



ECMWF Global Data Monitoring Report

August 2023

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

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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 coordinate 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	Jul	Aug	Ident	Time	Jul	Aug
04417	(00)	30	16	32098	(00)	6	31
23921	(00)	31	11	32098	(12)	6	31
23921	(12)	31	10	32150	(00)	10	28
25123	(12)	29	16	42339	(00)	18	29
28445	(00)	28	12	43003	(00)	5	22
28445	(12)	30	12	43014	(00)	0	16
29839	(00)	19	0	43110	(00)	0	17
29839	(12)	19	1	43311	(00)	8	30
30230	(00)	30	5	48327	(00)	12	31
30230	(12)	28	5	60155	(00)	16	29
40738	(12)	26	11	60760	(00)	13	45
40800	(00)	23	5	63741	(00)	6	26
40809	(12)	20	9	65344	(12)	2	28
40841	(12)	23	10	68538	(12)	0	19
40856	(00)	28	9	72233	(00)	10	31
42867	(00)	30	10	72233	(12)	9	31
48601	(00)	26	12	72403	(00)	6	31
48601	(12)	25	8	72403	(12)	6	31
48615	(00)	23	7	72451	(00)	9	31
50578	(00)	43	0	72451	(12)	8	31
50578	(12)	40	0	80028	(12)	0	14
61291	(00)	31	3	80094	(12)	0	12
61291	(12)	31	1	80259	(12)	0	14
71934	(00)	26	12	82022	(00)	0	20
76225	(00)	29	2	82099	(00)	7	31
76225	(12)	30	0	82099	(12)	10	31
76256	(00)	31	6	82411	(00)	0	31
76394	(12)	27	4	82705	(00)	0	12
76458	(00)	26	2	83554	(00)	0	24
76458	(12)	28	1	83554	(12)	0	25
76526	(00)	24	1	89009	(12)	0	18
76526	(12)	27	0	89664	(12)	0	20
76595	(00)	27	1	-	-	-	-
76595	(12)	31	2	-	-	-	-
76612	(00)	29	4	-	-	-	-
76612	(12)	30	2	-	-	-	-
76644	(00)	27	6	-	-	-	-
76644	(12)	27	5	-	-	-	-
76654	(00)	28	3	-	-	-	-
76654	(12)	28	2	-	-	-	-
76679	(00)	29	4	-	-	-	-
76679	(12)	31	4	-	-	-	-
76692	(12)	20	3	-	-	-	-
76805	(00)	21	0	-	-	-	-
76805	(12)	22	1	-	-	-	-
78016	(12)	31	5	-	-	-	-
82193	(12)	31	3	-	-	-	-
82244	(12)	14	0	-	-	-	-
83612	(00)	31	14	-	-	-	-
83612	(12)	31	13	-	-	-	-
91680	(00)	23	0	-	-	-	-
94995	(00)	31	11	-	-	-	-
96471	(00)	29	10	-	-	-	-
96471	(12)	20	9	-	-	-	-
96481	(00)	31	4	-	-	-	-

2.2 Drifting Buoys

Surface pressure observations from **1428** 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.

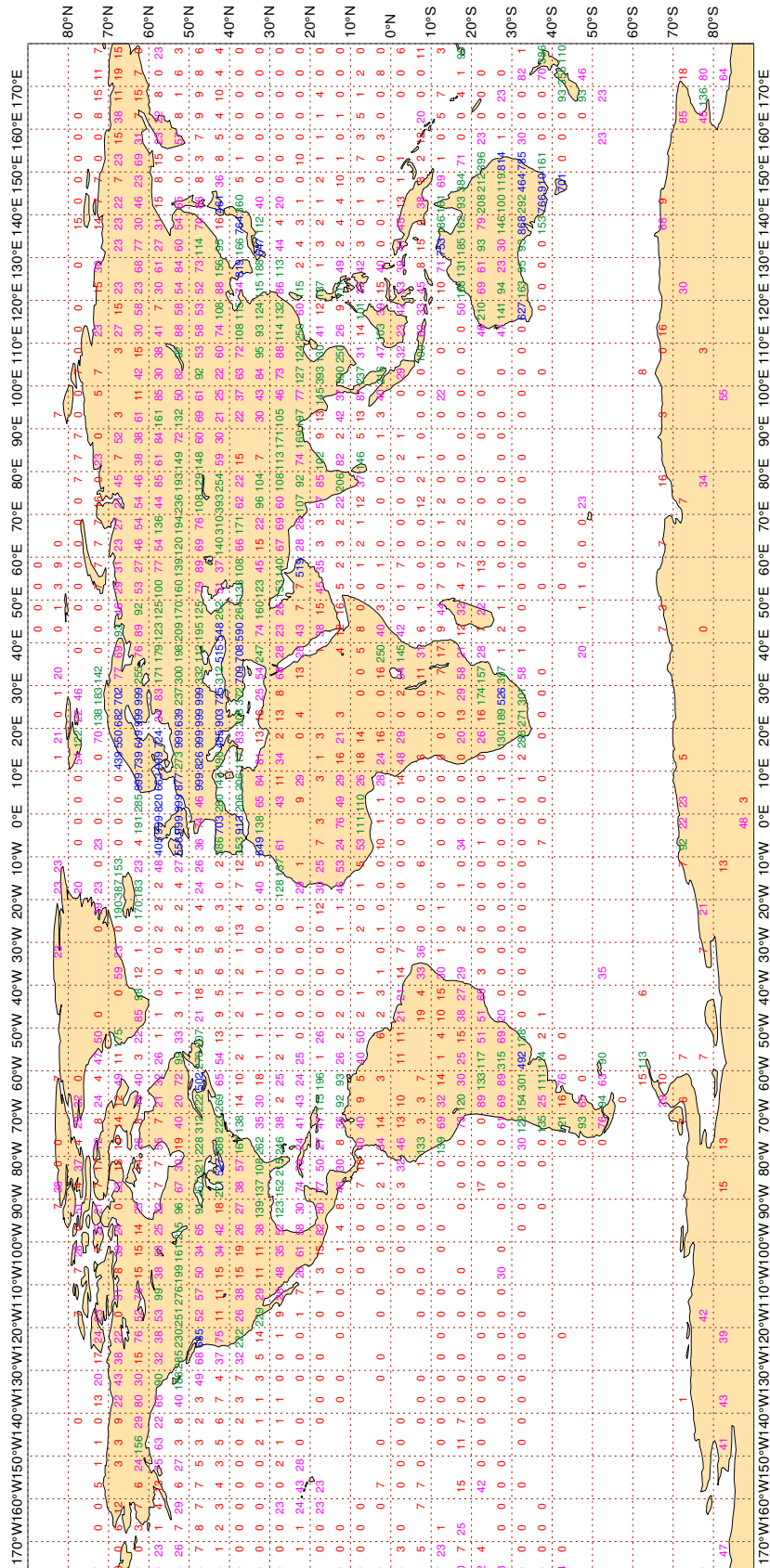
Fig	Parameter	Level/Layer
14	SATOB - Mean observed wind	1000-700 hPa
15	SATOB - Mean observed wind	400-150 hPa
16	SATOB - Mean observed minus first-guess wind	1000-700 hPa
17	SATOB - Mean observed minus first-guess wind	400-150 hPa
18	AIRCRAFT WIND - Mean observed minus first-guess	300-150 hPa

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

3.2.1 Figure 1 - Availability - SYNOP PRESSURE

ECMWF Monitoring Statistics - AUG 2023
 Availability - SYNOP/SHIP (manual, auto) pressure
 Average number of observations in 24 hours - 109765
 LAND - WMO Region I: 6797 II:20639 III: 4839 IV: 7488
 Region V:14932 VI:40847 Antarctic: 1386
 Oceans - N. Atlantic 6237 S. Atlantic 131 Indian 536 Pacific 5933

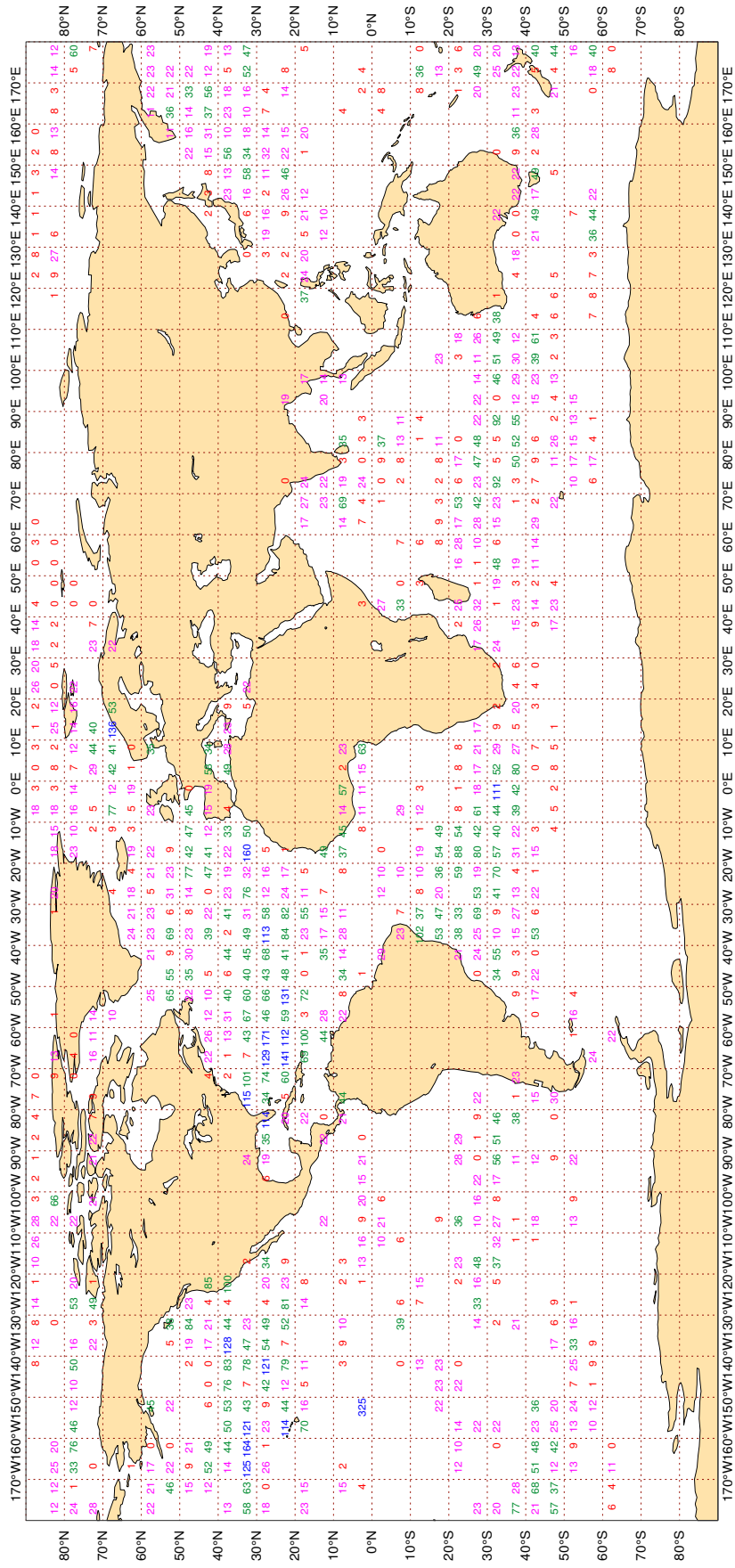
Figure 1



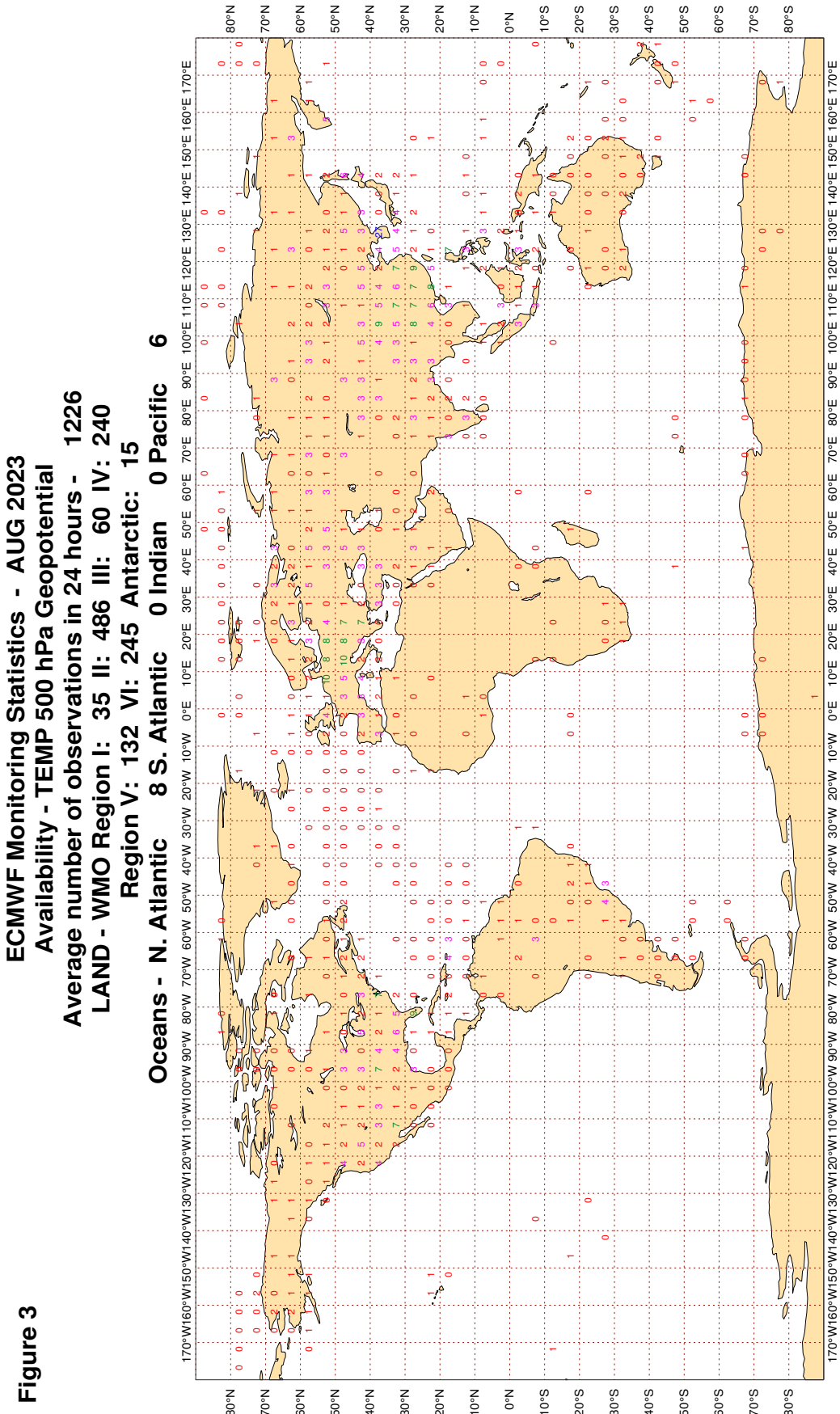
3.2.2 Figure 2 - Availability - DRIFTER PRESSURE

Figure 2

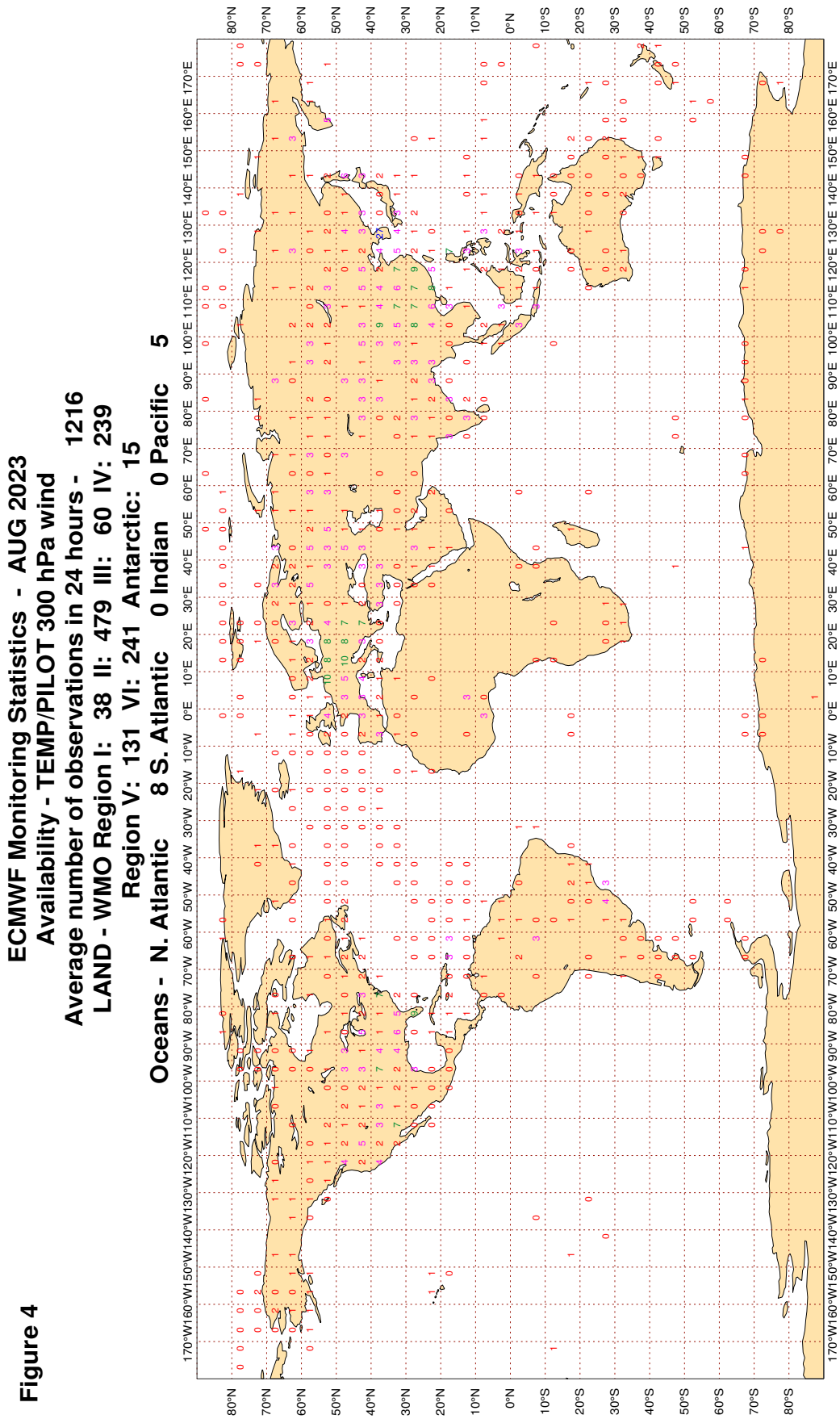
ECMWF Monitoring Statistics - AUG 2023
Availability - DRIFTER PRESSURE
Average number of observations in 24 hours - 20554
Oceans - N. Atlantic 6306 S. Atlantic 2532 Indian 2854 Pacific 8861



3.2.3 Figure 3 - Availability - TEMP 500 hPa geopotential



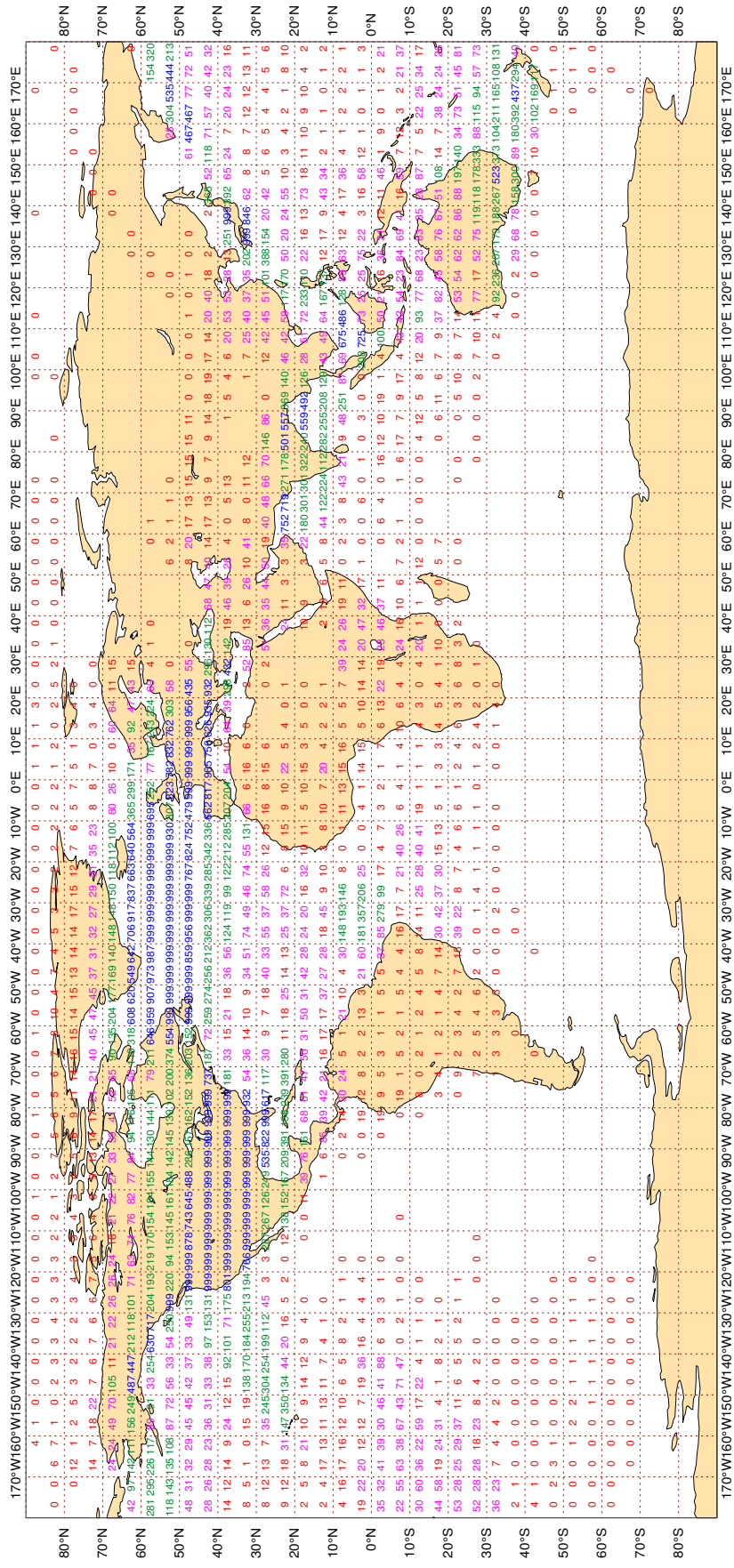
3.2.4 Figure 4 - Availability - TEMP/PILOT 300 hPa wind



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

Figure 5

ECMWF Monitoring Statistics - AUG 2023
Availability - Aircraft winds 300-150 hPa
Average number of observations in 24 hours - 219411



Magics 4.9.4



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

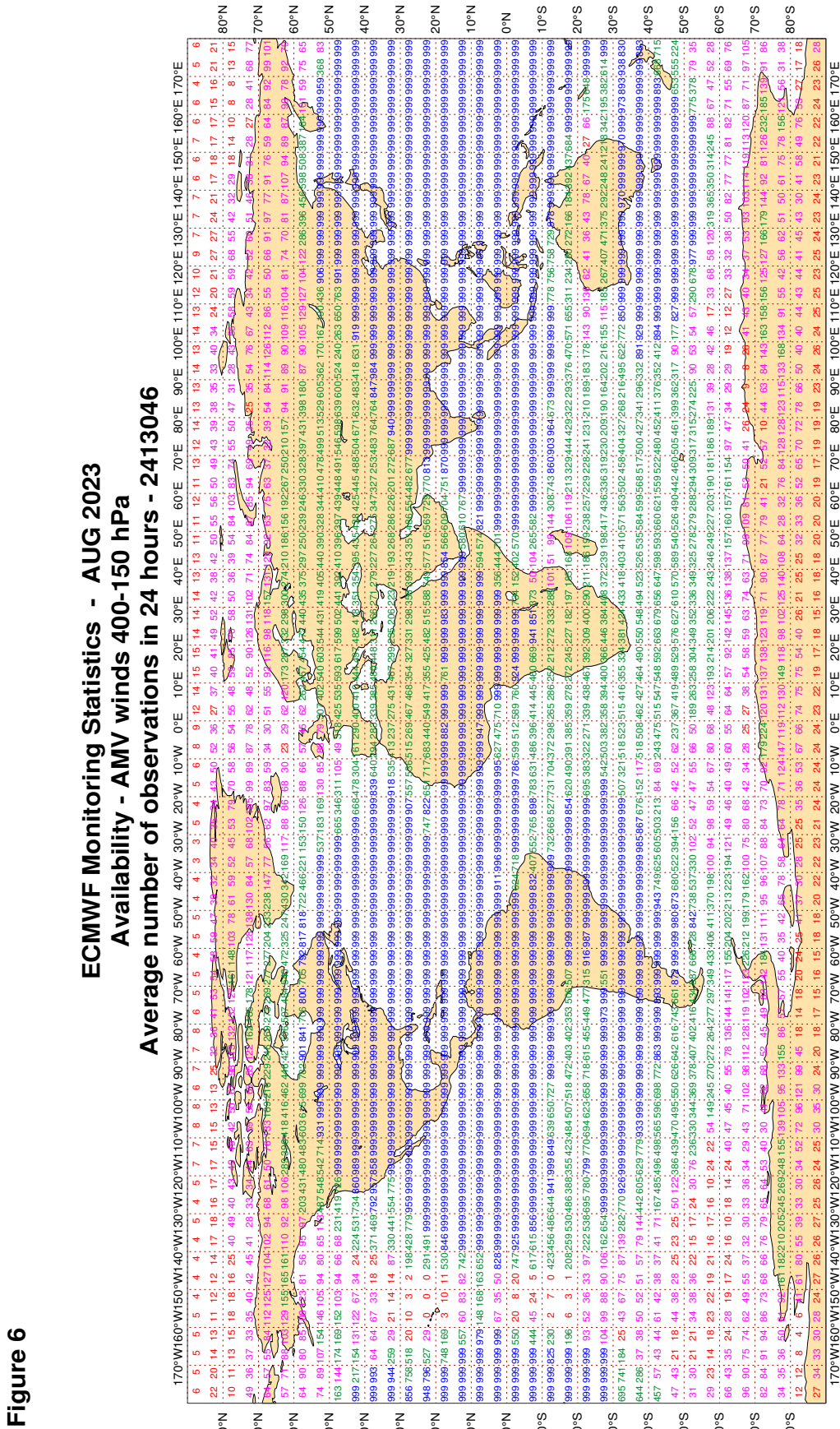


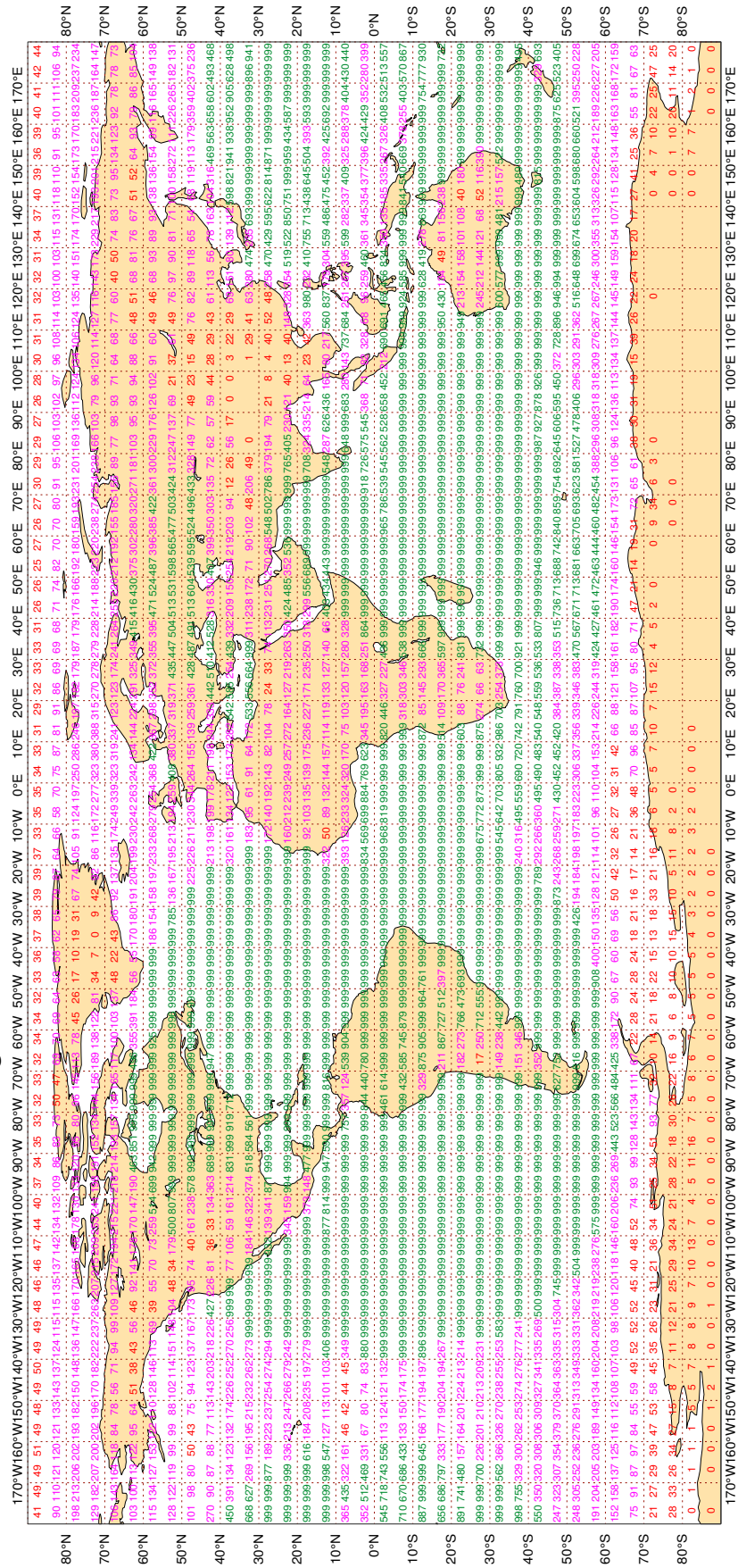
Figure 6



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

Figure 7

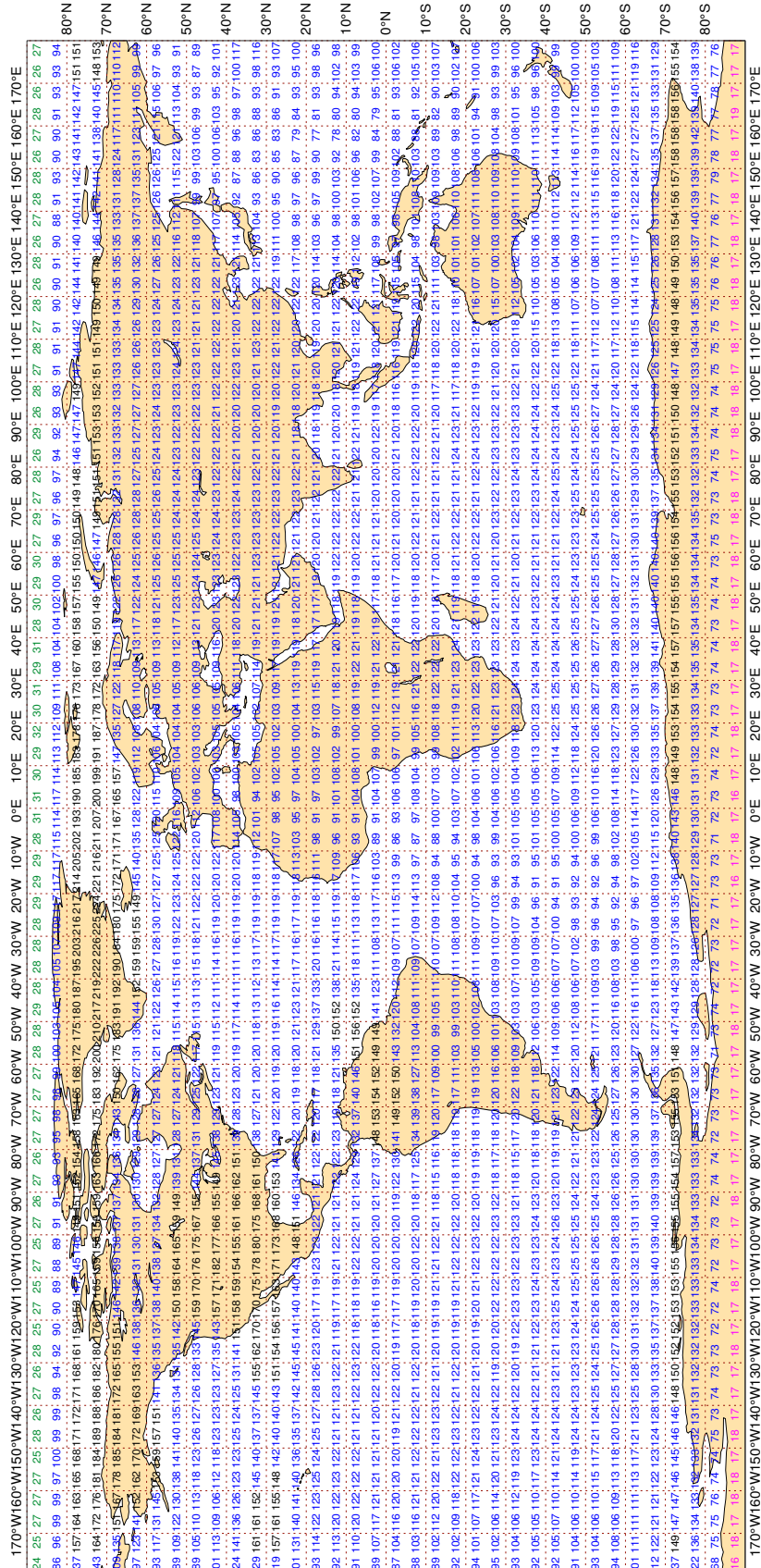
ECMWF Monitoring Statistics - AUG 2023
Availability - AMV winds 1000-700 hPa
Average number of observations in 24 hours - 3744613



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

Figure 8

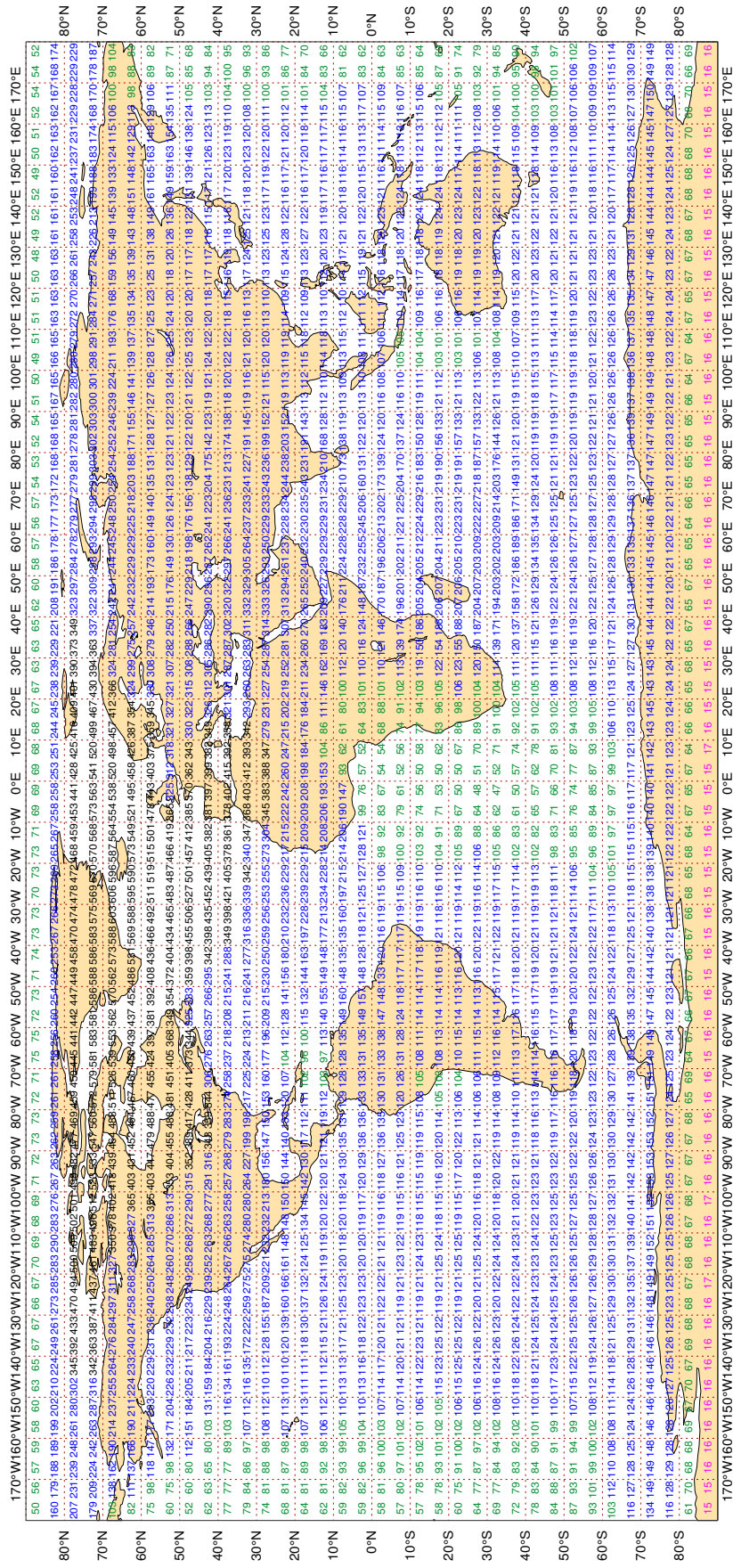
ECMWF Monitoring Statistics - AUG 2023
Availability - NOAA15 ATOVS : AMSU-A
Average number of observations in 24 hours - 302493



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

Figure 9.1

ECMWF Monitoring Statistics - AUG 2023
Availability - NOAA18 ATOVS : AMSU-A
Average number of observations in 24 hours - 431928



Magics 4.9.4

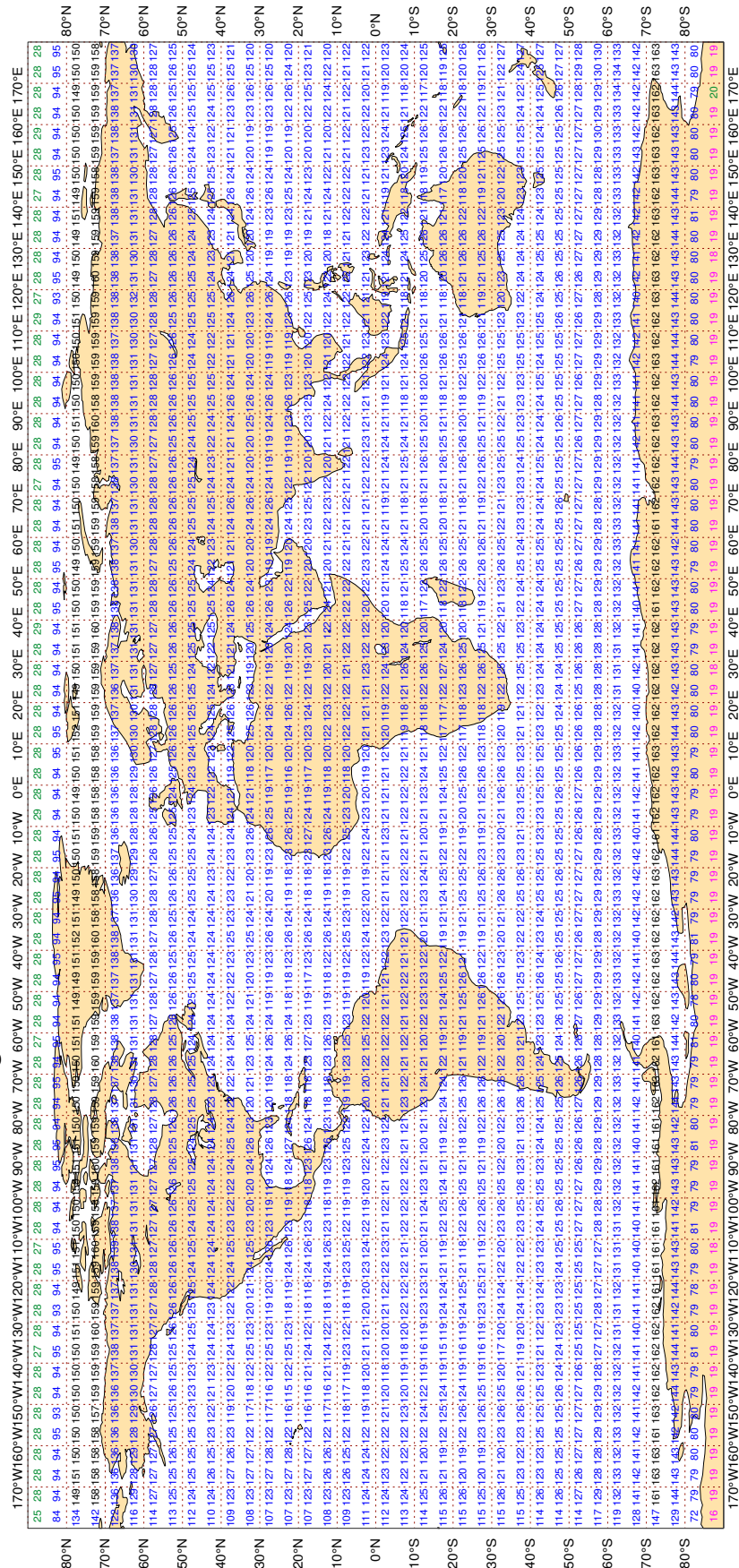


3.2.10 Figure 9.2 - Availability - AQUA ATOVS : AMSU-A

Figure 9.2

ECMWF Monitoring Statistics - AUG 2023
Availability - METOP-C ATOVS : AMSU-A

Average number of observations in 24 hours - 313464

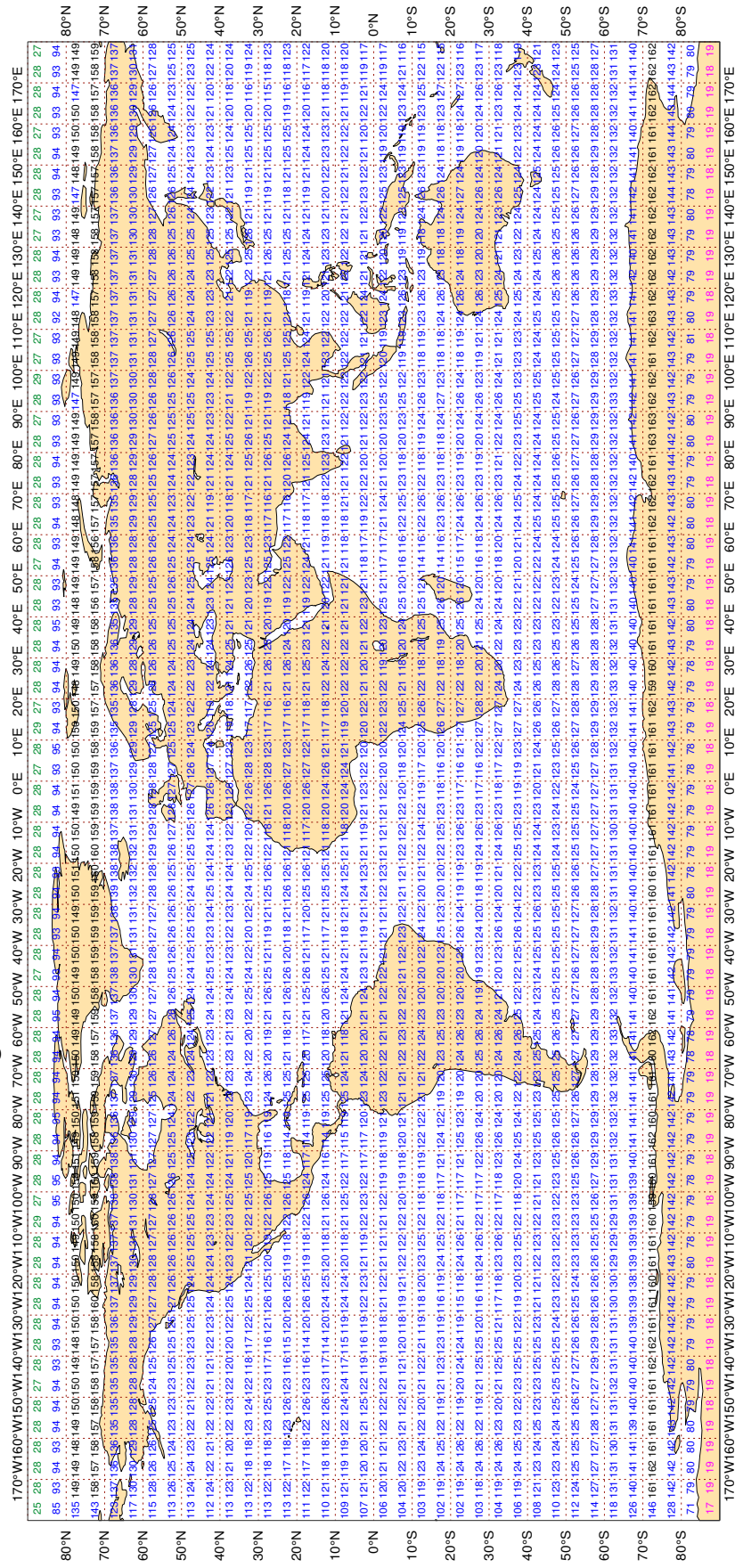


3.2.11 Figure 9.3 - Availability - METOP ATOVS : AMSU-A

Figure 9.3

ECMWF Monitoring Statistics - AUG 2023
Availability - METOP-B ATOVS : AMSU-A

Average number of observations in 24 hours - 311943



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 : AUG 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
3E3566	99	P	SUR	20	0	1.6	3.9	4.2
3EBY2	99	P	SUR	15	0	1.0	9.6	9.7
3FJL6	99	P	SUR	24	0	0.8	4.0	4.0
3FOA6	99	P	SUR	40	0	0.8	7.0	7.0
3FZI8	99	P	SUR	93	0	0.8	5.4	5.4
45201	99	P	SUR	124	32	5.0	8.2	9.7
46097	99	P	SUR	124	0	3.4	3.3	4.8
5LCQ3	99	P	SUR	20	0	1.8	3.7	4.1
7JMV	99	P	SUR	17	0	0.5	4.1	4.2
7KOA	99	P	SUR	29	0	0.5	5.3	5.3
9HA2583	99	P	SUR	23	0	1.2	-3.9	4.1
9HA3858	99	P	SUR	23	6	4.9	-6.1	7.8
9HA4638	99	P	SUR	88	0	1.9	6.1	6.4
9HA4960	99	P	SUR	29	1	2.4	4.5	5.1
9HA5063	99	P	SUR	85	0	2.6	6.4	6.9
9HA5209	99	P	SUR	99	2	3.9	8.1	9.0
9HJB9	99	P	SUR	21	0	0.8	3.7	3.7
9V3913	99	P	SUR	84	0	1.4	4.6	4.8
9V8190	99	P	SUR	41	4	9.7	4.3	10.6
9V8372	99	P	SUR	17	0	2.0	4.2	4.7
9V8776	99	P	SUR	25	1	1.3	7.5	7.7
9V9404	99	P	SUR	43	0	2.6	7.6	8.0
9V9450	99	P	SUR	109	1	1.9	3.3	3.8
9VPQ7	99	P	SUR	17	0	0.8	5.2	5.2
ALGOM08	99	P	SUR	24	14	0.6	0.8	1.0
AUCE	99	P	SUR	110	0	0.6	3.3	3.3
BHJH	99	P	SUR	30	0	1.2	4.3	4.5
C6DX2	99	P	SUR	47	0	1.1	4.8	4.9
C6PZ8	99	P	SUR	39	0	1.0	-3.2	3.4
C6SE5	99	P	SUR	18	0	0.7	-3.4	3.4
C6TX6	99	P	SUR	19	1	1.9	5.3	5.6
D5DS3	99	P	SUR	108	0	0.6	3.0	3.1

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
JMJRCES	99	P	SUR	80	0	0.9	-6.2	6.3
KIAB	99	P	SUR	17	0	1.1	3.0	3.2
LAHR7	99	P	SUR	80	0	1.5	3.1	3.5
LAJF7	99	P	SUR	85	0	1.7	3.6	4.0
LAVN4	99	P	SUR	28	0	1.3	4.9	5.0
LAZV5	99	P	SUR	19	0	0.5	-3.4	3.4
NWS0003	99	P	SUR	100	15	7.8	-3.5	8.6
OBAA	99	P	SUR	74	0	0.8	-6.2	6.2
PHET	99	P	SUR	35	0	2.8	4.7	5.4
S6AN5	99	P	SUR	21	0	0.9	6.2	6.3
SBPQ	99	P	SUR	98	0	2.2	-3.2	3.8
TBWUK35	99	P	SUR	22	0	3.0	3.4	4.6
UGYU	99	P	SUR	17	1	2.1	-4.5	5.0
V7A6070	99	P	SUR	34	0	1.1	5.2	5.3
V7QT7	99	P	SUR	38	0	0.7	5.4	5.4
VABC	99	P	SUR	16	0	1.5	8.5	8.6
VREX4	99	P	SUR	17	0	0.5	10.4	10.4
VRFN8	99	P	SUR	16	0	1.7	6.7	6.9
VRFU9	99	P	SUR	15	0	0.5	-5.3	5.3
VRGO2	99	P	SUR	40	0	2.4	5.0	5.5
VRGO3	99	P	SUR	22	0	1.1	7.3	7.3
VRLJ4	99	P	SUR	29	0	3.2	6.2	7.0
VRLQ9	99	P	SUR	18	0	1.1	3.3	3.5
VRLZ3	99	P	SUR	16	0	2.3	4.1	4.8
VRMX7	99	P	SUR	19	0	1.4	8.5	8.6
VRQS3	99	P	SUR	21	0	1.0	6.0	6.1
VRQX5	99	P	SUR	26	0	1.1	11.7	11.8
VRRB5	99	P	SUR	48	0	1.1	4.5	4.7
VRUX7	99	P	SUR	19	0	1.7	3.5	3.9
VRZK9	99	P	SUR	44	0	0.9	3.4	3.5
WCX2417	99	P	SUR	21	6	7.1	3.0	7.7
WDF2493	99	P	SUR	59	0	0.4	4.2	4.2
WGEB	99	P	SUR	110	0	0.5	6.6	6.6
WQVZ	99	P	SUR	25	0	2.4	3.1	3.9
ZGFY4	99	P	SUR	37	0	0.6	-6.3	6.3

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 : AUG 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
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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 : AUG 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
45145	99	DIRN	SUR	77	0	0	150.9	68.3	165.6
45150	99	DIRN	SUR	82	0	0	30.0	48.6	57.1
45168	99	DIRN	SUR	81	0	0	28.4	34.7	44.8
45176	99	DIRN	SUR	80	0	0	40.1	-79.2	88.8
45203	99	DIRN	SUR	58	0	0	54.6	-56.6	78.7
45205	99	DIRN	SUR	67	0	0	62.9	-55.8	84.1
46081	99	DIRN	SUR	39	0	0	43.8	38.7	58.4
46131	99	DIRN	SUR	48	0	0	70.2	-24.4	74.3
46145	99	DIRN	SUR	34	0	0	21.0	32.6	38.8
46204	99	DIRN	SUR	69	0	0	18.1	34.7	39.1

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 : AUG 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
1301763	99	P	SUR	7	-44	41	39	1.3	13.3	13.4
1501696	99	P	SUR	-30	-8	733	0	1.1	-6.3	6.4
1501727	99	P	SUR	-16	-39	727	0	0.4	-7.5	7.5
1501729	99	P	SUR	-19	-32	732	0	0.5	-11.2	11.2
1601809	99	P	SUR	-42	145	225	88	4.7	-1.4	5.0
3202507	99	P	SUR	13	-90	707	202	2.7	-1.0	2.9
3301702	99	P	SUR	-44	-39	733	195	8.3	0.1	8.3
3401637	99	P	SUR	-31	13	663	5	0.5	13.4	13.4
4102660	99	P	SUR	33	-117	22	0	0.4	-6.2	6.2
4500201	99	P	SUR	42	83	4322	1075	5.0	8.3	9.7
45201	99	P	SUR	42	83	744	192	5.0	8.2	9.7
4601776	99	P	SUR	29	-133	736	104	4.2	8.1	9.1
4602563	99	P	SUR	26	-168	676	9	5.8	6.6	8.8
4602577	99	P	SUR	38	-130	212	111	4.5	6.1	7.6
4602604	99	P	SUR	39	-137	316	316	0.0	0.0	0.0
4602608	99	P	SUR	43	-134	449	61	3.0	7.0	7.7
4701738	99	P	SUR	70	-67	543	543	0.0	0.0	0.0
4701744	99	P	SUR	78	-106	744	744	0.0	0.0	0.0
4801658	99	P	SUR	73	-80	542	540	8.0	5.7	9.8
4802662	99	P	SUR	75	-127	743	513	3.4	8.6	9.3
4803990	99	P	SUR	80	-174	741	741	0.0	0.0	0.0
5102809	99	P	SUR	10	-109	733	667	1.6	-12.2	12.3
5103563	99	P	SUR	30	-159	723	177	3.8	-8.6	9.4
5501735	99	P	SUR	-47	-177	744	744	0.0	0.0	0.0
6203859	99	P	SUR	15	-24	165	0	0.4	-9.1	9.1
6204605	99	P	SUR	41	3	720	395	1.3	13.3	13.4

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 : AUG 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
2300459	99	SPEED	SUR	14	87	24	0	0	1.5	-6.7	6.8
23459	99	SPEED	SUR	14	87	76	0	0	1.5	-7.1	7.3
4400069	99	SPEED	SUR	41	-73	1328	0	0	2.0	5.0	5.4

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

LIST OF SUSPECT STATIONS : DRIFTER
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND DIRECTION (DEGREES)
 PERIOD : AUG 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
2200101	99	DIRN	SUR	37	126	255	0	0	20.6	110.6	112.5
2300092	99	DIRN	SUR	17	89	159	0	0	27.0	-89.7	93.7
2300093	99	DIRN	SUR	16	88	145	0	0	117.5	-76.9	140.4
2300095	99	DIRN	SUR	10	94	166	0	0	11.2	23.8	26.2
2300451	99	DIRN	SUR	15	69	164	0	0	16.5	-37.8	41.2
2300452	99	DIRN	SUR	12	69	144	0	0	41.4	-80.5	90.5
2300453	99	DIRN	SUR	8	73	149	0	0	10.5	-45.0	46.2
2300454	99	DIRN	SUR	10	73	139	0	0	58.6	-75.4	95.5
23091	99	DIRN	SUR	18	89	35	0	0	34.8	43.3	55.6
23092	99	DIRN	SUR	17	89	204	0	0	31.1	-90.0	95.2
23093	99	DIRN	SUR	16	88	210	0	0	101.7	-91.6	136.9
23094	99	DIRN	SUR	13	84	68	0	0	31.4	-75.8	82.0
23095	99	DIRN	SUR	10	94	236	0	0	10.5	23.7	25.9
23451	99	DIRN	SUR	15	69	217	0	0	17.5	-35.1	39.2
23452	99	DIRN	SUR	12	69	167	0	0	35.5	-84.6	91.8
23453	99	DIRN	SUR	8	73	191	0	0	12.7	-45.4	47.1
23454	99	DIRN	SUR	10	73	159	0	0	58.8	-72.9	93.6
23491	99	DIRN	SUR	12	93	279	0	0	33.6	-96.6	102.3
23497	99	DIRN	SUR	11	72	184	0	0	35.3	-62.0	71.4
4300301	99	DIRN	SUR	8	-95	269	0	0	122.6	34.1	127.3
43301	99	DIRN	SUR	8	-95	261	0	0	122.6	36.0	127.8
4400008	99	DIRN	SUR	40	-69	3004	0	0	24.4	23.0	33.6
4400033	99	DIRN	SUR	44	-69	341	0	0	19.1	20.7	28.1
4400488	99	DIRN	SUR	45	-61	524	0	0	21.2	-20.9	29.8
4400489	99	DIRN	SUR	45	-61	453	0	0	18.9	-27.3	33.2
44008	99	DIRN	SUR	41	-69	469	0	0	21.2	23.5	31.7
44033	99	DIRN	SUR	44	-69	320	0	0	20.1	20.3	28.6
44078	99	DIRN	SUR	60	-40	223	0	0	15.2	-21.0	25.9
44488	99	DIRN	SUR	45	-61	515	0	0	20.4	-20.3	28.8
44489	99	DIRN	SUR	46	-61	463	0	0	20.2	-29.2	35.5
4500168	99	DIRN	SUR	42	-86	2739	0	0	29.4	31.8	43.3

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
4500176	99	DIRN	SUR	42	-82	2631	0	0	42.1	-80.2	90.5
4500197	99	DIRN	SUR	42	-82	1922	0	0	27.0	-23.4	35.7
4500199	99	DIRN	SUR	43	-88	1048	0	0	24.7	-25.6	35.6
4500201	99	DIRN	SUR	42	83	134	0	0	104.7	-16.8	106.1
4500203	99	DIRN	SUR	41	-83	2223	0	0	61.8	-56.4	83.7
4500205	99	DIRN	SUR	42	-82	2543	0	0	55.9	-58.1	80.6
45145	99	DIRN	SUR	52	-97	472	5	0	144.1	73.0	161.5
45150	99	DIRN	SUR	62	-114	473	0	0	24.8	50.9	56.6
45168	99	DIRN	SUR	42	-86	439	0	0	29.0	31.9	43.1
45176	99	DIRN	SUR	42	-82	486	0	0	43.4	-78.7	89.9
45197	99	DIRN	SUR	42	-82	445	0	0	26.2	-22.2	34.3
45199	99	DIRN	SUR	43	-88	515	0	0	25.4	-27.1	37.2
45201	99	DIRN	SUR	42	83	23	0	0	104.5	-17.4	105.9
45203	99	DIRN	SUR	41	-83	369	0	0	59.7	-57.1	82.6
45205	99	DIRN	SUR	42	-82	394	0	0	55.3	-59.9	81.5
4600081	99	DIRN	SUR	61	-148	256	0	0	50.8	32.1	60.1
4600087	99	DIRN	SUR	48	-125	996	0	0	32.4	26.2	41.7
4600145	99	DIRN	SUR	54	-132	183	0	0	28.3	27.0	39.2
4600147	99	DIRN	SUR	52	-131	178	4	0	13.7	23.7	27.4
4600204	99	DIRN	SUR	51	-129	424	0	0	16.9	37.2	40.9
46081	99	DIRN	SUR	61	-148	251	0	0	47.0	33.3	57.6
46087	99	DIRN	SUR	49	-125	132	0	0	31.0	20.9	37.4
46120	99	DIRN	SUR	48	-122	23	0	0	17.9	-22.6	28.8
46131	99	DIRN	SUR	50	-125	281	0	0	75.8	-7.5	76.2
46145	99	DIRN	SUR	54	-132	167	0	0	23.8	28.3	37.0
46147	99	DIRN	SUR	52	-131	168	4	0	13.8	23.5	27.3
46204	99	DIRN	SUR	51	-129	401	0	0	17.0	37.3	41.0
5100311	99	DIRN	SUR	0	-140	563	0	0	56.0	35.0	66.1
51311	99	DIRN	SUR	0	-140	557	0	0	55.5	35.2	65.7
6100280	99	DIRN	SUR	41	1	283	0	0	94.8	37.3	101.9
6200086	99	DIRN	SUR	55	6	327	0	0	15.7	27.2	31.4
6301004	99	DIRN	SUR	72	20	201	0	0	25.1	136.2	138.5
6600022	99	DIRN	SUR	54	14	95	0	0	65.2	44.3	78.8
6600024	99	DIRN	SUR	55	13	99	0	0	17.9	24.6	30.5

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 : AUG 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	30	0	5.6	79.0	79.2
01400	00	Z	1000	57	3	30	0	4.0	79.6	79.7
31977	12	Z	100	43	132	27	0	78.4	83.9	114.8
31977	00	Z	100	43	132	28	1	87.5	112.2	142.3
32150	00	Z	250	47	143	23	0	57.8	55.2	79.9
36872	12	Z	50	43	77	28	0	83.0	123.4	148.7
38341	00	Z	150	43	71	24	1	73.0	84.9	112.0
38341	12	Z	100	43	71	27	0	62.1	140.7	153.8
40766	00	Z	700	34	47	22	10	38.0	18.4	42.2
42027	00	Z	700	34	75	28	5	19.7	37.9	42.7
42123	00	Z	925	30	74	21	4	7.9	62.8	63.3
42348	00	Z	850	27	76	17	1	4.4	48.5	48.7
42399	00	Z	50	27	89	10	1	95.5	133.2	163.9
42410	00	Z	850	26	92	29	2	16.6	29.2	33.6
42410	12	Z	850	26	92	30	0	20.2	58.2	61.6
43041	00	Z	850	19	82	31	3	30.6	36.6	47.7
43049	00	Z	850	19	85	23	0	22.2	26.0	34.2
43128	00	Z	850	17	78	27	1	29.4	22.1	36.8
43185	00	Z	850	16	81	29	0	26.1	27.1	37.6
43346	12	Z	850	11	80	10	1	11.1	33.6	35.4
47122	12	Z	1000	37	127	23	8	30.8	-11.0	32.7
52533	12	Z	50	40	98	30	0	76.7	139.4	159.1
52533	00	Z	30	40	98	30	0	105.5	191.8	218.9
57083	00	Z	50	35	114	27	2	160.2	151.1	220.2
62378	00	Z	400	30	31	19	0	55.6	70.8	90.0
62403	12	Z	1000	26	33	10	6	40.1	30.3	50.3
71926	00	Z	850	64	-96	29	0	19.6	-31.6	37.2
71926	12	Z	850	64	-96	28	0	19.9	-30.7	36.6
78486	12	Z	1000	18	-70	29	0	3.6	31.9	32.1
78486	00	Z	1000	18	-70	29	0	12.6	33.2	35.5

LIST OF SUSPECT STATIONS (CONTINUED)

WMO IDENT	OBS TIME	ELM	LEV	LAT	LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
96315	00	Z	1000	5	115	30	0	7.6	57.3	57.8
96315	12	Z	1000	5	115	30	0	8.0	53.5	54.1
97690	00	Z	925	-3	141	27	0	31.7	21.7	38.4
KMPLHP	12	Z	925	54	-18	10	0	26.7	43.0	50.6

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 : AUG 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	19	0	12.7	-23.6	28.2
42701	00	V	100	23	85	27	0	6.4	-6.4	15.8

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 : AUG 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

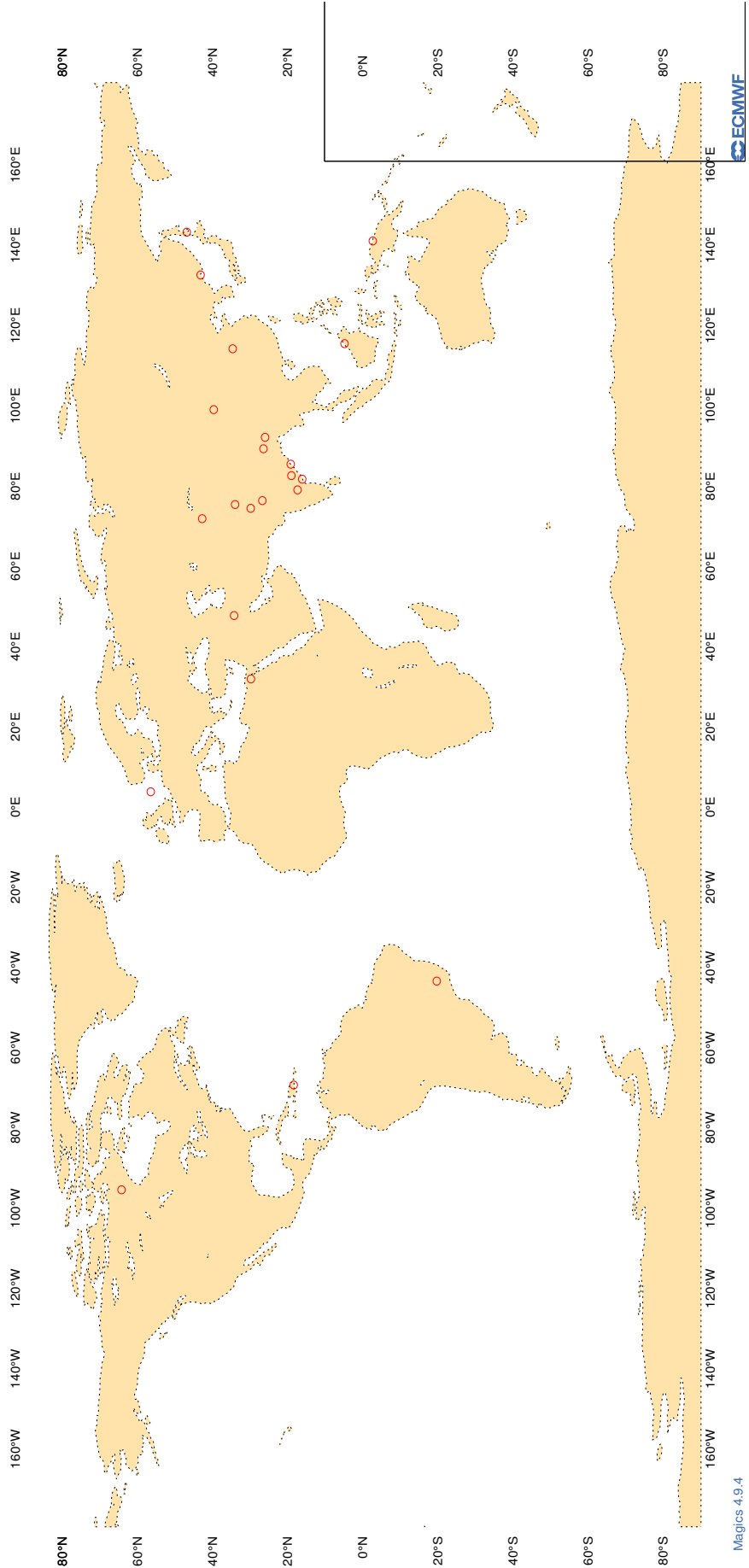
SELECTION CRITERIA: OBSERVED/FORECAST WIND SPEEDS \geq 5 M/S
 NO. OF OBSERVATIONS \geq 5, AND,
 ABSOLUTE BIAS \geq 10 DEGREES, WITH
 STANDARD DEVIATION $<$ 30 DEGREES, AND,
 VERTICAL SPREAD $<$ 10 DEGREES
 (AVERAGE BETWEEN 500 AND 150 HPA)

WMO IDENT	OBS TIME	ELM	LAT	LONG	NUM OBS	BIAS	MAX SPREAD	SD
48327	00	DD	19	99	23	-11.5	9.2	14.5
48407	00	DD	15	105	19	11.1	5.8	17.7
54340	00	DD	42	124	10	-13.8	1.4	5.6

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

Figure 10

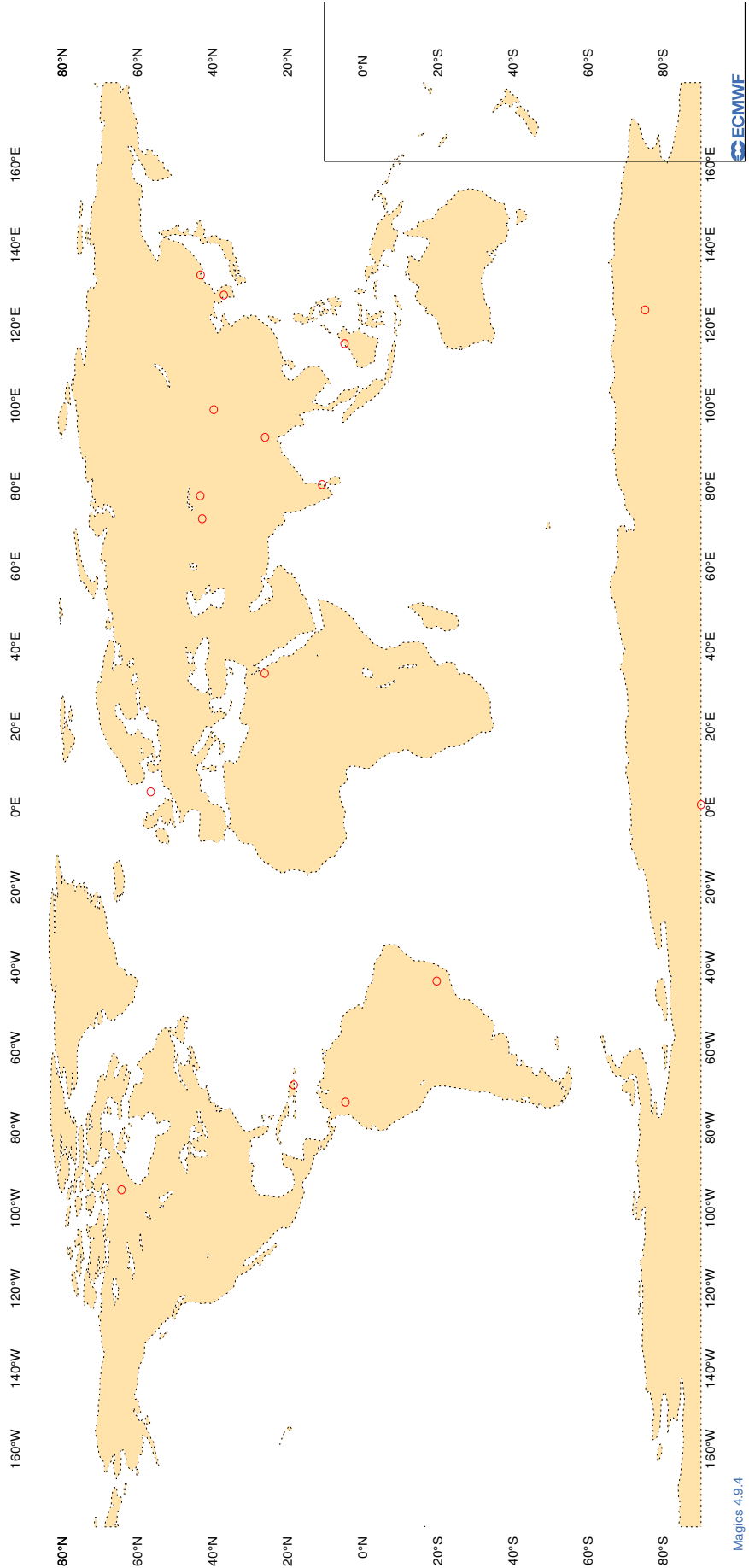
ECMWF Monitoring Statistics - AUG 2023 00 UTC
Suspect TEMP observations - GEOPOTENTIAL



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

Figure 11

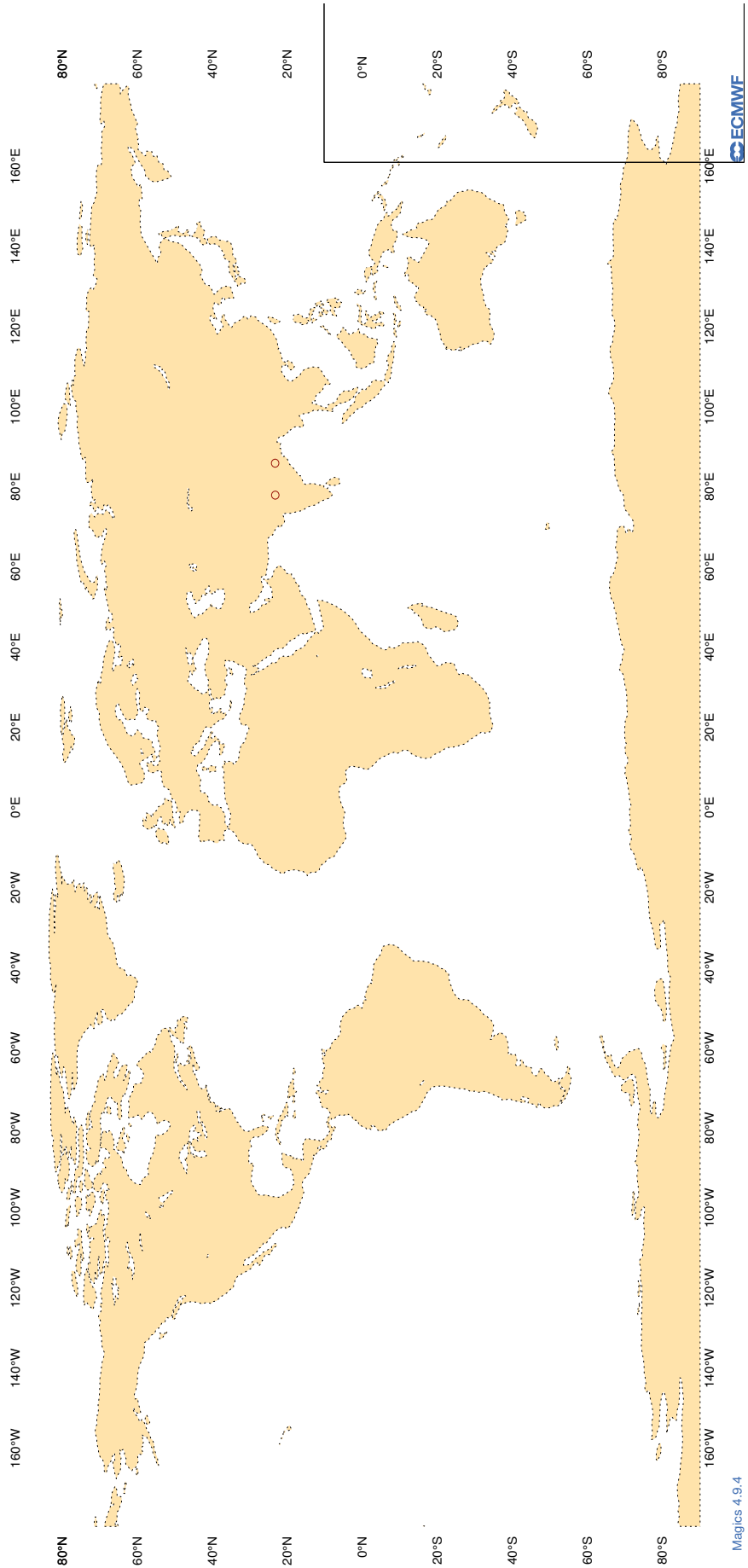
ECMWF Monitoring Statistics - AUG 2023 12 UTC
Suspect TEMP observations - GEOPOTENTIAL



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

Figure 12

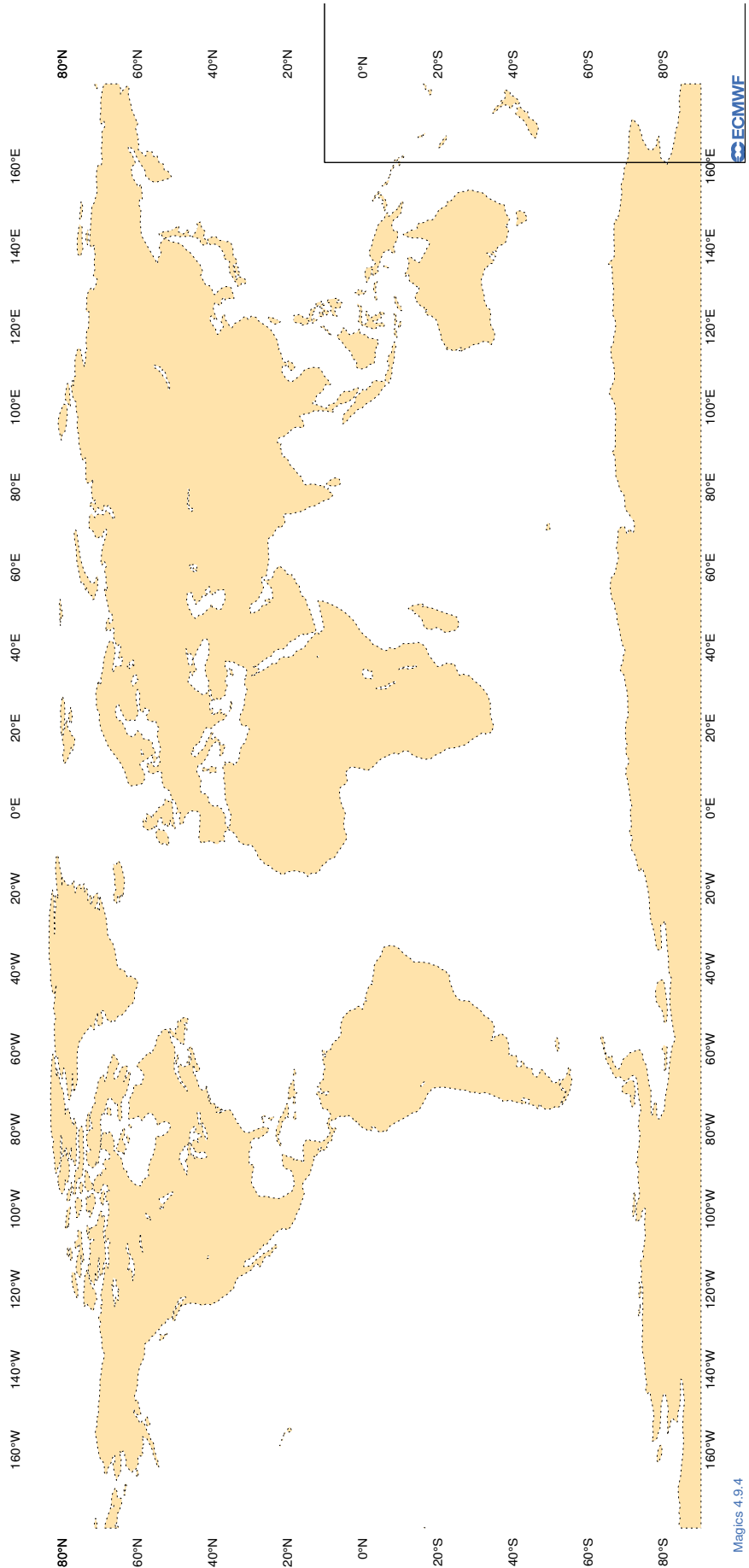
ECMWF Monitoring Statistics - AUG 2023 00 UTC
Suspect TEMP/PILOT observations - WIND



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

Figure 13

ECMWF Monitoring Statistics - AUG 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 : AUG 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
2EERVT	00	Z	100	5	6.0	-3.5
2EERVT	12	Z	100	7	6.5	-0.4
7JUNA4	12	Z	100	6	57.6	52.2
7JUNA4	00	Z	100	6	18.4	-11.6
9ZT9MR	12	Z	100	8	18.6	-15.1
9ZT9MR	00	Z	100	6	70.0	-39.8
AH2ML	00	Z	100	28	5.2	3.1
ATGU3F	00	Z	100	0	0.0	0.0
BPMWB2	12	Z	100	11	11.5	-6.8
BPMWB2	00	Z	100	11	11.9	-10.6
DBLK	12	Z	100	26	10.6	9.4
DSQL7	12	Z	100	23	7.6	-6.5
DSQL7	00	Z	100	23	11.2	-6.2
FPUW5G	12	Z	100	9	8.1	5.7
JGQH	12	Z	100	2	7.6	4.3
JNKN7J	12	Z	100	4	45.6	43.2
JNKN7J	00	Z	100	5	19.5	18.2
JPBN	12	Z	100	7	6.8	-4.0
JPBN	00	Z	100	2	5.5	-5.4
KJFF9X	12	Z	100	2	7.2	4.7
KJFF9X	00	Z	100	2	16.6	-15.4
KMPLHP	12	Z	100	9	81.5	54.7
KMPLHP	00	Z	100	9	33.2	15.8
LAGY8	00	Z	100	1	117.2	-117.2
LAGZ8	12	Z	100	1	46.6	46.6
LAGZ8	00	Z	100	1	50.1	50.1
LRYQE3	12	Z	100	5	24.4	-21.6
LRYQE3	00	Z	100	6	13.0	-11.6
UBQW2	00	Z	100	28	19.7	-5.9
UXK5JT	12	Z	100	6	4.7	1.7
UXK5JT	00	Z	100	6	8.6	-4.6
WDK38H	12	Z	100	7	13.0	-11.7
XKQLWQ	12	Z	100	25	37.0	35.3
YLV96W	12	Z	100	8	59.6	44.0
YLV96W	00	Z	100	10	13.5	-3.5
ZVQEQC	12	Z	100	1	3.8	3.8
ZVQEQC	00	Z	100	1	12.8	12.8

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

RADIOSONDE MONITORING STATISTICS (SHIPS)

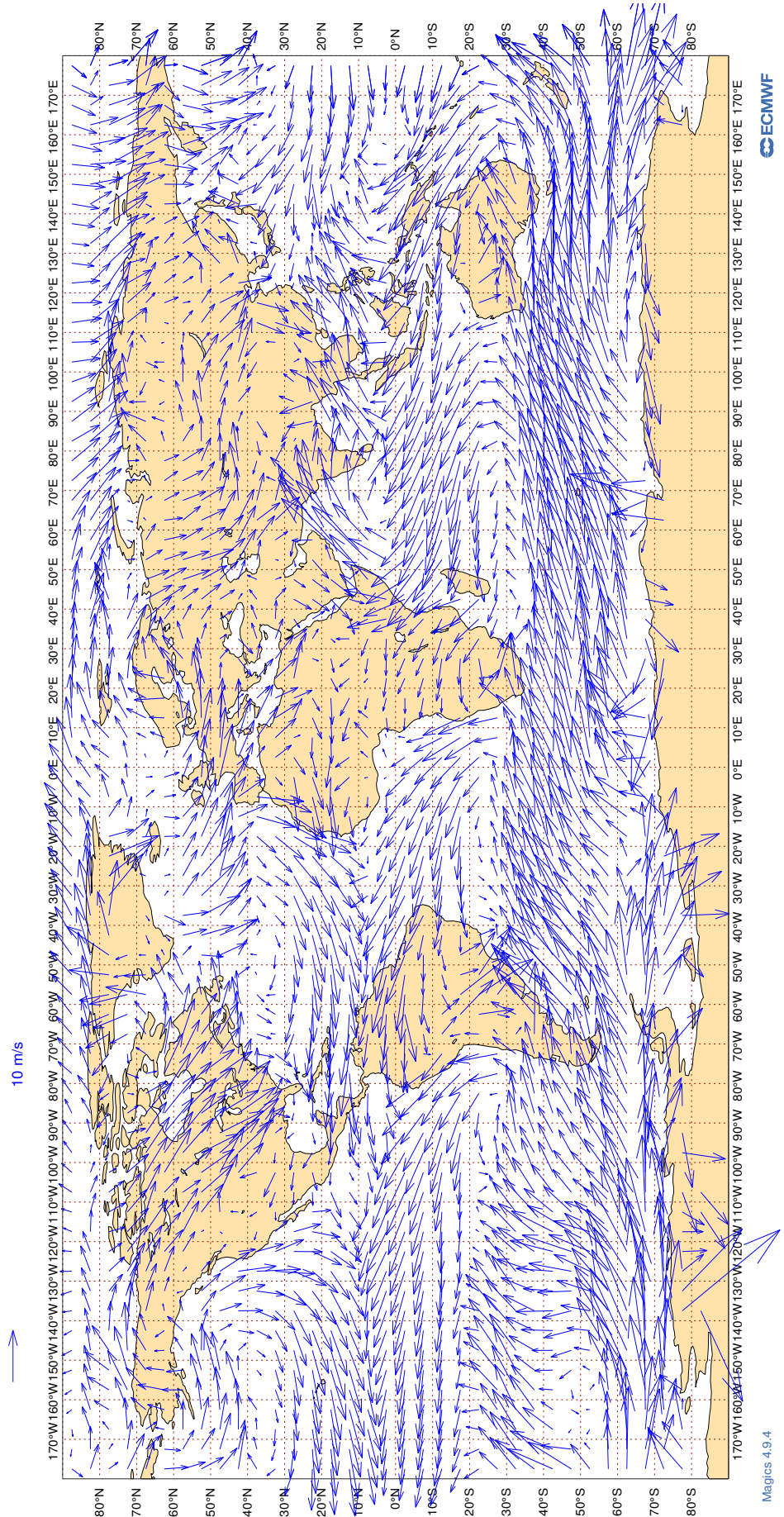
MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND (M/S)
 LEVEL : 100 HPA
 AREA : GLOBAL
 PERIOD : AUG 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
2EERVT	00	V	100	5	3.3	0.9	0.3
2EERVT	12	V	100	7	3.7	-1.9	-0.1
7JUNA4	12	V	100	6	2.9	0.6	-0.3
7JUNA4	00	V	100	6	3.6	-0.5	1.5
9ZT9MR	12	V	100	8	3.5	2.0	0.7
9ZT9MR	00	V	100	6	2.1	-0.4	-1.7
AH2ML	00	V	100	28	3.2	-0.7	-0.4
ATGU3F	00	V	100	0	0.0	0.0	0.0
BPMWB2	12	V	100	11	2.9	0.1	1.0
BPMWB2	00	V	100	11	2.6	-0.5	0.1
DBLK	12	V	100	26	2.2	-0.2	0.0
DSQL7	12	V	100	22	2.1	-0.3	0.2
DSQL7	00	V	100	22	2.0	-0.2	0.1
FPUW5G	12	V	100	9	2.1	1.0	-0.5
JGQH	12	V	100	2	2.6	-1.3	-1.0
JNKN7J	12	V	100	4	2.8	0.0	0.1
JNKN7J	00	V	100	5	3.4	-1.1	-1.5
JPBN	12	V	100	7	3.0	1.0	-0.1
JPBN	00	V	100	2	3.3	-1.6	1.5
KJFF9X	12	V	100	2	1.7	-1.0	0.4
KJFF9X	00	V	100	2	2.6	0.8	-0.8
KMPLHP	12	V	100	9	3.4	1.5	-0.8
KMPLHP	00	V	100	9	3.6	-0.8	1.1
LAGY8	00	V	100	1	2.0	0.2	-2.0
LAGZ8	12	V	100	1	3.8	3.8	0.0
LAGZ8	00	V	100	1	3.8	-3.0	2.4
LRYQE3	12	V	100	5	2.8	0.1	1.5
LRYQE3	00	V	100	6	2.6	0.5	-1.0
UBQW2	00	V	100	28	3.0	0.0	-0.2
UXK5JT	12	V	100	6	2.5	-0.9	-0.8
UXK5JT	00	V	100	6	2.7	-0.7	0.0
WDK38H	12	V	100	6	2.9	-1.2	0.2
XKQLWQ	12	V	100	23	3.1	1.3	-0.4
YL96W	12	V	100	8	2.5	-0.4	0.3
YL96W	00	V	100	10	2.8	0.0	-0.4
ZVQEQC	12	V	100	1	2.6	-2.6	-0.4
ZVQEQC	00	V	100	1	2.4	-1.2	2.1

3.2.27 Figure 14 - SATOB Winds: 700-1000hPa

Figure 14

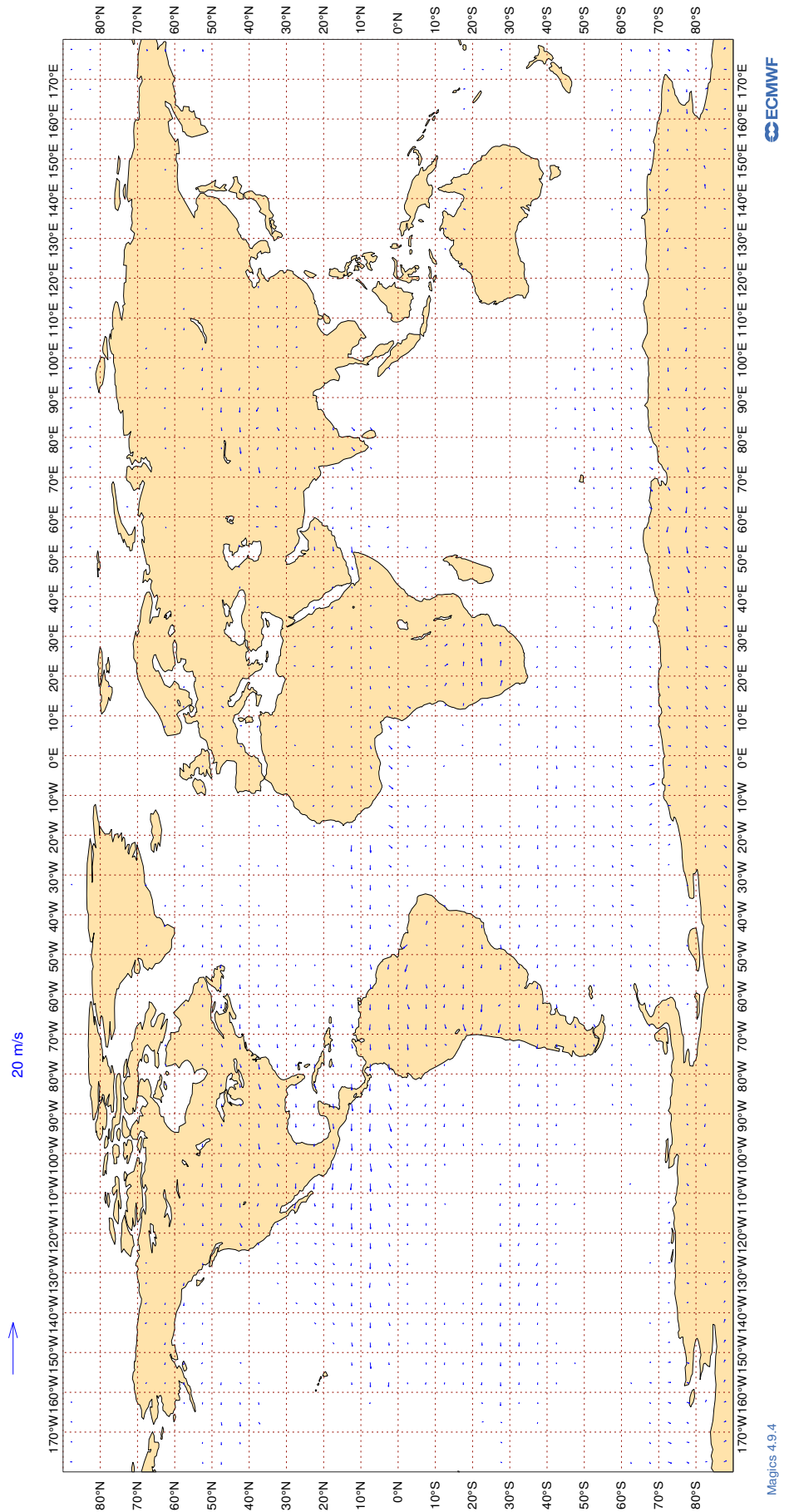
ECMWF Monitoring Statistics: Aug 2023
AMV Winds: 700-1000hPa
Mean Observed Wind



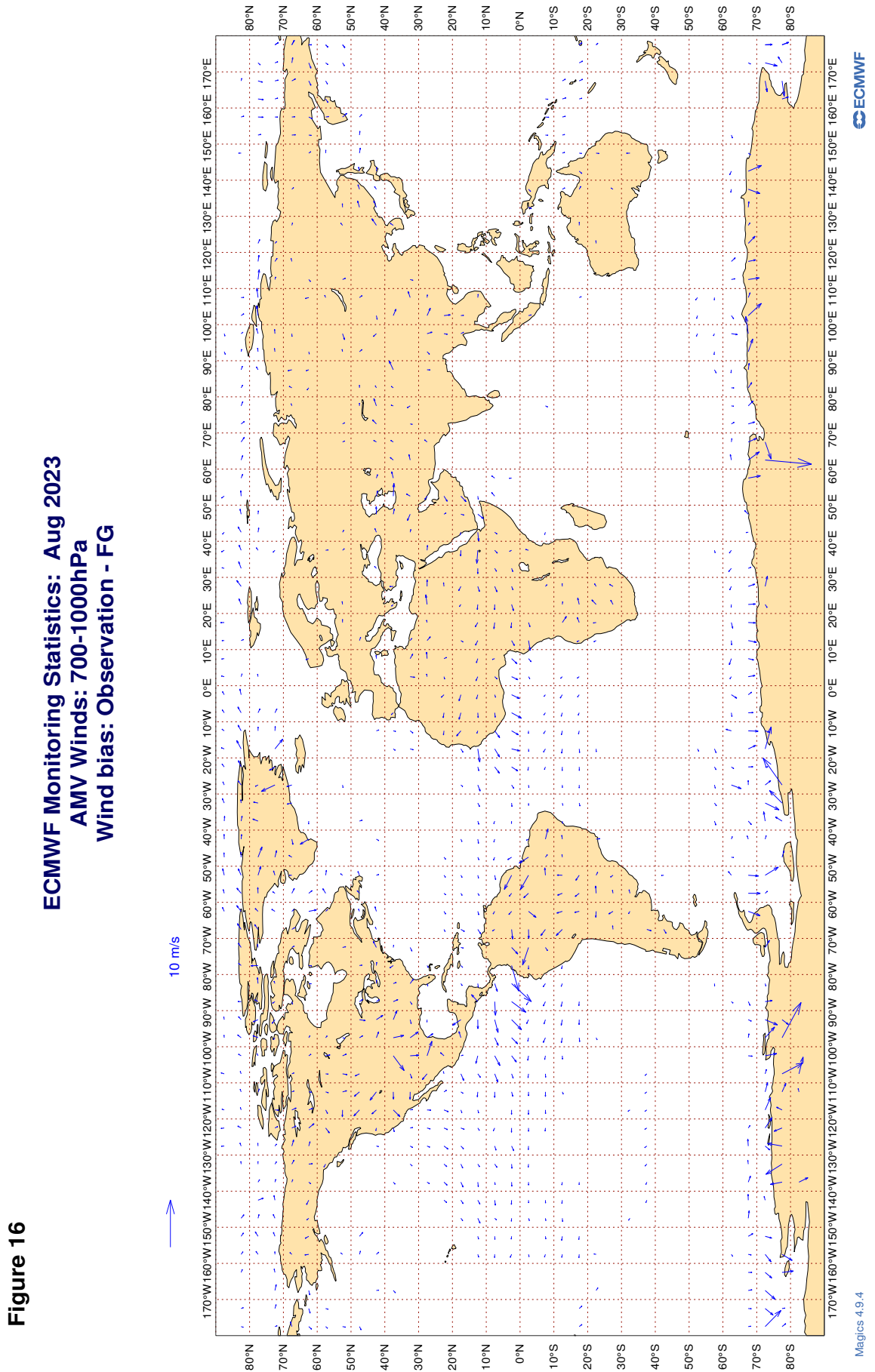
3.2.28 Figure 15 - SATOB Winds: 150- 400hPa

Figure 15

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



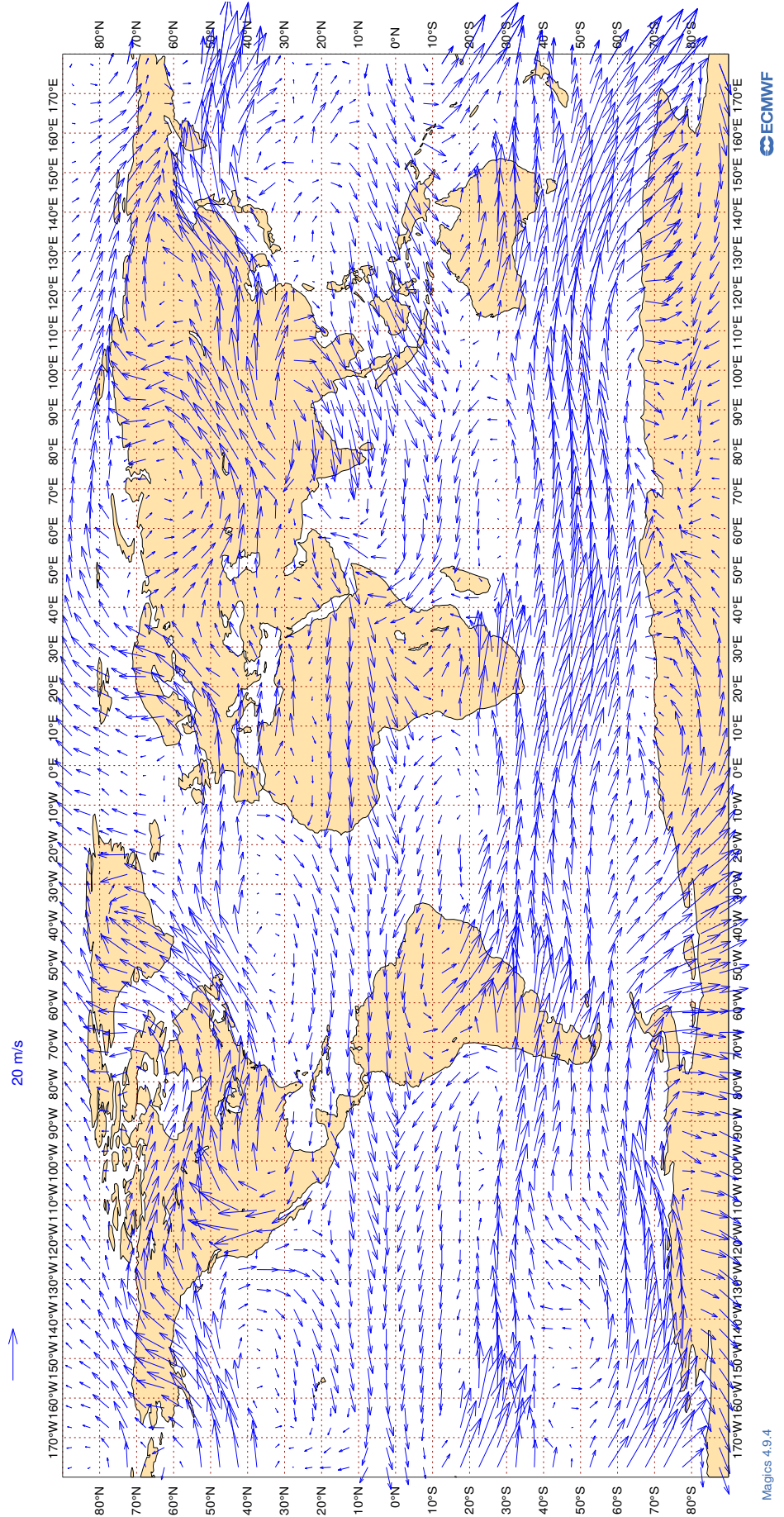
3.2.29 Figure 16 - SATOB Winds: 700-1000hPa



3.2.30 Figure 17 - SATOB Winds: 150- 400hPa

Figure 17

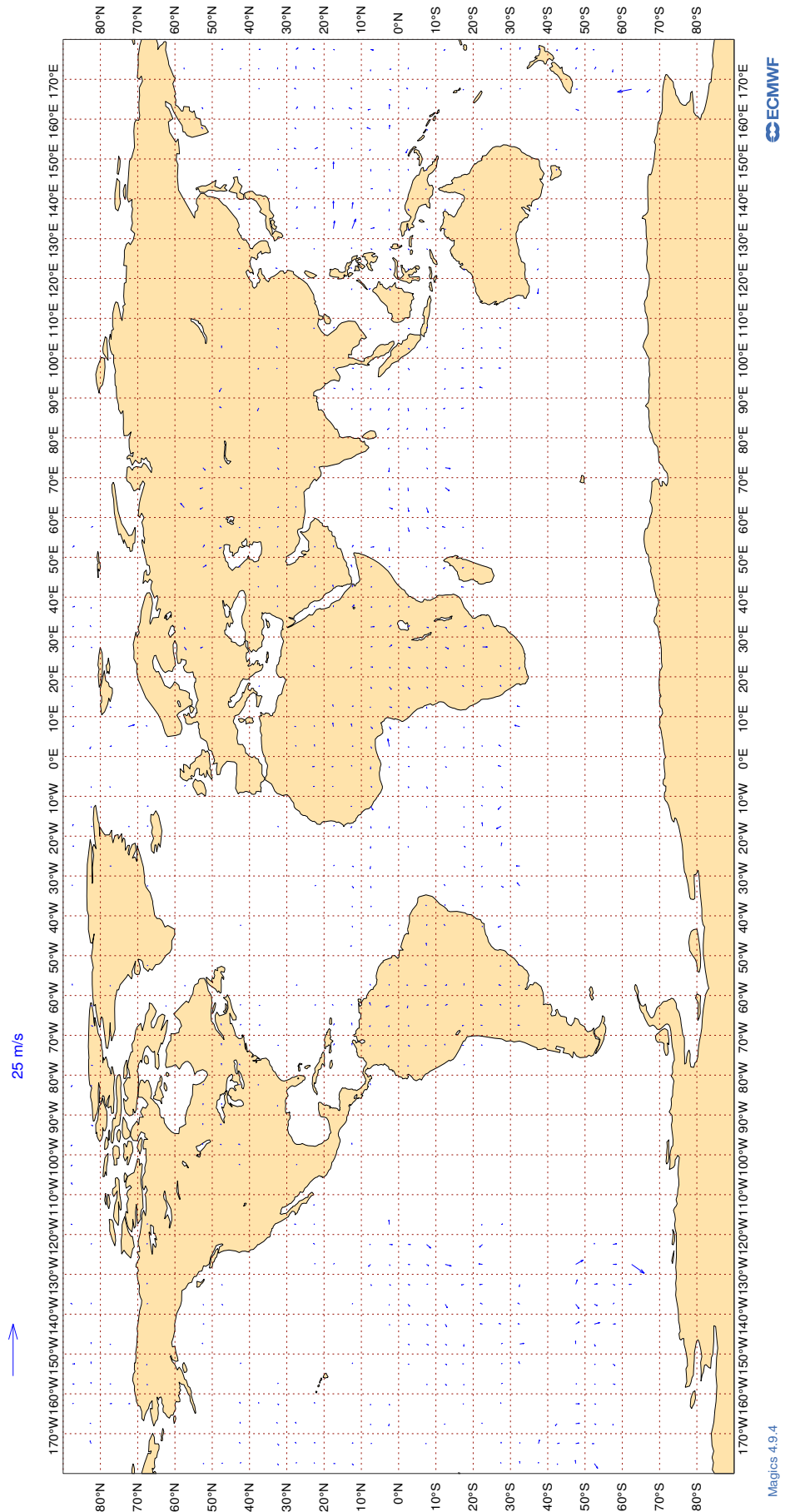
ECMWF Monitoring Statistics: Aug 2023
AMV Winds: 150- 400hPa
Mean Observed Wind



3.2.31 Figure 18 - AIRCRAFT Winds: 150- 300hPa

Figure 18

ECMWF Monitoring Statistics: Aug 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 : AUG 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
AAL	99	V	300-150	55842	3	0	4.9	0.2
AAR	99	V	300-150	267	0	0	4.2	-0.5
ABD	99	V	300-150	1063	0	0	4.1	-0.5
ACA	99	V	300-150	41522	2	0	4.7	0.2
ACI	99	V	300-150	344	0	0	3.6	0.4
AEA	99	V	300-150	646	9	0	6.5	-0.3
AFR	99	V	300-150	40107	1	0	3.9	0.3
AHO	99	V	300-150	345	0	0	3.8	0.3
AHY	99	V	300-150	33	0	0	2.7	0.7
AIC	99	V	300-150	5058	0	1	4.9	0.2
AJT	99	V	300-150	156	0	0	3.5	-0.2
ALK	99	V	300-150	2191	0	0	3.1	0.4
AME	99	V	300-150	32	0	0	3.5	0.0
AMX	99	V	300-150	4577	7	0	5.9	0.0
ANA	99	V	300-150	244	0	3	4.7	-0.3
ANZ	99	V	300-150	18362	0	0	3.5	0.4
AOJ	99	V	300-150	287	0	0	3.5	0.2
ASL	99	V	300-150	1371	0	0	3.7	0.6
ASY	99	V	300-150	35	0	0	5.5	1.1
ATC	99	V	300-150	424	0	0	4.4	0.5
ATG	99	V	300-150	286	0	0	4.9	0.5
ATN	99	V	300-150	177	0	1	5.3	0.1
AUA	99	V	300-150	4917	0	0	4.1	0.1

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
AVA	99	V	300-150	473	8	0	5.5	0.0
AWC	99	V	300-150	97	0	0	2.4	0.1
AXB	99	V	300-150	21	0	0	3.8	-0.6
AXM	99	V	300-150	101	0	1	5.0	-0.1
AXY	99	V	300-150	172	0	0	4.0	0.1
AZG	99	V	300-150	945	0	0	3.8	-0.1
BAF	99	V	300-150	48	0	0	3.6	0.5
BAV	99	V	300-150	115	0	0	4.6	0.8
BAW	99	V	300-150	50530	2	0	4.3	0.2
BBC	99	V	300-150	544	4	0	5.3	0.0
BCS	99	V	300-150	2285	0	0	3.5	0.3
BEL	99	V	300-150	1690	0	0	3.7	0.7
BFF	99	V	300-150	24	0	0	7.8	-0.1
BFY	99	V	300-150	22	0	0	2.0	-0.4
BLU	99	V	300-150	26	0	0	3.4	1.1
BMW	99	V	300-150	34	0	0	3.6	0.3
BOX	99	V	300-150	4316	0	0	3.8	0.2
BOX	99	V	300-150	114	0	0	3.6	0.0
BRJ	99	V	300-150	46	0	0	3.2	1.7
BTX	99	V	300-150	45	0	0	3.1	0.1
CAL	99	V	300-150	1805	0	0	4.2	0.3
CAO	99	V	300-150	22	0	0	4.3	1.3
CBJ	99	V	300-150	258	0	1	4.8	0.4
CCA	99	V	300-150	178	0	2	4.1	0.5
CEB	99	V	300-150	1196	0	0	4.6	0.4
CEF	99	V	300-150	24	0	0	4.2	0.5
CES	99	V	300-150	982	0	0	3.9	0.4
CFC	99	V	300-150	167	0	0	4.0	0.5
CFG	99	V	300-150	7187	0	0	3.6	0.2
CHG	99	V	300-150	565	0	0	3.9	-0.1
CHH	99	V	300-150	112	0	0	3.3	0.7
CJT	99	V	300-150	826	0	0	3.6	0.1
CKS	99	V	300-150	1719	0	0	3.4	0.1
CLF	99	V	300-150	84	0	0	3.5	0.6
CLX	99	V	300-150	4696	0	0	3.9	-0.1
CLY	99	V	300-150	26	0	0	4.3	-1.5
CMA	99	V	300-150	191	0	1	4.2	0.6
CMB	99	V	300-150	1534	0	0	3.9	-0.1
CNK	99	V	300-150	21	0	0	3.0	-0.9
CNV	99	V	300-150	109	0	0	3.2	0.5
COL	99	V	300-150	34	0	0	3.4	0.7
CPA	99	V	300-150	2631	0	0	4.4	0.3
CPJ	99	V	300-150	20	0	0	3.4	0.3

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
CRL	99	V	300-150	1891	0	0	3.2	0.4
CRV	99	V	300-150	53	0	0	3.0	0.5
CSC	99	V	300-150	815	0	0	3.9	0.2
CSN	99	V	300-150	542	0	1	4.0	-0.1
CSS	99	V	300-150	85	0	2	3.7	0.6
CTM	99	V	300-150	158	0	0	3.3	0.5
CWG	99	V	300-150	23	0	0	2.7	-0.3
CXB	99	V	300-150	21	10	0	3.5	-1.5
CXF	99	V	300-150	20	0	0	5.1	-1.7
DAH	99	V	300-150	1412	0	0	3.6	0.2
DAL	99	V	300-150	79192	0	0	3.6	0.2
DCS	99	V	300-150	35	0	0	3.0	0.3
DHK	99	V	300-150	2483	0	0	3.8	0.0
DHX	99	V	300-150	295	0	0	4.7	0.0
DJT	99	V	300-150	1907	0	0	4.0	0.5
DLH	99	V	300-150	30404	1	0	4.1	0.2
DSO	99	V	300-150	22	0	0	3.0	-1.8
DUB	99	V	300-150	75	0	0	4.1	0.6
EAL	99	V	300-150	161	0	0	3.5	0.8
EAU	99	V	300-150	122	0	0	4.0	0.1
EDC	99	V	300-150	44	0	0	3.4	0.3
EDG	99	V	300-150	422	0	0	4.2	0.5
EDW	99	V	300-150	2016	0	0	3.5	0.4
EIN	99	V	300-150	17848	0	0	3.6	0.4
EJM	99	V	300-150	968	0	0	3.5	0.2
ELY	99	V	300-150	5621	6	0	6.0	0.2
ETD	99	V	300-150	14292	1	0	4.5	0.0
ETH	99	V	300-150	8571	1	0	4.0	0.3
EUK	99	V	300-150	1947	0	0	3.5	0.5
EVA	99	V	300-150	1401	0	1	4.1	0.7
EVE	99	V	300-150	430	0	0	4.0	0.2
EXS	99	V	300-150	1437	0	0	3.1	0.0
FBU	99	V	300-150	3073	0	0	3.6	-0.1
FDX	99	V	300-150	7531	0	0	3.3	0.2
FFM	99	V	300-150	52	0	0	4.8	-0.1
FIN	99	V	300-150	2296	0	0	4.4	0.3
FJI	99	V	300-150	2508	0	0	3.4	0.6
FJO	99	V	300-150	45	0	0	3.5	0.2
FLI	99	V	300-150	23	0	0	2.9	-0.3
FPY	99	V	300-150	3610	0	0	2.8	0.1
FSY	99	V	300-150	29	0	0	3.1	0.0
FWI	99	V	300-150	1907	0	0	3.2	0.2
FWK	99	V	300-150	84	0	0	3.1	-0.1

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
FXT	99	V	300-150	90	0	0	3.6	0.1
FYG	99	V	300-150	62	0	0	3.5	-0.2
GAF	99	V	300-150	129	0	4	3.3	0.0
GCK	99	V	300-150	46	0	0	3.8	1.1
GEC	99	V	300-150	1448	0	0	3.5	0.1
GFA	99	V	300-150	2048	0	1	4.4	0.1
GIA	99	V	300-150	1709	0	0	3.1	0.2
GJE	99	V	300-150	131	0	0	3.2	-0.2
GLJ	99	V	300-150	22	0	0	1.9	-0.1
GNJ	99	V	300-150	47	0	0	3.9	0.5
GRP	99	V	300-150	26	0	0	3.4	1.0
GTI	99	V	300-150	1543	0	0	3.9	0.1
GTR	99	V	300-150	305	0	0	3.5	0.5
HAL	99	V	300-150	1102	0	0	4.1	0.5
HFM	99	V	300-150	50	0	0	3.2	-0.3
HKC	99	V	300-150	166	0	1	4.8	1.0
HLF	99	V	300-150	54	0	0	3.3	0.4
HRT	99	V	300-150	117	0	0	3.1	0.0
HUE	99	V	300-150	58	0	0	6.4	0.9
HVN	99	V	300-150	1029	0	1	4.8	0.4
HZA	99	V	300-150	31	0	0	3.8	0.6
HZS	99	V	300-150	53	0	0	4.3	0.7
IAM	99	V	300-150	43	0	0	3.3	-0.3
IBE	99	V	300-150	6572	0	0	3.7	0.2
ICE	99	V	300-150	9477	0	0	3.3	0.1
ICL	99	V	300-150	148	0	0	4.2	-1.2
ICV	99	V	300-150	243	0	0	4.2	0.6
IFA	99	V	300-150	396	0	0	3.7	0.2
IGO	99	V	300-150	37	0	0	2.3	0.1
IJM	99	V	300-150	59	0	0	3.3	-0.2
ITY	99	V	300-150	6101	0	0	3.7	0.4
IXR	99	V	300-150	21	0	0	3.4	1.3
JAF	99	V	300-150	648	6	0	6.2	0.0
JAL	99	V	300-150	148	0	1	4.7	0.0
JAS	99	V	300-150	123	0	0	3.4	-0.3
JBU	99	V	300-150	6282	0	0	3.6	0.5
JCO	99	V	300-150	53	0	0	3.4	0.1
JDI	99	V	300-150	21	0	0	6.7	-0.2
JEF	99	V	300-150	23	0	0	3.6	-0.2
JME	99	V	300-150	50	0	0	2.9	0.4
JRE	99	V	300-150	34	0	0	6.0	1.9
JST	99	V	300-150	104	0	0	3.3	0.6
KAC	99	V	300-150	3266	0	0	3.9	0.3

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
KAF	99	V	300-150	50	0	0	4.3	1.4
KAI	99	V	300-150	108	0	0	2.6	0.4
KAL	99	V	300-150	764	0	0	4.0	0.2
KAY	99	V	300-150	66	0	0	2.2	0.6
KFS	99	V	300-150	35	43	0	17.3	-1.0
KIW	99	V	300-150	38	0	0	3.3	1.5
KLM	99	V	300-150	19291	3	0	5.0	0.3
KQA	99	V	300-150	718	5	0	4.7	0.0
LCO	99	V	300-150	705	0	0	4.3	-0.5
LDX	99	V	300-150	163	9	0	5.5	0.0
LMJ	99	V	300-150	34	0	0	3.2	0.0
LNI	99	V	300-150	1975	0	0	3.0	0.2
LNK	99	V	300-150	36	0	0	3.3	0.9
LOT	99	V	300-150	4593	6	0	6.7	-0.2
LUC	99	V	300-150	20	0	0	3.4	1.0
LVA	99	V	300-150	35	0	0	3.3	0.3
LWG	99	V	300-150	38	0	0	2.8	0.0
LXJ	99	V	300-150	761	0	0	3.4	0.4
MAS	99	V	300-150	6632	0	0	4.5	0.6
MAU	99	V	300-150	458	0	0	4.8	1.4
MHV	99	V	300-150	31	0	0	3.0	0.3
MLM	99	V	300-150	171	0	0	3.6	0.2
MMD	99	V	300-150	282	0	0	3.2	-0.2
MMF	99	V	300-150	27	0	0	4.5	0.2
MNB	99	V	300-150	289	0	0	3.4	0.1
MPH	99	V	300-150	611	0	0	4.1	-0.8
MSR	99	V	300-150	2834	4	0	5.1	0.1
MVJ	99	V	300-150	43	0	0	3.5	-0.6
MYM	99	V	300-150	25	0	0	5.8	1.6
NAF	99	V	300-150	28	0	0	2.5	0.8
NBT	99	V	300-150	2961	7	0	6.3	-0.1
NCR	99	V	300-150	290	0	0	3.8	-0.2
NEW	99	V	300-150	89	0	0	3.6	-0.1
NJE	99	V	300-150	457	0	0	3.2	0.4
NJM	99	V	300-150	33	0	0	3.4	1.6
NOJ	99	V	300-150	79	0	0	3.3	0.2
NOS	99	V	300-150	1297	7	0	4.8	0.1
NUM	99	V	300-150	42	0	0	3.9	-0.7
OAE	99	V	300-150	658	0	0	4.4	0.1
OBS	99	V	300-150	42	0	0	4.3	1.1
OCN	99	V	300-150	4416	0	0	3.5	0.4
OMA	99	V	300-150	3878	0	0	4.9	0.3
PAC	99	V	300-150	384	0	0	4.1	-0.3

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
PAL	99	V	300-150	2023	0	0	4.2	0.2
PEG	99	V	300-150	86	0	0	4.7	-0.5
PIA	99	V	300-150	537	0	0	4.4	0.5
PLF	99	V	300-150	49	0	0	3.9	-0.3
PVA	99	V	300-150	114	0	0	4.0	0.3
PVG	99	V	300-150	36	0	0	2.6	0.4
QAF	99	V	300-150	157	0	0	3.1	0.0
QFA	99	V	300-150	5845	0	0	4.4	0.3
QFX	99	V	300-150	46	0	0	3.2	-0.5
QQE	99	V	300-150	241	0	0	3.8	0.4
QTR	99	V	300-150	41839	0	0	3.8	0.2
RAM	99	V	300-150	814	9	0	5.5	0.1
RBA	99	V	300-150	354	0	0	5.2	0.0
RCH	99	V	300-150	3032	0	0	4.8	0.3
RCR	99	V	300-150	35	0	0	4.3	0.7
RHH	99	V	300-150	50	0	0	7.3	2.2
RJA	99	V	300-150	2821	6	0	6.1	0.0
RNA	99	V	300-150	21	0	0	6.4	1.2
ROJ	99	V	300-150	31	0	0	3.0	0.0
RRR	99	V	300-150	192	0	0	3.9	0.2
RSF	99	V	300-150	36	0	0	3.7	0.2
RYR	99	V	300-150	1174	0	0	3.3	0.2
RZO	99	V	300-150	353	0	1	4.3	0.1
SAM	99	V	300-150	215	0	0	3.5	0.0
SAS	99	V	300-150	6390	0	0	3.4	0.3
SAZ	99	V	300-150	67	0	0	3.5	0.7
SCX	99	V	300-150	61	2	0	4.5	0.2
SEY	99	V	300-150	85	0	0	4.4	0.8
SIA	99	V	300-150	15603	0	0	4.5	0.4
SIO	99	V	300-150	87	0	0	3.0	-0.1
SKV	99	V	300-150	34	0	0	2.1	0.3
SLM	99	V	300-150	152	0	0	3.2	0.4
SON	99	V	300-150	100	0	0	3.9	-0.1
SPA	99	V	300-150	59	0	0	3.5	0.6
SVA	99	V	300-150	12068	0	0	3.9	0.3
SVW	99	V	300-150	125	0	0	3.2	0.1
SWR	99	V	300-150	11105	0	1	3.7	0.3
SYB	99	V	300-150	177	0	0	3.6	-0.3
TAI	99	V	300-150	48	0	0	2.6	0.3
TAM	99	V	300-150	120	0	1	4.0	-0.1
TAP	99	V	300-150	2658	0	0	3.8	0.3
TAR	99	V	300-150	563	0	0	3.3	0.4
TAY	99	V	300-150	366	0	0	4.0	0.1

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
TEU	99	V	300-150	21	0	0	2.7	0.3
TFF	99	V	300-150	138	0	0	4.0	0.1
TFL	99	V	300-150	1598	6	0	6.9	0.3
TGW	99	V	300-150	1426	0	1	4.6	0.5
THA	99	V	300-150	6356	0	1	4.7	0.2
THT	99	V	300-150	3062	1	0	4.8	0.2
THY	99	V	300-150	20936	1	0	4.4	0.2
TMN	99	V	300-150	467	0	0	3.7	0.3
TOM	99	V	300-150	7106	6	0	5.7	0.1
TSC	99	V	300-150	23605	0	0	3.7	0.3
TWY	99	V	300-150	569	0	0	3.4	0.4
UAE	99	V	300-150	38815	0	0	3.7	0.2
UAF	99	V	300-150	159	0	0	4.2	0.6
UAG	99	V	300-150	26	0	0	4.0	-0.2
UAL	99	V	300-150	87298	2	1	4.7	0.1
UBT	99	V	300-150	4455	7	0	6.1	0.0
ULC	99	V	300-150	48	0	0	2.4	-0.2
UNI	99	V	300-150	44	0	0	4.6	-0.2
UPS	99	V	300-150	6470	0	0	3.7	0.0
UZB	99	V	300-150	636	2	1	6.0	0.4
VAL	99	V	300-150	22	0	0	4.0	0.3
VCG	99	V	300-150	38	0	0	4.3	0.0
VCJ	99	V	300-150	32	0	0	4.9	1.7
VIR	99	V	300-150	22963	2	0	4.4	0.2
VJC	99	V	300-150	356	0	0	4.9	0.6
VJT	99	V	300-150	1475	0	0	3.5	0.5
VKG	99	V	300-150	33	0	0	2.5	0.3
VLZ	99	V	300-150	34	0	0	6.7	1.1
VTI	99	V	300-150	2424	0	0	4.7	0.9
VXS	99	V	300-150	40	0	0	4.5	1.2
WFL	99	V	300-150	100	0	1	4.1	-1.0
WGN	99	V	300-150	22	0	0	1.8	0.4
WJA	99	V	300-150	2000	3	0	7.2	-0.3
WPT	99	V	300-150	27	0	0	6.2	0.3
WWI	99	V	300-150	44	0	0	3.1	-0.2
XAX	99	V	300-150	999	0	0	4.0	0.5
XLS	99	V	300-150	20	0	0	2.9	0.9
XOJ	99	V	300-150	28	0	0	3.2	1.4

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 : AUG 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	00	Z	50	28	31.0	-26.7
01001	12	Z	50	31	9.8	-7.8
01028	00	Z	50	29	6.6	-4.9
01028	12	Z	50	31	8.4	-6.4
01400	12	Z	50	27	72.1	71.6
01400	00	Z	50	22	80.2	79.8
01415	12	Z	50	29	8.4	-3.8
01415	00	Z	50	30	5.5	2.3
02365	00	Z	50	27	4.7	-1.6
02365	12	Z	50	28	8.8	-5.9
02591	12	Z	50	29	7.8	-3.3
02591	00	Z	50	27	7.1	4.2
02836	12	Z	50	31	9.6	-8.0
02836	00	Z	50	31	5.9	-3.1
02963	12	Z	50	32	15.9	-4.7
02963	00	Z	50	29	6.9	-1.2
03005	00	Z	50	24	5.2	-3.2
03005	12	Z	50	30	10.1	-8.1
03238	00	Z	50	30	6.2	-0.3
03238	12	Z	50	6	5.4	-1.3
03808	12	Z	50	33	6.4	-2.8
03808	00	Z	50	29	6.6	-1.3
03918	12	Z	50	3	5.2	-0.1
03918	00	Z	50	31	10.4	6.1
03953	00	Z	50	31	11.3	-9.4
03953	12	Z	50	31	11.7	-10.0
04018	00	Z	50	27	17.3	-8.5
04018	12	Z	50	26	11.2	-10.0
04220	12	Z	50	31	21.6	-17.7
04220	00	Z	50	31	33.7	-29.2
04270	12	Z	50	30	29.3	-23.0
04270	00	Z	50	30	26.8	-23.6
04320	12	Z	50	31	11.6	-8.0
04320	00	Z	50	30	15.0	-12.7
043207	12	Z	50	0	0.0	0.0
04339	00	Z	50	29	26.9	-23.3
04339	12	Z	50	29	20.3	-16.8
04360	12	Z	50	25	74.8	17.8
04360	00	Z	50	23	15.3	-10.6

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06011	00	Z	50	1	4.3	-4.3
06011	12	Z	50	27	10.6	4.9
06260	12	Z	50	6	5.9	-3.5
06260	00	Z	50	29	7.7	0.2
06610	12	Z	50	32	7.8	-2.8
06610	00	Z	50	32	8.1	3.7
07110	12	Z	50	28	39.3	-36.0
07110	00	Z	50	29	43.7	-42.8
07510	00	Z	50	29	28.9	-26.4
07510	12	Z	50	29	28.9	-26.1
07645	00	Z	50	28	10.6	-5.7
07645	12	Z	50	27	15.8	-13.0
07761	12	Z	50	31	21.6	-16.1
07761	00	Z	50	29	11.9	0.6
08001	12	Z	50	31	8.1	-0.9
08001	00	Z	50	31	7.9	4.2
08221	12	Z	50	31	6.8	-3.4
08221	00	Z	50	28	7.9	5.4
08302	00	Z	50	28	5.8	-1.2
08302	12	Z	50	30	13.4	-11.8
08508	12	Z	50	29	6.4	-3.7
08522	12	Z	50	31	6.7	-1.7
085220	00	Z	50	0	0.0	0.0
10035	00	Z	50	31	14.1	12.4
10035	12	Z	50	30	9.4	6.8
10393	00	Z	50	31	7.6	1.0
10393	12	Z	50	31	10.8	-6.8
10410	00	Z	50	23	7.3	0.0
10410	12	Z	50	24	12.0	-9.0
10739	12	Z	50	31	6.2	-2.0
10739	00	Z	50	31	12.8	5.5
11035	00	Z	50	31	9.7	6.2
11035	12	Z	50	32	16.5	9.6
12982	00	Z	50	28	8.4	7.2
12982	12	Z	50	31	12.4	-1.4
16245	12	Z	50	29	8.4	-5.1
16245	00	Z	50	31	8.1	7.0
16429	00	Z	50	31	10.1	8.9
16429	12	Z	50	31	5.4	-3.4
16622	12	Z	50	2	7.7	6.5
16622	00	Z	50	25	16.8	15.5
16754	00	Z	50	28	28.7	17.0
17607	12	Z	50	13	4.5	-0.1

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
26435	12	Z	50	15	8.4	-7.0
2EERVT	00	Z	50	4	8.8	0.6
2EERVT	12	Z	50	7	11.9	0.6
60018	12	Z	50	30	6.1	-3.1
60018	00	Z	50	31	6.6	2.8
7JUNA4	12	Z	50	6	115.0	103.3
7JUNA4	00	Z	50	6	42.1	-19.5
9ZT9MR	12	Z	50	7	17.8	-10.7
9ZT9MR	00	Z	50	6	66.9	-37.7
ATGU3F	00	Z	50	0	0.0	0.0
BPMWB2	12	Z	50	11	16.2	-13.6
BPMWB2	00	Z	50	10	13.8	-10.9
DBLK	12	Z	50	26	10.3	8.4
FPUW5G	12	Z	50	8	10.1	6.6
JNKN7J	12	Z	50	3	74.5	64.3
JNKN7J	00	Z	50	2	25.5	24.9
KJJF9X	12	Z	50	2	16.3	7.3
KJJF9X	00	Z	50	2	17.4	-12.5
KMPLHP	12	Z	50	9	120.9	71.9
KMPLHP	00	Z	50	9	33.0	13.6
LAGY8	00	Z	50	0	0.0	0.0
LAGZ8	12	Z	50	1	38.3	38.3
LAGZ8	00	Z	50	1	56.5	56.5
LRYQE3	12	Z	50	5	30.8	-29.0
LRYQE3	00	Z	50	6	11.8	-9.1
UXK5JT	12	Z	50	6	8.5	-6.3
UXK5JT	00	Z	50	6	12.6	-6.8
WDK38H	12	Z	50	5	11.6	-10.4
XKQLWQ	12	Z	50	22	43.0	41.3
YLV96W	12	Z	50	8	128.3	100.6
YLV96W	00	Z	50	9	12.8	-6.6
ZVQEQC	12	Z	50	1	3.0	3.0
ZVQEQC	00	Z	50	1	24.1	24.1

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 : AUG 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	00	V	50	28	2.7	0.2	-0.1
01001	12	V	50	31	2.8	0.1	-0.5
01028	00	V	50	29	2.7	-0.7	-0.2
01028	12	V	50	31	2.4	-0.4	0.0
01400	12	V	50	24	2.9	0.1	0.1
01400	00	V	50	21	3.0	1.2	-0.2
01415	12	V	50	29	3.0	0.2	-0.1
01415	00	V	50	29	3.7	0.0	0.7
02365	00	V	50	25	2.9	-0.4	-0.1
02365	12	V	50	26	2.6	-0.2	0.2
02591	12	V	50	29	3.2	-0.2	-0.4
02591	00	V	50	24	3.2	-0.4	-0.4
02836	12	V	50	27	2.7	-0.1	-0.4
02836	00	V	50	29	2.8	0.1	0.3
02963	12	V	50	29	2.7	0.3	-0.3
02963	00	V	50	29	3.0	0.6	0.5
03005	00	V	50	20	2.8	0.0	-0.3
03005	12	V	50	29	2.9	0.3	0.2
03238	00	V	50	29	2.4	0.1	0.2
03238	12	V	50	6	2.9	0.1	0.2
03808	12	V	50	31	2.3	0.2	0.4
03808	00	V	50	29	2.4	-0.1	0.4
03918	12	V	50	3	1.0	0.3	0.0
03918	00	V	50	29	2.9	0.2	0.2
03953	00	V	50	30	2.7	-0.3	0.1
03953	12	V	50	31	2.5	-0.1	-0.3
04018	00	V	50	25	2.2	0.3	-0.3
04018	12	V	50	26	2.6	0.0	0.0
04220	12	V	50	31	2.3	-0.1	-0.3
04220	00	V	50	30	2.1	0.1	0.4
04270	12	V	50	30	2.8	-0.1	0.1
04270	00	V	50	30	2.6	-1.0	0.3
04320	12	V	50	31	2.3	0.0	-0.1
04320	00	V	50	30	2.9	0.0	0.0
043207	12	V	50	0	0.0	0.0	0.0
04339	00	V	50	29	2.3	-0.3	0.3
04339	12	V	50	29	2.3	-0.1	0.3
04360	12	V	50	25	2.5	0.1	0.1
04360	00	V	50	23	1.8	-0.3	-0.1

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06011	00	V	50	1	0.9	0.5	-0.8
06011	12	V	50	27	2.7	0.1	-0.8
06260	12	V	50	6	2.8	0.5	0.6
06260	00	V	50	29	3.6	0.5	-0.2
06610	12	V	50	30	3.5	0.1	-0.7
06610	00	V	50	30	2.9	0.2	0.3
07110	12	V	50	28	3.0	0.6	0.1
07110	00	V	50	28	2.4	0.2	0.3
07510	00	V	50	29	2.7	-0.4	-0.3
07510	12	V	50	29	2.7	0.0	-0.2
07645	00	V	50	27	3.1	-0.4	0.4
07645	12	V	50	27	3.3	-0.2	0.5
07761	12	V	50	31	3.4	0.1	-0.2
07761	00	V	50	29	3.6	-0.6	0.0
08001	12	V	50	30	2.8	0.0	-0.3
08001	00	V	50	31	3.2	0.0	0.1
08221	12	V	50	31	2.8	-0.6	-0.5
08221	00	V	50	28	2.7	-0.3	0.3
08302	00	V	50	28	3.1	-1.3	0.1
08302	12	V	50	30	3.5	0.5	-0.3
08508	12	V	50	29	3.3	0.3	0.1
08522	12	V	50	31	3.3	-0.5	0.1
085220	00	V	50	0	0.0	0.0	0.0
10035	00	V	50	31	2.9	0.3	0.6
10035	12	V	50	30	2.9	0.3	0.0
10393	00	V	50	29	3.6	1.0	0.0
10393	12	V	50	31	3.8	0.1	-0.8
10410	00	V	50	23	3.3	-0.1	0.1
10410	12	V	50	24	3.0	-0.9	-0.3
10739	12	V	50	31	2.8	-0.1	-0.1
10739	00	V	50	31	2.5	-0.1	0.2
11035	00	V	50	28	3.6	0.5	-0.4
11035	12	V	50	31	3.0	0.3	0.0
12982	00	V	50	26	2.5	0.2	-0.2
12982	12	V	50	31	3.3	-0.1	-0.6
16245	12	V	50	29	3.5	0.8	0.7
16245	00	V	50	31	3.6	-0.5	-0.1
16429	00	V	50	31	2.9	0.1	-0.4
16429	12	V	50	31	3.8	0.1	0.0
16622	12	V	50	2	2.1	0.5	0.6
16622	00	V	50	23	3.9	0.3	-0.5
16754	00	V	50	26	3.5	-0.1	-0.4
17607	12	V	50	0	0.0	0.0	0.0

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
26435	12	V	50	15	2.4	0.0	0.2
2EERVT	00	V	50	4	3.3	-0.4	1.7
2EERVT	12	V	50	7	1.8	-0.6	-0.6
60018	12	V	50	30	3.6	-0.1	0.5
60018	00	V	50	31	3.8	-0.7	0.3
7JUNA4	12	V	50	6	2.3	1.0	1.1
7JUNA4	00	V	50	6	2.4	0.9	0.2
9ZT9MR	12	V	50	7	2.9	1.1	-0.5
9ZT9MR	00	V	50	6	1.9	0.3	0.2
ATGU3F	00	V	50	0	0.0	0.0	0.0
BPMWB2	12	V	50	11	3.7	-0.9	-0.1
BPMWB2	00	V	50	10	2.7	0.9	-0.1
DBLK	12	V	50	26	2.8	-0.5	0.2
FPUW5G	12	V	50	8	3.2	1.9	0.3
JNKN7J	12	V	50	3	2.0	0.8	0.3
JNKN7J	00	V	50	2	2.5	1.8	-1.7
KJJF9X	12	V	50	2	1.9	-0.4	1.6
KJJF9X	00	V	50	2	3.0	-2.8	-0.5
KMPLHP	12	V	50	9	2.8	0.1	0.2
KMPLHP	00	V	50	9	2.5	-0.2	-0.1
LAGY8	00	V	50	0	0.0	0.0	0.0
LAGZ8	12	V	50	1	1.3	0.2	1.3
LAGZ8	00	V	50	1	2.6	-2.3	-1.2
LRYQE3	12	V	50	5	1.8	0.2	-0.8
LRYQE3	00	V	50	6	2.4	0.6	0.3
UXK5JT	12	V	50	6	2.2	-0.1	0.4
UXK5JT	00	V	50	6	2.4	1.0	1.5
WDK38H	12	V	50	5	3.6	0.0	-1.8
XKQLWQ	12	V	50	18	2.7	0.0	-0.5
YLV96W	12	V	50	8	3.3	-0.6	-1.7
YLV96W	00	V	50	9	3.2	0.2	0.2
ZVQEQC	12	V	50	1	4.1	-2.6	3.2
ZVQEQC	00	V	50	1	6.6	5.8	-3.1

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 : AUG 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	00	Z	100	28	27.4	-25.0
01001	12	Z	100	31	9.1	-8.0
01028	00	Z	100	30	6.5	-5.2
01028	12	Z	100	31	7.7	-6.5
01400	12	Z	100	29	72.7	72.4
01400	00	Z	100	27	78.3	78.1
01415	12	Z	100	30	6.0	-3.7
01415	00	Z	100	30	4.1	-0.9
02365	00	Z	100	30	5.6	-4.0
02365	12	Z	100	29	8.2	-6.1
02591	12	Z	100	29	5.2	-2.4
02591	00	Z	100	28	5.5	3.0
02836	12	Z	100	32	7.9	-6.9
02836	00	Z	100	31	5.1	-4.0
02963	12	Z	100	33	14.0	-3.5
02963	00	Z	100	29	5.6	-1.2
03005	00	Z	100	28	6.5	-5.5
03005	12	Z	100	31	8.8	-7.8
03238	00	Z	100	30	6.7	-3.5
03238	12	Z	100	6	4.6	-2.7
03808	12	Z	100	36	5.7	-3.3
03808	00	Z	100	30	6.3	-3.1
03918	12	Z	100	3	5.0	1.0
03918	00	Z	100	31	7.5	1.5
03953	00	Z	100	31	12.2	-10.3
03953	12	Z	100	31	12.0	-10.5
04018	00	Z	100	28	11.9	-8.3
04018	12	Z	100	27	9.0	-8.4
04220	12	Z	100	31	17.4	-15.1
04220	00	Z	100	31	26.7	-23.8
04270	12	Z	100	30	25.1	-19.2
04270	00	Z	100	30	21.8	-20.3
04320	12	Z	100	31	10.8	-7.5
04320	00	Z	100	30	12.5	-9.8
043207	12	Z	100	0	0.0	0.0
04339	00	Z	100	29	24.8	-22.4
04339	12	Z	100	31	18.0	-15.9
04360	12	Z	100	25	38.2	5.8
04360	00	Z	100	23	16.1	-9.9

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06011	00	Z	100	1	3.2	-3.2
06011	12	Z	100	29	7.9	2.3
06260	12	Z	100	6	6.4	-5.9
06260	00	Z	100	30	6.0	-1.9
06610	12	Z	100	32	6.2	-2.8
06610	00	Z	100	31	6.2	-0.6
07110	12	Z	100	28	32.9	-30.9
07110	00	Z	100	29	36.9	-36.1
07510	00	Z	100	31	23.1	-21.3
07510	12	Z	100	30	24.3	-22.9
07645	00	Z	100	28	10.2	-6.8
07645	12	Z	100	28	14.5	-12.6
07761	12	Z	100	31	16.2	-11.1
07761	00	Z	100	31	8.3	-1.0
08001	12	Z	100	31	7.8	0.6
08001	00	Z	100	31	7.4	2.6
08221	12	Z	100	31	5.3	-1.9
08221	00	Z	100	28	6.3	2.3
08302	00	Z	100	31	6.3	-3.9
08302	12	Z	100	31	12.4	-11.2
08508	12	Z	100	31	4.9	1.1
08522	12	Z	100	31	5.6	3.1
085220	00	Z	100	0	0.0	0.0
10035	00	Z	100	31	12.3	10.8
10035	12	Z	100	30	7.3	5.1
10393	00	Z	100	31	5.9	-1.8
10393	12	Z	100	31	9.4	-6.6
10410	00	Z	100	23	7.4	-2.5
10410	12	Z	100	24	10.1	-8.4
10739	12	Z	100	31	5.1	-2.7
10739	00	Z	100	31	10.2	1.8
11035	00	Z	100	32	6.9	1.9
11035	12	Z	100	32	10.7	3.0
12982	00	Z	100	30	6.5	4.7
12982	12	Z	100	31	10.1	-1.0
16245	12	Z	100	29	4.5	-3.6
16245	00	Z	100	31	5.9	2.8
16429	00	Z	100	31	6.1	4.5
16429	12	Z	100	31	4.2	-2.6
16622	12	Z	100	2	3.7	-3.6
16622	00	Z	100	27	15.0	14.2
16754	00	Z	100	31	14.1	11.4
17607	12	Z	100	15	3.7	1.4

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
26435	12	Z	100	15	7.1	-6.0
2EERVT	00	Z	100	5	6.0	-3.5
2EERVT	12	Z	100	7	6.5	-0.4
60018	12	Z	100	31	5.4	0.6
60018	00	Z	100	31	5.0	1.7
7JUNA4	12	Z	100	6	57.6	52.2
7JUNA4	00	Z	100	6	18.4	-11.6
9ZT9MR	12	Z	100	8	18.6	-15.1
9ZT9MR	00	Z	100	6	70.0	-39.8
ATGU3F	00	Z	100	0	0.0	0.0
BPMWB2	12	Z	100	11	11.5	-6.8
BPMWB2	00	Z	100	11	11.9	-10.6
DBLK	12	Z	100	26	10.6	9.4
FPUW5G	12	Z	100	9	8.1	5.7
JNKN7J	12	Z	100	4	45.6	43.2
JNKN7J	00	Z	100	5	19.5	18.2
KJJF9X	12	Z	100	2	7.2	4.7
KJJF9X	00	Z	100	2	16.6	-15.4
KMPLHP	12	Z	100	9	81.5	54.7
KMPLHP	00	Z	100	9	33.2	15.8
LAGY8	00	Z	100	1	117.2	-117.2
LAGZ8	12	Z	100	1	46.6	46.6
LAGZ8	00	Z	100	1	50.1	50.1
LRQE3	12	Z	100	5	24.4	-21.6
LRQE3	00	Z	100	6	13.0	-11.6
UXK5JT	12	Z	100	6	4.7	1.7
UXK5JT	00	Z	100	6	8.6	-4.6
WDK38H	12	Z	100	7	13.0	-11.7
XKQLWQ	12	Z	100	25	37.0	35.3
YLV96W	12	Z	100	8	59.6	44.0
YLV96W	00	Z	100	10	13.5	-3.5
ZVQEQC	12	Z	100	1	3.8	3.8
ZVQEQC	00	Z	100	1	12.8	12.8

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 : AUG 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	00	V	100	28	2.4	-0.3	0.3
01001	12	V	100	31	2.3	-0.2	0.6
01028	00	V	100	29	2.3	-0.3	0.3
01028	12	V	100	31	2.6	0.0	-0.3
01400	12	V	100	28	3.2	0.8	0.3
01400	00	V	100	23	3.0	0.1	0.7
01415	12	V	100	29	2.4	0.5	-0.6
01415	00	V	100	29	2.5	-0.3	-0.1
02365	00	V	100	30	2.9	-0.3	-0.1
02365	12	V	100	29	2.7	0.3	-0.5
02591	12	V	100	29	3.0	0.5	-0.7
02591	00	V	100	28	3.0	-0.3	0.2
02836	12	V	100	30	2.9	0.5	-0.1
02836	00	V	100	30	3.0	0.8	0.0
02963	12	V	100	30	2.8	-0.2	-0.1
02963	00	V	100	29	2.7	-0.3	-1.1
03005	00	V	100	21	2.9	0.2	-0.2
03005	12	V	100	31	2.6	0.4	0.2
03238	00	V	100	29	2.6	0.1	0.5
03238	12	V	100	6	3.2	1.7	-0.7
03808	12	V	100	31	3.0	0.4	0.4
03808	00	V	100	29	3.5	0.1	-0.2
03918	12	V	100	3	2.5	0.3	0.6
03918	00	V	100	30	3.6	-0.1	0.5
03953	00	V	100	30	3.0	0.1	-0.4
03953	12	V	100	31	3.0	0.1	0.4
04018	00	V	100	28	2.6	0.0	-0.7
04018	12	V	100	27	2.6	-0.1	0.0
04220	12	V	100	31	2.3	-0.3	-0.3
04220	00	V	100	30	2.6	-0.1	0.4
04270	12	V	100	30	2.8	-0.2	0.0
04270	00	V	100	30	2.7	0.5	-0.4
04320	12	V	100	31	2.0	-0.6	0.1
04320	00	V	100	30	2.6	-0.6	-0.1
043207	12	V	100	0	0.0	0.0	0.0
04339	00	V	100	29	2.7	-0.6	0.1
04339	12	V	100	31	2.6	0.0	-0.3
04360	12	V	100	25	2.2	0.1	-0.3
04360	00	V	100	23	2.9	0.5	-0.9

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06011	00	V	100	1	1.6	1.6	0.0
06011	12	V	100	29	2.6	1.0	0.1
06260	12	V	100	6	2.6	-0.1	-0.3
06260	00	V	100	29	2.8	0.3	0.3
06610	12	V	100	31	3.3	0.3	-0.7
06610	00	V	100	30	3.3	-0.4	-0.8
07110	12	V	100	28	3.2	0.1	-0.1
07110	00	V	100	28	2.9	0.3	0.7
07510	00	V	100	30	3.4	1.0	0.2
07510	12	V	100	30	3.6	0.7	-1.3
07645	00	V	100	27	4.4	0.6	0.5
07645	12	V	100	28	4.1	-0.4	0.1
07761	12	V	100	31	4.3	0.3	0.2
07761	00	V	100	30	3.3	0.4	-0.6
08001	12	V	100	31	3.5	-0.1	-0.7
08001	00	V	100	31	3.1	-0.6	0.1
08221	12	V	100	31	3.7	0.6	-0.2
08221	00	V	100	28	2.8	-0.4	0.7
08302	00	V	100	31	3.8	-0.2	0.7
08302	12	V	100	31	3.3	0.9	0.2
08508	12	V	100	31	3.1	-0.5	1.1
08522	12	V	100	31	3.5	-0.4	0.4
085220	00	V	100	0	0.0	0.0	0.0
10035	00	V	100	31	3.6	0.5	0.0
10035	12	V	100	30	3.2	0.0	0.3
10393	00	V	100	31	3.3	0.7	-0.6
10393	12	V	100	31	3.1	0.1	-0.5
10410	00	V	100	23	3.7	-0.3	0.3
10410	12	V	100	24	3.4	0.5	0.2
10739	12	V	100	31	3.0	0.1	-0.8
10739	00	V	100	31	3.3	-0.3	-0.4
11035	00	V	100	28	3.5	-0.4	0.4
11035	12	V	100	31	3.4	0.6	0.3
12982	00	V	100	29	3.3	0.8	0.4
12982	12	V	100	31	3.5	-0.3	-0.6
16245	12	V	100	29	3.8	0.3	0.9
16245	00	V	100	31	3.3	0.4	0.1
16429	00	V	100	31	2.8	0.2	-0.2
16429	12	V	100	31	3.4	0.2	0.1
16622	12	V	100	2	4.5	2.4	0.7
16622	00	V	100	25	3.6	0.4	0.1
16754	00	V	100	31	3.9	0.2	-0.8
17607	12	V	100	3	2.0	-0.4	0.5

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
26435	12	V	100	15	2.8	0.5	0.2
2EERVT	00	V	100	5	3.3	0.9	0.3
2EERVT	12	V	100	7	3.7	-1.9	-0.1
60018	12	V	100	31	3.6	0.1	-0.4
60018	00	V	100	31	3.5	-0.5	-0.5
7JUNA4	12	V	100	6	2.9	0.6	-0.3
7JUNA4	00	V	100	6	3.6	-0.5	1.5
9ZT9MR	12	V	100	8	3.5	2.0	0.7
9ZT9MR	00	V	100	6	2.1	-0.4	-1.7
ATGU3F	00	V	100	0	0.0	0.0	0.0
BPMWB2	12	V	100	11	2.9	0.1	1.0
BPMWB2	00	V	100	11	2.6	-0.5	0.1
DBLK	12	V	100	26	2.2	-0.2	0.0
FPUW5G	12	V	100	9	2.1	1.0	-0.5
JNKN7J	12	V	100	4	2.8	0.0	0.1
JNKN7J	00	V	100	5	3.4	-1.1	-1.5
KJJF9X	12	V	100	2	1.7	-1.0	0.4
KJJF9X	00	V	100	2	2.6	0.8	-0.8
KMPLHP	12	V	100	9	3.4	1.5	-0.8
KMPLHP	00	V	100	9	3.6	-0.8	1.1
LAGY8	00	V	100	1	2.0	0.2	-2.0
LAGZ8	12	V	100	1	3.8	3.8	0.0
LAGZ8	00	V	100	1	3.8	-3.0	2.4
LRYQE3	12	V	100	5	2.8	0.1	1.5
LRYQE3	00	V	100	6	2.6	0.5	-1.0
UXK5JT	12	V	100	6	2.5	-0.9	-0.8
UXK5JT	00	V	100	6	2.7	-0.7	0.0
WDK38H	12	V	100	6	2.9	-1.2	0.2
XKQLWQ	12	V	100	23	3.1	1.3	-0.4
YLV96W	12	V	100	8	2.5	-0.4	0.3
YLV96W	00	V	100	10	2.8	0.0	-0.4
ZVQEQC	12	V	100	1	2.6	-2.6	-0.4
ZVQEQC	00	V	100	1	2.4	-1.2	2.1

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 : AUG 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	00	Z	500	31	13.6	-11.8
01001	12	Z	500	31	3.8	-2.2
01028	00	Z	500	30	3.0	-0.7
01028	12	Z	500	31	2.4	-0.1
01400	12	Z	500	30	78.1	77.8
01400	00	Z	500	30	79.5	79.3
01415	12	Z	500	30	3.1	1.2
01415	00	Z	500	30	2.8	1.9
02365	00	Z	500	31	2.8	0.2
02365	12	Z	500	29	4.0	-0.9
02591	12	Z	500	29	6.9	6.5
02591	00	Z	500	28	7.2	6.1
02836	12	Z	500	33	2.2	0.7
02836	00	Z	500	31	2.9	1.9
02963	12	Z	500	33	15.2	4.5
02963	00	Z	500	29	4.5	3.4
03005	00	Z	500	29	4.2	-3.4
03005	12	Z	500	32	3.7	-3.1
03238	00	Z	500	30	2.6	0.3
03238	12	Z	500	6	3.0	1.6
03808	12	Z	500	36	3.4	1.0
03808	00	Z	500	31	3.6	-0.1
03918	12	Z	500	3	4.0	2.2
03918	00	Z	500	31	5.2	3.7
03953	00	Z	500	31	5.4	-4.3
03953	12	Z	500	31	4.4	-2.8
04018	00	Z	500	28	2.9	0.2
04018	12	Z	500	27	3.0	-0.1
04220	12	Z	500	31	7.1	-5.4
04220	00	Z	500	31	8.7	-7.5
04270	12	Z	500	30	26.2	-4.9
04270	00	Z	500	31	9.0	-8.1
04320	12	Z	500	31	6.0	1.1
04320	00	Z	500	31	4.7	0.9
043207	12	Z	500	0	0.0	0.0
04339	00	Z	500	30	10.2	-9.3
04339	12	Z	500	31	9.9	-7.9
04360	12	Z	500	25	5.9	-3.2
04360	00	Z	500	23	8.0	-6.9

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06011	00	Z	500	1	3.8	-3.8
06011	12	Z	500	31	6.4	3.9
06260	12	Z	500	6	5.4	-2.8
06260	00	Z	500	30	3.7	0.4
06610	12	Z	500	32	3.0	1.0
06610	00	Z	500	31	2.8	0.9
07110	12	Z	500	28	14.6	-13.8
07110	00	Z	500	29	16.1	-15.5
07510	00	Z	500	31	7.6	-6.2
07510	12	Z	500	32	10.0	-3.7
07645	00	Z	500	31	6.6	-4.5
07645	12	Z	500	30	6.0	-4.8
07761	12	Z	500	31	4.0	-1.3
07761	00	Z	500	31	6.8	-1.7
08001	12	Z	500	31	3.9	2.9
08001	00	Z	500	31	4.2	3.5
08221	12	Z	500	31	4.3	3.8
08221	00	Z	500	28	5.0	4.2
08302	00	Z	500	31	6.2	-5.6
08302	12	Z	500	31	6.6	-6.3
08508	12	Z	500	31	7.5	6.9
08522	12	Z	500	31	7.6	7.4
085220	00	Z	500	0	0.0	0.0
10035	00	Z	500	31	12.8	12.6
10035	12	Z	500	30	11.3	10.9
10393	00	Z	500	31	3.0	-0.4
10393	12	Z	500	31	4.1	-1.9
10410	00	Z	500	23	2.8	-1.1
10410	12	Z	500	26	4.0	-3.0
10739	12	Z	500	31	4.4	2.6
10739	00	Z	500	31	4.6	3.8
11035	00	Z	500	33	4.2	-0.3
11035	12	Z	500	32	6.2	1.9
12982	00	Z	500	30	5.4	4.7
12982	12	Z	500	31	4.6	1.2
16245	12	Z	500	30	2.9	0.7
16245	00	Z	500	31	3.6	2.6
16429	00	Z	500	31	4.4	3.6
16429	12	Z	500	31	3.5	2.3
16622	12	Z	500	2	8.1	8.1
16622	00	Z	500	27	10.8	10.0
16754	00	Z	500	31	5.4	2.3
17607	12	Z	500	17	3.0	2.3

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
26435	12	Z	500	15	1.5	0.1
2EERVT	00	Z	500	5	4.9	-3.9
2EERVT	12	Z	500	7	3.2	0.1
60018	12	Z	500	31	5.5	4.9
60018	00	Z	500	31	4.1	2.4
7JUNA4	12	Z	500	8	4.9	3.2
7JUNA4	00	Z	500	9	7.6	-5.1
9ZT9MR	12	Z	500	10	13.2	-12.6
9ZT9MR	00	Z	500	6	17.2	-16.3
ATGU3F	00	Z	500	0	0.0	0.0
BPMWB2	12	Z	500	13	6.8	-3.6
BPMWB2	00	Z	500	13	8.4	-7.9
DBLK	12	Z	500	26	16.1	15.9
FPUW5G	12	Z	500	9	8.4	7.6
JNKN7J	12	Z	500	5	34.4	34.2
JNKN7J	00	Z	500	6	35.6	34.6
KJJF9X	12	Z	500	2	1.0	-1.0
KJJF9X	00	Z	500	2	28.9	-25.3
KMPLHP	12	Z	500	10	45.3	38.4
KMPLHP	00	Z	500	9	42.3	28.4
LAGY8	00	Z	500	1	136.6	-136.6
LAGZ8	12	Z	500	1	73.4	73.4
LAGZ8	00	Z	500	1	72.5	72.5
LRQE3	12	Z	500	5	10.7	-6.8
LRQE3	00	Z	500	6	11.7	-6.7
UXK5JT	12	Z	500	7	8.1	0.3
UXK5JT	00	Z	500	6	3.3	-2.3
WDK38H	12	Z	500	20	9.5	-3.9
XKQLWQ	12	Z	500	25	36.0	26.7
YLV96W	12	Z	500	10	8.7	5.0
YLV96W	00	Z	500	10	5.1	-2.6
ZVQEQC	12	Z	500	1	4.5	4.5
ZVQEQC	00	Z	500	1	8.6	8.6

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 : AUG 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	00	V	500	31	2.1	-0.1	-0.3
01001	12	V	500	31	2.3	-0.6	-0.2
01028	00	V	500	30	2.0	0.1	0.0
01028	12	V	500	31	2.1	0.0	0.1
01400	12	V	500	30	2.7	-0.1	0.2
01400	00	V	500	29	2.0	0.2	0.4
01415	12	V	500	30	2.7	0.2	0.6
01415	00	V	500	30	2.4	-0.1	0.0
02365	00	V	500	31	2.5	0.0	0.3
02365	12	V	500	29	2.5	0.1	0.5
02591	12	V	500	29	2.6	0.0	0.1
02591	00	V	500	28	3.0	-0.6	-0.1
02836	12	V	500	31	2.1	-0.3	0.2
02836	00	V	500	31	2.9	0.1	0.0
02963	12	V	500	31	3.5	-0.3	-0.1
02963	00	V	500	29	3.0	0.5	0.2
03005	00	V	500	26	2.1	-0.3	-0.2
03005	12	V	500	31	2.7	0.4	-0.3
03238	00	V	500	30	2.3	0.4	-0.1
03238	12	V	500	6	3.1	-0.4	-0.1
03808	12	V	500	31	2.9	0.3	0.0
03808	00	V	500	29	2.6	0.9	0.8
03918	12	V	500	3	1.7	0.7	-0.1
03918	00	V	500	30	2.4	0.1	-0.1
03953	00	V	500	31	2.7	0.5	0.3
03953	12	V	500	31	2.8	0.0	0.5
04018	00	V	500	28	2.5	0.1	-0.3
04018	12	V	500	27	2.1	0.3	0.2
04220	12	V	500	31	2.6	-0.2	0.0
04220	00	V	500	31	2.4	0.3	-0.7
04270	12	V	500	30	2.3	0.3	-0.1
04270	00	V	500	31	2.4	0.0	-0.3
04320	12	V	500	31	2.5	-0.3	0.0
04320	00	V	500	31	2.4	-0.4	-0.5
043207	12	V	500	0	0.0	0.0	0.0
04339	00	V	500	30	2.6	0.4	0.6
04339	12	V	500	31	2.3	0.0	0.0
04360	12	V	500	25	2.1	0.2	0.2
04360	00	V	500	23	1.9	0.4	-0.1

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06011	00	V	500	1	3.6	3.6	-0.4
06011	12	V	500	31	2.1	-0.2	0.1
06260	12	V	500	6	1.4	0.4	-0.4
06260	00	V	500	30	2.3	0.7	0.2
06610	12	V	500	31	3.1	0.7	-0.3
06610	00	V	500	30	3.0	1.0	0.4
07110	12	V	500	28	2.0	0.8	-0.1
07110	00	V	500	29	2.5	-0.1	0.5
07510	00	V	500	31	2.9	1.0	-0.2
07510	12	V	500	31	2.2	0.5	-0.1
07645	00	V	500	29	2.4	0.2	-0.3
07645	12	V	500	28	3.4	0.4	-0.3
07761	12	V	500	31	3.1	0.2	-0.2
07761	00	V	500	31	4.9	-0.2	0.9
08001	12	V	500	31	1.8	0.2	0.3
08001	00	V	500	31	2.2	0.9	0.4
08221	12	V	500	31	1.8	0.6	0.0
08221	00	V	500	28	1.9	-0.2	0.3
08302	00	V	500	31	2.5	0.3	0.1
08302	12	V	500	31	2.2	-0.2	0.3
08508	12	V	500	31	2.3	-0.1	0.2
08522	12	V	500	31	2.2	0.2	0.0
085220	00	V	500	0	0.0	0.0	0.0
10035	00	V	500	31	2.5	0.2	0.1
10035	12	V	500	30	2.3	0.1	-0.7
10393	00	V	500	31	3.3	-0.1	-0.4
10393	12	V	500	31	3.1	0.3	0.1
10410	00	V	500	23	3.2	1.0	-0.1
10410	12	V	500	25	2.4	0.3	0.0
10739	12	V	500	31	2.7	-0.2	0.4
10739	00	V	500	31	2.8	0.4	-0.6
11035	00	V	500	30	2.5	-0.3	0.7
11035	12	V	500	31	2.8	-0.9	0.0
12982	00	V	500	30	2.9	-0.1	0.1
12982	12	V	500	31	2.9	0.4	0.6
16245	12	V	500	30	2.0	0.6	0.8
16245	00	V	500	31	2.3	0.0	0.1
16429	00	V	500	31	2.3	0.2	0.0
16429	12	V	500	31	2.4	0.1	0.0
16622	12	V	500	2	3.0	-2.2	-0.5
16622	00	V	500	27	2.5	-0.2	0.5
16754	00	V	500	31	2.3	0.7	-0.1
17607	12	V	500	14	2.1	1.0	-0.9

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
26435	12	V	500	15	2.4	0.4	-0.1
2EERV	00	V	500	5	1.8	-0.2	-0.7
2EERV	12	V	500	7	2.1	0.0	-0.4
60018	12	V	500	31	2.6	0.1	0.1
60018	00	V	500	31	3.1	0.0	1.2
7JUNA4	12	V	500	8	2.6	0.1	0.8
7JUNA4	00	V	500	9	2.8	1.0	0.6
9ZT9MR	12	V	500	10	2.7	-0.5	-0.3
9ZT9MR	00	V	500	6	1.7	-0.4	0.0
ATGU3F	00	V	500	0	0.0	0.0	0.0
BPMWB2	12	V	500	13	2.1	0.2	-0.1
BPMWB2	00	V	500	13	2.5	0.2	1.0
DBLK	12	V	500	26	1.9	0.0	-0.1
FPUW5G	12	V	500	9	1.6	0.5	-0.2
JNKN7J	12	V	500	5	2.4	-1.1	-1.1
JNKN7J	00	V	500	6	3.0	0.0	-0.3
KJJF9X	12	V	500	2	2.6	-1.6	0.6
KJJF9X	00	V	500	2	2.6	0.8	-1.8
KMPLHP	12	V	500	10	2.3	0.3	-0.3
KMPLHP	00	V	500	9	2.3	0.5	-0.1
LAGY8	00	V	500	1	1.9	1.2	-1.5
LAGZ8	12	V	500	1	1.7	-0.6	-1.6
LAGZ8	00	V	500	1	6.4	5.8	2.8
LRYQE3	12	V	500	5	4.6	-1.7	-0.3
LRYQE3	00	V	500	6	4.2	2.4	-0.3
UXK5JT	12	V	500	7	1.7	0.5	-0.3
UXK5JT	00	V	500	6	1.4	0.0	0.3
WDK38H	12	V	500	19	2.3	-0.7	0.2
XKQLWQ	12	V	500	24	1.8	0.1	0.5
YLV96W	12	V	500	10	2.9	-0.5	-0.2
YLV96W	00	V	500	10	1.9	0.0	-0.3
ZVQEQC	12	V	500	1	0.7	0.0	0.7
ZVQEQC	00	V	500	1	1.9	1.0	1.6

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 : AUG 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	00	Z	850	32	9.5	-9.0
01001	12	Z	850	31	5.2	-3.0
01028	00	Z	850	30	3.3	0.9
01028	12	Z	850	31	2.5	0.7
01400	12	Z	850	30	79.4	79.2
01400	00	Z	850	30	80.2	80.1
01415	12	Z	850	30	3.7	3.0
01415	00	Z	850	30	3.2	2.8
02365	00	Z	850	31	2.6	1.2
02365	12	Z	850	29	2.5	0.9
02591	12	Z	850	29	7.3	7.0
02591	00	Z	850	28	6.9	6.5
02836	12	Z	850	32	3.8	2.0
02836	00	Z	850	31	4.2	3.8
02963	12	Z	850	33	3.9	2.8
02963	00	Z	850	29	3.6	3.2
03005	00	Z	850	29	2.5	-1.7
03005	12	Z	850	32	2.8	-1.8
03238	00	Z	850	30	2.6	1.9
03238	12	Z	850	6	4.6	4.0
03808	12	Z	850	36	2.7	1.4
03808	00	Z	850	31	2.4	1.1
03918	12	Z	850	3	5.9	5.8
03918	00	Z	850	32	5.3	4.8
03953	00	Z	850	31	3.6	-1.6
03953	12	Z	850	31	3.5	-2.0
04018	00	Z	850	28	2.1	1.0
04018	12	Z	850	27	1.6	-0.3
04220	12	Z	850	31	4.3	-3.7
04220	00	Z	850	31	5.4	-4.7
04270	12	Z	850	30	7.5	-5.4
04270	00	Z	850	31	7.7	-7.4
04320	12	Z	850	31	2.8	0.3
04320	00	Z	850	31	2.9	0.7
043207	12	Z	850	1	60.8	-60.8
04339	00	Z	850	30	8.7	-8.1
04339	12	Z	850	31	8.6	-7.4
04360	12	Z	850	25	5.9	-5.3
04360	00	Z	850	23	6.7	-6.2

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06011	00	Z	850	1	4.8	-4.8
06011	12	Z	850	31	2.4	1.1
06260	12	Z	850	6	3.0	-0.8
06260	00	Z	850	30	2.4	0.1
06610	12	Z	850	32	4.3	2.5
06610	00	Z	850	32	3.2	2.2
07110	12	Z	850	28	8.5	-8.1
07110	00	Z	850	31	9.5	-9.1
07510	00	Z	850	31	2.8	-1.4
07510	12	Z	850	32	2.2	-0.1
07645	00	Z	850	31	7.5	-7.1
07645	12	Z	850	30	7.5	-7.1
07761	12	Z	850	31	3.6	0.7
07761	00	Z	850	31	2.4	0.4
08001	12	Z	850	31	3.2	2.1
08001	00	Z	850	31	2.6	1.0
08221	12	Z	850	31	1.9	1.3
08221	00	Z	850	28	1.6	1.1
08302	00	Z	850	31	8.1	-7.9
08302	12	Z	850	31	7.7	-7.4
08508	12	Z	850	31	5.2	4.9
08522	12	Z	850	31	4.8	4.1
085220	00	Z	850	1	60.5	-60.5
10035	00	Z	850	31	11.8	11.6
10035	12	Z	850	30	12.9	12.7
10393	00	Z	850	31	2.8	0.5
10393	12	Z	850	31	2.1	0.3
10410	00	Z	850	23	2.6	-0.9
10410	12	Z	850	25	2.0	-0.1
10739	12	Z	850	31	4.6	4.2
10739	00	Z	850	31	4.3	3.8
11035	00	Z	850	33	3.2	1.8
11035	12	Z	850	32	3.5	2.0
12982	00	Z	850	30	4.7	3.9
12982	12	Z	850	31	4.1	3.6
16245	12	Z	850	30	3.4	2.9
16245	00	Z	850	31	3.6	3.2
16429	00	Z	850	31	3.5	3.0
16429	12	Z	850	31	2.8	2.2
16622	12	Z	850	2	10.6	10.6
16622	00	Z	850	27	11.1	10.8
16754	00	Z	850	31	3.5	2.6
17607	12	Z	850	17	2.0	0.2

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
26435	12	Z	850	15	2.6	0.5
2EERT	00	Z	850	5	3.4	-0.6
2EERT	12	Z	850	7	3.6	0.9
60018	12	Z	850	31	2.8	1.0
60018	00	Z	850	31	3.0	-1.3
7JUNA4	12	Z	850	8	3.4	-0.1
7JUNA4	00	Z	850	10	5.9	-2.0
9ZT9MR	12	Z	850	10	10.1	-9.6
9ZT9MR	00	Z	850	6	12.5	-12.0
ATGU3F	00	Z	850	1	22.6	-22.6
BPMWB2	12	Z	850	13	4.0	-1.5
BPMWB2	00	Z	850	13	6.7	-6.0
DBLK	12	Z	850	26	17.8	17.2
FPUW5G	12	Z	850	9	9.1	8.4
JNKN7J	12	Z	850	5	38.9	38.8
JNKN7J	00	Z	850	6	36.5	36.2
KJJF9X	12	Z	850	2	5.1	-5.1
KJJF9X	00	Z	850	2	21.8	-19.1
KMPLHP	12	Z	850	10	49.1	41.8
KMPLHP	00	Z	850	9	45.3	30.9
LAGY8	00	Z	850	1	0.0	0.0
LAGZ8	12	Z	850	1	79.9	79.9
LAGZ8	00	Z	850	1	86.7	86.7
LRQE3	12	Z	850	5	3.9	-0.6
LRQE3	00	Z	850	6	8.0	-4.2
UXK5JT	12	Z	850	7	8.4	1.2
UXK5JT	00	Z	850	6	4.2	-1.0
WDK38H	12	Z	850	20	9.5	-2.9
XKQLWQ	12	Z	850	25	17.6	16.3
YLV96W	12	Z	850	10	7.3	1.4
YLV96W	00	Z	850	10	4.9	-1.0
ZVQEQC	12	Z	850	1	2.5	2.5
ZVQEQC	00	Z	850	1	1.3	1.3

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 : AUG 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	00	V	850	30	3.8	0.1	-0.6
01001	12	V	850	31	3.0	0.2	-0.4
01028	00	V	850	30	2.0	-0.4	0.3
01028	12	V	850	31	2.7	-0.1	0.2
01400	12	V	850	30	2.3	0.3	-0.3
01400	00	V	850	29	2.3	0.2	-0.1
01415	12	V	850	30	2.7	-0.2	0.2
01415	00	V	850	30	2.3	0.0	0.3
02365	00	V	850	31	3.0	0.4	0.1
02365	12	V	850	29	2.7	-0.1	0.1
02591	12	V	850	29	2.8	0.4	-0.3
02591	00	V	850	28	2.3	0.2	0.3
02836	12	V	850	31	2.9	0.5	0.3
02836	00	V	850	31	2.3	-0.6	0.2
02963	12	V	850	31	2.3	0.2	-0.4
02963	00	V	850	29	2.0	-0.3	0.2
03005	00	V	850	26	3.0	-0.9	0.1
03005	12	V	850	31	2.8	-0.7	-0.4
03238	00	V	850	30	2.3	0.2	0.2
03238	12	V	850	6	3.2	-0.7	0.5
03808	12	V	850	31	2.1	0.5	0.1
03808	00	V	850	29	2.3	0.0	0.0
03918	12	V	850	3	2.6	0.0	0.8
03918	00	V	850	31	2.4	0.1	0.2
03953	00	V	850	31	3.1	0.3	0.2
03953	12	V	850	31	2.8	0.2	0.0
04018	00	V	850	28	2.8	-0.6	0.5
04018	12	V	850	27	2.4	-0.3	0.0
04220	12	V	850	31	3.0	0.4	0.0
04220	00	V	850	31	3.1	-0.4	0.8
04270	12	V	850	30	2.7	-0.2	-0.2
04270	00	V	850	31	2.7	0.4	0.3
04320	12	V	850	31	3.6	-0.4	-0.6
04320	00	V	850	31	2.7	-0.2	-0.3
043207	12	V	850	1	17.1	12.6	11.5
04339	00	V	850	30	2.9	-0.3	0.1
04339	12	V	850	31	3.2	1.0	0.8
04360	12	V	850	25	2.9	0.6	0.0
04360	00	V	850	23	3.2	-0.2	-0.4

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06011	00	V	850	1	2.0	-0.5	-1.9
06011	12	V	850	31	3.0	-0.2	-0.5
06260	12	V	850	6	2.9	-0.9	0.1
06260	00	V	850	30	2.3	0.1	-0.2
06610	12	V	850	31	3.1	0.7	0.8
06610	00	V	850	31	2.6	0.9	0.2
07110	12	V	850	28	3.0	-0.9	-0.6
07110	00	V	850	29	2.5	0.5	-0.3
07510	00	V	850	31	3.0	-0.4	0.3
07510	12	V	850	31	2.9	0.4	0.1
07645	00	V	850	29	3.0	-0.3	0.4
07645	12	V	850	28	2.6	0.2	0.3
07761	12	V	850	31	3.5	0.0	-0.1
07761	00	V	850	31	3.0	0.5	0.6
08001	12	V	850	31	2.1	0.6	-0.3
08001	00	V	850	31	2.2	0.7	0.2
08221	12	V	850	31	2.7	-0.4	0.2
08221	00	V	850	28	2.9	-0.1	0.4
08302	00	V	850	31	2.5	0.1	0.6
08302	12	V	850	31	4.1	0.1	0.5
08508	12	V	850	31	2.7	-0.5	-0.2
08522	12	V	850	31	2.9	-1.0	0.3
085220	00	V	850	1	16.8	3.8	16.4
10035	00	V	850	31	2.5	0.0	-0.1
10035	12	V	850	30	2.0	0.2	-0.3
10393	00	V	850	31	2.7	-0.1	-0.5
10393	12	V	850	31	2.1	0.5	0.3
10410	00	V	850	23	2.9	0.6	0.6
10410	12	V	850	25	3.0	0.5	-0.2
10739	12	V	850	31	2.3	0.4	0.3
10739	00	V	850	31	2.5	0.3	0.4
11035	00	V	850	30	2.4	0.4	-0.2
11035	12	V	850	30	3.6	-0.1	-0.3
12982	00	V	850	30	4.2	0.6	-0.6
12982	12	V	850	31	2.9	0.1	0.0
16245	12	V	850	30	3.1	0.3	-0.4
16245	00	V	850	31	2.4	-0.4	0.3
16429	00	V	850	31	2.5	-0.1	0.0
16429	12	V	850	31	2.1	-0.4	0.0
16622	12	V	850	2	1.6	-0.4	-1.3
16622	00	V	850	27	3.1	0.3	-0.5
16754	00	V	850	31	2.7	-0.3	-0.8
17607	12	V	850	17	2.6	0.3	0.0

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
26435	12	V	850	15	2.8	0.1	0.1
2EERVT	00	V	850	5	1.6	-1.0	-0.4
2EERVT	12	V	850	7	1.7	0.6	-0.2
60018	12	V	850	31	3.2	0.6	-0.2
60018	00	V	850	31	3.3	1.0	-0.3
7JUNA4	12	V	850	8	2.3	0.8	0.8
7JUNA4	00	V	850	10	2.9	-1.7	-0.1
9ZT9MR	12	V	850	10	1.7	-0.4	0.0
9ZT9MR	00	V	850	6	7.5	3.1	0.4
ATGU3F	00	V	850	1	4.5	4.2	-1.7
BPMWB2	12	V	850	13	2.4	0.3	0.7
BPMWB2	00	V	850	13	2.6	0.8	-0.5
DBLK	12	V	850	26	2.7	-0.1	-0.5
FPUW5G	12	V	850	9	2.0	-0.4	-0.8
JNKN7J	12	V	850	5	1.9	-1.0	-0.1
JNKN7J	00	V	850	6	1.8	0.1	0.2
KJJF9X	12	V	850	2	1.0	0.7	0.5
KJJF9X	00	V	850	2	1.3	1.3	0.3
KMPLHP	12	V	850	10	2.1	-0.9	-0.2
KMPLHP	00	V	850	9	1.9	-0.4	-0.1
LAGY8	00	V	850	1	3.4	-3.0	1.7
LAGZ8	12	V	850	1	2.4	-2.4	0.2
LAGZ8	00	V	850	1	2.9	-0.7	-2.8
LRYQE3	12	V	850	5	1.9	-1.0	0.5
LRYQE3	00	V	850	6	2.7	-0.5	-0.4
UXK5JT	12	V	850	7	2.6	1.0	0.9
UXK5JT	00	V	850	6	1.8	-0.2	0.1
WDK38H	12	V	850	20	2.5	-0.3	0.5
XKQLWQ	12	V	850	24	2.9	0.3	0.5
YLV96W	12	V	850	10	1.7	0.0	-0.5
YLV96W	00	V	850	10	2.3	0.5	0.3
ZVQEQC	12	V	850	1	1.3	0.9	-0.9
ZVQEQC	00	V	850	1	0.7	0.1	-0.7

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 : AUG 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
03380	99	P	SUR	54	0	1488	0	0.3	-0.2	0.3
1300001	99	P	SUR	11	-23	600	0	0.5	0.0	0.5
1300008	99	P	SUR	15	-38	606	0	0.3	0.0	0.3
1300130	99	P	SUR	28	-16	735	0	0.4	0.2	0.5
1300131	99	P	SUR	28	-17	736	0	0.5	0.3	0.5
1301608	99	P	SUR	33	-55	743	0	0.4	0.0	0.4
1301619	99	P	SUR	38	-26	743	0	0.3	-0.2	0.4
1301629	99	P	SUR	20	-40	743	0	0.4	0.0	0.4
1301700	99	P	SUR	22	-55	736	0	0.3	-0.1	0.3
1301706	99	P	SUR	20	-66	736	0	0.4	0.0	0.4
1301712	99	P	SUR	20	-62	736	0	0.4	0.0	0.4
1301713	99	P	SUR	20	-67	735	0	0.5	0.1	0.5
1301714	99	P	SUR	24	-53	736	0	0.3	0.2	0.4
1301718	99	P	SUR	26	-47	735	0	0.4	0.2	0.4
1301719	99	P	SUR	25	-58	736	0	0.4	0.7	0.8
1301720	99	P	SUR	22	-36	736	0	0.3	0.0	0.3
1301723	99	P	SUR	18	-28	736	0	0.3	0.7	0.7
1301725	99	P	SUR	23	-31	736	0	0.3	0.1	0.3
1301726	99	P	SUR	20	-33	736	0	0.4	0.0	0.4
1301731	99	P	SUR	23	-32	733	0	0.3	0.2	0.4
1301735	99	P	SUR	29	-39	736	0	0.3	-0.7	0.7
1301736	99	P	SUR	27	-40	735	0	0.3	0.3	0.4
1301737	99	P	SUR	28	-61	735	0	0.4	0.1	0.4
1301767	99	P	SUR	33	-16	735	0	0.3	-0.3	0.4
1301769	99	P	SUR	32	-16	733	0	0.3	1.3	1.4
1301770	99	P	SUR	32	-15	734	0	0.3	0.2	0.4
1301771	99	P	SUR	33	-15	734	0	0.3	0.2	0.3
1301774	99	P	SUR	39	-54	201	0	1.1	0.1	1.1
1301775	99	P	SUR	38	-57	60	0	0.7	0.0	0.7
1301776	99	P	SUR	43	-27	29	0	0.3	0.2	0.3
1301777	99	P	SUR	41	-38	85	0	0.5	0.2	0.5
1301778	99	P	SUR	31	-20	733	0	0.3	0.1	0.3
1301779	99	P	SUR	19	-52	734	0	0.3	0.1	0.3
1301783	99	P	SUR	19	-54	735	0	0.3	0.4	0.5
1301792	99	P	SUR	18	-39	719	0	0.3	-0.7	0.7
1301793	99	P	SUR	55	-19	725	0	0.3	0.0	0.3

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
1301794	99	P	SUR	41	-21	723	0	0.3	0.3	0.5
1301795	99	P	SUR	12	-32	722	0	0.5	-0.3	0.5
1301796	99	P	SUR	15	-32	715	0	0.3	0.0	0.3
1301797	99	P	SUR	16	-33	712	0	0.3	0.0	0.3
1301798	99	P	SUR	36	-22	733	0	0.3	0.3	0.4
1301799	99	P	SUR	29	-29	729	0	0.3	0.2	0.3
1501637	99	P	SUR	10	-41	743	0	0.4	-0.1	0.4
1501638	99	P	SUR	12	-20	744	0	0.5	-0.1	0.5
1701715	99	P	SUR	13	-42	713	0	0.4	-0.3	0.5
1701716	99	P	SUR	10	-37	726	0	0.4	-0.4	0.5
1801556	99	P	SUR	22	-66	2968	0	0.4	0.2	0.4
1801560	99	P	SUR	15	-58	1022	0	0.4	0.0	0.4
1801584	99	P	SUR	18	-65	1065	0	1.4	0.5	1.5
1801585	99	P	SUR	27	-63	3371	0	0.4	0.4	0.5
1801681	99	P	SUR	36	14	731	0	0.3	-0.1	0.3
1801693	99	P	SUR	61	-11	107	0	0.3	0.0	0.3
1801735	99	P	SUR	49	-8	734	0	0.3	0.2	0.4
2601716	99	P	SUR	84	39	46	0	0.9	-0.2	0.9
2801966	99	P	SUR	35	15	10	0	0.4	0.2	0.5
2801981	99	P	SUR	63	-18	695	0	0.4	-0.3	0.5
2802061	99	P	SUR	84	34	388	0	0.3	-0.2	0.4
2802074	99	P	SUR	55	-57	723	0	0.4	0.1	0.4
2802075	99	P	SUR	54	-55	744	0	0.3	-0.1	0.3
3801550	99	P	SUR	82	-12	743	0	0.4	-0.5	0.7
3801576	99	P	SUR	35	14	9	0	0.3	-0.4	0.5
3801586	99	P	SUR	75	15	732	0	0.3	-0.6	0.6
3801588	99	P	SUR	78	6	734	0	0.4	0.1	0.4
3801596	99	P	SUR	38	-42	734	0	0.3	-0.1	0.3
4100040	99	P	SUR	15	-53	4422	0	0.4	-0.5	0.6
4100043	99	P	SUR	21	-65	4428	0	0.4	-0.3	0.5
4100044	99	P	SUR	22	-59	4428	0	0.3	-0.5	0.6
4100046	99	P	SUR	24	-68	4434	0	0.6	0.1	0.6
4100048	99	P	SUR	32	-70	4430	1	0.8	-0.3	0.9
4100049	99	P	SUR	28	-63	4427	0	0.4	-0.3	0.5
4100052	99	P	SUR	18	-65	4030	0	0.4	-1.1	1.1
4100053	99	P	SUR	18	-66	4075	0	0.4	-0.8	0.9
4100056	99	P	SUR	18	-65	1894	0	0.3	-1.0	1.0
4100139	99	P	SUR	20	-38	720	0	0.4	0.1	0.4
4100300	99	P	SUR	16	-57	699	0	0.4	0.0	0.4
4101616	99	P	SUR	31	-37	49	0	0.7	-1.3	1.5
4101618	99	P	SUR	30	-51	616	0	0.4	0.3	0.5
4101663	99	P	SUR	26	-37	678	0	0.3	0.0	0.3
4101665	99	P	SUR	68	4	711	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
4101696	99	P	SUR	27	-36	744	0	0.3	0.0	0.3
4101717	99	P	SUR	16	-62	741	0	0.4	-1.3	1.4
4101719	99	P	SUR	22	-24	744	0	0.3	0.0	0.3
4101723	99	P	SUR	25	-69	744	0	0.4	0.2	0.5
4101724	99	P	SUR	34	-63	64	0	1.2	1.2	1.6
4101725	99	P	SUR	18	-63	742	0	0.4	-0.1	0.4
4101727	99	P	SUR	24	-32	744	0	1.0	0.1	1.0
4101728	99	P	SUR	32	-43	744	0	0.3	0.2	0.4
4101729	99	P	SUR	29	-51	744	0	0.3	0.0	0.3
4101730	99	P	SUR	12	-20	744	0	0.5	0.1	0.5
4101743	99	P	SUR	41	-24	744	0	0.4	-0.1	0.4
4101753	99	P	SUR	31	-46	743	0	0.3	0.3	0.4
4101755	99	P	SUR	36	-56	744	0	0.3	0.0	0.3
4101756	99	P	SUR	12	-62	590	0	0.4	-0.8	1.0
4101842	99	P	SUR	69	16	723	0	0.3	-0.4	0.5
4101843	99	P	SUR	74	11	736	0	0.3	-0.2	0.3
4101845	99	P	SUR	71	2	736	0	0.4	0.0	0.4
4101851	99	P	SUR	28	-54	735	0	0.4	-0.3	0.5
4102547	99	P	SUR	24	-62	731	0	0.4	0.4	0.5
4102552	99	P	SUR	14	-61	125	0	0.5	0.0	0.5
4102557	99	P	SUR	14	-61	577	0	0.4	0.1	0.4
4102559	99	P	SUR	42	-60	451	0	0.5	-0.2	0.5
4102561	99	P	SUR	15	-62	734	0	0.4	0.1	0.4
4102636	99	P	SUR	28	-64	685	0	0.4	0.3	0.5
41040	99	P	SUR	15	-53	742	0	0.4	-0.5	0.6
41043	99	P	SUR	21	-65	732	0	0.4	-0.3	0.5
41044	99	P	SUR	22	-59	741	0	0.3	-0.6	0.7
41046	99	P	SUR	24	-68	742	0	0.6	0.1	0.6
41048	99	P	SUR	32	-70	742	1	1.0	-0.3	1.0
41049	99	P	SUR	28	-63	741	0	0.4	-0.3	0.5
41052	99	P	SUR	18	-65	739	0	0.4	-1.0	1.1
41053	99	P	SUR	19	-66	744	0	0.4	-0.8	0.9
41056	99	P	SUR	18	-66	620	0	0.4	-1.0	1.0
4200059	99	P	SUR	15	-67	4430	0	0.4	-0.4	0.6
4200060	99	P	SUR	16	-63	4428	0	0.3	-0.4	0.5
4200085	99	P	SUR	18	-67	3223	0	0.4	-0.8	0.9
42059	99	P	SUR	15	-68	742	0	0.4	-0.4	0.6
42060	99	P	SUR	16	-63	742	0	0.4	-0.4	0.5
42085	99	P	SUR	18	-67	733	0	0.4	-0.8	0.9
4400005	99	P	SUR	43	-69	4429	0	0.5	-0.3	0.5
4400008	99	P	SUR	40	-69	4427	0	0.4	-0.6	0.8
4400011	99	P	SUR	41	-67	4429	0	0.5	-0.5	0.7
4400032	99	P	SUR	44	-69	665	0	0.5	-0.9	1.0

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
4400033	99	P	SUR	44	-69	665	0	0.4	-0.9	1.0
4400034	99	P	SUR	44	-68	433	0	0.5	-0.3	0.5
4400037	99	P	SUR	43	-68	344	0	0.5	-0.3	0.6
4400150	99	P	SUR	43	-64	728	0	0.4	0.0	0.4
4400488	99	P	SUR	45	-61	703	0	0.4	0.2	0.4
4400489	99	P	SUR	45	-61	704	0	0.4	0.2	0.4
44005	99	P	SUR	43	-69	742	0	0.5	-0.3	0.5
44008	99	P	SUR	41	-69	741	0	0.4	-0.6	0.8
44011	99	P	SUR	41	-67	742	0	0.5	-0.5	0.7
4401581	99	P	SUR	33	-66	743	0	0.7	-0.1	0.7
4401582	99	P	SUR	26	-38	743	0	0.3	0.4	0.5
4401584	99	P	SUR	30	-47	744	0	0.4	0.0	0.4
4401585	99	P	SUR	24	-52	743	0	0.4	0.0	0.4
4401587	99	P	SUR	79	11	743	1	0.4	0.0	0.4
4401588	99	P	SUR	68	11	743	0	0.3	-0.1	0.3
4401864	99	P	SUR	27	-65	736	0	0.4	-0.1	0.4
4402603	99	P	SUR	68	12	735	0	0.3	-0.7	0.8
4402606	99	P	SUR	66	7	736	0	0.3	0.1	0.3
4402613	99	P	SUR	39	-18	735	0	0.3	-0.3	0.4
4402618	99	P	SUR	29	-59	735	0	0.4	0.3	0.5
4402656	99	P	SUR	32	-37	734	0	0.3	0.2	0.3
4402660	99	P	SUR	25	-43	734	0	0.3	0.4	0.5
4402663	99	P	SUR	41	-10	732	0	0.3	0.0	0.3
4402670	99	P	SUR	20	-50	736	0	0.3	-0.2	0.3
4402672	99	P	SUR	21	-52	736	0	0.3	0.0	0.3
4402674	99	P	SUR	24	-68	736	0	0.4	0.4	0.5
4402675	99	P	SUR	22	-39	736	0	0.4	0.0	0.4
4402676	99	P	SUR	32	-35	736	0	0.3	0.2	0.3
4402721	99	P	SUR	43	-10	736	0	0.2	0.3	0.4
4402726	99	P	SUR	53	-35	732	0	0.4	0.1	0.4
4402727	99	P	SUR	65	9	735	0	0.3	-0.1	0.3
4402729	99	P	SUR	50	-49	736	0	0.4	0.2	0.4
4402730	99	P	SUR	48	-47	734	0	0.5	-0.1	0.5
4402731	99	P	SUR	55	-52	735	0	0.3	0.1	0.3
4402732	99	P	SUR	47	-30	732	0	0.3	0.0	0.3
4402733	99	P	SUR	45	-52	734	0	0.4	0.2	0.5
4402735	99	P	SUR	51	-38	734	0	0.4	-0.1	0.4
4402736	99	P	SUR	44	-25	734	0	0.3	-0.1	0.3
4402737	99	P	SUR	53	-46	734	0	0.3	-0.1	0.3
4402738	99	P	SUR	53	-53	734	0	0.4	-0.9	1.0
4402739	99	P	SUR	49	-49	734	0	0.4	0.1	0.4
4402740	99	P	SUR	54	-53	733	0	0.3	0.2	0.4
4402741	99	P	SUR	50	-48	734	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
4402742	99	P	SUR	48	-25	734	0	0.3	-0.2	0.4
4402743	99	P	SUR	46	-42	730	0	0.4	-0.6	0.7
4402744	99	P	SUR	42	-63	735	0	0.4	0.1	0.4
4402746	99	P	SUR	46	-16	733	0	0.4	-0.1	0.4
4402747	99	P	SUR	48	-41	731	0	0.5	0.0	0.5
4402749	99	P	SUR	54	-39	736	0	0.3	0.0	0.3
4402750	99	P	SUR	56	-40	736	0	0.3	-0.3	0.5
4402878	99	P	SUR	41	-59	717	0	0.5	0.5	0.7
4402879	99	P	SUR	35	-60	686	0	0.4	0.5	0.6
4402880	99	P	SUR	38	-33	673	0	0.3	0.5	0.6
4402881	99	P	SUR	49	-28	94	0	0.4	0.2	0.5
4402882	99	P	SUR	26	-65	729	0	0.4	0.5	0.7
4402884	99	P	SUR	27	-69	725	0	0.7	0.4	0.8
44032	99	P	SUR	44	-69	670	0	0.5	-0.9	1.0
44033	99	P	SUR	44	-69	670	0	0.4	-0.9	1.0
44034	99	P	SUR	44	-68	437	0	0.5	-0.3	0.6
4403557	99	P	SUR	59	6	733	0	0.3	-0.4	0.5
4403558	99	P	SUR	47	-6	744	0	0.3	0.0	0.3
4403568	99	P	SUR	39	-36	744	0	0.3	0.2	0.4
4403569	99	P	SUR	45	-23	744	0	0.3	-0.1	0.4
44037	99	P	SUR	44	-68	347	0	0.5	-0.3	0.6
44078	99	P	SUR	60	-40	343	0	0.4	-0.6	0.7
44150	99	P	SUR	43	-64	723	0	0.4	0.0	0.4
44258	99	P	SUR	45	-63	742	0	0.4	0.1	0.4
44488	99	P	SUR	45	-61	743	0	0.4	0.2	0.4
44489	99	P	SUR	46	-61	743	0	0.4	0.2	0.4
4601782	99	P	SUR	33	-18	734	0	0.3	0.5	0.5
4601812	99	P	SUR	78	-5	734	0	0.4	0.1	0.5
4601818	99	P	SUR	86	-10	734	0	0.4	0.0	0.4
4701518	99	P	SUR	75	-19	711	0	0.4	-0.2	0.5
4701738	99	P	SUR	70	-67	543	543	0.0	0.0	0.0
4801663	99	P	SUR	83	-56	712	0	0.4	-0.5	0.7
4801723	99	P	SUR	77	22	734	0	0.4	-0.2	0.4
4801763	99	P	SUR	84	-30	737	0	0.5	-0.9	1.1
4801771	99	P	SUR	68	-57	743	0	1.3	-0.4	1.4
4802506	99	P	SUR	55	-29	743	0	0.4	0.0	0.4
4802602	99	P	SUR	59	-39	711	0	0.3	0.1	0.3
4802603	99	P	SUR	87	27	711	0	0.4	-0.3	0.5
4802663	99	P	SUR	71	-61	743	0	0.3	-0.2	0.4
4803914	99	P	SUR	25	-65	3212	0	0.3	0.3	0.5
4803978	99	P	SUR	83	-20	395	0	0.4	-0.6	0.7
4804002	99	P	SUR	35	14	9	0	0.6	-0.5	0.8
5801958	99	P	SUR	21	-67	665	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
5801959	99	P	SUR	20	-56	2826	0	0.3	0.2	0.4
5801987	99	P	SUR	78	5	653	0	0.4	0.0	0.4
5802034	99	P	SUR	48	-9	735	0	0.3	-0.1	0.3
5802068	99	P	SUR	53	-56	744	0	0.3	0.3	0.4
6100001	99	P	SUR	43	8	525	0	0.4	0.2	0.4
6100002	99	P	SUR	42	5	724	0	0.4	0.0	0.4
6100196	99	P	SUR	42	4	735	0	0.4	0.2	0.5
6100197	99	P	SUR	40	4	734	0	0.4	0.6	0.8
6100198	99	P	SUR	37	-2	734	0	0.3	0.7	0.7
6100280	99	P	SUR	41	1	731	0	0.4	0.4	0.5
6100281	99	P	SUR	40	0	731	0	0.5	0.4	0.6
6100417	99	P	SUR	38	0	60	9	1.8	0.5	1.8
6100430	99	P	SUR	40	2	734	0	0.4	0.4	0.5
6101007	99	P	SUR	36	25	70	0	0.5	-0.3	0.5
6101009	99	P	SUR	35	25	128	0	0.4	-0.5	0.6
6101031	99	P	SUR	42	8	741	0	0.4	0.2	0.4
6102732	99	P	SUR	32	20	733	157	0.3	-0.1	0.3
6102809	99	P	SUR	32	15	162	0	0.3	-3.6	3.6
6102810	99	P	SUR	40	4	733	0	0.6	0.1	0.6
6102812	99	P	SUR	38	7	734	0	0.4	-0.1	0.4
6200001	99	P	SUR	45	-5	743	0	0.3	0.0	0.3
6200024	99	P	SUR	44	-3	733	0	0.3	0.4	0.5
6200025	99	P	SUR	44	-6	733	0	0.4	0.3	0.5
6200029	99	P	SUR	49	-12	738	0	0.3	-0.3	0.4
6200050	99	P	SUR	50	-4	744	0	0.3	0.0	0.3
6200081	99	P	SUR	51	-13	743	0	0.3	-0.1	0.3
6200082	99	P	SUR	44	-8	676	0	0.4	0.2	0.4
6200083	99	P	SUR	43	-9	732	0	0.4	0.3	0.5
6200084	99	P	SUR	42	-9	732	0	0.3	0.6	0.7
6200085	99	P	SUR	36	-7	733	0	0.4	0.4	0.6
6200086	99	P	SUR	55	6	372	0	0.3	-0.3	0.4
6200087	99	P	SUR	55	7	190	0	0.3	-0.3	0.5
6200091	99	P	SUR	53	-5	740	0	0.3	0.0	0.3
6200092	99	P	SUR	51	-11	741	0	0.3	-0.1	0.3
6200093	99	P	SUR	55	-10	724	0	0.3	-0.1	0.3
6200094	99	P	SUR	52	-7	741	0	0.4	0.0	0.4
6200095	99	P	SUR	53	-16	725	0	0.4	-0.3	0.5
6200103	99	P	SUR	50	-3	744	0	0.3	-0.3	0.4
6200163	99	P	SUR	47	-8	744	0	0.3	-0.1	0.3
6200191	99	P	SUR	41	-10	737	0	0.3	-0.4	0.5
6200192	99	P	SUR	40	-10	739	0	0.5	0.2	0.5
6200199	99	P	SUR	40	-9	734	0	0.4	0.0	0.4
6200200	99	P	SUR	36	-8	298	0	0.3	-0.4	0.5

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
6201065	99	P	SUR	54	7	742	0	0.3	1.2	1.3
6201066	99	P	SUR	55	7	349	0	0.3	0.3	0.4
6201081	99	P	SUR	38	-9	738	0	0.3	-0.4	0.5
6202597	99	P	SUR	47	-31	744	0	0.3	0.0	0.3
6202598	99	P	SUR	43	-38	744	0	0.3	-0.1	0.3
6202623	99	P	SUR	72	37	744	0	0.3	-0.2	0.4
6202627	99	P	SUR	67	13	572	0	0.3	-0.2	0.4
6202637	99	P	SUR	67	-10	744	0	0.3	0.0	0.3
6202639	99	P	SUR	29	-36	692	0	0.3	-0.1	0.3
6202640	99	P	SUR	33	-23	591	0	0.2	-0.1	0.3
6202644	99	P	SUR	41	-35	526	0	1.1	-0.5	1.2
62029	99	P	SUR	49	-12	1479	0	0.3	-0.3	0.4
6203516	99	P	SUR	43	-16	598	0	0.3	0.0	0.3
6203607	99	P	SUR	34	-30	744	0	0.3	0.1	0.4
6203612	99	P	SUR	31	-59	744	0	0.4	0.3	0.5
6203613	99	P	SUR	47	-16	744	0	0.3	0.0	0.3
6203621	99	P	SUR	27	-31	743	0	0.3	0.0	0.3
6203624	99	P	SUR	34	-56	744	0	1.3	-0.2	1.3
6203625	99	P	SUR	29	-32	744	0	0.3	-0.2	0.4
6203632	99	P	SUR	25	-49	744	0	0.4	0.2	0.5
6203634	99	P	SUR	28	-38	744	0	0.3	0.3	0.4
6203639	99	P	SUR	31	-26	743	0	0.3	-0.1	0.3
6203640	99	P	SUR	28	-67	742	0	0.4	-0.2	0.4
6203651	99	P	SUR	45	-20	741	0	0.3	0.2	0.3
6203658	99	P	SUR	88	10	15	15	0.0	0.0	0.0
6203659	99	P	SUR	89	7	744	0	0.4	-0.1	0.4
6203660	99	P	SUR	89	7	744	0	0.4	-0.2	0.4
6203665	99	P	SUR	87	35	744	0	0.3	-0.1	0.4
6203669	99	P	SUR	83	13	744	0	0.4	-0.2	0.5
6203737	99	P	SUR	21	-53	736	0	0.3	0.4	0.5
6203741	99	P	SUR	62	-4	734	0	0.3	0.0	0.3
6203744	99	P	SUR	71	10	734	0	0.3	0.2	0.4
6203753	99	P	SUR	59	-51	736	0	0.3	-0.2	0.4
6203755	99	P	SUR	31	-15	734	0	0.4	-0.3	0.5
6203768	99	P	SUR	30	-22	736	0	0.2	0.3	0.4
6203771	99	P	SUR	25	-38	736	0	0.3	0.1	0.3
6203773	99	P	SUR	31	-58	736	0	0.4	-0.5	0.6
6203776	99	P	SUR	27	-30	239	0	0.3	0.0	0.3
6203825	99	P	SUR	66	-11	735	0	0.3	0.1	0.3
6203827	99	P	SUR	66	12	733	0	0.3	-0.2	0.3
6203838	99	P	SUR	21	-68	735	0	0.4	0.4	0.6
6203839	99	P	SUR	28	-54	735	0	0.3	0.0	0.3
6203840	99	P	SUR	24	-43	736	0	0.3	0.2	0.4

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
6203842	99	P	SUR	32	-25	736	0	0.3	0.1	0.3
6203844	99	P	SUR	43	-22	735	0	0.3	0.4	0.5
6203845	99	P	SUR	56	-7	736	0	0.3	0.0	0.3
6203846	99	P	SUR	32	-29	736	0	0.3	-0.1	0.3
6203848	99	P	SUR	54	-26	735	0	0.4	-0.1	0.4
6203849	99	P	SUR	24	-34	734	0	0.3	0.1	0.3
6203853	99	P	SUR	70	6	736	0	0.3	0.0	0.3
6203854	99	P	SUR	63	-27	734	0	0.3	0.1	0.3
6203855	99	P	SUR	68	12	734	0	0.3	-0.3	0.4
6203859	99	P	SUR	15	-24	165	0	0.4	-9.1	9.1
6203861	99	P	SUR	22	-32	738	0	0.4	0.1	0.4
6203864	99	P	SUR	66	-1	734	0	0.3	-0.1	0.3
6203865	99	P	SUR	64	-34	735	0	0.3	0.0	0.3
6203866	99	P	SUR	69	15	734	0	0.3	0.0	0.3
6204603	99	P	SUR	41	6	715	0	0.4	0.6	0.7
6204604	99	P	SUR	39	2	708	0	0.4	-0.7	0.8
6204605	99	P	SUR	41	3	720	395	1.3	13.3	13.4
6204607	99	P	SUR	40	4	728	0	0.4	0.2	0.5
6204608	99	P	SUR	40	0	130	3	2.3	-0.8	2.4
6204609	99	P	SUR	39	0	684	0	0.4	-0.5	0.7
62050	99	P	SUR	50	-4	1488	0	0.3	0.0	0.3
62081	99	P	SUR	51	-13	1488	0	0.3	-0.1	0.3
62091	99	P	SUR	53	-5	740	0	0.3	0.0	0.3
62092	99	P	SUR	51	-11	740	0	0.3	-0.1	0.3
62093	99	P	SUR	55	-10	723	0	0.3	-0.1	0.3
62094	99	P	SUR	52	-7	740	0	0.4	0.0	0.4
62095	99	P	SUR	53	-16	724	0	0.4	-0.3	0.5
62102	99	P	SUR	58	2	1480	0	0.3	0.2	0.4
62103	99	P	SUR	50	-3	1488	0	0.4	-0.3	0.5
62104	99	P	SUR	57	1	1488	0	0.3	0.1	0.3
62105	99	P	SUR	55	-13	1486	0	0.3	-0.2	0.4
62107	99	P	SUR	50	-6	1243	0	0.3	-0.1	0.4
62112	99	P	SUR	58	0	1488	0	0.3	0.4	0.5
62113	99	P	SUR	58	0	1488	0	0.4	0.0	0.4
62114	99	P	SUR	58	0	1488	0	0.3	0.4	0.5
62115	99	P	SUR	58	-3	1441	0	0.2	0.1	0.3
62116	99	P	SUR	58	1	1488	0	0.3	0.1	0.3
62118	99	P	SUR	58	1	1478	0	0.2	0.5	0.6
62119	99	P	SUR	57	2	1488	0	0.3	0.0	0.3
62120	99	P	SUR	56	2	1486	0	0.3	0.1	0.3
62121	99	P	SUR	54	3	1488	0	0.4	0.3	0.5
62122	99	P	SUR	57	2	1486	0	0.3	0.2	0.4
62124	99	P	SUR	54	-4	502	0	0.2	0.1	0.3

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	1488	0	0.2	0.8	0.8
62129	99	P	SUR	58	0	1488	0	0.3	0.1	0.3
62130	99	P	SUR	59	1	1488	0	0.3	0.1	0.4
62131	99	P	SUR	54	1	1464	0	0.3	0.6	0.6
62132	99	P	SUR	56	2	1484	0	0.4	0.6	0.7
62133	99	P	SUR	57	1	1488	0	0.4	0.2	0.4
62134	99	P	SUR	58	1	1488	0	0.3	0.6	0.7
62140	99	P	SUR	57	1	1480	0	0.3	0.2	0.4
62141	99	P	SUR	56	-3	1484	0	0.5	0.8	0.9
62143	99	P	SUR	58	2	1482	0	0.3	0.7	0.8
62144	99	P	SUR	53	2	1440	0	0.3	0.3	0.5
62145	99	P	SUR	53	3	1488	0	0.3	0.5	0.5
62146	99	P	SUR	57	2	1478	0	0.3	0.0	0.3
62148	99	P	SUR	54	2	1428	0	0.3	0.6	0.7
62149	99	P	SUR	54	1	1488	0	0.3	0.8	0.9
62151	99	P	SUR	57	2	864	0	0.3	0.3	0.4
62152	99	P	SUR	57	2	1464	0	0.3	0.4	0.5
62153	99	P	SUR	57	2	1340	0	0.3	0.4	0.5
62154	99	P	SUR	56	2	1488	0	0.3	0.1	0.4
62155	99	P	SUR	58	1	1478	0	0.3	0.5	0.5
62157	99	P	SUR	58	0	1488	0	0.3	0.1	0.3
62160	99	P	SUR	57	2	1488	0	0.3	0.3	0.4
62161	99	P	SUR	58	1	1460	0	0.4	-0.1	0.4
62162	99	P	SUR	57	1	1412	0	0.3	0.2	0.3
62163	99	P	SUR	48	-9	1488	0	0.3	-0.1	0.3
62164	99	P	SUR	57	1	1488	0	0.3	0.6	0.7
62165	99	P	SUR	54	1	1486	0	0.4	0.4	0.5
62168	99	P	SUR	58	1	1488	0	0.3	0.2	0.3
62170	99	P	SUR	51	2	1487	0	0.3	0.0	0.3
62297	99	P	SUR	59	2	1488	0	0.3	0.2	0.4
62302	99	P	SUR	61	-2	1485	0	0.4	0.1	0.4
62304	99	P	SUR	51	2	1487	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	1393	0	0.3	-0.3	0.5
6301001	99	P	SUR	64	5	739	0	0.3	-0.1	0.3
6301004	99	P	SUR	72	20	267	0	0.3	-0.3	0.4
6301572	99	P	SUR	50	-24	744	0	0.8	0.0	0.8
6301575	99	P	SUR	54	-38	743	0	0.4	0.2	0.5
6301577	99	P	SUR	66	-6	744	0	0.3	-0.2	0.4
63055	99	P	SUR	61	2	1460	0	0.3	0.0	0.3
63056	99	P	SUR	60	2	1480	0	0.4	0.4	0.5
63057	99	P	SUR	59	2	1486	0	0.3	0.1	0.3
63058	99	P	SUR	53	2	811	0	0.3	0.1	0.3

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
63059	99	P	SUR	58	-1	1488	0	0.2	0.6	0.6
63101	99	P	SUR	61	1	1488	0	0.3	0.2	0.4
63102	99	P	SUR	61	1	1488	0	0.3	0.1	0.3
63103	99	P	SUR	61	1	1488	0	0.4	0.3	0.5
63108	99	P	SUR	61	2	1488	0	0.3	0.0	0.3
63109	99	P	SUR	60	2	1478	0	0.4	-0.2	0.4
63110	99	P	SUR	60	2	1478	0	0.3	-0.1	0.4
63111	99	P	SUR	61	2	1484	0	0.4	-0.1	0.4
63112	99	P	SUR	61	1	1478	0	0.4	-0.2	0.4
63115	99	P	SUR	62	1	1484	0	0.4	0.3	0.4
63117	99	P	SUR	61	1	1488	0	0.3	0.4	0.5
63118	99	P	SUR	58	1	1488	0	0.3	0.0	0.3
6400045	99	P	SUR	59	-12	695	0	0.3	-0.2	0.3
6400046	99	P	SUR	61	-4	741	0	0.3	-0.2	0.3
6401583	99	P	SUR	63	-36	742	0	0.3	0.2	0.4
6401584	99	P	SUR	67	-7	743	0	0.3	0.1	0.3
6401587	99	P	SUR	75	-19	661	1	0.5	0.0	0.5
6401590	99	P	SUR	70	32	744	0	0.3	-0.5	0.6
6401592	99	P	SUR	73	8	744	0	0.3	0.0	0.3
6401759	99	P	SUR	58	-34	743	0	0.3	-0.2	0.4
6401762	99	P	SUR	64	3	744	0	0.3	0.2	0.3
6401763	99	P	SUR	66	12	743	0	0.4	0.0	0.4
6402539	99	P	SUR	69	34	724	0	0.3	-0.2	0.4
6402551	99	P	SUR	49	-16	730	0	0.3	0.1	0.4
6402597	99	P	SUR	58	-25	731	0	0.3	-0.1	0.3
6402599	99	P	SUR	52	-49	1	1	0.0	0.0	0.0
6402615	99	P	SUR	19	-63	736	0	0.4	0.3	0.5
6402616	99	P	SUR	30	-43	736	0	0.4	-0.1	0.4
6402617	99	P	SUR	29	-45	736	0	0.3	0.4	0.5
6402618	99	P	SUR	24	-46	736	0	0.3	0.2	0.4
6402619	99	P	SUR	36	-15	736	0	0.3	0.1	0.3
6402620	99	P	SUR	43	-5	227	2	0.4	0.5	0.6
6402621	99	P	SUR	34	-13	736	0	0.3	0.5	0.6
6402622	99	P	SUR	32	-17	736	0	0.3	0.2	0.3
64041	99	P	SUR	61	-3	1485	0	0.3	0.2	0.4
64045	99	P	SUR	59	-12	1396	0	0.3	-0.2	0.3
64046	99	P	SUR	61	-4	1488	0	0.3	-0.2	0.3
6600021	99	P	SUR	55	14	223	0	0.4	-1.1	1.1
6600022	99	P	SUR	54	14	145	0	0.4	-0.3	0.5
6600023	99	P	SUR	55	11	373	0	0.3	-0.2	0.4
6600024	99	P	SUR	55	13	147	0	0.5	-1.4	1.5
6801791	99	P	SUR	38	-41	732	0	0.3	0.3	0.5
7801552	99	P	SUR	84	-19	743	0	0.4	-0.4	0.5

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
7801563	99	P	SUR	44	-69	732	0	0.5	0.2	0.5

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 : AUG 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
1300001	99	SPEED	SUR	11	-23	600	0	0	1.8	0.2	1.8
1300002	99	SPEED	SUR	20	-23	601	0	0	0.9	0.1	0.9
1300008	99	SPEED	SUR	15	-38	606	0	0	1.1	0.1	1.1
1300131	99	SPEED	SUR	28	-17	726	0	0	2.7	2.6	3.7
1801556	99	SPEED	SUR	22	-66	2968	0	0	1.1	-0.3	1.1
1801560	99	SPEED	SUR	15	-58	1022	0	0	1.3	-0.2	1.3
1801584	99	SPEED	SUR	18	-65	1065	0	0	2.4	-0.8	2.6
1801585	99	SPEED	SUR	27	-63	3371	0	0	1.2	-0.3	1.2
4100026	99	SPEED	SUR	12	-38	303	0	0	1.3	0.3	1.4
4100040	99	SPEED	SUR	15	-53	4426	0	0	1.0	0.0	1.0
4100043	99	SPEED	SUR	21	-65	4422	0	0	1.0	-0.2	1.0
4100044	99	SPEED	SUR	22	-59	4428	0	0	0.9	-0.2	0.9
4100046	99	SPEED	SUR	24	-68	4434	0	0	1.1	-0.2	1.2
4100048	99	SPEED	SUR	32	-70	4430	5	0	1.5	-0.4	1.6
4100049	99	SPEED	SUR	28	-63	4427	0	0	1.2	0.0	1.2
4100052	99	SPEED	SUR	18	-65	4063	0	0	1.1	-0.3	1.1
4100053	99	SPEED	SUR	18	-66	4039	0	0	1.4	0.3	1.4
4100056	99	SPEED	SUR	18	-65	1894	0	0	1.4	-0.5	1.5
4100139	99	SPEED	SUR	20	-38	720	0	0	0.9	-0.2	0.9
4100300	99	SPEED	SUR	16	-57	699	0	0	1.2	-0.3	1.2
41040	99	SPEED	SUR	15	-53	742	0	0	1.1	0.0	1.1
41043	99	SPEED	SUR	21	-65	732	0	0	1.1	-0.1	1.1
41044	99	SPEED	SUR	22	-59	741	0	0	1.0	-0.2	1.0
41046	99	SPEED	SUR	24	-68	742	0	0	1.2	-0.1	1.2
41048	99	SPEED	SUR	32	-70	742	2	0	1.8	-0.3	1.8
41049	99	SPEED	SUR	28	-63	741	0	0	1.2	0.0	1.2
41052	99	SPEED	SUR	18	-65	743	0	0	1.1	-0.2	1.1
41053	99	SPEED	SUR	19	-66	743	0	0	1.5	-0.2	1.5
41056	99	SPEED	SUR	18	-66	620	0	0	1.5	-0.6	1.6
4200059	99	SPEED	SUR	15	-67	4429	0	0	1.0	0.2	1.0
4200060	99	SPEED	SUR	16	-63	4424	0	0	1.1	0.1	1.1
4200085	99	SPEED	SUR	18	-67	3226	0	0	1.5	-0.2	1.5
42059	99	SPEED	SUR	15	-68	742	0	0	1.1	0.2	1.1
42060	99	SPEED	SUR	16	-63	741	0	0	1.2	0.2	1.2

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
42085	99	SPEED	SUR	18	-67	735	0	0	1.5	0.2	1.5
4400005	99	SPEED	SUR	43	-69	4428	0	0	1.3	-0.4	1.4
4400008	99	SPEED	SUR	40	-69	4424	0	0	1.5	-0.3	1.5
4400011	99	SPEED	SUR	41	-67	4428	0	0	1.3	-0.7	1.5
4400027	99	SPEED	SUR	44	-67	4433	0	0	1.2	-0.8	1.5
4400032	99	SPEED	SUR	44	-69	666	0	0	1.3	-0.3	1.3
4400033	99	SPEED	SUR	44	-69	665	0	0	1.4	-0.2	1.5
4400034	99	SPEED	SUR	44	-68	669	0	0	1.2	-1.2	1.7
4400037	99	SPEED	SUR	43	-68	107	0	0	1.1	-0.2	1.1
4400150	99	SPEED	SUR	43	-64	724	0	0	1.3	0.4	1.4
4400488	99	SPEED	SUR	45	-61	703	0	0	1.5	0.3	1.5
4400489	99	SPEED	SUR	45	-61	704	0	0	1.5	0.9	1.7
44005	99	SPEED	SUR	43	-69	742	0	0	1.4	-0.5	1.5
44008	99	SPEED	SUR	41	-69	741	0	0	1.5	-0.2	1.5
44011	99	SPEED	SUR	41	-67	742	0	0	1.3	-0.6	1.5
44027	99	SPEED	SUR	44	-67	742	0	0	1.2	-0.8	1.4
44032	99	SPEED	SUR	44	-69	671	0	0	1.3	-0.3	1.3
44033	99	SPEED	SUR	44	-69	670	0	0	1.5	-0.1	1.5
44034	99	SPEED	SUR	44	-68	674	0	0	1.2	-1.1	1.7
44037	99	SPEED	SUR	44	-68	107	0	0	1.1	-0.1	1.2
44078	99	SPEED	SUR	60	-40	343	0	0	1.2	-0.6	1.3
44150	99	SPEED	SUR	43	-64	719	0	0	1.3	0.4	1.4
44258	99	SPEED	SUR	45	-63	742	0	0	1.4	-0.2	1.4
44488	99	SPEED	SUR	45	-61	743	0	0	1.5	0.8	1.7
44489	99	SPEED	SUR	46	-61	743	0	0	1.5	1.0	1.8
4803914	99	SPEED	SUR	25	-65	3212	0	0	1.1	-0.6	1.2
5801958	99	SPEED	SUR	21	-67	665	0	0	1.4	-0.5	1.4
5801959	99	SPEED	SUR	20	-56	2826	0	0	0.9	-0.6	1.1
6100001	99	SPEED	SUR	43	8	735	0	0	1.6	0.0	1.6
6100002	99	SPEED	SUR	42	5	724	0	0	1.2	0.0	1.2
6100196	99	SPEED	SUR	42	4	715	0	0	1.4	-0.4	1.5
6100197	99	SPEED	SUR	40	4	686	0	0	1.4	-0.4	1.5
6100198	99	SPEED	SUR	37	-2	729	0	0	1.2	-0.6	1.4
6100280	99	SPEED	SUR	41	1	668	0	0	2.1	-1.2	2.4
6100281	99	SPEED	SUR	40	0	714	0	0	1.9	0.0	1.9
6100417	99	SPEED	SUR	38	0	55	0	0	2.6	-1.1	2.8
6100430	99	SPEED	SUR	40	2	723	0	0	1.4	-0.1	1.5
6101007	99	SPEED	SUR	36	25	71	0	0	1.5	-0.4	1.5
6101008	99	SPEED	SUR	37	22	131	0	0	2.4	-4.9	5.5
6101009	99	SPEED	SUR	35	25	128	0	0	1.4	1.2	1.8
6101031	99	SPEED	SUR	42	8	741	0	0	1.3	-0.6	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
6200001	99	SPEED	SUR	45	-5	742	0	0	1.1	-0.5	1.3
6200024	99	SPEED	SUR	44	-3	704	0	0	1.1	-0.8	1.4
6200025	99	SPEED	SUR	44	-6	728	0	0	1.3	-0.3	1.3
6200029	99	SPEED	SUR	49	-12	738	0	0	0.9	0.6	1.0
6200050	99	SPEED	SUR	50	-4	744	0	0	1.1	0.0	1.1
6200081	99	SPEED	SUR	51	-13	742	0	0	1.0	-0.1	1.0
6200082	99	SPEED	SUR	44	-8	675	0	0	1.2	-0.6	1.3
6200083	99	SPEED	SUR	43	-9	725	0	0	1.1	-0.6	1.2
6200084	99	SPEED	SUR	42	-9	721	0	0	1.0	-0.8	1.3
6200085	99	SPEED	SUR	36	-7	723	0	0	1.5	-1.0	1.8
6200086	99	SPEED	SUR	55	6	372	0	0	1.6	1.1	2.0
6200087	99	SPEED	SUR	55	7	191	0	0	1.5	1.1	1.9
6200091	99	SPEED	SUR	53	-5	740	0	0	1.3	0.3	1.3
6200092	99	SPEED	SUR	51	-11	741	0	0	1.0	0.0	1.0
6200093	99	SPEED	SUR	55	-10	724	0	0	1.5	-0.2	1.5
6200094	99	SPEED	SUR	52	-7	741	0	0	1.2	0.3	1.2
6200095	99	SPEED	SUR	53	-16	725	0	0	1.1	-0.6	1.3
6200103	99	SPEED	SUR	50	-3	743	0	0	1.2	-0.3	1.2
6200163	99	SPEED	SUR	47	-8	744	0	0	0.9	-0.1	0.9
6200200	99	SPEED	SUR	36	-8	347	0	0	1.3	-0.2	1.3
6201065	99	SPEED	SUR	54	7	742	0	0	1.5	-0.8	1.7
6201066	99	SPEED	SUR	55	7	349	0	0	1.9	-0.2	1.9
6201081	99	SPEED	SUR	38	-9	111	0	0	2.7	0.2	2.7
62029	99	SPEED	SUR	49	-12	1479	0	0	0.9	0.6	1.1
62050	99	SPEED	SUR	50	-4	1488	0	0	1.1	0.4	1.2
62081	99	SPEED	SUR	51	-13	1486	0	0	1.0	0.5	1.1
62091	99	SPEED	SUR	53	-5	740	0	0	1.3	0.5	1.4
62092	99	SPEED	SUR	51	-11	740	0	0	1.0	0.1	1.0
62093	99	SPEED	SUR	55	-10	723	0	0	1.6	-0.1	1.6
62094	99	SPEED	SUR	52	-7	740	0	0	1.2	0.4	1.2
62095	99	SPEED	SUR	53	-16	724	0	0	1.1	-0.5	1.2
62102	99	SPEED	SUR	58	2	1482	0	0	1.2	0.0	1.2
62103	99	SPEED	SUR	50	-3	1486	0	0	1.3	-0.4	1.4
62104	99	SPEED	SUR	57	1	1488	0	0	1.2	-0.2	1.3
62105	99	SPEED	SUR	55	-13	1486	0	0	0.9	0.3	1.0
62107	99	SPEED	SUR	50	-6	652	0	0	1.1	0.2	1.2
62112	99	SPEED	SUR	58	0	1488	0	0	1.3	-0.5	1.4
62113	99	SPEED	SUR	58	0	1488	0	0	1.4	-0.1	1.5
62114	99	SPEED	SUR	58	0	1488	0	0	1.3	0.3	1.4
62118	99	SPEED	SUR	58	1	1478	0	0	1.3	0.4	1.4
62119	99	SPEED	SUR	57	2	1488	0	0	1.3	-0.6	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
62120	99	SPEED	SUR	56	2	1266	0	0	2.3	-2.5	3.4
62121	99	SPEED	SUR	54	3	1488	0	0	1.3	-0.5	1.4
62122	99	SPEED	SUR	57	2	1486	0	0	1.2	-0.2	1.2
62129	99	SPEED	SUR	58	0	1488	0	0	1.3	-0.1	1.3
62131	99	SPEED	SUR	54	1	1464	0	0	1.9	-0.5	2.0
62132	99	SPEED	SUR	56	2	1484	0	0	2.2	-1.2	2.5
62133	99	SPEED	SUR	57	1	1486	0	0	1.3	-0.1	1.3
62134	99	SPEED	SUR	58	1	1488	0	0	1.3	-0.2	1.3
62140	99	SPEED	SUR	57	1	1480	0	0	1.1	0.0	1.1
62143	99	SPEED	SUR	58	2	1482	0	0	1.5	-0.8	1.7
62144	99	SPEED	SUR	53	2	1440	0	0	1.6	-0.6	1.8
62145	99	SPEED	SUR	53	3	1488	0	0	1.3	0.3	1.3
62146	99	SPEED	SUR	57	2	1458	0	0	1.2	-0.1	1.2
62148	99	SPEED	SUR	54	2	1428	0	0	1.4	-0.1	1.4
62149	99	SPEED	SUR	54	1	1488	0	0	1.3	-0.1	1.3
62152	99	SPEED	SUR	57	2	1464	0	0	1.3	-0.5	1.4
62153	99	SPEED	SUR	57	2	1340	0	0	1.7	-0.9	1.9
62154	99	SPEED	SUR	56	2	1488	0	0	1.3	0.0	1.3
62155	99	SPEED	SUR	58	1	1478	0	0	1.5	-0.3	1.6
62163	99	SPEED	SUR	48	-9	1488	0	0	0.9	0.4	1.0
62164	99	SPEED	SUR	57	1	1488	0	0	1.3	-0.8	1.5
62165	99	SPEED	SUR	54	1	1486	0	0	1.4	-0.4	1.5
62170	99	SPEED	SUR	51	2	1487	0	0	1.5	0.1	1.5
62304	99	SPEED	SUR	51	2	1477	0	0	1.5	0.5	1.6
62305	99	SPEED	SUR	50	0	974	0	0	1.4	0.2	1.4
62442	99	SPEED	SUR	49	-16	1393	0	0	1.1	0.3	1.1
6301001	99	SPEED	SUR	64	5	739	0	0	1.1	-0.1	1.2
6301004	99	SPEED	SUR	72	20	267	0	0	0.9	-0.5	1.1
63055	99	SPEED	SUR	61	2	1462	0	0	1.1	-0.8	1.3
63056	99	SPEED	SUR	60	2	1470	0	0	1.2	0.4	1.3
63057	99	SPEED	SUR	59	2	1486	0	0	1.5	-0.2	1.5
63058	99	SPEED	SUR	53	2	811	0	0	1.4	0.1	1.4
63101	99	SPEED	SUR	61	1	1488	0	0	1.2	-0.3	1.2
63103	99	SPEED	SUR	61	1	1488	0	0	1.2	-0.4	1.2
63106	99	SPEED	SUR	61	2	1486	0	0	1.7	-1.1	2.0
63108	99	SPEED	SUR	61	2	1488	0	0	1.3	-0.3	1.3
63109	99	SPEED	SUR	60	2	1446	0	0	1.3	0.2	1.4
63110	99	SPEED	SUR	60	2	1478	0	0	1.3	-0.2	1.4
63112	99	SPEED	SUR	61	1	1478	0	0	1.1	-0.4	1.1
63115	99	SPEED	SUR	62	1	1480	0	0	1.3	-0.4	1.4
63117	99	SPEED	SUR	61	1	1488	0	0	1.2	-0.3	1.2

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
6400045	99	SPEED	SUR	59	-12	695	0	0	1.2	-0.1	1.2
6400046	99	SPEED	SUR	61	-4	191	0	0	1.1	0.1	1.1
64041	99	SPEED	SUR	61	-3	1485	0	0	1.3	-0.2	1.3
64045	99	SPEED	SUR	59	-12	1396	0	0	1.1	0.3	1.2
64046	99	SPEED	SUR	61	-4	384	0	0	1.1	0.5	1.2
6600021	99	SPEED	SUR	55	14	223	0	0	1.1	0.3	1.2
6600022	99	SPEED	SUR	54	14	145	0	0	1.5	0.0	1.5
6600024	99	SPEED	SUR	55	13	116	0	0	1.4	1.0	1.7

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 : AUG 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
1300001	99	DIRN	SUR	11	-23	379	0	0	36.0	5.9	36.5
1300002	99	DIRN	SUR	20	-23	547	0	0	10.2	0.5	10.2
1300008	99	DIRN	SUR	15	-38	562	0	0	12.7	8.8	15.5
1300131	99	DIRN	SUR	28	-17	364	0	0	22.8	2.9	23.0
1801556	99	DIRN	SUR	22	-66	2769	0	0	10.4	8.2	13.2
1801560	99	DIRN	SUR	15	-58	1008	0	0	15.4	4.8	16.2
1801565	99	DIRN	SUR	32	-80	1942	0	0	25.2	-1.3	25.2
1801577	99	DIRN	SUR	32	-75	2446	0	0	16.8	3.8	17.2
1801584	99	DIRN	SUR	18	-65	873	0	0	21.3	1.9	21.4
1801585	99	DIRN	SUR	27	-63	2673	0	0	17.0	1.5	17.0
1801599	99	DIRN	SUR	28	-84	1798	1	0	23.4	0.8	23.5
4100001	99	DIRN	SUR	35	-72	3512	0	0	17.4	11.8	21.0
4100002	99	DIRN	SUR	32	-75	3781	0	0	17.7	3.6	18.1
4100004	99	DIRN	SUR	33	-79	2978	0	0	20.7	0.5	20.7
4100008	99	DIRN	SUR	31	-81	2411	0	0	19.8	4.1	20.3
4100009	99	DIRN	SUR	29	-80	3247	0	0	18.5	3.2	18.8
4100013	99	DIRN	SUR	33	-78	3231	0	0	21.5	4.2	21.9
4100024	99	DIRN	SUR	34	-78	647	0	0	28.5	5.2	29.0
4100025	99	DIRN	SUR	35	-75	3394	0	0	17.8	6.6	19.0
4100026	99	DIRN	SUR	12	-38	198	0	0	25.8	7.9	27.0
4100029	99	DIRN	SUR	33	-80	517	0	0	21.6	-6.4	22.5
4100033	99	DIRN	SUR	32	-80	705	0	0	32.6	4.9	33.0
4100037	99	DIRN	SUR	34	-77	555	0	0	15.7	1.4	15.8
4100038	99	DIRN	SUR	34	-78	647	0	0	20.6	0.2	20.6
4100040	99	DIRN	SUR	15	-53	3695	0	0	12.9	10.7	16.8
4100043	99	DIRN	SUR	21	-65	4117	0	0	13.0	9.8	16.3
4100044	99	DIRN	SUR	22	-59	3750	0	0	11.4	8.6	14.3
4100046	99	DIRN	SUR	24	-68	3890	0	0	18.0	5.0	18.7
4100047	99	DIRN	SUR	27	-71	3388	0	0	20.3	3.3	20.5
4100048	99	DIRN	SUR	32	-70	3634	5	0	17.7	9.7	20.2
4100049	99	DIRN	SUR	28	-63	3181	0	0	20.7	7.4	22.0
4100052	99	DIRN	SUR	18	-65	3654	0	0	13.5	6.4	15.0

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
4100053	99	DIRN	SUR	18	-66	2927	0	0	19.3	10.0	21.8
4100056	99	DIRN	SUR	18	-65	1660	0	0	16.8	10.3	19.8
4100064	99	DIRN	SUR	34	-77	559	0	0	16.2	-1.8	16.3
4100066	99	DIRN	SUR	33	-80	521	0	0	21.5	1.5	21.6
41001	99	DIRN	SUR	35	-72	575	0	0	16.7	11.7	20.4
4100139	99	DIRN	SUR	20	-38	717	0	0	9.3	5.3	10.7
41002	99	DIRN	SUR	32	-75	612	0	0	17.5	3.5	17.9
4100300	99	DIRN	SUR	16	-57	586	0	0	21.2	-8.6	22.8
41004	99	DIRN	SUR	33	-79	488	0	0	20.6	1.0	20.6
41008	99	DIRN	SUR	31	-81	387	0	0	21.9	5.0	22.5
41009	99	DIRN	SUR	29	-80	530	0	0	18.4	4.0	18.9
41013	99	DIRN	SUR	33	-78	520	0	0	21.1	3.5	21.4
41024	99	DIRN	SUR	34	-79	546	0	0	26.4	2.7	26.5
41025	99	DIRN	SUR	35	-76	566	0	0	17.4	7.0	18.7
41029	99	DIRN	SUR	33	-80	509	0	0	21.9	-6.5	22.8
41033	99	DIRN	SUR	32	-80	553	0	0	28.5	2.0	28.6
41037	99	DIRN	SUR	34	-77	552	0	0	16.3	1.4	16.3
41038	99	DIRN	SUR	34	-78	539	0	0	20.5	0.4	20.5
41040	99	DIRN	SUR	15	-53	606	0	0	13.6	11.0	17.5
41043	99	DIRN	SUR	21	-65	668	0	0	13.6	9.4	16.5
41044	99	DIRN	SUR	22	-59	610	0	0	11.9	8.0	14.3
41046	99	DIRN	SUR	24	-68	639	0	0	18.5	4.6	19.0
41047	99	DIRN	SUR	28	-72	553	0	0	17.3	3.4	17.6
41048	99	DIRN	SUR	32	-70	599	2	0	18.4	8.5	20.3
41049	99	DIRN	SUR	28	-63	509	0	0	20.7	7.5	22.0
41052	99	DIRN	SUR	18	-65	663	0	0	13.3	6.0	14.6
41053	99	DIRN	SUR	19	-66	557	0	0	20.5	10.0	22.8
41056	99	DIRN	SUR	18	-66	550	0	0	18.7	10.5	21.4
41064	99	DIRN	SUR	34	-77	557	0	0	16.7	-1.9	16.8
41066	99	DIRN	SUR	33	-80	511	0	0	21.9	0.8	21.9
4200013	99	DIRN	SUR	27	-83	759	0	0	20.3	-6.6	21.3
4200022	99	DIRN	SUR	28	-84	56	0	0	20.7	-0.4	20.7
4200023	99	DIRN	SUR	26	-83	653	0	0	19.2	-6.6	20.3
4200026	99	DIRN	SUR	25	-83	693	0	0	20.7	-5.9	21.5
4200036	99	DIRN	SUR	29	-85	2306	0	0	23.7	1.5	23.7
4200056	99	DIRN	SUR	20	-85	3664	0	0	19.7	-1.5	19.8
4200057	99	DIRN	SUR	17	-82	3665	0	0	15.4	8.4	17.5
4200058	99	DIRN	SUR	15	-75	3876	0	0	9.0	9.1	12.8
4200059	99	DIRN	SUR	15	-67	4150	0	0	10.9	10.3	15.0
4200060	99	DIRN	SUR	16	-63	3624	0	0	13.3	7.4	15.2
4200085	99	DIRN	SUR	18	-67	2677	0	0	20.5	13.5	24.5

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
42013	99	DIRN	SUR	27	-83	367	0	0	21.9	-5.4	22.5
42022	99	DIRN	SUR	28	-84	27	0	0	19.8	2.7	20.0
42023	99	DIRN	SUR	26	-83	313	0	0	20.7	-6.0	21.6
42026	99	DIRN	SUR	25	-84	329	0	0	22.3	-6.7	23.3
42036	99	DIRN	SUR	29	-85	354	0	0	22.6	1.1	22.7
42056	99	DIRN	SUR	20	-85	592	0	0	20.8	-1.5	20.9
42057	99	DIRN	SUR	17	-82	609	0	0	16.0	8.1	18.0
42058	99	DIRN	SUR	15	-75	644	0	0	9.2	8.5	12.6
42059	99	DIRN	SUR	15	-68	683	0	0	11.4	9.7	14.9
42060	99	DIRN	SUR	16	-63	593	0	0	12.6	7.1	14.4
42085	99	DIRN	SUR	18	-67	607	0	0	17.9	12.0	21.5
4400005	99	DIRN	SUR	43	-69	3012	0	0	19.0	8.2	20.7
4400007	99	DIRN	SUR	44	-70	2425	0	0	18.3	7.4	19.7
4400008	99	DIRN	SUR	40	-69	3004	0	0	24.4	23.0	33.6
4400009	99	DIRN	SUR	38	-75	3128	0	0	23.1	8.0	24.4
4400011	99	DIRN	SUR	41	-67	3196	0	0	17.2	11.6	20.8
4400013	99	DIRN	SUR	42	-71	2686	0	0	17.7	8.8	19.8
4400014	99	DIRN	SUR	37	-75	2884	0	0	18.5	6.4	19.5
4400018	99	DIRN	SUR	42	-70	2957	0	0	18.4	9.8	20.8
4400020	99	DIRN	SUR	41	-70	3744	0	0	18.6	3.5	18.9
4400022	99	DIRN	SUR	41	-74	212	0	0	15.0	0.3	15.0
4400027	99	DIRN	SUR	44	-67	2775	0	0	16.6	15.1	22.4
4400029	99	DIRN	SUR	43	-71	435	0	0	18.8	9.3	21.0
4400030	99	DIRN	SUR	43	-70	384	0	0	19.4	4.9	20.0
4400032	99	DIRN	SUR	44	-69	418	0	0	18.7	0.0	18.7
4400033	99	DIRN	SUR	44	-69	341	0	0	19.1	20.7	28.1
4400034	99	DIRN	SUR	44	-68	367	0	0	20.4	7.2	21.6
4400037	99	DIRN	SUR	43	-68	84	0	0	18.1	14.5	23.2
4400039	99	DIRN	SUR	41	-73	301	0	0	35.8	2.2	35.8
4400040	99	DIRN	SUR	41	-74	1	0	0	0.0	119.3	119.3
4400041	99	DIRN	SUR	37	-77	794	0	0	17.2	-0.1	17.2
4400042	99	DIRN	SUR	38	-76	3984	0	0	24.8	-4.6	25.2
4400043	99	DIRN	SUR	39	-76	1887	0	0	20.0	1.5	20.1
4400058	99	DIRN	SUR	38	-76	4966	0	0	19.4	-1.9	19.5
4400062	99	DIRN	SUR	39	-76	4632	0	0	22.2	-1.8	22.3
4400063	99	DIRN	SUR	39	-76	3740	0	0	21.5	-1.9	21.6
4400064	99	DIRN	SUR	37	-76	4095	0	0	24.2	6.3	25.0
4400066	99	DIRN	SUR	40	-73	1977	0	0	18.6	9.0	20.7
4400072	99	DIRN	SUR	37	-76	4752	0	0	22.9	-1.3	22.9
4400150	99	DIRN	SUR	43	-64	615	0	0	17.4	11.8	21.0
4400488	99	DIRN	SUR	45	-61	524	0	0	21.2	-20.9	29.8

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
4400489	99	DIRN	SUR	45	-61	453	0	0	18.9	-27.3	33.2
44005	99	DIRN	SUR	43	-69	470	0	0	18.1	7.7	19.7
44007	99	DIRN	SUR	44	-70	413	0	0	18.3	7.8	19.9
44008	99	DIRN	SUR	41	-69	469	0	0	21.2	23.5	31.7
44009	99	DIRN	SUR	39	-75	498	0	0	22.4	9.1	24.2
44011	99	DIRN	SUR	41	-67	518	0	0	16.9	11.9	20.7
44013	99	DIRN	SUR	42	-71	426	0	0	18.8	9.3	21.0
44014	99	DIRN	SUR	37	-75	481	0	0	20.1	7.6	21.5
44018	99	DIRN	SUR	42	-70	489	0	0	19.0	9.5	21.3
44020	99	DIRN	SUR	42	-70	612	0	0	19.1	3.5	19.5
44022	99	DIRN	SUR	41	-74	62	0	0	13.7	3.1	14.1
44027	99	DIRN	SUR	44	-67	435	0	0	16.5	14.5	22.0
44029	99	DIRN	SUR	43	-71	418	0	0	18.8	8.6	20.6
44030	99	DIRN	SUR	43	-70	379	0	0	19.8	4.2	20.3
44032	99	DIRN	SUR	44	-69	386	0	0	18.8	-1.3	18.9
44033	99	DIRN	SUR	44	-69	320	0	0	20.1	20.3	28.6
44034	99	DIRN	SUR	44	-68	336	0	0	20.2	5.6	21.0
44037	99	DIRN	SUR	44	-68	80	0	0	14.1	12.1	18.6
44039	99	DIRN	SUR	41	-73	302	0	0	38.1	0.0	38.1
44041	99	DIRN	SUR	37	-77	83	0	0	17.6	0.5	17.6
44042	99	DIRN	SUR	38	-76	475	0	0	25.7	-2.4	25.8
44043	99	DIRN	SUR	39	-76	199	0	0	21.8	2.8	22.0
44058	99	DIRN	SUR	38	-76	486	0	0	21.3	-0.9	21.3
44062	99	DIRN	SUR	39	-76	494	0	0	23.0	-1.4	23.0
44063	99	DIRN	SUR	39	-76	383	0	0	22.6	-1.3	22.6
44064	99	DIRN	SUR	37	-76	449	0	0	26.3	9.1	27.9
44066	99	DIRN	SUR	40	-73	325	0	0	18.6	8.8	20.6
44069	99	DIRN	SUR	41	-73	507	0	0	25.4	-13.2	28.6
44072	99	DIRN	SUR	37	-76	477	0	0	23.8	-0.1	23.8
44078	99	DIRN	SUR	60	-40	223	0	0	15.2	-21.0	25.9
44150	99	DIRN	SUR	43	-64	594	0	0	17.1	11.5	20.6
44258	99	DIRN	SUR	45	-63	476	0	0	18.5	-3.8	18.9
44488	99	DIRN	SUR	45	-61	515	0	0	20.4	-20.3	28.8
44489	99	DIRN	SUR	46	-61	463	0	0	20.2	-29.2	35.5
4500003	99	DIRN	SUR	45	-83	3229	0	0	18.4	-1.1	18.4
4500005	99	DIRN	SUR	42	-82	3232	0	0	26.3	4.0	26.6
4500008	99	DIRN	SUR	44	-82	3076	0	0	17.4	7.1	18.8
4500012	99	DIRN	SUR	44	-77	2858	0	0	21.1	4.8	21.6
4500132	99	DIRN	SUR	42	-81	581	0	0	22.4	-5.5	23.0
4500135	99	DIRN	SUR	44	-77	525	0	0	29.3	-5.5	29.8
4500137	99	DIRN	SUR	46	-81	591	0	0	20.0	10.7	22.7

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
4500139	99	DIRN	SUR	43	-80	429	0	0	25.0	3.8	25.3
4500142	99	DIRN	SUR	43	-79	576	0	0	23.6	-3.7	23.9
4500143	99	DIRN	SUR	45	-81	571	0	0	26.0	-3.9	26.3
4500159	99	DIRN	SUR	44	-79	452	2	0	24.8	-1.6	24.8
4500162	99	DIRN	SUR	45	-83	1519	0	0	22.1	-2.1	22.2
4500163	99	DIRN	SUR	44	-84	1725	0	0	21.9	2.7	22.1
4500164	99	DIRN	SUR	42	-82	456	0	0	24.4	-15.3	28.8
4500165	99	DIRN	SUR	42	-83	2870	0	0	33.8	2.4	33.9
4500175	99	DIRN	SUR	46	-85	5023	0	0	29.8	4.9	30.2
4500176	99	DIRN	SUR	42	-82	2631	0	0	42.1	-80.2	90.5
4500178	99	DIRN	SUR	45	-73	1356	0	0	29.5	5.2	29.9
4500196	99	DIRN	SUR	42	-82	2125	0	0	23.3	-9.4	25.1
4500197	99	DIRN	SUR	42	-82	1922	0	0	27.0	-23.4	35.7
4500200	99	DIRN	SUR	42	-83	2643	0	0	33.2	13.9	36.0
4500203	99	DIRN	SUR	41	-83	2223	0	0	61.8	-56.4	83.7
4500205	99	DIRN	SUR	42	-82	2543	0	0	55.9	-58.1	80.6
4500209	99	DIRN	SUR	43	-82	2725	0	0	30.1	-1.0	30.1
45003	99	DIRN	SUR	45	-83	525	0	0	20.7	-1.6	20.8
45005	99	DIRN	SUR	42	-82	522	0	0	25.0	4.7	25.4
45008	99	DIRN	SUR	44	-82	504	0	0	18.7	7.3	20.1
45012	99	DIRN	SUR	44	-77	469	0	0	21.4	4.9	22.0
45132	99	DIRN	SUR	43	-81	573	0	0	24.0	-6.5	24.9
45135	99	DIRN	SUR	44	-77	517	0	0	29.4	-7.0	30.2
45137	99	DIRN	SUR	46	-81	576	0	0	19.6	9.4	21.7
45139	99	DIRN	SUR	43	-80	425	0	0	27.5	1.6	27.6
45142	99	DIRN	SUR	43	-79	566	0	0	22.6	-4.9	23.1
45143	99	DIRN	SUR	45	-81	561	0	0	26.7	-4.5	27.1
45147	99	DIRN	SUR	42	-83	539	0	0	27.2	0.8	27.2
45149	99	DIRN	SUR	44	-82	543	0	0	20.8	-11.0	23.5
45151	99	DIRN	SUR	45	-79	424	0	0	23.7	-0.1	23.7
45152	99	DIRN	SUR	46	-80	366	0	0	21.8	-5.8	22.6
45154	99	DIRN	SUR	46	-83	544	0	0	24.0	4.9	24.5
45159	99	DIRN	SUR	44	-79	403	2	0	22.5	-3.2	22.7
45162	99	DIRN	SUR	45	-83	474	0	0	22.7	-1.8	22.8
45163	99	DIRN	SUR	44	-84	553	0	0	21.9	3.5	22.2
45164	99	DIRN	SUR	42	-82	448	0	0	24.4	-16.5	29.5
45165	99	DIRN	SUR	42	-83	467	0	0	33.3	4.7	33.7
45175	99	DIRN	SUR	46	-85	403	0	0	30.8	7.7	31.7
45176	99	DIRN	SUR	42	-82	486	0	0	43.4	-78.7	89.9
45178	99	DIRN	SUR	45	-73	316	0	0	30.7	3.1	30.8
45196	99	DIRN	SUR	42	-82	450	0	0	23.3	-8.6	24.8

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
45197	99	DIRN	SUR	42	-82	445	0	0	26.2	-22.2	34.3
45200	99	DIRN	SUR	42	-83	447	0	0	31.1	14.4	34.2
45203	99	DIRN	SUR	41	-83	369	0	0	59.7	-57.1	82.6
45205	99	DIRN	SUR	42	-82	394	0	0	55.3	-59.9	81.5
45209	99	DIRN	SUR	43	-82	449	0	0	31.6	-0.6	31.6
4803914	99	DIRN	SUR	25	-65	2868	0	0	11.6	0.3	11.6
5801958	99	DIRN	SUR	21	-67	655	0	0	15.9	0.8	15.9
5801959	99	DIRN	SUR	20	-56	2310	0	0	13.1	2.4	13.3
6100198	99	DIRN	SUR	37	-2	485	0	0	14.8	5.1	15.7
6100281	99	DIRN	SUR	40	0	264	0	0	35.3	-5.7	35.7
6100417	99	DIRN	SUR	38	0	17	0	0	21.2	-1.0	21.2
6200001	99	DIRN	SUR	45	-5	634	0	0	14.3	-1.4	14.3
6200024	99	DIRN	SUR	44	-3	414	0	0	17.6	4.6	18.2
6200025	99	DIRN	SUR	44	-6	526	0	0	20.6	1.8	20.7
6200029	99	DIRN	SUR	49	-12	682	0	0	10.6	-5.1	11.8
6200050	99	DIRN	SUR	50	-4	678	0	0	12.4	4.2	13.1
6200081	99	DIRN	SUR	51	-13	688	0	0	10.8	-5.5	12.1
6200082	99	DIRN	SUR	44	-8	551	0	0	19.4	2.4	19.6
6200083	99	DIRN	SUR	43	-9	573	0	0	13.3	7.1	15.1
6200084	99	DIRN	SUR	42	-9	556	0	0	9.1	4.5	10.2
6200085	99	DIRN	SUR	36	-7	431	0	0	13.9	11.2	17.8
6200091	99	DIRN	SUR	53	-5	654	0	0	14.3	5.6	15.4
6200092	99	DIRN	SUR	51	-11	667	0	0	11.7	7.5	13.9
6200093	99	DIRN	SUR	55	-10	650	0	0	13.8	5.7	14.9
6200094	99	DIRN	SUR	52	-7	675	0	0	13.3	9.4	16.3
6200095	99	DIRN	SUR	53	-16	675	0	0	13.5	0.8	13.6
6200103	99	DIRN	SUR	50	-3	654	0	0	14.6	4.8	15.4
6200163	99	DIRN	SUR	47	-8	670	0	0	18.8	4.2	19.2
6200200	99	DIRN	SUR	36	-8	240	0	0	11.1	7.0	13.1
6201081	99	DIRN	SUR	38	-9	104	0	0	4.8	-0.2	4.8
62029	99	DIRN	SUR	49	-12	1366	0	0	11.0	-5.2	12.2
62050	99	DIRN	SUR	50	-4	1345	0	0	13.1	4.8	13.9
62081	99	DIRN	SUR	51	-13	1367	0	0	11.3	-5.5	12.6
62091	99	DIRN	SUR	53	-5	648	0	0	14.3	4.8	15.0
62092	99	DIRN	SUR	51	-11	661	0	0	12.1	7.2	14.1
62093	99	DIRN	SUR	55	-10	646	0	0	14.1	5.1	15.0
62094	99	DIRN	SUR	52	-7	666	0	0	13.4	8.8	16.0
62095	99	DIRN	SUR	53	-16	660	0	0	13.7	0.2	13.7
62103	99	DIRN	SUR	50	-3	1304	0	0	15.0	5.1	15.9
62105	99	DIRN	SUR	55	-13	1344	0	0	13.1	-4.6	13.9
62107	99	DIRN	SUR	50	-6	579	0	0	17.2	1.0	17.2

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
62112	99	DIRN	SUR	58	0	1157	0	0	13.5	-2.4	13.7
62114	99	DIRN	SUR	58	0	1208	0	0	13.8	-1.2	13.8
62163	99	DIRN	SUR	48	-9	1314	0	0	18.9	4.3	19.3
62305	99	DIRN	SUR	50	0	786	0	0	19.9	7.3	21.2
62442	99	DIRN	SUR	49	-16	1285	0	0	11.4	-2.1	11.6
6400045	99	DIRN	SUR	59	-12	606	0	0	15.3	-11.9	19.4
6400046	99	DIRN	SUR	61	-4	179	0	0	13.5	3.1	13.8
64041	99	DIRN	SUR	61	-3	1230	0	0	12.2	7.8	14.5
64045	99	DIRN	SUR	59	-12	1206	0	0	15.5	-12.0	19.6
64046	99	DIRN	SUR	61	-4	358	0	0	13.7	3.0	14.0

4.12 Table 24 - List of Assimilated BUFR Encoded Radiosonde Stations

ATGU3FT	BPMWB2N	DBLK	DSQL7	FPUW5GN	JGQH	JNKN7JF	JPBN	KJJF9XN
KMPLHPW	LAGY8	LAGZ8	LRYQE3U	M2HATS_I		UXK5JTU	WDK38HS	XKQLWQB
YLV96WM	ZVQEQCM	2EERVTP	7JUNA4N	9ZT9MRK	01001	01004	01010	01028
01241	01400	01415	01492	02185	02365	02527	02591	02836
02963	03005	03023	03238	03354	03502	03743	03808	03882
03918	03953	04018	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	15420	15614	16045	16064
16113	16144	16224	16245	16332	16429	16546	16622	16716
16754	17030	17064	17095	17196	17220	17240	17351	17516
17607	20674	22008	22820	22845	23205	23472	23884	23921
23955	24641	24908	26038	26435	26477	26629	26708	27459
27707	27713	27962	28225	28661	28695	29612	29698	30557
30673	30935	31770	31873	34122	34172	34731	35121	35671
40179	40186	42369	42971	43150	43333	43371	45004	47102
47104	47138	47155	47169	47183	47186	47193	47194	47230
47401	47412	47582	47600	47646	47678	47778	47807	47827
47909	47918	47945	47971	47991	48601	48615	48650	48657
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	54340	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	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	71845	71867	71906	71907	71908
71909	71913	71917	71924	71925	71926	71934	71945	71957
71964	72201	72202	72206	72208	72210	72214	72215	72230
72235	72240	72248	72249	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	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	78384	78397
78486	78583	78866	78897	78954	78970	80001	81405	82965
85442	85799	85934	87155	87344	87418	87582	87623	87715
87860	88889	89002	89055	89062	89564	89571	89592	89611
89625	89642	89859	91165	91212	91285	91334	91348	91376
91408	91413	91592	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	96481	96996				

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

ATGU3FT	BPMWB2N	DBLK	DSQL7	FPUW5GN	JNKN7JF	KJJF9XN	KMPLHPW	LAGY8
LAGZ8	LRYQE3U	M2HATS_I		UXK5JTU	WDK38HS	XKQLWQB	YLV96WM	ZVQEQCM
2EERVTP	7JUNA4N	9ZT9MRK	01010	01028	01415	02185	02365	02527
02591	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	47183
47193	47194	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	54340	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	72413	76743	89002	89642	89859	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.