ECMWF Global Data Monitoring Report

February 2024

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	Jan	Feb	Ident	Time	Jan	Feb
27459	(00)	30	5	42220	(00)	0	22
27459	(12)	31	5	42634	(00)	7	28
30054	(00)	30	16	61024	(12)	16	29
30054	(12)	31	16	72317	(00)	15	27
30309	(00)	27	16	72317	(12)	15	26
30309	(12)	26	12	82099	(00)	4	29
30965	(00)	30	1	83827	(00)	18	29
30965	(12)	31	0	86218	(12)	10	26
35671	(00)	19	8	91376	(12)	0	19
40754	(12)	18	5	91643	(00)	11	29
42056	(12)	29	8	-	-	-	-
42182	(00)	31	4	-	-	-	-
42182	(12)	31	2	-	-	-	-
42361	(00)	29	6	-	-	-	-
42361	(12)	31	8	-	-	-	-
42399	(00)	31	5	-	-	-	-
42492	(00)	23	2	-	-	-	-
43049	(00)	26	5	-	-	-	-
43243	(00)	22	6	-	-	-	-
43279	(00)	30	5	-	-	-	-
43279	(12)	27	3	-	-	-	-
48381	(00)	26	0	-	-	-	-
65548	(12)	28	7	-	-	-	-
65578	(00)	29	12	-	-	-	-
65578	(12)	31	16	-	-	-	-
68263	(00)	25	1	-	-	-	-
68263	(12)	29	0	-	-	-	-
68592	(00)	18	0	-	-	-	-
68592	(12)	12	0	-	-	-	-
71823	(12)	31	20	-	-	-	-
71926	(00)	29	14	-	-	-	-
71926	(12)	31	13	-	-	-	-
72274	(00)	31	12	-	-	-	-
72274	(12)	31	12	-	-	-	-
72357	(00)	30	14	-	-	-	-
72357	(12)	31	14	-	-	-	-
72403	(00)	31	8	-	-	-	-
72403	(12)	31	7	-	-	-	-
76256	(00)	25	0	-	-	-	-
76256	(12)	17	4	-	-	-	-
76405	(00)	22	8	-	-	-	-
76405	(12)	22	6	-	-	-	-
76526	(00)	20	3	-	-	-	-
76526	(12)	24	7	-	-	-	-
76644	(00)	23	2	-	-	-	-
76644	(12)	27	5	-	-	-	-
76654	(00)	21	7	-	-	-	-
76679	(00)	22	6	-	-	-	-
76679	(12)	24	9	-	-	-	-
76692	(00)	19	8	-	-	-	-
76692	(12)	22	5	-	-	-	-
76743	(00)	21	5	-	-	-	-
76743	(12)	20	4	-	-	-	-
80094	(12)	15	0	-	-	-	-
80398	(12)	29	17	-	-	-	-
82022	(00)	24	1	-	-	-	-
82022	(12)	28	1	-	-	-	-
82400	(12)	19	0	-	-	-	-
82824	(00)	30	8	-	-	-	-
83208	(00)	29	11	-	-	-	-

83208	(12)	30	15	-	-	-	-
83768	(12)	16	0	-	-	-	-
85586	(00)	27	6	-	-	-	-
85586	(12)	27	7	-	-	-	-
89022	(12)	25	0	-	-	-	-
89662	(00)	21	0	-	-	-	-
89662	(12)	17	0	-	-	-	-

2.2 Drifting Buoys

Surface pressure observations from **1462** 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

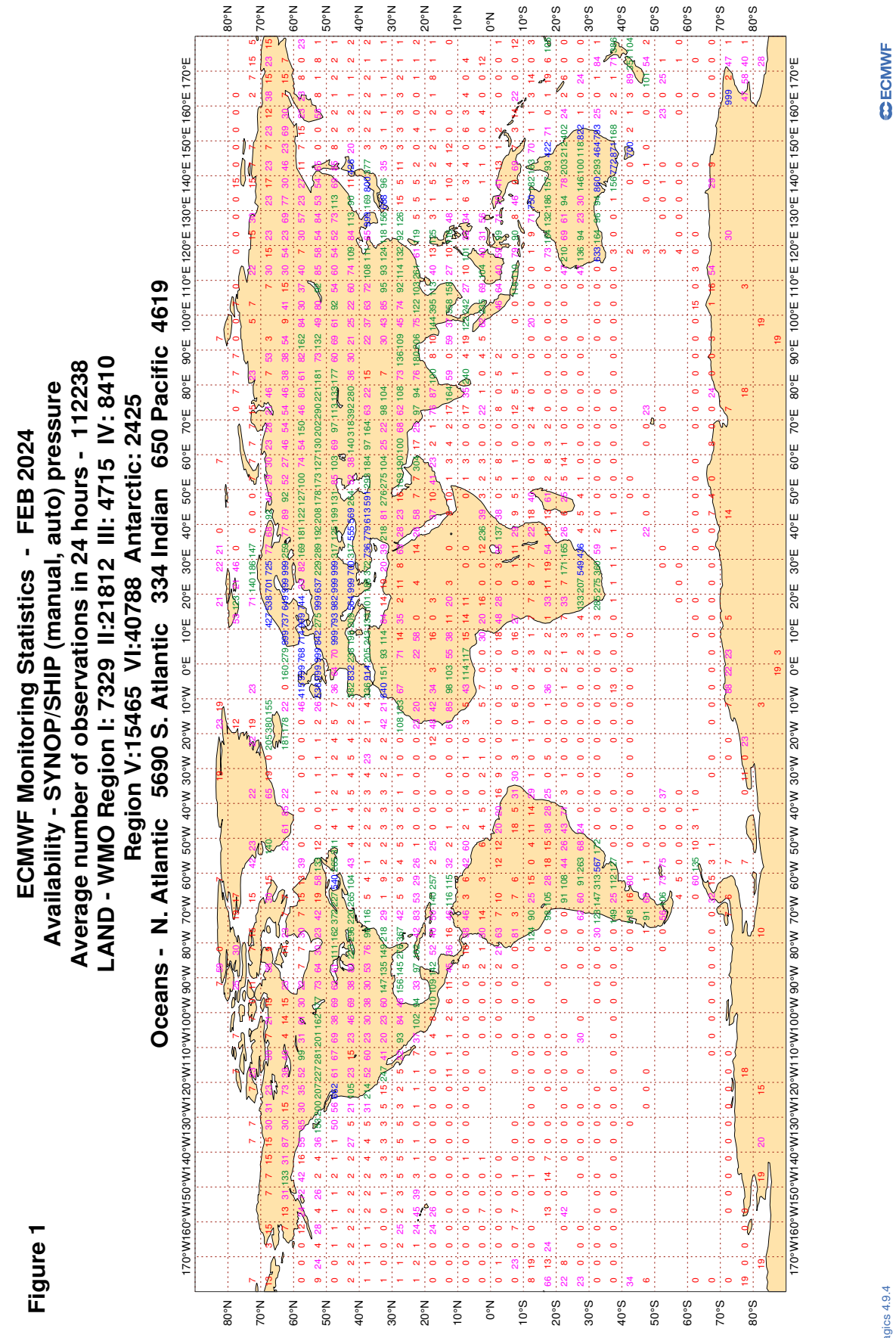


Figure 1

3.2.2 Figure 2 - Availability - DRIFTER PRESSURE

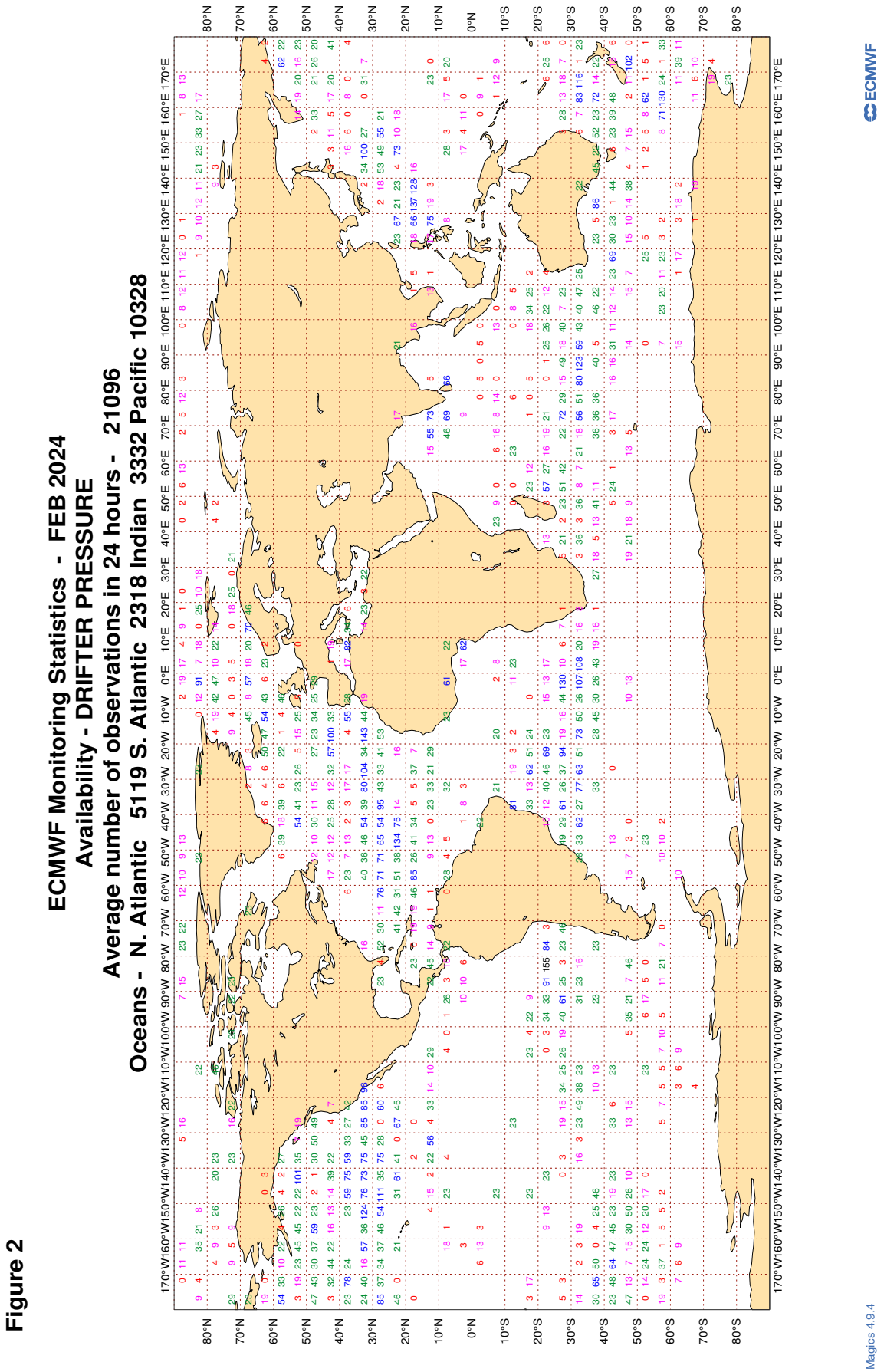


Figure 2

3.2.3 Figure 3 - Availability - TEMP 500 hPa geopotential

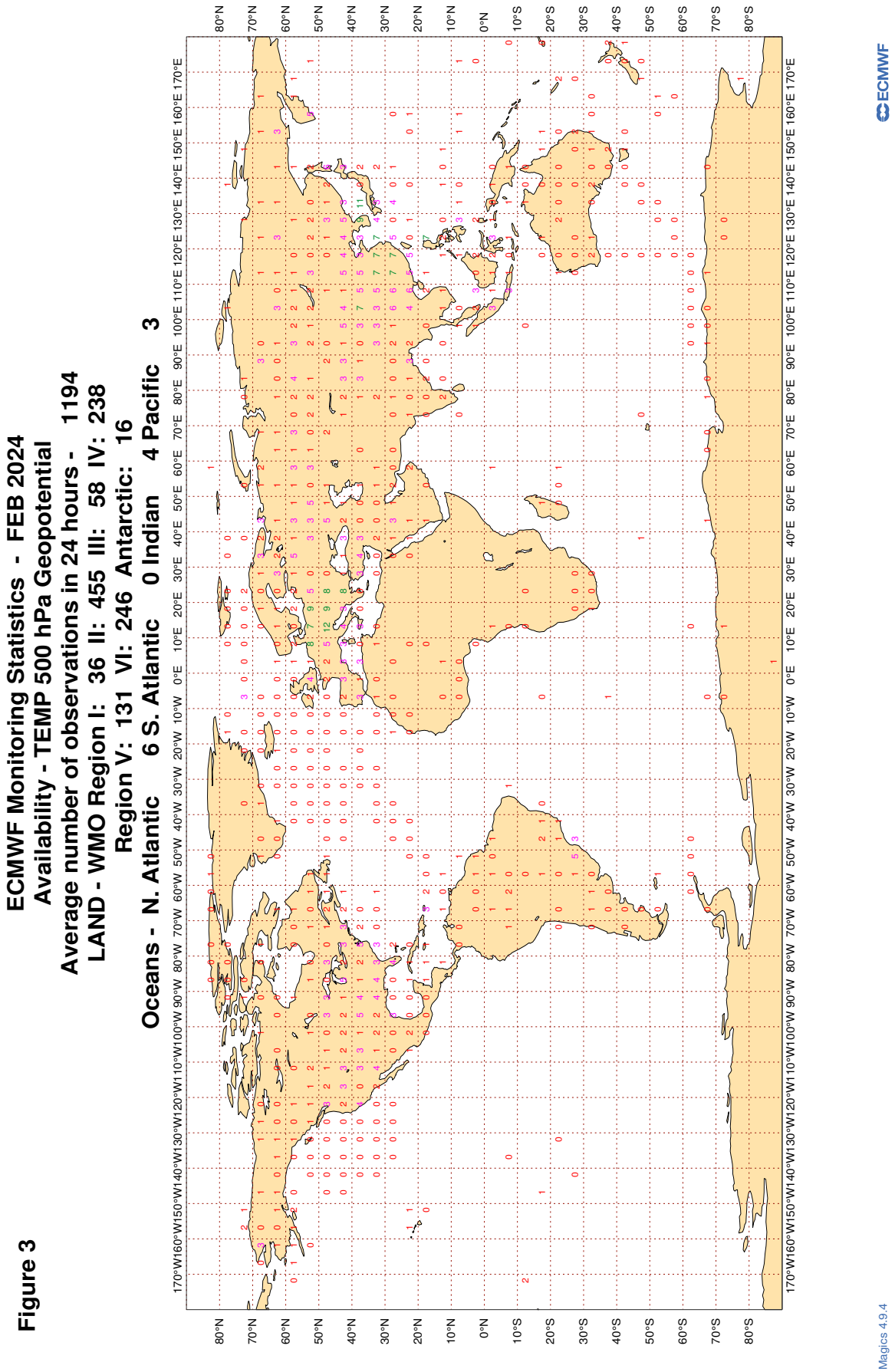


Figure 3

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

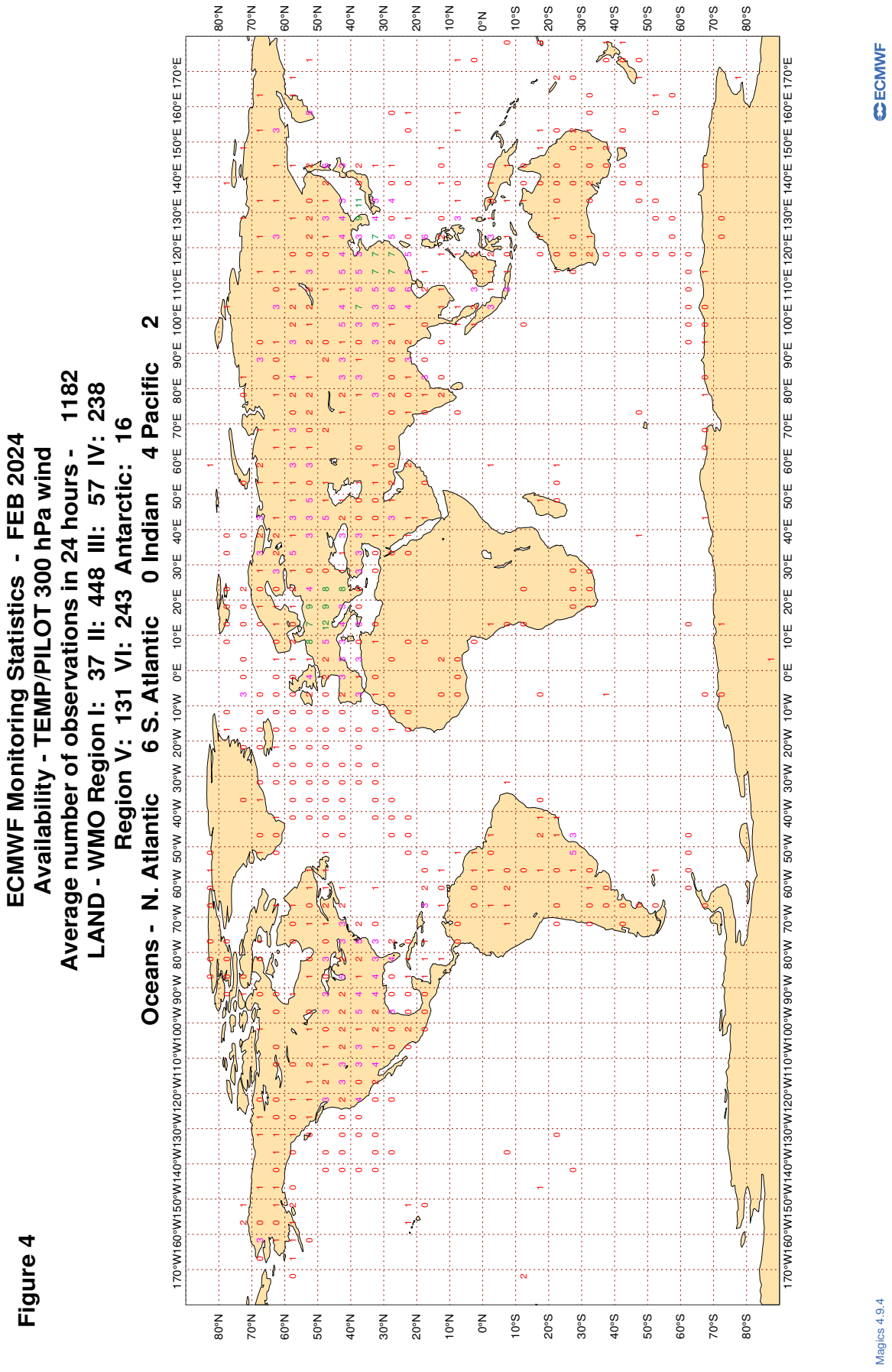


Figure 4

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

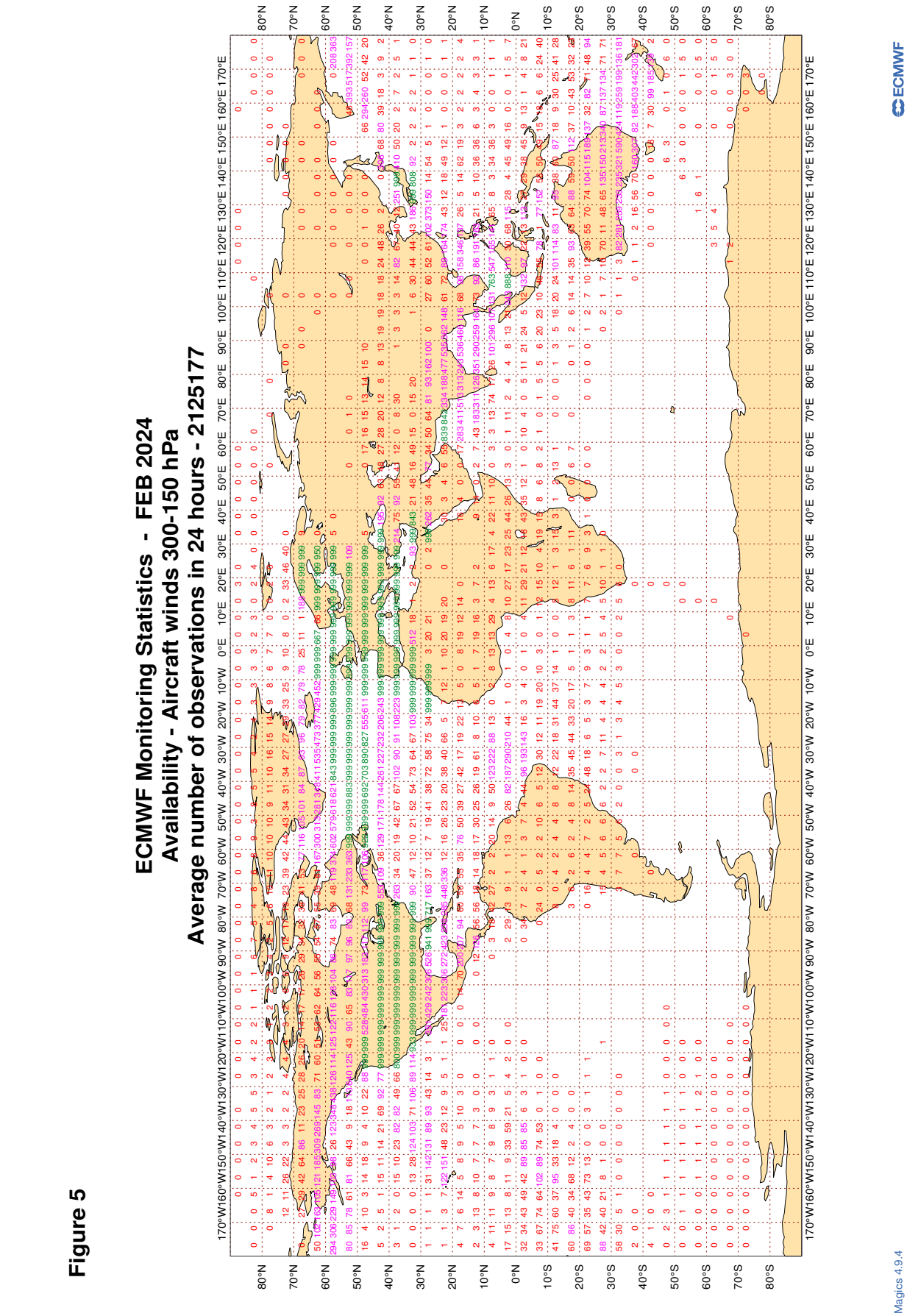
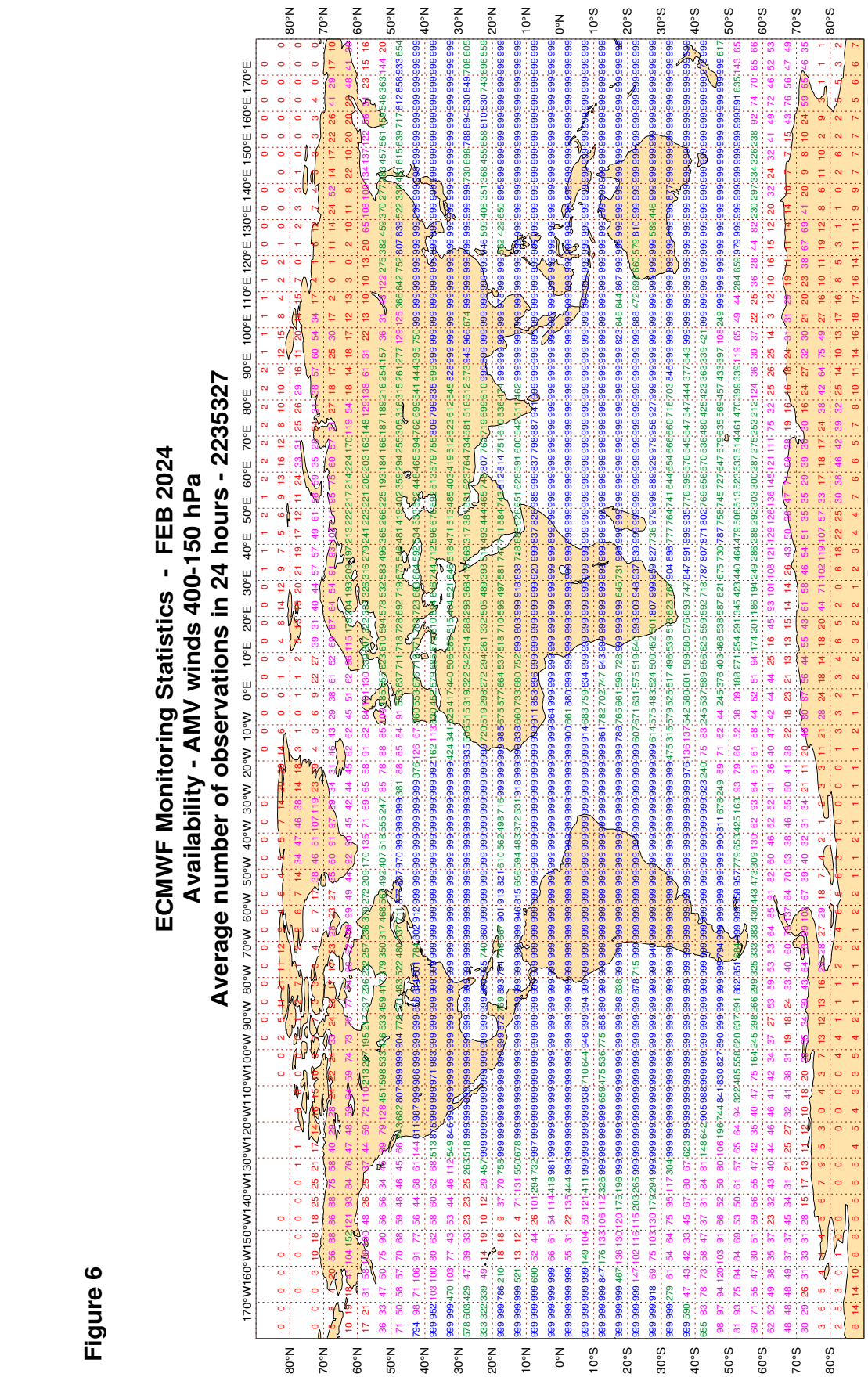


Figure 5

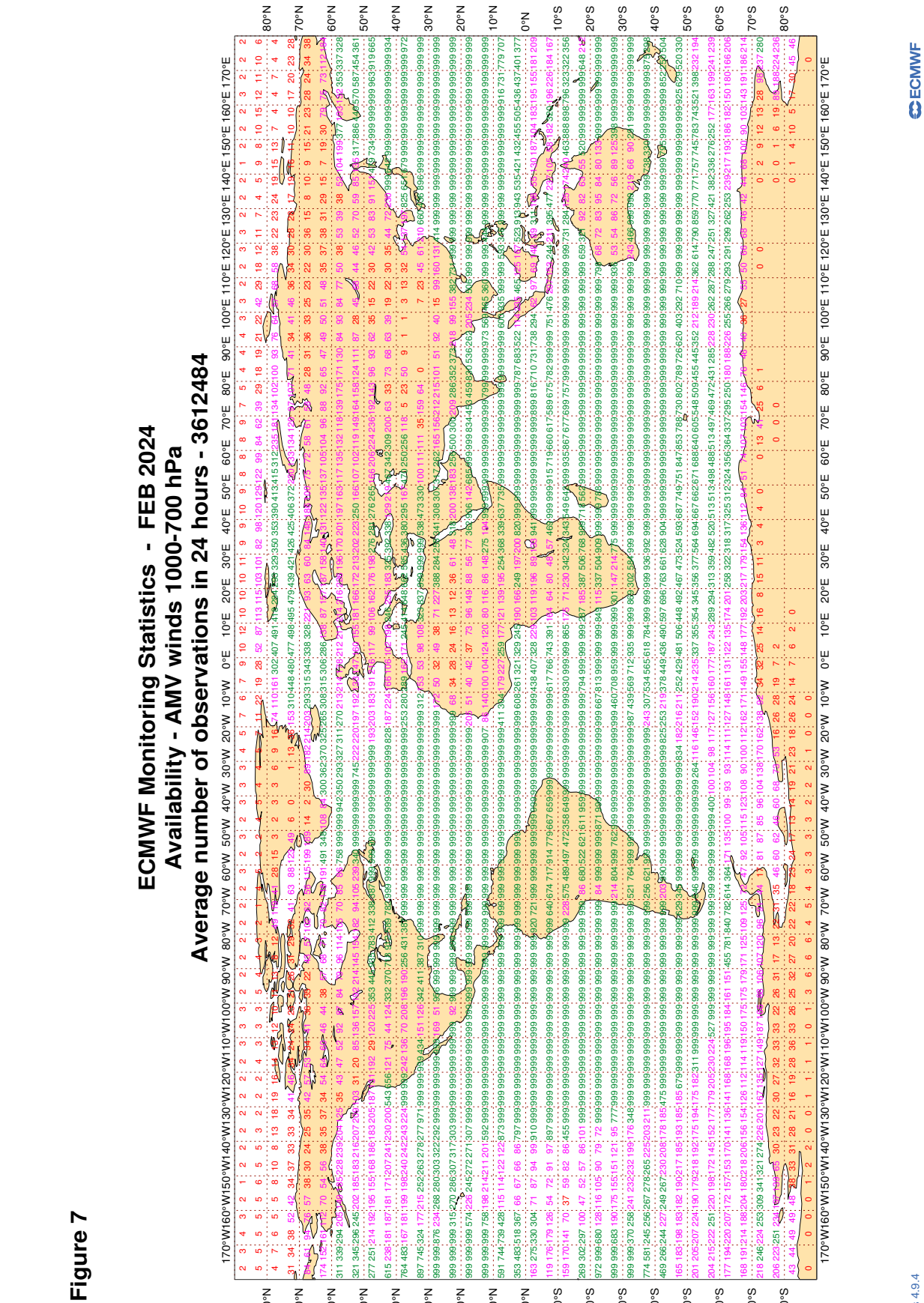
3.2.6 Figure 6 - Availability - SATOB winds 400-150 hPa

Figure 6



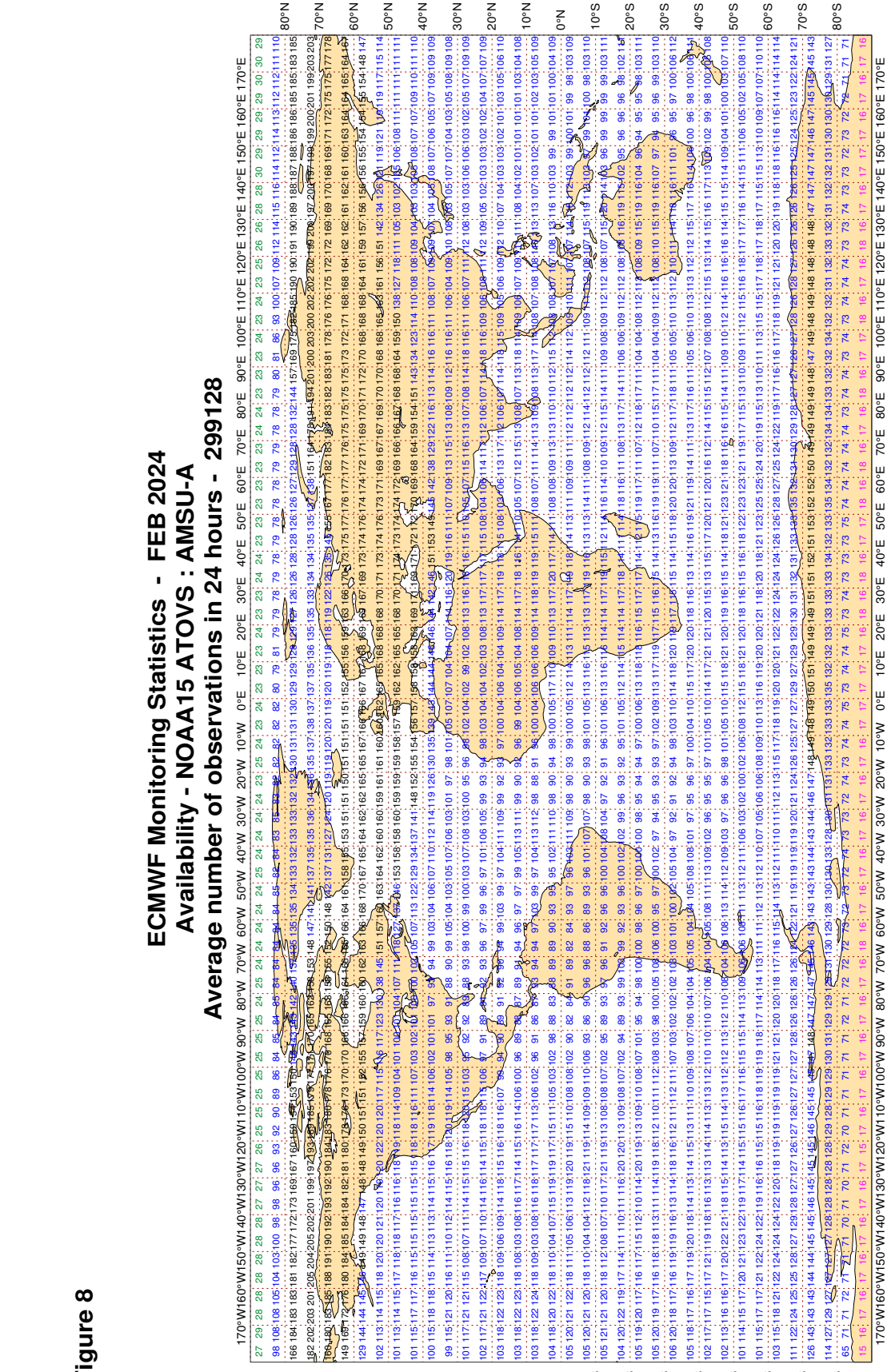
3.2.7 Figure 7 - Availability - SATOB winds 1000-700 hPa

Figure 7



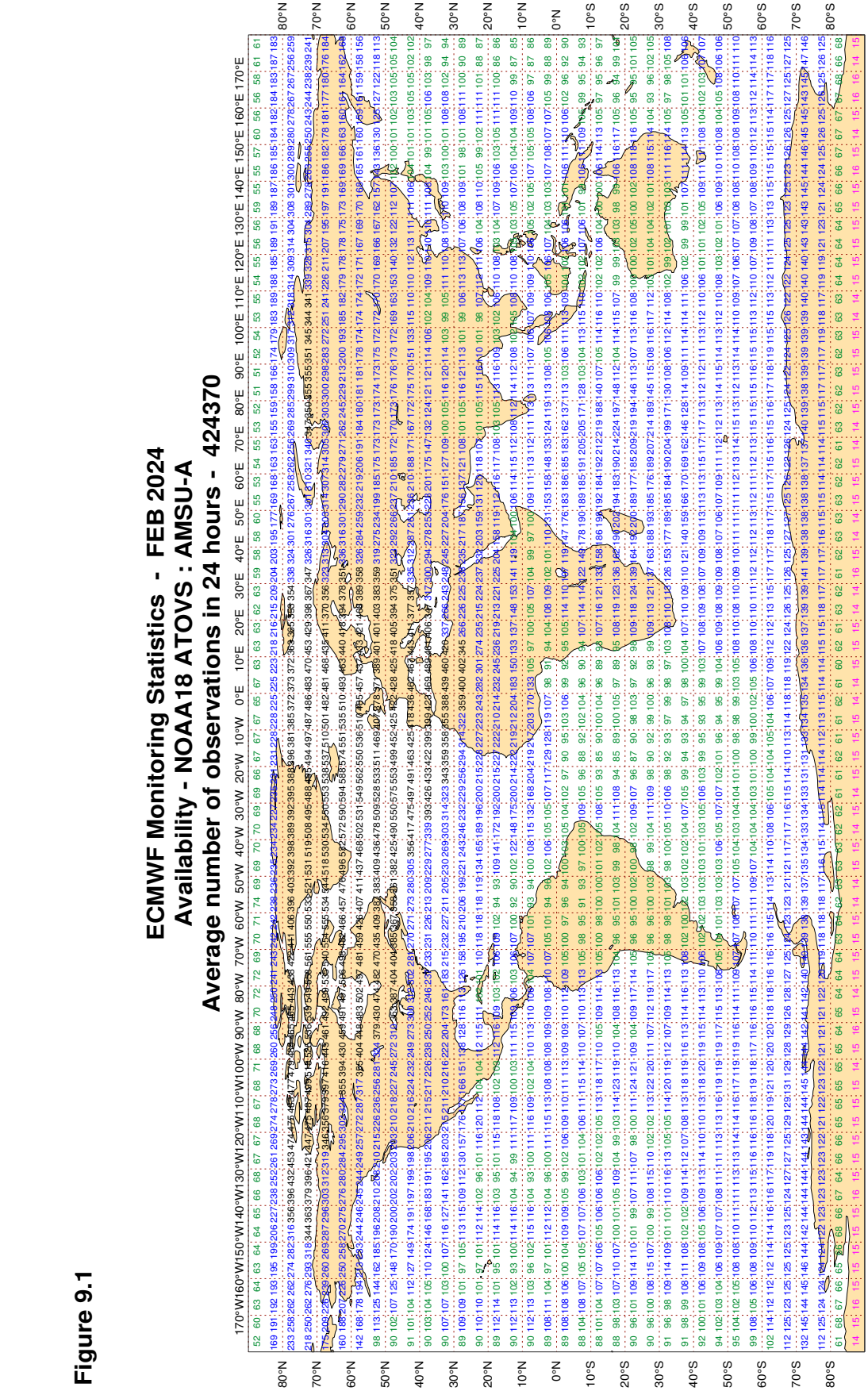
3.2.8 Figure 8 - Availability - NOAA15 ATOVS : AMSU-A

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

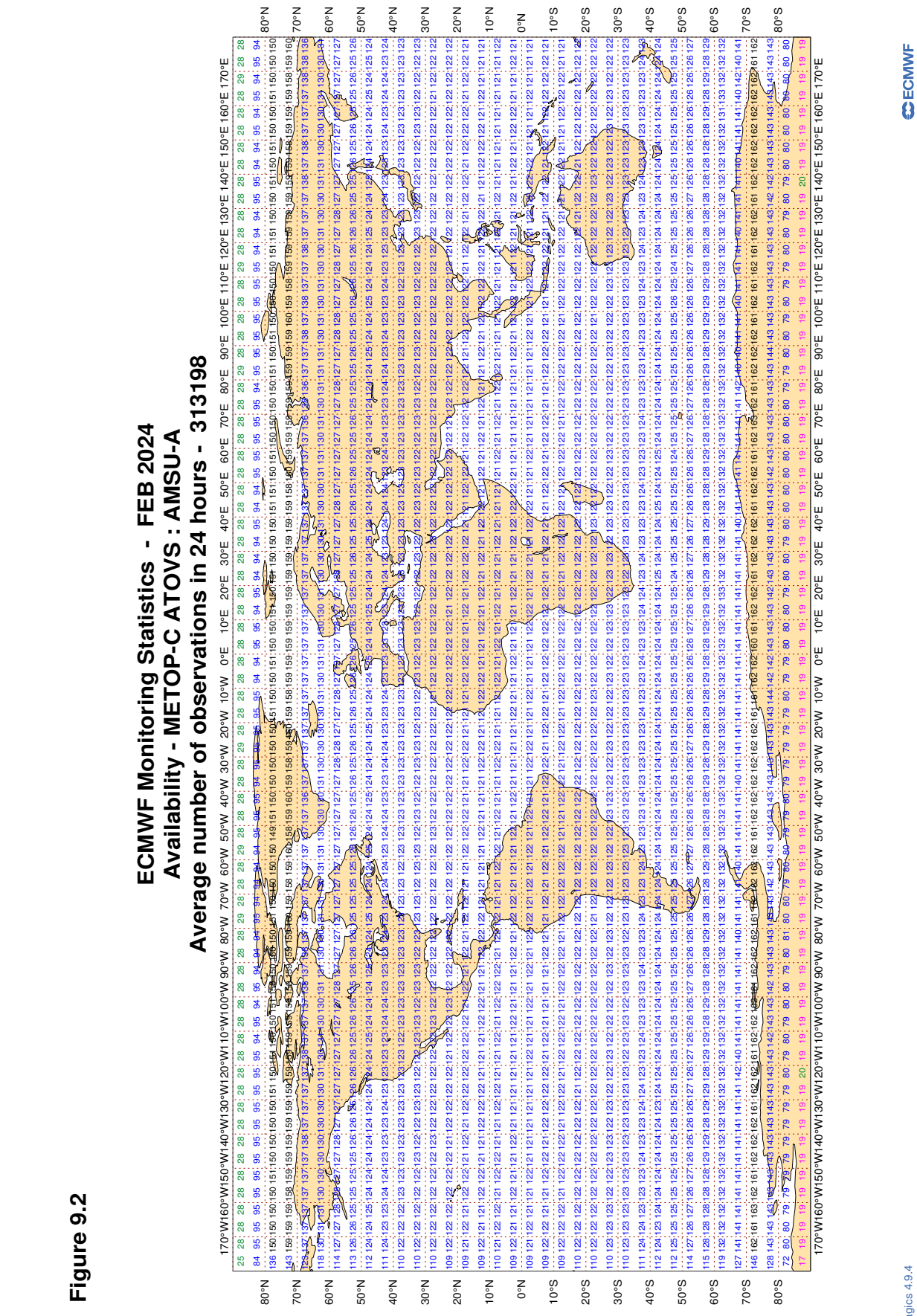
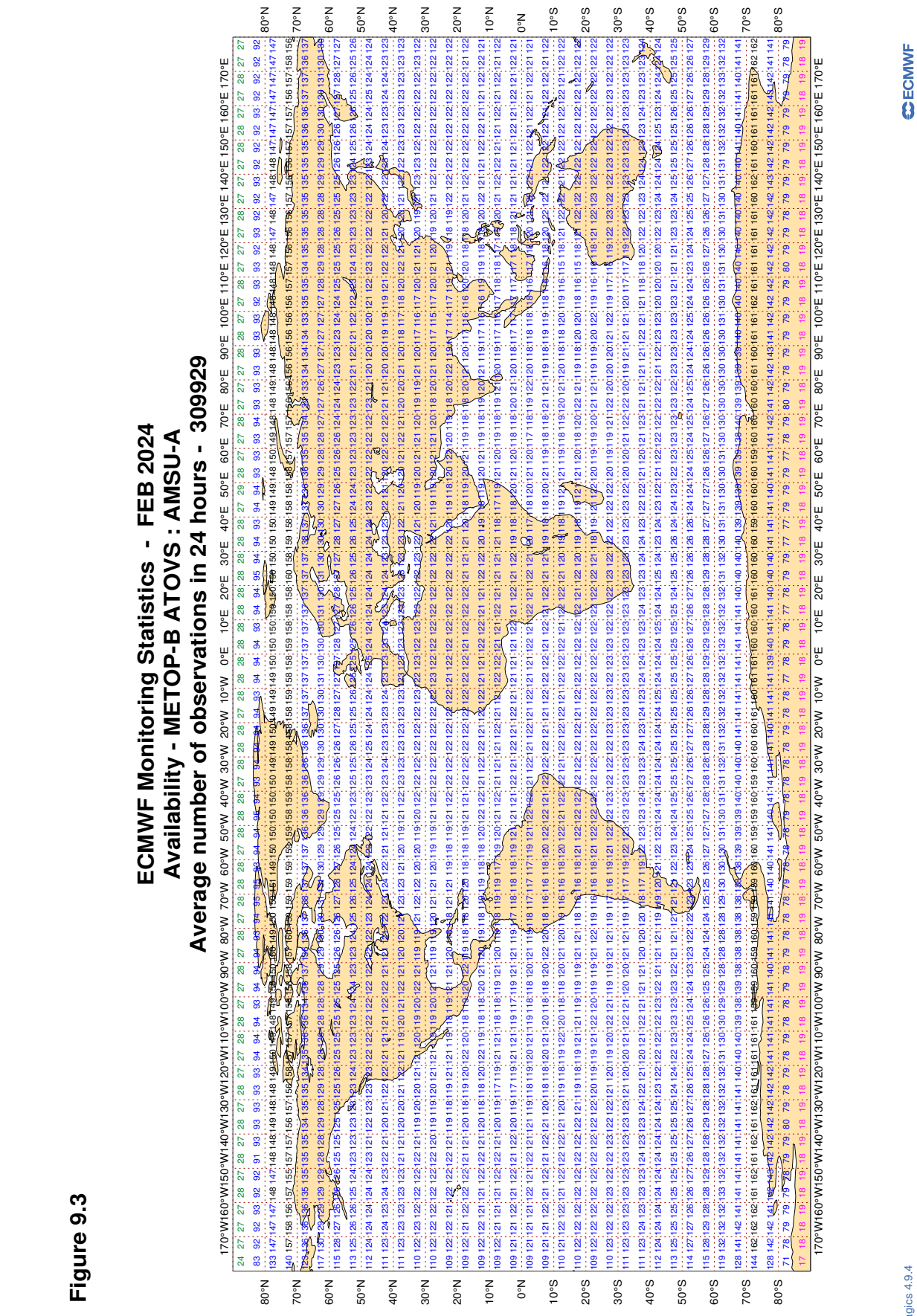


Figure 9.2

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                : FEB 2024
                    STANDARD OF COMPARISON: FIRST-GUESS FIELD


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

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

WMO IDENT	OBS TIME	ELM	LEVEL	NUM OBS	NUM GROSS	SD	BIAS	RMS
3E3566	99	P	SUR	33	0	1.2	4.7	4.9
3EBY2	99	P	SUR	31	12	2.2	9.7	9.9
3EPL4	99	P	SUR	18	0	1.3	6.7	6.8
3ERG5	99	P	SUR	16	0	1.5	4.8	5.0
3FEN2	99	P	SUR	65	0	1.1	3.2	3.4
3FLO4	99	P	SUR	15	1	2.4	5.9	6.4
3FZI8	99	P	SUR	45	0	1.9	4.6	5.0
5LCS5	99	P	SUR	35	0	0.3	-5.9	5.9
5LDS2	99	P	SUR	23	0	1.6	7.7	7.9
5LMQ8	99	P	SUR	19	0	2.1	4.8	5.2
7KDA	99	P	SUR	23	0	1.1	-6.4	6.5
9HA3062	99	P	SUR	18	0	0.7	-4.9	4.9
9HA4048	99	P	SUR	18	0	2.7	3.2	4.2
9HA4638	99	P	SUR	79	0	1.2	7.0	7.1
9HA4683	99	P	SUR	17	0	0.9	-3.2	3.3
9HA4767	99	P	SUR	18	0	1.1	12.4	12.4
9HA4902	99	P	SUR	20	0	4.0	8.9	9.8
9HA5063	99	P	SUR	102	0	2.8	5.6	6.2
9HA5209	99	P	SUR	31	2	3.0	10.9	11.3
9HA5677	99	P	SUR	15	0	3.6	8.7	9.4
9HJD9	99	P	SUR	24	0	2.1	3.3	3.9
9V2728	99	P	SUR	18	0	1.8	5.3	5.6
9V3913	99	P	SUR	45	0	2.5	5.3	5.8
9V9404	99	P	SUR	80	0	2.2	8.2	8.5
9V9450	99	P	SUR	37	0	1.2	5.1	5.3
AUBD	99	P	SUR	20	0	3.4	3.2	4.6
AUTP	99	P	SUR	22	0	1.6	6.1	6.3
AUYR	99	P	SUR	22	0	1.6	4.1	4.4
BKIY	99	P	SUR	24	0	1.2	3.9	4.0
BNPC	99	P	SUR	92	1	6.0	0.2	6.0
BNSK	99	P	SUR	86	86	0.0	0.0	0.0
C6EO5	99	P	SUR	22	0	1.9	3.2	3.8

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
C6FB3	99	P	SUR	18	0	0.5	-6.8	6.9
C6PZ8	99	P	SUR	16	0	1.6	-3.6	4.0
C6SE5	99	P	SUR	50	0	0.8	-3.8	3.9
C6TX6	99	P	SUR	25	0	2.9	5.5	6.2
C6VG7	99	P	SUR	38	0	0.7	-3.1	3.2
C6VV8	99	P	SUR	18	0	2.6	-3.5	4.4
D5264	99	P	SUR	19	0	1.6	7.9	8.1
D5LW3	99	P	SUR	46	0	2.1	6.7	7.0
HLTDM3H	99	P	SUR	17	0	0.5	3.7	3.7
LAHR7	99	P	SUR	52	0	1.5	3.9	4.2
LAPD7	99	P	SUR	31	0	2.1	3.6	4.2
LAQL7	99	P	SUR	36	0	2.2	3.7	4.3
LOCW	99	P	SUR	51	0	1.3	-4.4	4.6
OBAA	99	P	SUR	62	1	1.0	-6.8	6.9
S6LT3	99	P	SUR	16	0	1.6	4.3	4.6
SKEC	99	P	SUR	19	19	0.0	0.0	0.0
TNVXRHV	99	P	SUR	18	0	0.8	-5.8	5.9
UCSJ	99	P	SUR	26	6	5.0	0.3	5.0
UDKG	99	P	SUR	21	0	3.6	7.4	8.2
UGYU	99	P	SUR	72	0	1.1	-4.5	4.6
UHMI	99	P	SUR	19	4	4.7	-6.9	8.4
V7A6085	99	P	SUR	22	0	1.4	4.7	4.8
V7BN9	99	P	SUR	19	0	2.9	5.2	6.0
V7ZZ6	99	P	SUR	25	0	3.2	-3.4	4.7
VRDB3	99	P	SUR	16	0	0.4	-4.8	4.8
VREX4	99	P	SUR	18	0	0.8	10.2	10.3
VRFI7	99	P	SUR	49	0	0.6	-4.0	4.0
VRGO2	99	P	SUR	24	0	1.1	5.2	5.3
VRGO6	99	P	SUR	18	1	1.3	-6.5	6.6
VRGO8	99	P	SUR	23	0	1.2	5.1	5.2
VRLJ4	99	P	SUR	23	5	3.6	9.7	10.3
VRLZ3	99	P	SUR	25	0	3.3	3.2	4.6
VRNR6	99	P	SUR	22	0	0.7	-5.7	5.7
VROO3	99	P	SUR	84	0	3.8	5.4	6.6
VROO4	99	P	SUR	15	0	1.3	10.4	10.5
VRPF8	99	P	SUR	15	0	2.1	5.2	5.6
VRQS3	99	P	SUR	15	0	1.4	7.2	7.3
VRRB5	99	P	SUR	15	0	0.9	6.4	6.5
VRSJ8	99	P	SUR	32	0	3.1	-3.7	4.8
VRTF2	99	P	SUR	32	0	1.3	4.0	4.2
VRVR2	99	P	SUR	16	1	2.7	-6.0	6.6

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
VRWN4	99	P	SUR	19	0	0.5	-5.3	5.3
VRZK8	99	P	SUR	19	0	2.0	3.5	4.0
VRZK9	99	P	SUR	24	0	0.7	5.2	5.3
VTSJ	99	P	SUR	22	0	2.1	-11.0	11.2
VTVS	99	P	SUR	108	0	1.5	3.2	3.6
WCY2920	99	P	SUR	110	0	0.7	-4.2	4.3
WDF2493	99	P	SUR	75	0	1.3	3.9	4.2
WDK5676	99	P	SUR	113	0	0.7	-3.3	3.3
WGEB	99	P	SUR	112	0	0.3	6.1	6.1
WMDK	99	P	SUR	49	0	0.7	-3.8	3.9
WTAA	99	P	SUR	101	0	0.3	4.3	4.3
WYM9567	99	P	SUR	98	0	0.8	-3.4	3.5

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                : FEB 2024
                    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
46181	99	SPEED	SUR	109	0	0	3.3	5.2	6.1

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                : FEB 2024
                    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	82	0	0	16.2	-32.1	35.9
44489	99	DIRN	SUR	81	0	0	11.3	-35.6	37.4
46036	99	DIRN	SUR	101	0	0	22.0	52.7	57.1
46145	99	DIRN	SUR	76	0	0	14.4	-43.3	45.7

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                 : FEB 2024
                    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
1301704	99	P	SUR	1	7	242	0	0.9	10.7	10.8
1501727	99	P	SUR	-16	-39	695	0	0.4	-7.4	7.4
1501729	99	P	SUR	-30	-42	695	624	0.0	-14.8	14.8
1601701	99	P	SUR	-62	-59	328	328	0.0	0.0	0.0
1701718	99	P	SUR	11	-49	688	688	0.0	0.0	0.0
1801790	99	P	SUR	6	80	134	0	0.3	-5.9	5.9
1801792	99	P	SUR	-25	47	102	0	0.3	-4.5	4.5
2101820	99	P	SUR	34	-178	695	269	7.8	3.0	8.3
2300094	99	P	SUR	13	84	163	0	1.2	-5.8	5.9
23094	99	P	SUR	13	84	52	0	1.2	-5.3	5.5
2802107	99	P	SUR	50	-160	682	88	6.3	1.3	6.4
3301523	99	P	SUR	-15	-39	694	0	0.4	-4.2	4.2
3401636	99	P	SUR	-31	-121	696	0	0.5	-5.2	5.3
3801564	99	P	SUR	-22	35	106	106	0.0	0.0	0.0
3801586	99	P	SUR	80	4	58	24	4.8	1.8	5.1
4601776	99	P	SUR	30	-130	571	50	6.8	-3.1	7.5
4602563	99	P	SUR	27	-164	693	90	0.9	13.7	13.7
4701536	99	P	SUR	72	-177	49	49	0.0	0.0	0.0
4701558	99	P	SUR	79	-18	58	0	0.5	-4.8	4.9
4802662	99	P	SUR	70	-125	677	677	0.0	0.0	0.0
5102809	99	P	SUR	10	-109	693	693	0.0	0.0	0.0
5103563	99	P	SUR	32	-148	579	517	8.7	-0.6	8.7
5401674	99	P	SUR	-27	-109	174	0	0.8	-5.7	5.8
5501735	99	P	SUR	-47	-153	696	696	0.0	0.0	0.0
6203814	99	P	SUR	-22	-40	692	179	2.9	-0.8	3.0
6801915	99	P	SUR	46	-175	676	37	7.2	-0.6	7.2

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                : FEB 2024
                    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
2200107	99	SPEED	SUR	33	126	353	0	0	3.6	-8.0	8.8
6101008	99	SPEED	SUR	37	22	215	0	0	3.3	-6.1	7.0

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

```
          LIST OF SUSPECT STATIONS         : DRIFTER
                    MONITORING CENTRE      : ECMWF
                    ELEMENT MONITORED      : WIND DIRECTION (DEGREES)
                    PERIOD                 : FEB 2024
                    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
2200185	99	DIRN	SUR	37	125	299	1	61	48.2	36.6	60.6
2200189	99	DIRN	SUR	35	130	334	0	0	30.0	27.7	40.9
2300095	99	DIRN	SUR	10	94	186	0	0	10.9	23.5	25.9
2300453	99	DIRN	SUR	8	73	75	0	0	15.9	25.0	29.6
23095	99	DIRN	SUR	10	94	55	0	0	11.0	20.1	22.9
44078	99	DIRN	SUR	60	-40	588	0	0	15.6	-20.0	25.4
44488	99	DIRN	SUR	45	-61	522	0	0	15.9	-32.0	35.8
44489	99	DIRN	SUR	46	-61	473	0	0	13.1	-35.4	37.8
4600036	99	DIRN	SUR	48	-134	626	1	1	20.4	53.3	57.1
4600075	99	DIRN	SUR	54	-161	3561	0	7	23.8	-23.0	33.1
4600145	99	DIRN	SUR	54	-132	490	0	0	15.9	-44.1	46.9
46036	99	DIRN	SUR	48	-134	623	3	1	21.2	52.8	56.9
46075	99	DIRN	SUR	54	-161	594	0	7	24.2	-24.0	34.1
46145	99	DIRN	SUR	54	-132	477	0	0	16.0	-44.9	47.7
6200086	99	DIRN	SUR	55	7	221	0	0	11.0	26.3	28.5
62148	99	DIRN	SUR	54	2	1260	0	0	12.4	20.2	23.7
6301004	99	DIRN	SUR	72	20	454	0	5	22.5	-34.1	40.8
63112	99	DIRN	SUR	61	1	1331	0	0	10.9	-21.5	24.1
6600022	99	DIRN	SUR	54	14	253	0	15	24.8	26.6	36.4

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                : FEB 2024
                    STANDARD OF COMPARISON: FIRST-GUESS FIELD


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


ONLY THE WORST LEVEL IS SHOWN (WITH UNWEIGHTED RMS)
```

WMO IDENT	OBS TIME	ELM	LEV	LAT	LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
01400	12	Z	1000	57	3	26	0	5.5	75.5	75.7
01400	00	Z	1000	57	3	25	0	5.5	75.2	75.4
04417	12	Z	1000	73	-38	28	13	17.2	-77.1	79.0
06458	00	Z	1000	51	5	24	0	11.8	26.8	29.3
38341	00	Z	300	43	71	19	3	54.2	-44.3	70.0
38341	12	Z	300	43	71	14	4	63.1	-67.9	92.7
41923	12	Z	1000	24	90	28	0	12.9	48.1	49.8
41923	00	Z	1000	24	90	28	0	17.9	44.1	47.6
42339	12	Z	200	26	73	18	1	41.5	70.0	81.4
42348	00	Z	850	27	78	11	3	18.5	53.8	56.9
42348	12	Z	400	27	76	12	0	35.8	78.1	85.9
62403	12	Z	925	26	33	11	2	42.1	67.9	79.9
68994	12	Z	850	-47	38	27	0	17.5	26.1	31.4
68994	00	Z	1000	-47	38	28	0	9.8	27.2	28.9
78486	00	Z	1000	18	-70	29	0	2.5	31.9	32.0
78486	12	Z	1000	18	-70	28	0	0.0	31.4	31.4
91680	00	Z	1000	-18	177	27	0	4.3	30.8	31.1
96315	00	Z	1000	5	115	23	0	6.7	55.5	55.9
KMPLHP	12	Z	1000	48	-23	12	0	11.5	65.2	66.2
KMPLHP	00	Z	1000	49	-19	11	0	9.3	61.1	61.8

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                : FEB 2024
                    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
17607	12	V	100	35	33	14	0	-18.7	0.4	26.5
38341	00	V	850	43	71	26	3	4.6	1.5	15.5
38341	12	V	200	43	71	11	0	-1.7	-1.1	15.6
40179	00	V	150	32	35	6	4	-20.8	2.3	31.1
40179	12	V	100	32	35	9	1	-11.6	-3.5	20.3
41112	00	V	150	18	43	12	0	-7.3	0.6	17.0
42647	00	V	400	23	73	10	0	-4.1	0.8	15.1
42667	00	V	150	23	77	15	0	-12.7	-17.0	22.1

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                : FEB 2024
                    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
38341	00	DD	43	71	16	-13.8	5.0	23.5
42667	00	DD	23	77	15	-29.4	4.7	5.7
54340	12	DD	42	124	29	-13.3	1.0	4.3
54340	00	DD	42	124	29	-11.4	1.1	4.5

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

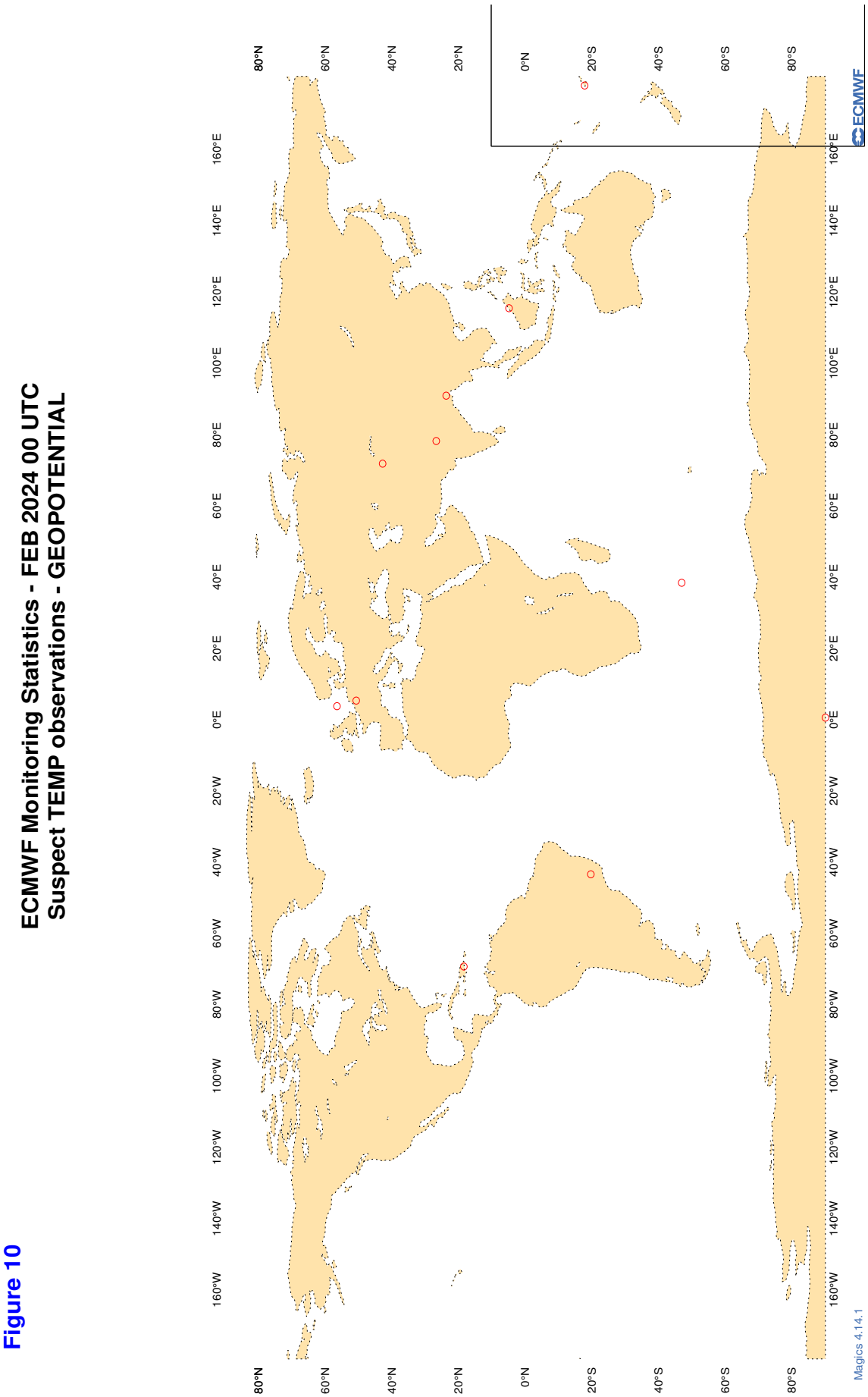
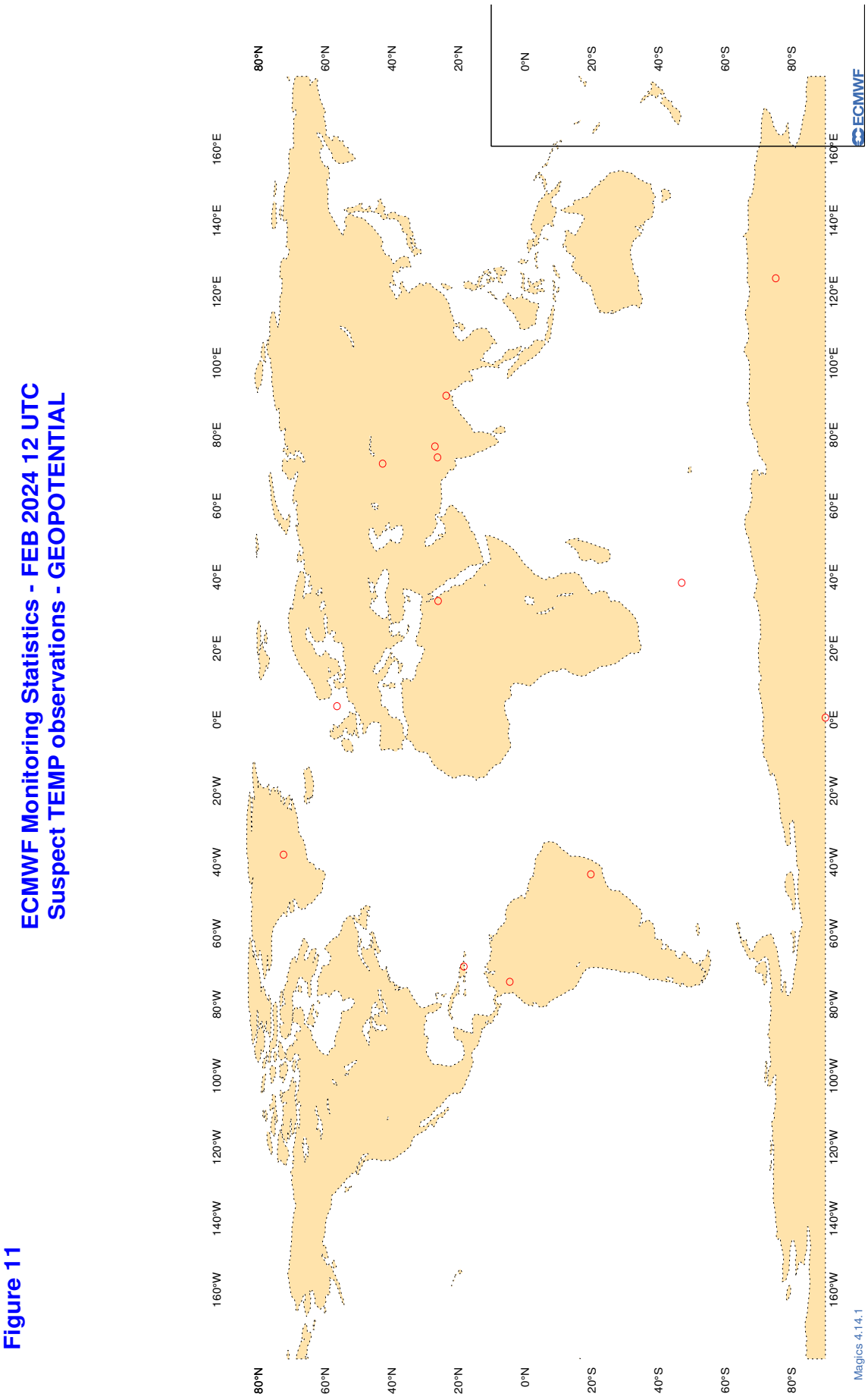
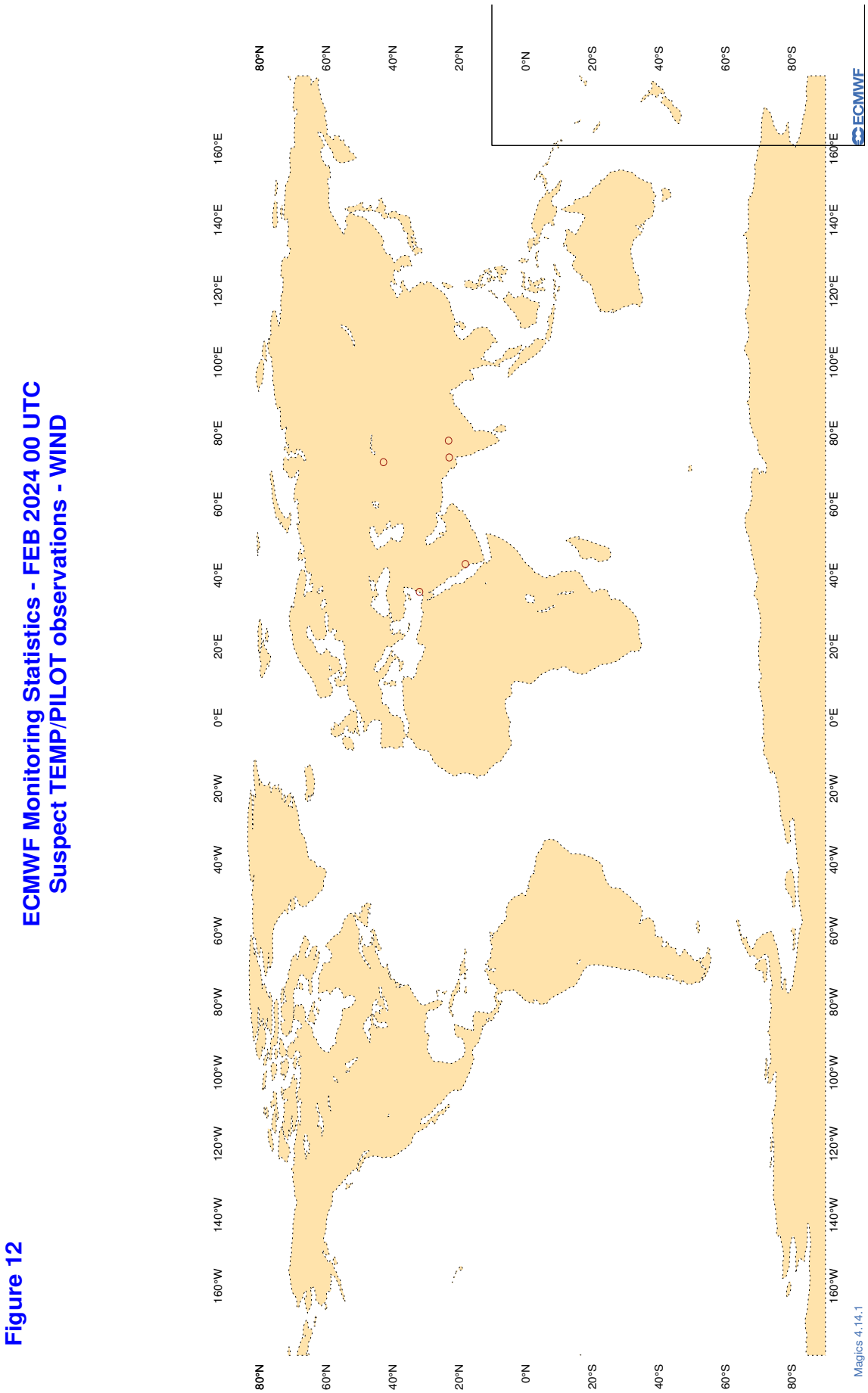


Figure 10

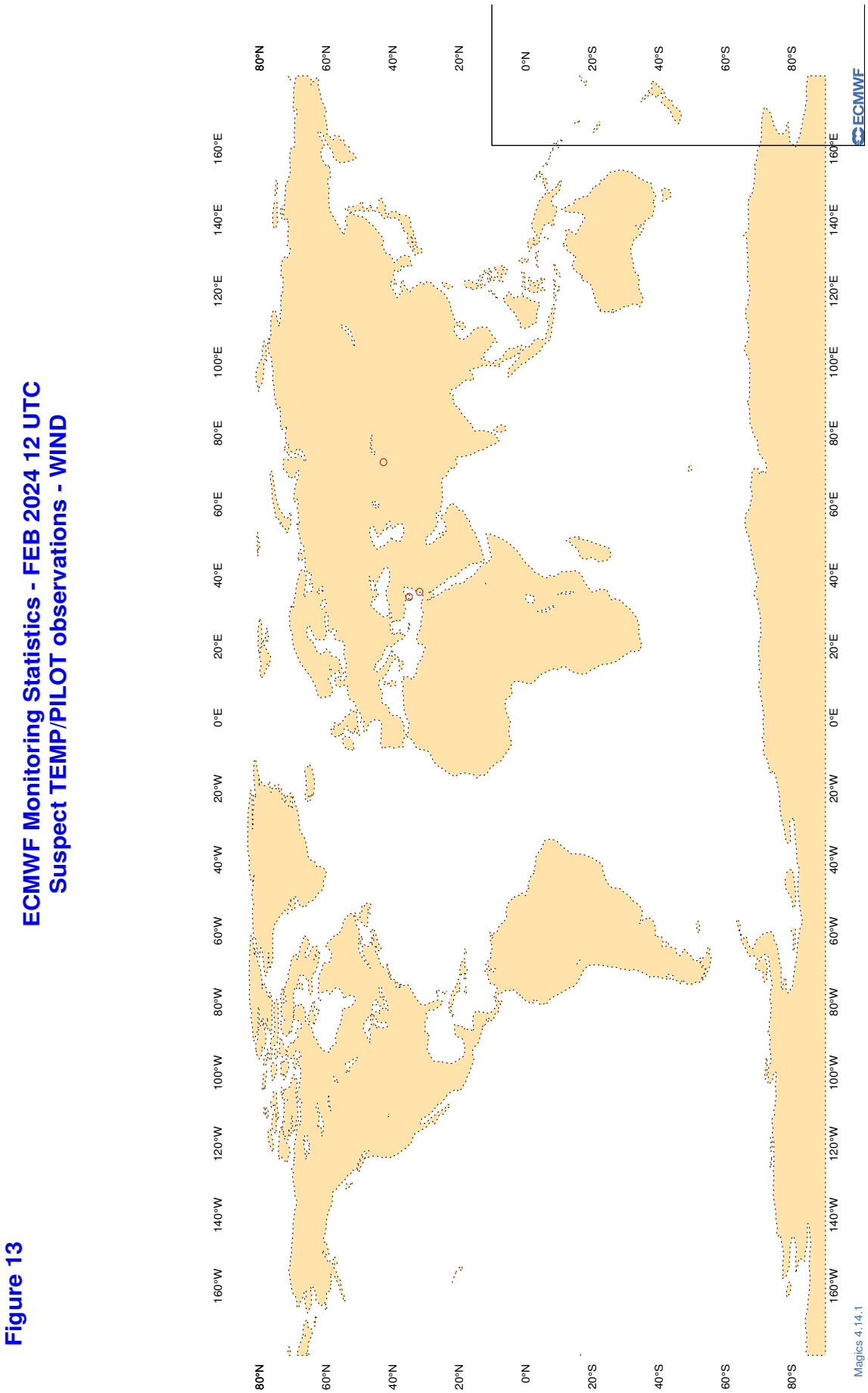
3.2.22 Figure 11 - Suspect TEMP observations - geopotential : 12 UTC



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                : FEB 2024
         STANDARD OF COMPARISON: FIRST-GUESS FIELD
```

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
7JUNA4	12	Z	100	9	41.7	31.0
7JUNA4	00	Z	100	8	5.9	-2.6
ASDE09	12	Z	100	1	4.8	-4.8
ATGU3F	12	Z	100	7	35.1	-33.5
ATGU3F	00	Z	100	6	25.0	-23.2
BPMWB2	12	Z	100	2	46.2	-38.1
BPMWB2	00	Z	100	2	9.8	-5.2
DBLK	00	Z	100	9	10.4	9.5
DBLK	12	Z	100	23	9.8	6.4
FPUW5G	12	Z	100	4	4.9	1.4
GQBZLZ	12	Z	100	6	33.7	-31.3
GQBZLZ	00	Z	100	8	33.5	-28.8
JNKN7J	12	Z	100	6	55.0	34.6
JNKN7J	00	Z	100	5	23.5	22.4
JPBN	12	Z	100	2	3.8	3.4
JPBN	00	Z	100	2	4.6	2.3
KMPLHP	12	Z	100	11	37.8	33.9
KMPLHP	00	Z	100	11	39.8	37.6
LAGY8	00	Z	100	2	19.6	-0.8
LAGZ8	12	Z	100	3	58.9	56.6
LRYQE3	12	Z	100	6	88.5	63.5
LRYQE3	00	Z	100	5	21.7	-15.0
USBOD	12	Z	100	9	10.2	-5.6
USBOD	00	Z	100	5	24.0	-17.3
USCAT	12	Z	100	1	3.2	3.2
USCAT	00	Z	100	2	24.0	-17.2
USSOD	12	Z	100	0	0.0	0.0
USSOD	00	Z	100	0	0.0	0.0
USYUB	12	Z	100	4	9.1	6.5
USYUB	00	Z	100	4	19.3	-7.9
UXK5JT	12	Z	100	9	33.6	30.9
UXK5JT	00	Z	100	7	19.0	18.2
VLMJ	12	Z	100	18	15.8	-1.6
VLMJ	00	Z	100	10	15.9	-11.7
WDK38H	12	Z	100	9	15.7	-15.3
XKQLWQ	12	Z	100	20	36.6	35.1
YLV96W	12	Z	100	11	29.2	23.2
YLV96W	00	Z	100	8	9.0	-7.2
ZSNO	12	Z	100	1	12.1	12.1

RADIOSONDE MONITORING STATISTICS (SHIPS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
ZVQEQC	12	Z	100	3	3.9	3.5

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                : FEB 2024
         STANDARD OF COMPARISON: FIRST-GUESS FIELD
```

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
7JUNA4	12	V	100	9	3.0	1.3	0.7
7JUNA4	00	V	100	8	3.7	-1.0	-0.1
ASDE09	12	V	100	1	1.7	-0.8	1.5
ATGU3F	12	V	100	7	2.1	0.7	-0.4
ATGU3F	00	V	100	6	2.6	1.0	0.1
BPMWB2	12	V	100	2	7.0	-0.6	-0.1
BPMWB2	00	V	100	2	3.8	-1.2	3.3
DBLK	00	V	100	9	1.7	-0.6	0.1
DBLK	12	V	100	23	2.5	-0.6	-0.2
FPUW5G	12	V	100	4	2.2	0.8	-0.1
GQBZLZ	12	V	100	6	2.9	1.3	1.2
GQBZLZ	00	V	100	8	2.9	-0.1	-0.5
JNKN7J	12	V	100	6	3.3	-0.2	0.3
JNKN7J	00	V	100	5	2.2	0.2	-0.4
JPBN	12	V	100	2	2.8	1.6	2.2
JPBN	00	V	100	2	3.6	1.0	-1.0
KMPLHP	12	V	100	11	4.3	1.6	0.1
KMPLHP	00	V	100	11	3.8	-1.0	0.7
LAGY8	00	V	100	2	2.7	2.3	-0.8
LAGZ8	12	V	100	3	3.5	0.4	0.0
LRYQE3	12	V	100	6	4.2	0.2	-0.5
LRYQE3	00	V	100	5	3.0	-0.8	1.3
USBOD	12	V	100	5	6.4	4.5	-2.2
USBOD	00	V	100	4	5.0	0.4	1.0
USCAT	12	V	100	1	8.1	-2.0	-7.9
USCAT	00	V	100	2	4.5	2.1	3.8
USSOD	12	V	100	0	0.0	0.0	0.0
USSOD	00	V	100	0	0.0	0.0	0.0
USYUB	12	V	100	2	8.4	-4.8	-4.7
USYUB	00	V	100	3	5.7	1.2	-3.6
UXK5JT	12	V	100	9	3.6	0.1	0.3
UXK5JT	00	V	100	7	4.7	-2.9	-0.9
VLMJ	12	V	100	11	2.3	0.2	0.5
VLMJ	00	V	100	9	2.1	-0.3	-0.6
WDK38H	12	V	100	9	2.2	0.2	0.9
XKQLWQ	12	V	100	19	5.6	-1.3	-0.6
YLV96W	12	V	100	11	3.1	-0.1	0.9
YLV96W	00	V	100	8	2.8	-0.1	1.0
ZSNO	12	V	100	1	7.0	2.3	-6.6

RADIOSONDE MONITORING STATISTICS (SHIPS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
ZVQEQC	12	V	100	3	5.1	0.4	3.7

3.2.27 Figure 14 - SATOB Winds: 700-1000hPa

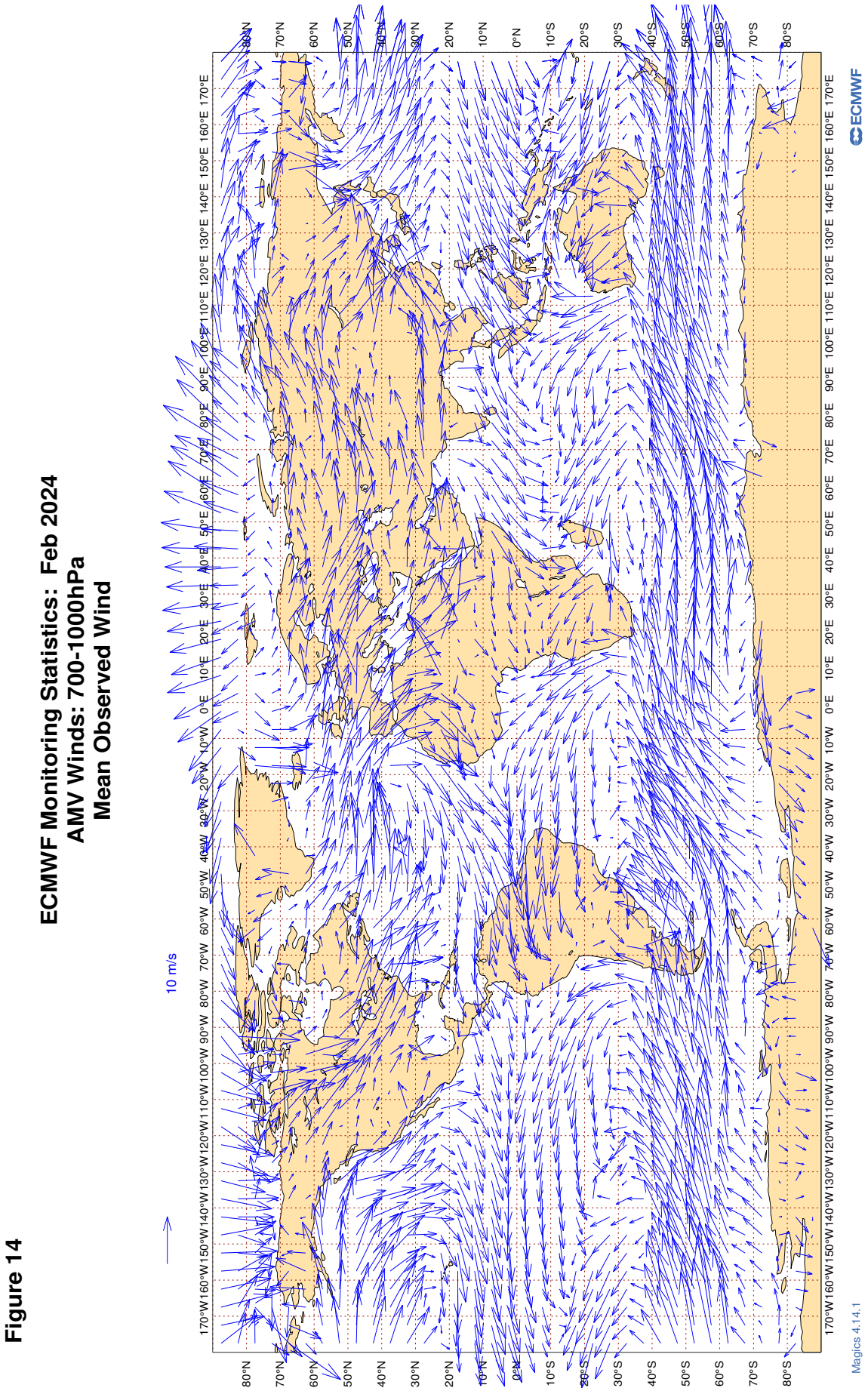


Figure 14

3.2.28 Figure 15 - SATOB Winds: 150- 400hPa

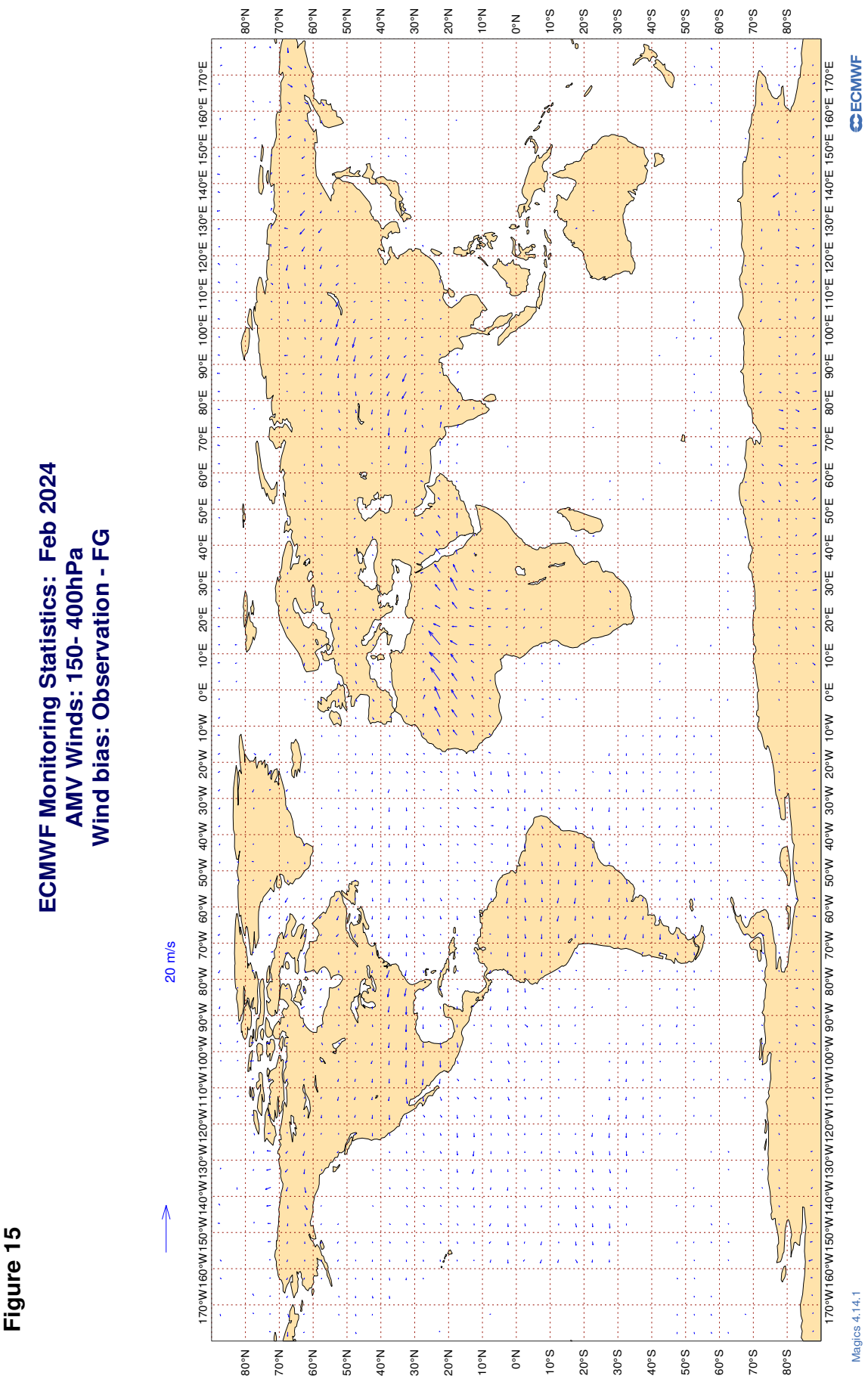


Figure 15

3.2.29 Figure 16 - SATOB Winds: 700-1000hPa

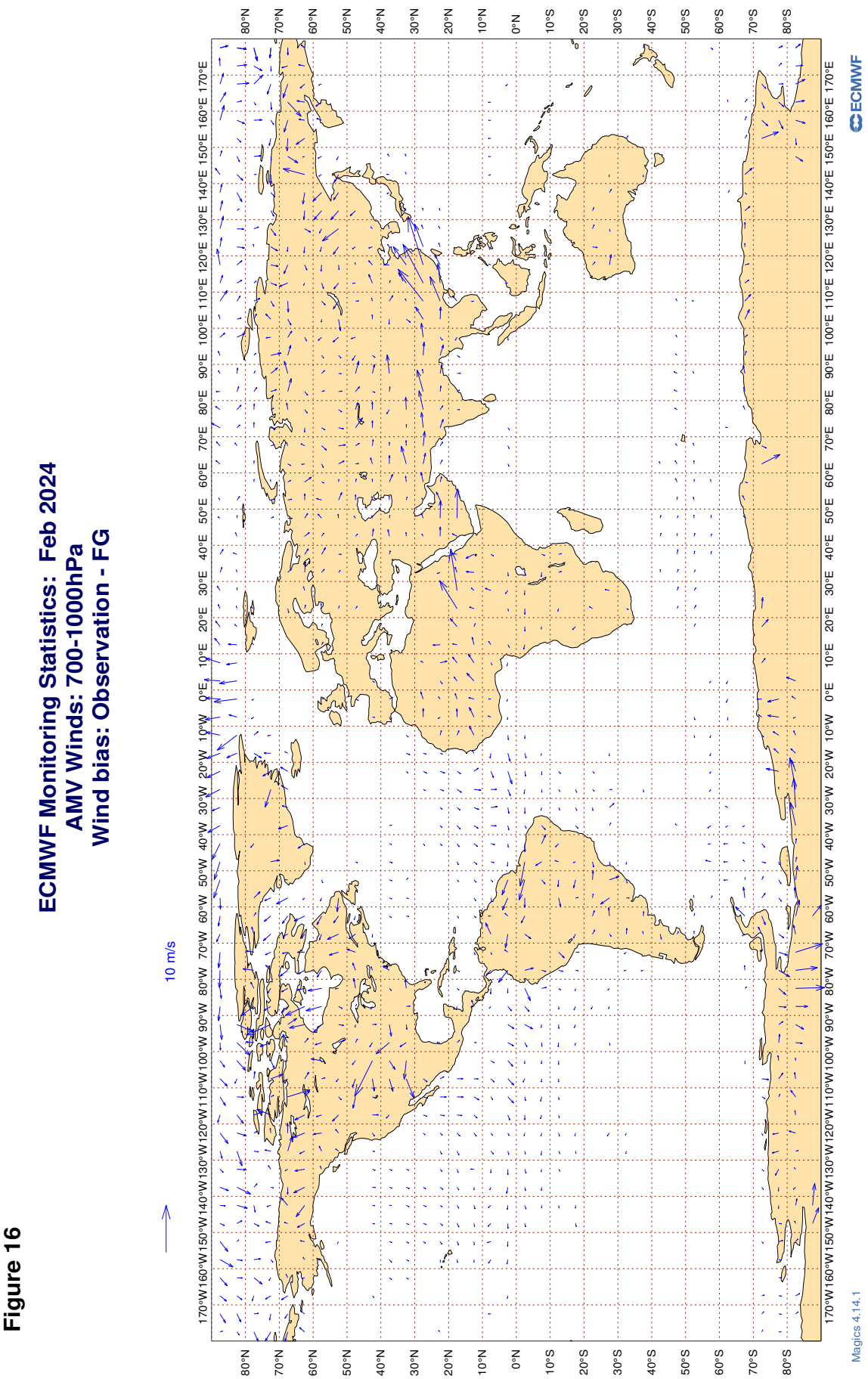


Figure 16

3.2.30 Figure 17 - SATOB Winds: 150- 400hPa

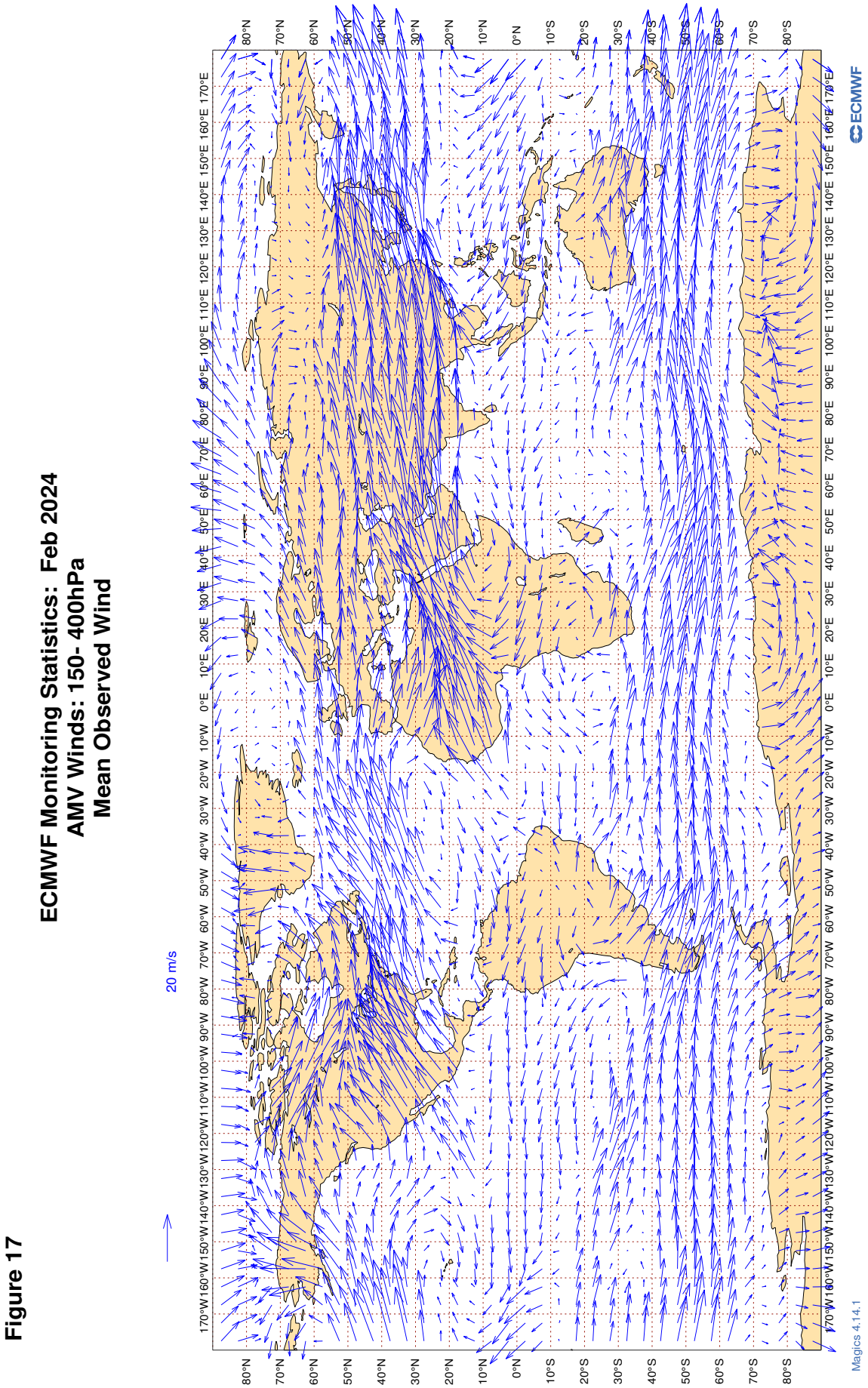


Figure 17

3.2.31 Figure 18 - AIRCRAFT Winds: 150- 300hPa

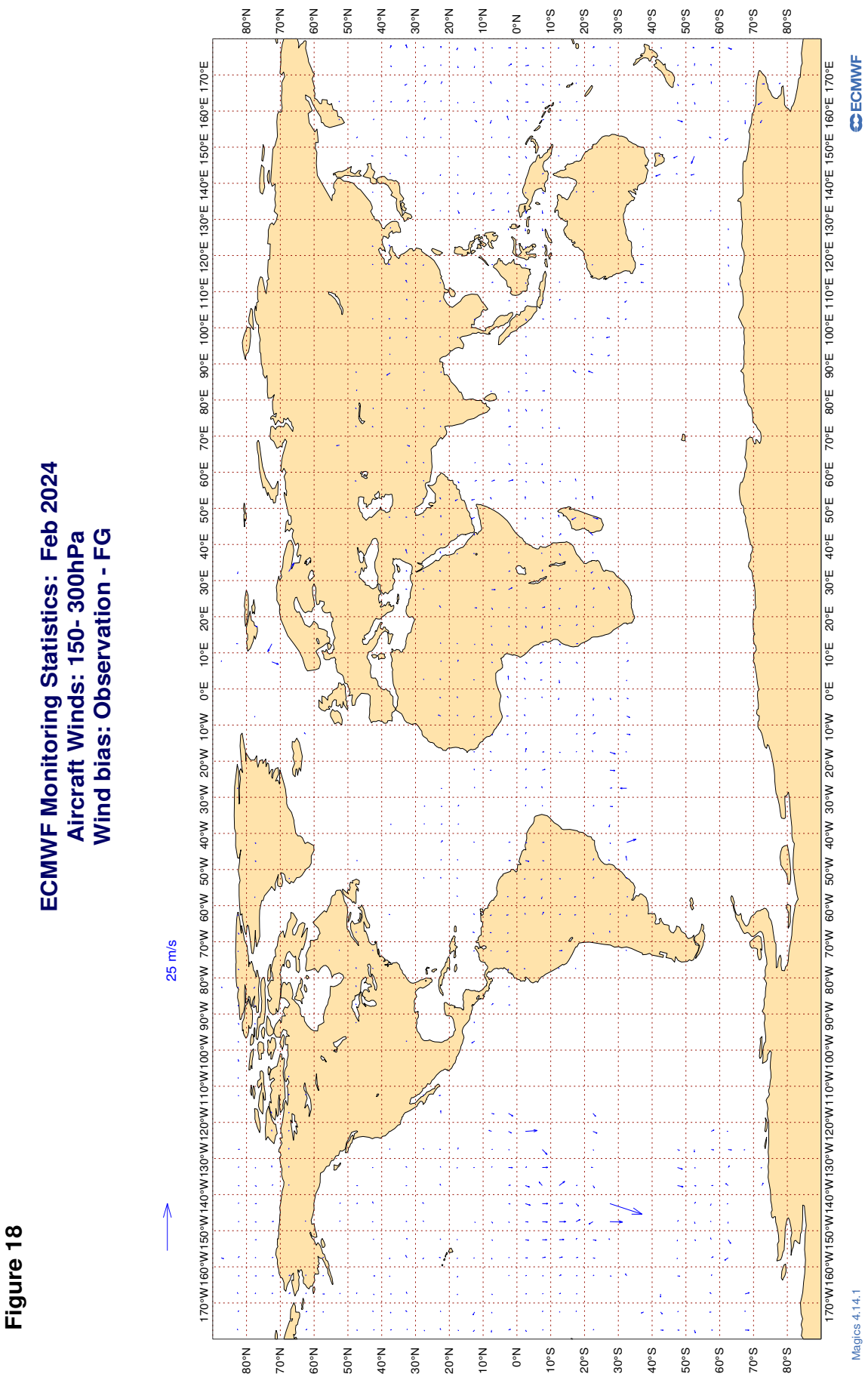


Figure 18

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                : FEB 2024
                   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	45	0	0	3.2	0.1
AAL	99	V	300-150	34168	4	0	5.6	0.1
AAR	99	V	300-150	214	0	0	4.1	-0.9
ABB	99	V	300-150	656	0	0	3.2	-0.1
ABD	99	V	300-150	1114	0	0	3.9	0.0
ABP	99	V	300-150	32	0	0	2.9	0.5
ABX	99	V	300-150	34	0	0	4.3	0.5
ACA	99	V	300-150	21446	4	0	5.4	0.0
ACI	99	V	300-150	542	0	0	4.2	0.8
ADY	99	V	300-150	55	0	0	3.4	0.4
ADZ	99	V	300-150	123	0	0	3.5	0.0
AEA	99	V	300-150	431	9	1	7.4	0.3
AFR	99	V	300-150	28724	1	0	4.3	0.1
AIB	99	V	300-150	32	0	0	3.0	-0.5
AIC	99	V	300-150	5923	1	0	4.3	0.2
AIZ	99	V	300-150	23	0	0	3.5	0.6
AJT	99	V	300-150	198	0	0	4.1	0.0
AKK	99	V	300-150	30	0	0	4.0	-0.3
ALK	99	V	300-150	2603	0	0	3.0	0.3
AMX	99	V	300-150	4505	12	0	8.2	-0.1
ANA	99	V	300-150	253	0	0	3.7	0.7
ANZ	99	V	300-150	15752	0	0	3.8	0.3
AOJ	99	V	300-150	170	0	0	3.5	-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	27	0	0	4.3	1.3
ASA	99	V	300-150	88	2	2	9.9	1.0
ASL	99	V	300-150	504	0	0	3.6	0.4
ASY	99	V	300-150	206	0	0	3.4	-0.2
ATC	99	V	300-150	213	0	0	5.4	0.5
ATG	99	V	300-150	281	0	0	4.1	1.1
ATN	99	V	300-150	77	0	0	8.5	-0.8
AUA	99	V	300-150	3248	0	0	3.8	0.2
AVA	99	V	300-150	440	5	1	6.7	0.0
AWC	99	V	300-150	110	0	1	3.5	0.6
AXM	99	V	300-150	84	0	0	4.0	0.9
AXY	99	V	300-150	93	0	0	2.9	0.7
AZG	99	V	300-150	883	1	0	4.9	0.0
BAF	99	V	300-150	34	0	0	2.4	1.0
BAW	99	V	300-150	42898	2	0	4.5	0.1
BBC	99	V	300-150	934	3	0	4.7	0.3
BCS	99	V	300-150	1386	0	0	3.5	0.1
BEL	99	V	300-150	569	0	0	3.3	0.1
BFY	99	V	300-150	48	0	0	4.3	0.7
BLX	99	V	300-150	796	5	0	6.3	0.2
BOX	99	V	300-150	4324	0	0	3.5	0.1
BOX	99	V	300-150	38	0	0	4.0	0.2
BRJ	99	V	300-150	20	0	0	3.2	1.2
BRK	99	V	300-150	123	0	0	8.3	0.0
BTX	99	V	300-150	50	0	0	3.4	-0.6
CAL	99	V	300-150	1531	0	0	3.8	0.7
CAZ	99	V	300-150	81	0	0	4.2	0.2
CBJ	99	V	300-150	289	0	0	3.1	0.4
CCA	99	V	300-150	270	0	0	3.5	0.4
CEB	99	V	300-150	597	0	0	3.2	0.3
CES	99	V	300-150	1585	0	0	3.2	0.3
CFC	99	V	300-150	457	0	0	3.8	0.3
CFG	99	V	300-150	4705	0	0	3.6	0.2
CHG	99	V	300-150	601	0	0	3.7	0.0
CHH	99	V	300-150	755	0	0	3.5	0.5
CJT	99	V	300-150	419	0	0	3.9	0.0
CKS	99	V	300-150	452	0	0	4.2	-0.2
CLX	99	V	300-150	4220	0	0	3.7	-0.2
CMA	99	V	300-150	190	0	0	3.5	0.6
CMB	99	V	300-150	1156	0	0	3.9	-0.3
CND	99	V	300-150	305	0	0	3.5	-0.3
CNK	99	V	300-150	21	0	0	3.8	-1.6
CNV	99	V	300-150	141	0	0	4.1	-0.2

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
CPA	99	V	300-150	2902	0	0	3.5	0.5
CPI	99	V	300-150	26	0	0	3.4	-0.7
CRK	99	V	300-150	152	0	0	3.0	0.5
CRL	99	V	300-150	1052	0	0	3.8	0.3
CRV	99	V	300-150	71	0	1	4.0	0.5
CSC	99	V	300-150	934	0	0	3.6	0.6
CSG	99	V	300-150	36	0	0	3.3	0.0
CSN	99	V	300-150	840	0	1	3.9	0.5
CSS	99	V	300-150	78	0	0	3.6	0.4
CTM	99	V	300-150	150	0	0	3.7	-0.2
CWG	99	V	300-150	21	0	0	5.8	3.0
CXA	99	V	300-150	147	0	1	3.3	1.0
DAH	99	V	300-150	568	0	0	3.3	0.1
DAL	99	V	300-150	41140	0	0	3.5	0.1
DCM	99	V	300-150	55	0	0	5.0	0.8
DCS	99	V	300-150	20	0	0	3.2	0.4
DCW	99	V	300-150	33	0	0	3.7	0.5
DEE	99	V	300-150	61	0	0	3.2	0.0
DGX	99	V	300-150	33	0	0	3.5	0.3
DHK	99	V	300-150	4018	0	0	3.7	0.0
DHX	99	V	300-150	623	0	0	3.3	0.5
DJT	99	V	300-150	1207	0	0	3.5	0.2
DLH	99	V	300-150	19744	1	0	4.0	0.0
DSO	99	V	300-150	82	0	0	4.2	0.3
DUB	99	V	300-150	43	0	0	3.6	0.7
EAL	99	V	300-150	82	0	0	3.2	0.8
EAU	99	V	300-150	35	0	0	4.4	0.6
EDC	99	V	300-150	109	0	0	4.5	-0.1
EDW	99	V	300-150	1608	0	0	3.7	0.2
EIN	99	V	300-150	9908	0	0	3.5	0.1
EJM	99	V	300-150	599	0	0	3.7	0.3
ELY	99	V	300-150	5019	8	0	6.9	0.0
ETD	99	V	300-150	16429	2	0	4.6	0.2
ETH	99	V	300-150	6301	3	0	5.0	0.2
EUK	99	V	300-150	1534	0	0	3.5	0.1
EUW	99	V	300-150	54	0	0	2.5	0.3
EVA	99	V	300-150	1535	1	1	5.3	0.9
EVE	99	V	300-150	185	0	0	3.6	0.5
EXS	99	V	300-150	3480	0	0	3.3	0.2
FBU	99	V	300-150	1616	0	0	3.8	0.1
FDX	99	V	300-150	7132	0	0	3.6	0.1
FFM	99	V	300-150	45	0	0	3.7	0.6
FIN	99	V	300-150	2630	0	0	3.6	0.2

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
FJI	99	V	300-150	2209	0	0	4.1	0.5
FJO	99	V	300-150	128	0	0	3.3	0.5
FPY	99	V	300-150	3568	0	0	3.2	0.2
FWI	99	V	300-150	2365	0	1	3.6	0.2
FYG	99	V	300-150	89	0	0	3.0	0.9
FYL	99	V	300-150	68	0	0	4.5	-0.2
GAF	99	V	300-150	129	0	0	3.5	0.0
GCK	99	V	300-150	45	0	0	4.4	0.6
GEC	99	V	300-150	1177	0	0	3.5	0.1
GES	99	V	300-150	113	0	0	3.5	0.5
GFA	99	V	300-150	1758	1	0	4.9	0.5
GIA	99	V	300-150	931	0	0	3.3	0.5
GJE	99	V	300-150	25	0	0	3.2	0.8
GJI	99	V	300-150	29	0	0	3.8	-0.4
GJW	99	V	300-150	44	0	0	3.7	1.1
GLJ	99	V	300-150	46	0	0	3.2	0.8
GNJ	99	V	300-150	128	0	0	3.5	0.5
GOL	99	V	300-150	27	0	0	4.3	0.2
GSM	99	V	300-150	106	0	0	4.0	0.1
GTI	99	V	300-150	1628	0	0	4.0	-0.2
GTR	99	V	300-150	130	0	0	3.3	-0.2
HAF	99	V	300-150	44	0	0	2.9	0.5
HAL	99	V	300-150	912	0	0	4.6	0.5
HFM	99	V	300-150	47	0	0	3.3	0.3
HGO	99	V	300-150	52	0	0	4.3	2.1
HIM	99	V	300-150	53	6	0	6.1	1.2
HKC	99	V	300-150	152	0	0	3.4	0.3
HLF	99	V	300-150	65	0	0	3.1	0.8
HMZ	99	V	300-150	64	0	0	4.7	0.9
HRN	99	V	300-150	36	0	0	4.1	0.8
HRT	99	V	300-150	39	0	0	2.7	0.1
HUA	99	V	300-150	34	0	0	3.7	-0.5
HUE	99	V	300-150	95	0	0	6.2	0.6
HVN	99	V	300-150	1015	1	0	4.0	0.8
HYP	99	V	300-150	40	0	0	2.6	-0.5
HZS	99	V	300-150	21	0	0	4.2	-0.2
IAM	99	V	300-150	60	0	0	3.8	0.8
IBE	99	V	300-150	4749	0	0	3.5	0.2
ICE	99	V	300-150	5636	0	0	3.4	0.2
ICL	99	V	300-150	26	0	0	4.2	0.0
ICV	99	V	300-150	260	0	0	3.9	-0.9
IDN	99	V	300-150	34	0	0	4.7	0.8
IFA	99	V	300-150	393	0	0	3.6	0.0

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
IFC	99	V	300-150	57	0	0	3.4	0.0
IGO	99	V	300-150	64	0	0	3.3	0.4
IJM	99	V	300-150	42	0	0	3.1	0.1
IND	99	V	300-150	26	0	0	3.1	0.8
ITY	99	V	300-150	2432	0	0	3.6	0.3
IXR	99	V	300-150	32	0	0	4.3	0.9
JAF	99	V	300-150	666	12	0	8.2	-0.2
JAL	99	V	300-150	254	0	0	4.2	0.3
JAS	99	V	300-150	95	0	0	3.4	-0.9
JBU	99	V	300-150	7272	0	0	3.6	0.1
JCO	99	V	300-150	80	0	0	3.5	0.5
JCT	99	V	300-150	33	0	0	3.9	0.2
JCY	99	V	300-150	33	0	0	2.9	0.3
JET	99	V	300-150	34	0	0	3.3	0.7
JME	99	V	300-150	79	0	0	4.1	0.8
JST	99	V	300-150	366	0	0	3.6	0.5
KAC	99	V	300-150	3065	0	0	3.6	0.4
KAF	99	V	300-150	54	0	0	4.4	-0.5
KAI	99	V	300-150	113	0	1	4.7	0.6
KAL	99	V	300-150	755	0	0	4.4	0.7
KAY	99	V	300-150	128	0	0	3.5	0.4
KIW	99	V	300-150	107	0	0	5.4	1.3
KLM	99	V	300-150	16954	5	0	5.8	0.0
KOC	99	V	300-150	68	0	0	3.5	0.4
KQA	99	V	300-150	566	9	0	7.5	0.0
KUG	99	V	300-150	42	0	0	3.1	0.6
LCO	99	V	300-150	599	0	0	4.0	-0.8
LDX	99	V	300-150	175	0	0	3.6	0.3
LEA	99	V	300-150	25	0	0	2.4	-0.4
LNI	99	V	300-150	1606	0	0	3.1	0.3
LNX	99	V	300-150	69	0	0	3.5	0.1
LOB	99	V	300-150	36	0	0	2.7	-0.6
LOT	99	V	300-150	4031	6	0	6.4	0.1
LPE	99	V	300-150	20	10	15	8.1	1.1
LRQ	99	V	300-150	87	0	0	2.3	0.0
LUC	99	V	300-150	25	0	0	5.1	1.8
LXJ	99	V	300-150	293	0	0	3.3	0.3
MAS	99	V	300-150	7087	0	0	3.1	0.4
MAU	99	V	300-150	579	0	0	4.3	0.4
MED	99	V	300-150	68	0	0	3.9	1.4
MHV	99	V	300-150	52	0	0	3.7	0.1
MLM	99	V	300-150	113	0	0	4.0	0.6
MLT	99	V	300-150	221	0	1	4.0	0.5

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
MMD	99	V	300-150	327	0	0	3.8	0.4
MMF	99	V	300-150	25	0	0	2.8	1.1
MNB	99	V	300-150	278	0	0	3.3	0.2
MPH	99	V	300-150	449	0	0	4.0	-0.7
MSR	99	V	300-150	2207	3	0	5.8	0.0
MXD	99	V	300-150	703	0	0	3.0	0.2
NBT	99	V	300-150	792	9	0	6.9	0.2
NCR	99	V	300-150	600	0	0	3.5	-0.3
NEW	99	V	300-150	51	0	0	4.3	-0.7
NJE	99	V	300-150	441	0	0	3.9	0.1
NOS	99	V	300-150	1562	9	0	6.7	0.0
OAE	99	V	300-150	386	0	0	4.0	0.3
OCN	99	V	300-150	3650	0	0	3.6	0.1
OMA	99	V	300-150	3594	1	0	4.4	0.4
PAC	99	V	300-150	216	0	0	4.0	-0.8
PAL	99	V	300-150	1450	0	0	3.0	0.2
PAT	99	V	300-150	34	0	0	3.4	0.3
PEX	99	V	300-150	73	0	0	3.1	-0.7
PIA	99	V	300-150	500	0	0	3.6	0.8
PJZ	99	V	300-150	40	0	0	2.8	0.0
PLF	99	V	300-150	30	0	0	5.1	-1.5
PRD	99	V	300-150	32	0	0	2.9	0.0
PUE	99	V	300-150	231	0	0	3.3	0.4
PVA	99	V	300-150	101	0	0	3.1	0.0
PVG	99	V	300-150	33	0	0	4.7	-0.6
QAF	99	V	300-150	36	0	0	3.0	-1.2
QFA	99	V	300-150	5555	1	0	5.9	0.3
QFX	99	V	300-150	67	0	0	3.3	-0.5
QID	99	V	300-150	20	0	0	3.6	-0.8
QQE	99	V	300-150	258	0	0	3.7	0.6
QTR	99	V	300-150	39376	0	0	3.8	0.3
RAM	99	V	300-150	545	15	0	8.8	0.1
RBA	99	V	300-150	404	0	0	4.5	0.0
RCH	99	V	300-150	2994	0	0	4.6	0.3
RCR	99	V	300-150	143	0	0	4.0	0.7
RDN	99	V	300-150	64	0	0	3.8	0.7
RHH	99	V	300-150	64	0	0	8.6	-1.4
RJA	99	V	300-150	1523	9	0	8.2	-0.1
ROJ	99	V	300-150	70	0	0	3.0	-0.3
ROM	99	V	300-150	35	0	0	4.5	0.8
RRR	99	V	300-150	186	0	0	3.7	-0.3
RSF	99	V	300-150	36	0	0	6.0	-0.8
RWD	99	V	300-150	20	0	0	3.5	0.8

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
RYR	99	V	300-150	1079	0	0	3.9	0.0
RZO	99	V	300-150	429	0	3	4.4	0.6
SAM	99	V	300-150	250	0	0	4.2	0.4
SAS	99	V	300-150	4694	0	0	3.5	0.3
SAZ	99	V	300-150	146	0	0	3.2	0.6
SCX	99	V	300-150	51	4	4	5.8	0.5
SEY	99	V	300-150	96	0	0	3.8	0.0
SIA	99	V	300-150	14193	0	0	3.6	0.2
SIO	99	V	300-150	72	0	0	3.0	0.4
SJE	99	V	300-150	35	0	0	3.9	1.0
SLM	99	V	300-150	100	0	0	3.8	0.3
SPA	99	V	300-150	143	0	0	3.8	0.7
SSG	99	V	300-150	41	0	0	6.8	1.8
SVA	99	V	300-150	11331	1	0	4.0	0.2
SVW	99	V	300-150	136	0	0	3.9	0.2
SWA	99	V	300-150	40	3	0	8.4	1.7
SWR	99	V	300-150	9701	0	1	3.6	0.2
SWW	99	V	300-150	26	0	0	3.1	0.2
SYB	99	V	300-150	130	0	0	3.6	-0.8
TAG	99	V	300-150	38	0	0	3.2	-0.1
TAH	99	V	300-150	25	0	0	4.0	-0.7
TAM	99	V	300-150	79	4	5	4.6	0.5
TAP	99	V	300-150	2504	0	1	4.2	0.0
TAR	99	V	300-150	272	0	0	3.3	-0.2
TAY	99	V	300-150	173	0	1	3.7	-0.2
TBJ	99	V	300-150	32	0	0	3.9	1.1
TEU	99	V	300-150	53	0	0	2.6	0.2
TFF	99	V	300-150	66	0	0	3.7	-0.1
TFL	99	V	300-150	1585	10	0	7.7	-0.2
TGW	99	V	300-150	1049	1	0	5.9	0.3
THA	99	V	300-150	5921	0	0	3.6	0.5
THT	99	V	300-150	2304	2	0	9.0	0.4
THY	99	V	300-150	20329	2	0	4.8	0.1
TMN	99	V	300-150	396	0	0	3.6	0.2
TOM	99	V	300-150	4897	9	0	7.6	0.0
TRK	99	V	300-150	47	0	0	2.8	0.6
TSC	99	V	300-150	4346	0	0	3.6	0.2
TVL	99	V	300-150	26	0	0	2.4	0.0
TWY	99	V	300-150	593	0	0	3.6	0.5
UAE	99	V	300-150	34580	0	0	3.4	0.2
UAF	99	V	300-150	90	0	0	3.4	0.9
UAG	99	V	300-150	27	0	0	9.5	1.5
UAL	99	V	300-150	57898	2	1	5.3	0.1

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
UBT	99	V	300-150	2063	12	0	7.7	-0.2
UGD	99	V	300-150	53	0	0	3.4	-0.2
ULC	99	V	300-150	72	0	0	3.8	-0.4
UNI	99	V	300-150	61	0	0	4.1	0.4
UPS	99	V	300-150	5530	0	0	3.8	0.0
UZB	99	V	300-150	587	4	0	6.4	0.5
VCG	99	V	300-150	52	0	0	3.7	1.4
VCJ	99	V	300-150	27	0	0	3.7	-0.2
VEE	99	V	300-150	28	0	0	3.2	-0.6
VIR	99	V	300-150	18937	2	0	4.7	0.0
VJC	99	V	300-150	296	0	0	3.2	0.2
VJH	99	V	300-150	404	0	0	3.9	-0.2
VJT	99	V	300-150	1542	0	0	3.8	0.6
VKG	99	V	300-150	438	0	0	2.9	0.3
VLZ	99	V	300-150	106	0	0	7.3	1.2
VMP	99	V	300-150	33	0	0	3.1	-0.2
VSV	99	V	300-150	58	0	0	3.2	0.6
VTI	99	V	300-150	3295	0	0	3.1	0.1
VXS	99	V	300-150	87	0	0	3.5	0.1
WAZ	99	V	300-150	22	0	0	3.1	0.5
WFL	99	V	300-150	306	0	0	3.6	0.4
WJA	99	V	300-150	707	4	0	6.9	-0.2
WWI	99	V	300-150	21	0	0	2.8	0.2
XAX	99	V	300-150	1000	0	0	3.0	0.3
XFL	99	V	300-150	22	0	0	3.0	0.4

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                : FEB 2024
         STANDARD OF COMPARISON: FIRST-GUESS FIELD
```

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	12	Z	50	32	9.5	1.9
01001	00	Z	50	25	23.9	-21.2
01028	00	Z	50	29	6.3	-3.3
01028	12	Z	50	31	8.6	-6.8
01400	12	Z	50	21	71.4	70.6
01400	00	Z	50	17	71.8	71.3
01415	00	Z	50	29	17.5	-2.4
01415	12	Z	50	29	16.6	-2.5
02365	00	Z	50	21	8.0	2.4
02365	12	Z	50	18	14.7	2.4
02591	12	Z	50	26	6.7	1.3
02591	00	Z	50	29	7.8	1.5
02836	12	Z	50	28	9.7	-5.6
02836	00	Z	50	17	8.4	-4.4
02963	12	Z	50	28	8.2	-5.3
02963	00	Z	50	27	8.0	-2.3
03005	12	Z	50	29	11.6	-6.0
03005	00	Z	50	28	13.3	-7.5
03238	12	Z	50	2	2.7	-1.8
03238	00	Z	50	24	13.6	-1.2
03808	12	Z	50	29	9.3	-0.5
03808	00	Z	50	28	7.2	2.9
03918	12	Z	50	5	15.1	-0.8
03918	00	Z	50	27	16.2	3.1
03953	12	Z	50	29	14.1	-5.4
03953	00	Z	50	29	12.8	-8.0
04018	00	Z	50	24	6.6	-0.3
04018	12	Z	50	22	9.3	-7.0
04220	12	Z	50	29	24.7	-23.0
04220	00	Z	50	28	22.9	-20.7
04270	12	Z	50	29	28.3	-22.5
04270	00	Z	50	27	29.9	-22.1
04320	12	Z	50	28	16.3	-10.8
04320	00	Z	50	29	13.7	0.0
04339	00	Z	50	23	27.2	-12.0
04339	12	Z	50	22	21.1	-15.0
04360	00	Z	50	27	20.2	-13.9
04360	12	Z	50	27	16.9	-11.2
06011	12	Z	50	26	19.7	-15.5

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06260	12	Z	50	4	11.1	10.0
06260	00	Z	50	26	8.1	-1.6
06610	12	Z	50	29	7.4	1.0
06610	00	Z	50	28	15.5	3.0
07110	00	Z	50	26	40.2	-39.1
07110	12	Z	50	25	29.5	-26.4
07510	12	Z	50	27	20.1	2.4
07510	00	Z	50	24	21.1	-13.8
07645	12	Z	50	23	41.9	-37.9
07645	00	Z	50	22	48.9	-45.0
07761	00	Z	50	27	20.6	-16.1
07761	12	Z	50	29	12.7	-1.0
08001	12	Z	50	26	8.0	0.3
08001	00	Z	50	28	12.1	4.8
08221	00	Z	50	29	8.7	4.5
08221	12	Z	50	29	14.3	2.1
08302	12	Z	50	27	10.4	-2.4
08302	00	Z	50	27	7.6	-4.4
08508	12	Z	50	27	8.5	-0.4
08522	12	Z	50	28	6.9	-0.5
10035	00	Z	50	29	17.3	13.4
10035	12	Z	50	29	15.0	12.1
10393	12	Z	50	29	11.9	-1.9
10393	00	Z	50	29	11.4	-3.9
10410	12	Z	50	29	10.8	-2.3
10410	00	Z	50	27	8.9	-1.3
10739	00	Z	50	29	9.0	-1.1
10739	12	Z	50	29	9.1	-0.6
11035	00	Z	50	27	15.1	1.4
11035	12	Z	50	29	25.9	16.9
12982	12	Z	50	29	6.7	-0.5
12982	00	Z	50	28	6.9	0.7
16245	00	Z	50	29	9.9	4.1
16245	12	Z	50	29	7.0	1.1
16429	00	Z	50	29	7.8	3.2
16429	12	Z	50	29	10.1	1.7
16622	00	Z	50	27	15.1	10.7
16754	00	Z	50	22	11.0	3.2
17607	12	Z	50	21	38.6	-22.6
26435	12	Z	50	2	5.1	1.5
60018	00	Z	50	28	8.5	6.1
60018	12	Z	50	29	5.0	-0.8
7JUNA4	12	Z	50	8	88.8	67.8

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
7JUNA4	00	Z	50	7	7.3	-2.3
ASDE09	12	Z	50	1	4.5	-4.5
ATGU3F	12	Z	50	6	39.2	-36.7
ATGU3F	00	Z	50	4	23.2	-20.6
BPMWB2	12	Z	50	2	52.2	-42.6
BPMWB2	00	Z	50	1	14.3	14.3
FPUW5G	12	Z	50	3	7.2	-0.1
GQBZLZ	12	Z	50	5	35.8	-30.1
GQBZLZ	00	Z	50	7	29.2	-23.6
JNKN7J	12	Z	50	6	56.1	29.1
JNKN7J	00	Z	50	5	24.0	21.3
KMPLHP	12	Z	50	10	33.2	30.3
KMPLHP	00	Z	50	8	28.6	26.3
LRYQE3	12	Z	50	5	147.8	107.3
LRYQE3	00	Z	50	5	31.5	-21.2
UXK5JT	12	Z	50	9	47.8	44.7
UXK5JT	00	Z	50	5	23.7	21.4
WDK38H	12	Z	50	9	13.2	-12.6
XKQLWQ	12	Z	50	17	91.8	23.2
YLV96W	12	Z	50	11	81.8	73.0
YLV96W	00	Z	50	8	9.6	-5.9
ZVQEQC	12	Z	50	3	2.7	2.4

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                : FEB 2024
         STANDARD OF COMPARISON: FIRST-GUESS FIELD
```

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	12	V	50	29	2.4	0.1	0.1
01001	00	V	50	24	3.1	-0.2	-0.2
01028	00	V	50	28	3.0	0.8	-0.4
01028	12	V	50	29	3.1	0.3	-0.1
01400	12	V	50	20	3.0	0.5	0.2
01400	00	V	50	13	3.4	0.4	0.4
01415	00	V	50	27	3.2	0.0	-0.3
01415	12	V	50	29	3.8	0.2	0.3
02365	00	V	50	19	3.7	0.9	-0.9
02365	12	V	50	18	3.7	-0.9	0.7
02591	12	V	50	24	3.8	-0.4	0.0
02591	00	V	50	28	2.9	0.1	-0.3
02836	12	V	50	24	3.6	0.7	-1.3
02836	00	V	50	13	3.0	-0.5	-0.6
02963	12	V	50	28	3.1	0.2	0.0
02963	00	V	50	26	3.4	-0.3	-0.6
03005	12	V	50	29	3.9	-0.1	-0.5
03005	00	V	50	27	3.3	-0.3	0.3
03238	12	V	50	2	2.9	-1.4	1.8
03238	00	V	50	23	3.9	-0.7	-0.3
03808	12	V	50	29	3.6	0.5	-0.7
03808	00	V	50	27	3.0	0.0	-0.3
03918	12	V	50	5	3.3	-0.1	0.0
03918	00	V	50	27	4.3	-0.3	-0.5
03953	12	V	50	29	3.4	-0.5	0.2
03953	00	V	50	29	3.4	0.0	-0.1
04018	00	V	50	20	3.0	-0.3	-0.6
04018	12	V	50	22	3.8	0.4	0.1
04220	12	V	50	29	3.3	0.0	0.9
04220	00	V	50	26	2.3	-0.1	0.6
04270	12	V	50	29	4.1	-0.2	0.2
04270	00	V	50	26	5.0	-0.3	0.7
04320	12	V	50	28	3.3	0.1	0.5
04320	00	V	50	29	3.7	-1.1	-0.3
04339	00	V	50	23	9.6	-1.3	1.0
04339	12	V	50	21	2.5	0.9	0.6
04360	00	V	50	24	3.3	0.1	0.5
04360	12	V	50	27	3.1	-0.2	-1.1
06011	12	V	50	26	3.0	0.7	-0.3

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06260	12	V	50	4	4.2	1.9	-1.3
06260	00	V	50	26	3.6	-0.7	-0.8
06610	12	V	50	29	4.2	1.2	0.1
06610	00	V	50	26	4.0	-0.5	0.4
07110	00	V	50	25	2.5	0.2	-0.3
07110	12	V	50	25	3.8	-1.0	0.0
07510	12	V	50	27	3.5	0.5	-0.1
07510	00	V	50	24	4.5	0.8	-0.6
07645	12	V	50	23	3.7	0.5	0.4
07645	00	V	50	22	3.9	0.2	-0.7
07761	00	V	50	27	3.8	0.7	0.4
07761	12	V	50	29	3.7	0.4	0.5
08001	12	V	50	26	3.9	-0.2	0.1
08001	00	V	50	26	3.7	-0.2	0.2
08221	00	V	50	29	4.5	-1.3	-0.5
08221	12	V	50	29	5.6	0.3	0.7
08302	12	V	50	27	4.2	0.9	-0.2
08302	00	V	50	26	4.2	0.2	0.3
08508	12	V	50	27	3.0	0.0	-0.5
08522	12	V	50	28	3.3	-0.2	0.2
10035	00	V	50	29	3.1	-0.4	0.6
10035	12	V	50	29	3.2	0.2	-0.7
10393	12	V	50	29	4.2	-0.2	-1.1
10393	00	V	50	26	2.7	0.3	-0.5
10410	12	V	50	29	3.2	0.0	-0.1
10410	00	V	50	27	3.1	0.4	-0.3
10739	00	V	50	29	3.8	0.0	0.4
10739	12	V	50	29	3.5	0.7	-0.3
11035	00	V	50	26	4.0	0.3	0.1
11035	12	V	50	29	4.0	-0.1	-0.4
12982	12	V	50	29	3.3	0.0	-0.5
12982	00	V	50	27	3.8	0.3	0.8
16245	00	V	50	28	4.1	-0.2	-0.2
16245	12	V	50	29	3.3	0.0	-0.4
16429	00	V	50	27	3.6	-0.1	-0.2
16429	12	V	50	29	4.2	0.1	0.4
16622	00	V	50	19	3.0	0.5	-0.4
16754	00	V	50	20	4.5	1.5	-0.3
17607	12	V	50	8	13.9	-7.7	-2.5
26435	12	V	50	2	4.8	-1.0	-1.9
60018	00	V	50	27	3.6	-0.5	0.2
60018	12	V	50	29	3.7	-0.1	0.1
7JUNA4	12	V	50	8	4.8	3.9	1.1

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
7JUNA4	00	V	50	7	3.3	1.4	-0.1
ASDE09	12	V	50	1	2.0	-1.9	-0.5
ATGU3F	12	V	50	6	3.4	-0.4	0.5
ATGU3F	00	V	50	4	2.0	-0.8	0.8
BPMWB2	12	V	50	2	8.8	8.0	0.2
BPMWB2	00	V	50	1	3.0	2.5	-1.7
FPUW5G	12	V	50	2	1.9	0.8	-1.0
GQBZLZ	12	V	50	5	5.0	-2.1	-1.6
GQBZLZ	00	V	50	7	2.8	-0.9	-1.1
JNKN7J	12	V	50	6	4.4	1.8	1.4
JNKN7J	00	V	50	5	2.5	1.3	-0.8
KMPLHP	12	V	50	10	3.6	1.0	0.4
KMPLHP	00	V	50	8	3.5	-0.3	0.9
LRYQE3	12	V	50	5	3.5	-0.2	-0.9
LRYQE3	00	V	50	5	3.2	0.3	0.0
UXK5JT	12	V	50	9	3.3	0.0	-1.3
UXK5JT	00	V	50	5	3.5	-2.5	1.2
WDK38H	12	V	50	8	2.5	0.7	-0.2
XKQLWQ	12	V	50	16	5.1	0.8	-0.3
YLV96W	12	V	50	11	2.6	-0.5	0.8
YLV96W	00	V	50	8	2.5	0.4	-0.3
ZVQEQC	12	V	50	3	4.8	3.4	-0.4

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                : FEB 2024
         STANDARD OF COMPARISON: FIRST-GUESS FIELD
```

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	12	Z	100	32	8.4	2.5
01001	00	Z	100	28	20.7	-19.4
01028	00	Z	100	29	6.6	-3.7
01028	12	Z	100	31	7.7	-6.7
01400	12	Z	100	22	70.7	70.3
01400	00	Z	100	20	72.0	71.7
01415	00	Z	100	29	11.9	-3.1
01415	12	Z	100	29	12.6	-4.4
02365	00	Z	100	22	9.6	1.8
02365	12	Z	100	19	5.5	-1.8
02591	12	Z	100	29	5.6	3.4
02591	00	Z	100	29	6.9	2.2
02836	12	Z	100	28	7.6	-5.0
02836	00	Z	100	25	5.3	-3.1
02963	12	Z	100	28	5.1	-3.3
02963	00	Z	100	27	6.0	-3.1
03005	12	Z	100	29	8.5	-5.1
03005	00	Z	100	28	8.0	-5.2
03238	12	Z	100	2	5.4	-1.7
03238	00	Z	100	27	9.5	-2.4
03808	12	Z	100	29	8.4	-0.1
03808	00	Z	100	29	6.5	1.5
03918	12	Z	100	5	10.3	3.8
03918	00	Z	100	27	10.9	3.2
03953	12	Z	100	29	11.0	-5.8
03953	00	Z	100	29	11.1	-7.4
04018	00	Z	100	26	7.0	-2.3
04018	12	Z	100	28	5.8	-3.7
04220	12	Z	100	29	21.7	-20.5
04220	00	Z	100	28	20.5	-19.1
04270	12	Z	100	29	23.9	-22.3
04270	00	Z	100	28	23.6	-20.1
04320	12	Z	100	29	12.2	-8.8
04320	00	Z	100	29	11.2	-0.1
04339	00	Z	100	27	19.7	-16.8
04339	12	Z	100	24	18.4	-15.1
04360	00	Z	100	28	17.2	-13.5
04360	12	Z	100	29	17.3	-14.3
06011	12	Z	100	28	15.9	-14.1

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06260	12	Z	100	5	12.4	0.0
06260	00	Z	100	29	6.2	-3.6
06610	12	Z	100	29	6.6	0.8
06610	00	Z	100	30	11.6	1.5
07110	00	Z	100	29	32.9	-32.0
07110	12	Z	100	26	26.1	-23.7
07510	12	Z	100	29	14.2	-0.2
07510	00	Z	100	28	14.3	-11.4
07645	12	Z	100	24	30.7	-29.2
07645	00	Z	100	25	40.6	-27.6
07761	00	Z	100	28	19.0	-14.1
07761	12	Z	100	29	10.2	-2.6
08001	12	Z	100	28	8.7	0.3
08001	00	Z	100	29	9.9	1.1
08221	00	Z	100	29	7.7	1.8
08221	12	Z	100	29	11.3	0.5
08302	12	Z	100	29	9.2	-4.8
08302	00	Z	100	28	8.2	-5.2
08508	12	Z	100	28	8.3	1.0
08522	12	Z	100	29	6.4	2.9
10035	00	Z	100	30	15.4	13.0
10035	12	Z	100	29	12.8	11.2
10393	12	Z	100	29	7.3	-1.3
10393	00	Z	100	29	6.0	-2.9
10410	12	Z	100	29	8.5	-4.1
10410	00	Z	100	29	6.5	-4.0
10739	00	Z	100	29	6.9	-1.7
10739	12	Z	100	29	7.3	0.6
11035	00	Z	100	29	8.7	0.2
11035	12	Z	100	29	20.3	10.7
12982	12	Z	100	29	4.0	0.2
12982	00	Z	100	29	6.2	-0.1
16245	00	Z	100	29	5.3	0.6
16245	12	Z	100	29	5.2	-1.8
16429	00	Z	100	29	6.3	1.1
16429	12	Z	100	29	6.4	0.8
16622	00	Z	100	29	8.6	6.4
16754	00	Z	100	26	8.8	-0.1
17607	12	Z	100	25	36.6	-20.8
26435	12	Z	100	9	4.0	-0.5
60018	00	Z	100	29	6.9	4.0
60018	12	Z	100	29	5.5	1.4
7JUNA4	12	Z	100	9	41.7	31.0

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
7JUNA4	00	Z	100	8	5.9	-2.6
ASDE09	12	Z	100	1	4.8	-4.8
ATGU3F	12	Z	100	7	35.1	-33.5
ATGU3F	00	Z	100	6	25.0	-23.2
BPMWB2	12	Z	100	2	46.2	-38.1
BPMWB2	00	Z	100	2	9.8	-5.2
FPUW5G	12	Z	100	4	4.9	1.4
GQBZLZ	12	Z	100	6	33.7	-31.3
GQBZLZ	00	Z	100	8	33.5	-28.8
JNKN7J	12	Z	100	6	55.0	34.6
JNKN7J	00	Z	100	5	23.5	22.4
KMPLHP	12	Z	100	11	37.8	33.9
KMPLHP	00	Z	100	11	39.8	37.6
LRYQE3	12	Z	100	6	88.5	63.5
LRYQE3	00	Z	100	5	21.7	-15.0
UXK5JT	12	Z	100	9	33.6	30.9
UXK5JT	00	Z	100	7	19.0	18.2
WDK38H	12	Z	100	9	15.7	-15.3
XKQLWQ	12	Z	100	20	36.6	35.1
YLV96W	12	Z	100	11	29.2	23.2
YLV96W	00	Z	100	8	9.0	-7.2
ZVQEQC	12	Z	100	3	3.9	3.5

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                : FEB 2024
         STANDARD OF COMPARISON: FIRST-GUESS FIELD
```

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	12	V	100	29	2.6	0.2	0.2
01001	00	V	100	26	2.4	-0.3	-0.6
01028	00	V	100	28	2.6	-0.2	-0.2
01028	12	V	100	29	2.5	0.1	-0.4
01400	12	V	100	21	3.0	0.5	-0.5
01400	00	V	100	19	3.3	-0.7	0.5
01415	00	V	100	29	3.4	0.5	0.1
01415	12	V	100	29	2.7	0.3	0.2
02365	00	V	100	21	3.3	0.6	0.9
02365	12	V	100	19	3.2	0.6	-0.2
02591	12	V	100	29	3.1	0.4	0.2
02591	00	V	100	29	3.1	0.1	-1.1
02836	12	V	100	25	2.8	-0.2	-0.2
02836	00	V	100	21	2.8	-0.7	-0.3
02963	12	V	100	28	3.2	0.8	-0.6
02963	00	V	100	27	2.7	0.2	0.0
03005	12	V	100	29	3.3	0.4	-0.4
03005	00	V	100	27	3.1	0.6	0.3
03238	12	V	100	2	4.1	2.3	-1.3
03238	00	V	100	24	3.2	0.4	0.4
03808	12	V	100	29	3.3	-0.2	-0.7
03808	00	V	100	29	3.1	0.3	0.3
03918	12	V	100	5	3.0	0.1	-0.7
03918	00	V	100	27	3.6	-0.1	-0.9
03953	12	V	100	29	3.8	-0.5	0.0
03953	00	V	100	29	3.7	-0.4	-0.8
04018	00	V	100	25	3.0	0.6	-0.4
04018	12	V	100	26	2.8	-0.1	0.5
04220	12	V	100	29	2.1	0.0	-0.3
04220	00	V	100	27	2.4	-0.2	0.4
04270	12	V	100	29	3.0	0.1	0.1
04270	00	V	100	28	4.1	0.4	0.5
04320	12	V	100	29	2.1	-0.1	0.0
04320	00	V	100	29	2.7	0.0	0.0
04339	00	V	100	27	2.3	-0.6	-0.3
04339	12	V	100	23	2.3	0.1	0.2
04360	00	V	100	28	3.0	0.3	0.2
04360	12	V	100	29	2.5	0.2	0.4
06011	12	V	100	28	2.5	0.3	0.0

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06260	12	V	100	5	4.6	0.0	0.9
06260	00	V	100	28	3.2	0.5	0.4
06610	12	V	100	29	3.3	-0.2	0.5
06610	00	V	100	28	3.5	-0.5	-0.7
07110	00	V	100	28	3.3	0.2	-0.1
07110	12	V	100	26	3.3	0.7	0.2
07510	12	V	100	29	4.0	-0.9	-0.1
07510	00	V	100	27	3.2	0.1	0.3
07645	12	V	100	24	2.8	-0.2	-0.3
07645	00	V	100	25	4.6	0.0	0.4
07761	00	V	100	27	4.6	0.7	0.1
07761	12	V	100	29	3.3	0.6	1.0
08001	12	V	100	28	3.8	-0.6	-0.2
08001	00	V	100	29	4.1	-0.3	-0.2
08221	00	V	100	29	4.2	0.2	0.1
08221	12	V	100	29	3.7	-0.6	-0.1
08302	12	V	100	29	3.9	-0.6	0.5
08302	00	V	100	27	3.7	0.5	0.1
08508	12	V	100	28	3.5	0.5	-0.2
08522	12	V	100	27	4.0	-0.9	0.8
10035	00	V	100	29	3.1	0.0	0.3
10035	12	V	100	29	3.0	0.2	-0.1
10393	12	V	100	29	2.7	0.2	-0.7
10393	00	V	100	29	2.5	0.1	-0.2
10410	12	V	100	29	2.8	0.1	-0.3
10410	00	V	100	29	3.1	0.6	0.0
10739	00	V	100	29	3.3	-0.4	0.0
10739	12	V	100	29	2.9	-0.7	0.5
11035	00	V	100	28	3.4	0.9	-0.4
11035	12	V	100	29	2.8	-0.2	0.2
12982	12	V	100	29	2.8	0.4	-0.9
12982	00	V	100	27	2.9	-0.2	-0.1
16245	00	V	100	28	3.3	1.2	0.8
16245	12	V	100	29	3.8	0.8	-0.4
16429	00	V	100	29	3.9	-0.1	-0.2
16429	12	V	100	29	3.8	0.0	-0.2
16622	00	V	100	24	3.0	0.8	0.8
16754	00	V	100	23	2.8	-0.5	0.0
17607	12	V	100	14	26.5	-18.7	0.4
26435	12	V	100	7	2.1	0.8	0.3
60018	00	V	100	28	2.6	0.2	0.1
60018	12	V	100	29	4.0	0.1	0.0
7JUNA4	12	V	100	9	3.0	1.3	0.7

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
7JUNA4	00	V	100	8	3.7	-1.0	-0.1
ASDE09	12	V	100	1	1.7	-0.8	1.5
ATGU3F	12	V	100	7	2.1	0.7	-0.4
ATGU3F	00	V	100	6	2.6	1.0	0.1
BPMWB2	12	V	100	2	7.0	-0.6	-0.1
BPMWB2	00	V	100	2	3.8	-1.2	3.3
FPUW5G	12	V	100	4	2.2	0.8	-0.1
GQBZLZ	12	V	100	6	2.9	1.3	1.2
GQBZLZ	00	V	100	8	2.9	-0.1	-0.5
JNKN7J	12	V	100	6	3.3	-0.2	0.3
JNKN7J	00	V	100	5	2.2	0.2	-0.4
KMPLHP	12	V	100	11	4.3	1.6	0.1
KMPLHP	00	V	100	11	3.8	-1.0	0.7
LRYQE3	12	V	100	6	4.2	0.2	-0.5
LRYQE3	00	V	100	5	3.0	-0.8	1.3
UXK5JT	12	V	100	9	3.6	0.1	0.3
UXK5JT	00	V	100	7	4.7	-2.9	-0.9
WDK38H	12	V	100	9	2.2	0.2	0.9
XKQLWQ	12	V	100	19	5.6	-1.3	-0.6
YLV96W	12	V	100	11	3.1	-0.1	0.9
YLV96W	00	V	100	8	2.8	-0.1	1.0
ZVQEQC	12	V	100	3	5.1	0.4	3.7

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                : FEB 2024
         STANDARD OF COMPARISON: FIRST-GUESS FIELD
```

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	12	Z	500	34	8.7	5.7
01001	00	Z	500	28	14.2	-13.1
01028	00	Z	500	29	3.7	-1.0
01028	12	Z	500	32	4.2	-1.8
01400	12	Z	500	26	77.5	77.4
01400	00	Z	500	25	77.5	77.3
01415	00	Z	500	29	6.1	3.5
01415	12	Z	500	29	4.7	3.1
02365	00	Z	500	22	4.6	3.2
02365	12	Z	500	19	4.7	2.1
02591	12	Z	500	29	6.8	6.2
02591	00	Z	500	29	7.8	6.5
02836	12	Z	500	31	1.9	0.5
02836	00	Z	500	27	2.8	0.3
02963	12	Z	500	29	2.6	1.4
02963	00	Z	500	28	3.9	1.7
03005	12	Z	500	29	3.7	-1.7
03005	00	Z	500	28	3.8	-1.6
03238	12	Z	500	2	6.7	5.9
03238	00	Z	500	28	4.1	1.6
03808	12	Z	500	30	4.4	3.4
03808	00	Z	500	29	5.6	5.3
03918	12	Z	500	5	6.2	5.7
03918	00	Z	500	27	8.8	8.3
03953	12	Z	500	29	6.1	1.5
03953	00	Z	500	29	3.3	-0.6
04018	00	Z	500	28	3.5	2.1
04018	12	Z	500	28	2.9	0.7
04220	12	Z	500	28	10.4	-9.0
04220	00	Z	500	29	9.9	-8.8
04270	12	Z	500	29	12.2	-10.7
04270	00	Z	500	29	12.1	-9.6
04320	12	Z	500	29	5.2	1.5
04320	00	Z	500	30	6.1	1.9
04339	00	Z	500	27	11.4	-10.5
04339	12	Z	500	25	11.7	-9.7
04360	00	Z	500	29	10.9	-10.0
04360	12	Z	500	29	11.2	-10.3
06011	12	Z	500	29	7.5	-4.6

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06260	12	Z	500	5	2.7	0.9
06260	00	Z	500	29	2.9	1.4
06610	12	Z	500	30	3.4	2.6
06610	00	Z	500	30	4.6	2.9
07110	00	Z	500	30	11.8	-10.9
07110	12	Z	500	28	8.5	-7.3
07510	12	Z	500	30	7.5	4.9
07510	00	Z	500	30	5.3	3.6
07645	12	Z	500	28	10.0	-8.9
07645	00	Z	500	29	12.4	-11.4
07761	00	Z	500	28	5.3	-3.8
07761	12	Z	500	29	3.7	-1.2
08001	12	Z	500	28	6.4	4.6
08001	00	Z	500	29	5.7	4.3
08221	00	Z	500	29	4.8	4.3
08221	12	Z	500	29	6.0	3.5
08302	12	Z	500	29	6.4	-5.6
08302	00	Z	500	29	6.2	-4.9
08508	12	Z	500	28	6.2	3.5
08522	12	Z	500	29	5.7	4.6
10035	00	Z	500	31	15.1	14.8
10035	12	Z	500	29	14.9	14.7
10393	12	Z	500	29	2.6	0.7
10393	00	Z	500	29	3.4	1.6
10410	12	Z	500	30	3.1	1.0
10410	00	Z	500	30	3.1	1.4
10739	00	Z	500	29	5.6	4.9
10739	12	Z	500	29	5.4	4.6
11035	00	Z	500	30	3.6	-0.3
11035	12	Z	500	29	6.7	2.2
12982	12	Z	500	29	2.7	1.1
12982	00	Z	500	30	2.4	1.1
16245	00	Z	500	29	3.7	3.2
16245	12	Z	500	29	3.1	2.1
16429	00	Z	500	29	4.7	3.9
16429	12	Z	500	29	4.3	3.2
16622	00	Z	500	29	9.5	9.1
16754	00	Z	500	27	5.3	0.2
17607	12	Z	500	27	3.3	0.6
26435	12	Z	500	14	2.6	0.2
60018	00	Z	500	30	4.6	3.3
60018	12	Z	500	30	5.9	4.1
7JUNA4	12	Z	500	9	7.5	-0.8

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
7JUNA4	00	Z	500	10	5.7	1.5
ASDE09	12	Z	500	1	6.3	-6.3
ATGU3F	12	Z	500	7	27.9	-26.3
ATGU3F	00	Z	500	6	21.0	-19.1
BPMWB2	12	Z	500	7	14.4	-11.9
BPMWB2	00	Z	500	6	13.6	-10.8
FPUW5G	12	Z	500	4	11.3	6.8
GQBZLZ	12	Z	500	7	23.9	-22.1
GQBZLZ	00	Z	500	8	23.1	-22.7
JNKN7J	12	Z	500	6	31.4	28.9
JNKN7J	00	Z	500	5	39.6	39.6
KMPLHP	12	Z	500	12	56.0	55.1
KMPLHP	00	Z	500	11	57.8	57.1
LRYQE3	12	Z	500	6	6.6	5.2
LRYQE3	00	Z	500	5	3.7	-2.2
UXK5JT	12	Z	500	10	7.7	6.4
UXK5JT	00	Z	500	9	4.8	2.4
WDK38H	12	Z	500	22	11.4	-9.1
XKQLWQ	12	Z	500	20	19.8	19.1
YLV96W	12	Z	500	11	7.9	-4.9
YLV96W	00	Z	500	9	6.1	-1.4
ZVQEQC	12	Z	500	3	3.5	3.4

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

```
RADIOSONDE MONITORING STATISTICS (EUCOS)
         MONITORING CENTRE     : ECMWF
         ELEMENT MONITORED     : WIND (M/S)
         LEVEL                 : 500 HPA
         AREA                  : 0 - 90N, 100W - 40E
         PERIOD                : FEB 2024
         STANDARD OF COMPARISON: FIRST-GUESS FIELD
```

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	12	V	500	29	2.6	0.6	0.7
01001	00	V	500	28	2.8	-0.2	-0.2
01028	00	V	500	29	2.3	-0.2	-0.2
01028	12	V	500	29	2.5	0.2	-0.2
01400	12	V	500	26	3.0	0.2	-0.5
01400	00	V	500	25	3.1	0.4	-0.7
01415	00	V	500	29	3.7	1.2	-0.1
01415	12	V	500	29	3.4	0.1	1.0
02365	00	V	500	22	2.9	0.1	0.7
02365	12	V	500	19	2.9	0.2	0.9
02591	12	V	500	29	2.9	0.6	-0.7
02591	00	V	500	29	2.5	0.4	-0.4
02836	12	V	500	28	2.5	0.3	-0.1
02836	00	V	500	27	2.8	0.4	0.4
02963	12	V	500	28	3.5	-0.4	0.6
02963	00	V	500	28	2.1	-0.1	-0.1
03005	12	V	500	29	3.0	0.6	-0.1
03005	00	V	500	28	3.3	0.6	-0.4
03238	12	V	500	2	2.6	-1.3	1.7
03238	00	V	500	27	2.3	0.3	0.7
03808	12	V	500	29	2.8	-0.2	-0.3
03808	00	V	500	29	2.0	-0.2	0.3
03918	12	V	500	5	2.2	0.4	0.9
03918	00	V	500	27	2.8	0.7	0.4
03953	12	V	500	29	2.8	-0.4	0.1
03953	00	V	500	29	3.6	-0.5	0.1
04018	00	V	500	28	2.9	-0.1	-0.5
04018	12	V	500	27	3.1	0.5	-0.4
04220	12	V	500	28	2.8	0.5	-0.2
04220	00	V	500	28	2.5	0.2	0.3
04270	12	V	500	29	5.9	0.3	-0.5
04270	00	V	500	29	3.4	-0.1	-0.4
04320	12	V	500	29	3.0	0.6	0.5
04320	00	V	500	29	3.1	0.5	0.1
04339	00	V	500	27	2.4	0.5	0.3
04339	12	V	500	25	2.4	-0.1	-0.4
04360	00	V	500	28	2.8	-0.2	0.8
04360	12	V	500	29	4.5	0.5	0.8
06011	12	V	500	29	2.8	0.6	0.7

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06260	12	V	500	5	2.7	-0.7	1.4
06260	00	V	500	29	2.8	-0.2	-0.3
06610	12	V	500	29	2.3	0.6	0.4
06610	00	V	500	29	2.7	-0.2	0.2
07110	00	V	500	29	2.6	0.0	-0.6
07110	12	V	500	27	2.3	-0.6	-0.1
07510	12	V	500	29	3.0	-0.3	0.3
07510	00	V	500	29	2.3	0.0	0.1
07645	12	V	500	27	2.3	0.1	0.0
07645	00	V	500	28	2.6	-0.2	0.5
07761	00	V	500	28	2.5	0.4	0.1
07761	12	V	500	29	2.4	-0.4	0.2
08001	12	V	500	28	3.3	-0.7	0.4
08001	00	V	500	29	3.0	-0.5	-0.6
08221	00	V	500	29	2.8	0.1	0.2
08221	12	V	500	29	2.2	0.0	-0.1
08302	12	V	500	29	2.3	-0.1	0.4
08302	00	V	500	28	2.3	0.5	0.1
08508	12	V	500	28	3.5	0.3	-0.1
08522	12	V	500	29	2.8	0.5	0.2
10035	00	V	500	29	2.5	0.1	-0.2
10035	12	V	500	29	2.3	0.3	0.4
10393	12	V	500	29	2.8	-0.4	0.4
10393	00	V	500	29	2.6	0.1	0.0
10410	12	V	500	29	2.1	-0.2	0.1
10410	00	V	500	29	1.9	0.3	-0.2
10739	00	V	500	29	2.5	0.0	-0.4
10739	12	V	500	29	2.2	0.2	0.3
11035	00	V	500	29	2.5	-0.1	-0.1
11035	12	V	500	29	2.3	0.0	-0.4
12982	12	V	500	29	2.3	0.1	0.1
12982	00	V	500	29	2.0	-0.1	-0.2
16245	00	V	500	28	2.6	0.3	-0.1
16245	12	V	500	29	2.8	0.1	-0.4
16429	00	V	500	29	2.4	-0.4	0.3
16429	12	V	500	29	2.5	-0.7	0.2
16622	00	V	500	29	2.2	0.2	0.1
16754	00	V	500	27	2.5	0.9	0.0
17607	12	V	500	25	4.5	-0.4	0.9
26435	12	V	500	14	2.5	0.7	-0.1
60018	00	V	500	29	1.9	0.2	-0.3
60018	12	V	500	29	2.1	0.3	0.1
7JUNA4	12	V	500	9	3.7	0.5	-0.7

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
7JUNA4	00	V	500	10	2.6	1.2	-0.4
ASDE09	12	V	500	1	0.5	0.4	-0.3
ATGU3F	12	V	500	7	1.8	0.6	0.8
ATGU3F	00	V	500	6	1.8	-0.1	-0.1
BPMWB2	12	V	500	7	2.3	0.7	-0.5
BPMWB2	00	V	500	6	2.8	0.4	-1.3
FPUW5G	12	V	500	4	1.2	0.9	-0.1
GQBZLZ	12	V	500	7	3.2	1.1	-1.2
GQBZLZ	00	V	500	8	1.5	0.2	-0.2
JNKN7J	12	V	500	6	3.5	-0.6	-0.7
JNKN7J	00	V	500	5	4.4	-1.3	-0.3
KMPLHP	12	V	500	12	3.6	1.1	-0.3
KMPLHP	00	V	500	11	3.4	0.3	-0.5
LRYQE3	12	V	500	6	1.3	-0.2	0.2
LRYQE3	00	V	500	5	3.0	0.8	1.4
UXK5JT	12	V	500	10	2.3	0.5	-0.1
UXK5JT	00	V	500	9	2.1	0.1	0.4
WDK38H	12	V	500	22	2.5	0.6	-0.4
XKQLWQ	12	V	500	20	5.4	-0.2	0.0
YLV96W	12	V	500	11	2.8	0.2	-0.4
YLV96W	00	V	500	9	3.5	0.6	0.0
ZVQEQC	12	V	500	3	1.9	-1.3	1.3

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                : FEB 2024
         STANDARD OF COMPARISON: FIRST-GUESS FIELD
```

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	12	Z	850	34	10.4	6.6
01001	00	Z	850	28	10.8	-9.9
01028	00	Z	850	29	2.3	0.3
01028	12	Z	850	32	2.9	-1.0
01400	12	Z	850	26	76.6	76.4
01400	00	Z	850	25	76.0	75.8
01415	00	Z	850	29	4.7	3.2
01415	12	Z	850	29	5.2	4.2
02365	00	Z	850	22	5.1	4.2
02365	12	Z	850	19	4.5	3.8
02591	12	Z	850	29	6.5	6.1
02591	00	Z	850	29	6.9	6.5
02836	12	Z	850	31	2.2	1.4
02836	00	Z	850	27	2.5	1.9
02963	12	Z	850	29	2.7	2.0
02963	00	Z	850	28	3.4	2.4
03005	12	Z	850	29	3.2	-1.2
03005	00	Z	850	28	3.3	-1.2
03238	12	Z	850	2	4.2	3.8
03238	00	Z	850	28	3.9	2.0
03808	12	Z	850	30	5.2	4.6
03808	00	Z	850	29	4.1	3.0
03918	12	Z	850	5	8.9	7.4
03918	00	Z	850	27	7.4	6.9
03953	12	Z	850	29	5.1	0.6
03953	00	Z	850	29	2.7	-0.5
04018	00	Z	850	28	2.6	1.1
04018	12	Z	850	29	2.4	0.4
04220	12	Z	850	29	7.3	-6.8
04220	00	Z	850	29	7.6	-6.9
04270	12	Z	850	28	8.5	-5.3
04270	00	Z	850	29	8.6	-7.7
04320	12	Z	850	29	7.4	-1.6
04320	00	Z	850	30	5.6	0.2
04339	00	Z	850	27	10.6	-9.9
04339	12	Z	850	25	11.5	-10.4
04360	00	Z	850	30	12.4	-11.0
04360	12	Z	850	29	10.5	-9.6
06011	12	Z	850	29	3.4	-2.0

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06260	12	Z	850	5	3.0	0.0
06260	00	Z	850	29	3.3	1.7
06610	12	Z	850	30	2.8	1.8
06610	00	Z	850	30	2.8	2.0
07110	00	Z	850	30	5.8	-3.7
07110	12	Z	850	28	4.4	-2.2
07510	12	Z	850	30	5.4	4.5
07510	00	Z	850	30	4.1	3.2
07645	12	Z	850	30	6.1	-4.7
07645	00	Z	850	28	5.2	-4.7
07761	00	Z	850	28	3.0	0.9
07761	12	Z	850	29	3.1	0.5
08001	12	Z	850	28	3.9	1.6
08001	00	Z	850	29	2.3	0.2
08221	00	Z	850	29	2.1	1.1
08221	12	Z	850	29	3.4	2.4
08302	12	Z	850	29	8.7	-8.5
08302	00	Z	850	29	8.0	-7.8
08508	12	Z	850	28	4.9	3.7
08522	12	Z	850	29	3.9	3.1
10035	00	Z	850	31	13.4	13.2
10035	12	Z	850	29	14.3	14.1
10393	12	Z	850	30	4.7	-0.7
10393	00	Z	850	29	2.3	0.8
10410	12	Z	850	30	2.7	0.7
10410	00	Z	850	31	2.4	0.4
10739	00	Z	850	30	4.7	4.0
10739	12	Z	850	29	5.3	4.8
11035	00	Z	850	30	2.5	0.4
11035	12	Z	850	29	3.4	1.0
12982	12	Z	850	29	2.9	0.1
12982	00	Z	850	30	2.4	0.4
16245	00	Z	850	29	3.1	2.5
16245	12	Z	850	29	3.1	1.7
16429	00	Z	850	29	3.0	2.5
16429	12	Z	850	29	2.0	1.3
16622	00	Z	850	29	9.2	8.8
16754	00	Z	850	27	3.0	1.1
17607	12	Z	850	27	1.6	0.0
26435	12	Z	850	14	2.1	0.4
60018	00	Z	850	30	3.0	-0.9
60018	12	Z	850	30	2.8	-0.2
7JUNA4	12	Z	850	9	4.0	0.8

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
7JUNA4	00	Z	850	10	5.0	2.1
ASDE09	12	Z	850	1	4.9	-4.9
ATGU3F	12	Z	850	8	31.1	-29.8
ATGU3F	00	Z	850	6	23.4	-22.5
BPMWB2	12	Z	850	7	14.6	-11.8
BPMWB2	00	Z	850	6	18.6	-13.9
FPUW5G	12	Z	850	4	9.3	2.2
GQBZLZ	12	Z	850	7	22.6	-21.0
GQBZLZ	00	Z	850	8	23.8	-23.4
JNKN7J	12	Z	850	6	33.5	32.6
JNKN7J	00	Z	850	5	40.2	40.1
KMPLHP	12	Z	850	12	65.0	64.1
KMPLHP	00	Z	850	11	62.4	61.9
LRYQE3	12	Z	850	6	5.0	3.4
LRYQE3	00	Z	850	5	3.2	-1.1
UXK5JT	12	Z	850	10	4.2	1.1
UXK5JT	00	Z	850	9	4.2	1.5
WDK38H	12	Z	850	22	10.0	-6.1
XKQLWQ	12	Z	850	20	12.0	11.1
YLV96W	12	Z	850	11	7.8	-5.3
YLV96W	00	Z	850	9	6.9	-3.7
ZVQEQC	12	Z	850	3	1.7	-1.7

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                : FEB 2024
         STANDARD OF COMPARISON: FIRST-GUESS FIELD
```

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	12	V	850	29	3.1	-0.4	0.2
01001	00	V	850	28	3.3	0.2	-0.3
01028	00	V	850	29	2.6	0.3	-0.3
01028	12	V	850	29	2.8	-0.1	-0.4
01400	12	V	850	26	2.6	0.0	0.2
01400	00	V	850	25	2.4	0.1	-0.1
01415	00	V	850	29	3.3	-0.6	0.1
01415	12	V	850	29	2.8	-0.5	0.1
02365	00	V	850	22	2.6	-0.1	0.6
02365	12	V	850	19	3.3	-0.4	0.4
02591	12	V	850	29	2.6	0.7	0.0
02591	00	V	850	29	2.8	0.3	-0.9
02836	12	V	850	28	2.6	0.3	0.2
02836	00	V	850	27	2.4	-0.3	0.0
02963	12	V	850	29	2.7	0.0	-0.3
02963	00	V	850	28	2.3	-0.3	0.4
03005	12	V	850	29	3.0	-0.1	0.4
03005	00	V	850	28	2.5	0.1	0.3
03238	12	V	850	2	3.6	-2.0	0.4
03238	00	V	850	27	2.9	0.5	-0.3
03808	12	V	850	29	2.5	0.1	0.3
03808	00	V	850	29	2.6	0.2	0.5
03918	12	V	850	5	1.5	0.0	0.4
03918	00	V	850	27	2.5	-0.4	-0.2
03953	12	V	850	29	3.2	-0.1	0.2
03953	00	V	850	29	3.2	0.2	0.8
04018	00	V	850	28	2.8	0.8	-0.2
04018	12	V	850	27	3.7	-0.4	0.1
04220	12	V	850	29	4.0	0.4	-0.8
04220	00	V	850	28	3.5	0.4	-0.6
04270	12	V	850	28	3.7	0.9	0.4
04270	00	V	850	29	3.4	0.6	1.0
04320	12	V	850	29	3.9	0.3	0.5
04320	00	V	850	29	4.7	-0.4	1.8
04339	00	V	850	27	4.9	1.9	0.7
04339	12	V	850	25	5.2	1.6	0.1
04360	00	V	850	29	6.7	2.8	0.6
04360	12	V	850	29	7.1	3.0	0.7
06011	12	V	850	29	2.5	-0.2	-0.2

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06260	12	V	850	5	3.3	0.5	-0.6
06260	00	V	850	29	2.5	0.3	0.8
06610	12	V	850	29	2.6	-0.1	-0.5
06610	00	V	850	29	2.9	1.1	0.1
07110	00	V	850	29	2.2	-0.1	0.2
07110	12	V	850	27	3.6	-0.4	-0.6
07510	12	V	850	29	3.3	-0.6	-0.1
07510	00	V	850	29	2.9	0.2	-0.3
07645	12	V	850	29	3.3	0.8	0.2
07645	00	V	850	27	3.3	-0.9	0.3
07761	00	V	850	28	3.5	-0.7	-0.1
07761	12	V	850	29	3.0	-0.5	0.1
08001	12	V	850	28	2.8	-0.1	0.7
08001	00	V	850	29	2.2	0.0	0.7
08221	00	V	850	29	2.8	0.4	-0.2
08221	12	V	850	29	3.3	0.2	0.2
08302	12	V	850	29	3.5	0.6	0.3
08302	00	V	850	28	2.1	0.0	0.4
08508	12	V	850	28	2.6	0.1	-0.3
08522	12	V	850	29	3.1	-0.2	-0.2
10035	00	V	850	29	2.3	0.1	-0.6
10035	12	V	850	29	3.1	0.6	-0.3
10393	12	V	850	29	2.6	0.3	0.5
10393	00	V	850	29	2.6	0.3	-0.5
10410	12	V	850	29	2.5	0.2	0.6
10410	00	V	850	29	2.6	0.0	-0.4
10739	00	V	850	29	2.9	-0.6	-0.7
10739	12	V	850	29	2.6	0.1	-0.8
11035	00	V	850	29	3.2	0.4	-0.4
11035	12	V	850	29	3.5	-0.2	0.8
12982	12	V	850	29	3.0	-0.4	-0.3
12982	00	V	850	29	2.7	0.3	0.5
16245	00	V	850	28	3.2	0.6	0.3
16245	12	V	850	29	2.7	-0.2	-0.4
16429	00	V	850	29	2.6	0.0	0.2
16429	12	V	850	29	2.7	0.2	0.0
16622	00	V	850	29	3.0	0.2	-0.1
16754	00	V	850	27	2.6	0.1	0.4
17607	12	V	850	27	2.5	0.3	-0.2
26435	12	V	850	14	2.8	0.7	0.4
60018	00	V	850	29	3.0	0.3	-0.7
60018	12	V	850	29	3.6	0.1	-1.1
7JUNA4	12	V	850	9	3.7	0.4	0.1

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
7JUNA4	00	V	850	10	1.7	-0.1	0.3
ASDE09	12	V	850	1	1.3	-1.3	-0.3
ATGU3F	12	V	850	8	3.5	2.0	0.4
ATGU3F	00	V	850	6	1.9	0.1	0.2
BPMWB2	12	V	850	7	2.4	-0.6	-0.7
BPMWB2	00	V	850	6	3.5	0.5	1.0
FPUW5G	12	V	850	4	1.7	0.4	0.5
GQBZLZ	12	V	850	7	3.9	0.9	-0.5
GQBZLZ	00	V	850	8	2.2	0.7	0.2
JNKN7J	12	V	850	6	4.1	0.5	2.4
JNKN7J	00	V	850	5	3.4	0.9	-0.6
KMPLHP	12	V	850	12	3.8	1.3	-0.7
KMPLHP	00	V	850	11	2.6	-0.2	0.6
LRYQE3	12	V	850	6	4.2	0.4	-2.0
LRYQE3	00	V	850	5	3.4	1.0	0.6
UXK5JT	12	V	850	10	2.1	-0.4	-0.5
UXK5JT	00	V	850	9	2.6	0.2	-0.2
WDK38H	12	V	850	22	3.1	0.1	-0.6
XKQLWQ	12	V	850	20	5.6	0.0	-0.9
YLV96W	12	V	850	11	1.9	0.5	0.4
YLV96W	00	V	850	9	2.6	0.3	1.1
ZVQEQC	12	V	850	3	2.0	0.4	0.6

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                : FEB 2024
         STANDARD OF COMPARISON: FIRST-GUESS FIELD


TIME = 99 => AVERAGE OF ALL OBSERVATIONS
GROSS ERROR LIMIT = 15 HPA
```

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
03380	99	P	SUR	54	0	1392	0	0.4	-0.4	0.5
1300001	99	P	SUR	11	-23	562	0	0.3	0.2	0.3
1300008	99	P	SUR	15	-38	174	0	0.2	0.0	0.2
1300130	99	P	SUR	28	-16	693	0	0.3	0.2	0.4
1300131	99	P	SUR	28	-17	691	0	0.4	0.1	0.4
1301619	99	P	SUR	40	-23	694	0	0.5	-0.1	0.5
1301622	99	P	SUR	16	-56	688	0	0.3	0.1	0.3
1301629	99	P	SUR	21	-49	696	0	0.2	0.0	0.2
1301712	99	P	SUR	23	-62	696	0	0.3	-0.1	0.3
1301714	99	P	SUR	24	-60	696	0	0.5	0.0	0.5
1301718	99	P	SUR	29	-47	696	0	0.4	0.1	0.4
1301719	99	P	SUR	24	-58	696	0	0.4	0.5	0.7
1301723	99	P	SUR	14	-70	696	0	0.3	0.7	0.7
1301725	99	P	SUR	22	-40	696	0	0.2	0.0	0.2
1301726	99	P	SUR	23	-45	696	0	0.3	0.0	0.3
1301731	99	P	SUR	22	-43	695	0	0.3	0.2	0.3
1301735	99	P	SUR	29	-40	696	0	0.3	-1.0	1.0
1301736	99	P	SUR	26	-37	696	0	0.3	0.2	0.3
1301737	99	P	SUR	27	-53	696	0	0.5	-0.1	0.5
1301763	99	P	SUR	13	-44	2	2	0.0	0.0	0.0
1301767	99	P	SUR	32	-15	48	0	0.2	-0.7	0.7
1301769	99	P	SUR	31	-19	545	0	0.2	1.1	1.1
1301770	99	P	SUR	28	-25	696	0	0.3	0.0	0.3
1301771	99	P	SUR	32	-15	696	0	0.2	0.0	0.2
1301773	99	P	SUR	37	-11	696	0	0.3	-0.1	0.3
1301774	99	P	SUR	27	-56	695	0	0.4	0.1	0.5
1301778	99	P	SUR	31	-19	696	0	0.2	0.0	0.2
1301779	99	P	SUR	19	-56	695	0	0.3	0.1	0.3
1301783	99	P	SUR	19	-59	696	0	0.3	0.3	0.5
1301792	99	P	SUR	22	-50	681	0	0.3	-0.4	0.5
1301793	99	P	SUR	60	-21	673	0	0.5	0.1	0.5
1301794	99	P	SUR	40	-16	674	0	0.3	0.2	0.4
1301795	99	P	SUR	17	-42	537	0	0.2	0.0	0.2
1301796	99	P	SUR	18	-45	620	0	0.2	0.1	0.3
1301797	99	P	SUR	17	-47	660	0	0.2	0.2	0.3
1301798	99	P	SUR	33	-28	694	0	0.3	0.3	0.5

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
1301799	99	P	SUR	30	-26	683	0	0.3	0.2	0.3
1301803	99	P	SUR	61	3	694	0	0.4	0.1	0.4
1301804	99	P	SUR	62	-15	693	0	0.5	0.1	0.5
1301819	99	P	SUR	25	-21	130	0	0.3	-0.1	0.3
1301820	99	P	SUR	23	-22	113	0	0.3	-0.1	0.4
1301822	99	P	SUR	21	-23	100	0	0.5	0.2	0.5
1301823	99	P	SUR	24	-22	122	0	0.3	0.2	0.3
1501637	99	P	SUR	11	-36	696	0	0.2	0.4	0.5
1501638	99	P	SUR	18	-25	696	0	0.3	0.2	0.3
1701715	99	P	SUR	20	-53	653	0	0.3	-0.2	0.3
1701718	99	P	SUR	11	-49	688	688	0.0	0.0	0.0
1801671	99	P	SUR	53	-42	687	0	0.5	-0.1	0.5
1801674	99	P	SUR	41	-39	680	0	0.6	-0.1	0.6
1801678	99	P	SUR	51	-33	693	0	0.4	0.0	0.4
1801681	99	P	SUR	32	20	79	0	0.3	-0.7	0.8
1801735	99	P	SUR	48	-5	143	0	1.1	0.4	1.2
1801768	99	P	SUR	81	-3	617	0	0.6	0.3	0.7
2601714	99	P	SUR	83	25	404	0	0.6	-0.3	0.7
2801966	99	P	SUR	33	13	683	0	0.3	0.1	0.3
2801988	99	P	SUR	33	-16	695	0	0.3	-0.1	0.3
2802066	99	P	SUR	82	-3	696	0	0.6	0.3	0.7
2802075	99	P	SUR	48	-41	696	1	0.8	-0.2	0.8
2802076	99	P	SUR	64	-30	696	0	0.8	-0.5	0.9
2802077	99	P	SUR	62	-35	696	0	0.7	0.2	0.7
3801550	99	P	SUR	64	-39	88	0	1.9	0.8	2.1
3801569	99	P	SUR	49	-35	670	0	0.5	-0.2	0.5
3801572	99	P	SUR	32	25	683	0	0.3	-0.3	0.4
3801576	99	P	SUR	32	19	677	0	0.4	-0.7	0.8
3801586	99	P	SUR	80	4	58	24	4.8	1.8	5.1
3801596	99	P	SUR	31	-42	693	0	0.4	-0.1	0.4
3801665	99	P	SUR	85	2	696	0	0.5	0.3	0.6
3801676	99	P	SUR	67	-4	695	0	0.6	0.3	0.7
4100040	99	P	SUR	15	-53	4176	0	0.2	-0.7	0.7
4100043	99	P	SUR	21	-65	4175	0	0.3	-0.7	0.8
4100044	99	P	SUR	22	-59	4174	0	0.4	-0.4	0.6
4100046	99	P	SUR	24	-68	4176	0	0.4	-0.1	0.4
4100049	99	P	SUR	28	-63	1072	0	0.5	-0.9	1.1
4100052	99	P	SUR	18	-65	4088	0	0.3	-1.0	1.0
4100053	99	P	SUR	18	-66	4149	0	0.3	-0.7	0.8
4100056	99	P	SUR	18	-65	2310	0	0.3	-0.9	0.9
4100139	99	P	SUR	20	-38	511	0	0.2	0.1	0.3
4101665	99	P	SUR	70	-4	695	0	0.7	-0.3	0.8
4101696	99	P	SUR	31	-40	310	0	0.4	-0.1	0.4

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
4101719	99	P	SUR	18	-56	695	0	0.3	0.0	0.3
4101725	99	P	SUR	18	-63	695	0	0.3	0.0	0.3
4101727	99	P	SUR	24	-49	696	0	0.3	0.1	0.3
4101728	99	P	SUR	26	-39	696	0	0.3	0.3	0.5
4101729	99	P	SUR	32	-51	696	0	0.7	-0.1	0.7
4101730	99	P	SUR	14	-25	696	0	0.7	0.2	0.7
4101743	99	P	SUR	38	-14	616	0	3.0	1.7	3.5
4101753	99	P	SUR	30	-45	695	0	1.9	0.1	1.9
4101755	99	P	SUR	31	-48	696	0	0.5	0.2	0.5
4101843	99	P	SUR	77	4	695	0	1.4	-0.2	1.4
4101845	99	P	SUR	70	-2	695	0	0.4	0.2	0.5
4101851	99	P	SUR	29	-59	696	0	0.5	-0.7	0.8
4101859	99	P	SUR	14	-36	337	0	0.2	0.0	0.2
4101860	99	P	SUR	14	-32	307	0	0.3	-0.5	0.5
4101861	99	P	SUR	20	-38	402	0	0.2	0.3	0.4
4101862	99	P	SUR	17	-29	281	0	0.3	-0.5	0.6
4101863	99	P	SUR	17	-28	271	0	0.4	0.0	0.4
4102547	99	P	SUR	27	-65	696	0	0.4	0.2	0.5
4102559	99	P	SUR	41	-59	606	0	0.6	-0.2	0.7
41040	99	P	SUR	15	-53	696	0	0.3	-0.7	0.7
41043	99	P	SUR	21	-65	696	0	0.3	-0.7	0.8
41044	99	P	SUR	22	-59	696	0	0.4	-0.4	0.6
41046	99	P	SUR	24	-68	696	0	0.4	0.0	0.4
41049	99	P	SUR	28	-63	179	0	0.5	-1.0	1.1
41052	99	P	SUR	18	-65	686	0	0.3	-0.9	1.0
41053	99	P	SUR	19	-66	696	0	0.4	-0.7	0.8
41056	99	P	SUR	18	-66	386	0	0.2	-0.9	0.9
4200059	99	P	SUR	15	-67	4175	0	0.3	-0.6	0.7
4200060	99	P	SUR	16	-63	4176	0	0.3	-0.3	0.4
4200085	99	P	SUR	18	-67	3212	0	0.3	-0.8	0.8
42059	99	P	SUR	15	-68	696	0	0.3	-0.6	0.7
42060	99	P	SUR	16	-63	696	0	0.3	-0.3	0.4
42085	99	P	SUR	18	-67	676	0	0.3	-0.8	0.9
4400005	99	P	SUR	43	-69	4172	0	0.5	-0.6	0.8
4400008	99	P	SUR	40	-69	4176	0	0.5	-0.9	1.0
4400027	99	P	SUR	44	-67	4176	0	0.5	-0.9	1.0
4400032	99	P	SUR	44	-69	690	0	0.5	-0.4	0.7
4400033	99	P	SUR	44	-69	690	0	0.5	-1.1	1.2
4400037	99	P	SUR	43	-68	677	0	0.5	-0.2	0.6
4400150	99	P	SUR	43	-64	689	0	0.5	-0.2	0.5
4400488	99	P	SUR	45	-61	8	0	0.3	-0.5	0.6
4400489	99	P	SUR	45	-61	8	0	0.3	-0.6	0.7
44005	99	P	SUR	43	-69	696	0	0.5	-0.6	0.8

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
44008	99	P	SUR	41	-69	696	0	0.5	-0.9	1.1
4401581	99	P	SUR	37	-62	209	0	1.3	-1.9	2.3
4401582	99	P	SUR	25	-51	696	0	0.4	0.4	0.5
4401584	99	P	SUR	26	-49	696	0	0.3	0.0	0.3
4401585	99	P	SUR	26	-64	684	0	0.5	-0.1	0.5
4401587	99	P	SUR	80	26	546	0	1.0	1.0	1.5
4401588	99	P	SUR	69	15	659	0	0.7	-0.4	0.8
4401864	99	P	SUR	26	-56	515	0	0.4	-0.2	0.4
4402613	99	P	SUR	34	-8	696	0	0.4	-0.2	0.5
4402618	99	P	SUR	32	-57	696	0	0.4	0.0	0.4
4402656	99	P	SUR	34	-31	696	57	2.9	-0.2	2.9
4402660	99	P	SUR	21	-64	695	0	0.3	0.3	0.4
4402663	99	P	SUR	32	-19	695	0	0.3	-0.1	0.3
4402670	99	P	SUR	20	-68	695	0	0.3	-0.2	0.4
4402672	99	P	SUR	17	-61	695	0	0.3	-0.2	0.4
4402674	99	P	SUR	27	-61	696	0	0.4	0.1	0.4
4402675	99	P	SUR	23	-48	696	0	0.3	-0.1	0.3
4402676	99	P	SUR	27	-34	696	0	0.3	0.1	0.3
44027	99	P	SUR	44	-67	696	0	0.5	-0.9	1.0
4402721	99	P	SUR	30	-18	696	0	0.3	0.2	0.4
4402726	99	P	SUR	54	-16	696	0	0.4	-0.2	0.4
4402729	99	P	SUR	51	-37	695	0	0.8	0.4	0.9
4402730	99	P	SUR	33	-38	693	0	0.3	0.0	0.3
4402731	99	P	SUR	47	-42	692	2	1.6	1.0	1.9
4402732	99	P	SUR	45	-6	696	0	0.6	0.1	0.7
4402733	99	P	SUR	41	-56	695	0	0.7	0.3	0.7
4402735	99	P	SUR	46	-25	694	0	1.5	-0.7	1.7
4402736	99	P	SUR	44	-12	695	0	0.4	-0.2	0.4
4402737	99	P	SUR	52	-45	696	0	1.0	0.5	1.1
4402739	99	P	SUR	48	-42	694	0	0.7	0.1	0.7
4402741	99	P	SUR	52	-21	694	0	0.5	0.2	0.5
4402742	99	P	SUR	46	-9	696	0	0.4	-0.1	0.5
4402743	99	P	SUR	44	-24	695	0	0.8	-0.9	1.2
4402744	99	P	SUR	41	-42	693	0	1.3	1.2	1.8
4402747	99	P	SUR	43	-27	694	0	0.4	0.2	0.5
4402749	99	P	SUR	53	-30	695	0	0.4	-0.2	0.5
4402750	99	P	SUR	56	-37	695	0	0.4	-0.5	0.6
4402878	99	P	SUR	39	-53	90	0	0.7	0.3	0.7
4402879	99	P	SUR	33	-59	394	0	0.6	0.4	0.7
4402881	99	P	SUR	46	-15	426	0	0.5	0.1	0.5
4402882	99	P	SUR	37	-57	639	0	0.5	0.2	0.6
4402885	99	P	SUR	28	-45	496	0	0.4	0.4	0.6
44032	99	P	SUR	44	-69	690	0	0.5	-0.5	0.7

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
44033	99	P	SUR	44	-69	690	0	0.5	-1.1	1.2
4403568	99	P	SUR	33	-34	695	0	1.5	0.0	1.5
4403569	99	P	SUR	44	-16	694	0	0.6	0.1	0.6
44037	99	P	SUR	44	-68	677	0	0.5	-0.2	0.6
44078	99	P	SUR	60	-40	674	0	0.7	-1.0	1.2
44150	99	P	SUR	43	-64	689	0	0.6	-0.2	0.6
44258	99	P	SUR	45	-63	692	0	0.4	-0.2	0.5
44488	99	P	SUR	45	-61	617	0	0.5	-0.2	0.5
44489	99	P	SUR	46	-61	651	0	0.5	-0.1	0.5
4601782	99	P	SUR	31	-26	696	0	0.4	0.5	0.6
4701554	99	P	SUR	81	-3	695	0	0.8	0.0	0.8
4701555	99	P	SUR	83	-3	694	0	0.8	0.1	0.8
4701558	99	P	SUR	79	-18	58	0	0.5	-4.8	4.9
4701560	99	P	SUR	82	-4	696	0	0.5	0.1	0.6
4701561	99	P	SUR	82	-1	694	0	0.6	0.4	0.7
4801763	99	P	SUR	83	-27	696	0	0.8	-0.2	0.8
4802506	99	P	SUR	57	-7	696	0	0.6	-0.2	0.7
4802582	99	P	SUR	86	8	696	0	0.5	0.0	0.5
4802592	99	P	SUR	82	-10	695	0	0.7	0.0	0.7
4802598	99	P	SUR	86	-64	695	0	0.5	0.1	0.5
4802602	99	P	SUR	63	-22	694	0	0.5	-0.7	0.8
4802603	99	P	SUR	77	-7	306	0	0.5	0.0	0.5
4802606	99	P	SUR	87	-52	696	0	0.5	0.2	0.5
4802664	99	P	SUR	84	-53	696	0	0.5	0.1	0.5
4803978	99	P	SUR	63	-41	189	0	0.8	0.1	0.8
4804002	99	P	SUR	32	15	351	0	0.3	-0.5	0.6
5801972	99	P	SUR	46	-49	690	0	0.4	0.0	0.4
5801975	99	P	SUR	40	-32	679	0	0.4	0.0	0.4
5801976	99	P	SUR	49	-40	682	0	0.5	-0.2	0.6
5801977	99	P	SUR	19	-43	440	0	0.2	0.1	0.2
5801983	99	P	SUR	34	-18	672	0	0.3	0.2	0.3
5802034	99	P	SUR	47	-5	693	0	0.4	0.0	0.4
5802061	99	P	SUR	82	-4	696	0	0.6	0.3	0.7
5802077	99	P	SUR	27	-65	695	0	0.4	-0.1	0.5
6100001	99	P	SUR	43	8	673	0	0.4	0.1	0.4
6100002	99	P	SUR	42	5	695	0	0.4	-0.2	0.4
6100196	99	P	SUR	42	4	690	41	0.4	0.5	0.7
6100197	99	P	SUR	40	4	693	0	0.4	0.3	0.5
6100198	99	P	SUR	37	-2	693	0	0.5	0.2	0.6
6100280	99	P	SUR	41	1	692	0	0.4	0.2	0.4
6100281	99	P	SUR	40	0	693	0	0.5	0.3	0.6
6100417	99	P	SUR	38	0	693	0	0.3	0.4	0.5
6100430	99	P	SUR	40	2	693	0	0.3	0.3	0.5

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
6101031	99	P	SUR	42	8	695	0	0.3	0.1	0.3
6200001	99	P	SUR	45	-5	695	0	0.4	0.0	0.4
6200024	99	P	SUR	44	-3	693	0	0.6	0.2	0.7
6200025	99	P	SUR	44	-6	610	0	1.9	0.3	1.9
6200029	99	P	SUR	52	-4	12	0	0.4	-1.2	1.2
6200050	99	P	SUR	50	-4	715	0	0.4	-0.1	0.4
6200081	99	P	SUR	51	-13	16	0	0.3	-0.8	0.8
6200082	99	P	SUR	44	-8	536	0	0.5	0.0	0.5
6200083	99	P	SUR	43	-9	693	0	0.6	-0.3	0.6
6200084	99	P	SUR	42	-9	693	0	0.5	-0.2	0.6
6200085	99	P	SUR	36	-7	693	0	0.4	0.1	0.4
6200086	99	P	SUR	55	7	226	0	0.4	-0.4	0.6
6200091	99	P	SUR	53	-5	635	0	0.5	-0.2	0.5
6200092	99	P	SUR	51	-11	693	0	0.4	-0.4	0.6
6200093	99	P	SUR	55	-10	696	0	0.5	-0.4	0.6
6200094	99	P	SUR	52	-7	696	0	0.4	-0.2	0.5
6200095	99	P	SUR	53	-16	695	0	0.4	-0.4	0.6
6200103	99	P	SUR	50	-3	715	0	0.4	-0.4	0.5
6200105	99	P	SUR	55	-13	16	0	0.7	-0.5	0.8
6200163	99	P	SUR	47	-8	713	0	0.4	-0.2	0.4
6200191	99	P	SUR	41	-10	157	0	0.4	-1.1	1.2
6200192	99	P	SUR	40	-10	491	0	0.6	-0.7	0.9
6200199	99	P	SUR	40	-9	46	0	0.4	-0.7	0.8
6200200	99	P	SUR	36	-8	5	0	0.2	-0.4	0.4
6201065	99	P	SUR	54	7	447	0	0.4	1.1	1.2
6201066	99	P	SUR	55	7	681	0	0.4	0.4	0.5
6201081	99	P	SUR	38	-9	490	0	0.4	-0.6	0.8
6202597	99	P	SUR	46	-17	695	0	0.5	0.2	0.6
6202598	99	P	SUR	45	-23	696	0	0.4	0.2	0.5
6202637	99	P	SUR	63	-13	695	0	0.4	0.1	0.5
6202639	99	P	SUR	31	-31	641	0	0.3	-0.2	0.4
6203516	99	P	SUR	41	-17	678	0	0.6	0.1	0.6
6203607	99	P	SUR	30	-24	695	0	0.3	0.3	0.4
6203612	99	P	SUR	35	-54	695	0	0.7	0.2	0.7
6203621	99	P	SUR	25	-43	691	0	0.3	0.0	0.3
6203625	99	P	SUR	28	-39	696	0	0.3	-0.1	0.4
6203632	99	P	SUR	30	-57	696	2	2.1	-0.2	2.1
6203634	99	P	SUR	30	-31	696	0	0.3	0.3	0.5
6203639	99	P	SUR	31	-26	696	6	2.2	0.6	2.3
6203651	99	P	SUR	40	-16	689	0	0.4	0.3	0.5
6203656	99	P	SUR	82	-4	696	0	0.6	0.4	0.7
6203660	99	P	SUR	78	-12	696	0	0.5	-0.2	0.5
6203661	99	P	SUR	84	-3	696	0	0.7	0.0	0.7

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
6203664	99	P	SUR	87	22	696	0	0.5	0.3	0.6
6203667	99	P	SUR	83	6	695	0	0.6	0.0	0.6
6203669	99	P	SUR	80	16	696	0	0.6	0.0	0.6
6203741	99	P	SUR	64	5	693	0	0.4	0.1	0.4
6203744	99	P	SUR	76	10	683	0	0.5	0.4	0.6
6203753	99	P	SUR	57	-47	696	0	0.5	-0.5	0.7
6203755	99	P	SUR	26	-17	695	0	0.3	-0.3	0.4
6203768	99	P	SUR	27	-31	696	0	0.3	0.2	0.3
6203771	99	P	SUR	24	-42	695	0	0.3	0.0	0.3
6203773	99	P	SUR	38	-48	695	0	0.5	-0.8	0.9
6203823	99	P	SUR	62	-16	696	0	0.5	0.2	0.5
6203824	99	P	SUR	62	-10	695	0	0.5	1.0	1.1
6203825	99	P	SUR	63	-10	694	0	0.4	0.2	0.5
6203826	99	P	SUR	64	-13	694	0	0.5	0.0	0.5
6203827	99	P	SUR	66	12	667	0	0.7	-0.2	0.8
6203839	99	P	SUR	31	-56	696	0	0.4	-0.4	0.6
6203840	99	P	SUR	23	-54	696	0	0.4	0.2	0.4
6203842	99	P	SUR	29	-31	696	0	0.3	0.0	0.3
6203844	99	P	SUR	45	-18	695	0	0.5	0.2	0.5
6203845	99	P	SUR	57	-7	696	0	0.4	-0.4	0.6
6203846	99	P	SUR	31	-28	696	0	0.3	-0.2	0.3
6203849	99	P	SUR	23	-51	695	0	0.4	0.1	0.4
6203853	99	P	SUR	72	19	696	2	0.5	0.0	0.5
6203854	99	P	SUR	56	-45	695	0	0.5	0.2	0.5
6203855	99	P	SUR	68	12	693	0	0.6	-0.4	0.8
6203861	99	P	SUR	25	-51	305	0	1.2	-0.8	1.4
6203864	99	P	SUR	69	-11	693	0	1.2	-0.1	1.2
6203865	99	P	SUR	57	-41	693	0	0.5	-0.1	0.5
6203866	99	P	SUR	69	15	694	0	0.5	0.0	0.5
6203890	99	P	SUR	13	-30	696	0	0.2	-0.2	0.3
6203894	99	P	SUR	22	-23	108	0	0.4	0.2	0.5
6204603	99	P	SUR	43	9	596	0	0.4	0.6	0.7
6204604	99	P	SUR	39	6	651	0	0.3	-0.8	0.9
6204607	99	P	SUR	37	9	213	0	0.4	-2.9	3.0
6204609	99	P	SUR	38	11	685	0	0.3	-0.5	0.6
6204610	99	P	SUR	38	5	687	0	0.4	0.1	0.4
6204611	99	P	SUR	39	7	673	0	0.4	0.4	0.5
6204612	99	P	SUR	39	1	558	0	0.3	0.2	0.4
62050	99	P	SUR	50	-4	1392	0	0.4	-0.2	0.4
62081	99	P	SUR	51	-13	1390	0	0.5	-0.3	0.6
62091	99	P	SUR	53	-5	635	0	0.5	-0.2	0.5
62092	99	P	SUR	51	-11	632	0	0.4	-0.4	0.6
62093	99	P	SUR	55	-10	635	0	0.4	-0.4	0.6

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
62094	99	P	SUR	52	-7	635	0	0.4	-0.2	0.5
62095	99	P	SUR	53	-16	634	0	0.4	-0.5	0.6
62102	99	P	SUR	58	2	968	0	0.7	0.4	0.8
62103	99	P	SUR	50	-3	1392	0	0.4	-0.4	0.6
62104	99	P	SUR	57	1	1390	0	0.6	-0.1	0.6
62105	99	P	SUR	55	-13	1392	0	0.9	-0.3	0.9
62107	99	P	SUR	50	-6	192	0	0.4	-0.1	0.4
62112	99	P	SUR	58	0	1390	0	0.5	0.1	0.5
62113	99	P	SUR	58	0	1390	0	0.6	0.1	0.6
62114	99	P	SUR	58	0	1106	0	0.6	0.0	0.6
62115	99	P	SUR	58	-3	1390	0	0.4	-0.1	0.4
62116	99	P	SUR	58	1	1392	0	0.6	-0.2	0.6
62118	99	P	SUR	58	1	1392	0	0.5	0.3	0.5
62119	99	P	SUR	57	2	1392	0	0.4	0.1	0.4
62120	99	P	SUR	56	2	1384	0	0.5	-0.4	0.7
62121	99	P	SUR	54	3	1392	0	0.5	0.3	0.6
62122	99	P	SUR	57	2	1388	0	0.5	0.1	0.5
62124	99	P	SUR	54	-4	1392	0	0.4	-0.1	0.4
62127	99	P	SUR	54	1	1390	0	0.5	0.0	0.5
62129	99	P	SUR	58	0	1390	0	0.6	0.1	0.6
62130	99	P	SUR	59	1	1392	0	0.5	-0.4	0.7
62131	99	P	SUR	54	1	1388	0	0.5	0.3	0.6
62132	99	P	SUR	56	2	1320	0	0.6	0.2	0.6
62133	99	P	SUR	57	1	1390	0	0.7	0.0	0.8
62134	99	P	SUR	58	1	1388	0	0.4	0.2	0.4
62140	99	P	SUR	57	1	1390	0	0.6	0.0	0.6
62143	99	P	SUR	58	2	1384	0	0.5	0.6	0.8
62144	99	P	SUR	53	2	1392	0	0.4	0.2	0.4
62145	99	P	SUR	53	3	1386	0	0.4	0.2	0.4
62146	99	P	SUR	57	2	1374	0	0.5	0.3	0.5
62148	99	P	SUR	54	2	1392	0	0.5	1.0	1.1
62149	99	P	SUR	54	1	1392	0	0.4	0.2	0.5
62151	99	P	SUR	57	2	1384	0	0.5	0.1	0.5
62152	99	P	SUR	57	2	1392	0	0.4	0.5	0.6
62153	99	P	SUR	57	2	1388	0	0.5	0.1	0.5
62154	99	P	SUR	56	2	1390	0	0.4	-0.1	0.5
62155	99	P	SUR	58	1	1028	0	0.4	0.5	0.6
62157	99	P	SUR	58	0	1370	0	0.5	-0.2	0.5
62160	99	P	SUR	57	2	1282	0	0.8	0.0	0.8
62161	99	P	SUR	58	1	1392	0	0.6	-0.3	0.7
62162	99	P	SUR	57	1	1390	0	0.5	-0.2	0.5
62163	99	P	SUR	48	-9	1388	0	0.4	-0.2	0.4
62164	99	P	SUR	57	1	1384	0	0.5	0.4	0.6

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
62165	99	P	SUR	54	1	1392	0	0.5	0.0	0.5
62168	99	P	SUR	58	1	1390	0	0.5	-0.1	0.5
62170	99	P	SUR	51	2	1392	0	0.4	-0.2	0.4
62297	99	P	SUR	59	2	1392	0	0.5	-0.1	0.6
62302	99	P	SUR	61	-2	1388	0	0.8	-0.1	0.8
62304	99	P	SUR	51	2	1386	0	0.4	0.0	0.5
62305	99	P	SUR	50	0	1392	0	0.4	-0.3	0.5
6301001	99	P	SUR	64	5	695	0	0.4	-0.1	0.4
6301004	99	P	SUR	72	20	542	0	1.8	0.0	1.8
6301008	99	P	SUR	68	15	672	0	0.6	-0.8	1.0
6301575	99	P	SUR	48	-14	696	0	0.4	0.4	0.6
6301577	99	P	SUR	69	12	695	0	0.6	-0.4	0.7
63055	99	P	SUR	61	2	1392	0	0.5	0.1	0.5
63056	99	P	SUR	60	2	1390	0	0.7	0.3	0.8
63057	99	P	SUR	59	2	1392	0	0.5	-0.2	0.5
63058	99	P	SUR	53	2	1355	0	0.4	-0.1	0.4
63059	99	P	SUR	58	-1	1392	0	0.4	0.2	0.5
63101	99	P	SUR	61	1	1366	0	0.7	0.1	0.8
63102	99	P	SUR	61	1	1392	0	0.5	0.1	0.5
63103	99	P	SUR	61	1	1392	0	0.9	0.3	0.9
63108	99	P	SUR	61	2	1382	0	0.6	0.0	0.6
63109	99	P	SUR	60	2	1392	0	0.5	-0.5	0.7
63110	99	P	SUR	60	2	1388	0	0.6	-0.2	0.7
63111	99	P	SUR	61	2	1392	0	0.6	-0.6	0.8
63112	99	P	SUR	61	1	1390	0	0.5	-0.5	0.7
63115	99	P	SUR	62	1	1392	0	0.5	0.0	0.5
63117	99	P	SUR	61	1	1392	0	0.6	0.5	0.8
63118	99	P	SUR	58	1	1320	0	0.6	-0.5	0.8
6400045	99	P	SUR	59	-12	715	0	0.5	-0.6	0.8
6400046	99	P	SUR	60	-4	715	0	0.4	-0.4	0.6
6401583	99	P	SUR	63	-26	696	0	0.5	0.1	0.5
6401584	99	P	SUR	65	-26	696	0	0.7	0.3	0.8
6401590	99	P	SUR	70	32	630	0	0.5	-0.5	0.7
6401592	99	P	SUR	66	-2	696	2	1.8	0.0	1.8
6401759	99	P	SUR	58	-24	696	0	0.4	-0.2	0.5
6401763	99	P	SUR	66	12	696	0	0.6	0.0	0.6
6402615	99	P	SUR	26	-61	696	0	0.4	0.0	0.4
6402616	99	P	SUR	28	-41	696	0	0.4	-0.1	0.4
6402617	99	P	SUR	29	-47	695	0	0.4	0.3	0.5
6402618	99	P	SUR	22	-48	695	0	0.3	0.1	0.3
6402619	99	P	SUR	30	-16	695	0	0.2	0.0	0.2
6402621	99	P	SUR	33	-16	696	0	0.3	0.3	0.4
6402622	99	P	SUR	30	-19	695	0	0.2	0.1	0.3

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
64041	99	P	SUR	61	-3	1388	0	0.6	-0.2	0.6
64045	99	P	SUR	59	-12	1392	0	0.5	-0.6	0.8
64046	99	P	SUR	61	-4	1392	0	0.4	-0.4	0.6
6600021	99	P	SUR	55	14	17	0	0.4	-1.0	1.1
6600022	99	P	SUR	54	14	267	0	0.4	-0.5	0.7
6600023	99	P	SUR	55	11	242	0	0.3	-0.1	0.3
6600024	99	P	SUR	55	13	38	0	0.2	-1.3	1.3
6801790	99	P	SUR	38	-15	687	0	0.3	-0.1	0.3
6801791	99	P	SUR	31	-34	695	0	0.3	0.4	0.5
6801878	99	P	SUR	31	-18	173	0	0.5	-0.5	0.7
6801906	99	P	SUR	69	-66	695	0	0.6	-0.7	0.9
7801552	99	P	SUR	67	-5	696	1	1.6	-0.3	1.6
7801572	99	P	SUR	23	-47	462	0	0.2	0.1	0.2
7801588	99	P	SUR	35	-11	687	0	0.3	0.1	0.3
7801591	99	P	SUR	41	-11	50	0	0.2	0.0	0.2
7801698	99	P	SUR	67	-12	696	0	0.4	0.7	0.8

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

```
          DRIFTER MONITORING STATISTICS (EUCOS)
                   MONITORING CENTRE     : ECMWF
                   ELEMENT MONITORED     : WIND SPEED (M/S)
                   AREA                  : 10N - 90N, 70W - 40E
                   PERIOD                : FEB 2024
                   STANDARD OF COMPARISON: FIRST-GUESS FIELD


TIME = 99 => AVERAGE OF ALL OBSERVATIONS


GROSS ERROR LIMIT FOR VECTOR WIND = 25 M/S
```

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
1300001	99	SPEED	SUR	11	-23	562	0	0	0.7	0.7	1.0
1300002	99	SPEED	SUR	20	-23	561	0	0	0.9	0.2	0.9
1300008	99	SPEED	SUR	15	-38	174	0	0	0.6	0.0	0.6
1300130	99	SPEED	SUR	28	-16	686	0	0	1.4	-0.2	1.4
1300131	99	SPEED	SUR	28	-17	686	0	0	2.5	2.2	3.3
4100026	99	SPEED	SUR	12	-38	283	0	0	0.7	-0.1	0.7
4100040	99	SPEED	SUR	15	-53	4176	0	0	0.8	-0.1	0.8
4100043	99	SPEED	SUR	21	-65	4173	0	0	1.3	-0.1	1.3
4100044	99	SPEED	SUR	22	-59	4175	0	0	1.4	0.0	1.4
4100046	99	SPEED	SUR	24	-68	4176	0	0	1.3	0.0	1.3
4100049	99	SPEED	SUR	28	-63	1072	0	0	1.3	-0.2	1.3
4100052	99	SPEED	SUR	18	-65	4123	0	0	1.3	-0.4	1.4
4100053	99	SPEED	SUR	18	-66	4140	0	0	1.5	0.2	1.5
4100056	99	SPEED	SUR	18	-65	2310	0	0	1.1	0.2	1.2
4100139	99	SPEED	SUR	20	-38	484	0	0	1.0	0.1	1.0
41040	99	SPEED	SUR	15	-53	696	0	0	0.9	-0.1	0.9
41043	99	SPEED	SUR	21	-65	696	0	0	1.3	0.0	1.3
41044	99	SPEED	SUR	22	-59	696	0	0	1.5	0.0	1.5
41046	99	SPEED	SUR	24	-68	696	0	0	1.3	0.1	1.3
41049	99	SPEED	SUR	28	-63	179	0	0	1.4	-0.1	1.4
41052	99	SPEED	SUR	18	-65	691	0	0	1.3	-0.3	1.4
41053	99	SPEED	SUR	19	-66	695	0	0	1.6	-0.2	1.6
41056	99	SPEED	SUR	18	-66	386	0	0	1.1	0.3	1.2
4200059	99	SPEED	SUR	15	-67	4172	0	0	1.0	0.0	1.0
4200060	99	SPEED	SUR	16	-63	4176	0	0	1.2	0.0	1.2
4200085	99	SPEED	SUR	18	-67	3287	0	0	1.5	0.4	1.6
42059	99	SPEED	SUR	15	-68	696	0	0	1.1	0.0	1.1
42060	99	SPEED	SUR	16	-63	696	0	0	1.2	0.1	1.2
42085	99	SPEED	SUR	18	-67	678	0	0	1.6	0.7	1.8
4400005	99	SPEED	SUR	43	-69	4170	0	0	1.2	0.0	1.2
4400008	99	SPEED	SUR	40	-69	4176	0	0	1.2	-0.2	1.2
4400027	99	SPEED	SUR	44	-67	4176	0	0	1.1	0.3	1.1
4400032	99	SPEED	SUR	44	-69	690	0	0	1.3	-0.1	1.3
4400033	99	SPEED	SUR	44	-69	683	0	0	1.6	0.4	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
4400034	99	SPEED	SUR	44	-68	687	0	0	1.3	0.2	1.3
4400037	99	SPEED	SUR	43	-68	677	0	0	1.2	0.0	1.2
4400150	99	SPEED	SUR	43	-64	95	0	0	2.0	1.1	2.3
4400488	99	SPEED	SUR	45	-61	8	0	0	2.5	1.4	2.9
4400489	99	SPEED	SUR	45	-61	8	0	0	2.7	3.2	4.2
44005	99	SPEED	SUR	43	-69	696	0	0	1.2	-0.2	1.2
44008	99	SPEED	SUR	41	-69	696	0	0	1.2	-0.2	1.3
44027	99	SPEED	SUR	44	-67	696	0	0	1.2	0.3	1.2
44032	99	SPEED	SUR	44	-69	690	0	0	1.4	0.0	1.4
44033	99	SPEED	SUR	44	-69	682	0	0	1.6	0.7	1.8
44034	99	SPEED	SUR	44	-68	688	0	0	1.4	0.2	1.4
44037	99	SPEED	SUR	44	-68	677	0	0	1.3	0.1	1.3
44078	99	SPEED	SUR	60	-40	674	0	0	2.0	-1.7	2.6
44150	99	SPEED	SUR	43	-64	94	0	0	2.1	1.1	2.4
44258	99	SPEED	SUR	45	-63	692	0	0	1.9	0.4	2.0
44488	99	SPEED	SUR	45	-61	610	0	0	1.6	1.2	2.0
44489	99	SPEED	SUR	46	-61	635	0	0	1.6	1.6	2.3
6100001	99	SPEED	SUR	43	8	671	0	0	1.6	0.0	1.6
6100002	99	SPEED	SUR	42	5	695	0	0	1.2	0.2	1.2
6100196	99	SPEED	SUR	42	4	665	0	0	1.6	-0.1	1.6
6100197	99	SPEED	SUR	40	4	690	0	0	1.4	-0.1	1.4
6100198	99	SPEED	SUR	37	-2	680	0	0	2.0	-0.4	2.0
6100280	99	SPEED	SUR	41	1	663	0	0	1.5	-0.9	1.8
6100417	99	SPEED	SUR	38	0	683	0	0	1.6	-0.5	1.7
6100430	99	SPEED	SUR	40	2	679	0	0	1.5	-0.8	1.7
6101008	99	SPEED	SUR	37	22	215	0	0	3.3	-6.1	7.0
6101031	99	SPEED	SUR	42	8	695	0	0	1.2	0.1	1.2
6200001	99	SPEED	SUR	45	-5	692	0	0	1.4	-0.8	1.6
6200024	99	SPEED	SUR	44	-3	682	0	0	1.8	-0.6	1.9
6200025	99	SPEED	SUR	44	-6	681	0	0	1.8	-1.1	2.1
6200029	99	SPEED	SUR	52	-4	12	0	0	1.0	-0.2	1.0
6200050	99	SPEED	SUR	50	-4	715	0	0	1.3	-0.2	1.4
6200082	99	SPEED	SUR	44	-8	366	0	0	1.8	-2.5	3.1
6200083	99	SPEED	SUR	43	-9	686	0	0	1.4	-0.6	1.5
6200084	99	SPEED	SUR	42	-9	682	0	0	1.4	-1.2	1.8
6200085	99	SPEED	SUR	36	-7	692	0	0	1.0	-0.5	1.1
6200086	99	SPEED	SUR	55	7	226	0	0	1.8	1.6	2.4
6200091	99	SPEED	SUR	53	-5	635	0	0	1.3	0.2	1.3
6200092	99	SPEED	SUR	51	-11	693	0	0	1.2	-0.8	1.4
6200093	99	SPEED	SUR	55	-10	696	0	0	1.4	-0.5	1.5
6200094	99	SPEED	SUR	52	-7	696	0	0	1.1	0.0	1.1

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
6200095	99	SPEED	SUR	53	-16	695	0	0	1.2	0.3	1.2
6200103	99	SPEED	SUR	50	-3	680	0	0	1.8	-0.1	1.8
6200105	99	SPEED	SUR	55	-13	16	0	0	0.7	0.9	1.1
6200163	99	SPEED	SUR	47	-8	624	0	0	1.7	-0.2	1.7
6200192	99	SPEED	SUR	40	-10	491	0	0	1.3	-0.4	1.3
6200199	99	SPEED	SUR	40	-9	46	0	0	1.3	-0.5	1.4
6200200	99	SPEED	SUR	36	-8	6	0	0	0.6	0.0	0.6
6201065	99	SPEED	SUR	54	7	447	0	0	1.5	-0.6	1.6
6201066	99	SPEED	SUR	55	7	681	0	0	1.4	0.2	1.5
62050	99	SPEED	SUR	50	-4	1392	0	0	1.4	0.5	1.5
62091	99	SPEED	SUR	53	-5	635	0	0	1.3	0.4	1.4
62092	99	SPEED	SUR	51	-11	632	0	0	1.2	-0.6	1.3
62093	99	SPEED	SUR	55	-10	635	0	0	1.5	-0.5	1.5
62094	99	SPEED	SUR	52	-7	635	0	0	1.1	0.0	1.1
62095	99	SPEED	SUR	53	-16	634	0	0	1.2	0.4	1.2
62102	99	SPEED	SUR	58	2	1386	0	0	1.5	0.1	1.5
62103	99	SPEED	SUR	50	-3	1320	0	0	1.4	-0.5	1.5
62104	99	SPEED	SUR	57	1	1390	0	0	1.4	-0.3	1.4
62105	99	SPEED	SUR	55	-13	1388	0	0	1.3	0.7	1.4
62107	99	SPEED	SUR	50	-6	164	0	0	1.6	0.3	1.6
62112	99	SPEED	SUR	58	0	1302	0	0	1.8	-0.8	2.0
62113	99	SPEED	SUR	58	0	1390	0	0	1.6	0.2	1.6
62114	99	SPEED	SUR	58	0	1100	0	0	1.5	0.7	1.7
62118	99	SPEED	SUR	58	1	1392	0	0	1.5	0.6	1.7
62119	99	SPEED	SUR	57	2	1392	0	0	2.5	-0.9	2.7
62120	99	SPEED	SUR	56	2	1384	0	0	1.5	-0.8	1.6
62121	99	SPEED	SUR	54	3	1392	0	0	1.5	-0.2	1.5
62122	99	SPEED	SUR	57	2	1386	0	0	1.3	0.1	1.3
62129	99	SPEED	SUR	58	0	1384	0	0	1.5	0.4	1.5
62131	99	SPEED	SUR	54	1	1388	0	0	2.0	-0.2	2.0
62132	99	SPEED	SUR	56	2	108	0	0	1.3	-0.6	1.4
62133	99	SPEED	SUR	57	1	1350	0	0	1.6	-0.2	1.6
62134	99	SPEED	SUR	58	1	1388	0	0	1.3	0.0	1.3
62140	99	SPEED	SUR	57	1	1388	0	0	1.4	0.1	1.4
62143	99	SPEED	SUR	58	2	1338	0	0	2.2	-0.9	2.3
62144	99	SPEED	SUR	53	2	1392	0	0	1.8	0.0	1.8
62145	99	SPEED	SUR	53	3	1386	0	0	1.6	1.5	2.2
62146	99	SPEED	SUR	57	2	1326	0	0	1.4	0.3	1.4
62148	99	SPEED	SUR	54	2	1392	0	0	1.9	-0.2	1.9
62149	99	SPEED	SUR	54	1	1392	0	0	1.3	0.1	1.3
62152	99	SPEED	SUR	57	2	1392	0	0	1.8	-1.1	2.1

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
62154	99	SPEED	SUR	56	2	1390	0	0	1.3	0.4	1.4
62155	99	SPEED	SUR	58	1	1028	0	0	1.2	0.2	1.3
62163	99	SPEED	SUR	48	-9	1208	0	0	1.3	0.2	1.3
62164	99	SPEED	SUR	57	1	1384	0	0	1.6	-1.3	2.1
62165	99	SPEED	SUR	54	1	1392	0	0	1.7	-0.3	1.8
62170	99	SPEED	SUR	51	2	1388	0	0	1.8	0.8	1.9
62304	99	SPEED	SUR	51	2	1386	0	0	1.9	1.0	2.1
6301001	99	SPEED	SUR	64	5	695	0	0	1.5	-0.3	1.5
6301004	99	SPEED	SUR	72	20	542	0	0	2.6	-1.0	2.8
6301008	99	SPEED	SUR	68	15	672	2	0	2.1	-0.4	2.1
63055	99	SPEED	SUR	61	2	1392	0	0	2.0	-1.5	2.5
63056	99	SPEED	SUR	60	2	1388	0	0	1.6	-0.1	1.6
63057	99	SPEED	SUR	59	2	1392	0	0	2.5	-1.7	3.0
63058	99	SPEED	SUR	53	2	1351	0	0	1.5	0.5	1.6
63101	99	SPEED	SUR	61	1	1366	0	0	1.6	-1.0	1.9
63103	99	SPEED	SUR	61	1	1392	0	0	2.0	-0.6	2.1
63108	99	SPEED	SUR	61	2	1380	0	0	1.9	-0.4	2.0
63109	99	SPEED	SUR	60	2	1384	0	0	1.7	-0.2	1.7
63110	99	SPEED	SUR	60	2	1390	0	0	1.7	-0.9	2.0
63112	99	SPEED	SUR	61	1	1390	0	0	1.6	-0.9	1.8
63115	99	SPEED	SUR	62	1	1392	0	0	1.6	-0.9	1.9
63117	99	SPEED	SUR	61	1	1392	0	0	1.5	-1.0	1.8
6400045	99	SPEED	SUR	59	-12	713	0	0	1.6	0.0	1.6
64041	99	SPEED	SUR	61	-3	1388	0	0	1.7	-0.6	1.8
64045	99	SPEED	SUR	59	-12	1388	0	0	1.5	0.6	1.6
6600021	99	SPEED	SUR	55	14	17	0	0	1.2	0.1	1.2
6600022	99	SPEED	SUR	54	14	267	0	0	1.3	0.0	1.3
6600023	99	SPEED	SUR	55	11	243	0	0	1.7	1.8	2.5
6600024	99	SPEED	SUR	55	13	19	0	0	1.1	0.9	1.4

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

```
          DRIFTER MONITORING STATISTICS (EUCOS)
                   MONITORING CENTRE     : ECMWF
                   ELEMENT MONITORED     : WIND DIRECTION (DEGREES)
                   AREA                  : 10N - 90N, 70W - 40E
                   PERIOD                : FEB 2024
                   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	555	0	0	8.0	-0.2	8.0
1300002	99	DIRN	SUR	20	-23	539	0	0	6.7	-0.3	6.7
1300008	99	DIRN	SUR	15	-38	170	0	0	9.8	3.5	10.4
1300130	99	DIRN	SUR	28	-16	570	0	0	11.1	7.0	13.2
1300131	99	DIRN	SUR	28	-17	513	0	0	12.7	8.4	15.2
4100002	99	DIRN	SUR	32	-75	3868	0	0	14.1	1.3	14.2
4100004	99	DIRN	SUR	33	-79	3547	0	2	13.6	5.4	14.6
4100008	99	DIRN	SUR	31	-81	3241	0	1	17.0	8.1	18.8
4100009	99	DIRN	SUR	29	-80	3405	0	0	15.9	6.8	17.3
4100013	99	DIRN	SUR	33	-78	3569	0	0	13.4	6.2	14.7
4100024	99	DIRN	SUR	34	-78	469	0	0	14.5	5.3	15.4
4100025	99	DIRN	SUR	35	-75	3581	0	0	12.9	9.2	15.8
4100026	99	DIRN	SUR	12	-38	283	0	0	8.9	6.8	11.2
4100029	99	DIRN	SUR	33	-80	487	0	1	19.9	-7.0	21.1
4100033	99	DIRN	SUR	32	-80	498	0	1	18.5	-16.2	24.6
4100037	99	DIRN	SUR	34	-77	569	0	0	21.6	-3.3	21.8
4100038	99	DIRN	SUR	34	-78	556	0	0	15.9	1.4	15.9
4100040	99	DIRN	SUR	15	-53	3966	0	0	11.0	2.2	11.2
4100043	99	DIRN	SUR	21	-65	3607	0	1	13.9	10.2	17.2
4100044	99	DIRN	SUR	22	-59	3585	0	1	18.7	3.9	19.1
4100046	99	DIRN	SUR	24	-68	3884	0	0	14.2	4.3	14.8
4100047	99	DIRN	SUR	27	-71	3584	0	0	14.6	7.2	16.3
4100049	99	DIRN	SUR	28	-63	1004	0	0	15.2	5.3	16.1
4100052	99	DIRN	SUR	18	-65	3282	0	0	16.3	5.7	17.3
4100053	99	DIRN	SUR	18	-66	2239	0	1	22.5	9.5	24.4
4100056	99	DIRN	SUR	18	-65	1793	0	0	16.9	8.8	19.1
4100064	99	DIRN	SUR	34	-77	573	0	0	17.7	0.7	17.7
4100069	99	DIRN	SUR	29	-81	482	0	0	17.4	8.3	19.2
4100139	99	DIRN	SUR	20	-38	371	0	0	8.9	3.1	9.4
41002	99	DIRN	SUR	32	-75	642	0	0	14.6	1.3	14.7
41004	99	DIRN	SUR	33	-79	582	0	2	14.2	5.8	15.3
41008	99	DIRN	SUR	31	-81	528	0	1	17.7	8.2	19.5

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
41009	99	DIRN	SUR	29	-80	555	0	0	15.8	6.7	17.2
41013	99	DIRN	SUR	33	-78	586	0	0	13.8	6.7	15.3
41024	99	DIRN	SUR	34	-79	475	0	0	14.9	4.8	15.7
41025	99	DIRN	SUR	35	-76	585	0	0	13.0	9.5	16.1
41029	99	DIRN	SUR	33	-80	466	0	0	20.0	-7.4	21.3
41033	99	DIRN	SUR	32	-80	485	0	0	19.7	-15.7	25.2
41037	99	DIRN	SUR	34	-77	560	0	0	21.9	-3.8	22.2
41038	99	DIRN	SUR	34	-78	546	0	0	15.7	1.8	15.8
41040	99	DIRN	SUR	15	-53	651	0	0	11.2	1.8	11.3
41043	99	DIRN	SUR	21	-65	588	0	1	13.5	10.0	16.8
41044	99	DIRN	SUR	22	-59	593	0	1	18.1	4.3	18.7
41046	99	DIRN	SUR	24	-68	643	0	0	14.8	4.7	15.5
41047	99	DIRN	SUR	28	-72	585	0	0	15.2	7.9	17.1
41049	99	DIRN	SUR	28	-63	167	0	0	15.1	5.3	16.0
41052	99	DIRN	SUR	18	-65	534	0	0	15.7	4.3	16.2
41053	99	DIRN	SUR	19	-66	371	0	1	22.5	8.2	23.9
41056	99	DIRN	SUR	18	-66	293	0	0	17.9	8.7	19.9
41064	99	DIRN	SUR	34	-77	560	0	0	18.4	0.2	18.4
41069	99	DIRN	SUR	29	-81	483	0	0	17.5	9.0	19.7
4200013	99	DIRN	SUR	27	-83	989	0	0	13.4	-2.6	13.6
4200022	99	DIRN	SUR	28	-84	1060	0	0	12.9	-3.5	13.3
4200023	99	DIRN	SUR	26	-83	1139	0	1	13.1	-3.1	13.5
4200026	99	DIRN	SUR	25	-83	1182	0	0	13.3	-2.0	13.4
4200036	99	DIRN	SUR	29	-85	3219	0	0	12.7	1.4	12.8
4200056	99	DIRN	SUR	20	-85	3841	0	0	14.7	-0.6	14.7
4200057	99	DIRN	SUR	17	-82	3782	0	0	10.6	1.9	10.8
4200058	99	DIRN	SUR	15	-75	3946	0	0	9.4	8.4	12.6
4200059	99	DIRN	SUR	15	-67	3566	0	0	11.8	5.0	12.8
4200060	99	DIRN	SUR	16	-63	3411	0	2	16.5	9.0	18.8
4200085	99	DIRN	SUR	18	-67	2218	0	0	21.5	8.8	23.2
42013	99	DIRN	SUR	27	-83	480	0	0	14.5	-0.8	14.6
42022	99	DIRN	SUR	28	-84	525	0	0	13.3	-2.6	13.5
42023	99	DIRN	SUR	26	-83	560	0	1	13.7	-2.1	13.9
42026	99	DIRN	SUR	25	-84	578	0	1	13.6	-0.6	13.6
42036	99	DIRN	SUR	29	-85	524	0	0	13.3	1.8	13.5
42056	99	DIRN	SUR	20	-85	636	0	0	14.9	-0.7	14.9
42057	99	DIRN	SUR	17	-82	631	0	0	10.8	1.7	11.0
42058	99	DIRN	SUR	15	-75	651	0	0	9.8	8.1	12.7
42059	99	DIRN	SUR	15	-68	588	0	0	11.8	4.6	12.6
42060	99	DIRN	SUR	16	-63	561	0	2	16.6	8.9	18.9
42085	99	DIRN	SUR	18	-67	427	0	0	21.7	6.9	22.8

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
4400005	99	DIRN	SUR	43	-69	3518	0	0	12.5	3.0	12.9
4400007	99	DIRN	SUR	44	-70	3290	0	0	16.3	0.2	16.3
4400008	99	DIRN	SUR	40	-69	3449	0	0	10.7	16.6	19.7
4400009	99	DIRN	SUR	38	-75	3511	0	0	13.2	5.9	14.5
4400013	99	DIRN	SUR	42	-71	3394	0	0	14.6	5.3	15.5
4400014	99	DIRN	SUR	37	-75	3682	0	0	11.8	6.6	13.5
4400018	99	DIRN	SUR	42	-70	3537	0	0	13.2	7.3	15.1
4400020	99	DIRN	SUR	41	-70	3436	0	0	13.7	7.0	15.4
4400022	99	DIRN	SUR	41	-74	710	0	1	16.2	9.3	18.7
4400027	99	DIRN	SUR	44	-67	3804	0	0	12.4	5.8	13.7
4400029	99	DIRN	SUR	43	-71	582	0	0	14.9	-3.2	15.2
4400030	99	DIRN	SUR	43	-70	582	0	1	16.0	0.5	16.0
4400032	99	DIRN	SUR	44	-69	575	0	0	13.9	-4.7	14.7
4400033	99	DIRN	SUR	44	-69	548	0	0	18.8	13.7	23.2
4400034	99	DIRN	SUR	44	-68	598	0	0	13.6	-3.8	14.1
4400037	99	DIRN	SUR	43	-68	609	0	0	12.3	5.6	13.5
4400039	99	DIRN	SUR	41	-73	162	0	2	28.7	1.3	28.7
4400041	99	DIRN	SUR	37	-77	1382	0	1	20.2	1.1	20.3
4400042	99	DIRN	SUR	38	-76	4172	0	0	17.9	-3.2	18.2
4400058	99	DIRN	SUR	38	-76	4979	0	1	19.8	-1.7	19.9
4400062	99	DIRN	SUR	39	-76	4328	0	0	19.2	-1.5	19.3
4400063	99	DIRN	SUR	39	-76	3086	0	0	19.3	0.3	19.3
4400064	99	DIRN	SUR	37	-76	4925	0	0	17.6	2.3	17.7
4400072	99	DIRN	SUR	37	-76	4605	0	0	18.3	1.7	18.4
4400073	99	DIRN	SUR	43	-71	2307	0	1	15.5	-0.4	15.5
4400150	99	DIRN	SUR	43	-64	68	0	3	13.6	6.8	15.2
4400488	99	DIRN	SUR	45	-61	8	0	0	21.4	-33.6	39.9
4400489	99	DIRN	SUR	45	-61	8	0	0	14.9	-41.2	43.8
44005	99	DIRN	SUR	43	-69	580	0	0	13.0	2.6	13.2
44007	99	DIRN	SUR	44	-70	551	0	0	16.1	0.8	16.1
44008	99	DIRN	SUR	41	-69	569	0	0	11.5	16.2	19.9
44009	99	DIRN	SUR	39	-75	573	0	0	14.6	6.0	15.8
44013	99	DIRN	SUR	42	-71	541	0	0	14.8	4.1	15.3
44014	99	DIRN	SUR	37	-75	612	0	0	13.1	6.6	14.7
44018	99	DIRN	SUR	42	-70	579	0	0	13.9	7.0	15.5
44020	99	DIRN	SUR	42	-70	556	0	0	13.9	6.6	15.4
44022	99	DIRN	SUR	41	-74	187	0	2	17.8	9.5	20.2
44027	99	DIRN	SUR	44	-67	628	0	0	12.8	5.2	13.8
44029	99	DIRN	SUR	43	-71	571	0	0	14.7	-3.5	15.1
44030	99	DIRN	SUR	43	-70	565	0	1	16.3	1.0	16.3
44032	99	DIRN	SUR	44	-69	555	0	0	14.5	-5.3	15.5

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
44033	99	DIRN	SUR	44	-69	531	0	0	19.3	12.5	23.0
44034	99	DIRN	SUR	44	-68	594	0	0	13.2	-4.5	14.0
44037	99	DIRN	SUR	44	-68	602	0	0	12.6	5.2	13.7
44039	99	DIRN	SUR	41	-73	149	0	3	28.3	3.0	28.4
44041	99	DIRN	SUR	37	-77	147	0	0	20.4	2.2	20.5
44042	99	DIRN	SUR	38	-76	465	0	0	18.6	-1.5	18.7
44058	99	DIRN	SUR	38	-76	487	0	1	19.3	-0.3	19.3
44062	99	DIRN	SUR	39	-76	498	0	0	19.6	-0.2	19.7
44063	99	DIRN	SUR	39	-76	342	0	1	18.8	1.0	18.8
44064	99	DIRN	SUR	37	-76	566	0	0	17.8	3.8	18.2
44072	99	DIRN	SUR	37	-76	535	0	0	18.8	3.6	19.2
44073	99	DIRN	SUR	43	-71	498	0	1	16.1	0.9	16.1
44078	99	DIRN	SUR	60	-40	588	0	0	15.6	-20.0	25.4
44150	99	DIRN	SUR	43	-64	66	0	3	14.6	7.8	16.5
44258	99	DIRN	SUR	45	-63	592	0	1	23.9	14.3	27.8
44488	99	DIRN	SUR	45	-61	522	0	0	15.9	-32.0	35.8
44489	99	DIRN	SUR	46	-61	473	0	0	13.1	-35.4	37.8
6100198	99	DIRN	SUR	37	-2	456	0	0	19.2	2.2	19.3
6100417	99	DIRN	SUR	38	0	447	0	0	16.8	1.9	16.9
6200001	99	DIRN	SUR	45	-5	612	0	0	12.0	2.8	12.3
6200024	99	DIRN	SUR	44	-3	473	0	1	21.6	-1.4	21.7
6200025	99	DIRN	SUR	44	-6	428	0	0	17.4	2.4	17.6
6200029	99	DIRN	SUR	52	-4	2	0	0	23.4	-30.5	38.5
6200050	99	DIRN	SUR	50	-4	683	0	0	12.5	3.3	12.9
6200082	99	DIRN	SUR	44	-8	286	0	0	10.6	1.8	10.7
6200083	99	DIRN	SUR	43	-9	570	0	0	12.1	-12.9	17.7
6200084	99	DIRN	SUR	42	-9	521	0	0	12.6	-1.9	12.8
6200085	99	DIRN	SUR	36	-7	594	0	0	10.7	9.5	14.3
6200091	99	DIRN	SUR	53	-5	611	0	0	13.2	2.2	13.4
6200092	99	DIRN	SUR	51	-11	677	0	0	12.6	-2.8	12.9
6200093	99	DIRN	SUR	55	-10	662	0	0	12.7	0.4	12.7
6200094	99	DIRN	SUR	52	-7	671	0	0	10.9	0.5	10.9
6200095	99	DIRN	SUR	53	-16	681	0	0	10.3	3.3	10.8
6200103	99	DIRN	SUR	50	-3	645	0	2	25.9	14.8	29.8
6200105	99	DIRN	SUR	55	-13	16	0	0	5.2	-11.7	12.8
6200163	99	DIRN	SUR	47	-8	554	0	0	19.2	3.9	19.6
6200192	99	DIRN	SUR	40	-10	418	0	0	14.0	-4.9	14.9
6200199	99	DIRN	SUR	40	-9	43	0	0	13.2	12.1	17.9
6200200	99	DIRN	SUR	36	-8	6	0	0	12.4	5.0	13.4
62050	99	DIRN	SUR	50	-4	1339	0	0	12.1	3.5	12.6
62091	99	DIRN	SUR	53	-5	608	0	0	13.3	1.5	13.4

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
62092	99	DIRN	SUR	51	-11	613	0	0	12.7	-3.6	13.2
62093	99	DIRN	SUR	55	-10	601	0	0	12.0	-0.6	12.0
62094	99	DIRN	SUR	52	-7	614	0	0	11.1	-0.3	11.1
62095	99	DIRN	SUR	53	-16	619	0	0	10.4	2.6	10.7
62103	99	DIRN	SUR	50	-3	1289	0	2	26.4	15.2	30.4
62105	99	DIRN	SUR	55	-13	1335	0	0	12.2	-14.2	18.7
62107	99	DIRN	SUR	50	-6	152	0	1	9.7	2.6	10.1
62112	99	DIRN	SUR	58	0	1229	0	0	12.0	-3.1	12.3
62114	99	DIRN	SUR	58	0	1034	0	0	10.2	1.2	10.2
62163	99	DIRN	SUR	48	-9	1089	0	0	19.4	4.3	19.9
6400045	99	DIRN	SUR	59	-12	676	0	0	13.4	-9.1	16.2
64041	99	DIRN	SUR	61	-3	1303	0	0	11.3	8.5	14.2
64045	99	DIRN	SUR	59	-12	1309	0	0	13.6	-8.9	16.2

4.12 Table 24 - List of Assimilated BUFR Encoded Radiosonde Stations

ASDE09	ATGU3FT	BPMWB2N	DBLK	FPUW5GN	GQBZLZL	JNKN7JF	JPBN	KMPLHPW
LAGY8	LAGZ8	LRYQE3U	USBOD	USCAT	USSOD	USYUB	UXK5JTU	VLMJ
WDK38HS	XKQLWQB	YLV96WM	ZVQEQCM	7JUNA4N	01001	01004	01010	01028
01241	01400	01415	01492	02185	02365	02591	02836	02963
03005	03238	03502	03743	03808	03882	03918	03953	04018
04089	04220	04270	04320	04339	04360	04417	06011	06260
06458	06610	07110	07145	07510	07645	07761	08001	08023
08190	08221	08302	08383	08430	08508	08522	08536	10035
10113	10184	10238	10304	10393	10410	10548	10618	10739
10771	10868	10954	10962	11010	11035	11120	11240	11520
11747	11952	12120	12374	12425	12575	12843	12982	13275
13388	14015	14240	14430	15420	15614	16045	16064	16113
16144	16224	16245	16332	16429	16546	16622	16716	16754
17030	17064	17095	17196	17220	17240	17351	17516	17607
20674	22008	22820	22845	23205	23472	23884	23921	23955
24641	24908	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	35671	40179	40186	42056	42101	42123	42182	42314
42339	42348	42361	42369	42399	42410	42492	42647	42675
42724	42867	42874	42886	42971	43003	43014	43041	43049
43063	43086	43128	43150	43185	43243	43279	43333	43346
43353	43369	45004	47102	47104	47138	47155	47169	47183
47186	47230	47401	47412	47582	47600	47646	47678	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	60760	61901	61980	61998
63985	65344	66160	67083	68263	68424	68442	68512	68816
68842	70026	70133	70200	70219	70231	70261	70273	70308
70316	70326	70350	70361	70398	71043	71081	71082	71109
71119	71603	71722	71802	71811	71815	71816	71823	71845
71867	71906	71907	71908	71909	71913	71917	71924	71925
71926	71934	71945	71957	71964	72201	72202	72206	72208
72210	72215	72230	72233	72235	72240	72248	72249	72250
72251	72265	72274	72293	72305	72317	72318	72327	72340
72357	72363	72364	72365	72376	72388	72402	72403	72413
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	76225	76256	76405	76458	76526	76595	76644
76654	76679	76692	76743	76903	78384	78397	78486	78583
78866	78897	78954	78970	80001	81405	82965	85442	85799
85934	87155	87344	87418	87582	87623	87715	87860	88889
89002	89055	89564	89571	89592	89611	89625	89642	91165
91212	91285	91334	91348	91376	91408	91413	91592	91610
91925	91938	91948	91958	93112	93417	93817	93844	94001
94120	94155	94170	94203	94299	94302	94312	94326	94332
94403	94430	94461	94510	94578	94610	94637	94638	94653

94659	94672	94711	94767	94776	94802	94821	94866	94910
94975	94995	94996	94998	95282	95527	96413	96441	96471
96481	96996							

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

ASDE09	ATGU3FT	BPMWB2N	DBLK	edmonton		FPUW5GN	GQBZLZL	JNKN7JF
KMPLHPW	LAGY8	LAGZ8	LRYQE3U	USSOD	UXK5JTU	VLMJ	WDK38HS	XKQLWQB
YLV96WM	ZVQEQCM	7JUNA4N	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	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	60155	60253	72413	73111	76743	76903	89002	89642
91925	91938	91948	91958	94001	94653			

5 Annex - Explanations of figures and tables

5.1 General

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

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

5.2 Data Availability

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

5.3 Data Quality

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

It should be noted that:

(i) all results are based on software that may undergo further development;

(ii) although the quality of the ECMWF first-guess fields is of a generally high standard this is only true to a limited extent in the tropics, where small-scale processes such as convection are of much greater importance than in mid-latitudes, and the observations will sometimes not be representative of the scales of motion given by the first-guess;

(iii) the first-guess fields themselves will vary in accuracy depending on the density and quality of data, particularly in the upstream regions and over Antarctica and the southern hemisphere mid-latitudes. Direct comparisons between stations (or airlines) should preferably be restricted to observations in a reasonably homogeneous climatic region.

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

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

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

The corresponding limits for wind (table 8) are:

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

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

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

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

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

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

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

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

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