ECMWF Global Data Monitoring Report

January 2025

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

Contents

Summary of Revisions (in reverse order)

Revision 30 (Nov 23) – Coverage charts for AIREP/AMDARs updated:
Added MODE-S and ADS-C to Figure 5 and Figure 18

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)
SATOB 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 precentage of rejection.

1 Introduction

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

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

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

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

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

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

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

2 Data summary - History of events

2.1 Radiosondes

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

Ident	Time	Dec	Jan	Ident	Time	Dec	Jan
15614	(12)	31	19	01004	(00)	0	30
30230	(00)	30	7	04360	(00)	4	21
30230	(12)	30	7	10954	(00)	0	11
30935	(00)	31	5	11120	(12)	0	12
30935	(12)	31	5	26850	(00)	0	11
34009	(12)	30	18	30309	(00)	19	30
42182	(00)	26	13	30309	(12)	17	31
42182	(12)	29	7	41316	(00)	0	20
42410	(00)	30	13	42027	(00)	0	20
42410	(12)	18	6	42027	(12)	1	31
42724	(00)	29	2	42056	(12)	1	15
42867	(00)	31	12	47600	(00)	0	24
42867	(12)	31	12	48378	(12)	0	12
42971	(00)	18	6	48381	(12)	0	14
43003	(00)	31	13	62306	(00)	17	28
43003	(12)	30	12	62378	(12)	13	28
43150	(00)	30	13	76405	(00)	1	14
43150	(12)	28	11	76405	(12)	1	21
43279	(00)	23	6	96163	(00)	3	18
43279	(12)	25	8	96163	(12)	2	19
48378	(00)	27	12	-	-	-	-
48381	(00)	31	13	-	-	-	-
48407	(00)	28	1	-	-	-	-
48431	(00)	26	4	-	-	-	-
48500	(00)	31	0	-	-	-	-
48568	(00)	29	0	-	-	-	-
48811	(00)	30	17	-	-	-	-
48820	(00)	27	15	-	-	-	-
48820	(12)	28	16	-	-	-	-
48845	(00)	30	19	-	-	-	-
48855	(00)	29	17	-	-	-	-
48855	(12)	31	16	-	-	-	-
48900	(00)	30	16	-	-	-	-
48900	(12)	31	16	-	-	-	-
68442	(12)	17	0	-	-	-	-
78397	(00)	29	10	-	-	-	-
78397	(12)	31	10	-	-	-	-
78583	(00)	28	10	-	-	-	-
78583	(12)	27	11	-	-	-	-
78970	(00)	11	0	-	-	-	-
78988	(00)	14	0	-	-	-	-
78988	(12)	15	1	-	-	-	-
80028	(12)	13	0	-	-	-	-
80094	(12)	15	0	-	-	-	-
80259	(12)	15	0	-	-	-	-
82411	(12)	25	0	-	-	-	-
91610	(00)	24	2	-	-	-	-
96633	(00)	21	1	-	-	-	-

2.2 Drifting Buoys

Surface pressure observations from **1356** 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

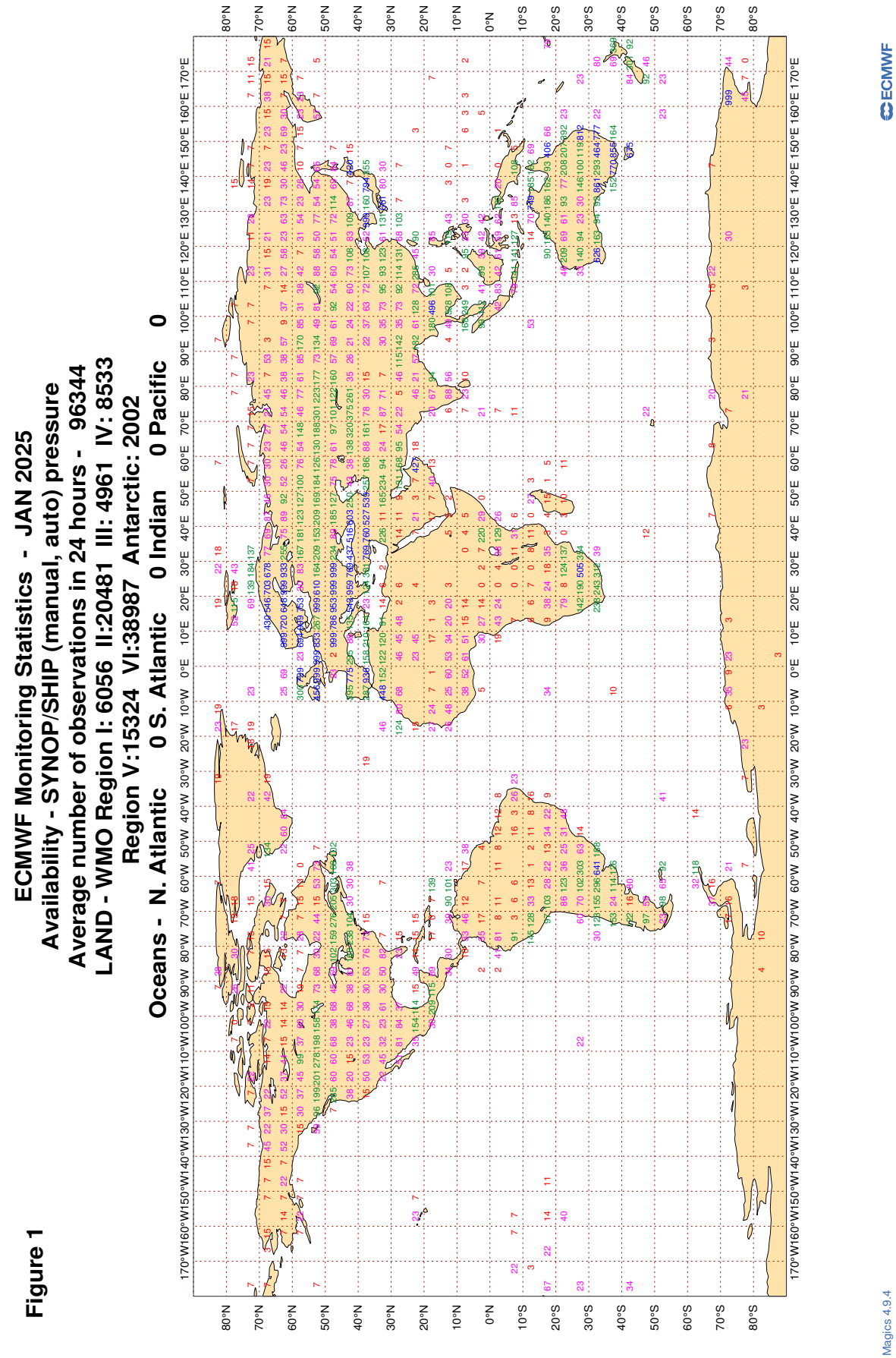


Figure 1

3.2.2 Figure 2 - Availability - DRIFTER PRESSURE

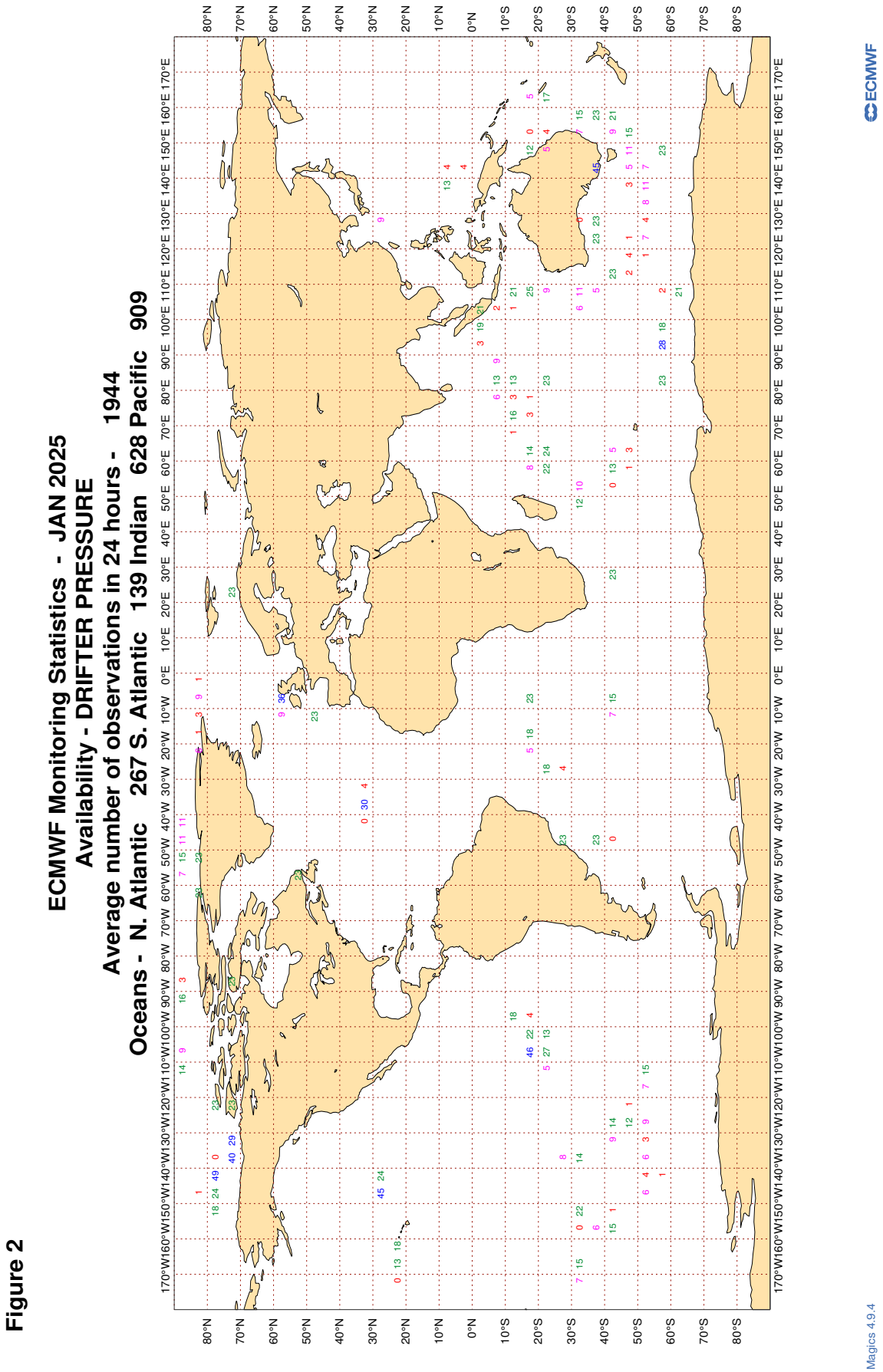
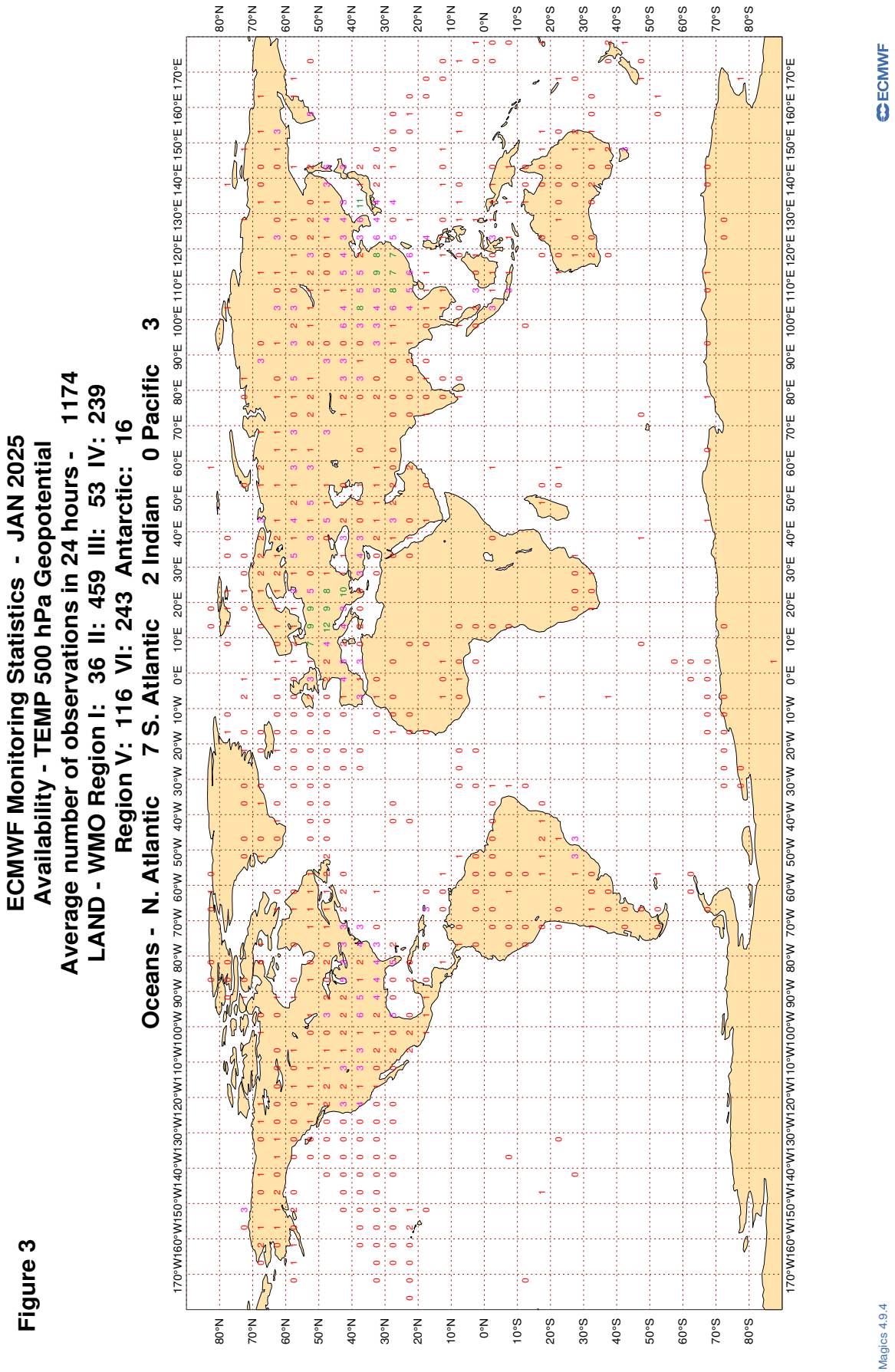
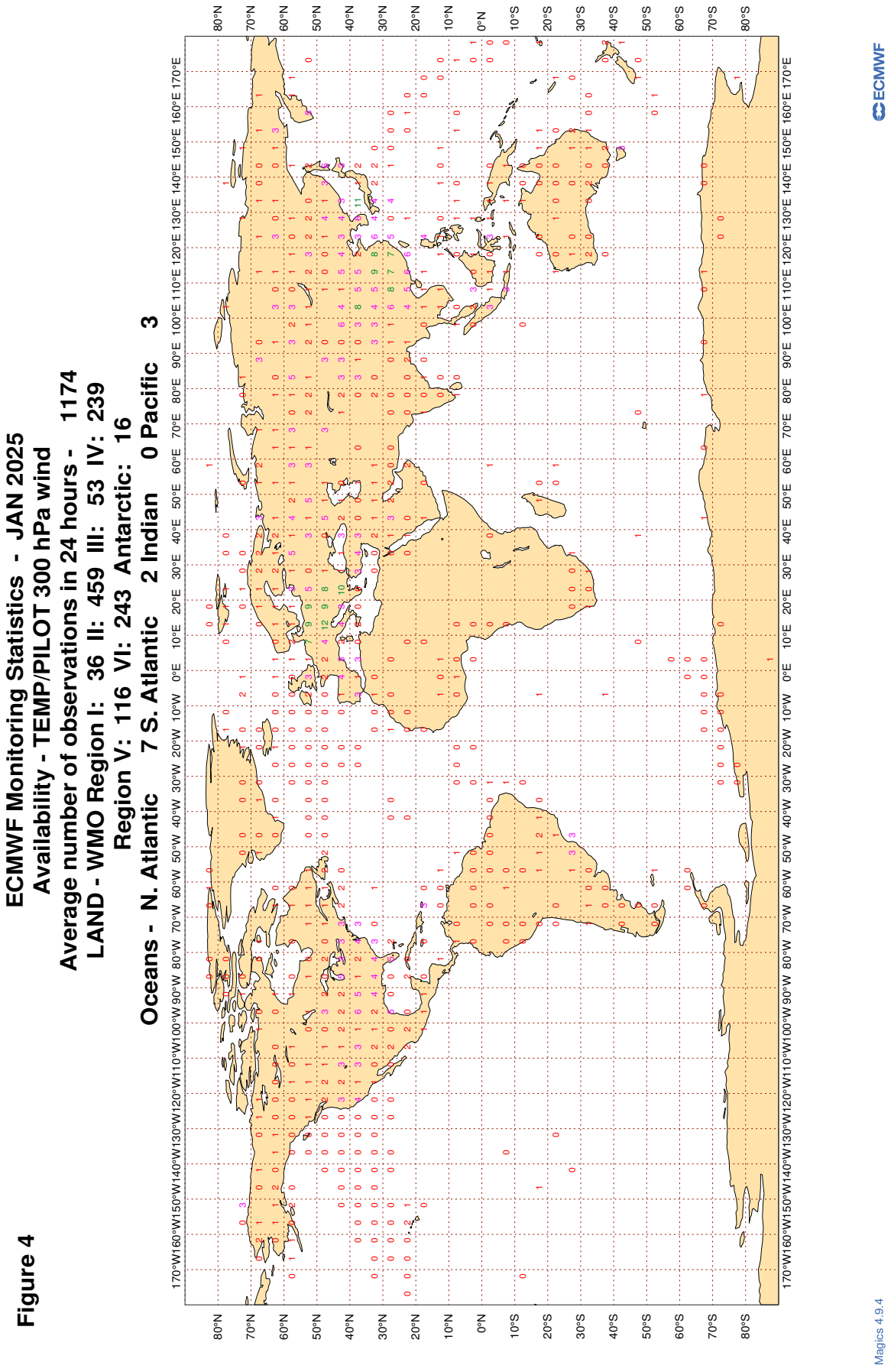


Figure 2

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

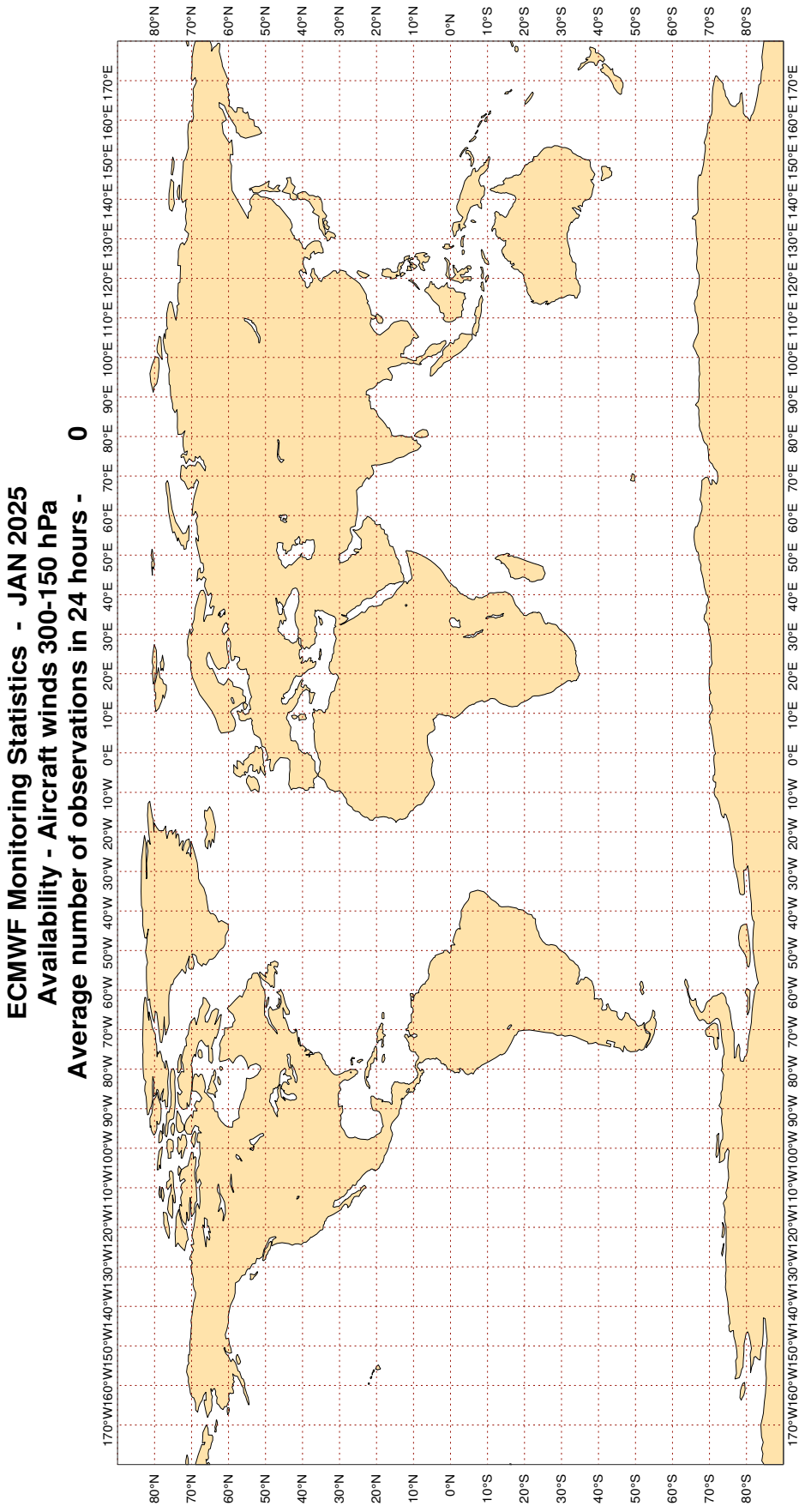


Figure 5

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

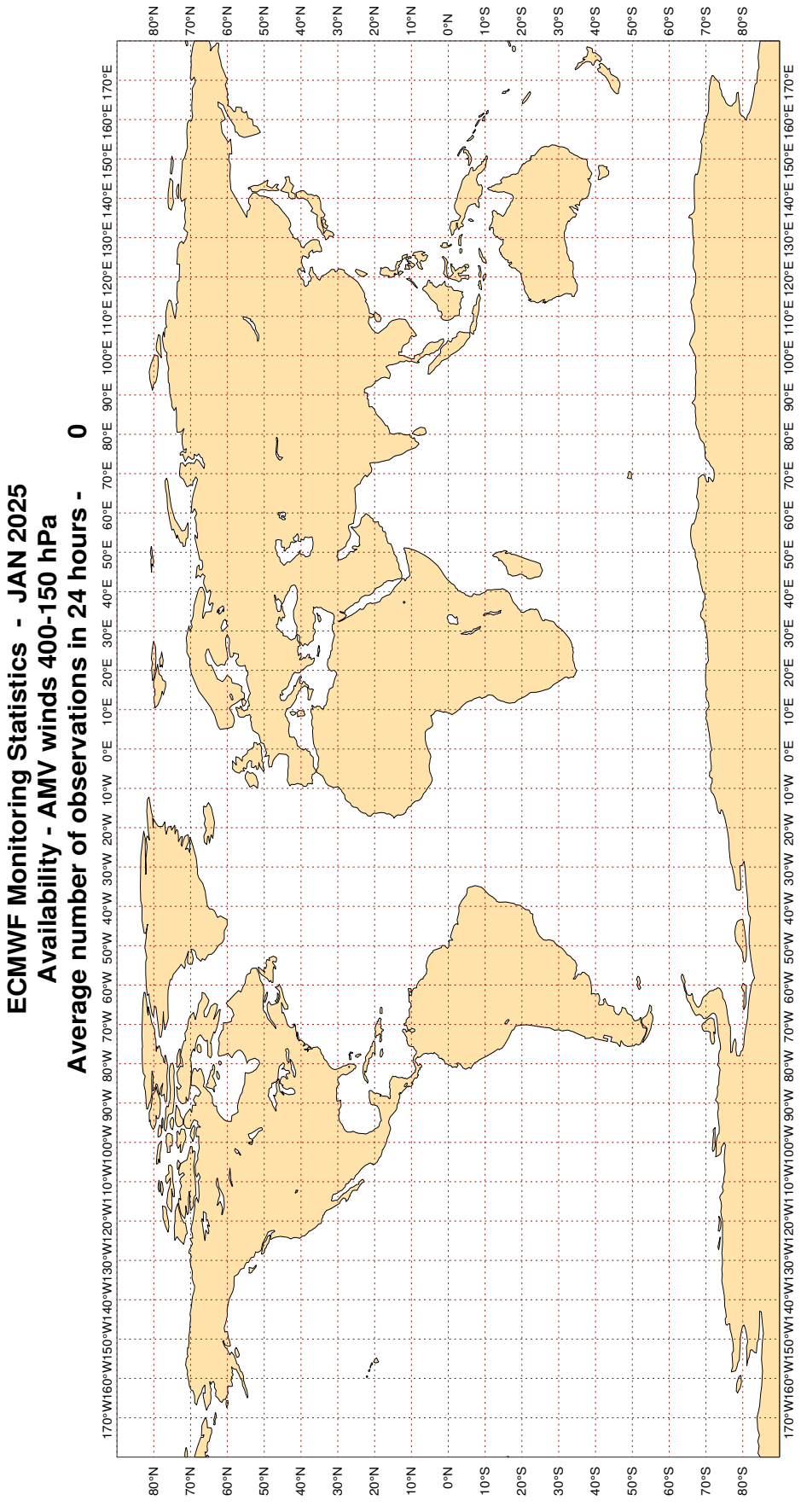


Figure 6

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

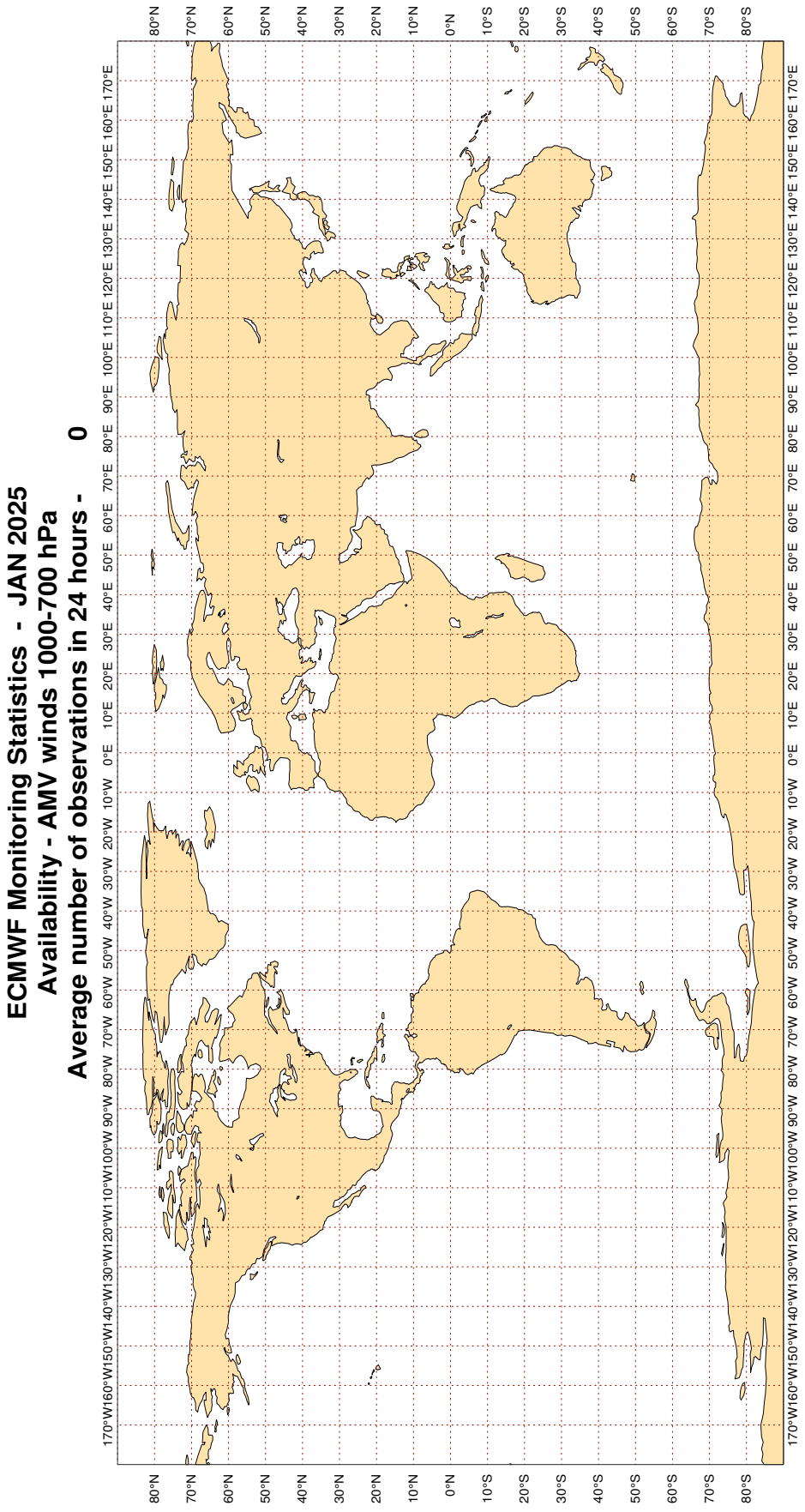


Figure 7

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

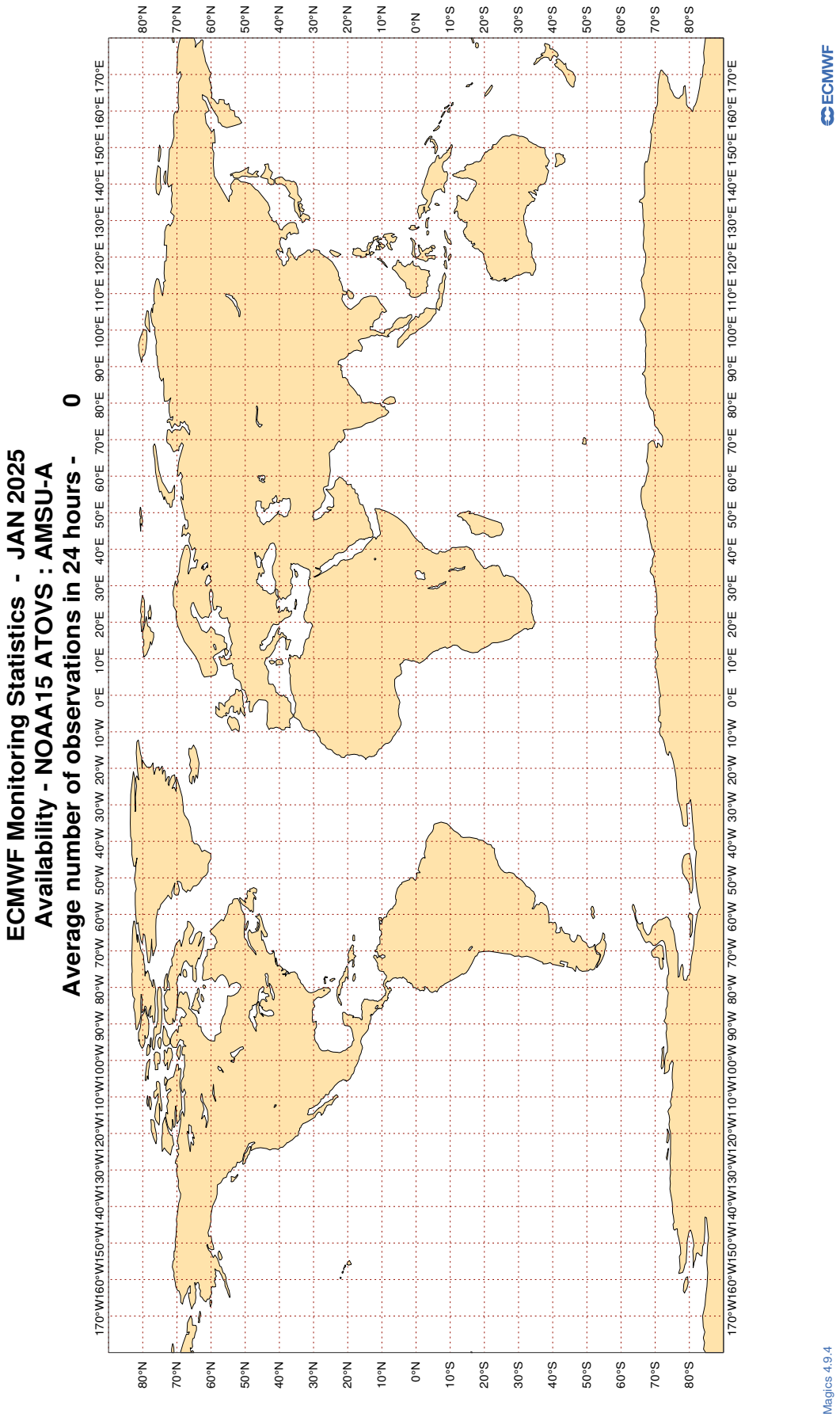


Figure 8

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

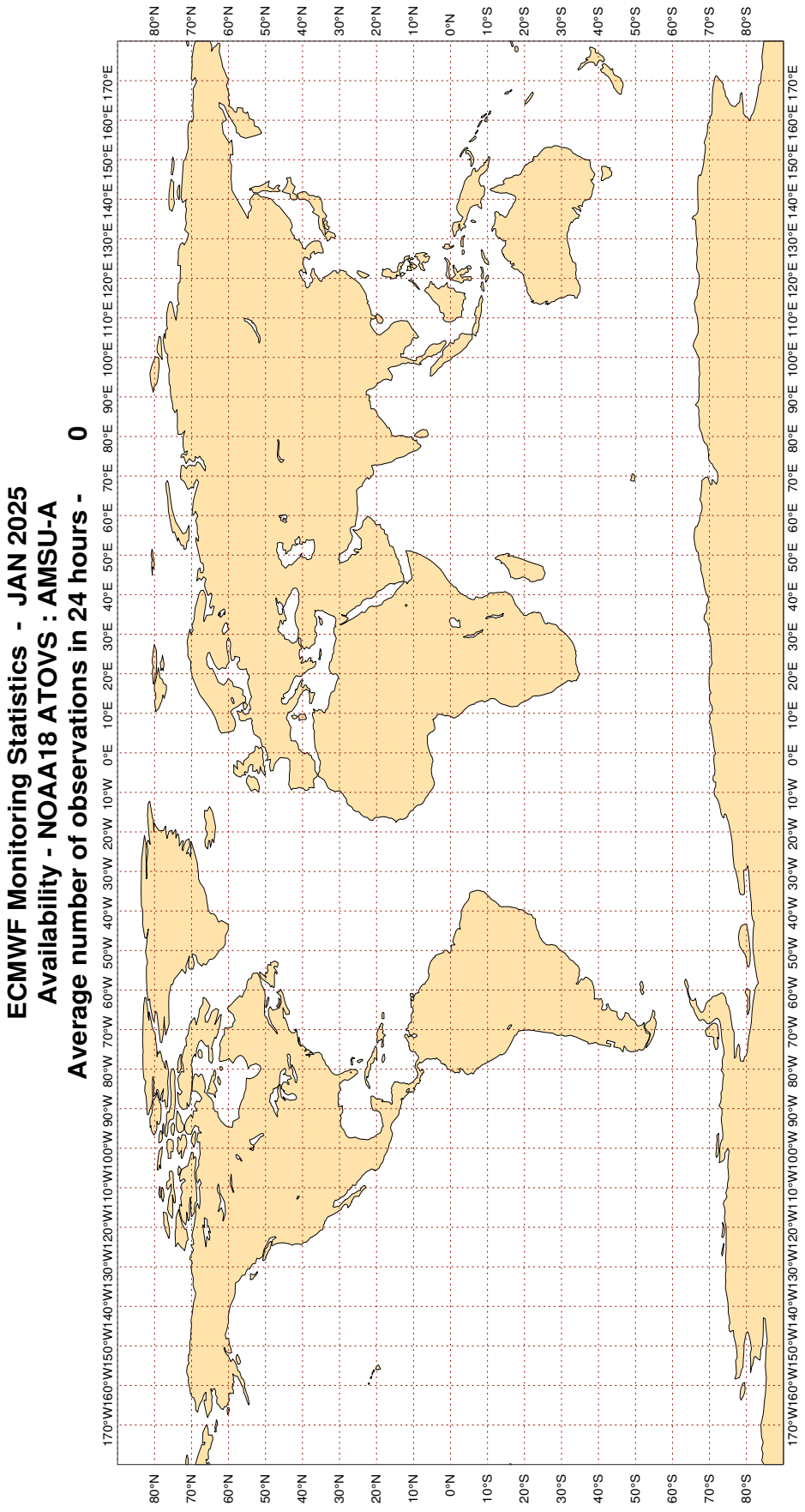


Figure 9.1

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

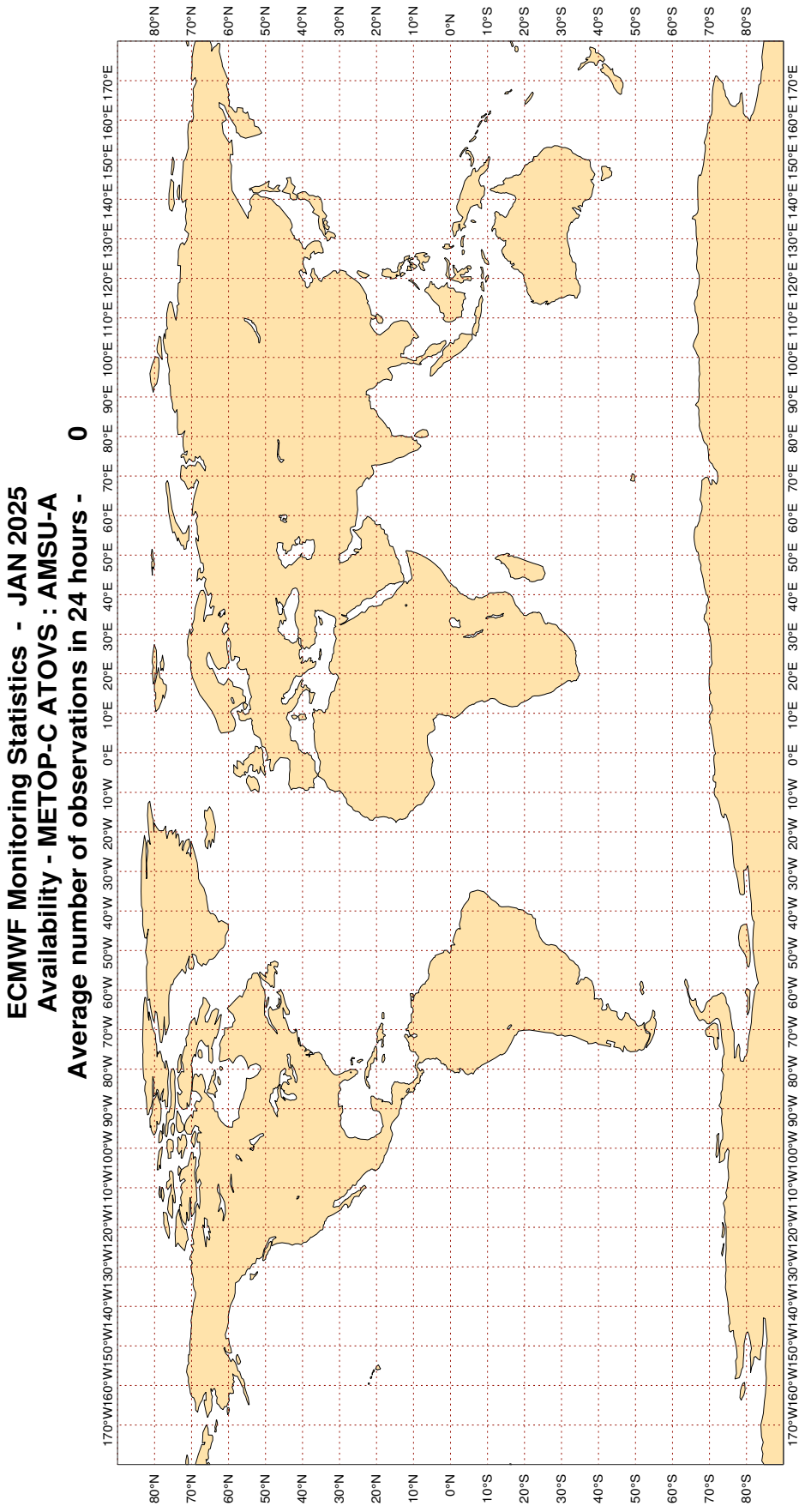


Figure 9.2

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

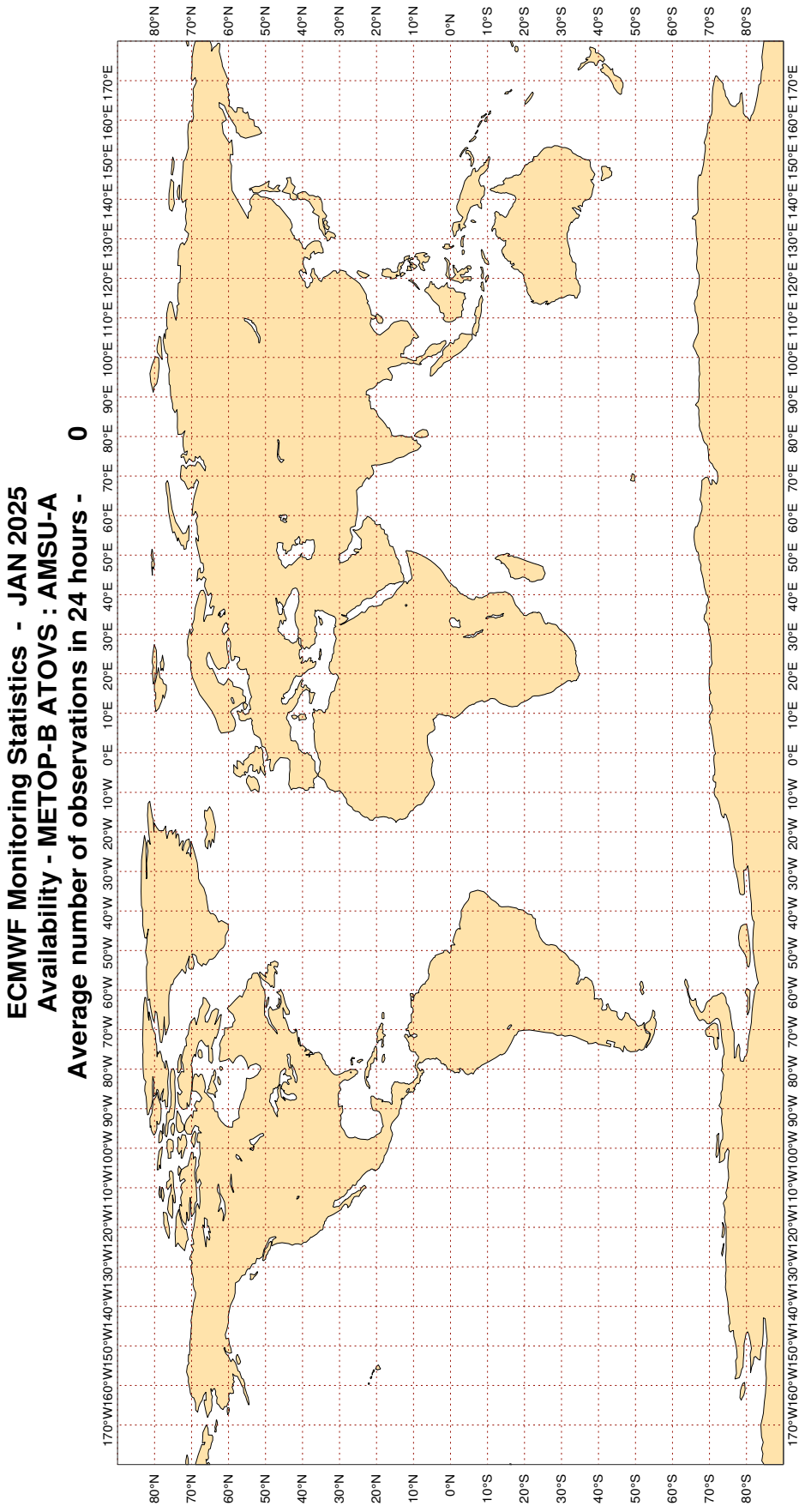


Figure 9.3

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                : JAN 2025
                    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
2CYD8	99	P	SUR	27	0	0.6	-5.4	5.4
2EIF7	99	P	SUR	34	0	0.6	4.7	4.8
2KZJ7DD	99	P	SUR	24	0	0.6	3.1	3.2
3E3566	99	P	SUR	57	0	1.2	6.6	6.7
3E5193	99	P	SUR	101	0	0.5	3.4	3.4
3EBY2	99	P	SUR	65	29	7.2	5.8	9.2
3EPL4	99	P	SUR	64	0	2.9	6.6	7.2
3ETR7	99	P	SUR	17	0	5.2	0.6	5.2
3FEN2	99	P	SUR	28	0	0.9	3.0	3.1
3FON6	99	P	SUR	32	0	1.1	4.8	4.9
3FWH8	99	P	SUR	52	0	4.4	7.6	8.8
3FYP8	99	P	SUR	40	0	0.8	4.2	4.3
41082	99	P	SUR	121	0	1.7	-5.2	5.4
6QZJ45L	99	P	SUR	59	0	1.6	-4.6	4.8
7JUN	99	P	SUR	42	0	2.0	-3.3	3.8
7KAS	99	P	SUR	43	0	1.8	5.0	5.3
7KKU	99	P	SUR	41	0	1.6	-3.2	3.6
7NC9H6B	99	P	SUR	16	0	4.5	3.6	5.8
8QVU8QS	99	P	SUR	95	24	4.2	-2.1	4.7
9HA4777	99	P	SUR	83	0	2.3	3.1	3.9
9HA5063	99	P	SUR	55	0	3.5	3.0	4.7
9HA5209	99	P	SUR	111	1	4.2	9.5	10.4
9HA5823	99	P	SUR	21	0	3.4	5.6	6.5
9HJB9	99	P	SUR	21	0	0.5	4.0	4.0
9HSJ7	99	P	SUR	34	0	1.9	6.1	6.4
9V3912	99	P	SUR	103	0	3.2	3.3	4.6
9V5242	99	P	SUR	20	1	1.5	3.3	3.6
9V5247	99	P	SUR	19	0	1.1	5.5	5.6
9V6256	99	P	SUR	41	0	0.9	-3.5	3.6
9V7650	99	P	SUR	31	0	1.1	8.0	8.1
9V9399	99	P	SUR	15	0	1.2	5.7	5.9
9V9404	99	P	SUR	49	0	2.0	4.8	5.2

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
9VHK7	99	P	SUR	29	0	0.5	-6.8	6.8
A8VP8	99	P	SUR	38	0	2.8	6.9	7.5
ATAH2	99	P	SUR	22	2	5.3	-9.9	11.2
C6BU3	99	P	SUR	33	0	0.5	5.2	5.2
C6TX6	99	P	SUR	60	0	5.5	0.0	5.5
CCLU	99	P	SUR	25	0	1.0	-3.5	3.6
CG2960	99	P	SUR	94	24	4.2	-2.1	4.7
CGDS	99	P	SUR	89	24	2.3	-0.8	2.5
JCP83EY	99	P	SUR	15	0	1.1	3.3	3.5
JPTX	99	P	SUR	66	0	0.8	6.6	6.7
KUL7SEK	99	P	SUR	17	0	0.7	4.6	4.7
LAPE7	99	P	SUR	22	1	2.0	4.8	5.2
LAVD4	99	P	SUR	47	0	0.6	6.3	6.3
LOCW	99	P	SUR	55	0	1.2	-4.6	4.8
OBMT	99	P	SUR	22	0	2.0	4.0	4.4
OZHS2	99	P	SUR	49	0	1.1	5.5	5.6
PZBN6JW	99	P	SUR	90	24	2.3	-0.8	2.5
UBUO6	99	P	SUR	21	0	3.0	-3.8	4.9
V7A5254	99	P	SUR	117	0	5.8	4.7	7.5
V7A6073	99	P	SUR	19	0	0.8	5.2	5.3
V7A6081	99	P	SUR	93	1	2.8	4.1	4.9
V7A6082	99	P	SUR	109	0	1.9	6.2	6.5
V7DJ7	99	P	SUR	24	0	1.8	4.0	4.4
V7QT7	99	P	SUR	59	0	1.7	3.7	4.1
VRCB4	99	P	SUR	18	0	0.6	-5.1	5.2
VRCI9	99	P	SUR	23	0	1.9	5.1	5.5
VRCY7	99	P	SUR	30	0	1.2	5.8	5.9
VRDB3	99	P	SUR	19	0	0.7	-4.5	4.5
VRDW2	99	P	SUR	72	0	1.6	-3.8	4.2
VREX4	99	P	SUR	21	0	1.6	7.2	7.4
VRFS2	99	P	SUR	18	1	1.9	-5.8	6.0
VRFW9	99	P	SUR	15	0	0.8	3.4	3.5
VRIB2	99	P	SUR	43	0	1.1	7.3	7.4
VRIR7	99	P	SUR	21	0	1.6	3.4	3.7
VRLJ4	99	P	SUR	25	0	3.7	6.6	7.6
VRTU5	99	P	SUR	38	0	0.8	-5.8	5.8
VRVC6	99	P	SUR	28	0	1.4	3.5	3.7
VRVR2	99	P	SUR	15	0	2.9	4.8	5.7
WCY2920	99	P	SUR	27	0	0.7	-3.6	3.7
WGEB	99	P	SUR	108	0	2.8	5.1	5.8
WHRN	99	P	SUR	56	0	0.6	-3.5	3.6

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
WTDO	99	P	SUR	92	0	5.0	-1.3	5.2
ZGFY4	99	P	SUR	38	0	1.8	-8.6	8.8

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                : JAN 2025
                    STANDARD OF COMPARISON: FIRST-GUESS FIELD


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


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

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

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

```
          LIST OF SUSPECT STATIONS        : SHIPS + FIXED MARINE PLATFORMS
                    MONITORING CENTRE     : ECMWF
                    ELEMENT MONITORED     : WIND DIRECTION (DEGREES)
                    AREA                  : GLOBAL
                    PERIOD                : JAN 2025
                    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
44488	99	DIRN	SUR	101	0	0	14.8	-31.7	35.0
44489	99	DIRN	SUR	101	0	0	15.2	-35.0	38.2
46073	99	DIRN	SUR	70	6	0	115.5	16.4	116.6
46092	99	DIRN	SUR	31	0	0	41.4	45.4	61.4
46204	99	DIRN	SUR	98	0	0	21.9	34.1	40.6

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                 : JAN 2025
                    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
0022942	99	P	SUR	4	105	550	0	4.4	-4.8	6.5
1301787	99	P	SUR	28	-16	581	581	0.0	0.0	0.0
1301795	99	P	SUR	25	-78	407	161	1.4	13.0	13.1
1501711	99	P	SUR	-24	-8	658	545	1.1	-12.1	12.1
1801774	99	P	SUR	-36	174	578	0	0.3	-4.1	4.1
2302627	99	P	SUR	11	73	674	674	0.0	0.0	0.0
2501556	99	P	SUR	74	154	278	278	0.0	0.0	0.0
2501557	99	P	SUR	74	167	73	73	0.0	0.0	0.0
2501575	99	P	SUR	72	-175	283	283	0.0	0.0	0.0
2501591	99	P	SUR	71	-179	741	172	6.7	-0.8	6.7
3201836	99	P	SUR	10	-171	735	735	0.0	0.0	0.0
3301523	99	P	SUR	-15	-39	539	0	0.4	-4.1	4.1
3401636	99	P	SUR	-32	-116	673	0	0.5	-6.3	6.3
4100082	99	P	SUR	36	-75	4340	0	1.7	-5.2	5.5
4101864	99	P	SUR	-12	44	98	98	0.0	0.0	0.0
41082	99	P	SUR	36	-75	725	0	1.8	-5.2	5.4
4402721	99	P	SUR	18	-65	729	143	2.2	-5.7	6.1
4601855	99	P	SUR	48	-169	735	380	5.0	-2.6	5.6
4602563	99	P	SUR	34	-164	728	0	4.5	4.7	6.5
4701543	99	P	SUR	72	-170	265	265	0.0	0.0	0.0
4701558	99	P	SUR	79	-18	61	0	0.4	-4.7	4.7
4801771	99	P	SUR	58	-11	744	744	0.0	0.0	0.0
4802662	99	P	SUR	70	-125	742	650	1.5	13.0	13.1
4804004	99	P	SUR	-5	-37	736	0	0.3	-5.8	5.8
5103563	99	P	SUR	33	-148	709	654	3.4	8.9	9.5
5501735	99	P	SUR	-43	-130	744	744	0.0	0.0	0.0
5802090	99	P	SUR	-11	89	310	310	0.0	0.0	0.0
5802091	99	P	SUR	-26	79	310	310	0.0	0.0	0.0
6203670	99	P	SUR	24	-17	133	133	0.0	0.0	0.0
6801904	99	P	SUR	-18	89	310	310	0.0	0.0	0.0
6801922	99	P	SUR	17	-25	722	0	0.6	-5.1	5.2
7801571	99	P	SUR	44	-48	730	99	7.0	2.5	7.5

LIST OF SUSPECT STATIONS : DRIFTER
MONITORING CENTRE : ECMWF
ELEMENT MONITORED : SURFACE PRESSURE (HPA)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	ME LEVEL	LAT	N LONG	N OBS	GROSS	SD	BIAS	RMS
7801641	99	P	SUR	61	-173	735	184	4.3	2.0	4.7
7801693	99	P	SUR	19	-176	735	0	0.0	-6.8	6.8
7801750	99	P	SUR	24	-131	721	645	1.7	13.3	13.4
7801759	99	P	SUR	20	152	730	18	1.6	11.5	11.6
7801770	99	P	SUR	59	-141	716	385	4.3	10.1	11.0
7810041	99	P	SUR	33	-117	39	0	0.4	-7.2	7.2
7810042	99	P	SUR	33	-117	40	0	0.0	-7.4	7.4
7810043	99	P	SUR	33	-117	40	0	0.0	-7.3	7.3
7810044	99	P	SUR	33	-117	38	0	0.7	-7.9	8.0
7810045	99	P	SUR	33	-117	40	0	0.0	-7.2	7.2
7810046	99	P	SUR	33	-117	40	0	0.4	-7.2	7.2
7810047	99	P	SUR	33	-117	39	0	0.4	-7.2	7.2
7810048	99	P	SUR	33	-117	39	0	0.4	-7.2	7.2
7810049	99	P	SUR	33	-117	40	0	0.4	-7.2	7.2
7810050	99	P	SUR	33	-117	36	0	0.0	-7.3	7.3
7810051	99	P	SUR	33	-117	36	0	0.0	-7.1	7.1
7810052	99	P	SUR	33	-117	37	0	0.4	-7.2	7.2
7810053	99	P	SUR	33	-117	36	0	0.0	-7.2	7.2
7810054	99	P	SUR	33	-117	36	0	0.4	-7.2	7.2
7810055	99	P	SUR	33	-117	36	0	0.0	-7.2	7.2
7810056	99	P	SUR	33	-117	36	0	0.4	-7.3	7.3
7810057	99	P	SUR	33	-117	36	0	0.4	-7.2	7.2
7810058	99	P	SUR	33	-117	37	0	0.0	-7.3	7.3
7810059	99	P	SUR	33	-117	36	0	0.0	-7.0	7.0
7810306	99	P	SUR	54	-165	689	135	6.2	0.3	6.2

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                : JAN 2025
                    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
2200105	99	SPEED	SUR	38	130	735	0	0	4.9	-5.0	7.0
5100010	99	SPEED	SUR	0	-170	24	0	0	0.4	-7.0	7.0
6100196	99	SPEED	SUR	42	4	191	0	0	4.5	-5.6	7.2

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

```
          LIST OF SUSPECT STATIONS         : DRIFTER
                    MONITORING CENTRE      : ECMWF
                    ELEMENT MONITORED      : WIND DIRECTION (DEGREES)
                    PERIOD                 : JAN 2025
                    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
1801606	99	DIRN	SUR	6	-142	31	0	0	5.6	23.1	23.7
2200105	99	DIRN	SUR	38	130	220	0	0	15.1	-23.3	27.8
2300003	99	DIRN	SUR	-2	81	274	0	0	134.3	44.8	141.5
23452	99	DIRN	SUR	12	68	169	0	0	9.1	-39.9	40.9
4400488	99	DIRN	SUR	45	-61	623	2	0	17.1	-30.8	35.2
4400489	99	DIRN	SUR	45	-61	617	0	0	15.3	-35.3	38.4
44488	99	DIRN	SUR	45	-61	622	2	0	17.9	-31.8	36.5
44489	99	DIRN	SUR	46	-61	619	0	0	16.1	-36.0	39.5
4600073	99	DIRN	SUR	55	-172	2557	179	0	114.1	7.8	114.4
4600092	99	DIRN	SUR	37	-122	163	0	0	29.9	38.6	48.8
46073	99	DIRN	SUR	55	-172	424	37	0	115.2	12.1	115.8
46092	99	DIRN	SUR	37	-122	164	0	0	36.4	40.5	54.4
46204	99	DIRN	SUR	51	-129	582	0	0	18.4	33.0	37.8
5200003	99	DIRN	SUR	5	165	280	0	0	39.7	-20.3	44.6
52003	99	DIRN	SUR	5	165	283	0	0	39.3	-20.3	44.3
5200312	99	DIRN	SUR	-2	-180	84	0	0	7.7	24.4	25.6
6100417	99	DIRN	SUR	38	0	593	9	0	130.6	-44.2	137.9
6200086	99	DIRN	SUR	55	7	83	0	0	12.8	26.6	29.5
62165	99	DIRN	SUR	54	1	1361	0	0	17.7	27.6	32.8

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                : JAN 2025
                    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	00	Z	1000	57	3	25	0	5.5	74.7	74.9
01400	12	Z	1000	57	3	28	0	5.5	74.3	74.5
23933	12	Z	300	61	69	29	0	33.7	-64.2	72.5
23933	00	Z	300	61	69	30	0	25.2	-65.1	69.8
24122	00	Z	200	69	112	31	0	30.7	-71.5	77.8
25403	12	Z	300	66	151	31	1	50.6	-78.5	93.4
25403	00	Z	250	66	151	30	0	61.3	-69.5	92.7
27730	00	Z	250	55	40	28	0	44.4	-76.0	88.0
32540	00	Z	70	53	159	30	0	139.8	14.6	140.6
32540	12	Z	400	53	159	29	1	59.1	30.1	66.3
34731	12	Z	200	47	40	31	0	50.3	71.1	87.1
35229	12	Z	1000	50	57	31	0	18.4	66.2	68.7
35229	00	Z	1000	50	57	31	0	16.1	67.1	69.0
38341	12	Z	300	43	71	23	4	97.1	-47.2	108.0
38341	00	Z	100	43	71	17	5	139.4	-88.7	165.2
60630	00	Z	1000	27	3	16	0	39.7	13.2	41.8
65344	12	Z	1000	6	2	31	0	5.8	33.5	34.0
68842	12	Z	1000	-34	26	24	0	26.9	17.5	32.1
68994	12	Z	1000	-47	38	26	0	8.5	26.9	28.2
68994	00	Z	1000	-47	38	25	0	11.1	28.1	30.2
76644	12	Z	1000	21	-90	26	0	2.6	33.1	33.2
76644	00	Z	850	21	-90	28	0	3.8	36.1	36.3
80371	12	Z	250	1	-78	18	3	6.6	216.7	216.8
91680	12	Z	1000	-18	177	31	0	4.5	33.0	33.3
91680	00	Z	1000	-18	177	31	0	5.0	31.0	31.4
97014	00	Z	1000	2	125	30	0	26.5	13.8	29.9
JNKN7J	00	Z	1000	52	-22	10	0	3.9	38.7	38.9
KMPLHP	00	Z	1000	45	-59	11	0	8.1	82.3	82.7

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                : JAN 2025
                    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
```

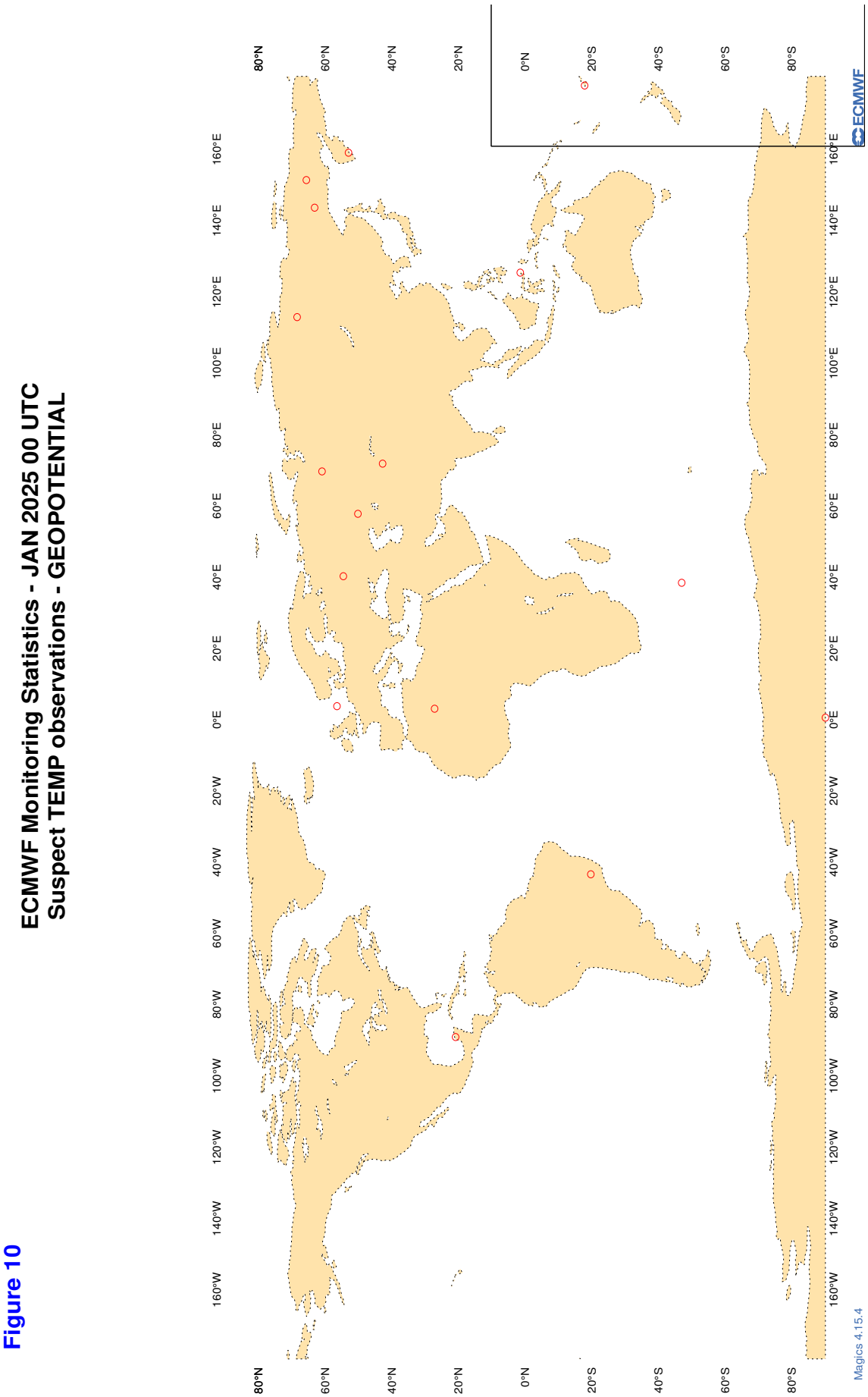
WMO IDENT	OBS TIME	ELM	LEV	LAT	LONG	NUM OBS	NUM GROSS	UBIAS	VBIAS	RMS
12120	00	V	100	55	18	11	2	-13.4	1.4	22.1
12120	12	V	250	55	18	17	0	-12.4	-3.1	25.2
38341	00	V	200	43	71	21	2	-0.2	-3.8	15.9
38341	12	V	200	43	71	21	1	1.2	-5.0	15.5
40179	00	V	100	32	35	24	0	-12.8	0.3	21.1

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

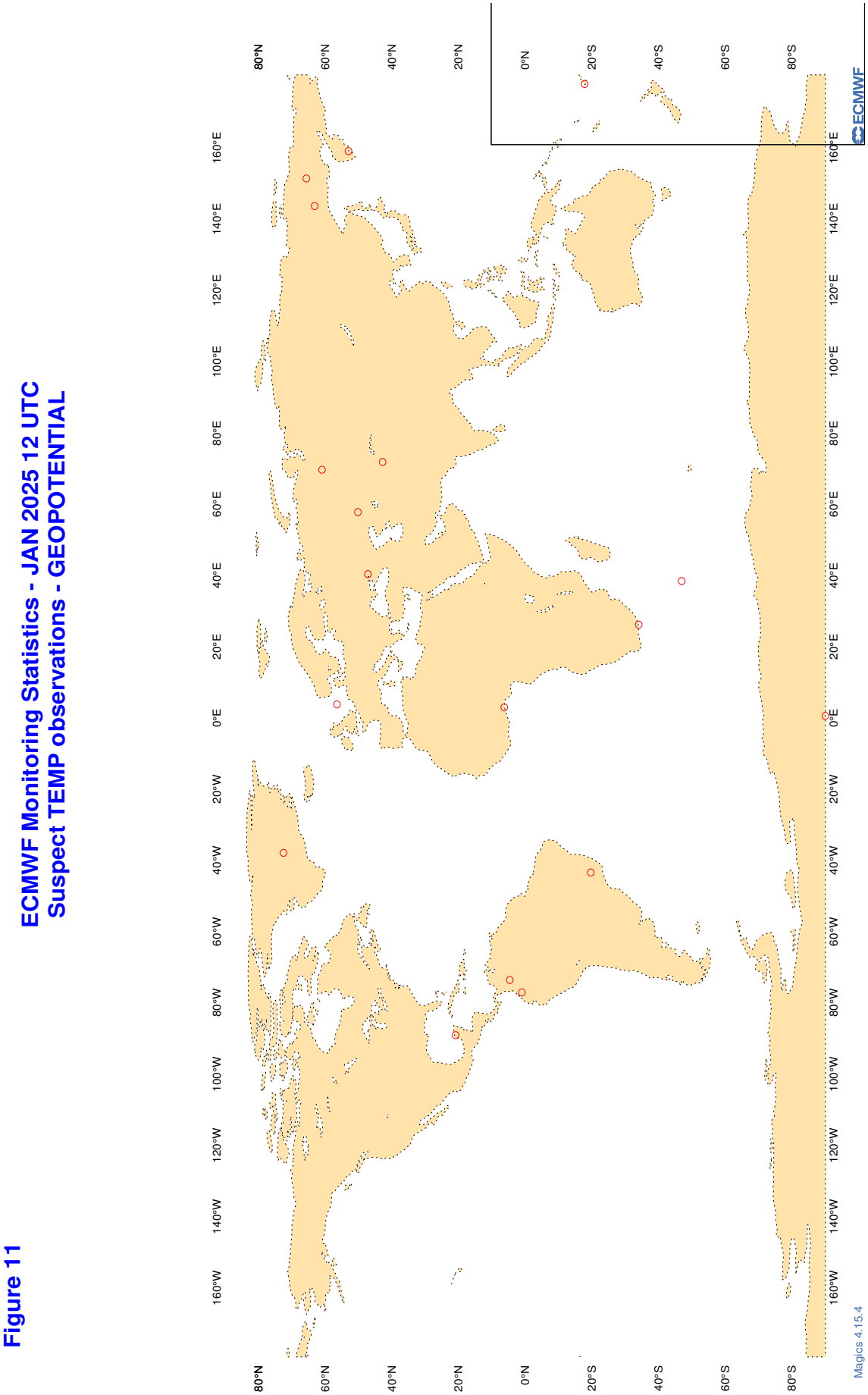
```
          LIST OF SUSPECT STATIONS        : RADIOSONDES
                    MONITORING CENTRE     : ECMWF
                    ELEMENT MONITORED     : WIND DIRECTION (DEGREES)
                    AREA                  : GLOBAL
                    PERIOD                : JAN 2025
                    STANDARD OF COMPARISON: FIRST-GUESS FIELD


SELECTION CRITERIA: OBSERVED/FORECAST WIND SPEEDS >= 5 M/S
                    NO. OF OBSERVATIONS   >= 5, AND,
                    ABSOLUTE BIAS         >= 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
51463	12	DD	44	88	30	-10.9	2.9	6.2
51463	00	DD	44	88	29	-10.7	2.9	5.6
54340	00	DD	42	124	28	-11.8	1.0	3.5
54340	12	DD	42	124	27	-12.5	0.9	4.3

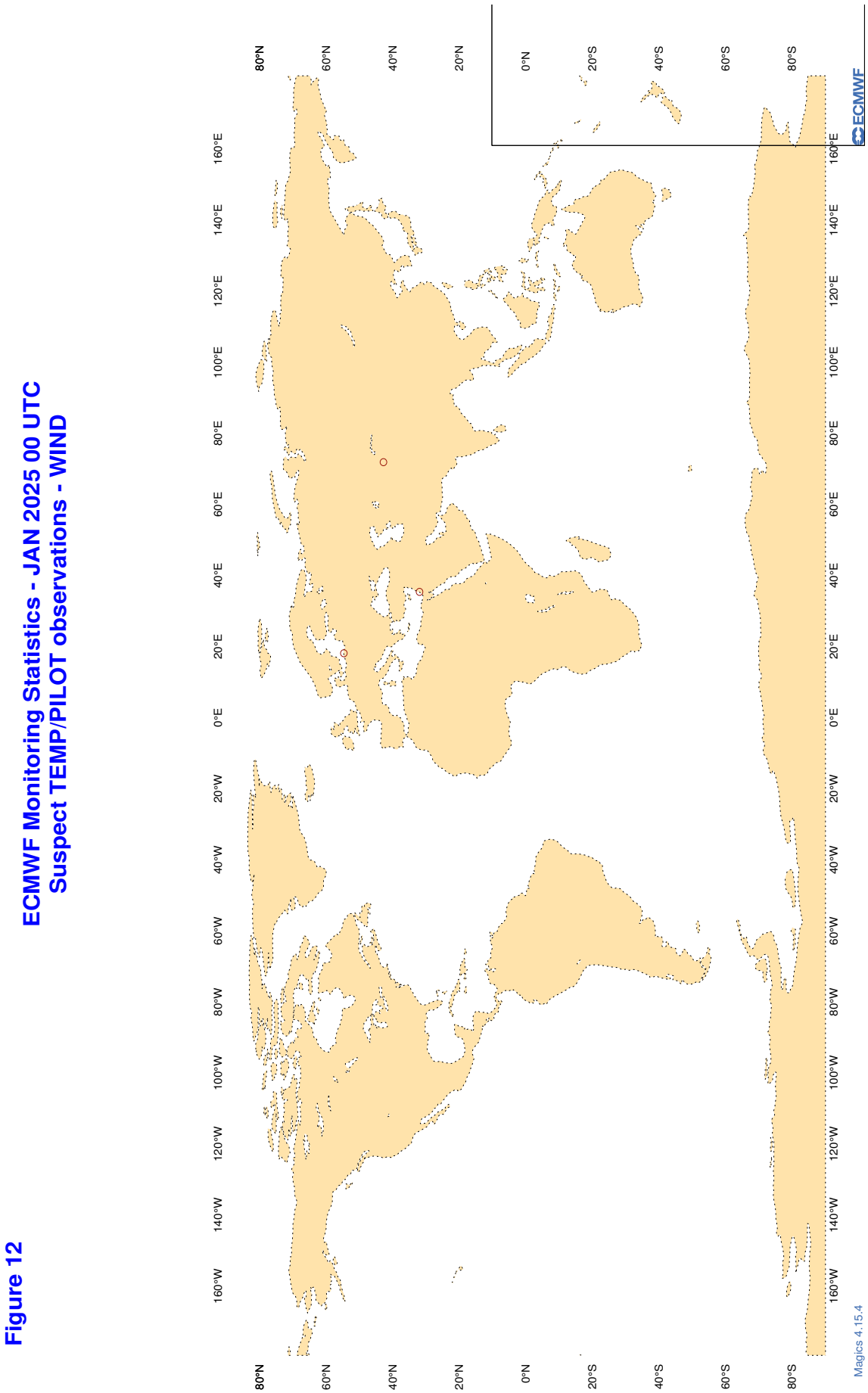
3.2.21 Figure 10 - Suspect TEMP observations - geopotential : 00 UTC



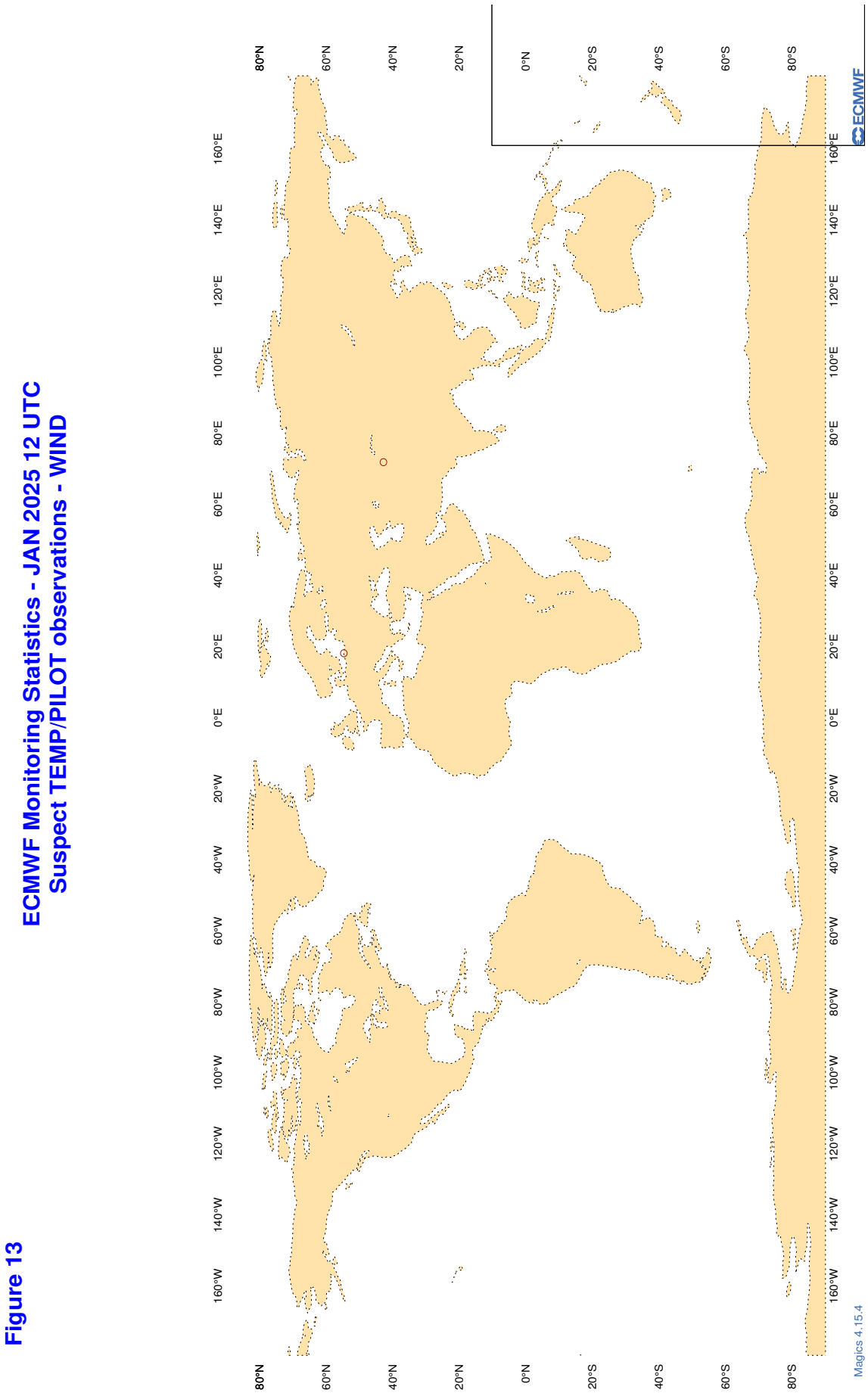
3.2.22 Figure 11 - Suspect TEMP observations - geopotential : 12 UTC



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



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



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                : JAN 2025
         STANDARD OF COMPARISON: FIRST-GUESS FIELD
```

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
2TDJJ8	00	Z	100	1	20.2	20.2
2TDJJ8	12	Z	100	28	11.5	10.3
7JUNA4	12	Z	100	7	21.9	-12.7
7JUNA4	00	Z	100	8	9.6	1.0
9ZT9MR	12	Z	100	9	48.0	-30.3
9ZT9MR	00	Z	100	5	33.4	-32.6
ATGU3F	00	Z	100	0	0.0	0.0
ATGU3F	12	Z	100	0	0.0	0.0
FPUW5G	12	Z	100	6	32.2	18.2
GQBZLZ	12	Z	100	0	0.0	0.0
GQBZLZ	00	Z	100	0	0.0	0.0
JNKN7J	12	Z	100	9	31.3	26.5
JNKN7J	00	Z	100	11	31.9	28.4
JNSR	12	Z	100	24	14.7	12.1
JNSR	00	Z	100	22	12.1	8.8
KJJF9X	12	Z	100	3	28.9	-28.7
KJJF9X	00	Z	100	1	10.3	-10.3
KMPLHP	12	Z	100	7	61.9	57.4
KMPLHP	00	Z	100	10	66.6	65.5
LAGY8	12	Z	100	2	31.3	-22.9
LAGZ8	12	Z	100	2	57.2	57.1
LAGZ8	00	Z	100	1	56.9	56.9
LRYQE3	12	Z	100	5	20.9	1.6
LRYQE3	00	Z	100	6	16.9	-14.2
USBOD	12	Z	100	1	11.3	-11.3
USTAC	00	Z	100	1	3.5	-3.5
USTAC	12	Z	100	2	16.7	-0.6
USYUB	12	Z	100	1	15.0	-15.0
UXK5JT	12	Z	100	2	13.4	-13.4
UXK5JT	00	Z	100	0	0.0	0.0
WDK38H	12	Z	100	7	13.1	-11.0
XKQLWQ	12	Z	100	20	21.4	18.8
YLV96W	12	Z	100	9	15.9	-0.4
YLV96W	00	Z	100	9	10.8	-5.2
ZVQEQC	12	Z	100	18	8.1	6.8
ZVQEQC	00	Z	100	20	10.1	8.5

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                : JAN 2025
         STANDARD OF COMPARISON: FIRST-GUESS FIELD
```

WMO IDENT	OB TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
2TDJJ8	00	V	100	1	1.9	-1.1	-1.5
2TDJJ8	12	V	100	28	1.9	0.1	0.0
7JUNA4	12	V	100	7	3.0	0.0	0.7
7JUNA4	00	V	100	8	4.2	-1.0	0.8
9ZT9MR	12	V	100	9	2.9	-1.7	0.0
9ZT9MR	00	V	100	5	2.4	1.5	0.3
ATGU3F	00	V	100	0	0.0	0.0	0.0
ATGU3F	12	V	100	0	0.0	0.0	0.0
FPUW5G	12	V	100	3	2.1	0.7	-1.4
GQBZLZ	12	V	100	0	0.0	0.0	0.0
GQBZLZ	00	V	100	0	0.0	0.0	0.0
JNKN7J	12	V	100	9	2.5	0.0	-1.2
JNKN7J	00	V	100	11	3.7	-1.2	0.1
JNSR	12	V	100	18	3.8	0.2	-1.0
JNSR	00	V	100	19	2.9	0.2	-0.4
KJJF9X	12	V	100	3	3.5	-2.7	-0.2
KJJF9X	00	V	100	1	2.0	-0.9	1.8
KMPLHP	12	V	100	7	3.6	-1.3	-0.8
KMPLHP	00	V	100	10	2.9	0.5	-0.2
LAGY8	12	V	100	2	3.4	0.1	3.0
LAGZ8	12	V	100	2	3.9	2.5	-1.8
LAGZ8	00	V	100	1	1.2	-0.1	1.2
LRYQE3	12	V	100	5	4.5	0.1	3.0
LRYQE3	00	V	100	6	6.5	-0.1	0.3
USBOD	12	V	100	1	3.6	2.9	-2.2
USTAC	00	V	100	1	2.1	2.0	0.7
USTAC	12	V	100	1	4.5	-4.5	-0.3
USYUB	12	V	100	1	0.2	-0.1	0.2
UXK5JT	12	V	100	2	4.1	-2.7	1.1
UXK5JT	00	V	100	0	0.0	0.0	0.0
WDK38H	12	V	100	6	2.6	-0.1	-0.7
XKQLWQ	12	V	100	19	5.1	-0.1	-0.8
YLV96W	12	V	100	9	2.3	1.0	-0.1
YLV96W	00	V	100	9	2.0	0.5	-0.4
ZVQEQC	12	V	100	16	4.0	0.0	-0.7
ZVQEQC	00	V	100	17	4.0	0.0	0.0

3.2.27 Figure 14 - SATOB Winds: 700-1000hPa

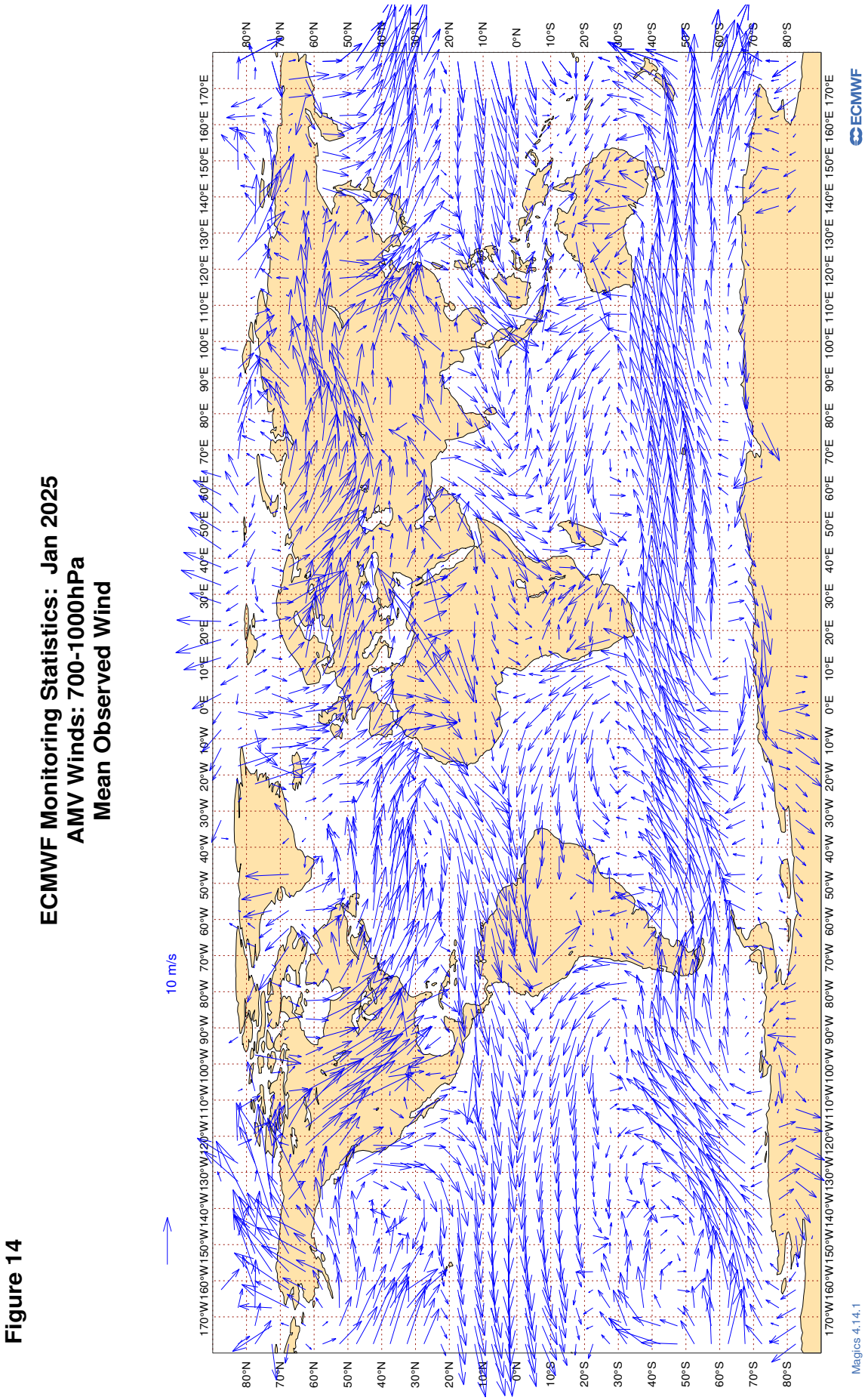


Figure 14

3.2.28 Figure 15 - SATOB Winds: 150- 400hPa

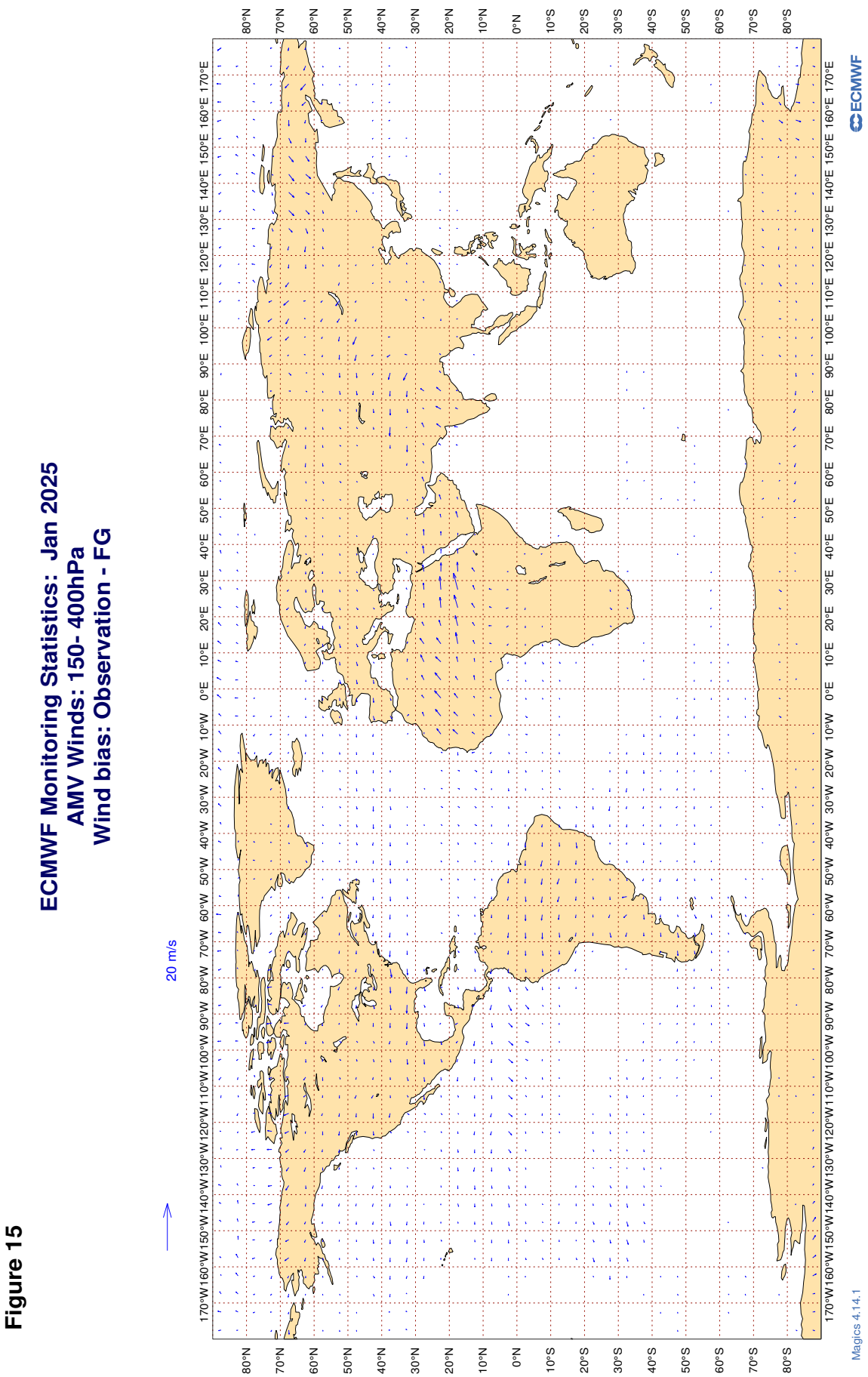


Figure 15

3.2.29 Figure 16 - SATOB Winds: 700-1000hPa

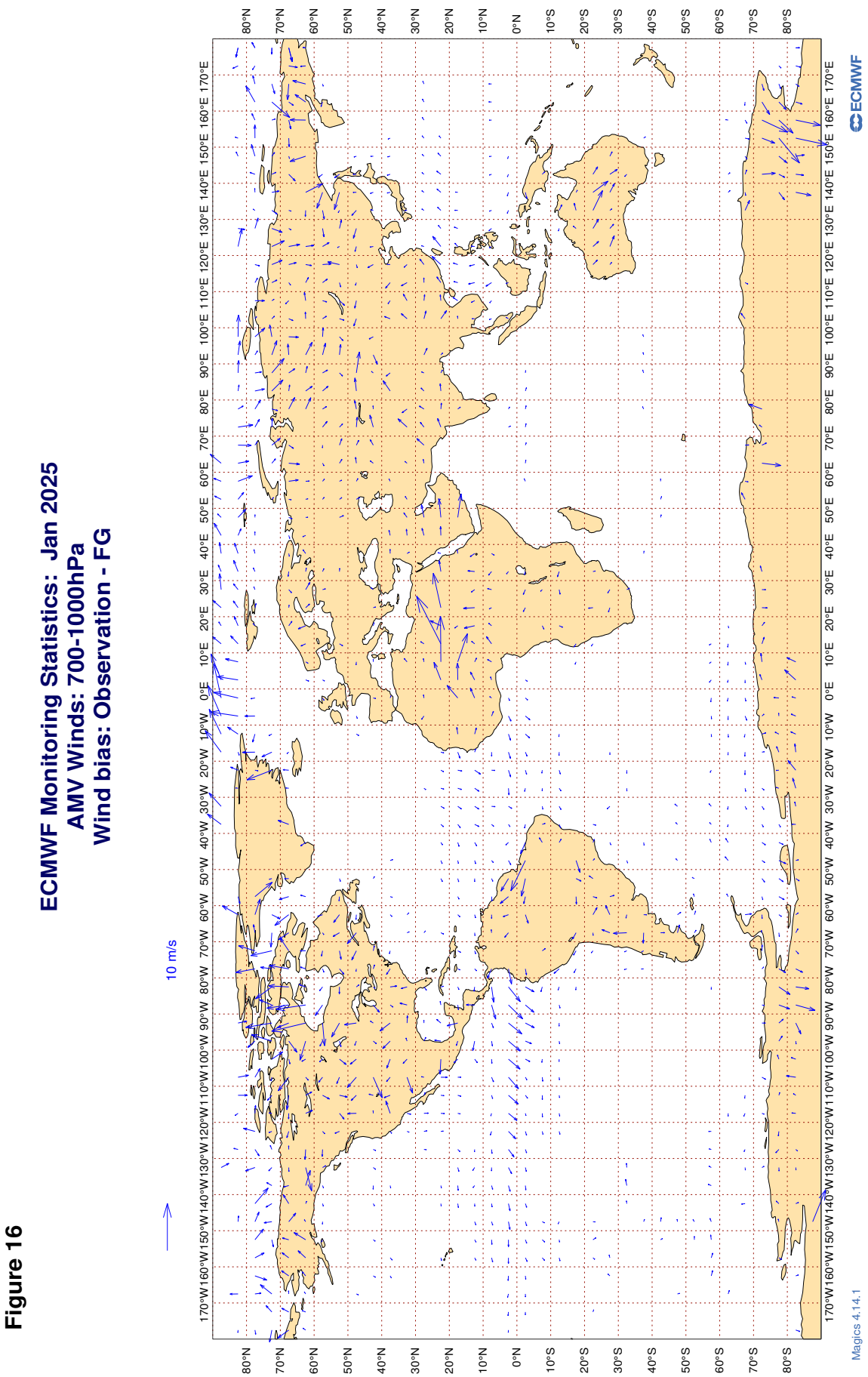


Figure 16

3.2.30 Figure 17 - SATOB Winds: 150- 400hPa

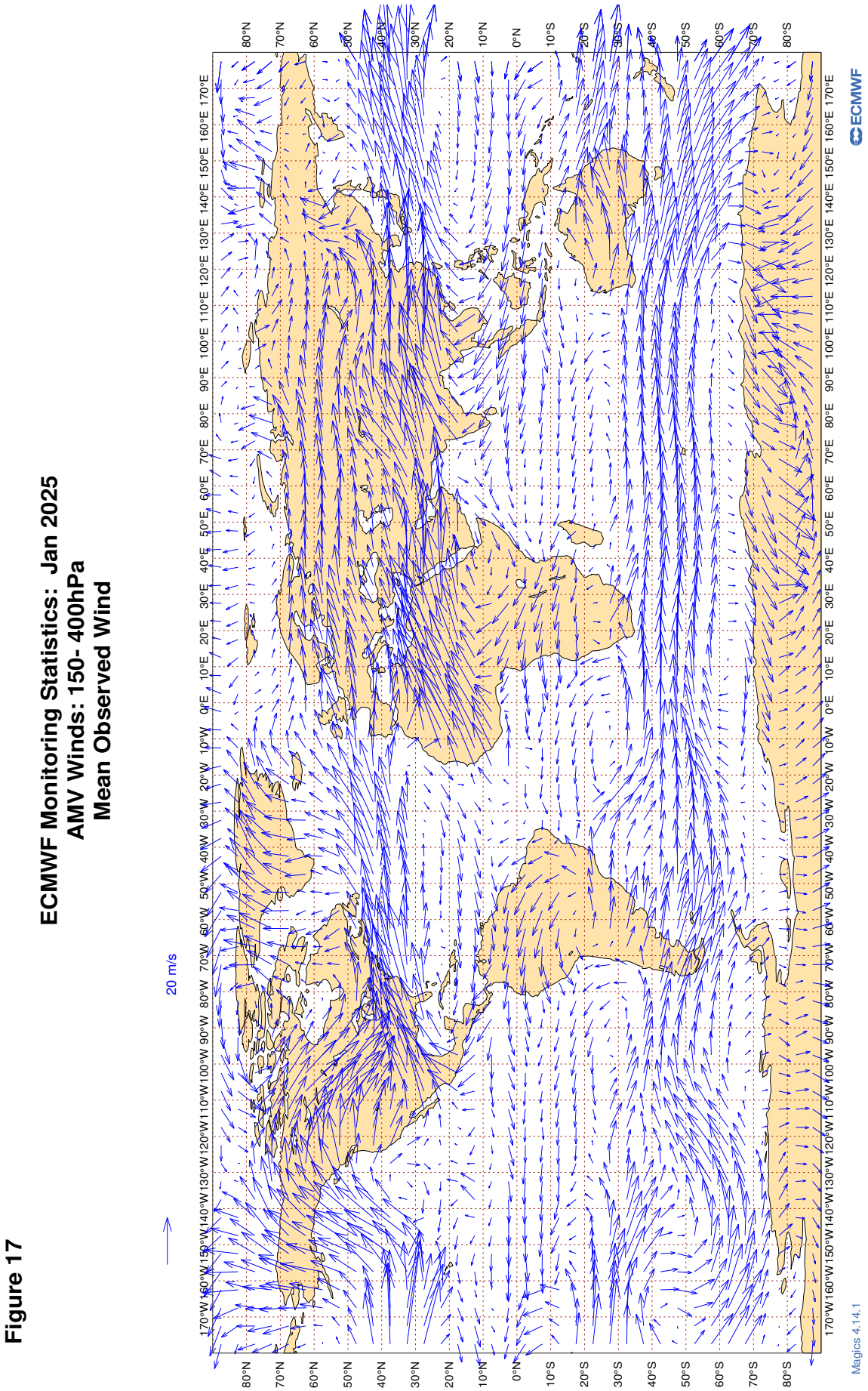


Figure 17

3.2.31 Figure 18 - AIRCRAFT Winds: 150- 300hPa

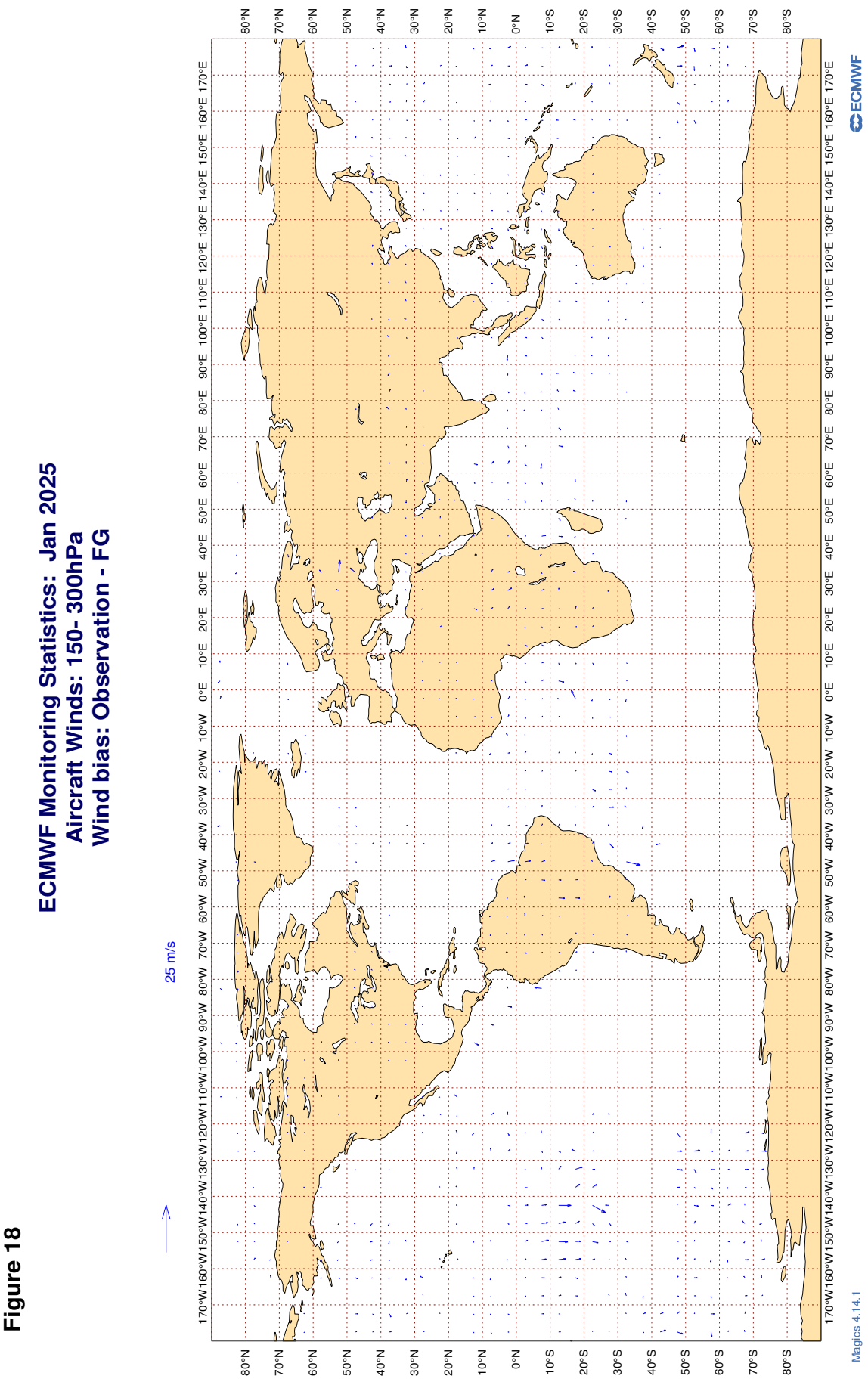


Figure 18

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 : JAN 2025
STANDARD OF COMPARISON: FIRST-GUESS FIELD

SELECTION CRITERIA: NO. OF OBS. >= 20

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

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
AAB	99	V	300-150	46	0	2	5.1	0.5
AAL	99	V	300-150	34052	5	0	6.2	0.1
AAR	99	V	300-150	190	0	0	4.3	-0.8
ABB	99	V	300-150	1488	0	0	3.6	0.0
ABD	99	V	300-150	1082	0	0	4.2	-0.3
ABP	99	V	300-150	38	0	0	3.5	1.0
ACA	99	V	300-150	23032	3	0	4.9	0.1
ACI	99	V	300-150	420	0	0	3.7	0.8
ADY	99	V	300-150	31	0	0	3.6	0.4
ADZ	99	V	300-150	397	0	0	3.0	0.2
AEA	99	V	300-150	478	10	0	10.4	-0.2
AFR	99	V	300-150	31543	1	0	4.3	0.0
AHY	99	V	300-150	32	0	0	8.1	0.5
AIC	99	V	300-150	7772	1	0	4.8	0.2
AJO	99	V	300-150	81	0	0	3.8	0.9
AJT	99	V	300-150	104	0	0	3.3	0.7
ALE	99	V	300-150	23	0	0	2.4	0.5
ALK	99	V	300-150	993	0	0	3.2	0.4
AMX	99	V	300-150	5338	12	0	8.0	0.0
ANA	99	V	300-150	165	4	0	4.5	0.6
ANZ	99	V	300-150	14403	0	0	4.1	0.4
AOJ	99	V	300-150	202	0	0	3.3	0.1
AOJ	99	V	300-150	34	0	0	4.3	-0.2

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
ARL	99	V	300-150	28	0	0	5.7	-1.7
ASA	99	V	300-150	48	4	0	8.5	-0.8
ASL	99	V	300-150	621	0	0	3.7	0.3
ASY	99	V	300-150	32	0	0	4.7	-1.7
ATC	99	V	300-150	135	7	0	6.4	0.4
ATN	99	V	300-150	111	0	1	4.9	0.0
AUA	99	V	300-150	4601	4	0	5.4	0.0
AVA	99	V	300-150	724	7	0	6.6	0.0
AWC	99	V	300-150	138	0	0	3.8	0.0
AXL	99	V	300-150	27	0	0	3.0	0.1
AXM	99	V	300-150	85	0	4	3.1	0.6
AXY	99	V	300-150	91	0	0	3.1	0.4
AZG	99	V	300-150	913	0	0	3.8	-0.3
BAF	99	V	300-150	81	0	0	3.6	0.3
BAW	99	V	300-150	45838	3	0	5.3	-0.1
BBB	99	V	300-150	29	0	0	3.3	-0.1
BBC	99	V	300-150	695	9	0	6.8	0.0
BCS	99	V	300-150	1751	0	0	3.7	0.2
BEL	99	V	300-150	546	0	0	3.5	0.0
BFY	99	V	300-150	31	0	0	3.5	1.2
BJN	99	V	300-150	46	0	0	2.9	-0.4
BLU	99	V	300-150	34	0	0	4.8	0.1
BLX	99	V	300-150	1076	5	0	6.9	0.1
BMW	99	V	300-150	28	0	0	2.8	0.6
BOX	99	V	300-150	4263	0	0	3.7	0.0
BQB	99	V	300-150	42	0	0	3.3	0.8
BRK	99	V	300-150	24	0	0	4.5	2.2
BTX	99	V	300-150	127	0	0	3.8	0.1
CAL	99	V	300-150	1467	0	0	3.4	0.3
CBJ	99	V	300-150	200	0	0	3.1	0.9
CCA	99	V	300-150	388	1	0	3.3	0.8
CEB	99	V	300-150	738	0	0	2.6	0.4
CES	99	V	300-150	1967	0	0	3.4	0.5
CFC	99	V	300-150	244	0	0	3.3	-0.5
CFG	99	V	300-150	6201	0	0	3.8	0.3
CHG	99	V	300-150	644	0	0	4.1	-0.2
CHH	99	V	300-150	637	4	0	4.8	0.3
CJT	99	V	300-150	617	0	0	4.4	-0.2
CKS	99	V	300-150	407	0	0	3.6	-0.2
CLF	99	V	300-150	41	0	0	4.5	-1.0
CLX	99	V	300-150	4389	0	0	4.1	-0.4
CLY	99	V	300-150	36	0	0	3.6	0.4
CMB	99	V	300-150	1271	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
CND	99	V	300-150	259	0	0	4.8	-0.7
CNK	99	V	300-150	34	0	0	4.0	0.1
CNV	99	V	300-150	119	0	0	4.0	-0.4
CPA	99	V	300-150	3389	0	0	3.2	0.1
CRK	99	V	300-150	122	0	0	4.0	0.3
CRL	99	V	300-150	819	0	0	3.8	0.4
CRV	99	V	300-150	46	0	0	3.5	0.6
CSC	99	V	300-150	1059	0	0	2.7	0.3
CSG	99	V	300-150	80	0	0	3.2	0.0
CSN	99	V	300-150	598	1	0	3.0	0.4
CSS	99	V	300-150	170	0	0	3.3	-0.1
CSZ	99	V	300-150	141	0	0	2.9	0.3
CTM	99	V	300-150	171	0	0	3.9	0.0
CTV	99	V	300-150	139	0	0	3.6	0.1
CXA	99	V	300-150	71	6	0	3.4	0.6
DAH	99	V	300-150	784	0	0	3.9	0.2
DAL	99	V	300-150	44009	0	0	3.8	0.1
DCM	99	V	300-150	27	0	0	3.8	0.9
DCW	99	V	300-150	41	0	0	3.8	0.3
DGX	99	V	300-150	64	0	0	3.2	-0.1
DHK	99	V	300-150	2283	0	0	4.3	-0.3
DHX	99	V	300-150	708	0	0	3.3	0.2
DJT	99	V	300-150	1812	0	0	4.0	0.2
DLH	99	V	300-150	22381	0	0	3.9	0.0
DSO	99	V	300-150	22	0	0	4.5	0.4
EAK	99	V	300-150	24	0	0	3.0	0.7
EAL	99	V	300-150	35	0	0	3.6	-0.2
EAU	99	V	300-150	49	0	0	3.9	-0.3
ECC	99	V	300-150	25	48	0	23.7	0.8
EDC	99	V	300-150	39	0	0	3.2	-0.3
EDG	99	V	300-150	29	0	0	3.8	-1.5
EDW	99	V	300-150	1385	0	0	4.0	0.3
EIN	99	V	300-150	12656	0	0	3.8	0.2
EJM	99	V	300-150	723	0	0	3.5	0.0
ELY	99	V	300-150	5270	11	0	7.8	0.0
ETD	99	V	300-150	12801	3	0	6.3	0.2
ETH	99	V	300-150	6226	3	0	5.9	0.3
EUK	99	V	300-150	1359	0	0	3.9	0.2
EVA	99	V	300-150	764	1	0	3.2	0.5
EVE	99	V	300-150	164	0	0	5.2	1.3
EXS	99	V	300-150	4640	0	0	3.7	0.1
EZY	99	V	300-150	120	0	0	3.5	0.1
FBU	99	V	300-150	1746	0	0	3.7	0.0

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
FDX	99	V	300-150	7487	0	0	3.8	-0.1
FIN	99	V	300-150	3173	0	0	3.1	0.3
FJI	99	V	300-150	2720	0	0	4.4	0.5
FJO	99	V	300-150	157	0	0	3.3	0.3
FLW	99	V	300-150	25	0	0	3.2	-0.2
FPY	99	V	300-150	3317	0	0	3.5	0.2
FWI	99	V	300-150	1947	0	0	4.2	-0.1
FYG	99	V	300-150	63	0	0	3.7	-0.4
FYL	99	V	300-150	71	0	0	5.1	0.2
GAF	99	V	300-150	199	0	0	3.2	0.5
GCK	99	V	300-150	85	0	0	4.0	0.2
GEC	99	V	300-150	981	0	0	3.6	0.2
GFA	99	V	300-150	1632	3	0	8.2	0.4
GIA	99	V	300-150	867	0	0	3.3	0.5
GJE	99	V	300-150	45	0	0	4.1	1.2
GJW	99	V	300-150	43	0	0	3.6	1.0
GLJ	99	V	300-150	29	0	0	4.2	0.5
GNJ	99	V	300-150	126	0	0	3.5	-0.2
GSM	99	V	300-150	126	0	0	3.8	0.2
GTI	99	V	300-150	1862	0	0	4.2	-0.3
GTR	99	V	300-150	369	0	0	4.0	0.2
HAL	99	V	300-150	840	0	0	4.4	0.6
HFM	99	V	300-150	56	0	0	4.2	0.9
HGO	99	V	300-150	157	0	0	3.4	2.0
HKC	99	V	300-150	75	0	0	2.9	0.9
HKH	99	V	300-150	31	0	0	3.0	-0.2
HLF	99	V	300-150	47	0	0	2.5	0.0
HRN	99	V	300-150	25	0	0	5.0	0.3
HUE	99	V	300-150	84	0	0	6.4	1.2
HVN	99	V	300-150	1075	2	0	3.8	0.6
HYP	99	V	300-150	55	0	0	3.5	0.7
HYS	99	V	300-150	540	0	0	3.4	0.1
HZS	99	V	300-150	57	0	0	4.4	0.2
IAM	99	V	300-150	74	0	0	4.1	0.2
IBE	99	V	300-150	5749	0	0	4.4	0.0
ICE	99	V	300-150	7960	0	0	3.4	0.2
ICL	99	V	300-150	252	0	0	4.2	-0.7
ICV	99	V	300-150	211	0	0	3.5	-0.2
IFA	99	V	300-150	469	0	0	3.8	-0.2
IGA	99	V	300-150	67	0	0	3.4	0.1
IGO	99	V	300-150	296	0	0	2.9	0.2
IJM	99	V	300-150	47	0	0	3.8	0.1
IND	99	V	300-150	38	0	0	2.3	0.1

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
ITY	99	V	300-150	3475	0	0	3.8	0.3
IXR	99	V	300-150	24	0	0	3.8	-0.4
JAF	99	V	300-150	472	4	0	6.3	0.2
JAL	99	V	300-150	735	2	0	6.5	0.1
JAS	99	V	300-150	169	5	0	8.3	0.5
JBU	99	V	300-150	6139	0	0	4.2	0.2
JCO	99	V	300-150	56	0	0	3.0	0.0
JDI	99	V	300-150	20	0	0	3.4	1.0
JEF	99	V	300-150	75	0	0	3.4	0.1
JME	99	V	300-150	104	0	0	3.6	0.1
JST	99	V	300-150	1234	0	0	3.9	0.5
JTL	99	V	300-150	37	0	0	4.7	0.7
JVW	99	V	300-150	30	0	0	5.1	1.3
JZR	99	V	300-150	23	0	0	2.8	0.2
KAC	99	V	300-150	2163	0	0	3.0	0.5
KAF	99	V	300-150	34	0	0	2.9	-0.6
KAI	99	V	300-150	138	1	0	4.4	0.5
KAL	99	V	300-150	488	0	0	3.8	0.8
KAY	99	V	300-150	149	0	0	3.6	0.2
KFE	99	V	300-150	31	0	0	4.1	-0.9
KLM	99	V	300-150	18482	5	0	5.9	0.0
KPO	99	V	300-150	38	0	0	3.6	-0.2
KQA	99	V	300-150	481	10	0	8.8	0.0
LCO	99	V	300-150	540	0	0	5.0	-1.0
LDX	99	V	300-150	68	12	0	12.6	0.4
LEA	99	V	300-150	20	0	0	3.3	2.0
LMJ	99	V	300-150	64	0	0	3.3	-0.3
LNI	99	V	300-150	572	0	1	3.2	0.4
LNX	99	V	300-150	61	0	0	3.8	0.9
LOT	99	V	300-150	4588	7	0	7.0	0.2
LRQ	99	V	300-150	63	0	0	3.8	-0.2
LXJ	99	V	300-150	572	0	0	3.6	0.4
MAS	99	V	300-150	6615	0	0	3.5	0.6
MAU	99	V	300-150	161	0	0	4.7	1.1
MED	99	V	300-150	69	0	0	4.1	-0.2
MLM	99	V	300-150	88	0	0	3.7	0.7
MMD	99	V	300-150	227	0	0	3.6	0.4
MMF	99	V	300-150	64	0	0	3.6	0.5
MNB	99	V	300-150	346	0	0	3.8	0.3
MPH	99	V	300-150	359	0	0	4.0	0.5
MSR	99	V	300-150	2242	6	0	6.8	0.0
MXD	99	V	300-150	437	0	0	2.6	0.3
NBT	99	V	300-150	1142	10	0	8.3	0.2

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
NCR	99	V	300-150	351	0	0	3.2	0.0
NEW	99	V	300-150	58	0	0	3.6	0.6
NJE	99	V	300-150	743	0	0	3.7	0.3
NOS	99	V	300-150	1994	10	0	7.5	0.0
NUM	99	V	300-150	103	0	0	3.4	0.5
OAE	99	V	300-150	460	0	0	3.8	0.2
OCN	99	V	300-150	4369	0	0	3.8	0.1
OMA	99	V	300-150	2041	4	0	8.6	0.3
PAL	99	V	300-150	1706	0	0	2.7	0.4
PEX	99	V	300-150	31	0	0	3.2	-0.2
PFT	99	V	300-150	26	0	0	7.6	-1.1
PIA	99	V	300-150	396	0	0	2.9	0.3
PJZ	99	V	300-150	20	0	0	3.2	-0.4
PUE	99	V	300-150	268	0	0	4.2	0.1
PVA	99	V	300-150	239	0	0	3.1	0.1
QFA	99	V	300-150	4626	4	0	6.0	0.3
QFX	99	V	300-150	38	0	0	3.3	0.5
QNT	99	V	300-150	183	0	0	2.6	0.4
QQE	99	V	300-150	357	0	0	3.6	0.3
QTR	99	V	300-150	29627	0	0	4.1	0.3
RAM	99	V	300-150	1110	17	0	8.2	-0.2
RBA	99	V	300-150	395	3	0	8.3	0.3
RCH	99	V	300-150	2111	0	0	4.8	0.0
RCR	99	V	300-150	86	0	0	2.6	0.5
RDN	99	V	300-150	31	0	0	3.8	-0.3
RHH	99	V	300-150	66	0	0	8.4	3.4
RJA	99	V	300-150	1923	10	0	7.5	-0.2
RJR	99	V	300-150	62	0	0	3.6	-0.4
RKK	99	V	300-150	29	0	0	5.0	-1.8
ROJ	99	V	300-150	36	0	0	4.4	-0.4
RRR	99	V	300-150	250	0	0	4.3	0.1
RSF	99	V	300-150	39	0	0	7.5	0.4
RYR	99	V	300-150	1196	0	0	3.9	0.4
RZO	99	V	300-150	558	0	0	4.0	-0.4
SAM	99	V	300-150	163	0	0	4.0	-0.2
SAS	99	V	300-150	6309	0	0	3.4	0.2
SAZ	99	V	300-150	137	0	0	3.7	0.6
SCO	99	V	300-150	68	0	0	2.9	0.5
SCX	99	V	300-150	83	0	1	4.2	0.9
SEU	99	V	300-150	58	0	0	3.1	0.2
SEY	99	V	300-150	23	0	0	4.7	0.6
SIA	99	V	300-150	18161	0	0	3.9	0.4
SIO	99	V	300-150	20	0	0	3.2	1.8

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
SJE	99	V	300-150	34	0	0	2.7	0.7
SKV	99	V	300-150	87	0	0	3.5	0.3
SLM	99	V	300-150	180	0	0	4.2	0.5
SPA	99	V	300-150	61	0	0	3.8	0.5
SRA	99	V	300-150	21	0	0	9.0	0.0
SRR	99	V	300-150	25	0	0	3.1	-1.0
SVA	99	V	300-150	9001	2	0	5.8	0.2
SVW	99	V	300-150	274	0	0	3.5	0.0
SWR	99	V	300-150	11582	0	0	3.8	0.1
SWW	99	V	300-150	50	0	0	4.8	-1.1
SYB	99	V	300-150	38	0	0	2.9	-0.3
TAG	99	V	300-150	51	0	0	3.8	0.6
TAM	99	V	300-150	63	0	0	4.4	0.8
TAP	99	V	300-150	4023	0	0	4.4	0.0
TAR	99	V	300-150	386	0	0	3.9	0.2
TAX	99	V	300-150	138	0	0	2.8	0.4
TAY	99	V	300-150	78	0	0	4.4	-1.6
TEU	99	V	300-150	85	0	0	3.7	0.5
TFF	99	V	300-150	44	0	2	3.6	1.1
TFL	99	V	300-150	1397	12	0	7.8	-0.2
TGW	99	V	300-150	1180	2	0	8.6	0.4
THA	99	V	300-150	6156	1	0	3.5	0.6
THT	99	V	300-150	2111	9	0	9.0	0.3
THY	99	V	300-150	23570	3	0	4.7	0.2
TLJ	99	V	300-150	44	0	0	4.0	0.2
TMN	99	V	300-150	421	0	0	4.3	0.5
TOM	99	V	300-150	4622	9	0	7.8	-0.1
TSC	99	V	300-150	5237	0	0	3.8	0.1
TUA	99	V	300-150	120	0	0	2.2	0.4
TWY	99	V	300-150	484	0	0	3.8	-0.1
UAE	99	V	300-150	27143	0	0	3.4	0.3
UAF	99	V	300-150	122	0	0	4.2	0.0
UAL	99	V	300-150	58424	3	1	5.4	0.1
UBT	99	V	300-150	1805	13	0	7.5	-0.2
ULC	99	V	300-150	74	0	0	3.7	0.4
UNI	99	V	300-150	60	0	0	4.6	-0.4
UPS	99	V	300-150	5742	0	0	3.9	-0.2
USY	99	V	300-150	124	0	0	2.9	0.7
UZB	99	V	300-150	884	4	0	6.5	0.4
UZS	99	V	300-150	271	0	0	3.0	0.3
VCG	99	V	300-150	80	0	0	4.1	0.2
VCJ	99	V	300-150	32	0	0	3.5	-0.3
VIR	99	V	300-150	19405	3	0	5.1	0.0

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
VJA	99	V	300-150	32	0	0	4.2	-0.2
VJC	99	V	300-150	334	0	0	2.8	0.2
VJH	99	V	300-150	210	0	0	3.8	0.0
VJT	99	V	300-150	1756	0	0	3.6	0.3
VKG	99	V	300-150	441	0	0	3.2	0.5
VLZ	99	V	300-150	92	0	0	3.6	-0.2
VOL	99	V	300-150	24	0	0	5.0	1.3
VOZ	99	V	300-150	160	0	0	4.2	-0.1
VSV	99	V	300-150	217	0	0	2.4	0.5
WFL	99	V	300-150	748	0	0	4.7	0.4
WJA	99	V	300-150	1111	12	1	8.2	0.1
WWI	99	V	300-150	105	0	0	3.8	0.4
XAX	99	V	300-150	1051	0	0	3.3	0.5
XFL	99	V	300-150	29	0	0	3.4	0.2
XGN	99	V	300-150	50	0	0	3.1	-0.3
XRO	99	V	300-150	24	0	0	5.4	3.4

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 $10\,^{\circ}$N - $90\,^{\circ}$N, $70\,^{\circ}$W - $40\,^{\circ}$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 $10\,^{\circ}$N - $90\,^{\circ}$N, $70\,^{\circ}$W - $40\,^{\circ}$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                : JAN 2025
         STANDARD OF COMPARISON: FIRST-GUESS FIELD
```

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	12	Z	50	25	11.8	-6.3
01001	00	Z	50	26	10.5	6.9
01028	12	Z	50	28	9.6	-5.5
01028	00	Z	50	26	8.0	-3.2
01400	00	Z	50	23	80.8	80.2
01400	12	Z	50	27	78.6	77.9
01415	00	Z	50	28	13.5	-3.5
01415	12	Z	50	31	11.2	2.7
02365	00	Z	50	26	7.9	2.0
02365	12	Z	50	22	13.9	7.0
02591	12	Z	50	13	12.4	3.0
02591	00	Z	50	13	11.1	1.9
02836	00	Z	50	0	0.0	0.0
02836	12	Z	50	6	14.6	6.2
02963	12	Z	50	22	7.7	-2.6
02963	00	Z	50	16	5.0	0.9
03005	00	Z	50	29	9.4	-5.4
03005	12	Z	50	29	10.7	-3.4
03238	12	Z	50	8	10.8	5.9
03238	00	Z	50	29	10.8	0.2
03808	00	Z	50	26	16.0	4.7
03808	12	Z	50	30	19.2	-2.5
03918	12	Z	50	4	9.0	3.3
03918	00	Z	50	31	12.7	7.8
03953	00	Z	50	28	12.2	-5.8
03953	12	Z	50	31	15.6	-7.6
04018	00	Z	50	29	11.7	1.9
04018	12	Z	50	30	10.9	-0.8
04220	00	Z	50	28	12.3	-5.6
04220	12	Z	50	30	11.1	-7.0
04270	12	Z	50	25	20.5	-15.8
04270	00	Z	50	26	16.0	-9.7
04320	00	Z	50	29	10.7	-1.7
04320	12	Z	50	28	43.2	4.7
04339	12	Z	50	16	21.1	-18.2
04339	00	Z	50	16	18.5	-11.9
04360	00	Z	50	5	33.3	-32.0
04360	12	Z	50	8	38.4	-37.5
06011	12	Z	50	29	32.8	-30.2

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06260	12	Z	50	7	10.8	1.3
06260	00	Z	50	30	9.0	2.2
06610	00	Z	50	30	14.5	0.9
06610	12	Z	50	31	10.5	4.0
07110	12	Z	50	31	25.3	-20.3
07110	00	Z	50	25	30.7	-27.5
07510	12	Z	50	29	33.8	-29.0
07510	00	Z	50	28	45.6	-43.4
07645	00	Z	50	27	43.4	-38.1
07645	12	Z	50	28	31.0	-26.3
07761	00	Z	50	25	25.0	-18.3
07761	12	Z	50	30	26.5	-13.6
08001	12	Z	50	31	9.1	5.7
08001	00	Z	50	29	9.3	1.1
08221	12	Z	50	30	11.4	9.0
08221	00	Z	50	30	9.0	5.1
08302	00	Z	50	31	9.7	-2.8
08302	12	Z	50	31	11.0	-4.4
08508	12	Z	50	28	23.2	0.2
08522	12	Z	50	29	8.6	5.1
10035	00	Z	50	29	16.3	13.3
10035	12	Z	50	30	13.9	10.3
10393	12	Z	50	30	8.6	1.6
10393	00	Z	50	30	7.7	-0.4
10410	00	Z	50	30	10.1	-1.3
10410	12	Z	50	30	11.5	1.2
10739	12	Z	50	31	12.8	5.6
10739	00	Z	50	28	14.0	5.7
11035	00	Z	50	30	16.1	-5.1
11035	12	Z	50	30	18.6	-3.2
12982	00	Z	50	31	10.2	-4.7
12982	12	Z	50	30	8.0	3.6
16245	00	Z	50	29	8.8	3.3
16245	12	Z	50	31	12.1	4.2
16429	00	Z	50	29	7.9	5.3
16429	12	Z	50	31	6.6	1.8
16622	00	Z	50	22	12.2	-8.2
16754	00	Z	50	27	11.0	-6.2
16754	12	Z	50	1	4.2	4.2
17607	12	Z	50	25	17.2	-3.4
26435	12	Z	50	1	6.6	6.6
60018	12	Z	50	31	6.0	1.4
60018	00	Z	50	31	8.0	5.4

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
7JUNA4	12	Z	50	7	23.3	-13.3
7JUNA4	00	Z	50	7	17.2	-3.5
9ZT9MR	12	Z	50	9	46.0	-25.0
9ZT9MR	00	Z	50	4	32.5	-30.7
ATGU3F	00	Z	50	0	0.0	0.0
ATGU3F	12	Z	50	1	37.0	-37.0
FPUW5G	12	Z	50	6	30.5	11.8
GQBZLZ	12	Z	50	1	16.5	-16.5
GQBZLZ	00	Z	50	1	14.8	-14.8
JNKN7J	12	Z	50	9	53.0	36.9
JNKN7J	00	Z	50	10	30.9	27.9
KJJF9X	12	Z	50	3	34.9	-34.8
KJJF9X	00	Z	50	1	22.7	-22.7
KMPLHP	12	Z	50	7	77.1	72.9
KMPLHP	00	Z	50	10	65.9	65.0
LRYQE3	12	Z	50	5	72.0	44.0
LRYQE3	00	Z	50	5	17.9	-11.7
UXK5JT	12	Z	50	2	38.6	-37.7
UXK5JT	00	Z	50	0	0.0	0.0
WDK38H	12	Z	50	6	13.9	-12.8
XKQLWQ	12	Z	50	18	28.2	25.0
YLV96W	12	Z	50	9	46.2	14.1
YLV96W	00	Z	50	7	4.7	-2.9

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                : JAN 2025
         STANDARD OF COMPARISON: FIRST-GUESS FIELD
```

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	12	V	50	23	4.2	-1.2	-1.1
01001	00	V	50	23	3.7	-0.3	-0.3
01028	12	V	50	27	3.3	0.5	0.1
01028	00	V	50	21	3.4	0.3	-0.6
01400	00	V	50	23	4.3	-0.2	0.4
01400	12	V	50	23	4.2	0.4	0.2
01415	00	V	50	24	4.2	0.1	-0.6
01415	12	V	50	31	4.0	-0.2	-0.2
02365	00	V	50	22	3.1	0.2	-0.5
02365	12	V	50	22	4.5	0.4	1.2
02591	12	V	50	9	4.3	0.4	-0.4
02591	00	V	50	8	4.7	0.1	-1.0
02836	00	V	50	0	0.0	0.0	0.0
02836	12	V	50	3	3.7	0.6	0.3
02963	12	V	50	16	4.2	0.3	-1.0
02963	00	V	50	11	3.4	1.1	1.6
03005	00	V	50	25	4.4	-0.1	-0.9
03005	12	V	50	29	4.8	-1.2	-0.3
03238	12	V	50	8	3.9	-0.6	1.4
03238	00	V	50	26	3.6	0.0	0.3
03808	00	V	50	25	4.0	-0.2	-0.4
03808	12	V	50	30	3.3	0.7	-0.6
03918	12	V	50	4	5.1	-1.7	-0.1
03918	00	V	50	22	4.0	0.0	-1.3
03953	00	V	50	24	3.2	0.0	-0.4
03953	12	V	50	31	3.8	0.1	-0.1
04018	00	V	50	22	3.8	0.1	0.6
04018	12	V	50	29	3.7	0.4	-0.2
04220	00	V	50	28	2.6	-0.4	0.2
04220	12	V	50	30	2.8	0.1	-0.3
04270	12	V	50	25	2.8	0.6	0.5
04270	00	V	50	26	3.6	-0.2	0.1
04320	00	V	50	28	3.3	0.1	0.7
04320	12	V	50	28	3.3	0.7	-0.2
04339	12	V	50	16	3.8	-0.4	-0.3
04339	00	V	50	16	3.8	-1.0	-0.9
04360	00	V	50	5	2.2	0.3	0.4
04360	12	V	50	8	2.5	-1.1	-0.5
06011	12	V	50	29	3.6	-1.0	0.4

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06260	12	V	50	7	2.8	-0.1	1.1
06260	00	V	50	29	3.7	0.4	0.3
06610	00	V	50	29	4.9	0.8	-1.2
06610	12	V	50	31	4.5	0.2	-0.7
07110	12	V	50	31	4.2	-0.8	-0.1
07110	00	V	50	24	3.7	-0.6	-0.7
07510	12	V	50	29	3.9	0.2	0.2
07510	00	V	50	25	3.6	0.0	-0.4
07645	00	V	50	26	4.3	0.9	-1.0
07645	12	V	50	28	4.8	0.0	-0.5
07761	00	V	50	23	3.8	0.2	0.3
07761	12	V	50	30	4.3	0.3	0.0
08001	12	V	50	31	3.9	0.2	0.4
08001	00	V	50	27	4.1	0.5	0.0
08221	12	V	50	30	4.6	-1.2	-0.5
08221	00	V	50	25	4.3	0.9	0.2
08302	00	V	50	26	3.6	1.4	0.0
08302	12	V	50	31	4.0	1.2	0.2
08508	12	V	50	28	4.0	-0.2	0.7
08522	12	V	50	29	3.9	-1.2	0.3
10035	00	V	50	28	3.8	-0.5	0.0
10035	12	V	50	30	3.5	-0.4	0.4
10393	12	V	50	30	3.9	0.8	-1.0
10393	00	V	50	29	3.3	0.1	0.1
10410	00	V	50	28	3.7	0.0	-0.7
10410	12	V	50	29	3.0	-0.1	-0.5
10739	12	V	50	31	4.0	0.0	-0.3
10739	00	V	50	27	4.0	-0.1	-0.7
11035	00	V	50	26	3.9	-0.5	0.5
11035	12	V	50	30	3.4	0.7	0.4
12982	00	V	50	30	3.5	0.4	-0.1
12982	12	V	50	30	3.3	0.1	0.2
16245	00	V	50	28	4.9	0.5	0.8
16245	12	V	50	31	3.0	0.6	0.3
16429	00	V	50	28	4.0	0.0	0.1
16429	12	V	50	31	3.7	-0.1	-0.5
16622	00	V	50	20	4.0	-0.5	0.3
16754	00	V	50	25	3.5	0.6	0.6
16754	12	V	50	1	5.3	-5.3	0.1
17607	12	V	50	18	5.7	-1.7	-0.6
26435	12	V	50	0	0.0	0.0	0.0
60018	12	V	50	30	3.8	-0.9	0.5
60018	00	V	50	28	3.4	0.2	-0.6

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
7JUNA4	12	V	50	7	2.4	0.0	-0.4
7JUNA4	00	V	50	7	3.1	1.8	-1.1
9ZT9MR	12	V	50	7	18.8	-8.6	-5.4
9ZT9MR	00	V	50	3	5.3	-3.9	1.8
ATGU3F	00	V	50	0	0.0	0.0	0.0
ATGU3F	12	V	50	1	5.5	-4.7	2.8
FPUW5G	12	V	50	3	3.5	-1.1	0.3
GQBZLZ	12	V	50	1	1.0	0.9	-0.5
GQBZLZ	00	V	50	1	1.6	-1.6	0.3
JNKN7J	12	V	50	9	2.5	0.8	0.5
JNKN7J	00	V	50	10	3.1	-0.3	-0.2
KJJF9X	12	V	50	3	2.2	-0.1	0.7
KJJF9X	00	V	50	1	1.0	-0.2	1.0
KMPLHP	12	V	50	7	2.5	-0.2	0.2
KMPLHP	00	V	50	10	4.2	0.7	0.8
LRYQE3	12	V	50	5	2.6	-0.6	-0.1
LRYQE3	00	V	50	5	5.6	-2.7	-0.1
UXK5JT	12	V	50	2	3.5	2.8	1.1
UXK5JT	00	V	50	0	0.0	0.0	0.0
WDK38H	12	V	50	6	2.9	1.2	0.2
XKQLWQ	12	V	50	16	3.1	0.1	-0.7
YLV96W	12	V	50	9	4.1	0.1	0.9
YLV96W	00	V	50	7	5.0	-1.4	2.6

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

```
RADIOSONDE MONITORING STATISTICS (EUCOS)
         MONITORING CENTRE     : ECMWF
         ELEMENT MONITORED     : GEOPOTENTIAL HEIGHT (METRES)
         LEVEL                 : 100 HPA
         AREA                  : 0 - 90N, 100W - 40E
         PERIOD                : JAN 2025
         STANDARD OF COMPARISON: FIRST-GUESS FIELD
```

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	12	Z	100	29	8.0	-4.9
01001	00	Z	100	30	9.2	5.3
01028	12	Z	100	29	6.6	-4.0
01028	00	Z	100	30	6.3	-1.2
01400	00	Z	100	25	77.1	76.8
01400	12	Z	100	28	77.5	76.7
01415	00	Z	100	29	7.4	0.1
01415	12	Z	100	31	7.6	2.1
02365	00	Z	100	27	6.8	3.9
02365	12	Z	100	26	6.7	4.2
02591	12	Z	100	19	8.6	3.1
02591	00	Z	100	21	8.6	5.1
02836	00	Z	100	11	4.9	-0.9
02836	12	Z	100	17	7.2	-1.0
02963	12	Z	100	30	6.8	-2.4
02963	00	Z	100	31	6.2	0.1
03005	00	Z	100	29	7.9	-4.2
03005	12	Z	100	32	8.4	-3.8
03238	12	Z	100	8	6.5	1.4
03238	00	Z	100	29	7.1	-0.5
03808	00	Z	100	26	14.4	2.8
03808	12	Z	100	30	20.5	-3.6
03918	12	Z	100	4	7.6	5.5
03918	00	Z	100	31	9.5	4.5
03953	00	Z	100	31	10.1	-7.7
03953	12	Z	100	31	13.8	-9.3
04018	00	Z	100	31	8.8	-0.6
04018	12	Z	100	31	9.7	-2.8
04220	00	Z	100	30	13.8	-8.2
04220	12	Z	100	31	10.5	-7.6
04270	12	Z	100	28	19.5	-16.5
04270	00	Z	100	27	11.9	-10.0
04320	00	Z	100	31	8.1	-2.5
04320	12	Z	100	29	8.5	-2.1
04339	12	Z	100	27	26.4	-19.3
04339	00	Z	100	24	15.7	-9.0
04360	00	Z	100	14	26.4	-25.2
04360	12	Z	100	14	41.9	-39.3
06011	12	Z	100	30	30.7	-28.0

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06260	12	Z	100	7	10.1	4.6
06260	00	Z	100	31	7.0	1.0
06610	00	Z	100	31	11.3	-1.1
06610	12	Z	100	32	8.9	2.2
07110	12	Z	100	31	23.7	-20.7
07110	00	Z	100	30	25.7	-23.4
07510	12	Z	100	27	32.7	-20.8
07510	00	Z	100	27	38.5	-36.8
07645	00	Z	100	28	36.3	-32.0
07645	12	Z	100	29	25.8	-22.8
07761	00	Z	100	27	28.7	-22.2
07761	12	Z	100	29	23.7	-15.9
08001	12	Z	100	31	7.9	2.6
08001	00	Z	100	31	11.3	0.0
08221	12	Z	100	30	9.1	7.2
08221	00	Z	100	30	8.8	2.2
08302	00	Z	100	31	9.7	-6.2
08302	12	Z	100	31	9.2	-5.7
08508	12	Z	100	30	21.1	0.2
08522	12	Z	100	29	7.8	5.7
10035	00	Z	100	31	13.7	11.8
10035	12	Z	100	31	12.2	10.3
10393	12	Z	100	30	7.1	1.2
10393	00	Z	100	31	7.5	-2.9
10410	00	Z	100	30	8.8	-2.6
10410	12	Z	100	31	9.7	-1.7
10739	12	Z	100	31	8.7	2.8
10739	00	Z	100	30	9.8	2.3
11035	00	Z	100	32	14.6	-7.5
11035	12	Z	100	31	14.0	-2.4
12982	00	Z	100	31	8.0	-5.2
12982	12	Z	100	31	6.2	0.5
16245	00	Z	100	30	5.1	0.5
16245	12	Z	100	31	9.2	2.4
16429	00	Z	100	29	6.1	1.1
16429	12	Z	100	31	6.6	2.2
16622	00	Z	100	26	12.5	-11.0
16754	00	Z	100	29	11.0	-7.5
16754	12	Z	100	2	11.7	-6.2
17607	12	Z	100	25	11.0	0.6
26435	12	Z	100	9	5.6	-2.4
60018	12	Z	100	31	5.5	3.6
60018	00	Z	100	31	7.8	6.1

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
7JUNA4	12	Z	100	7	21.9	-12.7
7JUNA4	00	Z	100	8	9.6	1.0
9ZT9MR	12	Z	100	9	48.0	-30.3
9ZT9MR	00	Z	100	5	33.4	-32.6
ATGU3F	00	Z	100	0	0.0	0.0
ATGU3F	12	Z	100	0	0.0	0.0
FPUW5G	12	Z	100	6	32.2	18.2
GQBZLZ	12	Z	100	0	0.0	0.0
GQBZLZ	00	Z	100	0	0.0	0.0
JNKN7J	12	Z	100	9	31.3	26.5
JNKN7J	00	Z	100	11	31.9	28.4
KJJF9X	12	Z	100	3	28.9	-28.7
KJJF9X	00	Z	100	1	10.3	-10.3
KMPLHP	12	Z	100	7	61.9	57.4
KMPLHP	00	Z	100	10	66.6	65.5
LRYQE3	12	Z	100	5	20.9	1.6
LRYQE3	00	Z	100	6	16.9	-14.2
UXK5JT	12	Z	100	2	13.4	-13.4
UXK5JT	00	Z	100	0	0.0	0.0
WDK38H	12	Z	100	7	13.1	-11.0
XKQLWQ	12	Z	100	20	21.4	18.8
YLV96W	12	Z	100	9	15.9	-0.4
YLV96W	00	Z	100	9	10.8	-5.2

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                : JAN 2025
         STANDARD OF COMPARISON: FIRST-GUESS FIELD
```

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	12	V	100	29	2.4	0.3	-0.3
01001	00	V	100	30	2.3	0.3	-0.2
01028	12	V	100	29	2.4	-0.1	0.4
01028	00	V	100	30	3.1	0.1	-0.2
01400	00	V	100	25	3.6	-0.1	0.1
01400	12	V	100	28	3.5	0.1	0.0
01415	00	V	100	28	3.5	0.2	0.1
01415	12	V	100	31	3.0	-0.2	0.2
02365	00	V	100	26	3.1	0.1	0.1
02365	12	V	100	25	3.3	0.1	-0.6
02591	12	V	100	19	2.8	0.7	0.0
02591	00	V	100	18	2.9	-0.1	0.0
02836	00	V	100	4	2.1	-1.5	0.1
02836	12	V	100	11	3.2	0.6	0.1
02963	12	V	100	26	3.0	0.1	0.6
02963	00	V	100	26	3.1	-0.5	1.3
03005	00	V	100	28	4.0	1.1	-0.3
03005	12	V	100	31	3.5	0.2	-0.4
03238	12	V	100	8	2.9	-0.2	-0.3
03238	00	V	100	27	3.8	-0.4	0.3
03808	00	V	100	26	3.3	0.5	-0.2
03808	12	V	100	30	3.3	0.4	0.4
03918	12	V	100	4	3.1	-0.6	1.2
03918	00	V	100	31	3.7	0.8	0.3
03953	00	V	100	29	3.7	0.1	0.3
03953	12	V	100	31	3.7	0.9	-0.3
04018	00	V	100	30	2.6	0.1	0.2
04018	12	V	100	31	2.9	-0.1	-0.5
04220	00	V	100	30	2.3	0.2	0.3
04220	12	V	100	31	2.8	0.0	0.6
04270	12	V	100	28	3.4	-0.3	0.4
04270	00	V	100	27	2.6	-0.4	0.3
04320	00	V	100	31	2.9	0.3	-0.1
04320	12	V	100	29	2.6	0.0	-0.2
04339	12	V	100	27	2.8	0.4	0.3
04339	00	V	100	24	2.8	0.2	-0.1
04360	00	V	100	14	3.2	-0.9	0.2
04360	12	V	100	14	2.8	0.0	0.0
06011	12	V	100	30	3.2	0.4	0.4

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06260	12	V	100	7	3.3	-0.8	1.0
06260	00	V	100	31	3.4	0.3	-0.3
06610	00	V	100	31	4.0	0.1	-0.4
06610	12	V	100	31	4.7	-0.3	-0.9
07110	12	V	100	31	3.3	0.2	0.2
07110	00	V	100	29	3.0	-0.9	0.4
07510	12	V	100	27	7.4	0.2	0.5
07510	00	V	100	25	3.4	-0.1	-0.3
07645	00	V	100	28	3.5	0.1	0.1
07645	12	V	100	29	3.1	0.1	0.8
07761	00	V	100	27	5.4	1.7	0.2
07761	12	V	100	29	4.5	1.1	-0.1
08001	12	V	100	31	4.2	-0.4	0.5
08001	00	V	100	31	3.5	-0.1	0.0
08221	12	V	100	30	3.7	-0.8	0.0
08221	00	V	100	29	3.9	0.5	0.2
08302	00	V	100	29	3.1	0.1	-0.1
08302	12	V	100	31	4.1	-0.1	-0.9
08508	12	V	100	29	3.7	-0.9	-0.1
08522	12	V	100	29	4.0	-0.7	-0.2
10035	00	V	100	31	3.1	-0.4	0.5
10035	12	V	100	31	3.4	-0.6	0.1
10393	12	V	100	30	3.8	-0.4	0.8
10393	00	V	100	30	3.0	0.7	-0.2
10410	00	V	100	30	3.1	0.4	0.3
10410	12	V	100	29	3.5	-0.1	1.1
10739	12	V	100	31	3.5	-0.5	-0.2
10739	00	V	100	30	3.1	-0.2	0.4
11035	00	V	100	28	2.9	0.6	0.0
11035	12	V	100	31	3.6	0.4	0.8
12982	00	V	100	31	3.0	0.0	-0.2
12982	12	V	100	31	2.7	-0.1	0.3
16245	00	V	100	30	3.2	0.2	0.4
16245	12	V	100	31	3.5	0.5	0.2
16429	00	V	100	29	3.6	-0.1	0.0
16429	12	V	100	31	3.5	0.7	-1.0
16622	00	V	100	23	2.9	0.1	-0.2
16754	00	V	100	27	4.0	0.3	-0.2
16754	12	V	100	2	2.1	0.2	-0.4
17607	12	V	100	22	5.2	-0.8	-0.1
26435	12	V	100	7	10.0	-2.4	-2.1
60018	12	V	100	31	4.1	1.1	-0.6
60018	00	V	100	31	3.9	-0.8	0.1

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
7JUNA4	12	V	100	7	3.0	0.0	0.7
7JUNA4	00	V	100	8	4.2	-1.0	0.8
9ZT9MR	12	V	100	9	2.9	-1.7	0.0
9ZT9MR	00	V	100	5	2.4	1.5	0.3
ATGU3F	00	V	100	0	0.0	0.0	0.0
ATGU3F	12	V	100	0	0.0	0.0	0.0
FPUW5G	12	V	100	3	2.1	0.7	-1.4
GQBZLZ	12	V	100	0	0.0	0.0	0.0
GQBZLZ	00	V	100	0	0.0	0.0	0.0
JNKN7J	12	V	100	9	2.5	0.0	-1.2
JNKN7J	00	V	100	11	3.7	-1.2	0.1
KJJF9X	12	V	100	3	3.5	-2.7	-0.2
KJJF9X	00	V	100	1	2.0	-0.9	1.8
KMPLHP	12	V	100	7	3.6	-1.3	-0.8
KMPLHP	00	V	100	10	2.9	0.5	-0.2
LRYQE3	12	V	100	5	4.5	0.1	3.0
LRYQE3	00	V	100	6	6.5	-0.1	0.3
UXK5JT	12	V	100	2	4.1	-2.7	1.1
UXK5JT	00	V	100	0	0.0	0.0	0.0
WDK38H	12	V	100	6	2.6	-0.1	-0.7
XKQLWQ	12	V	100	19	5.1	-0.1	-0.8
YLV96W	12	V	100	9	2.3	1.0	-0.1
YLV96W	00	V	100	9	2.0	0.5	-0.4

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                : JAN 2025
         STANDARD OF COMPARISON: FIRST-GUESS FIELD
```

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	12	Z	500	32	4.8	0.2
01001	00	Z	500	30	9.4	7.0
01028	12	Z	500	30	4.0	-1.6
01028	00	Z	500	30	3.4	-0.2
01400	00	Z	500	25	77.3	77.1
01400	12	Z	500	28	76.6	76.3
01415	00	Z	500	29	6.1	3.7
01415	12	Z	500	31	5.8	2.8
02365	00	Z	500	27	8.0	5.8
02365	12	Z	500	27	6.4	5.6
02591	12	Z	500	20	8.8	8.3
02591	00	Z	500	22	8.9	8.0
02836	00	Z	500	31	2.6	-0.1
02836	12	Z	500	35	3.4	0.4
02963	12	Z	500	31	4.3	2.0
02963	00	Z	500	31	3.7	2.3
03005	00	Z	500	29	3.3	-1.1
03005	12	Z	500	32	4.1	-1.7
03238	12	Z	500	8	4.0	3.7
03238	00	Z	500	31	4.6	2.9
03808	00	Z	500	26	16.6	6.2
03808	12	Z	500	31	21.4	-0.2
03918	12	Z	500	4	7.2	7.1
03918	00	Z	500	31	7.8	7.1
03953	00	Z	500	32	4.6	-2.4
03953	12	Z	500	31	4.9	0.3
04018	00	Z	500	31	4.7	2.0
04018	12	Z	500	31	9.4	0.2
04220	00	Z	500	30	7.8	-4.1
04220	12	Z	500	31	7.5	-2.9
04270	12	Z	500	31	8.7	-7.7
04270	00	Z	500	31	8.4	-7.3
04320	00	Z	500	31	6.5	0.4
04320	12	Z	500	31	6.9	0.0
04339	12	Z	500	30	12.7	-9.7
04339	00	Z	500	30	10.7	-9.6
04360	00	Z	500	21	14.9	-14.1
04360	12	Z	500	18	20.5	-18.8
06011	12	Z	500	31	10.0	-8.5

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06260	12	Z	500	7	3.5	2.5
06260	00	Z	500	31	3.4	1.7
06610	00	Z	500	31	4.1	1.2
06610	12	Z	500	33	3.2	2.2
07110	12	Z	500	31	8.0	-4.9
07110	00	Z	500	31	7.3	-5.5
07510	12	Z	500	32	16.9	-3.1
07510	00	Z	500	31	8.6	-7.2
07645	00	Z	500	32	13.3	-10.9
07645	12	Z	500	33	9.0	-7.8
07761	00	Z	500	30	10.9	-8.0
07761	12	Z	500	29	7.7	-4.5
08001	12	Z	500	31	5.4	4.0
08001	00	Z	500	31	5.5	3.6
08221	12	Z	500	30	4.7	4.0
08221	00	Z	500	30	4.5	3.5
08302	00	Z	500	31	5.8	-5.3
08302	12	Z	500	31	4.9	-3.9
08508	12	Z	500	30	19.4	8.6
08522	12	Z	500	31	8.3	7.4
10035	00	Z	500	33	13.2	12.9
10035	12	Z	500	31	12.7	12.3
10393	12	Z	500	30	2.9	0.4
10393	00	Z	500	32	3.2	0.1
10410	00	Z	500	31	3.5	-0.2
10410	12	Z	500	32	3.5	-0.2
10739	12	Z	500	31	5.2	4.4
10739	00	Z	500	30	5.9	5.0
11035	00	Z	500	33	5.5	-2.4
11035	12	Z	500	31	6.2	1.9
12982	00	Z	500	31	3.1	-1.4
12982	12	Z	500	31	3.4	1.0
16245	00	Z	500	30	4.6	4.1
16245	12	Z	500	31	6.2	5.2
16429	00	Z	500	29	5.6	4.4
16429	12	Z	500	31	5.8	5.6
16622	00	Z	500	30	5.7	1.5
16754	00	Z	500	29	3.6	-0.5
16754	12	Z	500	3	3.7	0.7
17607	12	Z	500	25	4.5	3.8
26435	12	Z	500	15	3.2	-0.9
60018	12	Z	500	31	5.9	5.5
60018	00	Z	500	31	5.4	4.9

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
7JUNA4	12	Z	500	7	11.1	-3.3
7JUNA4	00	Z	500	9	11.1	7.8
9ZT9MR	12	Z	500	9	49.2	-25.1
9ZT9MR	00	Z	500	7	29.3	-26.9
ATGU3F	00	Z	500	0	0.0	0.0
ATGU3F	12	Z	500	0	0.0	0.0
FPUW5G	12	Z	500	6	14.5	8.2
GQBZLZ	12	Z	500	0	0.0	0.0
GQBZLZ	00	Z	500	1	10.4	-10.4
JNKN7J	12	Z	500	9	35.4	35.0
JNKN7J	00	Z	500	11	36.7	36.3
KJJF9X	12	Z	500	3	9.0	-8.6
KJJF9X	00	Z	500	1	8.5	-8.5
KMPLHP	12	Z	500	8	59.5	54.6
KMPLHP	00	Z	500	10	72.5	72.1
LRYQE3	12	Z	500	5	19.0	-18.4
LRYQE3	00	Z	500	6	13.3	-11.7
UXK5JT	12	Z	500	0	0.0	0.0
UXK5JT	00	Z	500	0	0.0	0.0
WDK38H	12	Z	500	7	15.4	-13.2
XKQLWQ	12	Z	500	20	12.1	10.9
YLV96W	12	Z	500	10	7.8	-3.5
YLV96W	00	Z	500	9	5.5	-0.4

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

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RADIOSONDE MONITORING STATISTICS (EUCOS)
         MONITORING CENTRE     : ECMWF
         ELEMENT MONITORED     : WIND (M/S)
         LEVEL                 : 500 HPA
         AREA                  : 0 - 90N, 100W - 40E
         PERIOD                : JAN 2025
         STANDARD OF COMPARISON: FIRST-GUESS FIELD
```

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	12	V	500	31	2.1	-0.1	-0.1
01001	00	V	500	30	2.7	0.0	0.0
01028	12	V	500	30	2.0	0.1	-0.5
01028	00	V	500	30	2.5	-0.5	-0.3
01400	00	V	500	25	2.2	0.2	0.1
01400	12	V	500	28	2.6	0.1	-0.4
01415	00	V	500	29	2.7	0.5	-0.4
01415	12	V	500	31	2.6	-0.2	-0.2
02365	00	V	500	27	2.4	0.2	0.1
02365	12	V	500	27	2.6	0.0	0.4
02591	12	V	500	20	2.8	0.1	0.3
02591	00	V	500	22	2.5	0.7	0.0
02836	00	V	500	31	2.4	-0.4	0.1
02836	12	V	500	31	2.4	0.2	-0.1
02963	12	V	500	31	2.5	-0.7	-0.1
02963	00	V	500	31	3.0	-0.1	0.5
03005	00	V	500	28	2.6	-0.3	0.5
03005	12	V	500	31	3.0	0.2	-0.1
03238	12	V	500	8	2.0	0.8	-1.0
03238	00	V	500	29	2.4	-0.2	0.0
03808	00	V	500	26	2.8	0.1	0.0
03808	12	V	500	30	3.3	-0.2	0.1
03918	12	V	500	4	2.3	0.1	1.4
03918	00	V	500	31	2.4	0.2	-0.2
03953	00	V	500	31	3.1	-0.5	0.4
03953	12	V	500	31	3.0	0.2	-0.2
04018	00	V	500	31	2.5	-0.4	-0.4
04018	12	V	500	31	3.5	1.1	0.0
04220	00	V	500	30	2.5	0.6	-0.2
04220	12	V	500	31	3.4	0.8	0.4
04270	12	V	500	31	3.1	0.5	0.2
04270	00	V	500	31	3.0	0.1	0.6
04320	00	V	500	31	3.2	0.1	0.5
04320	12	V	500	31	2.3	0.1	0.1
04339	12	V	500	30	2.1	0.2	-0.2
04339	00	V	500	30	2.5	-0.1	0.2
04360	00	V	500	20	3.0	0.7	-0.1
04360	12	V	500	18	1.9	0.5	0.3
06011	12	V	500	31	2.8	-0.4	0.2

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06260	12	V	500	7	1.5	0.3	0.6
06260	00	V	500	31	2.7	0.6	0.3
06610	00	V	500	31	3.4	-0.4	0.2
06610	12	V	500	31	3.7	0.8	-0.1
07110	12	V	500	31	3.7	0.7	1.0
07110	00	V	500	29	3.3	-0.6	0.0
07510	12	V	500	30	2.9	0.7	-0.3
07510	00	V	500	29	2.7	-0.1	-0.9
07645	00	V	500	29	2.8	-0.1	0.2
07645	12	V	500	30	2.7	0.3	-0.4
07761	00	V	500	30	2.7	-0.2	-0.4
07761	12	V	500	29	3.1	0.4	0.5
08001	12	V	500	31	3.3	-0.3	0.2
08001	00	V	500	31	3.8	0.6	0.2
08221	12	V	500	30	2.1	0.2	-0.3
08221	00	V	500	30	2.8	0.1	-0.1
08302	00	V	500	31	2.0	0.0	0.4
08302	12	V	500	31	2.9	0.4	0.6
08508	12	V	500	30	3.2	-0.3	0.7
08522	12	V	500	31	2.5	0.7	0.4
10035	00	V	500	31	2.4	-0.4	0.4
10035	12	V	500	31	2.4	0.4	-0.4
10393	12	V	500	30	2.4	0.2	0.2
10393	00	V	500	31	2.0	-0.2	-0.2
10410	00	V	500	30	2.4	0.4	0.1
10410	12	V	500	30	3.5	0.0	-0.3
10739	12	V	500	31	2.2	0.2	-0.2
10739	00	V	500	30	2.4	0.4	-0.4
11035	00	V	500	30	4.3	-0.2	0.3
11035	12	V	500	31	2.3	-0.1	0.4
12982	00	V	500	31	2.3	0.1	-0.1
12982	12	V	500	31	2.4	0.3	0.2
16245	00	V	500	30	2.9	-0.2	-0.5
16245	12	V	500	31	3.0	0.0	0.0
16429	00	V	500	29	2.8	0.6	0.2
16429	12	V	500	31	2.6	0.3	0.4
16622	00	V	500	30	2.5	0.0	0.1
16754	00	V	500	29	2.7	0.6	-0.6
16754	12	V	500	2	5.2	-1.1	4.1
17607	12	V	500	23	2.2	0.5	-0.1
26435	12	V	500	15	2.6	0.1	0.1
60018	12	V	500	31	1.8	0.3	0.2
60018	00	V	500	31	2.5	0.5	0.4

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
7JUNA4	12	V	500	7	3.4	-1.0	0.2
7JUNA4	00	V	500	9	3.2	-0.6	0.7
9ZT9MR	12	V	500	9	1.6	-0.1	-0.1
9ZT9MR	00	V	500	7	8.6	0.8	-2.4
ATGU3F	00	V	500	0	0.0	0.0	0.0
ATGU3F	12	V	500	0	0.0	0.0	0.0
FPUW5G	12	V	500	6	2.1	0.3	-1.0
GQBZLZ	12	V	500	0	0.0	0.0	0.0
GQBZLZ	00	V	500	1	6.3	-5.6	2.8
JNKN7J	12	V	500	9	2.1	-0.1	0.5
JNKN7J	00	V	500	11	3.3	0.4	-0.5
KJJF9X	12	V	500	3	0.9	-0.2	-0.4
KJJF9X	00	V	500	1	0.5	-0.4	-0.3
KMPLHP	12	V	500	8	3.8	-1.1	-1.1
KMPLHP	00	V	500	10	3.7	0.3	0.7
LRYQE3	12	V	500	5	3.0	-0.3	-0.7
LRYQE3	00	V	500	6	2.1	0.5	0.2
UXK5JT	12	V	500	0	0.0	0.0	0.0
UXK5JT	00	V	500	0	0.0	0.0	0.0
WDK38H	12	V	500	7	2.3	1.0	-0.9
XKQLWQ	12	V	500	19	3.7	0.3	0.6
YLV96W	12	V	500	10	2.2	-0.5	0.0
YLV96W	00	V	500	9	3.9	0.7	-0.6

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                : JAN 2025
         STANDARD OF COMPARISON: FIRST-GUESS FIELD
```

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	12	Z	850	32	3.3	-1.0
01001	00	Z	850	30	6.1	4.8
01028	12	Z	850	30	3.2	-1.7
01028	00	Z	850	30	2.3	0.2
01400	00	Z	850	25	75.6	75.5
01400	12	Z	850	28	75.5	75.3
01415	00	Z	850	29	4.6	4.0
01415	12	Z	850	31	4.5	3.0
02365	00	Z	850	27	8.0	7.6
02365	12	Z	850	27	7.1	6.1
02591	12	Z	850	20	8.0	7.5
02591	00	Z	850	22	7.8	7.3
02836	00	Z	850	31	2.6	0.1
02836	12	Z	850	35	2.5	0.6
02963	12	Z	850	31	3.5	2.9
02963	00	Z	850	32	2.9	1.9
03005	00	Z	850	29	1.8	-0.4
03005	12	Z	850	32	4.2	-1.1
03238	12	Z	850	8	3.3	3.0
03238	00	Z	850	31	3.7	2.8
03808	00	Z	850	26	18.4	6.5
03808	12	Z	850	31	4.2	3.1
03918	12	Z	850	4	6.3	6.3
03918	00	Z	850	31	7.6	7.2
03953	00	Z	850	33	3.6	-0.6
03953	12	Z	850	31	4.2	1.3
04018	00	Z	850	31	2.1	0.5
04018	12	Z	850	31	7.7	-1.4
04220	00	Z	850	30	4.6	-3.1
04220	12	Z	850	31	3.1	-0.9
04270	12	Z	850	31	9.3	-8.1
04270	00	Z	850	31	10.0	-8.9
04320	00	Z	850	31	4.2	-1.2
04320	12	Z	850	29	6.7	-2.6
04339	12	Z	850	30	12.6	-11.0
04339	00	Z	850	30	11.5	-10.7
04360	00	Z	850	21	12.6	-11.4
04360	12	Z	850	18	12.6	-11.5
06011	12	Z	850	31	4.5	-3.0

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06260	12	Z	850	7	2.0	-1.0
06260	00	Z	850	31	2.5	0.4
06610	00	Z	850	31	3.8	0.9
06610	12	Z	850	33	3.3	0.2
07110	12	Z	850	31	2.8	0.4
07110	00	Z	850	33	2.6	0.0
07510	12	Z	850	32	4.4	3.3
07510	00	Z	850	32	3.5	2.2
07645	00	Z	850	32	7.1	-6.6
07645	12	Z	850	33	6.8	-5.9
07761	00	Z	850	30	7.0	-5.1
07761	12	Z	850	29	4.8	-2.8
08001	12	Z	850	31	2.7	2.1
08001	00	Z	850	31	2.4	0.4
08221	12	Z	850	30	4.3	3.5
08221	00	Z	850	30	2.7	1.8
08302	00	Z	850	31	7.7	-7.5
08302	12	Z	850	31	6.8	-6.5
08508	12	Z	850	31	19.8	7.9
08522	12	Z	850	31	4.9	3.7
10035	00	Z	850	33	13.3	13.1
10035	12	Z	850	31	12.4	12.2
10393	12	Z	850	30	2.1	-0.1
10393	00	Z	850	32	2.6	-0.7
10410	00	Z	850	31	1.9	0.2
10410	12	Z	850	32	2.0	-0.2
10739	12	Z	850	31	5.1	4.3
10739	00	Z	850	30	4.0	3.5
11035	00	Z	850	33	4.2	-2.1
11035	12	Z	850	31	3.7	0.0
12982	00	Z	850	31	2.5	-0.4
12982	12	Z	850	31	2.8	0.4
16245	00	Z	850	30	2.9	2.0
16245	12	Z	850	31	3.1	2.2
16429	00	Z	850	29	3.3	2.0
16429	12	Z	850	31	3.6	2.8
16622	00	Z	850	31	3.6	2.3
16754	00	Z	850	30	4.4	-2.0
16754	12	Z	850	3	5.0	-4.7
17607	12	Z	850	25	1.6	0.4
26435	12	Z	850	15	2.0	-0.3
60018	12	Z	850	31	2.2	1.2
60018	00	Z	850	31	2.7	0.6

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
7JUNA4	12	Z	850	7	5.6	1.4
7JUNA4	00	Z	850	9	9.7	7.0
9ZT9MR	12	Z	850	9	33.4	-1.8
9ZT9MR	00	Z	850	8	18.7	-18.1
ATGU3F	00	Z	850	0	0.0	0.0
ATGU3F	12	Z	850	0	0.0	0.0
FPUW5G	12	Z	850	7	3.8	-2.5
GQBZLZ	12	Z	850	0	0.0	0.0
GQBZLZ	00	Z	850	0	0.0	0.0
JNKN7J	12	Z	850	9	38.5	38.2
JNKN7J	00	Z	850	11	38.6	38.3
KJJF9X	12	Z	850	3	8.3	-8.2
KJJF9X	00	Z	850	1	5.7	-5.7
KMPLHP	12	Z	850	9	64.5	57.5
KMPLHP	00	Z	850	11	82.5	82.1
LRYQE3	12	Z	850	6	13.1	-11.0
LRYQE3	00	Z	850	6	10.7	-8.5
UXK5JT	12	Z	850	0	0.0	0.0
UXK5JT	00	Z	850	0	0.0	0.0
WDK38H	12	Z	850	7	11.6	-10.6
XKQLWQ	12	Z	850	20	5.1	3.4
YLV96W	12	Z	850	10	5.5	-2.8
YLV96W	00	Z	850	9	5.4	-1.4

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                : JAN 2025
         STANDARD OF COMPARISON: FIRST-GUESS FIELD
```

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	12	V	850	31	4.5	0.3	-0.6
01001	00	V	850	30	3.4	0.5	0.5
01028	12	V	850	30	2.6	0.2	0.3
01028	00	V	850	30	2.8	0.1	0.1
01400	00	V	850	25	2.2	-0.4	0.1
01400	12	V	850	28	2.1	-0.3	-0.1
01415	00	V	850	29	3.0	0.1	0.1
01415	12	V	850	31	3.6	0.9	0.7
02365	00	V	850	27	2.8	0.6	0.7
02365	12	V	850	27	2.6	0.5	0.2
02591	12	V	850	20	2.4	0.4	0.0
02591	00	V	850	22	2.9	-0.4	0.2
02836	00	V	850	31	2.8	-0.4	0.4
02836	12	V	850	31	2.5	-0.1	0.0
02963	12	V	850	31	2.7	0.0	0.1
02963	00	V	850	31	2.5	0.1	-0.2
03005	00	V	850	28	2.8	-0.1	0.1
03005	12	V	850	31	2.7	0.1	0.0
03238	12	V	850	8	2.7	-0.7	-0.1
03238	00	V	850	29	2.3	-0.5	-0.2
03808	00	V	850	26	2.4	0.2	-0.3
03808	12	V	850	30	3.0	0.1	-0.5
03918	12	V	850	4	2.7	-0.6	1.3
03918	00	V	850	31	2.1	0.1	-0.3
03953	00	V	850	31	3.3	-0.3	0.7
03953	12	V	850	31	3.0	0.1	0.2
04018	00	V	850	31	3.8	0.7	-0.2
04018	12	V	850	31	2.8	0.1	-0.2
04220	00	V	850	30	3.2	0.1	-0.7
04220	12	V	850	31	3.7	0.7	-0.3
04270	12	V	850	31	3.3	0.0	-0.4
04270	00	V	850	31	3.8	-0.3	0.0
04320	00	V	850	31	3.4	0.3	0.9
04320	12	V	850	29	3.2	0.1	0.3
04339	12	V	850	30	5.7	0.9	1.3
04339	00	V	850	30	3.9	0.2	0.5
04360	00	V	850	20	4.1	0.1	1.0
04360	12	V	850	18	5.8	2.4	0.3
06011	12	V	850	31	2.8	0.2	0.6

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06260	12	V	850	7	4.4	0.1	-1.2
06260	00	V	850	31	2.5	-0.5	-0.4
06610	00	V	850	31	2.4	0.3	0.2
06610	12	V	850	31	2.6	0.4	0.1
07110	12	V	850	31	2.5	-0.6	-0.1
07110	00	V	850	30	2.3	0.0	-0.5
07510	12	V	850	29	3.3	-0.9	-1.0
07510	00	V	850	30	2.4	0.2	-0.2
07645	00	V	850	29	4.3	-0.9	0.7
07645	12	V	850	30	3.6	-0.7	-0.1
07761	00	V	850	30	4.1	0.3	-0.2
07761	12	V	850	29	3.9	0.3	0.0
08001	12	V	850	31	3.1	0.0	-0.3
08001	00	V	850	31	2.8	0.6	-0.4
08221	12	V	850	30	2.8	0.6	-0.3
08221	00	V	850	30	3.6	-0.5	-0.2
08302	00	V	850	31	2.5	0.4	-0.1
08302	12	V	850	31	2.8	-0.6	0.8
08508	12	V	850	31	3.7	0.4	-0.8
08522	12	V	850	31	3.2	0.2	-0.3
10035	00	V	850	31	2.3	0.0	-0.3
10035	12	V	850	31	3.0	-0.5	-0.5
10393	12	V	850	30	2.6	-0.7	0.0
10393	00	V	850	31	2.8	0.2	-0.5
10410	00	V	850	30	2.6	-0.1	-0.2
10410	12	V	850	30	2.6	0.2	0.5
10739	12	V	850	31	2.8	0.0	-0.4
10739	00	V	850	30	2.8	-0.7	-0.4
11035	00	V	850	30	3.2	0.6	0.5
11035	12	V	850	31	4.0	1.0	-0.8
12982	00	V	850	31	2.9	0.5	0.3
12982	12	V	850	31	2.9	0.4	0.2
16245	00	V	850	30	2.7	0.4	-0.4
16245	12	V	850	31	3.2	0.7	-0.1
16429	00	V	850	29	2.2	-0.5	0.3
16429	12	V	850	31	2.8	0.3	0.1
16622	00	V	850	31	2.8	0.4	-0.7
16754	00	V	850	29	3.1	0.4	-0.5
16754	12	V	850	2	2.2	1.0	1.9
17607	12	V	850	25	2.6	0.8	-0.6
26435	12	V	850	15	2.2	0.5	0.0
60018	12	V	850	31	3.2	0.0	-1.0
60018	00	V	850	31	3.1	0.3	-0.7

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
7JUNA4	12	V	850	7	3.6	-0.7	0.6
7JUNA4	00	V	850	9	3.4	0.3	0.0
9ZT9MR	12	V	850	9	3.9	0.2	0.9
9ZT9MR	00	V	850	8	4.4	2.2	-0.5
ATGU3F	00	V	850	0	0.0	0.0	0.0
ATGU3F	12	V	850	0	0.0	0.0	0.0
FPUW5G	12	V	850	6	1.7	-0.2	0.3
GQBZLZ	12	V	850	0	0.0	0.0	0.0
GQBZLZ	00	V	850	0	0.0	0.0	0.0
JNKN7J	12	V	850	9	3.3	-0.1	-0.7
JNKN7J	00	V	850	11	2.0	-0.4	-0.3
KJJF9X	12	V	850	3	2.0	0.6	-0.1
KJJF9X	00	V	850	1	1.6	0.1	-1.6
KMPLHP	12	V	850	9	2.8	-0.4	0.4
KMPLHP	00	V	850	11	1.9	-0.1	0.1
LRYQE3	12	V	850	6	2.3	-0.4	-0.9
LRYQE3	00	V	850	6	3.2	-0.6	1.0
UXK5JT	12	V	850	0	0.0	0.0	0.0
UXK5JT	00	V	850	0	0.0	0.0	0.0
WDK38H	12	V	850	7	3.5	-1.0	-0.6
XKQLWQ	12	V	850	19	3.5	-0.3	-0.4
YLV96W	12	V	850	10	2.0	-0.2	0.9
YLV96W	00	V	850	9	3.1	-0.6	0.8

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

```
DRIFTER MONITORING STATISTICS (EUCOS)
         MONITORING CENTRE      : ECMWF
         ELEMENT MONITORED      : SURFACE PRESSURE (HPA)
         AREA                   : 10N - 90N, 70W - 40E
         PERIOD                 : JAN 2025
         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
1000044	99	P	SUR	55	10	209	0	0.5	-3.5	3.5
1300001	99	P	SUR	11	-23	742	0	0.3	0.3	0.4
1300008	99	P	SUR	15	-38	602	0	0.2	0.2	0.3
1300130	99	P	SUR	28	-16	370	0	0.3	0.3	0.4
1301714	99	P	SUR	27	-67	736	0	0.3	-0.1	0.3
1301718	99	P	SUR	28	-42	736	0	0.3	0.0	0.3
1301725	99	P	SUR	34	-40	735	0	0.4	-0.2	0.5
1301726	99	P	SUR	26	-48	736	0	0.3	-0.1	0.3
1301731	99	P	SUR	22	-59	736	0	0.3	0.1	0.3
1301735	99	P	SUR	22	-48	736	0	0.3	-1.3	1.3
1301736	99	P	SUR	34	-37	736	0	0.4	0.0	0.4
1301737	99	P	SUR	30	-63	637	0	0.3	-0.3	0.5
1301767	99	P	SUR	25	-26	6	0	0.3	-1.0	1.1
1301769	99	P	SUR	29	-30	736	0	0.3	-0.1	0.3
1301770	99	P	SUR	27	-58	401	0	0.3	-0.2	0.4
1301771	99	P	SUR	26	-29	694	0	0.3	0.0	0.3
1301773	99	P	SUR	29	-22	736	0	0.3	0.0	0.3
1301778	99	P	SUR	22	-33	736	0	0.3	-0.1	0.3
1301782	99	P	SUR	57	-52	736	1	0.5	0.0	0.5
1301784	99	P	SUR	38	-20	736	0	0.5	0.0	0.5
1301785	99	P	SUR	36	-21	723	0	0.4	0.2	0.4
1301786	99	P	SUR	37	-29	707	0	0.4	0.2	0.5
1301787	99	P	SUR	28	-16	581	581	0.0	0.0	0.0
1301788	99	P	SUR	32	-12	702	0	0.3	0.1	0.3
1301793	99	P	SUR	63	-7	376	0	0.8	0.2	0.8
1301797	99	P	SUR	21	-55	84	0	0.2	0.0	0.2
1301798	99	P	SUR	33	-40	735	0	0.4	0.2	0.5
1301799	99	P	SUR	28	-30	721	0	0.3	0.2	0.4
1301800	99	P	SUR	73	3	734	37	2.3	-0.5	2.4
1301801	99	P	SUR	61	3	734	0	0.4	0.4	0.6
1301802	99	P	SUR	67	12	735	0	0.6	-0.4	0.7
1301804	99	P	SUR	59	-19	736	0	0.5	-0.8	0.9
1301807	99	P	SUR	78	4	734	0	2.7	-0.2	2.7
1301810	99	P	SUR	37	-38	585	0	0.4	-0.3	0.5
1301811	99	P	SUR	39	-33	82	0	0.5	-0.1	0.5
1301814	99	P	SUR	43	-24	613	0	0.5	-0.1	0.5

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
1301816	99	P	SUR	47	-29	736	0	0.6	0.2	0.6
1301819	99	P	SUR	23	-28	734	0	0.6	0.3	0.7
1301820	99	P	SUR	29	-32	735	0	0.4	0.1	0.4
1301822	99	P	SUR	21	-30	736	0	0.4	0.5	0.7
1301823	99	P	SUR	25	-29	736	0	0.4	0.3	0.5
1801670	99	P	SUR	47	-45	728	0	0.7	0.5	0.8
1801671	99	P	SUR	47	-21	737	0	0.4	-0.3	0.5
1801674	99	P	SUR	39	-27	726	0	0.5	-1.6	1.7
1801675	99	P	SUR	50	-46	732	0	0.6	0.4	0.8
1801676	99	P	SUR	50	-40	718	0	0.7	0.1	0.7
1801678	99	P	SUR	29	-18	734	0	0.3	0.5	0.5
1801716	99	P	SUR	23	-34	737	0	0.3	0.1	0.3
1801732	99	P	SUR	39	-66	734	1	0.9	0.4	1.0
1801777	99	P	SUR	41	-32	743	0	0.5	0.1	0.5
1801778	99	P	SUR	52	-46	743	0	0.7	0.6	0.9
1801853	99	P	SUR	53	-56	742	4	1.0	-0.8	1.3
2801966	99	P	SUR	31	17	11	0	0.2	-0.6	0.6
2801968	99	P	SUR	48	-41	718	0	0.6	0.0	0.6
2802007	99	P	SUR	18	-29	736	0	0.2	0.0	0.2
2802008	99	P	SUR	65	-40	455	0	0.7	-0.3	0.8
2802010	99	P	SUR	21	-31	736	0	0.3	0.2	0.3
2802022	99	P	SUR	40	-61	735	0	0.8	0.1	0.8
2802062	99	P	SUR	85	3	744	0	0.5	0.0	0.5
2802063	99	P	SUR	85	-5	744	0	0.4	-0.1	0.4
2802100	99	P	SUR	66	-5	720	0	0.5	0.3	0.5
2802123	99	P	SUR	15	-23	393	0	0.2	-2.7	2.8
2802124	99	P	SUR	20	-28	715	0	0.3	0.1	0.3
2802160	99	P	SUR	48	-58	742	12	2.0	0.3	2.0
3801571	99	P	SUR	48	-48	725	0	0.5	0.3	0.6
3801575	99	P	SUR	48	-45	725	0	0.6	0.3	0.6
3801596	99	P	SUR	36	-39	735	0	0.5	-0.4	0.6
3801598	99	P	SUR	36	-64	734	0	0.6	0.1	0.7
3801612	99	P	SUR	18	-32	736	0	0.2	0.1	0.3
3801625	99	P	SUR	19	-33	735	0	0.2	0.4	0.5
3801676	99	P	SUR	71	7	742	0	0.5	0.2	0.5
3801702	99	P	SUR	63	-59	490	20	4.1	-2.2	4.6
4100040	99	P	SUR	15	-53	4435	0	0.3	-1.1	1.2
4100043	99	P	SUR	21	-65	4444	0	0.3	0.0	0.3
4100044	99	P	SUR	22	-59	4438	0	0.3	-0.3	0.4
4100049	99	P	SUR	28	-62	4450	0	0.3	-0.6	0.6
4100052	99	P	SUR	18	-65	4373	0	0.3	-1.1	1.2
4100053	99	P	SUR	18	-66	4362	0	0.3	-0.8	0.8
4100056	99	P	SUR	18	-65	4370	0	0.3	-0.9	0.9

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
4100300	99	P	SUR	16	-57	738	0	0.2	0.0	0.2
4101665	99	P	SUR	66	-1	736	0	0.4	-0.3	0.5
4101725	99	P	SUR	18	-63	742	0	0.2	-0.2	0.3
4101727	99	P	SUR	26	-67	743	0	0.4	0.1	0.4
4101728	99	P	SUR	33	-54	742	0	1.7	0.2	1.7
4101729	99	P	SUR	26	-60	743	1	3.2	-0.4	3.3
4101753	99	P	SUR	32	-46	450	10	3.9	-1.5	4.2
4101755	99	P	SUR	33	-62	742	0	1.2	0.3	1.2
4101845	99	P	SUR	72	31	700	0	0.4	0.2	0.5
4101851	99	P	SUR	27	-63	736	0	0.3	-1.1	1.2
4101859	99	P	SUR	17	-61	735	0	0.2	0.0	0.2
4101861	99	P	SUR	27	-52	736	0	0.4	0.3	0.5
4101862	99	P	SUR	16	-61	735	0	0.2	-0.3	0.4
4101863	99	P	SUR	22	-41	736	0	0.2	0.0	0.2
4101870	99	P	SUR	19	-36	735	0	0.4	0.2	0.5
4101873	99	P	SUR	27	-23	736	0	0.3	0.0	0.3
4101875	99	P	SUR	25	-26	735	0	0.3	0.2	0.4
4102557	99	P	SUR	34	-68	736	0	0.4	0.0	0.4
41040	99	P	SUR	15	-53	741	0	0.3	-1.1	1.2
41043	99	P	SUR	21	-65	744	0	0.2	0.0	0.2
41044	99	P	SUR	22	-59	741	0	0.2	-0.3	0.4
41049	99	P	SUR	28	-62	744	0	0.3	-0.6	0.6
41052	99	P	SUR	18	-65	734	0	0.3	-1.1	1.1
41053	99	P	SUR	19	-66	734	0	0.3	-0.8	0.8
41056	99	P	SUR	18	-66	734	0	0.2	-1.0	1.0
4200060	99	P	SUR	16	-63	4456	0	0.2	-0.3	0.4
4200085	99	P	SUR	18	-67	4239	0	0.3	-0.8	0.8
42060	99	P	SUR	16	-63	744	0	0.2	-0.3	0.4
42085	99	P	SUR	18	-67	717	0	0.3	-0.8	0.8
4400011	99	P	SUR	41	-67	4451	0	0.5	0.3	0.6
4400027	99	P	SUR	44	-67	4444	0	0.6	-0.9	1.1
4400032	99	P	SUR	44	-69	734	0	0.6	-0.5	0.8
4400033	99	P	SUR	44	-69	735	0	0.6	-1.4	1.5
4400034	99	P	SUR	44	-68	735	0	0.6	-0.6	0.8
4400488	99	P	SUR	45	-61	689	0	0.4	0.0	0.5
4400489	99	P	SUR	45	-61	727	0	0.4	0.0	0.5
44011	99	P	SUR	41	-67	744	0	0.5	0.3	0.6
4401582	99	P	SUR	33	-66	743	2	1.7	0.3	1.8
4401584	99	P	SUR	29	-60	743	0	0.3	-0.1	0.3
4401588	99	P	SUR	69	15	696	0	0.6	-0.1	0.6
4402618	99	P	SUR	40	-32	680	0	0.5	-0.2	0.5
4402656	99	P	SUR	25	-44	736	11	1.4	-1.0	1.8
4402674	99	P	SUR	26	-62	736	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
4402675	99	P	SUR	32	-64	16	0	0.3	-0.2	0.4
4402676	99	P	SUR	28	-40	736	0	0.3	0.1	0.3
44027	99	P	SUR	44	-67	744	0	0.6	-0.9	1.1
4402721	99	P	SUR	18	-65	729	143	2.2	-5.7	6.1
4402729	99	P	SUR	53	-10	735	0	0.6	-0.2	0.6
4402730	99	P	SUR	36	-35	674	0	0.7	0.0	0.7
4402731	99	P	SUR	46	-18	706	0	0.8	0.1	0.8
4402733	99	P	SUR	52	-20	734	1	0.6	0.2	0.6
4402736	99	P	SUR	22	-32	735	0	0.2	0.0	0.2
4402737	99	P	SUR	56	-34	735	0	0.9	-0.2	0.9
4402739	99	P	SUR	38	-16	735	0	0.4	-0.1	0.4
4402743	99	P	SUR	27	-37	735	0	0.2	-1.1	1.1
4402744	99	P	SUR	35	-52	735	0	0.4	-0.1	0.4
4402747	99	P	SUR	34	-31	735	0	0.4	0.0	0.4
4402749	99	P	SUR	61	-9	736	0	0.4	0.0	0.4
4402750	99	P	SUR	53	-35	736	0	0.5	-0.3	0.6
4402884	99	P	SUR	20	-64	71	0	0.3	0.3	0.4
44032	99	P	SUR	44	-69	734	0	0.6	-0.5	0.8
44033	99	P	SUR	44	-69	735	0	0.6	-1.4	1.5
44034	99	P	SUR	44	-68	735	0	0.7	-0.5	0.9
4403568	99	P	SUR	32	-41	743	0	0.8	0.0	0.8
44078	99	P	SUR	60	-40	735	0	0.7	-0.7	1.0
44137	99	P	SUR	42	-62	740	0	0.5	-0.3	0.6
44139	99	P	SUR	44	-57	318	0	0.8	-0.3	0.8
44150	99	P	SUR	43	-64	739	0	0.5	-0.3	0.6
44258	99	P	SUR	45	-63	714	0	0.5	-0.1	0.5
44488	99	P	SUR	45	-61	696	0	0.5	-0.1	0.5
44489	99	P	SUR	46	-61	735	0	0.4	0.0	0.5
4601782	99	P	SUR	30	-52	735	0	0.5	0.5	0.7
4701527	99	P	SUR	88	0	741	0	0.5	0.0	0.5
4701529	99	P	SUR	83	4	739	0	0.7	0.1	0.7
4701555	99	P	SUR	64	-22	19	0	0.5	-5.9	6.0
4701558	99	P	SUR	79	-18	61	0	0.4	-4.7	4.7
4701561	99	P	SUR	66	-21	741	0	0.6	-0.1	0.6
4801771	99	P	SUR	58	-11	744	744	0.0	0.0	0.0
4802506	99	P	SUR	58	-8	744	0	0.4	-0.3	0.5
4802582	99	P	SUR	61	-19	741	133	4.7	-0.1	4.7
4802594	99	P	SUR	82	-18	741	0	0.5	-0.4	0.6
4802608	99	P	SUR	78	-14	740	0	0.5	-0.5	0.7
4802664	99	P	SUR	83	-54	744	0	0.5	0.0	0.5
4803997	99	P	SUR	51	-42	722	0	0.6	0.0	0.6
4804003	99	P	SUR	57	-58	704	0	0.5	0.0	0.5
4804016	99	P	SUR	17	-53	717	0	0.2	0.1	0.2

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
4804120	99	P	SUR	70	8	706	0	0.5	0.3	0.6
4804127	99	P	SUR	22	-26	729	0	0.3	0.2	0.4
4804128	99	P	SUR	40	13	724	0	0.3	0.1	0.3
4804130	99	P	SUR	12	-25	715	0	0.3	-0.3	0.4
5801972	99	P	SUR	47	-40	726	0	0.6	-0.1	0.6
5801975	99	P	SUR	40	-28	1	0	0.0	-1.4	1.4
5801976	99	P	SUR	50	-23	718	0	0.7	0.0	0.7
5801977	99	P	SUR	20	-65	717	0	0.2	0.1	0.3
5801983	99	P	SUR	28	-18	532	0	0.3	0.2	0.3
5802011	99	P	SUR	17	-29	736	0	0.3	0.2	0.3
5802019	99	P	SUR	43	-43	735	0	0.6	0.4	0.7
5802026	99	P	SUR	45	-35	735	0	0.6	-0.2	0.6
5802033	99	P	SUR	22	-33	736	0	0.3	0.1	0.3
5802070	99	P	SUR	76	27	740	60	2.4	0.6	2.5
5802086	99	P	SUR	83	-17	215	0	0.5	-0.1	0.5
5802095	99	P	SUR	61	-24	722	0	0.5	-0.2	0.5
5802096	99	P	SUR	65	-21	729	0	0.5	-0.7	0.8
5802112	99	P	SUR	19	-26	722	0	0.3	0.3	0.4
5802115	99	P	SUR	38	19	695	0	0.3	0.1	0.3
5802118	99	P	SUR	18	-26	720	0	0.3	0.2	0.3
5802156	99	P	SUR	86	-19	743	0	0.4	0.0	0.4
6100001	99	P	SUR	43	8	709	0	0.6	-0.2	0.6
6100002	99	P	SUR	42	5	144	0	0.6	-0.5	0.8
6100198	99	P	SUR	37	-2	743	0	0.4	0.3	0.5
6100280	99	P	SUR	41	1	742	0	0.5	0.2	0.5
6100281	99	P	SUR	40	0	743	0	0.6	0.0	0.6
6100417	99	P	SUR	38	0	743	0	0.4	0.3	0.5
6100430	99	P	SUR	40	2	742	0	0.3	0.3	0.5
6101031	99	P	SUR	42	8	742	0	0.4	0.0	0.4
6101032	99	P	SUR	42	10	742	0	0.4	-0.1	0.4
6101034	99	P	SUR	42	5	745	0	0.4	-0.2	0.5
6101035	99	P	SUR	41	7	744	0	0.3	-0.3	0.4
6200001	99	P	SUR	45	-5	742	0	0.5	-0.2	0.5
6200024	99	P	SUR	44	-3	743	0	0.6	-0.1	0.6
6200025	99	P	SUR	44	-6	743	0	0.6	0.1	0.6
6200082	99	P	SUR	44	-8	743	0	0.6	-0.1	0.6
6200083	99	P	SUR	43	-9	743	0	0.7	-0.4	0.8
6200084	99	P	SUR	42	-9	743	0	0.5	-0.2	0.6
6200085	99	P	SUR	36	-7	743	0	0.4	0.1	0.4
6200086	99	P	SUR	55	7	89	0	0.3	-0.2	0.3
6200087	99	P	SUR	55	7	272	0	0.5	-0.5	0.7
6200091	99	P	SUR	53	-5	744	0	0.4	-0.2	0.5
6200092	99	P	SUR	51	-11	744	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
6200093	99	P	SUR	55	-10	744	0	0.5	-0.2	0.6
6200094	99	P	SUR	52	-7	744	0	0.4	-0.2	0.5
6200095	99	P	SUR	53	-16	744	0	0.5	-0.2	0.6
6200103	99	P	SUR	50	-3	742	0	0.4	0.0	0.4
6200163	99	P	SUR	47	-8	743	0	0.5	-0.2	0.6
6201065	99	P	SUR	54	7	710	0	0.4	1.1	1.1
6201066	99	P	SUR	55	7	741	0	0.4	0.2	0.4
6202113	99	P	SUR	54	7	190	0	0.3	0.0	0.3
6202114	99	P	SUR	54	6	183	0	0.3	-0.1	0.4
6202598	99	P	SUR	28	-29	743	0	0.7	0.1	0.7
6203612	99	P	SUR	47	-17	743	7	3.0	-0.4	3.0
6203615	99	P	SUR	35	-53	743	5	2.4	0.0	2.4
6203625	99	P	SUR	29	-53	743	0	0.3	-0.2	0.4
6203632	99	P	SUR	35	-53	635	11	2.5	-0.3	2.5
6203634	99	P	SUR	31	-48	743	3	2.5	-0.4	2.5
6203639	99	P	SUR	31	-39	719	0	2.5	0.1	2.5
6203651	99	P	SUR	29	-22	742	0	0.3	0.1	0.3
6203656	99	P	SUR	63	-24	743	27	1.7	-0.2	1.7
6203664	99	P	SUR	71	14	616	21	4.1	-0.8	4.2
6203666	99	P	SUR	85	35	743	0	0.6	0.0	0.6
6203668	99	P	SUR	80	14	349	26	4.1	-2.7	4.9
6203669	99	P	SUR	80	16	743	0	0.7	-0.1	0.7
6203670	99	P	SUR	24	-17	133	133	0.0	0.0	0.0
6203671	99	P	SUR	21	-18	743	0	0.3	0.3	0.4
6203672	99	P	SUR	23	-21	742	0	0.3	0.4	0.5
6203673	99	P	SUR	22	-19	741	0	0.3	0.4	0.5
6203679	99	P	SUR	25	-20	743	0	0.3	0.2	0.4
6203681	99	P	SUR	27	-20	743	0	0.3	0.3	0.4
6203685	99	P	SUR	16	-24	742	0	0.3	0.3	0.4
6203686	99	P	SUR	19	-29	743	0	0.3	0.2	0.4
6203687	99	P	SUR	17	-28	743	0	0.3	0.2	0.3
6203688	99	P	SUR	10	-36	743	0	0.3	0.4	0.5
6203753	99	P	SUR	53	-29	646	0	0.5	-0.4	0.6
6203771	99	P	SUR	27	-57	118	0	0.2	-0.1	0.2
6203772	99	P	SUR	35	-65	671	0	0.4	-0.1	0.4
6203773	99	P	SUR	34	-28	662	0	0.3	-0.7	0.8
6203823	99	P	SUR	66	12	731	0	0.5	0.0	0.5
6203830	99	P	SUR	66	12	736	0	0.5	-0.5	0.8
6203831	99	P	SUR	62	-11	735	0	0.5	0.4	0.7
6203832	99	P	SUR	62	-16	736	0	0.5	0.3	0.6
6203837	99	P	SUR	60	-10	736	0	0.5	0.3	0.6
6203842	99	P	SUR	27	-60	736	0	0.3	0.0	0.3
6203846	99	P	SUR	27	-44	736	0	0.3	-0.2	0.3

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
6203849	99	P	SUR	35	-60	735	0	0.5	-0.2	0.5
6203854	99	P	SUR	59	-15	734	0	0.4	0.4	0.5
6203890	99	P	SUR	13	-57	697	0	0.3	-0.2	0.4
6203894	99	P	SUR	22	-31	232	0	0.3	0.1	0.3
6204604	99	P	SUR	37	11	686	0	0.4	-2.1	2.1
6204612	99	P	SUR	36	11	1	0	0.0	0.2	0.2
6204613	99	P	SUR	39	8	602	0	0.3	-1.3	1.4
62050	99	P	SUR	50	-4	1487	0	0.4	-0.1	0.4
62091	99	P	SUR	53	-5	743	0	0.4	-0.2	0.5
62092	99	P	SUR	51	-11	743	0	0.5	-0.2	0.5
62093	99	P	SUR	55	-10	743	0	0.5	-0.2	0.6
62094	99	P	SUR	52	-7	743	0	0.4	-0.2	0.5
62095	99	P	SUR	53	-16	743	0	0.5	-0.2	0.6
62102	99	P	SUR	58	2	1488	0	0.7	0.0	0.7
62103	99	P	SUR	50	-3	1482	0	0.4	0.0	0.4
62104	99	P	SUR	57	1	1488	0	0.5	-0.2	0.6
62105	99	P	SUR	55	-13	1485	0	0.7	-0.3	0.8
62107	99	P	SUR	50	-6	1487	0	0.4	-0.5	0.6
62112	99	P	SUR	58	0	1487	0	0.5	0.1	0.5
62113	99	P	SUR	58	0	1487	0	0.8	0.0	0.8
62114	99	P	SUR	58	0	1488	0	0.7	0.1	0.7
62115	99	P	SUR	58	-3	1487	0	0.5	-0.1	0.5
62116	99	P	SUR	58	1	1469	0	0.6	-0.2	0.7
62118	99	P	SUR	58	1	1461	0	0.5	0.2	0.6
62119	99	P	SUR	57	2	1488	0	0.6	0.0	0.6
62120	99	P	SUR	56	2	1484	0	0.6	-0.4	0.8
62121	99	P	SUR	54	3	1488	0	0.6	0.3	0.7
62122	99	P	SUR	57	2	1483	0	0.6	0.0	0.6
62124	99	P	SUR	54	-4	1485	0	0.4	0.0	0.4
62127	99	P	SUR	54	1	1488	0	0.4	0.0	0.4
62129	99	P	SUR	58	0	1428	0	0.8	0.2	0.8
62130	99	P	SUR	59	1	1488	0	0.5	-0.6	0.8
62131	99	P	SUR	54	1	1446	0	0.5	0.4	0.6
62132	99	P	SUR	56	2	1392	0	0.6	0.4	0.7
62133	99	P	SUR	57	1	1482	0	0.7	-0.1	0.7
62134	99	P	SUR	58	1	1487	0	0.5	0.2	0.5
62138	99	P	SUR	54	0	1470	0	0.5	0.4	0.7
62140	99	P	SUR	57	1	1488	0	0.5	-0.1	0.5
62143	99	P	SUR	58	2	1487	0	0.6	0.6	0.9
62144	99	P	SUR	53	2	1488	0	0.4	0.0	0.4
62145	99	P	SUR	53	3	1488	0	0.4	0.0	0.4
62146	99	P	SUR	57	2	1488	0	0.7	0.2	0.7
62148	99	P	SUR	54	2	1488	0	0.8	0.4	0.9

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
62149	99	P	SUR	54	1	1456	0	0.3	0.2	0.4
62151	99	P	SUR	57	2	1488	0	0.4	0.1	0.5
62152	99	P	SUR	57	2	1488	0	0.6	0.4	0.7
62153	99	P	SUR	57	2	921	0	0.6	0.2	0.6
62154	99	P	SUR	56	2	1488	0	0.4	-0.1	0.4
62155	99	P	SUR	58	1	1425	0	0.6	0.4	0.7
62157	99	P	SUR	58	0	1479	0	0.5	-0.3	0.6
62160	99	P	SUR	57	2	1488	0	0.5	0.0	0.5
62161	99	P	SUR	58	1	1488	0	0.9	-0.2	0.9
62162	99	P	SUR	57	1	1477	0	0.5	-0.2	0.5
62163	99	P	SUR	48	-9	1486	0	0.5	-0.2	0.5
62164	99	P	SUR	57	1	1488	0	0.4	0.3	0.5
62165	99	P	SUR	54	1	1486	0	0.6	0.2	0.6
62168	99	P	SUR	58	1	1487	0	0.5	-0.1	0.5
62170	99	P	SUR	51	2	1488	0	0.4	-0.5	0.6
62297	99	P	SUR	59	2	1488	0	0.5	-0.3	0.6
62302	99	P	SUR	61	-2	1487	0	0.6	0.0	0.6
62304	99	P	SUR	51	2	1488	0	0.4	-0.2	0.5
62305	99	P	SUR	50	0	1488	0	0.4	-0.4	0.6
6301001	99	P	SUR	64	5	58	0	0.5	0.2	0.5
6301582	99	P	SUR	69	11	598	44	3.2	-0.9	3.3
63055	99	P	SUR	61	2	1443	0	0.5	0.1	0.5
63056	99	P	SUR	60	2	1488	0	0.8	0.4	0.9
63057	99	P	SUR	59	2	1488	0	0.5	-0.5	0.7
63058	99	P	SUR	53	2	998	0	0.3	-0.2	0.4
63059	99	P	SUR	58	-1	1487	0	0.5	0.2	0.5
63102	99	P	SUR	61	1	1487	0	0.5	0.0	0.5
63103	99	P	SUR	61	1	656	0	0.4	0.2	0.5
63108	99	P	SUR	61	2	1460	0	0.6	0.0	0.6
63109	99	P	SUR	60	2	1487	0	0.5	-0.4	0.7
63110	99	P	SUR	60	2	1488	0	0.7	-0.2	0.7
63111	99	P	SUR	61	2	1487	0	0.5	-0.4	0.6
63112	99	P	SUR	61	1	1488	0	0.4	-0.4	0.5
63115	99	P	SUR	62	1	1487	0	0.6	0.2	0.7
63118	99	P	SUR	58	1	1486	0	0.5	-0.5	0.7
6400045	99	P	SUR	59	-12	742	0	1.0	-0.4	1.1
6401601	99	P	SUR	88	-65	743	0	0.4	0.5	0.7
6401602	99	P	SUR	87	-68	743	0	0.4	0.4	0.6
6401759	99	P	SUR	65	-25	743	0	0.5	-0.1	0.5
6401763	99	P	SUR	66	12	741	0	0.6	0.1	0.6
6402616	99	P	SUR	27	-47	736	0	0.3	0.0	0.3
6402617	99	P	SUR	29	-55	735	0	0.3	0.1	0.4
6402618	99	P	SUR	18	-55	584	0	0.2	0.0	0.2

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
6402619	99	P	SUR	21	-61	736	0	0.2	0.0	0.2
6402621	99	P	SUR	27	-30	736	0	0.3	0.3	0.5
6402622	99	P	SUR	25	-35	736	0	0.3	0.2	0.3
6402635	99	P	SUR	39	2	736	0	0.3	0.0	0.3
6402636	99	P	SUR	40	3	736	0	0.5	-0.3	0.6
6402637	99	P	SUR	38	1	735	0	0.3	-0.2	0.4
6402638	99	P	SUR	37	2	735	0	0.3	0.0	0.3
64041	99	P	SUR	61	-3	1487	0	0.5	0.0	0.5
64045	99	P	SUR	59	-12	1488	0	1.0	-0.4	1.1
6600021	99	P	SUR	55	14	105	0	0.4	-1.1	1.2
6600024	99	P	SUR	55	13	189	0	0.5	-1.5	1.5
6801771	99	P	SUR	48	-30	710	0	0.8	-0.1	0.8
6801789	99	P	SUR	11	-19	734	0	0.3	0.1	0.3
6801790	99	P	SUR	39	-23	2	0	0.5	-0.9	1.0
6801791	99	P	SUR	30	-34	736	0	0.3	0.3	0.4
6801811	99	P	SUR	42	-51	734	0	0.8	0.4	0.9
6801879	99	P	SUR	16	-33	743	0	0.3	0.1	0.3
6801897	99	P	SUR	84	-64	740	0	0.4	0.0	0.4
6801900	99	P	SUR	84	-24	731	0	0.5	0.2	0.6
6801907	99	P	SUR	66	-7	723	0	0.5	0.1	0.5
6801922	99	P	SUR	17	-25	722	0	0.6	-5.1	5.2
6801928	99	P	SUR	39	14	721	0	0.4	0.0	0.4
6801929	99	P	SUR	17	-25	730	0	0.3	0.0	0.3
7801571	99	P	SUR	44	-48	730	99	7.0	2.5	7.5
7801572	99	P	SUR	22	-60	723	0	0.2	0.0	0.2
7801588	99	P	SUR	28	-26	630	0	0.3	0.2	0.4
7801616	99	P	SUR	23	-25	734	0	0.3	0.0	0.3
7801627	99	P	SUR	14	-31	737	0	0.3	0.3	0.4
7801647	99	P	SUR	17	-31	735	0	0.2	-0.1	0.3
7801697	99	P	SUR	38	-33	742	0	0.5	-0.3	0.6
7801699	99	P	SUR	32	-56	742	0	2.5	-0.6	2.6
7801722	99	P	SUR	85	-47	738	0	0.5	-0.6	0.8
7801723	99	P	SUR	85	-56	743	0	0.5	0.2	0.5
7801742	99	P	SUR	25	-21	722	0	0.3	0.2	0.4
7801755	99	P	SUR	24	-23	735	0	0.3	0.1	0.3
7810295	99	P	SUR	46	-37	14	0	0.2	0.2	0.3
7810297	99	P	SUR	28	-50	268	0	0.4	-0.1	0.4
7810310	99	P	SUR	37	-34	707	0	0.5	0.0	0.5
7810312	99	P	SUR	33	-66	735	0	0.4	-0.1	0.4
7810313	99	P	SUR	44	-45	395	0	0.6	0.2	0.7
7810314	99	P	SUR	37	-52	754	0	0.5	-0.2	0.5
7810315	99	P	SUR	44	-19	749	0	0.5	-0.2	0.5
7810316	99	P	SUR	39	-30	717	0	0.6	-0.1	0.6

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
7810317	99	P	SUR	44	-28	746	0	0.5	-0.3	0.6
7810318	99	P	SUR	34	-57	301	0	0.5	-0.1	0.5
7810319	99	P	SUR	48	-24	570	0	0.5	-0.1	0.5
7810320	99	P	SUR	35	-64	140	0	0.4	-0.2	0.5
7810322	99	P	SUR	25	-67	725	0	0.3	0.4	0.5
7810323	99	P	SUR	29	-63	724	0	0.3	0.1	0.3
7810324	99	P	SUR	37	-69	710	0	0.7	0.1	0.7
7810325	99	P	SUR	28	-61	741	0	0.4	0.0	0.4
7810328	99	P	SUR	40	-56	743	0	0.6	0.2	0.6
7810329	99	P	SUR	32	-68	744	0	0.3	0.2	0.4
7810378	99	P	SUR	33	-67	53	0	0.3	0.0	0.3
7810379	99	P	SUR	36	-48	251	0	0.5	0.0	0.5
7810380	99	P	SUR	38	-55	749	0	0.5	0.2	0.6
7811002	99	P	SUR	52	-56	743	0	0.5	0.3	0.6

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

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          DRIFTER MONITORING STATISTICS (EUCOS)
                   MONITORING CENTRE     : ECMWF
                   ELEMENT MONITORED     : WIND SPEED (M/S)
                   AREA                  : 10N - 90N, 70W - 40E
                   PERIOD                : JAN 2025
                   STANDARD OF COMPARISON: FIRST-GUESS FIELD


TIME = 99 => AVERAGE OF ALL OBSERVATIONS


GROSS ERROR LIMIT FOR VECTOR WIND = 25 M/S
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WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
1000044	99	SPEED	SUR	55	10	209	0	0	1.7	1.7	2.4
1300001	99	SPEED	SUR	11	-23	742	0	0	0.9	0.8	1.2
1300008	99	SPEED	SUR	15	-38	602	0	0	0.9	-0.1	0.9
1300130	99	SPEED	SUR	28	-16	360	0	0	1.4	-0.3	1.4
4100040	99	SPEED	SUR	15	-53	4454	0	0	0.9	-0.2	0.9
4100043	99	SPEED	SUR	21	-65	4444	0	0	1.0	0.0	1.0
4100044	99	SPEED	SUR	22	-59	4458	0	0	1.1	-0.1	1.1
4100049	99	SPEED	SUR	28	-62	4446	0	0	1.1	0.0	1.1
4100052	99	SPEED	SUR	18	-65	4403	0	0	1.0	-0.3	1.0
4100053	99	SPEED	SUR	18	-66	4390	0	0	1.5	0.5	1.6
4100056	99	SPEED	SUR	18	-65	4385	0	0	1.2	-0.6	1.3
4100300	99	SPEED	SUR	16	-57	743	0	0	0.9	-0.2	0.9
41040	99	SPEED	SUR	15	-53	744	0	0	1.0	-0.7	1.3
41043	99	SPEED	SUR	21	-65	744	0	0	1.1	-0.4	1.2
41044	99	SPEED	SUR	22	-59	744	0	0	1.2	-0.6	1.3
41049	99	SPEED	SUR	28	-62	744	0	0	1.3	-0.4	1.3
41052	99	SPEED	SUR	18	-65	739	0	0	1.1	-0.7	1.2
41053	99	SPEED	SUR	19	-66	738	0	0	1.6	-0.5	1.6
41056	99	SPEED	SUR	18	-66	736	0	0	1.3	-1.0	1.6
4200060	99	SPEED	SUR	16	-63	4455	0	0	0.9	-0.2	1.0
4200085	99	SPEED	SUR	18	-67	4270	0	0	1.4	-0.2	1.4
42060	99	SPEED	SUR	16	-63	744	0	0	1.0	-0.7	1.2
42085	99	SPEED	SUR	18	-67	724	0	0	1.5	0.0	1.5
4400011	99	SPEED	SUR	41	-67	4451	0	0	1.2	-0.1	1.2
4400027	99	SPEED	SUR	44	-67	4444	0	0	1.3	0.3	1.4
4400032	99	SPEED	SUR	44	-69	735	0	0	1.5	0.8	1.7
4400033	99	SPEED	SUR	44	-69	735	0	0	1.5	0.7	1.7
4400034	99	SPEED	SUR	44	-68	735	0	0	1.5	0.5	1.6
4400488	99	SPEED	SUR	45	-61	677	2	0	1.9	1.2	2.2
4400489	99	SPEED	SUR	45	-61	698	0	0	1.6	2.3	2.8
44011	99	SPEED	SUR	41	-67	744	0	0	1.3	-0.8	1.5
44027	99	SPEED	SUR	44	-67	744	0	0	1.4	-0.3	1.5
44032	99	SPEED	SUR	44	-69	735	0	0	1.6	0.2	1.6
44033	99	SPEED	SUR	44	-69	735	0	0	1.6	0.4	1.7

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
44034	99	SPEED	SUR	44	-68	735	0	0	1.6	-0.1	1.6
44078	99	SPEED	SUR	60	-40	735	1	0	2.1	-2.0	2.9
44137	99	SPEED	SUR	42	-62	740	1	0	2.1	-0.6	2.2
44139	99	SPEED	SUR	44	-57	318	0	0	1.8	-1.0	2.0
44150	99	SPEED	SUR	43	-64	739	0	0	1.4	-0.7	1.6
44258	99	SPEED	SUR	45	-63	714	0	0	1.4	0.1	1.5
44488	99	SPEED	SUR	45	-61	684	2	0	2.0	1.3	2.4
44489	99	SPEED	SUR	46	-61	706	0	0	1.6	2.1	2.7
6100001	99	SPEED	SUR	43	8	711	0	0	1.5	0.4	1.5
6100002	99	SPEED	SUR	42	5	144	0	0	1.3	0.5	1.3
6100196	99	SPEED	SUR	42	4	191	0	0	4.5	-5.6	7.2
6100197	99	SPEED	SUR	40	4	733	0	0	1.4	-1.0	1.7
6100198	99	SPEED	SUR	37	-2	725	0	0	1.7	-0.7	1.8
6100280	99	SPEED	SUR	41	1	739	0	0	1.8	-0.4	1.8
6100281	99	SPEED	SUR	40	0	740	0	0	2.1	1.4	2.5
6100417	99	SPEED	SUR	38	0	741	9	0	1.6	-0.5	1.7
6100430	99	SPEED	SUR	40	2	738	0	0	1.4	-0.4	1.4
6101031	99	SPEED	SUR	42	8	742	0	0	1.5	-0.2	1.5
6101032	99	SPEED	SUR	42	10	742	0	0	1.5	0.5	1.6
6101034	99	SPEED	SUR	42	5	745	0	0	1.3	0.7	1.5
6101035	99	SPEED	SUR	41	7	744	0	0	1.6	1.3	2.0
6200001	99	SPEED	SUR	45	-5	741	0	0	1.7	-0.7	1.8
6200024	99	SPEED	SUR	44	-3	729	0	0	2.1	-0.2	2.1
6200025	99	SPEED	SUR	44	-6	734	0	0	1.9	-0.3	1.9
6200082	99	SPEED	SUR	44	-8	743	0	0	1.7	-0.7	1.9
6200083	99	SPEED	SUR	43	-9	736	0	0	1.5	-0.8	1.7
6200084	99	SPEED	SUR	42	-9	739	0	0	1.4	-1.1	1.8
6200085	99	SPEED	SUR	36	-7	736	0	0	1.2	-0.6	1.4
6200086	99	SPEED	SUR	55	7	89	0	0	1.7	1.1	2.0
6200087	99	SPEED	SUR	55	7	270	0	0	1.6	0.9	1.9
6200091	99	SPEED	SUR	53	-5	744	0	0	1.2	0.7	1.4
6200092	99	SPEED	SUR	51	-11	744	0	0	1.3	0.6	1.4
6200093	99	SPEED	SUR	55	-10	744	0	0	1.6	-0.4	1.7
6200094	99	SPEED	SUR	52	-7	744	0	0	1.7	-1.3	2.2
6200095	99	SPEED	SUR	53	-16	744	0	0	1.4	0.2	1.4
6200103	99	SPEED	SUR	50	-3	742	0	0	1.5	0.0	1.5
6200163	99	SPEED	SUR	47	-8	743	0	0	1.5	0.1	1.5
6201065	99	SPEED	SUR	54	7	710	0	0	1.7	-1.0	2.0
6201066	99	SPEED	SUR	55	7	741	0	0	1.5	0.4	1.6
6202113	99	SPEED	SUR	54	7	192	0	0	1.4	0.1	1.4
6202114	99	SPEED	SUR	54	6	184	0	0	1.6	-0.1	1.6

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
62050	99	SPEED	SUR	50	-4	1487	0	0	1.6	-0.1	1.6
62091	99	SPEED	SUR	53	-5	743	0	0	1.2	1.0	1.6
62092	99	SPEED	SUR	51	-11	743	0	0	1.3	0.7	1.5
62093	99	SPEED	SUR	55	-10	743	0	0	1.7	-0.3	1.7
62094	99	SPEED	SUR	52	-7	743	0	0	1.8	-1.2	2.1
62095	99	SPEED	SUR	53	-16	743	0	0	1.4	0.3	1.5
62102	99	SPEED	SUR	58	2	1488	0	0	1.5	-0.2	1.5
62103	99	SPEED	SUR	50	-3	1482	0	0	1.6	-0.2	1.6
62104	99	SPEED	SUR	57	1	1488	0	0	1.4	-0.3	1.5
62105	99	SPEED	SUR	55	-13	1485	0	0	1.6	0.1	1.6
62107	99	SPEED	SUR	50	-6	1487	0	0	1.5	0.6	1.6
62112	99	SPEED	SUR	58	0	1487	0	0	1.6	-0.3	1.7
62113	99	SPEED	SUR	58	0	491	0	0	1.9	-0.1	2.0
62114	99	SPEED	SUR	58	0	1488	0	0	2.0	0.7	2.1
62118	99	SPEED	SUR	58	1	1461	0	0	1.7	0.7	1.9
62120	99	SPEED	SUR	56	2	1484	0	0	1.6	-0.8	1.8
62121	99	SPEED	SUR	54	3	1488	0	0	1.5	-0.7	1.7
62122	99	SPEED	SUR	57	2	1483	0	0	1.6	-0.4	1.7
62129	99	SPEED	SUR	58	0	1422	0	0	2.0	0.3	2.0
62131	99	SPEED	SUR	54	1	1446	0	0	1.8	-0.2	1.8
62134	99	SPEED	SUR	58	1	1487	0	0	1.7	-1.4	2.2
62140	99	SPEED	SUR	57	1	14	0	0	0.4	-1.4	1.5
62143	99	SPEED	SUR	58	2	1487	0	0	2.2	-1.0	2.4
62144	99	SPEED	SUR	53	2	1488	0	0	2.1	-0.9	2.3
62145	99	SPEED	SUR	53	3	1488	0	0	1.5	0.3	1.5
62146	99	SPEED	SUR	57	2	1482	0	0	1.7	0.2	1.7
62148	99	SPEED	SUR	54	2	1488	2	0	1.8	-0.4	1.9
62149	99	SPEED	SUR	54	1	1456	0	0	1.5	0.0	1.5
62152	99	SPEED	SUR	57	2	1488	0	0	1.8	-1.1	2.1
62154	99	SPEED	SUR	56	2	1488	0	0	1.6	-0.1	1.6
62155	99	SPEED	SUR	58	1	1425	0	0	1.6	0.3	1.6
62163	99	SPEED	SUR	48	-9	1486	0	0	1.5	0.1	1.5
62164	99	SPEED	SUR	57	1	1488	0	0	1.7	-1.2	2.0
62165	99	SPEED	SUR	54	1	1486	0	0	1.7	-0.5	1.8
62170	99	SPEED	SUR	51	2	1488	0	0	1.4	0.9	1.6
62304	99	SPEED	SUR	51	2	1484	0	0	1.5	1.0	1.8
6301001	99	SPEED	SUR	64	5	58	0	0	1.6	-0.8	1.8
63055	99	SPEED	SUR	61	2	1201	0	0	1.7	-1.3	2.1
63056	99	SPEED	SUR	60	2	1484	0	0	1.7	0.5	1.7
63057	99	SPEED	SUR	59	2	1486	0	0	2.6	-0.6	2.6
63058	99	SPEED	SUR	53	2	998	0	0	1.4	-0.3	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
63103	99	SPEED	SUR	61	1	656	0	0	1.7	-0.4	1.7
63108	99	SPEED	SUR	61	2	1458	0	0	1.9	-0.4	1.9
63109	99	SPEED	SUR	60	2	1487	0	0	1.7	0.4	1.8
63110	99	SPEED	SUR	60	2	1488	0	0	1.7	-0.5	1.7
63112	99	SPEED	SUR	61	1	1486	0	0	1.3	-0.6	1.5
63115	99	SPEED	SUR	62	1	1487	0	0	1.4	-0.8	1.6
64041	99	SPEED	SUR	61	-3	1235	0	0	1.5	-0.3	1.5
6600021	99	SPEED	SUR	55	14	105	0	0	1.2	0.9	1.5
6600024	99	SPEED	SUR	55	13	189	0	0	1.1	1.3	1.7

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

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          DRIFTER MONITORING STATISTICS (EUCOS)
                   MONITORING CENTRE     : ECMWF
                   ELEMENT MONITORED     : WIND DIRECTION (DEGREES)
                   AREA                  : 10N - 90N, 70W - 40E
                   PERIOD                : JAN 2025
                   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	742	0	0	7.2	0.0	7.2
1300008	99	DIRN	SUR	15	-38	593	0	0	9.1	1.2	9.1
1300130	99	DIRN	SUR	28	-16	248	0	0	9.4	2.1	9.7
4100004	99	DIRN	SUR	33	-79	3963	0	0	13.2	8.9	16.0
4100008	99	DIRN	SUR	31	-81	2019	0	0	13.1	9.8	16.3
4100009	99	DIRN	SUR	29	-80	3922	0	0	17.4	6.5	18.5
4100010	99	DIRN	SUR	29	-78	3929	0	0	14.5	3.1	14.9
4100013	99	DIRN	SUR	33	-78	4012	0	0	13.2	6.7	14.8
4100024	99	DIRN	SUR	34	-78	519	0	0	15.6	12.6	20.0
4100025	99	DIRN	SUR	35	-75	4227	0	0	15.3	6.7	16.7
4100029	99	DIRN	SUR	33	-80	540	0	0	20.7	-1.5	20.8
4100033	99	DIRN	SUR	32	-80	517	0	0	15.5	8.2	17.5
4100037	99	DIRN	SUR	34	-77	339	0	0	14.0	3.5	14.5
4100038	99	DIRN	SUR	34	-78	486	0	0	14.4	5.7	15.5
4100040	99	DIRN	SUR	15	-53	4123	0	0	11.2	1.4	11.3
4100043	99	DIRN	SUR	21	-65	3488	0	0	13.3	5.3	14.3
4100044	99	DIRN	SUR	22	-59	3785	0	0	12.9	7.9	15.1
4100049	99	DIRN	SUR	28	-62	3815	0	0	14.0	8.3	16.2
4100052	99	DIRN	SUR	18	-65	3990	0	0	11.9	4.7	12.8
4100053	99	DIRN	SUR	18	-66	3446	0	0	18.3	-0.1	18.3
4100056	99	DIRN	SUR	18	-65	3996	0	0	14.1	6.3	15.4
4100064	99	DIRN	SUR	34	-77	651	0	0	18.0	-13.5	22.5
4100066	99	DIRN	SUR	33	-80	589	0	0	21.1	2.3	21.2
4100068	99	DIRN	SUR	28	-80	642	0	0	18.7	-1.0	18.7
4100069	99	DIRN	SUR	29	-81	596	0	0	15.1	5.9	16.2
4100082	99	DIRN	SUR	36	-75	3996	0	0	14.0	-12.0	18.4
4100083	99	DIRN	SUR	36	-75	4194	0	0	12.5	-6.5	14.1
4100300	99	DIRN	SUR	16	-57	659	0	0	13.4	-0.2	13.4
41004	99	DIRN	SUR	33	-79	659	0	0	13.0	8.9	15.7
41008	99	DIRN	SUR	31	-81	341	0	0	13.6	9.6	16.7
41009	99	DIRN	SUR	29	-80	650	0	0	16.0	6.6	17.3
41010	99	DIRN	SUR	29	-79	647	0	0	14.0	3.5	14.4

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

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
41013	99	DIRN	SUR	33	-78	659	0	0	12.8	6.8	14.5
41024	99	DIRN	SUR	34	-79	546	0	0	16.5	12.9	20.9
41025	99	DIRN	SUR	35	-76	710	0	0	16.1	6.5	17.4
41029	99	DIRN	SUR	33	-80	535	0	0	19.4	-0.3	19.4
41033	99	DIRN	SUR	32	-80	512	0	0	15.0	7.0	16.6
41037	99	DIRN	SUR	34	-77	336	0	0	14.2	2.7	14.5
41038	99	DIRN	SUR	34	-78	457	0	0	15.1	6.6	16.5
41040	99	DIRN	SUR	15	-53	683	0	0	11.9	0.7	11.9
41043	99	DIRN	SUR	21	-65	591	0	0	13.6	5.1	14.5
41044	99	DIRN	SUR	22	-59	617	0	0	12.9	7.6	15.0
41049	99	DIRN	SUR	28	-62	631	0	0	13.9	8.0	16.0
41052	99	DIRN	SUR	18	-65	667	0	0	12.0	4.1	12.7
41053	99	DIRN	SUR	19	-66	583	0	0	19.9	-1.0	20.0
41056	99	DIRN	SUR	18	-66	668	0	0	14.9	6.2	16.1
41064	99	DIRN	SUR	34	-77	646	0	0	17.6	-13.9	22.4
41066	99	DIRN	SUR	33	-80	583	0	0	21.0	2.2	21.1
41068	99	DIRN	SUR	28	-80	639	0	0	20.9	-0.9	20.9
41069	99	DIRN	SUR	29	-81	586	0	0	14.7	6.3	16.0
41082	99	DIRN	SUR	36	-75	662	0	0	14.7	-11.9	18.9
41083	99	DIRN	SUR	36	-75	697	0	0	13.0	-6.4	14.5
4200013	99	DIRN	SUR	27	-83	1258	0	0	12.8	-3.8	13.4
4200022	99	DIRN	SUR	28	-84	1378	0	0	13.1	-3.0	13.4
4200023	99	DIRN	SUR	26	-83	101	0	0	6.4	-7.2	9.7
4200026	99	DIRN	SUR	25	-83	144	0	0	8.7	-10.0	13.3
4200036	99	DIRN	SUR	29	-85	4015	0	0	17.3	1.2	17.3
4200056	99	DIRN	SUR	20	-85	3872	0	0	10.9	4.1	11.6
4200058	99	DIRN	SUR	15	-75	4448	0	0	6.3	4.3	7.7
4200060	99	DIRN	SUR	16	-63	4211	0	0	11.9	6.7	13.7
4200085	99	DIRN	SUR	18	-67	3530	0	0	17.0	3.8	17.4
42013	99	DIRN	SUR	27	-83	632	0	0	13.7	-3.0	14.0
42022	99	DIRN	SUR	28	-84	682	0	0	13.4	-2.7	13.6
42023	99	DIRN	SUR	26	-83	35	0	0	6.5	-4.7	8.0
42026	99	DIRN	SUR	25	-84	71	0	0	9.6	-9.3	13.4
42036	99	DIRN	SUR	29	-85	664	0	0	18.2	1.4	18.3
42056	99	DIRN	SUR	20	-85	643	0	0	11.1	3.8	11.8
42058	99	DIRN	SUR	15	-75	744	0	0	7.0	3.6	7.9
42060	99	DIRN	SUR	16	-63	701	0	0	12.4	6.1	13.8
42085	99	DIRN	SUR	18	-67	568	0	0	16.6	3.2	16.9
4400007	99	DIRN	SUR	44	-70	4041	0	0	15.9	0.1	15.9
4400009	99	DIRN	SUR	38	-75	3985	0	0	13.3	4.4	14.0
4400011	99	DIRN	SUR	41	-67	4211	0	0	14.3	6.9	15.8

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
4400013	99	DIRN	SUR	42	-71	4178	0	0	14.8	4.0	15.4
4400014	99	DIRN	SUR	37	-75	4073	0	0	13.5	3.0	13.8
4400020	99	DIRN	SUR	41	-70	3873	0	0	13.5	3.3	13.9
4400025	99	DIRN	SUR	40	-73	4200	0	0	11.6	5.5	12.9
4400027	99	DIRN	SUR	44	-67	4008	0	0	13.5	6.0	14.8
4400029	99	DIRN	SUR	43	-71	704	0	0	13.4	2.3	13.6
4400030	99	DIRN	SUR	43	-70	692	0	0	14.0	2.6	14.2
4400032	99	DIRN	SUR	44	-69	688	0	0	13.2	0.0	13.2
4400033	99	DIRN	SUR	44	-69	632	0	0	17.5	-1.5	17.6
4400034	99	DIRN	SUR	44	-68	657	0	0	14.7	0.8	14.7
4400041	99	DIRN	SUR	37	-77	755	0	0	15.5	1.5	15.5
4400042	99	DIRN	SUR	38	-76	3215	1	0	20.4	-0.2	20.5
4400058	99	DIRN	SUR	38	-76	2840	0	0	18.2	5.4	19.0
4400062	99	DIRN	SUR	39	-76	3203	0	0	21.5	3.2	21.7
4400063	99	DIRN	SUR	39	-76	2597	0	0	17.4	2.8	17.6
4400064	99	DIRN	SUR	37	-76	2857	0	0	22.2	-0.4	22.2
4400065	99	DIRN	SUR	40	-74	4149	0	0	12.1	7.3	14.1
4400072	99	DIRN	SUR	37	-76	3399	0	0	22.4	5.0	22.9
4400073	99	DIRN	SUR	43	-71	2975	0	0	12.2	0.3	12.2
4400079	99	DIRN	SUR	36	-75	4198	0	0	12.3	-13.3	18.1
4400488	99	DIRN	SUR	45	-61	623	2	0	17.1	-30.8	35.2
4400489	99	DIRN	SUR	45	-61	617	0	0	15.3	-35.3	38.4
44007	99	DIRN	SUR	44	-70	680	0	0	15.2	0.3	15.2
44009	99	DIRN	SUR	39	-75	655	0	0	14.0	3.7	14.5
44011	99	DIRN	SUR	41	-67	706	0	0	15.3	6.6	16.7
44013	99	DIRN	SUR	42	-71	690	0	0	15.1	1.9	15.2
44014	99	DIRN	SUR	37	-75	688	0	0	13.9	2.7	14.1
44020	99	DIRN	SUR	42	-70	644	0	0	14.8	2.7	15.0
44025	99	DIRN	SUR	40	-73	702	0	0	12.1	4.8	13.1
44027	99	DIRN	SUR	44	-67	665	0	0	13.5	5.6	14.6
44029	99	DIRN	SUR	43	-71	697	0	0	13.6	1.8	13.8
44030	99	DIRN	SUR	43	-70	688	0	0	14.2	2.8	14.5
44032	99	DIRN	SUR	44	-69	684	0	0	14.4	-0.7	14.4
44033	99	DIRN	SUR	44	-69	634	0	0	17.0	-2.0	17.2
44034	99	DIRN	SUR	44	-68	656	0	0	15.8	1.0	15.9
44041	99	DIRN	SUR	37	-77	135	0	0	16.2	1.5	16.2
44042	99	DIRN	SUR	38	-76	439	0	0	20.7	1.0	20.7
44058	99	DIRN	SUR	38	-76	377	0	0	20.1	4.6	20.6
44062	99	DIRN	SUR	39	-76	437	0	0	21.6	3.5	21.9
44063	99	DIRN	SUR	39	-76	389	0	0	21.5	1.1	21.5
44064	99	DIRN	SUR	37	-76	420	0	0	22.0	0.1	22.0

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
44065	99	DIRN	SUR	40	-74	694	0	0	12.0	7.0	13.9
44072	99	DIRN	SUR	37	-76	475	0	0	22.8	5.2	23.4
44073	99	DIRN	SUR	43	-71	501	0	0	12.3	0.8	12.3
44078	99	DIRN	SUR	60	-40	682	1	0	21.7	-19.7	29.3
44079	99	DIRN	SUR	36	-75	701	0	0	13.2	-13.6	18.9
44137	99	DIRN	SUR	42	-62	690	1	0	13.5	-9.0	16.2
44139	99	DIRN	SUR	44	-57	306	0	0	19.3	-13.1	23.3
44150	99	DIRN	SUR	43	-64	677	0	0	15.6	-7.8	17.4
44258	99	DIRN	SUR	45	-63	628	0	0	15.4	-1.2	15.4
44488	99	DIRN	SUR	45	-61	622	2	0	17.9	-31.8	36.5
44489	99	DIRN	SUR	46	-61	619	0	0	16.1	-36.0	39.5
4500008	99	DIRN	SUR	44	-82	1242	0	0	10.5	8.2	13.4
45008	99	DIRN	SUR	44	-82	207	0	0	11.3	7.5	13.6
6100198	99	DIRN	SUR	37	-2	521	0	0	15.6	5.0	16.4
6100281	99	DIRN	SUR	40	0	549	0	0	24.8	0.2	24.8
6100417	99	DIRN	SUR	38	0	593	9	0	130.6	-44.2	137.9
6200001	99	DIRN	SUR	45	-5	680	0	0	20.5	0.7	20.5
6200024	99	DIRN	SUR	44	-3	564	0	0	18.7	7.4	20.1
6200025	99	DIRN	SUR	44	-6	530	0	0	17.5	-8.0	19.2
6200082	99	DIRN	SUR	44	-8	690	0	0	16.2	0.5	16.2
6200083	99	DIRN	SUR	43	-9	640	0	0	18.1	5.7	19.0
6200084	99	DIRN	SUR	42	-9	609	0	0	11.8	-8.9	14.8
6200085	99	DIRN	SUR	36	-7	556	0	0	14.0	7.0	15.6
6200091	99	DIRN	SUR	53	-5	707	0	0	12.4	2.7	12.7
6200092	99	DIRN	SUR	51	-11	681	0	0	12.1	4.8	13.1
6200093	99	DIRN	SUR	55	-10	724	0	0	14.5	2.1	14.7
6200094	99	DIRN	SUR	52	-7	685	0	0	14.7	-0.7	14.7
6200095	99	DIRN	SUR	53	-16	734	0	0	15.4	8.2	17.4
6200103	99	DIRN	SUR	50	-3	629	0	0	15.7	12.9	20.3
6200163	99	DIRN	SUR	47	-8	711	0	0	13.2	-1.2	13.2
62050	99	DIRN	SUR	50	-4	1349	0	0	14.7	6.2	16.0
62091	99	DIRN	SUR	53	-5	698	0	0	12.7	2.3	12.9
62092	99	DIRN	SUR	51	-11	678	0	0	12.7	4.7	13.5
62093	99	DIRN	SUR	55	-10	724	0	0	15.1	1.6	15.1
62094	99	DIRN	SUR	52	-7	676	0	0	15.1	-1.3	15.1
62095	99	DIRN	SUR	53	-16	732	0	0	15.5	7.3	17.2
62103	99	DIRN	SUR	50	-3	1258	0	0	15.8	13.0	20.5
62105	99	DIRN	SUR	55	-13	1455	0	0	12.1	-7.8	14.4
62107	99	DIRN	SUR	50	-6	1438	0	0	21.0	2.9	21.2
62112	99	DIRN	SUR	58	0	1272	0	0	12.8	3.2	13.2
62114	99	DIRN	SUR	58	0	1308	0	0	12.5	0.6	12.5

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
62163	99	DIRN	SUR	48	-9	1422	0	0	13.5	-1.1	13.5
64041	99	DIRN	SUR	61	-3	1103	0	0	12.3	9.3	15.5
9193264	99	DIRN	SUR	24	-84	30	0	0	17.9	-4.6	18.5

4.12 Table 24 - List of Assimilated BUFR Encoded Radiosonde Stations

ATGU3FT	FPUW5GN	GQBZLZL	JNKN7JF	JNSR	KJJF9XN	KMPLHPW	LAGY8	LAGZ8
LRYQE3U	USBOD	USTAC	USYUB	UXK5JTU	WDK38HS	XKQLWQB	YLV96WM	ZVQEQCM
2TDJJ8J	7JUNA4N	9ZT9MRK	01001	01004	01010	01028	01241	01400
01415	01492	02185	02365	02591	02836	02963	03005	03023
03238	03354	03502	03743	03808	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	14430	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
22522	22820	22845	23205	23472	23884	23921	23955	24266
24641	24688	24908	24947	26038	26435	26477	26629	26708
27459	27707	27713	27962	28225	28445	28661	28695	29612
29698	30557	30673	30935	31004	31770	31873	31977	34122
34172	34731	35121	40179	40186	42111	42182	42314	42339
42348	42399	42410	42492	42622	42623	42647	42675	42867
42886	42971	43003	43014	43041	43049	43063	43086	43128
43150	43185	43279	43295	43346	43353	43369	43466	45004
47102	47104	47138	47155	47169	47183	47186	47191	47230
47401	47412	47582	47600	47646	47678	47741	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	60715	61901	61980	61998	65344
66160	67083	68263	68424	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	72215	72230
72233	72235	72240	72248	72249	72250	72251	72261	72265
72274	72293	72305	72317	72318	72327	72340	72357	72363
72364	72365	72376	72388	72402	72403	72426	72440	72451
72456	72476	72489	72493	72501	72518	72520	72528	72558
72562	72572	72582	72597	72632	72634	72645	72649	72659
72662	72672	72681	72694	72712	72747	72764	72768	72776
72786	72797	73033	73110	73111	74389	74455	74560	76256
76394	76405	76458	76526	76595	76612	76644	76654	76679
76692	76743	76805	76903	78397	78486	78583	78897	78954
78970	78988	80001	81405	82965	84372	84516	84622	84754
85442	85586	85799	85934	87155	87344	87418	87585	87623
87715	87860	88889	89002	89022	89055	89062	89514	89564
89571	89592	89611	89625	89642	91165	91212	91285	91334
91348	91376	91408	91413	91592	91925	91938	91948	91958
93112	93417	93844	94001	94005	94120	94155	94170	94203
94299	94302	94312	94326	94332	94403	94430	94461	94510

94578	94610	94637	94653	94659	94672	94711	94767	94775
94802	94821	94866	94910	94995	94996	94998	95282	95527
95954	96413	96441	96471	96481	96996			

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

ATGU3FT	FPUW5GN	GQBZLZL	JNKN7JF	KJJF9XN	KMPLHPW	LAGY8	LAGZ8	LRYQE3U
USTAC	UXK5JTU	WDK38HS	XKQLWQB	YLV96WM	ZVQEQCM	2TDJJ8J	7JUNA4N	9ZT9MRK
01001	01004	01010	01028	01241	01400	01415	01492	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	42622	47183	47191
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
67083	72806	76743	76903	87585	89002	89642	91925	91938
91948	91958	94001	94005	94653	94767			

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.