
2300093	99	DIRN	SUR	16	88	31	0	0	48.2	50.9	70.1
2300453	99	DIRN	SUR	8	73	33	0	0	12.5	-36.7	38.8
2300454	99	DIRN	SUR	10	73	20	0	0	72.7	-37.2	81.7
2300459	99	DIRN	SUR	14	87	40	0	0	30.5	68.6	75.1
23091	99	DIRN	SUR	18	89	49	0	0	15.7	22.6	27.5
23092	99	DIRN	SUR	17	89	31	0	0	99.6	33.1	105.0
23093	99	DIRN	SUR	16	88	54	0	0	52.6	28.1	59.6
23453	99	DIRN	SUR	8	73	36	0	0	12.6	-36.8	38.9
23454	99	DIRN	SUR	10	73	27	0	0	49.0	-59.2	76.9
23459	99	DIRN	SUR	14	87	58	0	0	36.0	59.7	69.8
23491	99	DIRN	SUR	12	93	33	0	0	42.7	80.6	91.2
23497	99	DIRN	SUR	11	72	27	0	0	50.6	-71.1	87.3
3200305	99	DIRN	SUR	-8	-95	31	0	0	6.5	-84.6	84.8
32305	99	DIRN	SUR	-8	-95	31	0	0	7.2	-84.0	84.3
4500005	99	DIRN	SUR	42	-82	148	0	0	22.4	24.2	32.9
45005	99	DIRN	SUR	42	-82	25	0	0	18.9	24.2	30.7
4600092	99	DIRN	SUR	37	-122	540	0	0	24.0	26.9	36.1
4600125	99	DIRN	SUR	48	-123	125	0	0	24.6	29.5	38.4
46092	99	DIRN	SUR	37	-122	521	0	0	25.5	25.6	36.1
46125	99	DIRN	SUR	48	-123	21	0	0	34.9	27.7	44.6
46131	99	DIRN	SUR	50	-125	316	0	0	45.3	-23.2	50.9
5100301	99	DIRN	SUR	8	-155	86	0	0	72.9	47.5	87.1
51301	99	DIRN	SUR	8	-155	78	0	0	72.6	40.2	83.0
5300056	99	DIRN	SUR	-5	95	442	0	0	165.3	15.8	166.0
6200025	99	DIRN	SUR	44	-6	402	0	0	18.2	-26.3	32.0
6200086	99	DIRN	SUR	55	6	281	0	0	11.8	27.5	29.9
6200199	99	DIRN	SUR	40	-9	134	0	0	18.5	32.0	37.0
6301003	99	DIRN	SUR	74	24	435	0	0	16.1	29.5	33.7
6600022	99	DIRN	SUR	54	14	206	0	0	77.7	42.0	88.3

LIST OF SUSPECT STATIONS : DRIFTER
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND DIRECTION (DEGREES)
 (CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
6600024	99	DIRN	SUR	55	13	168	0	0	12.0	22.9	25.9

3.2.18 Table 7 - Suspect radiosondes: Geopotential height (metres)

LIST OF SUSPECT STATIONS : RADIOSONDES
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : GEOPOTENTIAL HEIGHT (METRES)
 AREA : GLOBAL
 PERIOD : MAR 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

SELECTION CRITERIA: AT LEAST 3 LEVELS WITH
 10 OBS AND 100 M WEIGHTED RMS

ONLY THE WORST LEVEL IS SHOWN (WITH UNWEIGHTED RMS)

WMO IDENT	OBS TIME	ELM	LEV	LAT	LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
01400	12	Z	1000	57	3	28	0	12.7	73.1	74.2
01400	00	Z	1000	57	3	29	0	3.9	76.5	76.6
25428	12	Z	250	65	161	23	2	55.0	-60.0	81.4
25428	00	Z	250	65	161	25	2	56.1	-41.8	70.0
35700	12	Z	250	47	52	29	0	29.5	72.2	78.0
36003	12	Z	300	52	77	27	0	33.8	58.3	67.4
42339	00	Z	500	26	73	16	1	37.5	33.4	50.2
42348	00	Z	850	27	76	25	0	7.9	44.4	45.1
42410	00	Z	850	26	92	31	0	25.0	33.5	41.8
42410	12	Z	850	26	92	31	0	13.8	32.6	35.4
42623	00	Z	100	25	94	17	11	74.1	150.0	167.3
42874	00	Z	850	21	82	11	0	20.5	37.9	43.1
42886	00	Z	925	22	84	10	1	33.3	19.1	38.4
43185	00	Z	925	16	81	12	0	26.2	33.5	42.5
47122	12	Z	70	37	127	29	3	71.6	138.8	156.2
52323	12	Z	30	42	97	28	0	80.6	228.5	242.3
52323	00	Z	30	42	97	28	4	82.3	333.3	343.3
54374	00	Z	30	42	127	28	0	92.2	206.9	226.5
55591	12	Z	50	30	91	22	0	44.5	135.8	142.9
58424	00	Z	30	31	117	27	0	150.7	192.4	244.4
61442	00	Z	850	18	-16	24	10	38.7	-63.8	74.6
62378	00	Z	400	30	31	20	1	49.5	59.9	77.7
62403	12	Z	850	26	33	16	5	43.1	41.6	59.9
65548	12	Z	925	7	-8	22	0	10.3	30.2	31.9
68842	12	Z	1000	-34	26	31	0	29.5	23.9	38.0
68842	00	Z	1000	-34	26	31	0	27.1	17.8	32.4
76644	12	Z	50	21	-90	25	4	168.1	141.5	219.7
7JUNA4	00	Z	1000	40	-70	12	0	34.1	12.4	36.3

LIST OF SUSPECT STATIONS (CONTINUED)

WMO IDENT	OBS TIME	ELM	LEV	LAT	LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
91680	00	Z	1000	-18	177	31	0	3.6	31.8	32.0
96315	00	Z	1000	5	115	30	0	9.5	56.0	56.8
96315	12	Z	1000	5	115	30	0	8.9	56.0	56.7
97690	00	Z	925	-3	141	30	1	4.2	87.9	88.0
98233	00	Z	1000	18	122	13	0	22.3	50.4	55.1
98558	00	Z	1000	11	126	21	0	29.2	23.9	37.7
9ZT9MR	12	Z	850	63	-32	14	4	35.8	18.2	40.2
JNKN7J	12	Z	1000	46	-53	10	0	6.4	40.1	40.6
KMPLHP	12	Z	1000	50	-42	13	0	26.8	25.9	37.3
KMPLHP	00	Z	1000	49	-46	11	1	27.5	43.4	51.4

3.2.19 Table 8 - Suspect radiosondes: Wind (m/s)

LIST OF SUSPECT STATIONS : RADIOSONDES
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND (M/S)
 AREA : GLOBAL
 PERIOD : MAR 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

SELECTION CRITERIA: AT LEAST 10 OBS AND 15 M/S RMS VECTOR WIND

STANDARD LEVEL (1000-100 HPA) WITH HIGHEST RMS IS SHOWN

WMO IDENT	OBS TIME	ELM	LEV	LAT	LONG	NUM OBS	NUM GROSS	UBIAS	VBIAS	RMS
42667	00	V	100	23	77	13	0	-5.4	15.4	17.0
9ZT9MR	12	V	250	63	-32	11	1	-6.3	1.4	18.0
9ZT9MR	00	V	300	64	-24	12	2	5.6	2.3	15.4

3.2.20 Table 9 - Suspect radiosondes: Wind direction (degrees)

LIST OF SUSPECT STATIONS : RADIOSONDES
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND DIRECTION (DEGREES)
 AREA : GLOBAL
 PERIOD : MAR 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

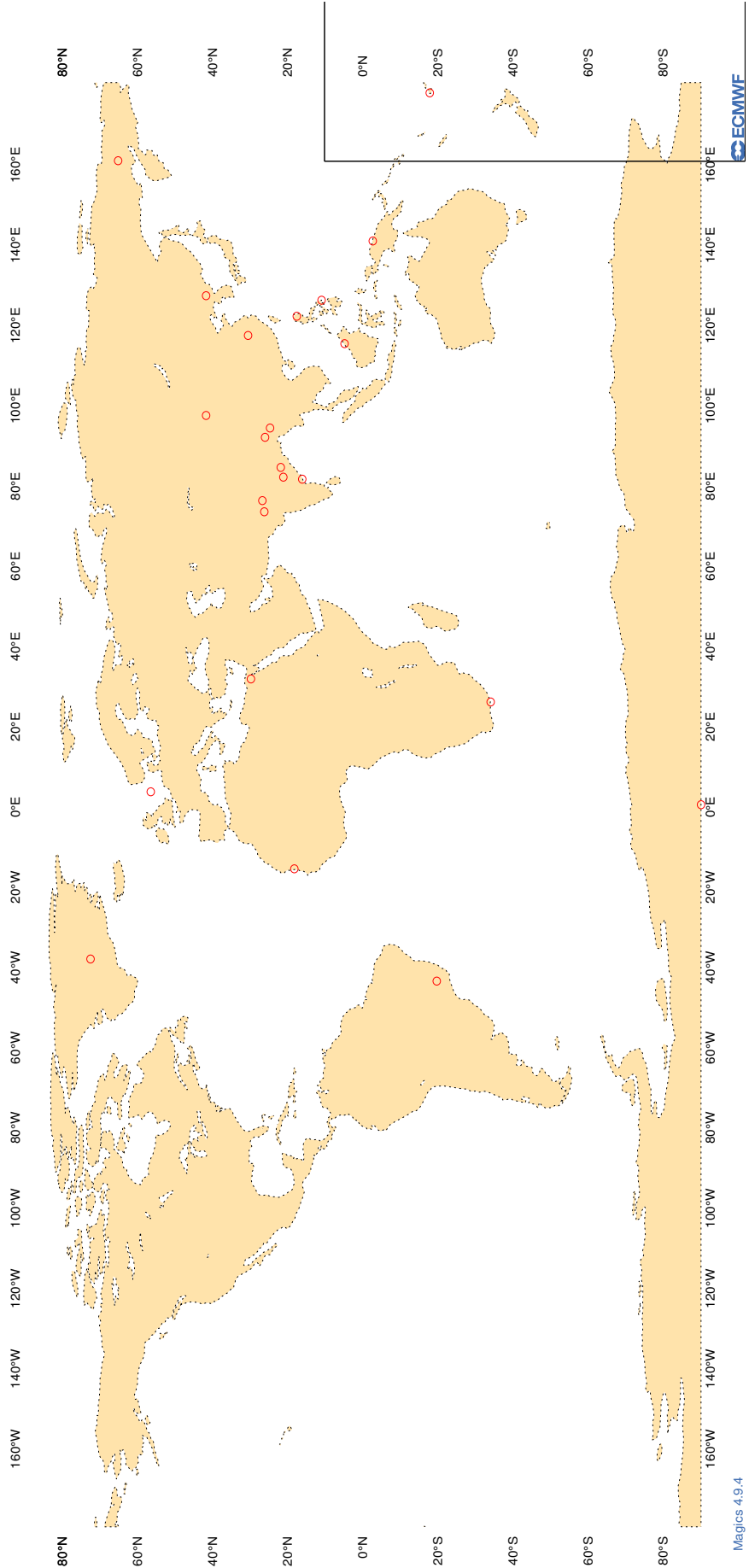
SELECTION CRITERIA: OBSERVED/FORECAST WIND SPEEDS \geq 5 M/S
 NO. OF OBSERVATIONS \geq 5, AND,
 ABSOLUTE BIAS \geq 10 DEGREES, WITH
 STANDARD DEVIATION $<$ 30 DEGREES, AND,
 VERTICAL SPREAD $<$ 10 DEGREES
 (AVERAGE BETWEEN 500 AND 150 HPA)

WMO IDENT	OBS TIME	ELM	LAT	LONG	NUM OBS	BIAS	MAX SPREAD	SD
42667	00	DD	23	77	15	40.2	9.4	10.8

3.2.21 Figure 10 - Suspect TEMP observations - geopotential : 00 UTC

Figure 10

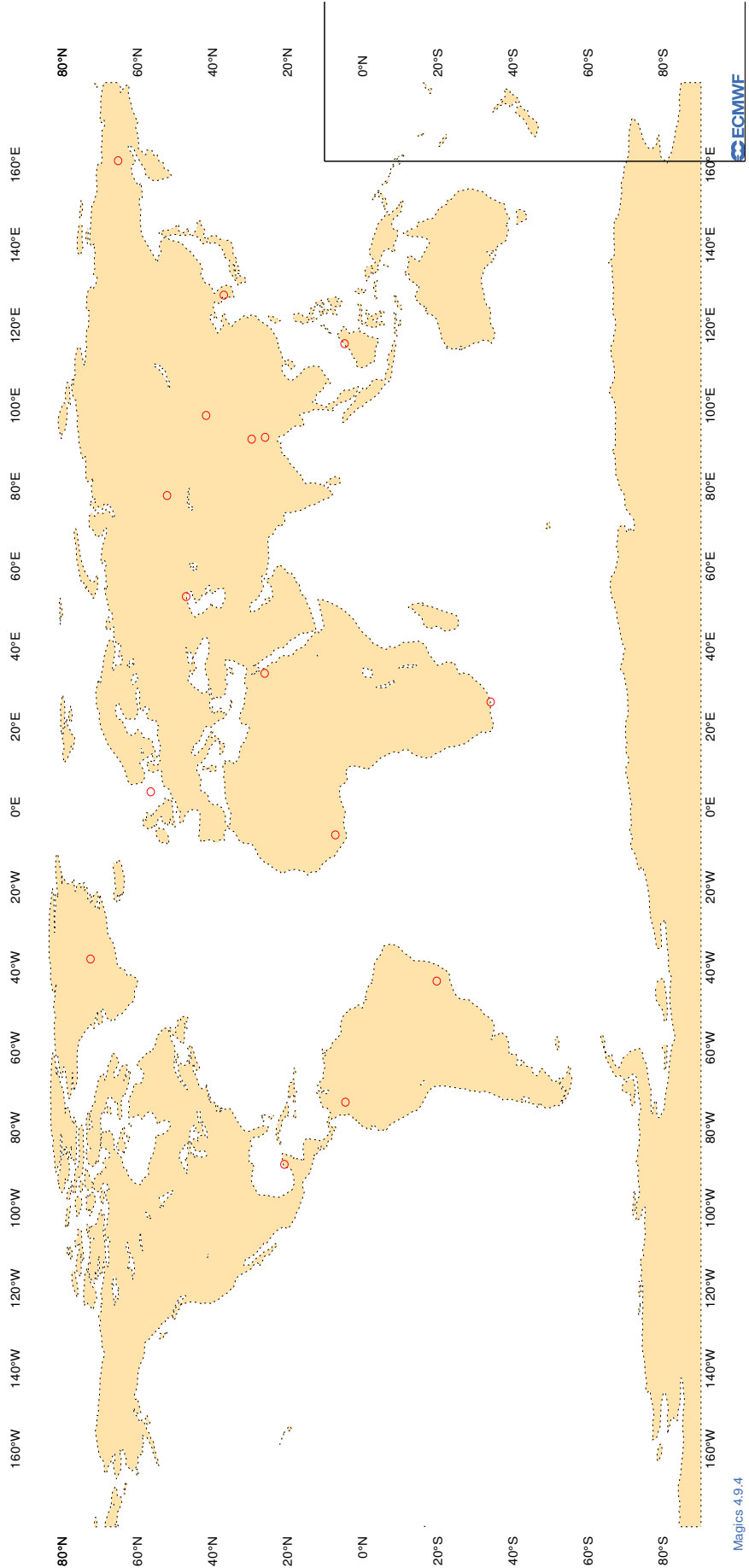
ECMWF Monitoring Statistics - MAR 2023 00 UTC
Suspect TEMP observations - GEOPOTENTIAL



3.2.22 Figure 11 - Suspect TEMP observations - geopotential : 12 UTC

Figure 11

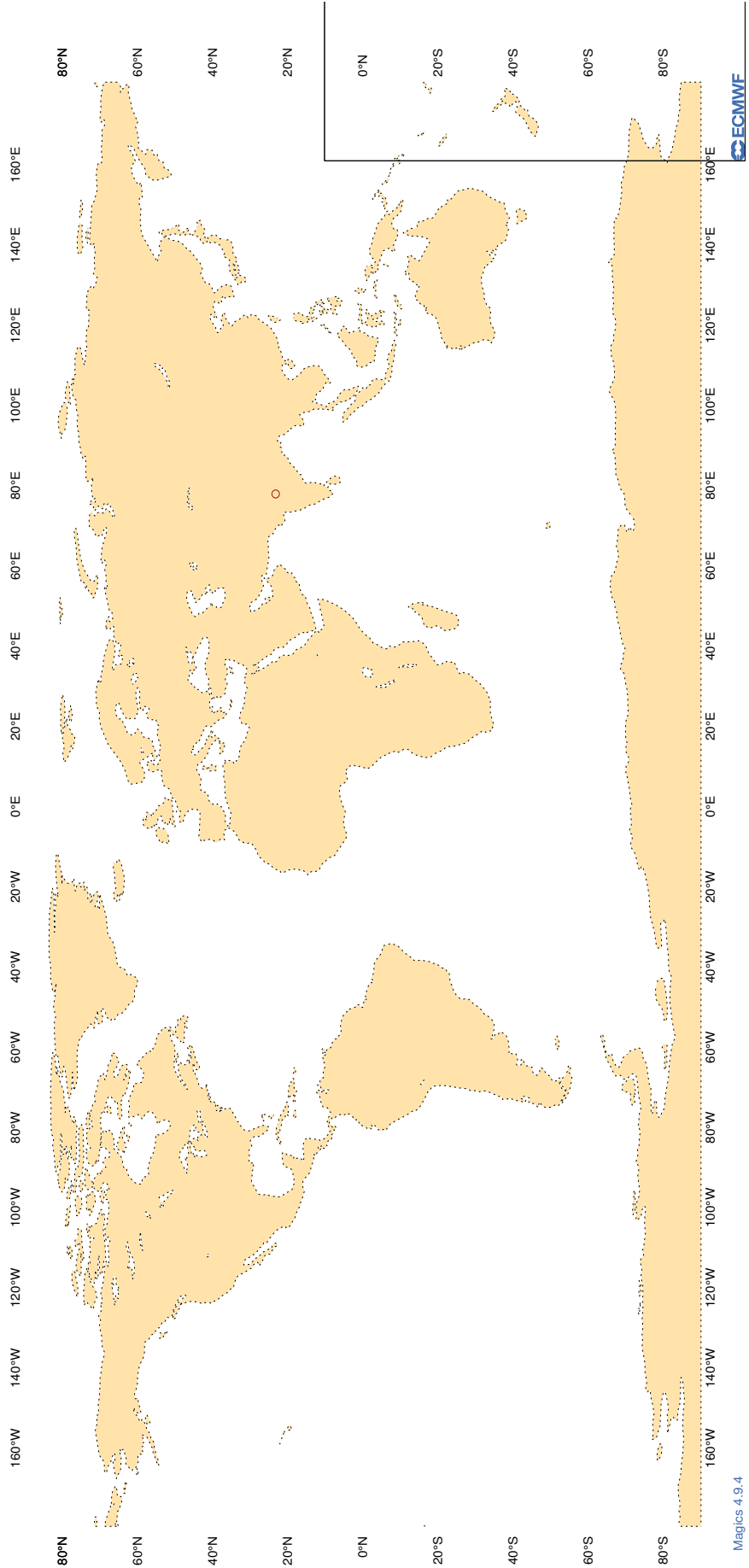
ECMWF Monitoring Statistics - MAR 2023 12 UTC
Suspect TEMP observations - GEOPOTENTIAL



3.2.23 Figure 12 - Suspect TEMP/PILOT observations - wind : 00 UTC

Figure 12

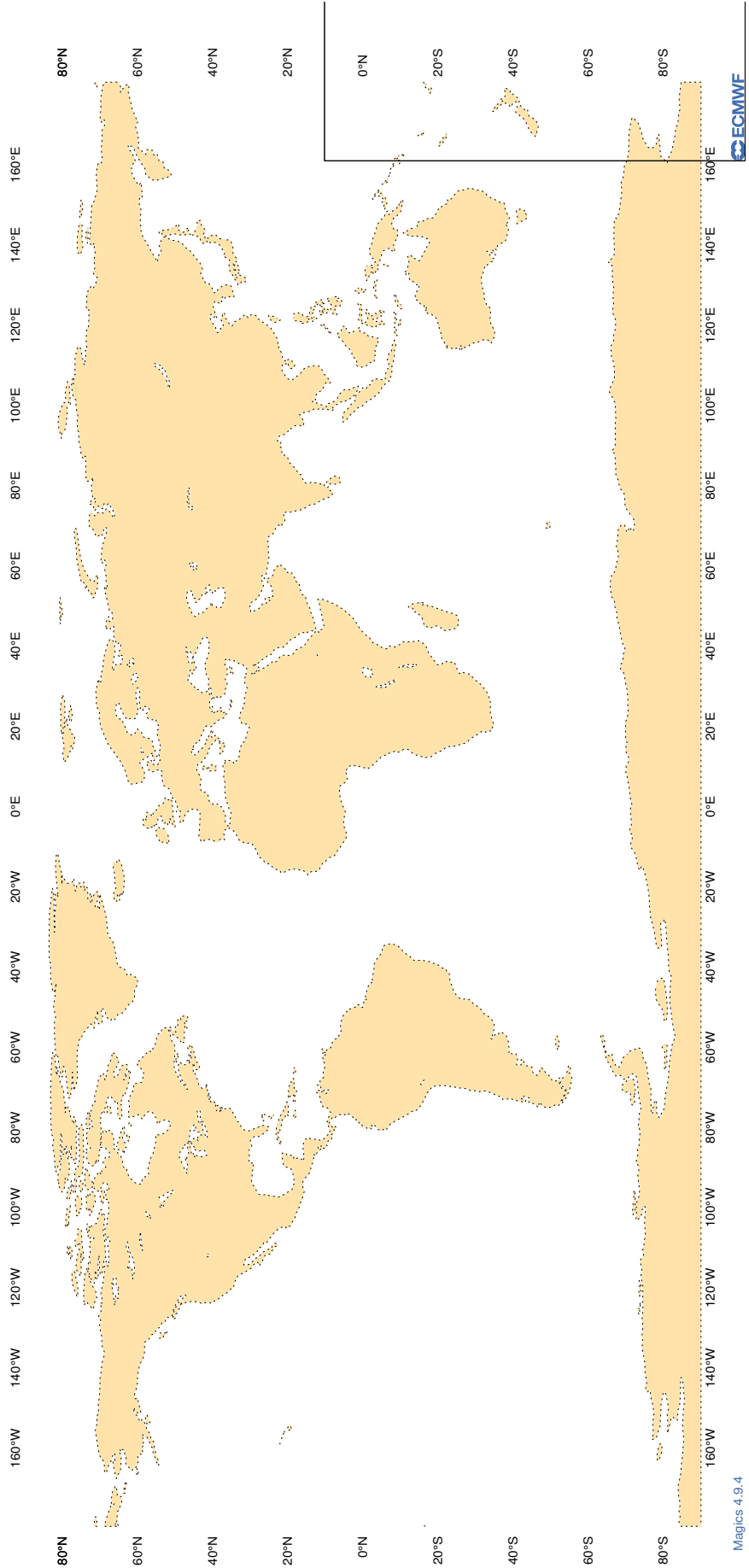
ECMWF Monitoring Statistics - MAR 2023 00 UTC
Suspect TEMP/PILOT observations - WIND



3.2.24 Figure 13 - Suspect TEMP/PILOT observations - wind : 12 UTC

Figure 13

ECMWF Monitoring Statistics - MAR 2023 12 UTC
Suspect TEMP/PILOT observations - WIND



3.2.25 Table 10 - Radiosonde monitoring statistics (SHIPS): Geopotential height (metres)

RADIOSONDE MONITORING STATISTICS (SHIPS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : GEOPOTENTIAL HEIGHT (METRES)
 LEVEL : 100 HPA
 AREA : GLOBAL
 PERIOD : MAR 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
2EERV	00	Z	100	5	15.0	-4.7
2EERV	12	Z	100	6	12.3	-9.0
7JUNA4	12	Z	100	11	89.9	62.5
7JUNA4	00	Z	100	7	34.5	7.2
9ZT9MR	12	Z	100	11	44.5	-36.4
9ZT9MR	00	Z	100	14	41.1	-34.6
ASDE09	12	Z	100	3	25.9	25.7
ATGU3F	12	Z	100	9	70.1	-35.2
ATGU3F	00	Z	100	11	29.6	-23.3
BPMWB2	12	Z	100	3	20.2	-15.9
BPMWB2	00	Z	100	2	7.3	-5.4
DBLK	12	Z	100	24	19.5	18.4
DBLK	00	Z	100	6	24.7	24.6
GQBZLZ	00	Z	100	0	0.0	0.0
GQBZLZ	12	Z	100	1	17.4	-17.4
JNKN7J	12	Z	100	11	41.4	35.0
JNKN7J	00	Z	100	9	30.1	27.2
KJFF9X	12	Z	100	8	8.0	3.7
KJFF9X	00	Z	100	10	11.1	7.5
KMPLHP	12	Z	100	13	69.5	52.3
KMPLHP	00	Z	100	10	42.1	31.8
LAGZ8	12	Z	100	1	0.0	0.0
LRYQE3	00	Z	100	10	9.1	-1.6
LRYQE3	12	Z	100	10	10.5	3.0
UBQW2	00	Z	100	30	22.6	-9.5
UBQW2	12	Z	100	27	22.4	-15.1
USBOD	12	Z	100	6	6.5	-1.3
USBOD	00	Z	100	6	12.0	-6.5
USCAT	12	Z	100	7	36.8	-18.1
USCAT	00	Z	100	4	11.3	-5.9
USSOD	12	Z	100	0	0.0	0.0
USSOD	00	Z	100	0	0.0	0.0
USYUB	12	Z	100	4	8.5	6.3
USYUB	00	Z	100	6	9.4	1.8
WDK38H	12	Z	100	0	0.0	0.0
XQFJRG	12	Z	100	9	10.6	-5.2
XQFJRG	00	Z	100	7	10.6	-6.0
YLV96W	12	Z	100	13	77.4	43.9
YLV96W	00	Z	100	13	22.6	-2.9

3.2.26 Table 11 - Radiosonde monitoring statistics (SHIPS): Wind (m/s)

RADIOSONDE MONITORING STATISTICS (SHIPS)

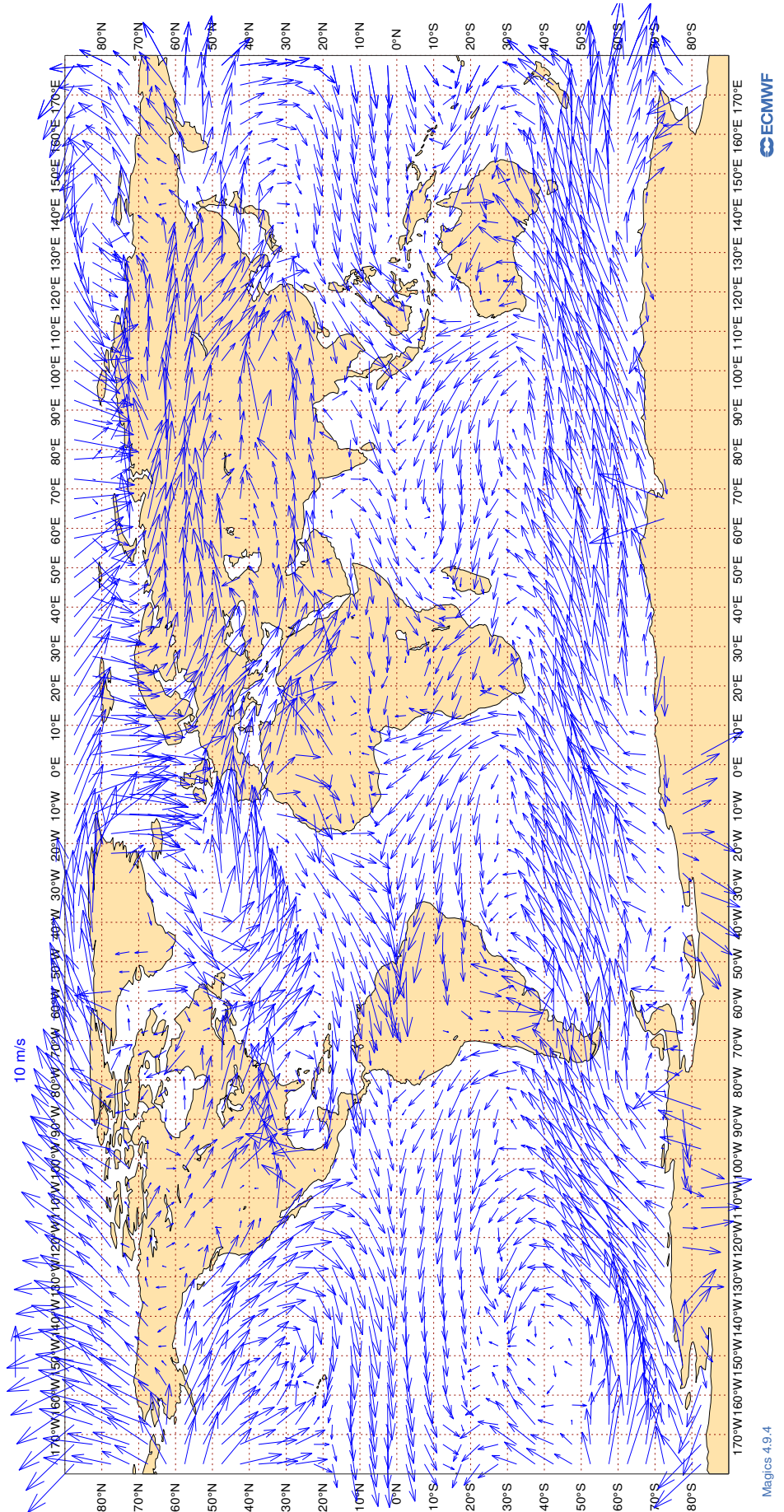
MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND (M/S)
 LEVEL : 100 HPA
 AREA : GLOBAL
 PERIOD : MAR 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
2EERVT	00	V	100	5	4.2	0.4	1.9
2EERVT	12	V	100	6	3.2	0.5	-0.7
7JUNA4	12	V	100	11	3.7	0.0	1.5
7JUNA4	00	V	100	7	2.5	0.4	0.1
9ZT9MR	12	V	100	11	3.0	-0.4	0.2
9ZT9MR	00	V	100	14	2.7	-0.6	0.6
ASDE09	12	V	100	3	2.6	0.9	-0.5
ATGU3F	12	V	100	9	2.7	0.3	-0.5
ATGU3F	00	V	100	11	3.5	0.6	0.0
BPMWB2	12	V	100	3	3.8	-1.0	1.2
BPMWB2	00	V	100	2	2.5	-0.2	-0.8
DBLK	12	V	100	24	3.8	1.2	-0.2
DBLK	00	V	100	6	3.8	1.7	1.8
GQBZLZ	00	V	100	0	0.0	0.0	0.0
GQBZLZ	12	V	100	1	2.8	2.6	1.0
JNKN7J	12	V	100	11	4.0	0.9	0.0
JNKN7J	00	V	100	9	3.0	0.7	1.1
KJFF9X	12	V	100	8	3.5	0.2	0.1
KJFF9X	00	V	100	10	5.0	-1.5	1.8
KMPLHP	12	V	100	13	3.9	0.2	0.9
KMPLHP	00	V	100	10	2.6	1.0	0.2
LAGZ8	12	V	100	1	9.2	8.9	2.5
LRYQE3	00	V	100	10	2.6	1.2	0.4
LRYQE3	12	V	100	10	4.7	1.0	-0.3
UBQW2	00	V	100	30	6.7	-0.7	-4.0
UBQW2	12	V	100	27	5.5	-1.1	-3.2
USBOD	12	V	100	3	7.6	-4.2	1.4
USBOD	00	V	100	3	2.7	-0.7	1.2
USCAT	12	V	100	4	2.3	0.8	0.0
USCAT	00	V	100	4	2.9	2.2	-1.3
USSOD	12	V	100	0	0.0	0.0	0.0
USSOD	00	V	100	0	0.0	0.0	0.0
USYUB	12	V	100	2	0.8	-0.2	-0.3
USYUB	00	V	100	5	4.7	-1.0	-0.9
WDK38H	12	V	100	0	0.0	0.0	0.0
XQFJRG	12	V	100	9	3.0	0.0	1.4
XQFJRG	00	V	100	7	4.0	-0.3	-0.3
YLV96W	12	V	100	13	3.4	-0.4	0.1
YLV96W	00	V	100	13	3.1	0.1	0.0

3.2.27 Figure 14 - SATOB Winds: 700-1000hPa

Figure 14

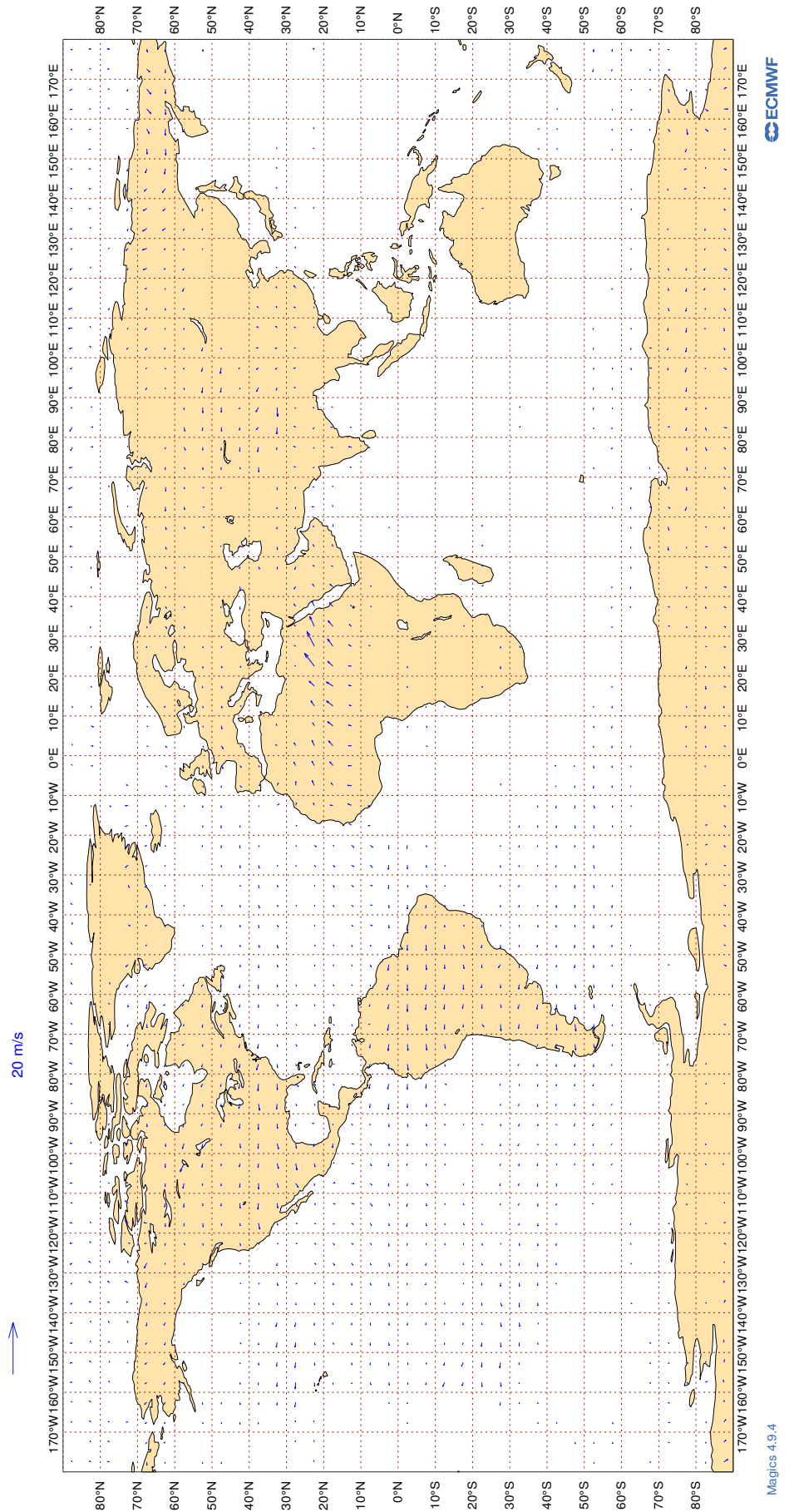
ECMWF Monitoring Statistics: Mar 2023
AMV Winds: 700-1000hPa
Mean Observed Wind



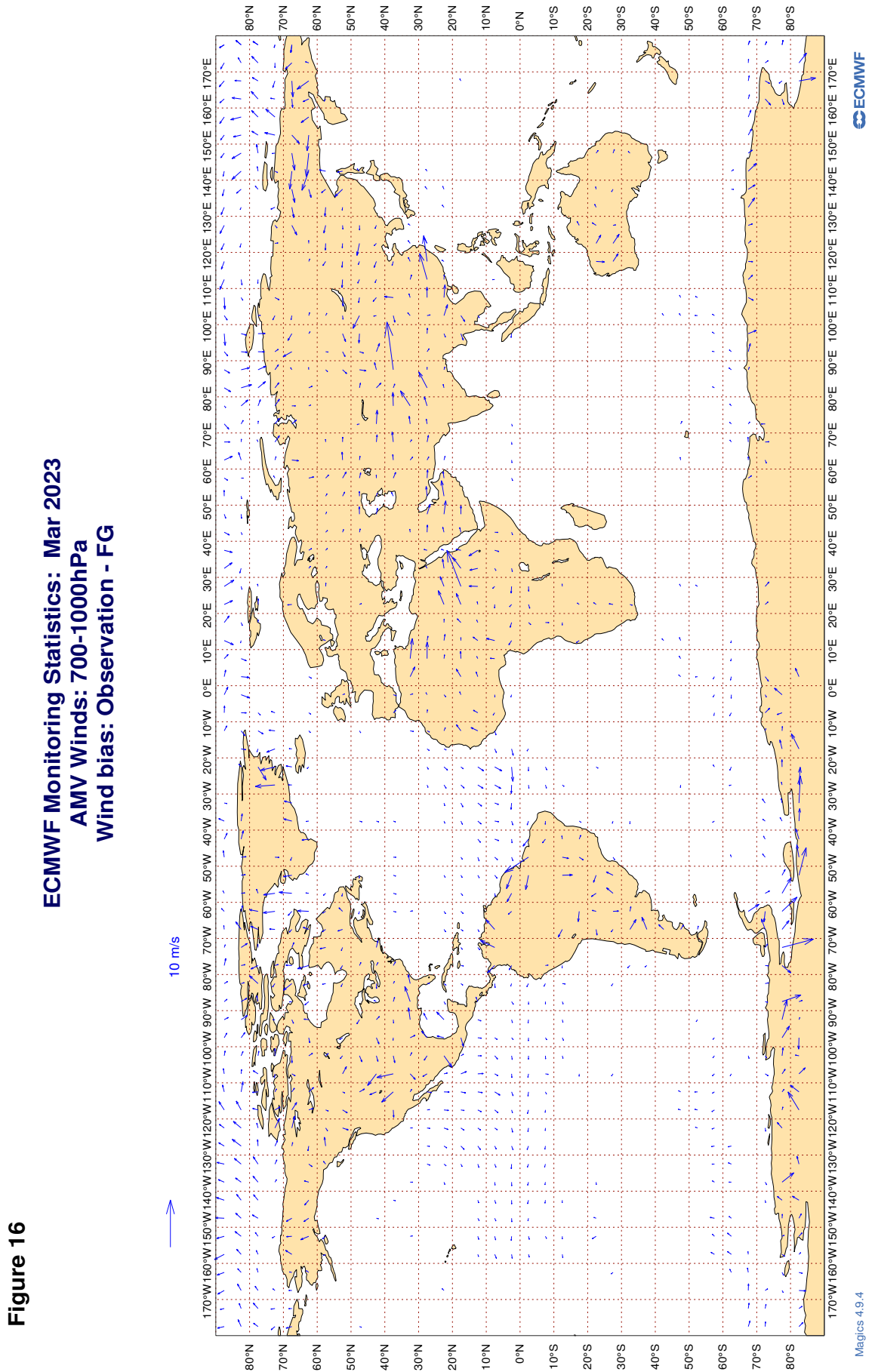
3.2.28 Figure 15 - SATOB Winds: 150- 400hPa

Figure 15

ECMWF Monitoring Statistics: Mar 2023
AMV Winds: 150- 400hPa
Wind bias: Observation - FG



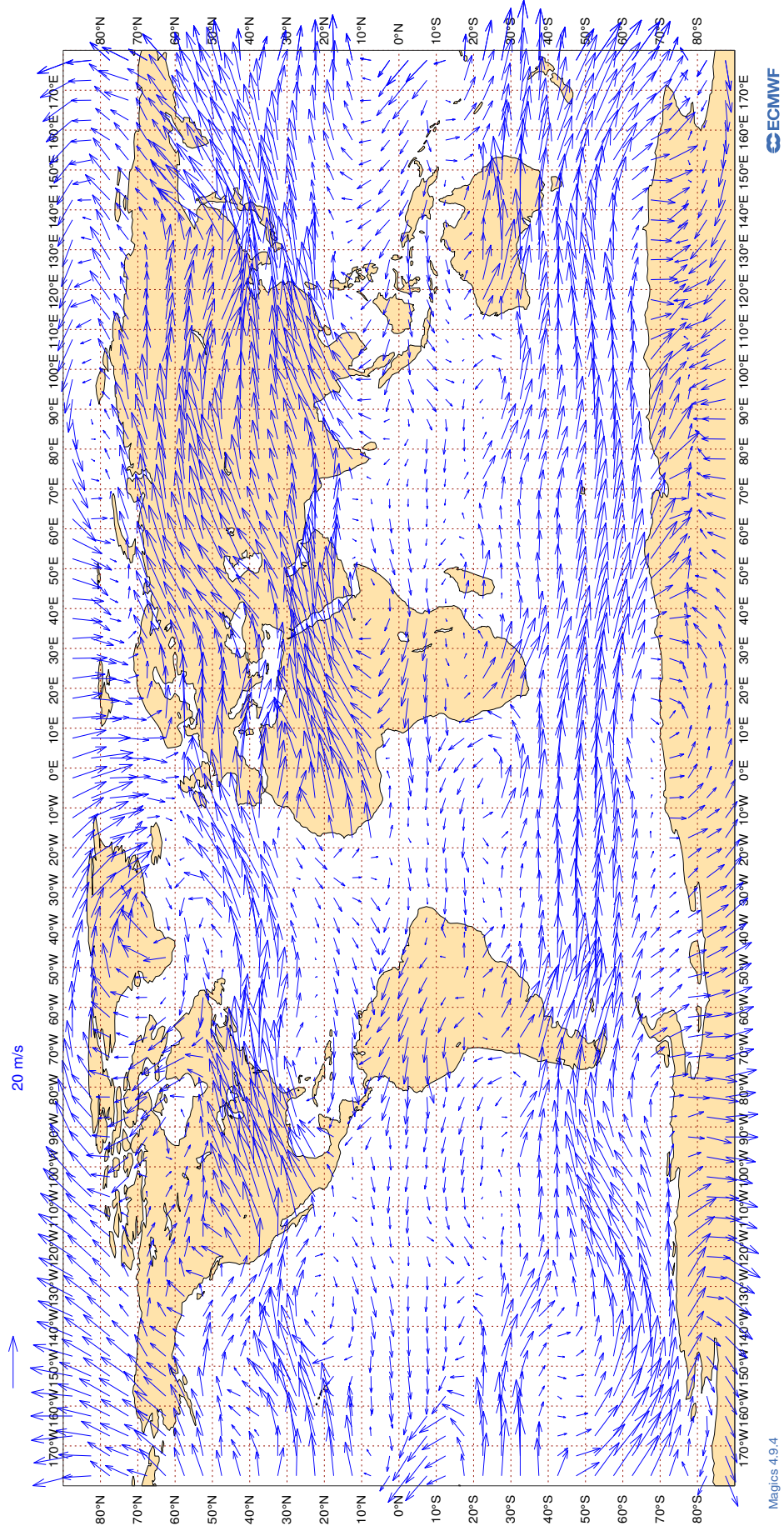
3.2.29 Figure 16 - SATOB Winds: 700-1000hPa



3.2.30 Figure 17 - SATOB Winds: 150- 400hPa

Figure 17

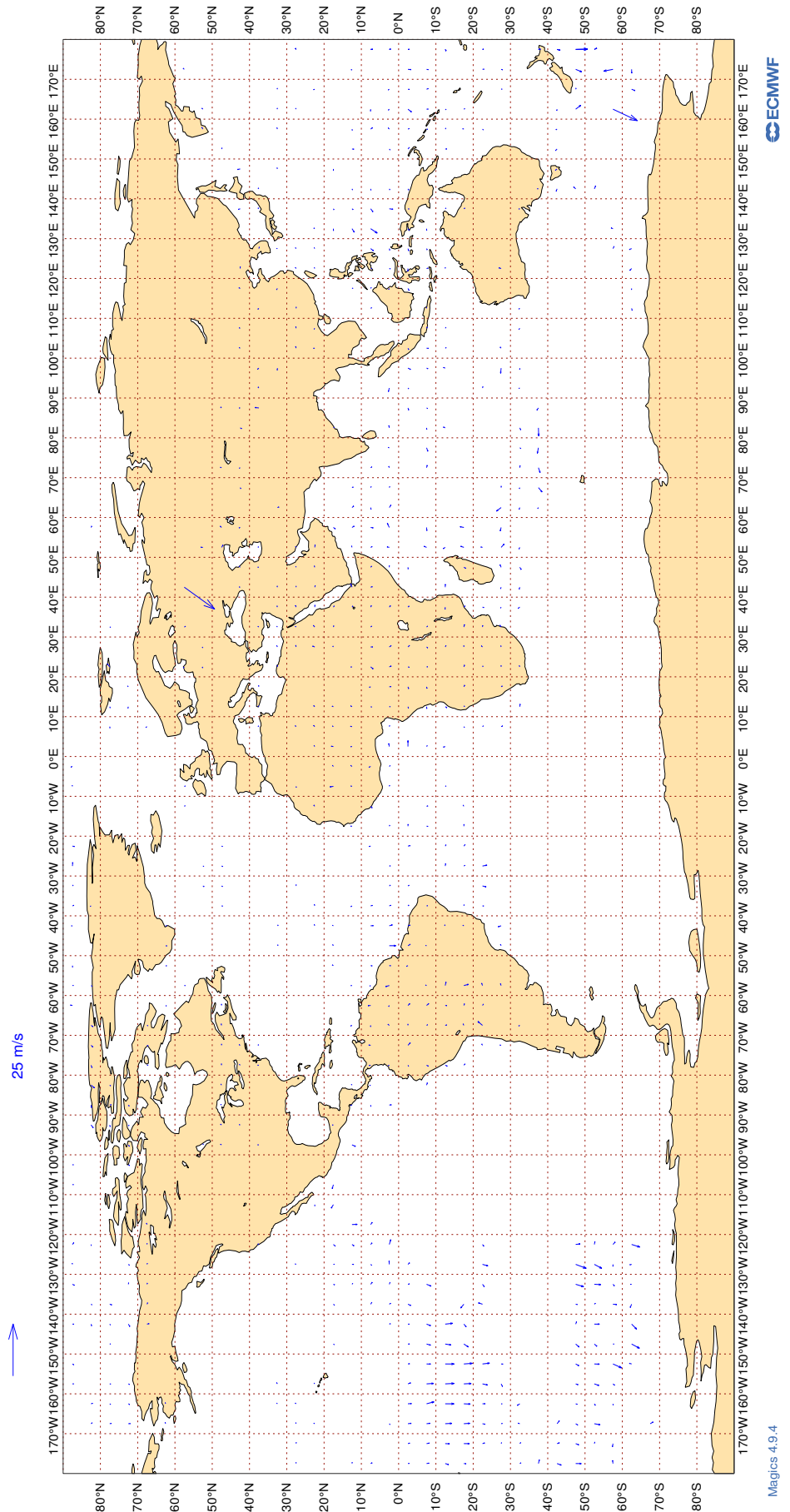
ECMWF Monitoring Statistics: Mar 2023
AMV Winds: 150- 400hPa
Mean Observed Wind



3.2.31 Figure 18 - AIRCRAFT Winds: 150- 300hPa

Figure 18

ECMWF Monitoring Statistics: Mar 2023
Aircraft Winds: 150- 300hPa
Wind bias: Observation - FG



3.2.32 Table 12 - Airep Monitoring Statistics For Airline Carriers (Global)

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : VECTOR WIND (M/S)
 AREA : GLOBAL
 PERIOD : MAR 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

SELECTION CRITERIA: NO. OF OBS. >= 20

TIME = 99 => AVERAGE OF ALL OBSERVATIONS
 GROSS ERROR LIMIT ON VECTOR WIND = 40 M/S

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
AAB	99	V	300-150	61	0	0	3.3	-0.1
AAL	99	V	300-150	39941	2	0	5.8	0.1
AAR	99	V	300-150	208	0	0	4.2	-0.9
ABB	99	V	300-150	130	0	0	4.0	0.2
ABD	99	V	300-150	1294	0	0	3.8	-0.1
ABP	99	V	300-150	42	0	2	2.7	0.0
ABX	99	V	300-150	259	0	0	4.0	0.3
ACA	99	V	300-150	24218	1	0	5.4	0.1
ACI	99	V	300-150	348	0	0	4.6	1.0
ADY	99	V	300-150	35	0	0	3.8	-0.5
AEA	99	V	300-150	464	7	3	7.1	-0.1
AEE	99	V	300-150	35	0	0	3.4	0.9
AFR	99	V	300-150	33667	1	0	4.2	0.2
AHO	99	V	300-150	711	0	0	3.6	0.1
AHY	99	V	300-150	27	0	0	4.2	0.6
AIC	99	V	300-150	5204	2	0	5.0	0.3
AJT	99	V	300-150	300	0	0	3.3	-0.1
AKK	99	V	300-150	70	0	0	2.5	-0.1
ALK	99	V	300-150	1993	0	0	3.4	0.5
AME	99	V	300-150	42	0	0	3.3	0.6
AMX	99	V	300-150	4167	9	0	7.4	0.0

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
ANA	99	V	300-150	82	5	0	4.0	2.0
ANZ	99	V	300-150	19613	2	0	5.7	0.4
AOJ	99	V	300-150	361	0	0	2.9	0.2
ARG	99	V	300-150	26	0	0	4.1	0.3
ARL	99	V	300-150	37	0	0	5.3	-1.1
ASA	99	V	300-150	213	3	3	7.3	-0.2
ASL	99	V	300-150	354	0	0	3.3	0.5
ASY	99	V	300-150	69	0	1	3.9	-0.2
ATC	99	V	300-150	224	2	0	5.5	0.5
ATG	99	V	300-150	420	0	0	4.7	0.5
ATN	99	V	300-150	186	1	1	5.5	0.2
AUA	99	V	300-150	4009	0	0	3.8	0.0
AUH	99	V	300-150	21	0	0	3.0	0.9
AVA	99	V	300-150	449	8	0	6.2	-0.2
AWC	99	V	300-150	476	0	0	3.4	0.5
AXB	99	V	300-150	45	0	0	2.8	0.6
AXM	99	V	300-150	117	0	3	4.4	0.3
AXY	99	V	300-150	125	0	0	3.4	0.4
AZG	99	V	300-150	738	0	0	3.6	0.1
BAH	99	V	300-150	64	0	0	3.6	-0.4
BAV	99	V	300-150	194	4	1	6.0	0.5
BAW	99	V	300-150	51416	1	0	4.8	0.1
BBC	99	V	300-150	641	1	0	5.5	0.6
BCS	99	V	300-150	2001	0	0	3.3	0.1
BEL	99	V	300-150	1085	0	0	3.0	0.3
BFF	99	V	300-150	74	0	0	9.0	1.5
BLU	99	V	300-150	33	0	0	2.9	0.1
BLX	99	V	300-150	1140	4	0	7.4	0.2
BOX	99	V	300-150	4756	0	0	3.5	0.2
BOX	99	V	300-150	44	0	0	3.4	-0.2
BRJ	99	V	300-150	51	0	0	3.0	1.6
BTX	99	V	300-150	77	0	0	3.4	0.6
CAL	99	V	300-150	1736	0	0	4.2	0.5
CAZ	99	V	300-150	99	0	1	3.6	0.3
CBJ	99	V	300-150	168	0	0	3.5	0.1
CCA	99	V	300-150	41	0	0	3.3	1.0
CEB	99	V	300-150	710	0	0	3.9	0.5
CEF	99	V	300-150	22	0	0	3.2	0.4
CES	99	V	300-150	884	0	0	3.6	0.5
CFC	99	V	300-150	256	0	0	4.4	0.9
CFG	99	V	300-150	5404	0	0	3.6	0.3
CHG	99	V	300-150	959	0	0	3.8	-0.1
CJT	99	V	300-150	883	0	0	3.7	0.0

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
CKS	99	V	300-150	2331	0	0	3.5	0.1
CLX	99	V	300-150	5612	0	0	3.7	-0.1
CLY	99	V	300-150	63	0	2	3.8	-0.2
CMA	99	V	300-150	484	0	0	3.0	0.2
CMB	99	V	300-150	1750	0	0	3.4	0.3
CNK	99	V	300-150	37	0	0	3.3	-1.0
CNV	99	V	300-150	128	0	0	3.7	0.6
CPA	99	V	300-150	1760	0	0	4.1	0.6
CPI	99	V	300-150	23	0	0	3.6	0.6
CPJ	99	V	300-150	29	0	0	3.8	0.1
CRL	99	V	300-150	1158	0	1	3.8	0.2
CRV	99	V	300-150	71	0	0	3.0	0.4
CSC	99	V	300-150	651	0	0	4.2	0.5
CSN	99	V	300-150	592	1	0	4.4	0.1
CSS	99	V	300-150	70	0	0	3.9	0.4
CTM	99	V	300-150	197	0	0	3.9	0.6
CWG	99	V	300-150	36	0	0	4.0	1.3
DAH	99	V	300-150	616	0	0	3.3	0.3
DAL	99	V	300-150	53353	0	0	3.3	0.2
DCS	99	V	300-150	48	0	0	3.4	0.4
DCW	99	V	300-150	41	0	0	3.5	-0.1
DHK	99	V	300-150	3314	0	0	3.5	0.1
DHX	99	V	300-150	270	0	0	3.8	0.9
DJT	99	V	300-150	1622	0	0	3.3	0.3
DLH	99	V	300-150	22433	0	0	3.7	0.1
DSO	99	V	300-150	42	0	0	2.9	1.4
DUB	99	V	300-150	41	0	0	3.1	0.2
EAL	99	V	300-150	46	0	0	4.7	-1.2
EAU	99	V	300-150	37	0	0	2.4	0.5
ECC	99	V	300-150	43	0	0	8.1	0.2
EDC	99	V	300-150	105	0	0	2.5	0.0
EDG	99	V	300-150	36	0	0	2.6	0.3
EDW	99	V	300-150	1385	0	0	3.6	0.3
EFF	99	V	300-150	35	0	0	4.4	-0.7
EIN	99	V	300-150	15783	0	0	3.1	0.2
EJM	99	V	300-150	749	2	0	4.0	0.1
ELY	99	V	300-150	4525	6	0	7.4	0.0
ESW	99	V	300-150	48	0	0	3.9	0.2
ETD	99	V	300-150	12015	3	0	5.1	0.3
ETH	99	V	300-150	6151	1	0	5.0	0.2
EUK	99	V	300-150	1738	0	0	3.3	0.2
EVA	99	V	300-150	1358	4	0	4.8	0.3
EVE	99	V	300-150	114	0	0	3.5	0.6

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
EXS	99	V	300-150	189	0	0	3.5	0.4
EXV	99	V	300-150	61	0	0	3.4	0.6
FBU	99	V	300-150	2042	0	0	3.5	0.1
FDX	99	V	300-150	8307	0	0	3.3	0.1
FFM	99	V	300-150	46	0	0	4.4	1.2
FIN	99	V	300-150	2561	0	0	3.4	0.2
FJI	99	V	300-150	2393	0	0	3.8	0.5
FJO	99	V	300-150	54	0	0	3.2	0.0
FPY	99	V	300-150	2302	0	0	3.0	0.1
FWI	99	V	300-150	2192	0	0	3.5	0.3
FXT	99	V	300-150	34	0	0	3.9	0.2
FYG	99	V	300-150	44	0	0	3.6	-0.3
FYL	99	V	300-150	36	0	0	4.0	0.4
GAF	99	V	300-150	199	0	1	3.0	0.6
GCK	99	V	300-150	98	0	0	3.4	-0.6
GEC	99	V	300-150	1868	0	0	3.4	0.2
GES	99	V	300-150	94	6	0	2.7	0.5
GFA	99	V	300-150	1098	5	0	5.7	0.5
GIA	99	V	300-150	1057	0	0	3.4	0.4
GJE	99	V	300-150	42	0	0	2.6	0.2
GJI	99	V	300-150	29	0	0	2.7	-0.2
GJW	99	V	300-150	34	0	0	3.0	0.4
GMA	99	V	300-150	38	0	0	3.5	1.0
GNJ	99	V	300-150	50	0	0	3.9	-0.1
GSM	99	V	300-150	59	0	0	4.2	1.5
GTI	99	V	300-150	2370	0	0	3.5	-0.2
GTR	99	V	300-150	465	0	0	2.9	0.3
HAF	99	V	300-150	39	0	0	3.0	0.1
HAL	99	V	300-150	862	0	1	4.1	0.5
HFM	99	V	300-150	78	0	0	3.6	0.1
HIM	99	V	300-150	188	0	0	3.3	0.3
HKC	99	V	300-150	176	0	0	3.5	0.5
HLF	99	V	300-150	89	0	0	3.5	0.9
HRN	99	V	300-150	56	0	0	4.1	1.1
HUA	99	V	300-150	67	0	0	3.5	-0.9
HVN	99	V	300-150	855	4	0	5.1	0.3
HYP	99	V	300-150	62	0	0	2.9	0.2
IBE	99	V	300-150	5519	0	0	3.4	0.2
ICE	99	V	300-150	5347	0	0	3.0	0.3
ICL	99	V	300-150	33	0	0	3.1	-1.1
ICV	99	V	300-150	331	0	0	4.1	0.9
IFA	99	V	300-150	184	0	1	4.1	0.4
IFC	99	V	300-150	41	0	0	3.1	0.7

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
IJM	99	V	300-150	176	0	0	3.3	-0.1
ITY	99	V	300-150	4665	0	0	3.3	0.2
JAF	99	V	300-150	482	9	0	7.2	-0.1
JAL	99	V	300-150	159	4	0	6.1	0.2
JAS	99	V	300-150	138	0	0	3.7	0.7
JBU	99	V	300-150	4741	0	0	3.5	0.3
JCO	99	V	300-150	115	0	0	2.7	0.4
JCT	99	V	300-150	30	0	0	5.2	-0.3
JEF	99	V	300-150	32	0	0	4.4	-1.0
JET	99	V	300-150	34	0	0	3.8	0.2
JME	99	V	300-150	84	0	0	3.0	-0.5
JML	99	V	300-150	72	0	0	3.6	0.2
JPV	99	V	300-150	21	0	0	4.6	2.5
JST	99	V	300-150	54	0	0	2.9	-0.3
KAC	99	V	300-150	2767	0	0	3.5	0.2
KAF	99	V	300-150	64	0	0	3.5	0.6
KAI	99	V	300-150	94	0	0	6.2	0.5
KAL	99	V	300-150	658	1	0	4.4	0.7
KAY	99	V	300-150	46	0	0	3.3	1.2
KCE	99	V	300-150	66	0	0	2.6	0.1
KFE	99	V	300-150	78	0	0	4.0	0.1
KIW	99	V	300-150	109	0	0	5.5	0.0
KLM	99	V	300-150	19596	2	0	5.9	0.1
KOC	99	V	300-150	59	0	0	3.3	0.2
KQA	99	V	300-150	415	5	0	5.3	0.3
KRH	99	V	300-150	33	0	0	3.4	0.7
LAN	99	V	300-150	1363	6	0	7.2	0.1
LCO	99	V	300-150	601	0	0	3.9	-0.3
LDX	99	V	300-150	97	0	0	3.0	-0.3
LEA	99	V	300-150	69	0	0	3.3	0.3
LNI	99	V	300-150	2666	0	0	3.4	0.3
LNK	99	V	300-150	147	0	1	3.1	0.5
LOT	99	V	300-150	4135	3	0	7.3	0.0
LXJ	99	V	300-150	430	0	0	3.2	0.9
MAS	99	V	300-150	6796	0	0	3.7	0.5
MAU	99	V	300-150	345	0	0	4.1	1.1
MED	99	V	300-150	83	0	0	3.6	1.1
MFX	99	V	300-150	32	0	0	2.1	0.4
MGO	99	V	300-150	22	0	0	3.6	1.7
MLM	99	V	300-150	207	0	0	3.4	0.3
MMD	99	V	300-150	323	0	0	3.0	0.5
MMZ	99	V	300-150	23	0	0	3.8	1.6
MNB	99	V	300-150	511	0	0	3.5	0.1

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
MPH	99	V	300-150	605	0	0	3.7	-0.3
MSR	99	V	300-150	2063	1	0	5.0	0.0
MVJ	99	V	300-150	33	0	0	4.9	1.5
MYM	99	V	300-150	36	0	0	5.6	1.8
NBT	99	V	300-150	2265	4	0	8.0	-0.1
NCR	99	V	300-150	402	0	0	4.3	-0.1
NJE	99	V	300-150	682	0	0	3.2	0.3
NOS	99	V	300-150	1512	8	0	8.0	0.1
NSP	99	V	300-150	36	0	0	10.1	-1.1
NVR	99	V	300-150	118	0	0	3.4	-0.2
OAE	99	V	300-150	610	0	0	4.0	0.1
OCN	99	V	300-150	4939	0	0	3.3	0.2
OLI	99	V	300-150	28	0	0	3.1	0.5
OMA	99	V	300-150	3151	4	0	5.5	0.5
PAC	99	V	300-150	378	0	0	3.3	0.2
PAL	99	V	300-150	1625	0	0	3.5	0.4
PEG	99	V	300-150	20	0	0	2.1	0.7
PIA	99	V	300-150	489	0	0	3.2	0.2
PJS	99	V	300-150	34	0	0	3.9	0.9
PJZ	99	V	300-150	30	0	3	3.0	0.3
PVA	99	V	300-150	121	0	0	2.8	0.3
QAF	99	V	300-150	46	0	0	3.5	1.4
QFA	99	V	300-150	7257	2	0	6.6	0.2
QID	99	V	300-150	32	0	0	3.5	0.1
QQE	99	V	300-150	171	0	0	3.2	0.5
QTR	99	V	300-150	36136	0	0	3.8	0.3
RAM	99	V	300-150	616	10	1	8.3	0.6
RBA	99	V	300-150	394	4	0	7.2	0.5
RCH	99	V	300-150	2613	0	0	4.7	0.3
RDN	99	V	300-150	34	0	0	2.6	-0.5
RHH	99	V	300-150	61	0	2	5.2	0.3
RJA	99	V	300-150	1952	3	0	7.8	0.0
RKK	99	V	300-150	62	0	0	3.8	0.6
ROJ	99	V	300-150	182	0	0	3.8	0.3
RRR	99	V	300-150	361	0	0	4.4	0.1
RSF	99	V	300-150	37	0	0	4.8	-0.6
RTA	99	V	300-150	35	0	3	3.2	0.7
RUN	99	V	300-150	41	0	0	4.8	2.2
RYR	99	V	300-150	1024	0	0	3.4	0.2
RZO	99	V	300-150	384	0	2	4.4	0.3
SAM	99	V	300-150	378	0	1	3.9	-0.2
SAS	99	V	300-150	5134	0	0	2.9	0.2
SAZ	99	V	300-150	164	0	0	3.0	0.1

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
SCX	99	V	300-150	56	0	2	4.9	0.6
SEY	99	V	300-150	62	0	0	4.3	1.0
SFZ	99	V	300-150	20	0	0	3.6	0.6
SHE	99	V	300-150	79	0	0	3.2	0.2
SIA	99	V	300-150	14725	0	0	4.1	0.4
SLM	99	V	300-150	75	0	0	3.2	0.2
SMR	99	V	300-150	23	0	0	5.9	3.2
SON	99	V	300-150	60	0	0	3.8	0.1
SPA	99	V	300-150	67	0	0	3.6	0.9
SVA	99	V	300-150	10215	1	0	4.6	0.4
SVW	99	V	300-150	192	0	0	3.3	0.2
SWA	99	V	300-150	20	5	10	7.1	1.4
SWR	99	V	300-150	9759	0	1	3.5	0.2
SYB	99	V	300-150	113	0	0	3.5	-0.1
TAG	99	V	300-150	28	0	0	3.5	1.6
TAM	99	V	300-150	101	0	0	3.2	0.3
TAP	99	V	300-150	4300	0	0	3.7	0.0
TAR	99	V	300-150	299	0	0	3.2	-0.1
TAY	99	V	300-150	325	0	0	3.7	0.2
TEU	99	V	300-150	94	0	0	3.6	0.8
TFF	99	V	300-150	49	0	0	2.5	0.6
TFL	99	V	300-150	1839	8	0	7.8	0.0
TGW	99	V	300-150	1365	2	0	5.7	0.5
THA	99	V	300-150	6077	1	0	4.7	0.4
THT	99	V	300-150	3124	2	0	7.2	0.4
THY	99	V	300-150	19050	1	0	4.6	0.1
TLJ	99	V	300-150	25	0	0	3.5	1.1
TMN	99	V	300-150	448	0	0	4.9	0.3
TOM	99	V	300-150	4535	9	0	8.0	-0.2
TOW	99	V	300-150	71	0	0	4.3	0.3
TRE	99	V	300-150	20	0	0	5.5	1.1
TRK	99	V	300-150	33	0	0	3.1	0.8
TSC	99	V	300-150	3842	0	0	3.4	0.3
TWB	99	V	300-150	20	0	0	4.3	0.5
TWY	99	V	300-150	648	0	0	3.2	0.4
UAE	99	V	300-150	31682	0	0	3.7	0.3
UAF	99	V	300-150	155	0	1	4.3	-0.4
UAL	99	V	300-150	72459	1	1	5.4	0.2
UBT	99	V	300-150	170	5	0	10.7	0.0
ULC	99	V	300-150	67	0	0	3.3	0.3
UNI	99	V	300-150	46	0	0	4.3	1.0
UPS	99	V	300-150	6544	0	0	3.5	-0.1
UZB	99	V	300-150	388	1	0	6.7	0.0

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
VCG	99	V	300-150	95	0	0	4.1	-0.4
VIR	99	V	300-150	19672	1	0	5.3	0.0
VJT	99	V	300-150	1395	0	0	3.2	0.4
VKG	99	V	300-150	417	0	0	3.9	0.2
VLZ	99	V	300-150	105	0	0	5.2	1.0
VMP	99	V	300-150	52	0	0	5.9	1.4
VSV	99	V	300-150	137	0	0	5.0	0.1
VTI	99	V	300-150	2250	0	0	3.7	0.3
WFL	99	V	300-150	54	0	2	3.5	0.2
WGN	99	V	300-150	35	0	0	2.3	0.8
WJA	99	V	300-150	1274	1	0	6.8	0.2
XAX	99	V	300-150	759	0	0	3.6	0.6
XEN	99	V	300-150	32	0	3	2.5	0.3
XOJ	99	V	300-150	59	0	0	3.0	-0.2

4 EUCOS Area Monitoring Statistics

The following tables provide information on the quality of upper-air data and surface DRIFTER data over the EUCOS area as received at ECMWF during the month.

Tables 13, 14 (50 hPa level), 15, 16 (100 hPa level) 17, 18 (500 hPa level) 19 and 20 (850 hPa level) provide quality statistics for all TEMPSHIPS and PILOTSHIPS received during the month in the area 10°N - 90°N, 70°W - 40°E and for TEMPS and PILOTS from selected land stations within the same area. The statistics are in the same form as tables 10 and 11.

Tables 21-23 provides quality statistics of pressure and wind for all DRIFTER reports received in the area 10°N - 90°N, 70°W - 40°E. The statistics are in the same form as tables 4-6.

4.1 Table 13 - Radiosonde Monitoring Statistics (EUCOS): 50 hPa Geopotential height (metres)

RADIOSONDE MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : GEOPOTENTIAL HEIGHT (METRES)
 LEVEL : 50 HPA
 AREA : 0 - 90N, 100W - 40E
 PERIOD : MAR 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	12	Z	50	31	6.9	-2.7
01001	00	Z	50	23	32.4	-28.0
01028	00	Z	50	31	12.0	-4.4
01028	12	Z	50	31	10.5	-8.1
01400	00	Z	50	24	78.6	78.4
01400	12	Z	50	17	74.8	73.0
01415	12	Z	50	30	6.6	0.1
01415	00	Z	50	29	7.9	1.2
02365	00	Z	50	8	5.9	2.9
02365	12	Z	50	12	4.1	0.2
02836	12	Z	50	39	19.3	2.9
02836	00	Z	50	31	8.3	1.3
02963	00	Z	50	31	6.6	2.5
02963	12	Z	50	30	6.9	-0.3
03005	12	Z	50	30	7.0	-2.9
03005	00	Z	50	25	5.3	0.8
03238	00	Z	50	30	8.4	2.1
03238	12	Z	50	3	8.9	8.9
03808	12	Z	50	30	8.8	0.2
03808	00	Z	50	28	7.3	2.6
03918	00	Z	50	31	11.3	3.2
03918	12	Z	50	1	4.0	4.0
03953	00	Z	50	31	11.0	-7.2
03953	12	Z	50	30	11.2	-4.3
04018	00	Z	50	22	6.2	2.8
04018	12	Z	50	23	7.6	-4.3
04220	00	Z	50	27	23.8	-19.0
04220	12	Z	50	29	15.2	-6.5
04270	12	Z	50	29	20.9	-16.6
04270	00	Z	50	31	20.7	-15.5
04320	12	Z	50	31	8.8	-4.8
04320	00	Z	50	31	6.8	-2.0
04339	00	Z	50	31	61.5	-18.9
04339	12	Z	50	28	24.7	-2.2
04360	12	Z	50	22	13.5	-0.8
04360	00	Z	50	21	11.7	-9.1
06011	12	Z	50	25	10.2	4.2
06011	00	Z	50	24	46.6	4.2
06260	12	Z	50	5	6.4	-6.0

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06260	00	Z	50	28	7.3	-1.1
06610	00	Z	50	30	9.6	2.2
06610	12	Z	50	30	10.7	3.7
07110	00	Z	50	28	21.7	-16.8
07110	12	Z	50	29	23.2	-19.6
07510	00	Z	50	26	13.5	8.7
07510	12	Z	50	25	23.4	18.8
07645	12	Z	50	27	11.5	-4.7
07645	00	Z	50	23	12.8	-9.4
07761	00	Z	50	30	20.0	-10.0
07761	12	Z	50	31	18.1	-7.3
08001	12	Z	50	26	9.3	2.1
08001	00	Z	50	22	12.1	2.9
08221	12	Z	50	31	6.1	0.8
08221	00	Z	50	31	8.3	6.4
08302	12	Z	50	31	11.3	-9.4
08302	00	Z	50	31	7.4	-2.5
08508	12	Z	50	31	20.2	-2.7
08522	12	Z	50	31	8.9	-0.1
10035	00	Z	50	31	14.0	12.2
10035	12	Z	50	31	11.5	8.1
10393	12	Z	50	31	7.6	-1.0
10393	00	Z	50	31	7.5	-2.1
10410	00	Z	50	29	7.6	-1.2
10410	12	Z	50	30	8.7	-4.9
10739	00	Z	50	31	10.0	2.0
10739	12	Z	50	31	7.7	0.3
11035	00	Z	50	31	9.8	6.0
11035	12	Z	50	31	17.0	8.6
12982	00	Z	50	31	7.3	4.1
12982	12	Z	50	30	6.3	2.4
16245	12	Z	50	31	8.3	-2.6
16245	00	Z	50	30	8.3	3.1
16429	00	Z	50	29	7.4	4.5
16429	12	Z	50	31	6.6	1.5
16622	00	Z	50	23	14.6	11.6
16754	00	Z	50	24	12.2	9.1
17607	12	Z	50	21	10.5	2.1
26435	12	Z	50	15	8.4	-1.6
2EERVT	00	Z	50	5	14.4	-2.1
2EERVT	12	Z	50	6	12.3	-6.5
60018	00	Z	50	30	18.1	6.5
60018	12	Z	50	29	4.7	0.7

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
7JUNA4	12	Z	50	10	156.4	113.6
7JUNA4	00	Z	50	7	40.3	7.7
9ZT9MR	12	Z	50	11	36.9	-29.6
9ZT9MR	00	Z	50	13	40.6	-31.7
ASDE09	12	Z	50	1	26.5	26.5
ATGU3F	12	Z	50	5	84.6	-51.6
ATGU3F	00	Z	50	8	30.9	-24.6
BPMWB2	12	Z	50	3	28.6	3.5
BPMWB2	00	Z	50	1	1.0	-1.0
GQBZLZ	00	Z	50	0	0.0	0.0
GQBZLZ	12	Z	50	1	19.0	-19.0
JNKN7J	12	Z	50	11	67.1	45.5
JNKN7J	00	Z	50	7	33.1	31.3
KJFF9X	12	Z	50	7	7.8	-1.7
KJFF9X	00	Z	50	10	12.6	10.0
KMPLHP	12	Z	50	13	123.6	96.1
KMPLHP	00	Z	50	9	27.7	18.1
LRYQE3	00	Z	50	9	9.8	2.3
LRYQE3	12	Z	50	10	20.3	8.5
WDK38H	12	Z	50	0	0.0	0.0
XQFJRG	12	Z	50	9	12.2	-2.3
XQFJRG	00	Z	50	7	10.8	-4.8
YLV96W	12	Z	50	9	105.5	73.4
YLV96W	00	Z	50	14	34.7	7.6

4.2 Table 14 - Radiosonde Monitoring Statistics (EUCOS):50 hPa Wind (m/s)

RADIOSONDE MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND (M/S)
 LEVEL : 50 HPA
 AREA : 0 - 90N, 100W - 40E
 PERIOD : MAR 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	12	V	50	30	2.6	0.2	0.0
01001	00	V	50	23	3.1	0.7	-0.6
01028	00	V	50	29	3.9	-0.6	-0.3
01028	12	V	50	31	3.6	0.1	-0.2
01400	00	V	50	20	3.6	0.1	-0.9
01400	12	V	50	17	3.3	0.1	0.3
01415	12	V	50	29	2.9	-0.6	-0.5
01415	00	V	50	28	3.7	0.0	-0.4
02365	00	V	50	8	3.4	0.5	0.9
02365	12	V	50	12	2.2	-0.4	-0.5
02836	12	V	50	31	3.1	-0.5	0.5
02836	00	V	50	29	2.6	0.1	-0.3
02963	00	V	50	29	3.1	0.2	0.4
02963	12	V	50	30	3.0	-0.3	0.3
03005	12	V	50	29	3.1	-0.1	-0.3
03005	00	V	50	23	4.2	-0.2	0.1
03238	00	V	50	26	3.5	0.5	-0.2
03238	12	V	50	3	3.5	-0.3	1.4
03808	12	V	50	30	3.4	-0.2	0.3
03808	00	V	50	26	3.3	-0.3	-0.2
03918	00	V	50	30	3.0	0.1	-0.6
03918	12	V	50	1	1.6	0.2	1.6
03953	00	V	50	29	3.1	-0.3	-0.4
03953	12	V	50	30	3.2	0.9	-0.2
04018	00	V	50	16	3.3	-0.9	-0.2
04018	12	V	50	22	3.8	-0.1	0.0
04220	00	V	50	26	3.2	-0.1	0.0
04220	12	V	50	29	3.1	-0.1	0.1
04270	12	V	50	29	3.1	0.3	-0.2
04270	00	V	50	28	3.0	-0.1	0.1
04320	12	V	50	31	3.5	-0.6	-0.2
04320	00	V	50	30	3.1	-0.2	0.2
04339	00	V	50	29	3.7	0.9	0.3
04339	12	V	50	28	3.6	0.5	0.3
04360	12	V	50	22	2.5	-0.2	0.3
04360	00	V	50	20	3.4	-0.3	-0.4
06011	12	V	50	25	3.0	0.2	0.0
06011	00	V	50	19	3.0	-0.7	0.0
06260	12	V	50	5	3.0	0.6	0.3

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06260	00	V	50	27	2.6	0.5	-0.5
06610	00	V	50	28	3.5	-0.5	0.3
06610	12	V	50	29	4.0	-0.8	0.2
07110	00	V	50	26	2.6	0.3	0.1
07110	12	V	50	29	3.2	0.3	-0.3
07510	00	V	50	23	3.8	0.6	0.3
07510	12	V	50	25	3.2	0.6	-0.4
07645	12	V	50	27	3.0	-0.1	-0.1
07645	00	V	50	19	2.8	-1.4	-0.3
07761	00	V	50	29	4.5	0.1	-0.6
07761	12	V	50	31	3.3	0.2	-0.5
08001	12	V	50	26	3.8	0.1	-0.9
08001	00	V	50	22	4.1	-0.6	0.1
08221	12	V	50	31	3.5	-0.3	0.0
08221	00	V	50	30	3.6	-0.8	0.0
08302	12	V	50	31	4.6	-0.5	-1.3
08302	00	V	50	28	3.4	-0.2	0.5
08508	12	V	50	31	4.0	0.1	0.2
08522	12	V	50	31	3.0	-0.1	0.2
10035	00	V	50	30	3.4	0.4	-0.1
10035	12	V	50	31	3.5	-0.9	-0.5
10393	12	V	50	31	3.3	0.1	0.2
10393	00	V	50	29	3.8	0.2	-0.4
10410	00	V	50	27	2.8	0.5	0.2
10410	12	V	50	30	3.2	-0.1	-0.2
10739	00	V	50	28	3.2	-0.2	-0.2
10739	12	V	50	31	3.7	0.9	0.2
11035	00	V	50	28	3.0	0.2	0.1
11035	12	V	50	31	3.2	-0.4	-0.9
12982	00	V	50	29	3.0	0.4	-0.3
12982	12	V	50	30	3.3	-0.5	-0.1
16245	12	V	50	31	3.1	0.4	0.0
16245	00	V	50	29	3.6	-0.7	-0.8
16429	00	V	50	28	4.1	0.5	0.2
16429	12	V	50	31	4.0	0.4	-0.5
16622	00	V	50	15	4.4	0.4	-1.4
16754	00	V	50	20	5.1	-1.1	0.5
17607	12	V	50	10	4.8	-2.4	-0.9
26435	12	V	50	14	3.1	-0.3	-0.2
2EERVT	00	V	50	5	4.1	1.0	-1.6
2EERVT	12	V	50	6	3.1	0.2	1.0
60018	00	V	50	28	2.9	0.5	-0.9
60018	12	V	50	29	3.8	-1.1	0.3

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
7JUNA4	12	V	50	10	3.3	0.0	0.9
7JUNA4	00	V	50	7	2.7	0.7	0.3
9ZT9MR	12	V	50	11	2.9	0.1	-0.4
9ZT9MR	00	V	50	13	3.6	0.4	-0.2
ASDE09	12	V	50	1	1.7	-0.3	-1.7
ATGU3F	12	V	50	5	3.4	0.1	-0.7
ATGU3F	00	V	50	8	3.5	-1.1	0.8
BPMWB2	12	V	50	3	3.6	0.5	1.2
BPMWB2	00	V	50	1	7.3	1.5	-7.1
GQBZLZ	00	V	50	0	0.0	0.0	0.0
GQBZLZ	12	V	50	1	3.0	-1.4	2.7
JNKN7J	12	V	50	11	2.9	0.1	-1.0
JNKN7J	00	V	50	7	2.9	0.9	-0.6
KJJF9X	12	V	50	7	4.4	-1.5	-0.7
KJJF9X	00	V	50	10	4.3	1.2	1.0
KMPLHP	12	V	50	13	4.1	0.3	1.3
KMPLHP	00	V	50	9	3.7	0.5	-0.6
LRYQE3	00	V	50	9	4.5	-0.2	0.4
LRYQE3	12	V	50	10	3.7	1.4	1.3
WDK38H	12	V	50	0	0.0	0.0	0.0
XQFJRG	12	V	50	9	4.0	-1.0	0.2
XQFJRG	00	V	50	7	3.3	1.2	0.9
YLV96W	12	V	50	9	2.8	0.9	-1.1
YLV96W	00	V	50	14	4.0	1.0	1.6

4.3 Table 15 - Radiosonde Monitoring Statistics (EUCOS): 100 hPa Geopotential height (metres)

RADIOSONDE MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : GEOPOTENTIAL HEIGHT (METRES)
 LEVEL : 100 HPA
 AREA : 0 - 90N, 100W - 40E
 PERIOD : MAR 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	12	Z	100	31	8.8	-6.4
01001	00	Z	100	26	27.8	-24.8
01028	00	Z	100	31	9.7	-5.2
01028	12	Z	100	31	9.6	-7.5
01400	00	Z	100	27	75.7	75.5
01400	12	Z	100	23	73.3	71.9
01415	12	Z	100	31	4.1	-1.2
01415	00	Z	100	30	8.4	-1.7
02365	00	Z	100	14	8.0	0.1
02365	12	Z	100	13	5.0	-1.7
02836	12	Z	100	39	10.3	0.9
02836	00	Z	100	31	6.6	-2.8
02963	00	Z	100	31	4.2	-1.5
02963	12	Z	100	30	5.5	-2.1
03005	12	Z	100	31	6.9	-4.4
03005	00	Z	100	26	6.3	-3.1
03238	00	Z	100	31	7.1	-1.5
03238	12	Z	100	3	3.2	2.4
03808	12	Z	100	30	7.5	-2.5
03808	00	Z	100	30	6.0	-0.9
03918	00	Z	100	31	8.8	0.5
03918	12	Z	100	1	2.9	2.9
03953	00	Z	100	31	10.9	-7.8
03953	12	Z	100	31	10.9	-5.8
04018	00	Z	100	22	5.6	-2.8
04018	12	Z	100	26	9.1	-5.2
04220	00	Z	100	29	20.6	-17.2
04220	12	Z	100	31	13.1	-9.8
04270	12	Z	100	30	17.2	-14.2
04270	00	Z	100	31	20.7	-15.1
04320	12	Z	100	31	8.8	-3.5
04320	00	Z	100	31	6.2	-1.8
04339	00	Z	100	31	15.5	-12.3
04339	12	Z	100	28	24.4	-5.2
04360	12	Z	100	22	8.0	-4.7
04360	00	Z	100	22	13.1	-11.4
06011	12	Z	100	28	7.3	-0.3
06011	00	Z	100	26	43.1	1.6
06260	12	Z	100	5	6.9	-6.0

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06260	00	Z	100	30	6.3	-3.5
06610	00	Z	100	31	9.6	-1.2
06610	12	Z	100	32	9.3	-1.7
07110	00	Z	100	29	22.7	-18.7
07110	12	Z	100	29	22.0	-19.5
07510	00	Z	100	27	9.5	4.5
07510	12	Z	100	25	15.3	11.8
07645	12	Z	100	27	11.6	-6.9
07645	00	Z	100	28	18.6	-13.8
07761	00	Z	100	30	26.5	-19.0
07761	12	Z	100	31	20.8	-15.0
08001	12	Z	100	26	7.7	0.6
08001	00	Z	100	22	8.8	-1.6
08221	12	Z	100	31	6.1	0.2
08221	00	Z	100	31	6.1	1.9
08302	12	Z	100	31	11.5	-10.6
08302	00	Z	100	32	9.4	-7.0
08508	12	Z	100	31	17.7	-1.8
08522	12	Z	100	31	9.5	3.3
10035	00	Z	100	31	10.2	8.7
10035	12	Z	100	31	11.6	8.8
10393	12	Z	100	31	6.6	-3.3
10393	00	Z	100	31	6.9	-4.7
10410	00	Z	100	31	7.7	-4.7
10410	12	Z	100	31	9.1	-6.1
10739	00	Z	100	31	9.0	-1.0
10739	12	Z	100	31	5.3	-1.5
11035	00	Z	100	31	6.9	2.5
11035	12	Z	100	31	12.2	4.2
12982	00	Z	100	31	4.5	0.9
12982	12	Z	100	31	4.5	0.7
16245	12	Z	100	31	6.3	-3.2
16245	00	Z	100	30	5.3	0.3
16429	00	Z	100	30	6.3	0.8
16429	12	Z	100	31	5.9	0.7
16622	00	Z	100	27	10.6	7.0
16754	00	Z	100	28	9.8	5.1
17607	12	Z	100	30	7.5	2.4
26435	12	Z	100	15	7.4	-5.7
2EERVT	00	Z	100	5	15.0	-4.7
2EERVT	12	Z	100	6	12.3	-9.0
60018	00	Z	100	30	17.3	4.8
60018	12	Z	100	30	12.2	5.1

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
7JUNA4	12	Z	100	11	89.9	62.5
7JUNA4	00	Z	100	7	34.5	7.2
9ZT9MR	12	Z	100	11	44.5	-36.4
9ZT9MR	00	Z	100	14	41.1	-34.6
ASDE09	12	Z	100	3	25.9	25.7
ATGU3F	12	Z	100	9	70.1	-35.2
ATGU3F	00	Z	100	11	29.6	-23.3
BPMWB2	12	Z	100	3	20.2	-15.9
BPMWB2	00	Z	100	2	7.3	-5.4
GQBZLZ	00	Z	100	0	0.0	0.0
GQBZLZ	12	Z	100	1	17.4	-17.4
JNKN7J	12	Z	100	11	41.4	35.0
JNKN7J	00	Z	100	9	30.1	27.2
KJFF9X	12	Z	100	8	8.0	3.7
KJFF9X	00	Z	100	10	11.1	7.5
KMPLHP	12	Z	100	13	69.5	52.3
KMPLHP	00	Z	100	10	42.1	31.8
LRYQE3	00	Z	100	10	9.1	-1.6
LRYQE3	12	Z	100	10	10.5	3.0
WDK38H	12	Z	100	0	0.0	0.0
XQFJRG	12	Z	100	9	10.6	-5.2
XQFJRG	00	Z	100	7	10.6	-6.0
YLV96W	12	Z	100	13	77.4	43.9
YLV96W	00	Z	100	13	22.6	-2.9

4.4 Table 16 - Radiosonde Monitoring Statistics (EUCOS): 100 hPa Wind (m/s)

RADIOSONDE MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND (M/S)
 LEVEL : 100 HPA
 AREA : 0 - 90N, 100W - 40E
 PERIOD : MAR 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	12	V	100	31	3.1	0.2	0.0
01001	00	V	100	25	2.4	0.5	0.2
01028	00	V	100	29	2.8	-0.1	-0.4
01028	12	V	100	31	2.8	-0.1	0.7
01400	00	V	100	22	3.0	0.2	0.6
01400	12	V	100	22	3.8	0.7	-0.7
01415	12	V	100	31	3.2	0.2	0.8
01415	00	V	100	30	4.1	0.1	-0.1
02365	00	V	100	10	3.3	-1.9	-1.0
02365	12	V	100	12	3.4	-0.4	-0.5
02836	12	V	100	31	3.6	-1.0	0.3
02836	00	V	100	30	2.6	-0.2	0.3
02963	00	V	100	29	2.9	-0.4	-0.6
02963	12	V	100	30	3.4	0.3	0.0
03005	12	V	100	31	3.7	0.8	0.9
03005	00	V	100	24	4.0	0.2	0.1
03238	00	V	100	27	2.6	0.3	-0.3
03238	12	V	100	3	2.3	-0.1	1.4
03808	12	V	100	30	4.0	1.2	0.1
03808	00	V	100	27	3.2	0.4	0.0
03918	00	V	100	30	3.3	-0.4	0.4
03918	12	V	100	1	2.1	1.2	1.7
03953	00	V	100	29	3.0	0.2	-0.1
03953	12	V	100	31	3.0	-0.4	-0.6
04018	00	V	100	21	3.7	-1.0	0.8
04018	12	V	100	24	3.8	0.3	0.0
04220	00	V	100	28	2.8	-0.3	-0.2
04220	12	V	100	31	2.1	-0.4	-0.3
04270	12	V	100	30	2.6	-0.6	-0.7
04270	00	V	100	29	3.4	0.2	-0.5
04320	12	V	100	31	3.0	-0.1	0.3
04320	00	V	100	30	3.5	-0.1	0.2
04339	00	V	100	30	4.0	-0.6	-0.8
04339	12	V	100	28	4.0	-0.6	0.3
04360	12	V	100	22	2.4	0.8	-0.5
04360	00	V	100	21	2.9	0.1	-0.2
06011	12	V	100	28	3.3	-0.6	-0.6
06011	00	V	100	25	2.7	-0.3	0.5
06260	12	V	100	5	3.8	2.1	-1.8

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06260	00	V	100	29	2.9	0.1	0.5
06610	00	V	100	30	3.7	0.1	-0.3
06610	12	V	100	31	4.0	0.6	-0.6
07110	00	V	100	27	3.2	0.3	-0.2
07110	12	V	100	29	2.8	0.4	-0.3
07510	00	V	100	24	3.3	-0.7	0.3
07510	12	V	100	25	2.6	0.0	-0.2
07645	12	V	100	27	3.5	0.9	-0.6
07645	00	V	100	23	3.8	-0.3	-0.4
07761	00	V	100	29	5.7	2.1	-0.6
07761	12	V	100	31	4.9	0.5	0.4
08001	12	V	100	26	3.9	0.4	0.0
08001	00	V	100	22	3.8	1.0	-1.0
08221	12	V	100	31	3.4	0.3	0.4
08221	00	V	100	30	3.9	0.0	0.2
08302	12	V	100	31	4.3	0.2	-0.7
08302	00	V	100	28	3.6	0.3	-0.5
08508	12	V	100	31	3.3	0.0	-0.9
08522	12	V	100	31	4.2	-1.2	-0.4
10035	00	V	100	30	3.7	0.7	-0.5
10035	12	V	100	31	3.3	0.1	0.3
10393	12	V	100	31	3.0	0.6	-0.1
10393	00	V	100	30	2.9	0.4	0.1
10410	00	V	100	30	3.0	0.2	-0.3
10410	12	V	100	31	2.6	0.0	0.2
10739	00	V	100	30	3.5	-0.2	-1.0
10739	12	V	100	31	3.6	-0.2	-0.4
11035	00	V	100	29	4.0	0.1	-0.3
11035	12	V	100	31	3.0	-0.2	-0.5
12982	00	V	100	30	2.6	0.2	-0.1
12982	12	V	100	31	3.1	1.1	0.0
16245	12	V	100	31	3.6	-0.2	0.5
16245	00	V	100	29	3.5	0.1	0.2
16429	00	V	100	28	3.7	0.7	-0.6
16429	12	V	100	31	4.0	0.3	0.2
16622	00	V	100	24	3.8	0.2	-0.7
16754	00	V	100	27	4.1	0.7	0.2
17607	12	V	100	18	4.7	-0.9	-1.2
26435	12	V	100	15	2.5	0.2	0.1
2EERVT	00	V	100	5	4.2	0.4	1.9
2EERVT	12	V	100	6	3.2	0.5	-0.7
60018	00	V	100	28	3.4	-0.7	-0.1
60018	12	V	100	30	3.7	-0.7	0.4

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
7JUNA4	12	V	100	11	3.7	0.0	1.5
7JUNA4	00	V	100	7	2.5	0.4	0.1
9ZT9MR	12	V	100	11	3.0	-0.4	0.2
9ZT9MR	00	V	100	14	2.7	-0.6	0.6
ASDE09	12	V	100	3	2.6	0.9	-0.5
ATGU3F	12	V	100	9	2.7	0.3	-0.5
ATGU3F	00	V	100	11	3.5	0.6	0.0
BPMWB2	12	V	100	3	3.8	-1.0	1.2
BPMWB2	00	V	100	2	2.5	-0.2	-0.8
GQBZLZ	00	V	100	0	0.0	0.0	0.0
GQBZLZ	12	V	100	1	2.8	2.6	1.0
JNKN7J	12	V	100	11	4.0	0.9	0.0
JNKN7J	00	V	100	9	3.0	0.7	1.1
KJJF9X	12	V	100	8	3.5	0.2	0.1
KJJF9X	00	V	100	10	5.0	-1.5	1.8
KMPLHP	12	V	100	13	3.9	0.2	0.9
KMPLHP	00	V	100	10	2.6	1.0	0.2
LRYQE3	00	V	100	10	2.6	1.2	0.4
LRYQE3	12	V	100	10	4.7	1.0	-0.3
WDK38H	12	V	100	0	0.0	0.0	0.0
XQFJRG	12	V	100	9	3.0	0.0	1.4
XQFJRG	00	V	100	7	4.0	-0.3	-0.3
YLV96W	12	V	100	13	3.4	-0.4	0.1
YLV96W	00	V	100	13	3.1	0.1	0.0

4.5 Table 17 - Radiosonde Monitoring Statistics (EUCOS): 500 hPa Geopotential height (metres)

RADIOSONDE MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : GEOPOTENTIAL HEIGHT (METRES)
 LEVEL : 500 HPA
 AREA : 0 - 90N, 100W - 40E
 PERIOD : MAR 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	12	Z	500	31	5.0	-2.8
01001	00	Z	500	30	12.7	-11.3
01028	00	Z	500	31	4.5	-2.6
01028	12	Z	500	31	3.6	-1.4
01400	00	Z	500	29	78.1	77.9
01400	12	Z	500	28	76.4	75.3
01415	12	Z	500	31	4.7	3.7
01415	00	Z	500	30	5.1	1.0
02365	00	Z	500	15	4.3	3.0
02365	12	Z	500	15	4.4	2.8
02836	12	Z	500	38	3.6	1.0
02836	00	Z	500	31	3.1	-0.7
02963	00	Z	500	31	3.1	1.2
02963	12	Z	500	31	3.6	2.7
03005	12	Z	500	31	4.4	-1.1
03005	00	Z	500	28	3.7	-1.5
03238	00	Z	500	31	3.9	2.5
03238	12	Z	500	3	3.8	3.2
03808	12	Z	500	31	4.7	3.4
03808	00	Z	500	33	4.1	2.8
03918	00	Z	500	31	6.4	5.7
03918	12	Z	500	1	6.0	6.0
03953	00	Z	500	31	5.1	-1.7
03953	12	Z	500	32	5.8	-0.5
04018	00	Z	500	24	3.6	0.3
04018	12	Z	500	29	3.4	0.6
04220	00	Z	500	31	7.9	-5.8
04220	12	Z	500	31	6.3	-5.2
04270	12	Z	500	31	6.7	-4.9
04270	00	Z	500	31	9.8	-6.5
04320	12	Z	500	31	4.5	2.1
04320	00	Z	500	31	4.2	0.7
04339	00	Z	500	31	19.9	-9.5
04339	12	Z	500	28	23.2	-0.8
04360	12	Z	500	22	7.4	-6.7
04360	00	Z	500	23	10.7	-9.8
06011	12	Z	500	30	5.3	2.9
06011	00	Z	500	31	12.7	1.4
06260	12	Z	500	6	3.2	2.5

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06260	00	Z	500	30	4.1	0.5
06610	00	Z	500	31	3.6	1.9
06610	12	Z	500	32	3.4	1.9
07110	00	Z	500	31	14.1	-9.9
07110	12	Z	500	31	10.1	-8.5
07510	00	Z	500	28	7.5	6.4
07510	12	Z	500	29	9.8	7.9
07645	12	Z	500	34	5.7	-3.2
07645	00	Z	500	34	5.9	-4.5
07761	00	Z	500	31	11.4	-10.1
07761	12	Z	500	31	7.3	-6.4
08001	12	Z	500	26	5.1	4.2
08001	00	Z	500	22	4.2	3.3
08221	12	Z	500	31	5.8	4.2
08221	00	Z	500	31	4.6	3.6
08302	12	Z	500	31	6.3	-5.4
08302	00	Z	500	32	5.6	-4.5
08508	12	Z	500	31	18.8	1.5
08522	12	Z	500	31	9.6	5.6
10035	00	Z	500	31	12.3	12.1
10035	12	Z	500	31	13.2	12.8
10393	12	Z	500	31	3.1	-0.5
10393	00	Z	500	31	3.5	-0.6
10410	00	Z	500	31	3.6	0.4
10410	12	Z	500	31	4.7	-1.2
10739	00	Z	500	31	5.5	4.1
10739	12	Z	500	31	5.4	3.7
11035	00	Z	500	31	3.6	2.0
11035	12	Z	500	33	5.0	1.7
12982	00	Z	500	31	4.0	2.4
12982	12	Z	500	31	3.5	1.6
16245	12	Z	500	31	3.6	1.9
16245	00	Z	500	30	3.9	1.2
16429	00	Z	500	31	5.3	3.5
16429	12	Z	500	31	4.9	4.1
16622	00	Z	500	29	9.6	8.7
16754	00	Z	500	31	2.9	1.2
17607	12	Z	500	31	3.0	1.1
26435	12	Z	500	15	3.1	-0.7
2EERVT	00	Z	500	6	7.7	-3.9
2EERVT	12	Z	500	7	8.2	-5.3
60018	00	Z	500	30	16.8	2.1
60018	12	Z	500	30	12.7	7.4

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
7JUNA4	12	Z	500	11	26.2	10.2
7JUNA4	00	Z	500	10	32.1	13.5
9ZT9MR	12	Z	500	11	48.7	-39.0
9ZT9MR	00	Z	500	15	38.0	-28.9
ASDE09	12	Z	500	4	25.7	25.4
ATGU3F	12	Z	500	11	19.0	-15.1
ATGU3F	00	Z	500	14	19.6	-14.7
BPMWB2	12	Z	500	3	8.3	-6.5
BPMWB2	00	Z	500	3	7.5	-7.2
GQBZLZ	00	Z	500	1	48.9	-48.9
GQBZLZ	12	Z	500	1	12.2	-12.2
JNKN7J	12	Z	500	11	35.7	34.7
JNKN7J	00	Z	500	9	37.0	36.1
KJFF9X	12	Z	500	8	5.5	5.1
KJFF9X	00	Z	500	10	4.3	-0.2
KMPLHP	12	Z	500	14	38.5	27.4
KMPLHP	00	Z	500	11	59.7	48.6
LRYQE3	00	Z	500	10	5.2	1.7
LRYQE3	12	Z	500	12	7.2	6.0
WDK38H	12	Z	500	1	13.8	-13.8
XQFJRG	12	Z	500	9	7.2	-4.5
XQFJRG	00	Z	500	7	6.0	-4.7
YLV96W	12	Z	500	14	29.0	5.9
YLV96W	00	Z	500	14	28.3	5.3

4.6 Table 18 - Radiosonde Monitoring Statistics (EUCOS): 500 hPa Wind (m/s)

RADIOSONDE MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND (M/S)
 LEVEL : 500 HPA
 AREA : 0 - 90N, 100W - 40E
 PERIOD : MAR 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	12	V	500	31	3.2	0.3	-0.2
01001	00	V	500	30	1.7	0.0	-0.3
01028	00	V	500	30	2.8	0.2	0.2
01028	12	V	500	31	2.8	0.1	0.5
01400	00	V	500	27	2.8	0.4	0.6
01400	12	V	500	28	2.6	0.2	-0.5
01415	12	V	500	31	2.6	-0.1	0.3
01415	00	V	500	30	2.8	0.1	-0.1
02365	00	V	500	15	2.8	-0.8	0.2
02365	12	V	500	15	2.8	0.3	0.6
02836	12	V	500	31	2.9	0.3	0.5
02836	00	V	500	30	3.2	0.3	0.5
02963	00	V	500	30	2.5	-0.1	0.5
02963	12	V	500	31	2.9	0.1	0.7
03005	12	V	500	31	3.3	0.6	0.0
03005	00	V	500	26	2.9	0.6	0.5
03238	00	V	500	30	3.0	0.5	-0.5
03238	12	V	500	3	1.4	-0.3	1.1
03808	12	V	500	30	3.5	0.3	-0.2
03808	00	V	500	30	3.0	0.1	0.9
03918	00	V	500	30	2.5	0.7	0.2
03918	12	V	500	1	2.9	2.1	-2.0
03953	00	V	500	29	3.1	0.1	-0.2
03953	12	V	500	31	3.1	1.3	0.0
04018	00	V	500	23	2.3	0.1	-0.5
04018	12	V	500	29	2.6	0.4	-0.3
04220	00	V	500	30	2.1	0.0	0.0
04220	12	V	500	31	2.5	0.3	-0.1
04270	12	V	500	31	2.9	0.3	0.3
04270	00	V	500	30	2.1	0.4	-0.4
04320	12	V	500	31	2.3	-0.2	0.0
04320	00	V	500	30	2.5	0.1	0.8
04339	00	V	500	30	2.4	-0.1	-0.2
04339	12	V	500	28	2.0	-0.2	0.1
04360	12	V	500	22	1.9	0.3	0.3
04360	00	V	500	23	2.5	0.5	0.1
06011	12	V	500	30	2.9	0.5	0.7
06011	00	V	500	30	2.9	0.2	-0.2
06260	12	V	500	6	4.6	1.4	-0.2

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06260	00	V	500	29	2.5	0.4	-0.2
06610	00	V	500	30	2.9	0.1	0.6
06610	12	V	500	31	2.4	0.3	0.0
07110	00	V	500	29	3.3	0.5	0.0
07110	12	V	500	31	2.9	0.5	0.1
07510	00	V	500	26	2.3	0.0	-0.2
07510	12	V	500	28	3.7	1.5	-0.2
07645	12	V	500	31	3.1	1.2	-0.6
07645	00	V	500	29	3.1	0.0	0.1
07761	00	V	500	30	3.4	0.6	-1.1
07761	12	V	500	31	2.8	0.3	0.2
08001	12	V	500	26	2.9	-0.1	0.6
08001	00	V	500	22	2.8	0.9	-0.4
08221	12	V	500	31	2.5	0.0	-0.3
08221	00	V	500	30	2.4	0.4	-0.1
08302	12	V	500	31	2.5	0.1	0.0
08302	00	V	500	30	2.3	-0.2	-0.3
08508	12	V	500	31	3.7	0.8	-0.2
08522	12	V	500	31	2.2	0.5	0.3
10035	00	V	500	30	2.6	0.0	-0.8
10035	12	V	500	31	2.3	0.1	0.0
10393	12	V	500	31	2.3	0.8	-0.4
10393	00	V	500	30	3.8	-0.1	-0.4
10410	00	V	500	30	2.3	0.2	0.0
10410	12	V	500	31	3.3	0.2	-0.3
10739	00	V	500	30	3.2	0.3	-0.1
10739	12	V	500	31	2.8	0.1	0.1
11035	00	V	500	30	3.3	-0.3	-0.6
11035	12	V	500	31	3.1	-0.2	0.1
12982	00	V	500	30	2.3	-0.2	-0.2
12982	12	V	500	31	2.4	0.3	0.1
16245	12	V	500	31	3.0	0.2	0.3
16245	00	V	500	29	3.0	-0.2	0.2
16429	00	V	500	30	3.5	0.2	0.8
16429	12	V	500	31	2.3	0.2	-0.1
16622	00	V	500	28	3.0	-0.4	-0.2
16754	00	V	500	30	3.0	0.7	0.0
17607	12	V	500	27	2.5	0.2	0.1
26435	12	V	500	15	2.5	0.7	0.4
2EERV	00	V	500	6	2.4	1.1	0.0
2EERV	12	V	500	7	2.6	-0.4	-0.1
60018	00	V	500	29	2.2	0.4	-0.6
60018	12	V	500	30	2.2	0.2	0.6

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
7JUNA4	12	V	500	11	5.0	1.1	0.3
7JUNA4	00	V	500	10	5.0	0.4	0.9
9ZT9MR	12	V	500	11	3.5	0.7	-0.4
9ZT9MR	00	V	500	15	7.0	-1.4	-0.6
ASDE09	12	V	500	4	2.8	1.6	-0.4
ATGU3F	12	V	500	11	2.1	1.2	0.4
ATGU3F	00	V	500	14	3.0	-0.2	0.1
BPMWB2	12	V	500	3	3.4	0.5	-1.3
BPMWB2	00	V	500	3	1.8	0.6	-0.1
GQBZLZ	00	V	500	1	2.0	-0.4	2.0
GQBZLZ	12	V	500	1	5.1	-1.6	-4.8
JNKN7J	12	V	500	11	4.7	1.5	1.6
JNKN7J	00	V	500	9	3.5	-1.0	-0.3
KJJF9X	12	V	500	8	1.8	0.8	-0.5
KJJF9X	00	V	500	10	3.1	0.1	-0.2
KMPLHP	12	V	500	14	3.6	1.2	0.0
KMPLHP	00	V	500	11	2.9	-0.2	1.0
LRYQE3	00	V	500	10	4.0	-0.5	-1.7
LRYQE3	12	V	500	12	3.4	0.6	0.2
WDK38H	12	V	500	0	0.0	0.0	0.0
XQFJRG	12	V	500	9	2.5	-0.7	-0.4
XQFJRG	00	V	500	7	1.8	-0.2	-0.3
YLV96W	12	V	500	14	2.5	0.1	0.9
YLV96W	00	V	500	14	2.8	-0.5	0.0

4.7 Table 19 - Radiosonde Monitoring Statistics (EUCOS): 850 hPa Geopotential height (metres)

RADIOSONDE MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : GEOPOTENTIAL HEIGHT (METRES)
 LEVEL : 850 HPA
 AREA : 0 - 90N, 100W - 40E
 PERIOD : MAR 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	12	Z	850	31	4.0	-2.6
01001	00	Z	850	30	12.1	-11.3
01028	00	Z	850	31	4.2	-2.9
01028	12	Z	850	31	4.6	-1.3
01400	00	Z	850	29	77.4	77.3
01400	12	Z	850	28	75.6	74.4
01415	12	Z	850	31	4.3	2.8
01415	00	Z	850	30	5.0	1.5
02365	00	Z	850	15	5.4	5.2
02365	12	Z	850	16	4.0	3.2
02836	12	Z	850	37	2.9	1.1
02836	00	Z	850	31	2.4	1.2
02963	00	Z	850	31	3.2	2.5
02963	12	Z	850	31	3.1	2.2
03005	12	Z	850	31	3.3	-1.2
03005	00	Z	850	28	2.5	-0.8
03238	00	Z	850	31	2.9	1.8
03238	12	Z	850	3	1.5	0.7
03808	12	Z	850	31	3.9	2.6
03808	00	Z	850	33	3.4	1.9
03918	00	Z	850	31	6.7	6.3
03918	12	Z	850	1	2.2	2.2
03953	00	Z	850	31	4.2	-1.6
03953	12	Z	850	32	3.4	0.1
04018	00	Z	850	24	1.9	-0.6
04018	12	Z	850	29	2.8	0.4
04220	00	Z	850	31	6.2	-5.5
04220	12	Z	850	31	5.6	-4.6
04270	12	Z	850	31	7.5	-5.8
04270	00	Z	850	31	8.5	-7.1
04320	12	Z	850	31	3.8	0.3
04320	00	Z	850	30	3.2	-1.3
04339	00	Z	850	31	9.4	-8.7
04339	12	Z	850	28	8.2	-6.5
04360	12	Z	850	22	11.4	-10.7
04360	00	Z	850	23	12.1	-11.9
06011	12	Z	850	30	4.9	-0.8
06011	00	Z	850	31	4.8	-2.0
06260	12	Z	850	6	2.7	0.4

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06260	00	Z	850	30	2.9	-0.1
06610	00	Z	850	31	3.1	1.3
06610	12	Z	850	32	3.1	0.5
07110	00	Z	850	33	4.6	-3.7
07110	12	Z	850	32	4.5	-3.1
07510	00	Z	850	28	3.4	2.6
07510	12	Z	850	29	5.4	4.8
07645	12	Z	850	34	4.9	-4.2
07645	00	Z	850	34	6.0	-5.5
07761	00	Z	850	31	5.0	-4.5
07761	12	Z	850	31	3.4	-2.8
08001	12	Z	850	26	2.5	1.5
08001	00	Z	850	22	2.1	0.8
08221	12	Z	850	31	4.0	3.1
08221	00	Z	850	31	2.9	1.8
08302	12	Z	850	31	7.6	-7.3
08302	00	Z	850	32	8.0	-7.9
08508	12	Z	850	31	18.6	2.5
08522	12	Z	850	31	8.0	2.9
10035	00	Z	850	31	12.3	12.0
10035	12	Z	850	31	13.5	13.3
10393	12	Z	850	31	2.5	0.5
10393	00	Z	850	31	2.4	-0.7
10410	00	Z	850	31	2.3	-1.0
10410	12	Z	850	31	1.8	-0.3
10739	00	Z	850	31	3.7	3.0
10739	12	Z	850	31	4.1	3.4
11035	00	Z	850	31	4.0	2.2
11035	12	Z	850	32	3.9	3.0
12982	00	Z	850	31	2.8	1.7
12982	12	Z	850	31	2.8	2.0
16245	12	Z	850	31	2.9	2.2
16245	00	Z	850	30	3.5	2.7
16429	00	Z	850	31	2.7	1.9
16429	12	Z	850	31	2.8	2.0
16622	00	Z	850	29	8.3	7.6
16754	00	Z	850	31	3.1	1.2
17607	12	Z	850	31	2.3	0.6
26435	12	Z	850	15	2.7	-1.2
2EERVT	00	Z	850	6	7.5	-2.9
2EERVT	12	Z	850	7	8.6	-3.3
60018	00	Z	850	30	17.0	-1.7
60018	12	Z	850	30	10.5	4.0

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
7JUNA4	12	Z	850	12	25.2	5.0
7JUNA4	00	Z	850	12	36.0	13.1
9ZT9MR	12	Z	850	14	40.2	18.2
9ZT9MR	00	Z	850	15	22.6	-5.2
ASDE09	12	Z	850	4	32.5	32.4
ATGU3F	12	Z	850	12	21.4	-16.3
ATGU3F	00	Z	850	16	19.6	-14.0
BPMWB2	12	Z	850	5	5.6	-4.9
BPMWB2	00	Z	850	4	6.9	-6.3
GQBZLZ	00	Z	850	1	41.8	-41.8
GQBZLZ	12	Z	850	1	11.4	-11.4
JNKN7J	12	Z	850	11	39.0	38.6
JNKN7J	00	Z	850	9	41.0	40.7
KJJF9X	12	Z	850	8	3.7	1.5
KJJF9X	00	Z	850	10	4.2	-1.7
KMPLHP	12	Z	850	14	38.6	27.9
KMPLHP	00	Z	850	11	49.0	41.3
LRYQE3	00	Z	850	10	5.7	3.5
LRYQE3	12	Z	850	12	7.6	6.4
WDK38H	12	Z	850	1	17.9	-17.9
XQFJRG	12	Z	850	9	7.4	-5.3
XQFJRG	00	Z	850	9	6.4	-5.9
YLV96W	12	Z	850	14	5.8	-2.9
YLV96W	00	Z	850	14	4.4	-2.5

4.8 Table 20 - Radiosonde Monitoring Statistics (EUCOS): 850 hPa Wind (m/s)

RADIOSONDE MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND (M/S)
 LEVEL : 850 HPA
 AREA : 0 - 90N, 100W - 40E
 PERIOD : MAR 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	12	V	850	31	3.3	0.1	0.0
01001	00	V	850	30	2.8	0.0	0.1
01028	00	V	850	30	2.5	0.2	0.3
01028	12	V	850	31	3.5	0.6	-0.9
01400	00	V	850	27	2.7	0.3	0.2
01400	12	V	850	28	1.9	0.7	-0.5
01415	12	V	850	31	3.0	-0.6	0.5
01415	00	V	850	30	2.1	0.2	0.1
02365	00	V	850	15	2.1	0.1	0.3
02365	12	V	850	16	3.6	1.7	-0.1
02836	12	V	850	31	2.6	0.1	-0.3
02836	00	V	850	30	2.9	0.0	-0.2
02963	00	V	850	30	2.4	0.3	0.1
02963	12	V	850	31	3.1	0.4	0.3
03005	12	V	850	31	2.8	0.5	-0.5
03005	00	V	850	26	3.5	0.6	1.5
03238	00	V	850	30	3.1	-0.1	-0.2
03238	12	V	850	3	2.4	0.2	1.2
03808	12	V	850	30	2.6	-0.4	0.2
03808	00	V	850	30	2.8	0.6	-0.3
03918	00	V	850	30	2.8	-0.1	0.4
03918	12	V	850	1	0.5	-0.2	0.5
03953	00	V	850	29	3.2	0.6	-0.7
03953	12	V	850	31	2.5	0.1	0.6
04018	00	V	850	23	3.0	0.6	0.4
04018	12	V	850	29	4.3	-0.4	0.4
04220	00	V	850	30	3.2	0.0	0.3
04220	12	V	850	31	2.6	-0.1	0.2
04270	12	V	850	31	5.0	0.7	0.2
04270	00	V	850	30	4.7	0.7	0.0
04320	12	V	850	31	2.9	0.0	0.3
04320	00	V	850	29	3.3	-0.2	0.0
04339	00	V	850	30	3.5	-0.3	-0.6
04339	12	V	850	28	3.3	0.1	-0.4
04360	12	V	850	22	3.7	0.7	1.5
04360	00	V	850	23	3.1	0.6	0.8
06011	12	V	850	30	3.6	-0.3	-0.2
06011	00	V	850	30	4.1	-0.4	0.1
06260	12	V	850	6	2.4	1.0	-0.7

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06260	00	V	850	29	2.7	0.0	-0.3
06610	00	V	850	30	3.7	0.9	-1.0
06610	12	V	850	31	4.2	0.7	0.2
07110	00	V	850	30	3.8	0.2	-0.1
07110	12	V	850	31	2.6	-0.2	0.7
07510	00	V	850	26	2.7	0.9	-0.6
07510	12	V	850	28	3.2	-0.9	0.1
07645	12	V	850	31	4.5	-1.1	1.5
07645	00	V	850	29	4.2	-1.1	0.4
07761	00	V	850	30	3.0	0.3	0.5
07761	12	V	850	31	2.6	-0.1	0.8
08001	12	V	850	26	2.6	0.2	0.1
08001	00	V	850	22	2.3	0.1	0.4
08221	12	V	850	31	2.8	0.1	-0.1
08221	00	V	850	30	2.8	-0.1	-0.1
08302	12	V	850	31	3.2	0.2	-0.2
08302	00	V	850	30	2.4	0.1	-0.6
08508	12	V	850	31	3.1	-0.2	-0.1
08522	12	V	850	31	2.9	0.3	-1.0
10035	00	V	850	30	2.5	-0.6	0.2
10035	12	V	850	31	2.3	0.4	-0.7
10393	12	V	850	31	3.0	0.5	-0.5
10393	00	V	850	30	2.9	1.0	0.5
10410	00	V	850	30	2.4	-0.3	0.2
10410	12	V	850	31	3.3	0.2	0.0
10739	00	V	850	30	3.3	-0.6	0.0
10739	12	V	850	31	3.6	-1.2	0.0
11035	00	V	850	30	4.5	-0.3	0.6
11035	12	V	850	31	3.6	0.3	0.2
12982	00	V	850	30	3.4	-0.1	-0.7
12982	12	V	850	31	2.5	0.1	-0.4
16245	12	V	850	31	4.0	0.6	-0.2
16245	00	V	850	29	2.9	-0.4	0.3
16429	00	V	850	30	2.8	-0.7	-0.2
16429	12	V	850	31	3.2	-0.4	0.1
16622	00	V	850	28	3.0	-0.1	-0.7
16754	00	V	850	30	2.5	0.1	0.1
17607	12	V	850	31	3.2	-0.1	0.1
26435	12	V	850	15	2.6	1.3	0.0
2EERV	00	V	850	6	2.4	0.3	0.2
2EERV	12	V	850	7	2.5	0.0	-0.1
60018	00	V	850	29	2.8	0.8	-0.3
60018	12	V	850	30	3.5	0.6	-0.6

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
7JUNA4	12	V	850	12	3.7	-1.0	0.0
7JUNA4	00	V	850	12	2.7	-0.7	0.2
9ZT9MR	12	V	850	14	10.3	1.8	2.9
9ZT9MR	00	V	850	15	4.3	1.7	-0.4
ASDE09	12	V	850	4	1.7	-0.6	-0.6
ATGU3F	12	V	850	11	4.3	-0.6	0.6
ATGU3F	00	V	850	16	2.7	0.2	-0.5
BPMWB2	12	V	850	5	2.3	1.4	0.9
BPMWB2	00	V	850	4	2.5	0.4	0.1
GQBZLZ	00	V	850	1	2.7	-2.7	0.0
GQBZLZ	12	V	850	1	4.5	-1.1	4.4
JNKN7J	12	V	850	11	3.0	-0.3	-0.8
JNKN7J	00	V	850	9	2.4	-0.2	0.2
KJJF9X	12	V	850	8	2.7	1.2	0.2
KJJF9X	00	V	850	10	2.6	-0.1	-0.2
KMPLHP	12	V	850	14	2.4	-0.3	-0.3
KMPLHP	00	V	850	11	2.8	-0.4	-0.4
LRYQE3	00	V	850	10	1.8	-0.3	0.4
LRYQE3	12	V	850	12	2.8	0.0	0.1
WDK38H	12	V	850	1	5.2	4.5	-2.7
XQFJRG	12	V	850	9	2.1	0.1	-0.5
XQFJRG	00	V	850	9	3.6	0.4	-0.9
YLV96W	12	V	850	14	2.8	-0.5	0.8
YLV96W	00	V	850	14	2.9	-0.2	0.8

4.9 Table 21 - Drifter Monitoring Statistics (EUCOS): Surface pressure (hpa)

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : SURFACE PRESSURE (HPA)
 AREA : 10N - 90N, 70W - 40E
 PERIOD : MAR 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

TIME = 99 => AVERAGE OF ALL OBSERVATIONS

GROSS ERROR LIMIT = 15 HPA

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
0000	99	P	SUR	28	-16	18	0	1.9	2.8	3.4
03380	99	P	SUR	54	0	1488	0	0.3	-0.3	0.5
1300001	99	P	SUR	11	-23	620	0	0.3	0.3	0.5
1300008	99	P	SUR	15	-38	620	0	0.2	0.1	0.2
1300130	99	P	SUR	28	-16	730	0	0.4	0.3	0.5
1300131	99	P	SUR	28	-17	742	0	0.4	0.3	0.5
1301603	99	P	SUR	32	-46	742	0	1.4	0.1	1.4
1301608	99	P	SUR	28	-48	742	0	0.9	-0.1	0.9
1301612	99	P	SUR	24	-67	741	0	0.3	-0.7	0.7
1301619	99	P	SUR	37	-41	742	4	1.7	-0.2	1.7
1301629	99	P	SUR	19	-32	740	0	0.3	0.1	0.3
1301699	99	P	SUR	27	-36	670	0	0.2	-0.5	0.5
1301700	99	P	SUR	19	-63	665	0	0.2	-0.2	0.3
1301706	99	P	SUR	22	-55	668	0	0.2	-0.2	0.3
1301708	99	P	SUR	14	-17	105	0	0.3	-0.4	0.5
1301712	99	P	SUR	22	-51	667	0	0.2	-0.1	0.2
1301713	99	P	SUR	15	-52	661	0	0.2	0.0	0.2
1301714	99	P	SUR	22	-52	668	0	0.2	0.0	0.2
1301718	99	P	SUR	26	-39	674	0	0.3	0.1	0.3
1301719	99	P	SUR	21	-45	667	0	0.2	0.5	0.5
1301720	99	P	SUR	26	-29	652	0	0.3	0.3	0.4
1301721	99	P	SUR	31	-21	274	0	0.3	-0.1	0.3
1301722	99	P	SUR	25	-45	667	0	0.2	-0.1	0.2
1301723	99	P	SUR	32	-11	667	0	0.3	0.9	1.0
1301724	99	P	SUR	34	-10	167	0	0.2	0.0	0.2
1301725	99	P	SUR	22	-22	668	0	0.3	0.2	0.3
1301726	99	P	SUR	24	-28	668	0	0.2	0.2	0.3
1301728	99	P	SUR	13	-29	668	1	0.3	0.2	0.3
1301731	99	P	SUR	22	-28	672	0	0.2	0.3	0.4
1301735	99	P	SUR	28	-42	667	0	0.3	-0.5	0.6
1301736	99	P	SUR	26	-45	666	0	0.3	0.2	0.3
1301737	99	P	SUR	23	-53	673	0	0.2	-0.1	0.2
1301756	99	P	SUR	11	-64	165	0	0.3	-0.8	0.9
1301763	99	P	SUR	15	-31	10	9	0.0	7.4	7.4
1301792	99	P	SUR	18	-29	129	0	0.3	-0.3	0.4
1301796	99	P	SUR	11	-29	211	0	0.3	0.2	0.3

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
1301797	99	P	SUR	15	-29	157	0	0.3	0.2	0.3
1501772	99	P	SUR	11	-59	665	0	0.3	-0.2	0.3
3801561	99	P	SUR	42	-69	740	0	0.7	0.2	0.8
4100043	99	P	SUR	21	-65	4448	0	0.3	-1.7	1.7
4100044	99	P	SUR	22	-59	4446	0	0.2	0.3	0.4
4100046	99	P	SUR	24	-68	1134	0	0.2	0.3	0.4
4100048	99	P	SUR	32	-70	4384	0	0.4	0.2	0.4
4100049	99	P	SUR	27	-63	4445	0	0.3	-1.7	1.7
4100052	99	P	SUR	18	-65	2250	0	0.2	-1.1	1.1
4100053	99	P	SUR	18	-66	4406	0	0.3	-0.7	0.7
4100056	99	P	SUR	18	-65	1796	0	0.2	-1.0	1.0
4100139	99	P	SUR	20	-38	744	0	0.2	0.1	0.2
4100300	99	P	SUR	16	-57	685	0	0.2	0.0	0.2
4101613	99	P	SUR	31	-55	665	0	0.3	0.1	0.4
4101616	99	P	SUR	30	-42	714	0	0.3	-0.1	0.3
4101618	99	P	SUR	28	-51	624	0	0.3	0.0	0.3
4101656	99	P	SUR	50	-44	184	0	1.1	2.2	2.4
4101663	99	P	SUR	30	-34	725	0	0.3	0.0	0.3
4101665	99	P	SUR	71	4	652	0	0.5	-0.1	0.5
4101696	99	P	SUR	30	-37	742	0	0.3	-0.1	0.3
4101717	99	P	SUR	16	-62	517	0	0.4	-0.8	0.9
4101719	99	P	SUR	36	-15	742	0	0.3	0.2	0.3
4101723	99	P	SUR	26	-70	741	0	0.3	0.0	0.3
4101724	99	P	SUR	25	-66	741	0	0.3	-0.3	0.4
4101725	99	P	SUR	18	-63	739	0	0.2	-0.1	0.2
4101727	99	P	SUR	33	-21	742	0	0.3	0.1	0.3
4101728	99	P	SUR	32	-43	742	0	0.4	0.3	0.5
4101729	99	P	SUR	31	-48	742	0	0.3	0.0	0.3
4101730	99	P	SUR	12	-22	742	0	0.3	0.4	0.6
4101731	99	P	SUR	17	-53	741	0	0.2	0.1	0.3
4101743	99	P	SUR	38	-39	741	0	1.0	-0.2	1.0
4101753	99	P	SUR	35	-54	695	0	2.1	0.1	2.2
4101755	99	P	SUR	32	-60	741	0	0.5	0.0	0.5
4101756	99	P	SUR	12	-62	685	0	0.3	-0.7	0.8
4101842	99	P	SUR	69	16	257	1	1.8	-0.3	1.8
4101843	99	P	SUR	70	12	661	0	0.5	-0.3	0.6
4101844	99	P	SUR	18	-63	469	0	0.2	0.2	0.3
4101845	99	P	SUR	69	0	664	0	0.5	0.0	0.5
4101848	99	P	SUR	25	-69	675	0	0.3	0.1	0.3
4101851	99	P	SUR	24	-57	660	0	0.3	-0.2	0.3
4102547	99	P	SUR	20	-58	671	0	0.2	0.2	0.3
4102560	99	P	SUR	15	-61	171	0	0.3	-0.8	0.8
41043	99	P	SUR	21	-65	743	0	0.3	-1.7	1.7

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
41044	99	P	SUR	22	-59	744	0	0.3	0.3	0.4
41046	99	P	SUR	24	-68	190	0	0.2	0.3	0.4
41048	99	P	SUR	32	-70	744	0	0.4	0.2	0.5
41049	99	P	SUR	28	-63	744	0	0.3	-1.7	1.7
41052	99	P	SUR	18	-65	379	0	0.3	-1.1	1.1
41053	99	P	SUR	19	-66	743	0	0.3	-0.7	0.7
41056	99	P	SUR	18	-66	308	0	0.2	-1.0	1.0
4200059	99	P	SUR	15	-67	4450	0	0.3	0.1	0.3
4200060	99	P	SUR	16	-63	4450	0	0.2	0.2	0.3
4200085	99	P	SUR	18	-67	3254	0	0.3	-0.8	0.9
4201703	99	P	SUR	42	-19	588	0	0.4	0.1	0.5
42059	99	P	SUR	15	-68	744	0	0.3	0.1	0.3
42060	99	P	SUR	16	-63	743	0	0.3	0.2	0.3
42085	99	P	SUR	18	-67	722	0	0.2	-0.8	0.9
4400005	99	P	SUR	43	-69	737	0	0.8	-0.1	0.8
4400008	99	P	SUR	40	-69	4445	0	0.5	-1.2	1.3
4400011	99	P	SUR	41	-67	80	0	0.5	0.2	0.5
4400032	99	P	SUR	44	-69	738	0	0.5	-0.8	1.0
4400033	99	P	SUR	44	-69	739	0	0.5	-1.0	1.1
4400150	99	P	SUR	43	-64	732	0	0.5	-0.4	0.7
4400488	99	P	SUR	45	-61	492	0	0.4	0.0	0.4
4400489	99	P	SUR	45	-61	491	0	0.4	0.0	0.4
44005	99	P	SUR	43	-69	740	0	0.8	-0.1	0.8
4400777	99	P	SUR	33	-35	742	0	0.4	0.1	0.4
44008	99	P	SUR	41	-69	743	0	0.5	-1.2	1.3
44011	99	P	SUR	41	-67	24	0	0.4	0.3	0.5
4401581	99	P	SUR	29	-68	741	0	0.3	-0.1	0.3
4401582	99	P	SUR	29	-29	742	0	0.3	0.4	0.5
4401584	99	P	SUR	30	-39	742	0	0.3	0.0	0.3
4401585	99	P	SUR	22	-36	742	0	0.2	0.3	0.4
4401587	99	P	SUR	75	8	742	0	0.5	0.1	0.5
4401588	99	P	SUR	65	-10	740	0	0.4	0.0	0.4
4401863	99	P	SUR	17	-61	644	0	0.3	-1.3	1.4
4401864	99	P	SUR	20	-61	666	0	0.2	-0.3	0.4
4401867	99	P	SUR	35	-57	742	0	0.5	-0.3	0.6
4401872	99	P	SUR	29	-65	742	0	0.3	-0.2	0.4
4402603	99	P	SUR	65	1	658	0	0.5	0.0	0.5
4402604	99	P	SUR	43	-20	33	0	0.4	-0.2	0.4
4402606	99	P	SUR	63	-8	663	0	0.7	0.0	0.7
4402607	99	P	SUR	46	-15	662	0	0.4	-0.2	0.4
4402609	99	P	SUR	66	-33	321	5	3.5	2.3	4.2
4402611	99	P	SUR	49	-16	659	0	0.4	0.1	0.4
4402613	99	P	SUR	39	-19	654	0	0.8	1.0	1.2

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
4402618	99	P	SUR	27	-60	663	0	0.3	0.1	0.3
4402656	99	P	SUR	33	-34	649	29	2.9	-0.4	2.9
4402660	99	P	SUR	26	-31	664	0	0.3	0.3	0.4
4402663	99	P	SUR	44	-10	591	0	0.3	-0.1	0.3
4402670	99	P	SUR	24	-44	664	0	0.3	-0.2	0.3
4402671	99	P	SUR	18	-63	442	0	0.0	-6.1	6.1
4402672	99	P	SUR	20	-48	667	0	0.2	-0.2	0.2
4402673	99	P	SUR	16	-57	666	0	0.2	0.2	0.3
4402674	99	P	SUR	17	-61	658	0	0.2	0.2	0.3
4402675	99	P	SUR	26	-34	665	0	0.2	0.0	0.2
4402676	99	P	SUR	31	-40	669	0	0.3	0.2	0.4
4402721	99	P	SUR	46	-15	672	0	0.4	0.0	0.4
4402726	99	P	SUR	53	-33	667	0	0.5	-0.1	0.6
4402727	99	P	SUR	59	-8	670	0	0.5	-0.2	0.5
4402732	99	P	SUR	50	-41	669	0	1.0	0.6	1.2
4402733	99	P	SUR	48	-50	663	0	0.7	0.2	0.7
4402735	99	P	SUR	44	-46	669	0	0.5	0.0	0.5
4402736	99	P	SUR	45	-35	296	3	2.2	1.7	2.8
4402742	99	P	SUR	48	-29	669	1	0.9	0.6	1.1
4402743	99	P	SUR	43	-51	662	0	1.1	-0.2	1.1
4402744	99	P	SUR	43	-54	665	0	1.5	1.0	1.8
4402746	99	P	SUR	43	-38	680	0	0.8	0.0	0.8
4402749	99	P	SUR	54	-40	668	0	0.5	-0.1	0.5
4402750	99	P	SUR	55	-37	673	0	0.4	-0.5	0.6
4402878	99	P	SUR	40	-68	559	0	0.5	0.5	0.7
4402880	99	P	SUR	40	-47	638	0	0.7	0.4	0.8
4402881	99	P	SUR	46	-41	626	0	0.6	0.0	0.6
4402882	99	P	SUR	35	-67	645	0	0.4	0.2	0.4
4402883	99	P	SUR	41	-46	552	0	0.6	0.3	0.6
44032	99	P	SUR	44	-69	740	0	0.6	-0.8	1.0
44033	99	P	SUR	44	-69	741	0	0.5	-1.0	1.1
4403557	99	P	SUR	60	2	718	0	0.4	0.7	0.8
4403558	99	P	SUR	47	-20	741	0	1.6	0.1	1.6
4403568	99	P	SUR	43	-60	740	0	0.6	0.4	0.7
4403569	99	P	SUR	43	-41	741	0	0.6	-0.2	0.6
44078	99	P	SUR	60	-40	29	0	0.4	-0.9	1.0
44150	99	P	SUR	43	-64	730	0	0.6	-0.4	0.7
44258	99	P	SUR	45	-63	736	0	0.5	-0.2	0.5
44488	99	P	SUR	45	-61	715	0	0.5	0.0	0.5
44489	99	P	SUR	46	-61	726	0	0.5	0.0	0.5
4601782	99	P	SUR	37	-26	658	0	0.4	0.5	0.6
4601812	99	P	SUR	85	-39	659	0	0.5	0.4	0.6
4701518	99	P	SUR	75	-19	167	0	0.4	0.3	0.5

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
4701738	99	P	SUR	70	-67	721	721	0.0	0.0	0.0
4801723	99	P	SUR	77	22	679	0	0.5	0.1	0.5
4801760	99	P	SUR	84	-66	740	0	0.6	-0.9	1.1
4801761	99	P	SUR	68	-12	743	89	3.2	1.1	3.4
4801763	99	P	SUR	84	-45	740	0	0.6	-0.6	0.9
4801765	99	P	SUR	84	-39	71	0	1.0	-0.7	1.2
4801770	99	P	SUR	72	-19	743	0	0.5	0.0	0.5
4802506	99	P	SUR	68	-27	742	0	0.5	0.4	0.6
4802602	99	P	SUR	77	-9	711	0	0.4	0.0	0.4
4803978	99	P	SUR	85	-59	740	0	0.6	-0.3	0.6
5801965	99	P	SUR	45	-66	740	0	0.5	0.5	0.7
6100001	99	P	SUR	43	8	741	0	0.6	-0.1	0.6
6100002	99	P	SUR	42	5	742	0	0.4	-0.1	0.4
6100196	99	P	SUR	42	4	252	0	0.4	0.2	0.4
6100197	99	P	SUR	40	4	742	0	0.4	0.5	0.6
6100198	99	P	SUR	37	-2	741	0	0.4	0.6	0.7
6100280	99	P	SUR	41	1	267	0	0.5	0.8	1.0
6100281	99	P	SUR	40	0	197	0	0.5	0.7	0.8
6100417	99	P	SUR	38	0	741	0	0.4	0.7	0.7
6100430	99	P	SUR	40	2	742	0	0.4	0.4	0.6
6101007	99	P	SUR	36	25	95	0	0.5	-0.5	0.8
6101008	99	P	SUR	37	22	124	0	0.6	-0.1	0.6
6101009	99	P	SUR	35	25	107	0	0.5	-0.3	0.6
6102731	99	P	SUR	42	19	24	0	0.6	-0.6	0.9
6102732	99	P	SUR	36	18	671	0	0.4	0.0	0.4
6102733	99	P	SUR	40	19	19	19	0.0	0.0	0.0
6102804	99	P	SUR	40	3	144	0	0.0	-7.7	7.7
6102809	99	P	SUR	39	7	671	0	0.3	-0.6	0.7
6102810	99	P	SUR	39	2	670	0	0.5	-0.1	0.5
6102812	99	P	SUR	39	2	666	0	0.4	-0.1	0.4
6102813	99	P	SUR	39	1	663	0	0.4	0.5	0.6
6200001	99	P	SUR	45	-5	741	0	0.4	0.2	0.4
6200024	99	P	SUR	44	-3	742	0	0.5	0.2	0.5
6200025	99	P	SUR	44	-6	681	0	0.4	0.0	0.5
6200082	99	P	SUR	44	-8	490	15	4.3	1.0	4.4
6200083	99	P	SUR	43	-9	742	0	0.4	0.4	0.5
6200084	99	P	SUR	42	-9	742	0	0.4	0.3	0.5
6200085	99	P	SUR	36	-7	505	0	0.3	0.4	0.5
6200086	99	P	SUR	55	6	302	0	0.4	-0.3	0.5
6200087	99	P	SUR	55	7	430	0	0.4	-0.4	0.6
6200091	99	P	SUR	53	-5	743	0	0.5	-0.2	0.5
6200092	99	P	SUR	51	-11	743	0	0.4	-0.2	0.5
6200093	99	P	SUR	55	-10	743	0	0.4	-0.2	0.5

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
6200094	99	P	SUR	52	-7	743	0	0.4	-0.1	0.4
6200095	99	P	SUR	53	-16	743	0	0.6	-0.4	0.7
6200192	99	P	SUR	40	-10	231	0	0.3	0.5	0.6
6200199	99	P	SUR	40	-9	228	0	0.3	0.3	0.4
6201065	99	P	SUR	54	7	625	0	0.3	1.0	1.1
6202613	99	P	SUR	35	-41	31	0	0.3	-0.3	0.4
6202627	99	P	SUR	67	13	669	0	0.4	-0.1	0.4
6202632	99	P	SUR	67	-54	261	24	5.1	1.8	5.5
6202637	99	P	SUR	68	-8	742	0	0.4	-0.1	0.4
6202639	99	P	SUR	30	-40	742	0	0.3	-0.2	0.4
6202640	99	P	SUR	35	-35	646	0	0.4	-0.1	0.4
6202644	99	P	SUR	37	-48	635	0	0.5	-0.7	0.9
62029	99	P	SUR	49	-13	1467	0	0.4	-0.3	0.5
6203516	99	P	SUR	41	-35	551	0	0.5	-0.4	0.6
6203607	99	P	SUR	31	-33	742	0	0.3	0.4	0.5
6203612	99	P	SUR	32	-56	742	0	0.4	0.0	0.4
6203613	99	P	SUR	44	-39	742	0	0.9	-0.1	0.9
6203616	99	P	SUR	22	-62	741	0	0.2	0.1	0.3
6203621	99	P	SUR	28	-27	741	0	0.3	0.1	0.3
6203624	99	P	SUR	35	-59	740	2	3.1	-0.5	3.2
6203625	99	P	SUR	31	-32	742	0	0.3	-0.1	0.3
6203632	99	P	SUR	24	-47	741	0	0.2	0.2	0.3
6203633	99	P	SUR	68	15	742	0	0.8	-0.2	0.8
6203634	99	P	SUR	29	-39	740	0	0.3	0.3	0.4
6203639	99	P	SUR	31	-31	742	1	2.3	0.1	2.3
6203640	99	P	SUR	22	-55	741	0	0.2	-0.3	0.3
6203642	99	P	SUR	16	-65	742	0	0.7	-0.3	0.8
6203643	99	P	SUR	21	-69	742	0	0.2	-0.1	0.3
6203651	99	P	SUR	45	-32	742	0	0.5	0.4	0.6
6203737	99	P	SUR	23	-48	671	0	0.2	0.3	0.4
6203741	99	P	SUR	65	-11	656	0	0.4	0.0	0.4
6203744	99	P	SUR	64	6	657	0	0.5	0.2	0.5
6203753	99	P	SUR	60	-29	666	0	0.6	-0.2	0.6
6203755	99	P	SUR	38	-11	652	0	0.5	-0.2	0.5
6203765	99	P	SUR	27	-52	516	1	0.3	0.2	0.4
6203768	99	P	SUR	31	-16	667	0	0.3	0.4	0.5
6203771	99	P	SUR	25	-37	669	0	0.2	0.0	0.2
6203772	99	P	SUR	33	-70	669	0	0.4	-0.1	0.4
6203773	99	P	SUR	32	-52	669	0	0.4	-0.7	0.8
6203776	99	P	SUR	28	-29	663	0	0.3	0.1	0.3
6203825	99	P	SUR	70	-12	273	43	6.0	0.6	6.0
6203827	99	P	SUR	66	12	677	0	0.4	-0.1	0.5
6203838	99	P	SUR	19	-64	664	0	0.2	0.3	0.3

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
6203839	99	P	SUR	24	-51	674	0	0.2	-0.2	0.3
6203840	99	P	SUR	25	-42	670	0	0.3	0.2	0.3
6203841	99	P	SUR	29	-16	167	0	0.3	-1.1	1.2
6203842	99	P	SUR	34	-32	665	0	0.3	0.1	0.3
6203844	99	P	SUR	45	-14	659	0	0.3	0.3	0.5
6203845	99	P	SUR	50	-13	667	0	0.5	-0.2	0.5
6203846	99	P	SUR	29	-23	669	0	0.3	0.1	0.3
6203848	99	P	SUR	46	-36	670	0	0.5	-0.1	0.5
6203849	99	P	SUR	30	-19	666	0	0.3	0.2	0.3
6203850	99	P	SUR	34	-15	665	0	0.3	0.2	0.4
6203853	99	P	SUR	66	7	671	0	0.8	0.5	0.9
6203854	99	P	SUR	61	-19	666	0	0.6	0.1	0.6
6203855	99	P	SUR	68	7	666	0	0.4	0.0	0.4
6203856	99	P	SUR	61	5	649	0	0.4	0.4	0.5
6203857	99	P	SUR	64	8	676	0	0.5	0.0	0.5
6203859	99	P	SUR	15	-17	667	0	0.4	-0.2	0.4
6203860	99	P	SUR	10	-22	670	0	0.3	0.7	0.7
6203861	99	P	SUR	23	-19	673	0	0.3	0.4	0.5
6203864	99	P	SUR	67	-6	669	0	1.8	-0.4	1.9
6203865	99	P	SUR	63	-26	669	0	0.5	0.1	0.5
6203866	99	P	SUR	69	15	675	0	0.4	0.0	0.4
6204603	99	P	SUR	39	1	663	0	0.4	0.4	0.6
62081	99	P	SUR	51	-13	1488	0	0.4	-0.1	0.5
62091	99	P	SUR	53	-5	743	0	0.5	-0.2	0.5
62092	99	P	SUR	51	-11	743	0	0.4	-0.2	0.5
62093	99	P	SUR	55	-10	743	0	0.4	-0.2	0.5
62094	99	P	SUR	52	-7	743	0	0.4	-0.1	0.4
62095	99	P	SUR	53	-16	743	0	0.6	-0.4	0.7
62102	99	P	SUR	58	2	1488	0	0.4	0.2	0.5
62103	99	P	SUR	50	-3	1485	0	0.4	-0.3	0.5
62104	99	P	SUR	57	1	1488	0	0.4	-0.1	0.4
62105	99	P	SUR	55	-13	1484	0	0.5	-0.2	0.5
62107	99	P	SUR	50	-6	1236	0	0.4	-0.2	0.4
62112	99	P	SUR	58	0	1487	0	0.4	0.2	0.4
62113	99	P	SUR	58	0	1488	0	0.6	-0.2	0.6
62114	99	P	SUR	58	0	1488	0	0.4	0.3	0.5
62116	99	P	SUR	58	1	1486	0	0.4	0.0	0.4
62118	99	P	SUR	58	1	1482	0	0.4	0.4	0.5
62119	99	P	SUR	57	2	1488	0	0.4	0.1	0.4
62120	99	P	SUR	56	2	1384	0	0.5	0.0	0.5
62121	99	P	SUR	54	3	1488	0	0.6	0.4	0.7
62122	99	P	SUR	57	2	1488	0	0.4	0.0	0.4
62124	99	P	SUR	54	-4	1458	0	0.4	0.0	0.4

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
62127	99	P	SUR	54	1	1464	0	0.4	0.5	0.6
62129	99	P	SUR	58	0	1488	0	0.5	0.0	0.5
62130	99	P	SUR	59	1	1466	0	0.4	-0.2	0.4
62131	99	P	SUR	54	1	1488	0	0.3	0.5	0.6
62132	99	P	SUR	56	2	1482	0	0.5	0.5	0.7
62133	99	P	SUR	57	1	1488	0	0.4	0.1	0.4
62134	99	P	SUR	58	1	1488	0	0.3	0.5	0.6
62138	99	P	SUR	54	0	1468	0	0.5	0.5	0.7
62140	99	P	SUR	57	1	1488	0	0.4	0.1	0.4
62141	99	P	SUR	56	-3	1429	0	0.8	0.0	0.8
62143	99	P	SUR	58	2	1488	0	0.4	0.6	0.7
62144	99	P	SUR	53	2	1488	0	0.4	0.1	0.4
62145	99	P	SUR	53	3	1488	0	0.4	0.2	0.5
62146	99	P	SUR	57	2	1488	0	0.4	-0.2	0.4
62148	99	P	SUR	54	2	1488	0	0.4	1.0	1.1
62149	99	P	SUR	54	1	1488	0	0.3	0.6	0.7
62151	99	P	SUR	57	2	1038	0	0.3	0.1	0.3
62152	99	P	SUR	57	2	1454	0	0.4	0.3	0.5
62153	99	P	SUR	57	2	1488	0	0.4	0.4	0.5
62154	99	P	SUR	56	2	1488	0	0.4	-0.1	0.4
62155	99	P	SUR	58	1	1486	0	0.4	0.3	0.5
62157	99	P	SUR	58	0	1468	0	0.4	-0.1	0.4
62160	99	P	SUR	57	2	1488	0	0.4	0.4	0.6
62161	99	P	SUR	58	1	1468	0	0.5	-0.2	0.6
62162	99	P	SUR	57	1	1468	0	0.3	0.0	0.3
62163	99	P	SUR	48	-9	1480	0	0.4	-0.2	0.4
62164	99	P	SUR	57	1	1334	0	0.4	0.3	0.5
62165	99	P	SUR	54	1	1484	0	0.4	0.2	0.5
62168	99	P	SUR	58	1	1486	0	0.4	-0.1	0.4
62170	99	P	SUR	51	2	1488	0	0.4	-0.1	0.4
62296	99	P	SUR	53	2	1468	0	0.4	-0.1	0.4
62297	99	P	SUR	59	2	1466	0	0.4	-0.1	0.4
62302	99	P	SUR	61	-2	1487	0	0.6	-0.3	0.6
62304	99	P	SUR	51	2	1488	0	0.4	-0.1	0.4
62305	99	P	SUR	50	0	1488	0	0.4	-0.1	0.4
62442	99	P	SUR	49	-16	1487	0	0.4	-0.3	0.5
6301001	99	P	SUR	64	5	740	0	0.6	-0.3	0.6
6301003	99	P	SUR	74	24	480	0	0.6	-0.3	0.6
6301572	99	P	SUR	55	-32	374	9	4.0	-1.6	4.4
6301575	99	P	SUR	60	-32	742	0	0.9	0.1	0.9
6301577	99	P	SUR	68	-7	740	0	0.4	-0.1	0.4
63055	99	P	SUR	61	2	1452	0	0.5	-0.3	0.5
63056	99	P	SUR	60	2	1488	0	0.5	0.2	0.5

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
63057	99	P	SUR	59	2	1488	0	0.3	-0.1	0.3
63058	99	P	SUR	53	2	2255	0	0.5	0.3	0.6
63059	99	P	SUR	58	-1	1467	0	0.4	0.3	0.5
63101	99	P	SUR	61	1	1488	0	0.5	-0.1	0.5
63102	99	P	SUR	61	1	1468	0	0.5	-0.1	0.5
63103	99	P	SUR	61	1	1488	0	0.6	0.1	0.6
63108	99	P	SUR	61	2	1454	0	0.5	-0.4	0.6
63109	99	P	SUR	60	2	1482	0	0.4	-0.5	0.7
63110	99	P	SUR	60	2	1482	0	0.4	-0.3	0.5
63111	99	P	SUR	61	2	1466	0	0.5	-0.4	0.7
63112	99	P	SUR	61	1	1486	0	0.5	-0.5	0.7
63115	99	P	SUR	62	1	1488	0	0.6	0.1	0.6
63117	99	P	SUR	61	1	1488	0	0.6	0.2	0.6
63118	99	P	SUR	58	1	1486	0	0.6	-0.4	0.7
6401582	99	P	SUR	78	1	39	0	2.5	-7.3	7.7
6401583	99	P	SUR	64	-21	742	0	0.4	0.2	0.5
6401584	99	P	SUR	74	-7	575	3	3.0	-0.1	3.0
6401587	99	P	SUR	75	-19	741	0	0.5	0.5	0.7
6401590	99	P	SUR	70	7	742	0	1.4	0.1	1.4
6401592	99	P	SUR	74	12	742	0	0.5	0.1	0.5
6401759	99	P	SUR	56	-37	740	0	0.4	0.5	0.6
6401762	99	P	SUR	65	-5	741	0	0.4	0.3	0.5
6401763	99	P	SUR	66	12	741	0	0.5	0.1	0.5
6402539	99	P	SUR	74	18	644	0	0.5	-0.1	0.5
6402551	99	P	SUR	50	-35	639	0	0.5	0.2	0.5
6402563	99	P	SUR	69	40	633	0	0.6	0.3	0.6
6402587	99	P	SUR	46	-44	134	0	1.7	10.5	10.6
6402594	99	P	SUR	52	-43	623	0	0.5	0.0	0.5
6402596	99	P	SUR	59	-39	615	0	0.4	0.1	0.4
6402597	99	P	SUR	50	-33	611	0	0.4	-0.1	0.4
6402615	99	P	SUR	16	-57	668	0	0.2	0.1	0.2
6402616	99	P	SUR	29	-48	673	0	0.4	-0.5	0.7
6402617	99	P	SUR	23	-47	669	0	0.2	0.3	0.4
6402618	99	P	SUR	23	-38	666	0	0.2	0.2	0.3
6402619	99	P	SUR	38	-12	662	0	0.3	0.2	0.3
6402620	99	P	SUR	46	-4	668	0	0.4	0.4	0.6
6402621	99	P	SUR	42	-12	670	0	0.3	0.4	0.5
6402622	99	P	SUR	33	-20	662	0	0.3	0.3	0.4
64041	99	P	SUR	61	-3	1487	0	0.5	-0.1	0.5
64045	99	P	SUR	59	-12	1482	0	0.6	-0.5	0.8
64046	99	P	SUR	61	-4	1485	0	0.4	-0.3	0.5
6600021	99	P	SUR	55	14	195	0	0.4	-1.0	1.0
6600022	99	P	SUR	54	14	237	0	0.4	-0.6	0.7

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
6600024	99	P	SUR	55	13	260	0	0.4	-1.3	1.4
7801563	99	P	SUR	45	-65	741	0	0.7	0.5	0.9

4.10 Table 22 - Drifter Monitoring Statistics (EUCOS): Wind speed (m/s)

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND SPEED (M/S)
 AREA : 10N - 90N, 70W - 40E
 PERIOD : MAR 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

TIME = 99 => AVERAGE OF ALL OBSERVATIONS

GROSS ERROR LIMIT FOR VECTOR WIND = 25 M/S

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
0000	99	SPEED	SUR	28	-16	16	0	0	6.2	4.3	7.5
1300001	99	SPEED	SUR	11	-23	620	0	0	0.9	0.5	1.0
1300002	99	SPEED	SUR	20	-23	619	0	0	0.9	0.4	1.0
1300008	99	SPEED	SUR	15	-38	620	0	0	0.8	0.0	0.8
1300130	99	SPEED	SUR	28	-16	728	0	0	0.9	-0.1	0.9
1300131	99	SPEED	SUR	28	-17	737	0	0	2.2	2.0	3.0
4100026	99	SPEED	SUR	12	-38	239	0	0	0.6	-0.1	0.7
4100043	99	SPEED	SUR	21	-65	4451	0	0	0.9	-0.2	0.9
4100046	99	SPEED	SUR	24	-68	1134	0	0	0.8	0.3	0.9
4100049	99	SPEED	SUR	27	-63	4447	0	0	1.0	-0.1	1.0
4100052	99	SPEED	SUR	18	-65	2263	0	0	1.0	-0.5	1.1
4100053	99	SPEED	SUR	18	-66	4406	0	0	1.4	1.0	1.7
4100056	99	SPEED	SUR	18	-65	1799	0	0	1.0	-0.7	1.2
4100139	99	SPEED	SUR	20	-38	744	0	0	0.8	0.0	0.8
4100300	99	SPEED	SUR	16	-57	680	0	0	0.8	-0.4	0.9
41043	99	SPEED	SUR	21	-65	744	0	0	0.9	-0.1	1.0
41046	99	SPEED	SUR	24	-68	190	0	0	0.9	0.2	0.9
41049	99	SPEED	SUR	28	-63	744	0	0	1.0	-0.1	1.0
41052	99	SPEED	SUR	18	-65	382	0	0	1.0	-0.4	1.1
41053	99	SPEED	SUR	19	-66	743	0	0	1.3	0.4	1.4
41056	99	SPEED	SUR	18	-66	309	0	0	1.0	-0.5	1.1
4200059	99	SPEED	SUR	15	-67	4452	0	0	0.8	0.0	0.8
4200085	99	SPEED	SUR	18	-67	3330	0	0	1.3	-0.4	1.4
42059	99	SPEED	SUR	15	-68	744	0	0	0.8	0.0	0.8
42085	99	SPEED	SUR	18	-67	724	0	0	1.3	-0.2	1.3
4400005	99	SPEED	SUR	43	-69	737	2	0	1.4	0.0	1.4
4400008	99	SPEED	SUR	40	-69	4450	0	0	1.4	-0.1	1.4
4400027	99	SPEED	SUR	44	-67	4451	0	0	1.3	0.4	1.4
4400032	99	SPEED	SUR	44	-69	738	0	0	1.4	0.1	1.4
4400033	99	SPEED	SUR	44	-69	740	0	0	1.6	0.3	1.6
4400034	99	SPEED	SUR	44	-68	739	0	0	1.3	0.2	1.3
4400150	99	SPEED	SUR	43	-64	732	0	0	1.2	0.4	1.2
4400488	99	SPEED	SUR	45	-61	488	0	0	1.5	0.8	1.7
4400489	99	SPEED	SUR	45	-61	486	0	0	1.4	1.5	2.0

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF

ELEMENT MONITORED : WIND SPEED (M/S)

(CONTINU

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
44005	99	SPEED	SUR	43	-69	740	2	0	1.4	0.1	1.4
44008	99	SPEED	SUR	41	-69	744	0	0	1.4	-0.1	1.4
44027	99	SPEED	SUR	44	-67	744	0	0	1.4	0.5	1.5
44032	99	SPEED	SUR	44	-69	740	0	0	1.4	0.2	1.4
44033	99	SPEED	SUR	44	-69	742	0	0	1.6	0.6	1.7
44034	99	SPEED	SUR	44	-68	741	0	0	1.4	0.2	1.4
44078	99	SPEED	SUR	60	-40	62	0	0	1.9	-1.9	2.7
44150	99	SPEED	SUR	43	-64	730	0	0	1.2	0.5	1.3
44258	99	SPEED	SUR	45	-63	736	0	0	1.4	0.7	1.6
44488	99	SPEED	SUR	45	-61	711	0	0	1.5	0.9	1.8
44489	99	SPEED	SUR	46	-61	721	0	0	1.4	1.7	2.2
6100001	99	SPEED	SUR	43	8	737	0	0	1.9	-1.0	2.2
6100002	99	SPEED	SUR	42	5	739	0	0	1.5	-0.3	1.5
6100196	99	SPEED	SUR	42	4	251	0	0	1.6	-0.7	1.7
6100197	99	SPEED	SUR	40	4	734	0	0	1.4	-0.6	1.5
6100198	99	SPEED	SUR	37	-2	689	0	0	1.4	-0.8	1.7
6100280	99	SPEED	SUR	41	1	265	0	0	1.3	-0.9	1.6
6100281	99	SPEED	SUR	40	0	192	0	0	2.4	0.4	2.4
6100417	99	SPEED	SUR	38	0	299	0	0	1.1	-0.4	1.1
6100430	99	SPEED	SUR	40	2	730	0	0	1.7	-0.7	1.8
6101007	99	SPEED	SUR	36	25	95	0	0	1.9	-0.7	2.0
6101008	99	SPEED	SUR	37	22	124	0	0	1.7	0.0	1.7
6101009	99	SPEED	SUR	35	25	107	0	0	1.9	0.5	2.0
6200001	99	SPEED	SUR	45	-5	736	0	0	1.5	-1.4	2.1
6200024	99	SPEED	SUR	44	-3	737	0	0	1.7	-0.1	1.7
6200025	99	SPEED	SUR	44	-6	674	0	0	1.7	-1.0	2.0
6200082	99	SPEED	SUR	44	-8	741	0	0	1.3	-1.4	1.9
6200083	99	SPEED	SUR	43	-9	737	0	0	1.1	-1.3	1.7
6200084	99	SPEED	SUR	42	-9	736	0	0	1.0	-0.8	1.2
6200085	99	SPEED	SUR	36	-7	491	0	0	1.2	-0.8	1.4
6200086	99	SPEED	SUR	55	6	302	0	0	1.7	1.5	2.3
6200087	99	SPEED	SUR	55	7	431	0	0	1.5	1.1	1.9
6200091	99	SPEED	SUR	53	-5	743	0	0	1.3	0.6	1.4
6200092	99	SPEED	SUR	51	-11	743	0	0	1.3	-0.5	1.4
6200093	99	SPEED	SUR	55	-10	743	0	0	1.4	0.5	1.5
6200094	99	SPEED	SUR	52	-7	743	0	0	1.2	0.3	1.2
6200095	99	SPEED	SUR	53	-16	743	0	0	1.2	0.2	1.2
6200192	99	SPEED	SUR	40	-10	231	0	0	0.8	-0.1	0.8
6200199	99	SPEED	SUR	40	-9	205	0	0	1.0	0.0	1.0
6201065	99	SPEED	SUR	54	7	55	0	0	1.4	-1.2	1.8
62029	99	SPEED	SUR	49	-13	877	0	0	1.3	0.4	1.4

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF

ELEMENT MONITORED : WIND SPEED (M/S)

(CONTINU

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
62081	99	SPEED	SUR	51	-13	1488	0	0	1.4	0.8	1.6
62091	99	SPEED	SUR	53	-5	743	0	0	1.3	0.6	1.5
62092	99	SPEED	SUR	51	-11	743	0	0	1.3	-0.4	1.4
62093	99	SPEED	SUR	55	-10	743	0	0	1.4	0.6	1.5
62094	99	SPEED	SUR	52	-7	743	0	0	1.2	0.4	1.3
62095	99	SPEED	SUR	53	-16	743	0	0	1.2	0.4	1.3
62102	99	SPEED	SUR	58	2	1488	0	0	1.5	-0.2	1.5
62103	99	SPEED	SUR	50	-3	1378	0	0	1.4	-0.5	1.5
62104	99	SPEED	SUR	57	1	1488	0	0	1.6	-0.5	1.7
62105	99	SPEED	SUR	55	-13	1484	0	0	1.4	0.6	1.5
62107	99	SPEED	SUR	50	-6	674	0	0	1.2	0.1	1.2
62112	99	SPEED	SUR	58	0	1485	0	0	1.6	-0.6	1.7
62113	99	SPEED	SUR	58	0	1488	0	0	1.6	-0.4	1.7
62114	99	SPEED	SUR	58	0	1482	0	0	1.6	-0.1	1.6
62118	99	SPEED	SUR	58	1	1482	0	0	1.5	0.3	1.5
62119	99	SPEED	SUR	57	2	1488	0	0	1.6	-0.8	1.8
62120	99	SPEED	SUR	56	2	1384	0	0	1.4	0.0	1.5
62121	99	SPEED	SUR	54	3	1488	0	0	1.4	-0.7	1.5
62122	99	SPEED	SUR	57	2	1488	0	0	1.7	-0.6	1.8
62129	99	SPEED	SUR	58	0	1484	0	0	1.6	-0.5	1.7
62131	99	SPEED	SUR	54	1	1488	0	0	2.0	-0.5	2.1
62132	99	SPEED	SUR	56	2	1380	0	0	2.9	-1.8	3.4
62133	99	SPEED	SUR	57	1	1476	0	0	1.7	-0.4	1.7
62134	99	SPEED	SUR	58	1	1480	0	0	1.6	-0.4	1.6
62140	99	SPEED	SUR	57	1	1484	0	0	1.5	-0.2	1.5
62143	99	SPEED	SUR	58	2	1488	0	0	2.0	-0.8	2.2
62144	99	SPEED	SUR	53	2	1488	0	0	1.8	-0.6	1.9
62145	99	SPEED	SUR	53	3	1488	0	0	1.8	0.9	2.0
62146	99	SPEED	SUR	57	2	1488	0	0	1.7	0.0	1.7
62148	99	SPEED	SUR	54	2	1488	0	0	1.5	-0.2	1.5
62149	99	SPEED	SUR	54	1	1486	0	0	1.3	0.0	1.3
62152	99	SPEED	SUR	57	2	1454	0	0	1.6	-0.8	1.7
62153	99	SPEED	SUR	57	2	1484	0	0	2.3	-1.3	2.7
62154	99	SPEED	SUR	56	2	1480	0	0	1.5	0.0	1.5
62155	99	SPEED	SUR	58	1	1024	0	0	1.3	0.0	1.3
62163	99	SPEED	SUR	48	-9	1480	0	0	1.2	0.3	1.2
62164	99	SPEED	SUR	57	1	1334	0	0	1.6	-1.5	2.2
62165	99	SPEED	SUR	54	1	1486	0	0	1.4	-0.5	1.4
62170	99	SPEED	SUR	51	2	1488	0	0	1.6	0.6	1.7
62304	99	SPEED	SUR	51	2	1462	0	0	1.7	0.6	1.8
62442	99	SPEED	SUR	49	-16	1487	0	0	1.3	0.5	1.5

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF

ELEMENT MONITORED : WIND SPEED (M/S)

(CONTINU

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
6301001	99	SPEED	SUR	64	5	740	0	0	1.7	0.1	1.7
6301003	99	SPEED	SUR	74	24	480	0	0	2.1	-1.7	2.7
63055	99	SPEED	SUR	61	2	1452	0	0	1.8	-1.6	2.4
63056	99	SPEED	SUR	60	2	1486	0	0	1.4	-0.1	1.4
63057	99	SPEED	SUR	59	2	1488	0	0	1.7	-0.2	1.7
63058	99	SPEED	SUR	53	2	789	0	0	1.5	0.2	1.5
63101	99	SPEED	SUR	61	1	1484	0	0	1.8	-0.7	2.0
63103	99	SPEED	SUR	61	1	1488	0	0	1.8	-0.9	2.0
63106	99	SPEED	SUR	61	2	1484	0	0	2.2	-1.8	2.8
63108	99	SPEED	SUR	61	2	1454	0	0	1.9	-1.1	2.2
63109	99	SPEED	SUR	60	2	1394	0	0	1.4	-0.2	1.4
63110	99	SPEED	SUR	60	2	1474	0	0	1.4	-0.6	1.6
63112	99	SPEED	SUR	61	1	1486	0	0	1.7	-0.9	1.9
63115	99	SPEED	SUR	62	1	1484	0	0	1.8	-1.1	2.1
63117	99	SPEED	SUR	61	1	1486	0	0	1.8	-0.9	2.0
64041	99	SPEED	SUR	61	-3	1487	0	0	1.5	-0.5	1.6
64045	99	SPEED	SUR	59	-12	1482	0	0	1.7	0.9	1.9
64046	99	SPEED	SUR	61	-4	1485	0	0	1.5	0.8	1.7
6600021	99	SPEED	SUR	55	14	195	0	0	1.3	0.5	1.4
6600022	99	SPEED	SUR	54	14	237	0	0	1.6	-0.4	1.7
6600024	99	SPEED	SUR	55	13	185	0	0	1.5	0.3	1.5

4.11 Table 23 - Drifter Monitoring Statistics (EUCOS): Wind direction

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND DIRECTION (DEGREES)
 AREA : 10N - 90N, 70W - 40E
 PERIOD : MAR 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

TIME = 99 => AVERAGE OF ALL OBSERVATIONS
 GROSS ERROR LIMIT FOR VECTOR WIND = 25 M/S
 WIND SPEEDS > 3M/S USED

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
0000	99	DIRN	SUR	28	-16	12	0	0	11.6	12.1	16.8
00000	99	DIRN	SUR	44	-79	63	0	0	13.7	-41.1	43.3
1300001	99	DIRN	SUR	11	-23	567	0	0	10.0	-1.2	10.1
1300002	99	DIRN	SUR	20	-23	577	0	0	7.9	-2.0	8.2
1300008	99	DIRN	SUR	15	-38	609	0	0	9.6	-0.3	9.6
1300130	99	DIRN	SUR	28	-16	650	0	0	10.5	-1.3	10.6
1300131	99	DIRN	SUR	28	-17	452	0	0	22.7	8.6	24.3
4100001	99	DIRN	SUR	35	-72	4241	0	0	14.6	7.2	16.3
4100002	99	DIRN	SUR	32	-75	4166	0	0	14.0	0.6	14.0
4100004	99	DIRN	SUR	33	-79	4041	0	0	15.2	0.2	15.2
4100008	99	DIRN	SUR	31	-81	592	0	0	17.8	-3.0	18.0
4100009	99	DIRN	SUR	29	-80	3851	0	0	17.1	1.8	17.2
4100010	99	DIRN	SUR	29	-78	4109	0	0	16.0	5.9	17.0
4100013	99	DIRN	SUR	33	-78	3866	0	0	17.7	1.8	17.8
4100024	99	DIRN	SUR	34	-78	527	0	0	20.0	4.2	20.4
4100025	99	DIRN	SUR	35	-75	4114	0	0	19.1	1.7	19.2
4100026	99	DIRN	SUR	12	-38	239	0	0	7.0	-7.0	9.9
4100029	99	DIRN	SUR	33	-80	258	0	0	21.9	-4.1	22.3
4100033	99	DIRN	SUR	32	-80	564	0	0	19.5	3.6	19.8
4100037	99	DIRN	SUR	34	-77	634	0	0	18.2	3.3	18.5
4100038	99	DIRN	SUR	34	-78	557	0	0	21.6	5.3	22.3
4100043	99	DIRN	SUR	21	-65	3439	0	0	11.8	3.3	12.2
4100046	99	DIRN	SUR	24	-68	417	0	0	13.3	7.5	15.3
4100047	99	DIRN	SUR	27	-71	3757	0	0	15.3	8.3	17.4
4100049	99	DIRN	SUR	27	-63	3643	0	0	12.9	5.8	14.2
4100052	99	DIRN	SUR	18	-65	2231	0	0	8.6	1.5	8.8
4100053	99	DIRN	SUR	18	-66	3171	0	0	13.9	9.4	16.8
4100056	99	DIRN	SUR	18	-65	1774	0	0	11.0	1.6	11.1
4100064	99	DIRN	SUR	34	-77	635	0	0	20.3	-0.6	20.3
4100066	99	DIRN	SUR	33	-80	603	0	0	18.7	3.9	19.1
41001	99	DIRN	SUR	35	-72	707	0	0	15.3	7.0	16.9
4100139	99	DIRN	SUR	20	-38	615	0	0	12.0	1.6	12.1

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF

ELEMENT MONITORED : WIND DIRECTION (DEGREES)

(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
41002	99	DIRN	SUR	32	-75	685	0	0	14.2	1.0	14.2
4100300	99	DIRN	SUR	16	-57	586	0	0	11.6	-12.0	16.7
41004	99	DIRN	SUR	33	-79	667	0	0	15.9	0.9	15.9
41008	99	DIRN	SUR	31	-81	583	0	0	18.2	-3.0	18.4
41009	99	DIRN	SUR	29	-80	631	0	0	17.9	2.2	18.0
41010	99	DIRN	SUR	29	-79	671	0	0	16.9	6.5	18.1
41013	99	DIRN	SUR	33	-78	638	0	0	19.9	2.5	20.0
41024	99	DIRN	SUR	34	-79	526	0	0	21.0	4.3	21.4
41025	99	DIRN	SUR	35	-76	685	0	0	19.3	2.8	19.5
41029	99	DIRN	SUR	33	-80	213	0	0	19.6	-2.9	19.9
41033	99	DIRN	SUR	32	-80	549	0	0	20.9	3.9	21.2
41037	99	DIRN	SUR	34	-77	621	0	0	18.9	3.2	19.2
41038	99	DIRN	SUR	34	-78	547	0	0	22.8	6.1	23.6
41043	99	DIRN	SUR	21	-65	551	0	0	12.0	3.6	12.5
41046	99	DIRN	SUR	24	-68	71	0	0	15.5	9.8	18.4
41047	99	DIRN	SUR	28	-72	616	0	0	15.0	9.0	17.5
41049	99	DIRN	SUR	28	-63	597	0	0	13.0	6.0	14.3
41052	99	DIRN	SUR	18	-65	374	0	0	8.8	1.0	8.9
41053	99	DIRN	SUR	19	-66	552	0	0	14.5	8.3	16.7
41056	99	DIRN	SUR	18	-66	300	0	0	11.6	1.5	11.7
41064	99	DIRN	SUR	34	-77	633	0	0	20.5	-0.4	20.5
41066	99	DIRN	SUR	33	-80	575	0	0	20.6	3.0	20.8
4200013	99	DIRN	SUR	27	-83	1122	0	0	17.3	-2.3	17.4
4200022	99	DIRN	SUR	28	-84	1154	0	0	16.4	-0.9	16.4
4200023	99	DIRN	SUR	26	-83	949	0	0	18.5	-3.2	18.8
4200026	99	DIRN	SUR	25	-83	925	0	0	16.2	-4.3	16.8
4200036	99	DIRN	SUR	29	-85	3632	0	0	15.9	5.4	16.8
4200059	99	DIRN	SUR	15	-67	4264	0	0	11.6	4.7	12.5
4200085	99	DIRN	SUR	18	-67	2738	0	0	16.7	8.1	18.6
42013	99	DIRN	SUR	27	-83	545	0	0	15.8	-0.5	15.8
42022	99	DIRN	SUR	28	-84	556	0	0	16.2	0.1	16.2
42023	99	DIRN	SUR	26	-83	453	0	0	18.0	-2.0	18.1
42026	99	DIRN	SUR	25	-84	458	0	0	16.0	-3.0	16.3
42036	99	DIRN	SUR	29	-85	594	0	0	16.1	5.8	17.1
42059	99	DIRN	SUR	15	-68	708	0	0	11.9	4.0	12.5
42085	99	DIRN	SUR	18	-67	567	0	0	16.4	6.9	17.8
4400005	99	DIRN	SUR	43	-69	671	2	0	17.5	1.3	17.5
4400007	99	DIRN	SUR	44	-70	3592	0	0	17.5	4.7	18.1
4400008	99	DIRN	SUR	40	-69	4103	0	0	13.2	8.6	15.8
4400009	99	DIRN	SUR	38	-75	1658	0	0	15.9	7.2	17.5
4400018	99	DIRN	SUR	42	-70	3999	0	0	15.4	6.8	16.9

DRIFTER MONITORING STATISTICS (EUCOS)
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND DIRECTION (DEGREES)
 (CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
4400020	99	DIRN	SUR	41	-70	3884	0	0	18.8	7.2	20.1
4400022	99	DIRN	SUR	41	-74	563	0	0	15.5	9.5	18.2
4400027	99	DIRN	SUR	44	-67	3847	0	0	20.5	6.5	21.5
4400029	99	DIRN	SUR	43	-71	655	0	0	14.6	2.8	14.8
4400030	99	DIRN	SUR	43	-70	631	0	0	19.1	0.5	19.1
4400032	99	DIRN	SUR	44	-69	646	0	0	16.9	-3.7	17.3
4400033	99	DIRN	SUR	44	-69	616	0	0	21.9	16.3	27.3
4400034	99	DIRN	SUR	44	-68	649	0	0	21.6	-4.5	22.1
4400039	99	DIRN	SUR	41	-73	470	0	0	49.6	11.5	50.9
4400040	99	DIRN	SUR	41	-74	776	0	0	17.3	6.5	18.5
4400041	99	DIRN	SUR	37	-77	2037	0	0	15.4	0.1	15.4
4400042	99	DIRN	SUR	38	-76	4894	0	0	19.6	2.3	19.8
4400058	99	DIRN	SUR	38	-76	5501	0	0	19.3	1.4	19.3
4400062	99	DIRN	SUR	39	-76	5177	0	0	26.3	0.9	26.3
4400063	99	DIRN	SUR	39	-76	4697	0	0	20.0	-0.9	20.0
4400064	99	DIRN	SUR	37	-76	5130	0	0	19.7	0.7	19.7
4400065	99	DIRN	SUR	40	-74	3914	0	0	19.1	19.0	26.9
4400066	99	DIRN	SUR	40	-73	4033	0	0	17.3	7.4	18.8
4400072	99	DIRN	SUR	37	-76	5135	0	0	19.5	-0.3	19.5
4400150	99	DIRN	SUR	43	-64	696	0	0	16.6	8.4	18.6
4400488	99	DIRN	SUR	45	-61	434	0	0	16.4	3.5	16.8
4400489	99	DIRN	SUR	45	-61	407	0	0	16.0	-1.2	16.1
44005	99	DIRN	SUR	43	-69	664	2	0	17.6	0.8	17.6
44007	99	DIRN	SUR	44	-70	589	0	0	18.3	4.5	18.8
44008	99	DIRN	SUR	41	-69	684	0	0	13.2	8.5	15.7
44009	99	DIRN	SUR	39	-75	272	0	0	18.8	5.8	19.7
44018	99	DIRN	SUR	42	-70	656	0	0	15.9	7.3	17.5
44020	99	DIRN	SUR	42	-70	634	0	0	18.4	7.1	19.7
44022	99	DIRN	SUR	41	-74	299	0	0	16.6	9.4	19.0
44027	99	DIRN	SUR	44	-67	639	0	0	22.7	6.4	23.6
44029	99	DIRN	SUR	43	-71	641	0	0	14.5	2.7	14.8
44030	99	DIRN	SUR	43	-70	626	0	0	18.7	0.5	18.8
44032	99	DIRN	SUR	44	-69	638	0	0	16.6	-4.1	17.1
44033	99	DIRN	SUR	44	-69	601	0	0	21.2	15.2	26.1
44034	99	DIRN	SUR	44	-68	637	0	0	20.9	-4.0	21.3
44039	99	DIRN	SUR	41	-73	460	0	0	48.8	11.1	50.0
44040	99	DIRN	SUR	41	-74	369	0	0	16.8	7.4	18.4
44041	99	DIRN	SUR	37	-77	228	0	0	15.7	0.6	15.7
44042	99	DIRN	SUR	38	-76	541	0	0	19.2	4.1	19.6
44058	99	DIRN	SUR	38	-76	547	0	0	20.1	3.7	20.4
44062	99	DIRN	SUR	39	-76	555	0	0	26.6	2.4	26.7

DRIFTER MONITORING STATISTICS (EUCOS)
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND DIRECTION (DEGREES)
 (CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
44063	99	DIRN	SUR	39	-76	508	0	0	22.7	-0.2	22.7
44064	99	DIRN	SUR	37	-76	583	0	0	20.4	2.5	20.6
44065	99	DIRN	SUR	40	-74	639	0	0	19.6	18.4	26.9
44066	99	DIRN	SUR	40	-73	668	0	0	18.0	7.1	19.3
44072	99	DIRN	SUR	37	-76	581	0	0	21.5	2.0	21.6
44078	99	DIRN	SUR	60	-40	55	0	0	8.5	-14.2	16.5
44150	99	DIRN	SUR	43	-64	693	0	0	17.1	7.9	18.8
44258	99	DIRN	SUR	45	-63	612	0	0	17.1	-10.0	19.8
44488	99	DIRN	SUR	45	-61	625	0	0	16.7	5.7	17.7
44489	99	DIRN	SUR	46	-61	597	0	0	15.3	0.2	15.3
4500005	99	DIRN	SUR	42	-82	148	0	0	22.4	24.2	32.9
45005	99	DIRN	SUR	42	-82	25	0	0	18.9	24.2	30.7
6100198	99	DIRN	SUR	37	-2	379	0	0	15.5	7.2	17.1
6100281	99	DIRN	SUR	40	0	75	0	0	39.4	-1.5	39.4
6100417	99	DIRN	SUR	38	0	182	0	0	14.5	9.2	17.2
6200001	99	DIRN	SUR	45	-5	662	0	0	12.3	1.0	12.3
6200024	99	DIRN	SUR	44	-3	489	0	0	26.4	9.9	28.2
6200025	99	DIRN	SUR	44	-6	402	0	0	18.2	-26.3	32.0
6200082	99	DIRN	SUR	44	-8	669	0	0	11.7	1.1	11.7
6200083	99	DIRN	SUR	43	-9	642	0	0	9.0	3.3	9.6
6200084	99	DIRN	SUR	42	-9	605	0	0	14.4	5.8	15.5
6200085	99	DIRN	SUR	36	-7	327	0	0	12.3	7.8	14.5
6200091	99	DIRN	SUR	53	-5	698	0	0	11.4	6.3	13.1
6200092	99	DIRN	SUR	51	-11	684	0	0	11.3	4.7	12.3
6200093	99	DIRN	SUR	55	-10	642	0	0	16.6	5.2	17.4
6200094	99	DIRN	SUR	52	-7	708	0	0	11.8	10.3	15.7
6200095	99	DIRN	SUR	53	-16	693	0	0	14.6	5.8	15.7
6200192	99	DIRN	SUR	40	-10	153	0	0	17.1	-1.4	17.2
6200199	99	DIRN	SUR	40	-9	134	0	0	18.5	32.0	37.0
62029	99	DIRN	SUR	49	-13	835	0	0	12.0	-6.0	13.4
62081	99	DIRN	SUR	51	-13	1412	0	0	11.1	-4.9	12.1
62091	99	DIRN	SUR	53	-5	692	0	0	11.4	5.9	12.8
62092	99	DIRN	SUR	51	-11	675	0	0	11.2	4.1	11.9
62093	99	DIRN	SUR	55	-10	634	0	0	17.2	4.5	17.8
62094	99	DIRN	SUR	52	-7	705	0	0	12.1	9.7	15.5
62095	99	DIRN	SUR	53	-16	696	0	0	15.0	5.3	15.9
62103	99	DIRN	SUR	50	-3	1292	0	0	12.4	3.2	12.8
62105	99	DIRN	SUR	55	-13	1338	0	0	19.4	-1.7	19.5
62107	99	DIRN	SUR	50	-6	655	0	0	10.9	4.3	11.7
62112	99	DIRN	SUR	58	0	1353	0	0	15.2	-3.3	15.6
62114	99	DIRN	SUR	58	0	1378	0	0	14.4	-0.3	14.4

DRIFTER MONITORING STATISTICS (EUCOS)
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND DIRECTION (DEGREES)
 (CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
62163	99	DIRN	SUR	48	-9	1375	0	0	17.2	10.1	20.0
62442	99	DIRN	SUR	49	-16	1439	0	0	16.7	10.5	19.7
64041	99	DIRN	SUR	61	-3	1310	0	0	17.5	9.3	19.9
64045	99	DIRN	SUR	59	-12	1291	0	0	23.5	-0.6	23.5
64046	99	DIRN	SUR	61	-4	1364	0	0	15.4	1.9	15.5

4.12 Table 24 - List of Assimilated BUFR Encoded Radiosonde Stations

ASDE09	ATGU3FT	BPMWB2N	DBLK	GQBZLZL	JNKN7JF	KJJF9XN	KMPLHPW	LAGZ8
LRYQE3U	USBOD	USCAT	USSOD	USYUB	WDK38HS	XQFJRGX	YLV96WM	2EERVTP
7JUNA4N	9ZT9MRK	01001	01004	01010	01028	01241	01400	01415
01492	02365	02527	02836	02963	03005	03023	03238	03354
03743	03808	03882	03918	03953	04018	04089	04220	04270
04320	04339	04360	04417	06011	06260	06458	06610	07110
07145	07510	07645	07761	08001	08023	08190	08221	08302
08383	08430	08508	08522	08536	10035	10113	10184	10238
10304	10393	10410	10548	10618	10739	10771	10868	10954
10962	11010	11035	11120	11240	11520	11747	11952	12120
12374	12425	12575	12843	12982	13275	13388	14015	14240
14430	15420	15614	16045	16064	16113	16144	16224	16245
16332	16429	16546	16622	16716	16754	17030	17064	17095
17196	17220	17240	17351	17607	20674	22008	22820	22845
23205	23472	23884	23921	24641	24908	26038	26435	26629
26708	26850	27459	27707	27713	27962	28225	28661	28695
29612	29698	30557	30673	30935	31770	34122	34172	34731
35121	40179	40186	42369	42867	42971	43150	43371	45004
47102	47104	47138	47155	47169	47186	47230	47401	47412
47582	47646	47678	47807	47827	47909	47918	47945	47971
47991	48601	48615	48698	50527	50557	50774	50953	51076
51243	51431	51463	51644	51656	51709	51777	51828	51839
52203	52267	52323	52418	52533	52652	52681	52818	52836
52866	52983	53068	53463	53513	53543	53614	53772	53845
53915	54102	54135	54161	54218	54292	54374	54511	54662
54727	54857	55299	55591	56029	56046	56080	56137	56146
56187	56492	56571	56651	56691	56739	56778	56964	56985
57083	57127	57131	57178	57245	57461	57494	57516	57541
57687	57749	57816	57957	57972	57993	58027	58150	58203
58238	58362	58424	58457	58606	58633	58665	58725	58847
59023	59134	59211	59265	59280	59293	59316	59431	59758
59981	60018	60096	60155	60191	60253	60390	60571	60630
60656	60680	60715	60760	61901	61980	61998	63894	63985
65344	66160	67083	68263	68424	68442	68512	68816	68842
70026	70133	70200	70219	70231	70261	70273	70308	70316
70326	70350	70361	70398	71043	71081	71082	71109	71119
71603	71722	71802	71811	71815	71816	71823	71836	71845
71867	71906	71907	71908	71909	71913	71917	71924	71925
71926	71934	71945	71957	71964	72201	72202	72206	72208
72210	72214	72215	72230	72240	72248	72251	72261	72265
72274	72293	72305	72317	72318	72327	72340	72357	72363
72364	72365	72376	72388	72402	72413	72426	72440	72456
72476	72489	72493	72501	72520	72528	72558	72562	72572
72582	72597	72632	72634	72645	72649	72659	72662	72672
72681	72694	72712	72747	72764	72768	72776	72786	72797
73033	73110	74389	74455	74560	76225	76256	76394	76405
76458	76526	76595	76612	76644	76654	76679	76692	76743
76805	76903	78384	78397	78583	78866	78897	78954	81405
82965	85442	85586	85799	85934	87155	87344	87418	87582
87623	87715	87860	88889	89002	89055	89062	89564	89571
89592	89611	89625	89642	91165	91212	91285	91334	91348
91376	91408	91413	91592	91765	91925	91938	91948	91958
93112	93417	93817	93844	94001	94120	94150	94170	94203
94299	94302	94312	94326	94332	94403	94430	94461	94510
94578	94610	94637	94638	94653	94659	94672	94711	94767
94776	94802	94821	94866	94910	94975	94995	94996	94998
95282	95527	96413	96441	96471	96996			

4.13 Table 25 - List of BUFR Encoded Radiosonde Stations with no TAC Counterpart

ASDE09	ATGU3FT	BPMWB2N	DBLK	GQBZLZL	JNKN7JF	KJJF9XN	KMPLHPW	LAGZ8
LRVQE3U	USSOD	WDK38HS	XQFJRGX	YLV96WM	2EERVTP	7JUNA4N	9ZT9MRK	01010
01028	01415	01492	02365	02527	02836	02963	06610	07110
07145	07510	07645	07761	08001	08023	08190	08221	08302
08383	08430	08508	08522	08536	11010	11035	11120	11240
12575	17607	40186	47230	48698	50527	50557	50774	50953
51076	51243	51431	51463	51644	51656	51709	51777	51828
51839	52203	52267	52323	52418	52533	52652	52681	52818
52836	52866	52983	53068	53463	53513	53543	53614	53772
53845	53915	54102	54135	54161	54218	54292	54374	54511
54662	54727	54857	55299	55591	56029	56046	56080	56137
56146	56187	56492	56571	56651	56691	56739	56778	56964
56985	57083	57127	57131	57178	57245	57461	57494	57516
57541	57687	57749	57816	57957	57972	57993	58027	58150
58203	58238	58362	58424	58457	58606	58633	58665	58725
58847	59023	59134	59211	59265	59280	59293	59316	59431
59758	59981	60253	65344	67083	72413	76743	76903	89002
89642	91925	91938	91948	91958	93817	94001	94653	

5 Annex - Explanations of figures and tables

5.1 General

All information presented in this report is based on data received at ECMWF before the appropriate analysis. Approximate cut-off times (UTC) are shown below:

Analysis	Obs Time	Cut-off
0000	2101-0300	1530 (16 hours)
1200	0901-1500	1900 (7 hours)

5.2 Data Availability

For each observation type/parameter the average number of reports received per day is displayed in boxes of 5 degrees square. The numbers plotted are the nearest integer values - e.g. if 40 reports were received during the month then the average daily value plotted will be 1. If the average number is greater than 1000 then 999 will be plotted. If the average number is less than 0.5 then the digit 0 will be plotted. If no observations were received then the box will be left blank.

5.3 Data Quality

The information presented on data quality is based on differences between observations and the values of the most recent ECMWF forecast ("first guess") of the same parameter. Depending on the time of the observation, the forecast range is between 9 and 15 hours. The ability of a modern data assimilation system to provide the diagnostic facilities to monitor the performance of the observational network is demonstrated by A. Hollingsworth et. al., *Monthly Weather Review*, Vol 114, No. 5, May 1986.

It should be noted that:

- (i) all results are based on software that may undergo further development;
- (ii) although the quality of the ECMWF first-guess fields is of a generally high standard this is only true to a limited extent in the tropics, where small-scale processes such as convection are of much greater importance than in mid-latitudes, and the observations will sometimes not be representative of the scales of motion given by the first-guess;
- (iii) the first-guess fields themselves will vary in accuracy depending on the density and quality of data, particularly in the upstream regions and over Antarctica and the southern hemisphere mid-latitudes. Direct comparisons between stations (or airlines) should preferably be restricted to observations in a reasonably homogeneous climatic region.

Tables 1-9 contain lists of SHIPs (including fixed marine platforms), DRIFTERS, TEMPs and TEMPs/PILOTs believed to have supplied suspect reports of surface pressure, geopotential height or wind during the month. The format of the tables is according to Recommendation 3 CBS-Ext(85) and the criteria for stations or data platforms to be classified as suspect are given at the top of each table. For tables 7 and 8 data for the worst

standard pressure level are shown. Units of RMS, standard deviation and bias are hPa in tables 1 and 4, m in table 7 and ms^{-1} in tables 2, 5 and 8. In tables 7 and 8 the station position is indicated; in the case of TEMPSHIPS and PILOTSHIPS this position is obtained from the first report of the month. The gross error limits for first-guess deviations of geopotential in table 7 are as follows:

Level	Geop
1000	100m
925	100m
850	100m
700	100m
500	150m
400	175m
300	200m
250	225m
200	250m
150	275m
100	300m
70	375m
50	400m
30	450m

The corresponding limits for wind (table 8) are:

Level	Wind
1000	35ms^{-1}
925	35ms^{-1}
850	35ms^{-1}
700	40ms^{-1}
500	45ms^{-1}
400	50ms^{-1}
300	60ms^{-1}
250	60ms^{-1}
200	50ms^{-1}
150	50ms^{-1}
100	45ms^{-1}

In table 7 the weighted RMS values at standard levels are calculated using the following weights:

Level	Weight
1000	3.70
925	3.55
850	3.40
700	2.90
500	2.20
400	1.90
300	1.60
250	1.50
200	1.37
150	1.19
100	1.00
70	0.87
50	0.80
30	0.64

Tables 10 and 11 provide geopotential and wind quality statistics (100 hPa level) for TEMPSHIPs and PILOTSHIPs received during the month. Units and display format are identical to those in tables 7 and 8 respectively. Tables 13, 14 (50 hPa), 15 and 16 (100 hPa), 17 and 18 (500hPa), 19 and 20 (850hPa) provide similar radiosonde statistics for the EUCOS area.

Tables 21-23 are similar to tables 4-6 with data coverage restricted to the EUCOS area.

Figures 14-18 show global charts of SATOB and aircraft wind quality, where the statistics have been averaged over latitude/longitude boxes of 5 degrees square, and the mean observed minus first-guess (or 'bias') wind vectors have been plotted. All observations in the specified layers have been used. For comparison the mean observed wind (from the SATOB reports only) for each layer is shown in figures 14 and 15. A reference value of wind speed is plotted in the top right corner of each figure. An arrow is only plotted if 10 or more observations have been received in that 5 degree square.

Table 12 provides quality statistics of aircraft wind observations in the layer 300-150 hPa stratified by airline carrier. The format and specifications of the table have been defined by NMC Washington, the lead centre for the monitoring of aircraft and satellite data.

Table 24 shows list of Assimilated BUFR Encoded Radiosonde Stations monitored within the month.

Table 25 shows list of BUFR Encoded Radiosonde Stations with no TAC Counterpart monitored within the month.