ECMWF Global Data Monitoring Report

September 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	Aug	Sep	Ident	Time	Aug	Sep
04417	(00)	29	1	02365	(00)	3	16
30309	(00)	15	0	02365	(12)	2	17
30309	(12)	14	0	31369	(00)	0	22
31369	(12)	25	8	32477	(12)	0	29
35700	(00)	13	2	32618	(00)	11	30
35700	(12)	24	4	40650	(00)	3	19
42516	(00)	22	6	40811	(12)	6	26
42623	(00)	30	11	42182	(00)	8	29
61024	(12)	25	2	42182	(12)	6	26
65503	(00)	20	0	42220	(00)	6	23
65503	(12)	19	0	42867	(00)	0	18
70414	(12)	23	8	42867	(12)	0	18
71964	(00)	27	13	42971	(00)	0	29
72694	(00)	29	12	42971	(12)	1	29
72694	(12)	30	12	43150	(00)	3	28
82022	(00)	18	0	43150	(12)	4	30
82026	(00)	15	0	43279	(00)	0	28
82193	(00)	11	0	43279	(12)	1	30
82332	(00)	20	0	64500	(00)	8	20
82532	(00)	20	0	64500	(12)	19	42
82705	(00)	18	0	65344	(12)	0	17
82824	(00)	15	0	78384	(00)	0	19
83208	(00)	14	0	78384	(12)	0	15
83649	(12)	31	3	80028	(12)	0	30
91165	(12)	29	9	80094	(12)	0	28
94975	(00)	31	2	80259	(12)	0	29
94975	(12)	26	0	82400	(12)	1	23
96035	(00)	30	9	83554	(00)	1	29
96035	(12)	30	9	83554	(12)	0	29
96237	(00)	30	18	89009	(12)	15	28
96237	(12)	30	17	-	-	-	-
96253	(00)	31	15	-	-	-	-
96253	(12)	31	14	-	-	-	-
96581	(00)	29	10	-	-	-	-
96581	(12)	27	9	-	-	-	-
96685	(00)	30	10	-	-	-	-
96685	(12)	30	10	-	-	-	-
96935	(12)	31	9	-	-	-	-
97014	(00)	31	14	-	-	-	-
97014	(12)	31	13	-	-	-	-
97072	(00)	31	11	-	-	-	-
97072	(12)	31	11	-	-	-	-
97180	(00)	31	18	-	-	-	-
97180	(12)	31	17	-	-	-	-
97230	(00)	31	17	-	-	-	-
97372	(00)	31	6	-	-	-	-
97372	(12)	30	5	-	-	-	-
97560	(00)	30	13	-	-	-	-
97560	(12)	31	13	-	-	-	-
97724	(00)	31	14	-	-	-	-
97724	(12)	31	13	-	-	-	-
97900	(00)	31	17	-	-	-	-
97900	(12)	31	15	-	-	-	-
97980	(00)	30	12	-	-	-	-
97980	(12)	31	13	-	-	-	-
98618	(00)	21	0	-	-	-	-
98618	(12)	17	0	-	-	-	-
98753	(12)	25	12	-	-	-	-

2.2 Drifting Buoys

Surface pressure observations from **1391** 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.

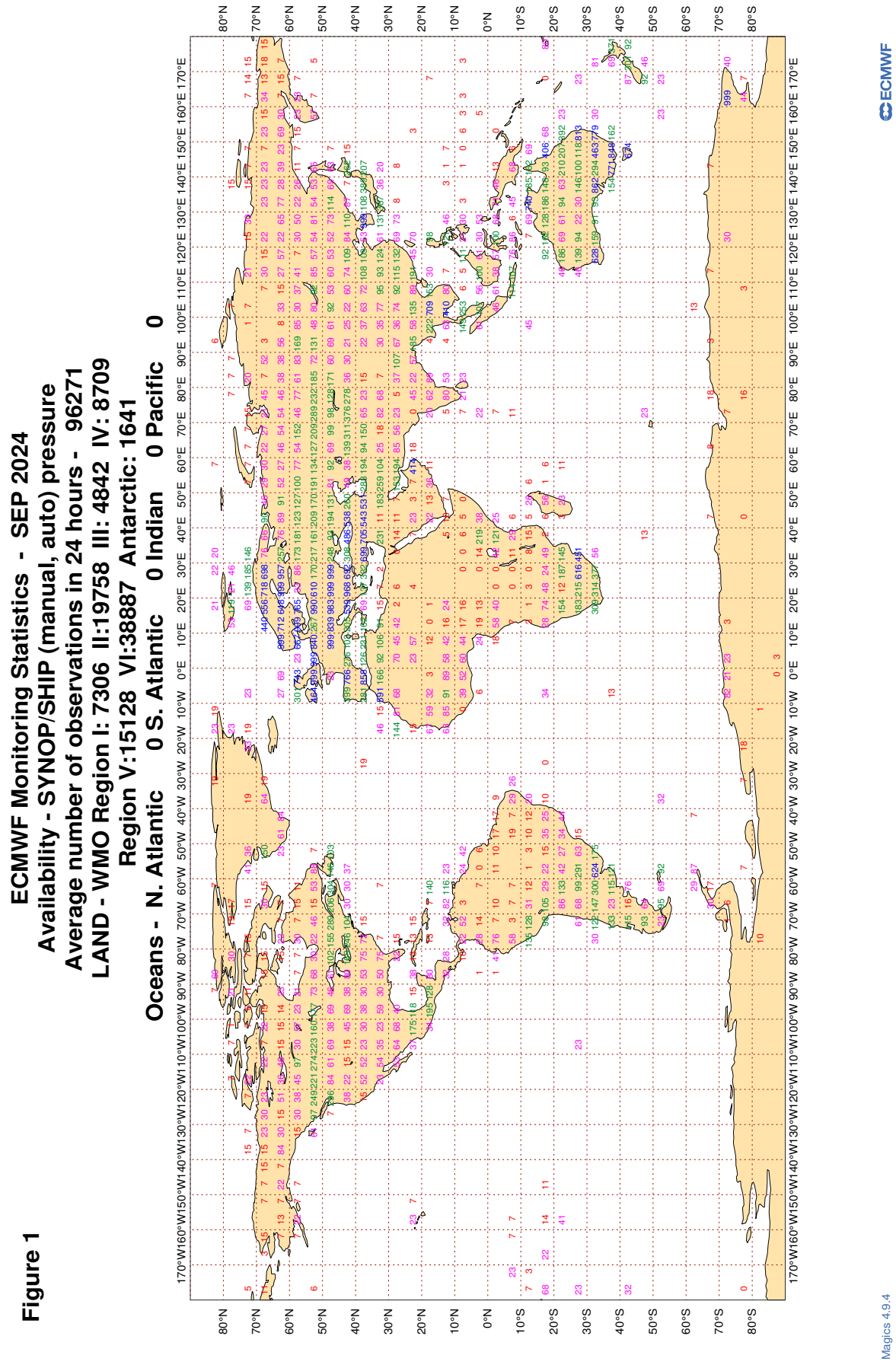
Tab	Parameter	Observation Time
10	Geopotential	00 and 12 UTC
11	Wind	00 and 12 UTC

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



3.2.2 Figure 2 - Availability - DRIFTER PRESSURE

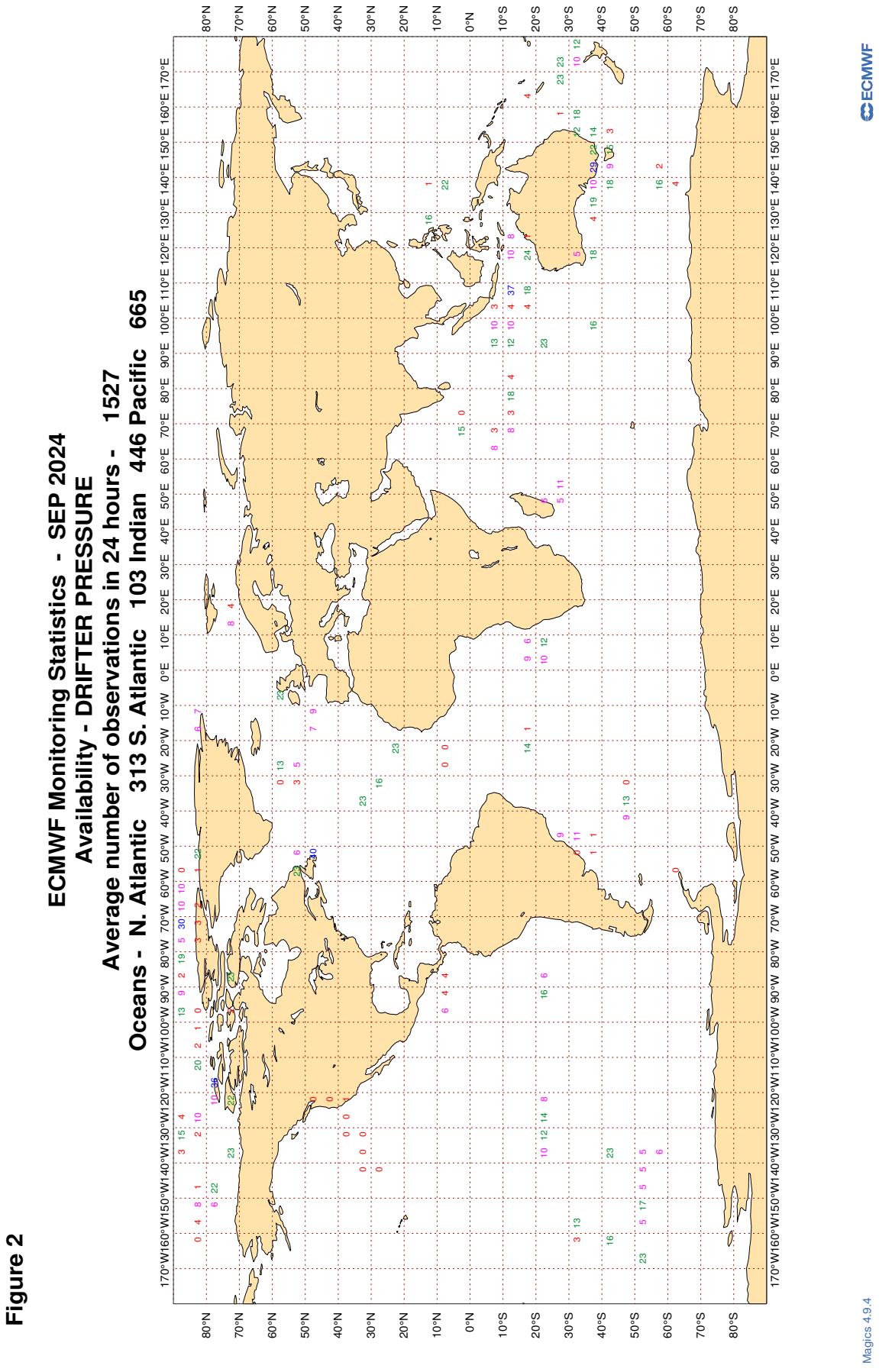
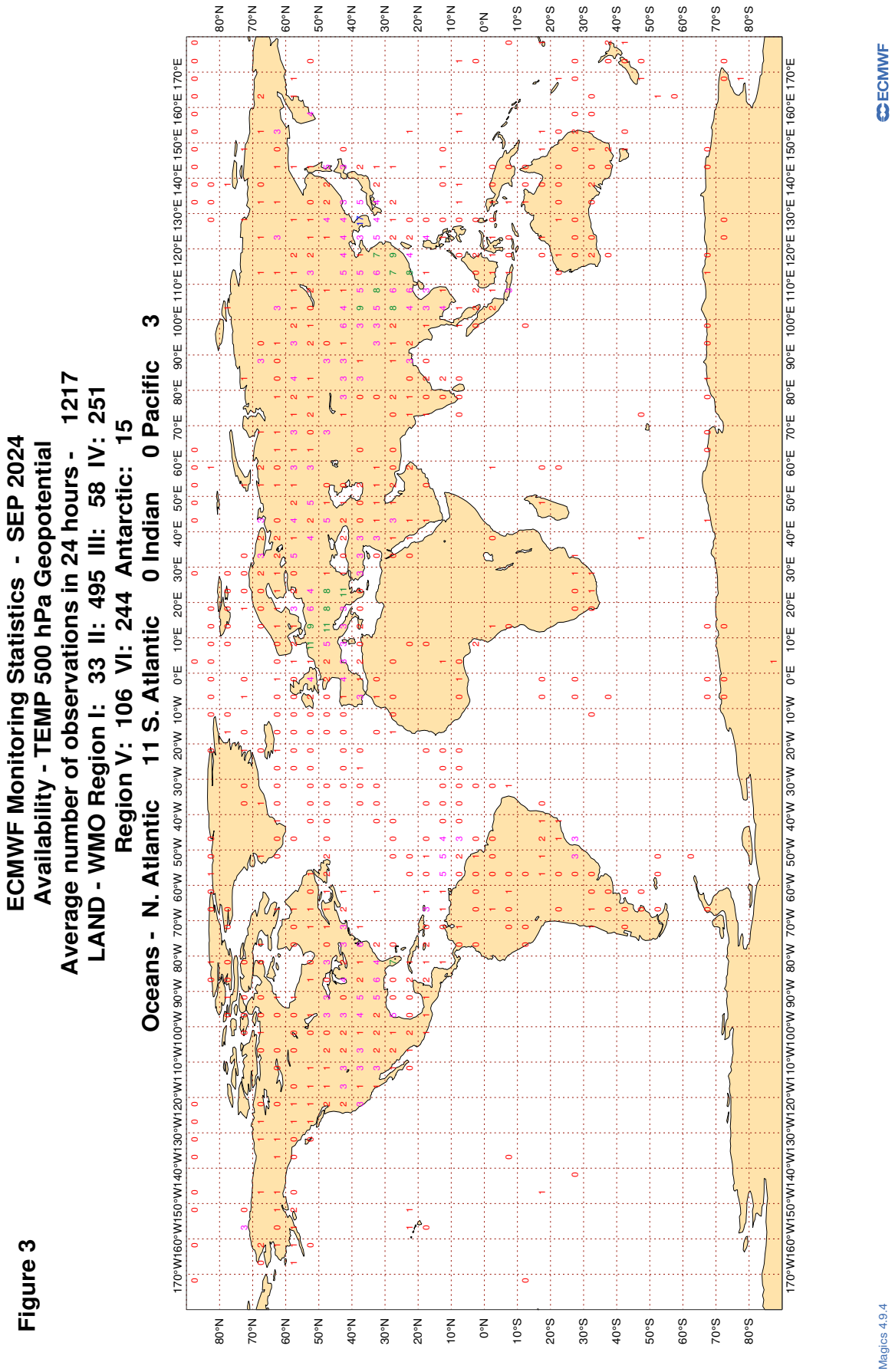


Figure 2

3.2.3 Figure 3 - Availability - TEMP 500 hPa geopotential



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

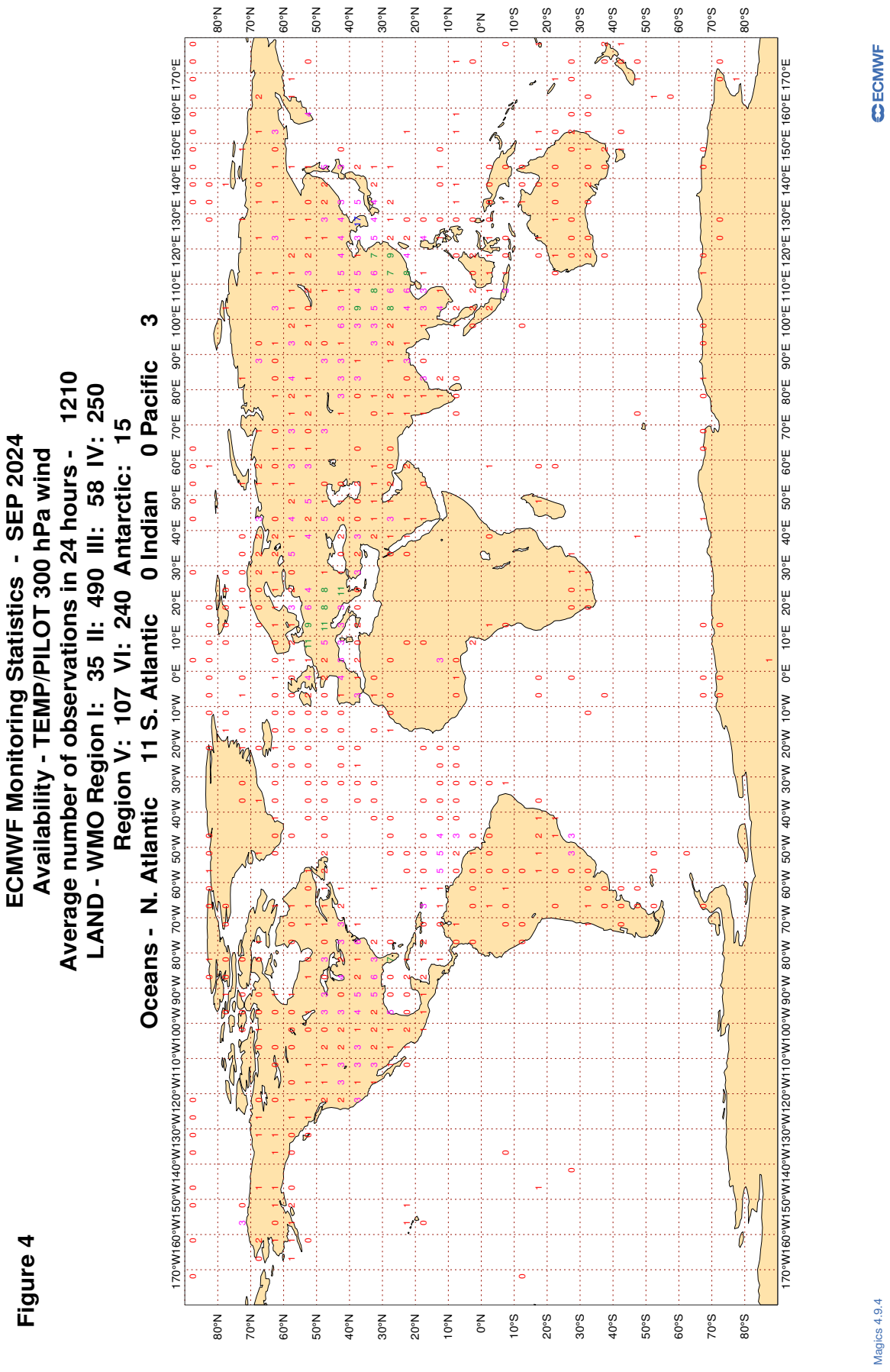


Figure 4

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

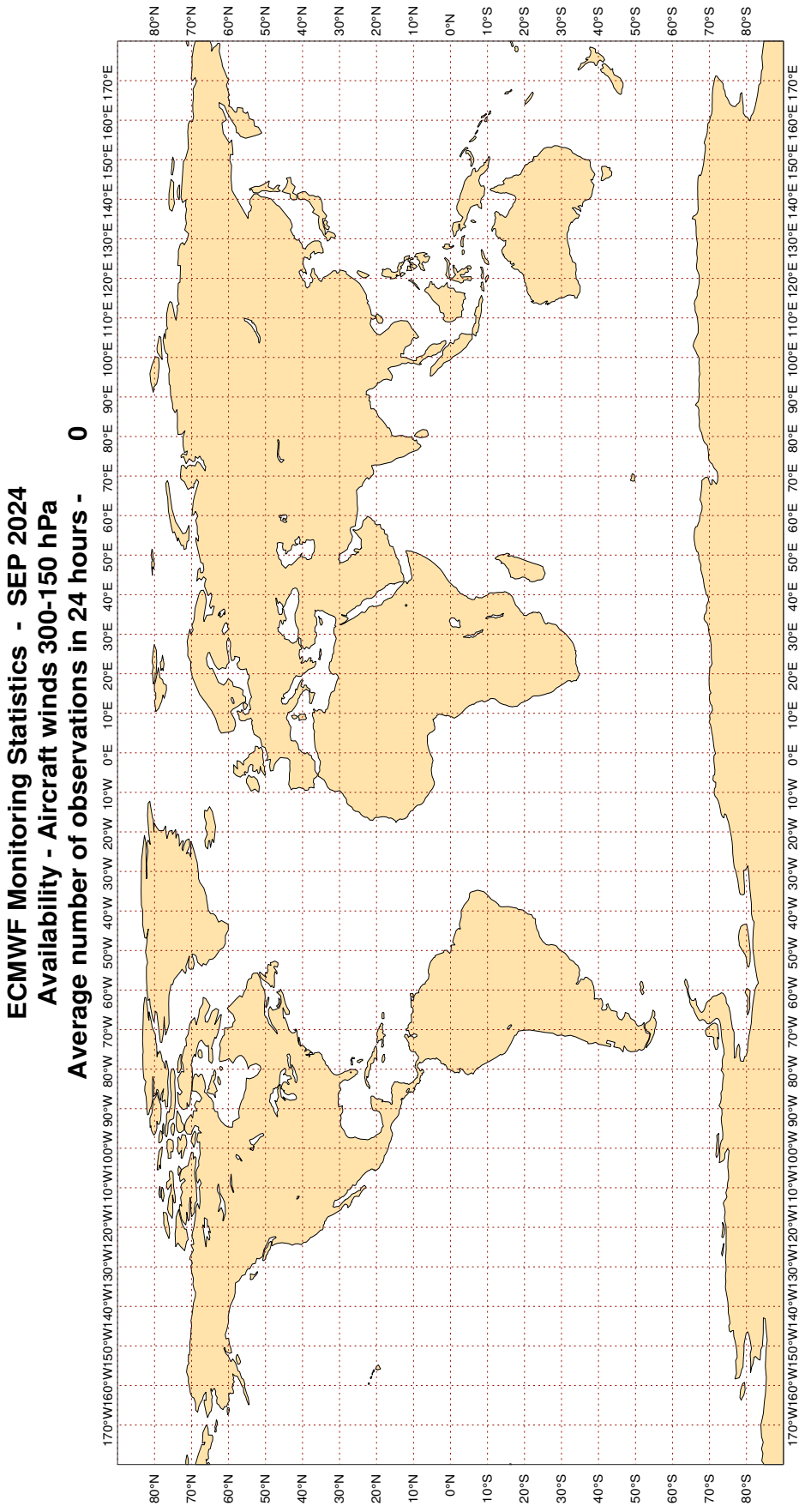


Figure 5

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

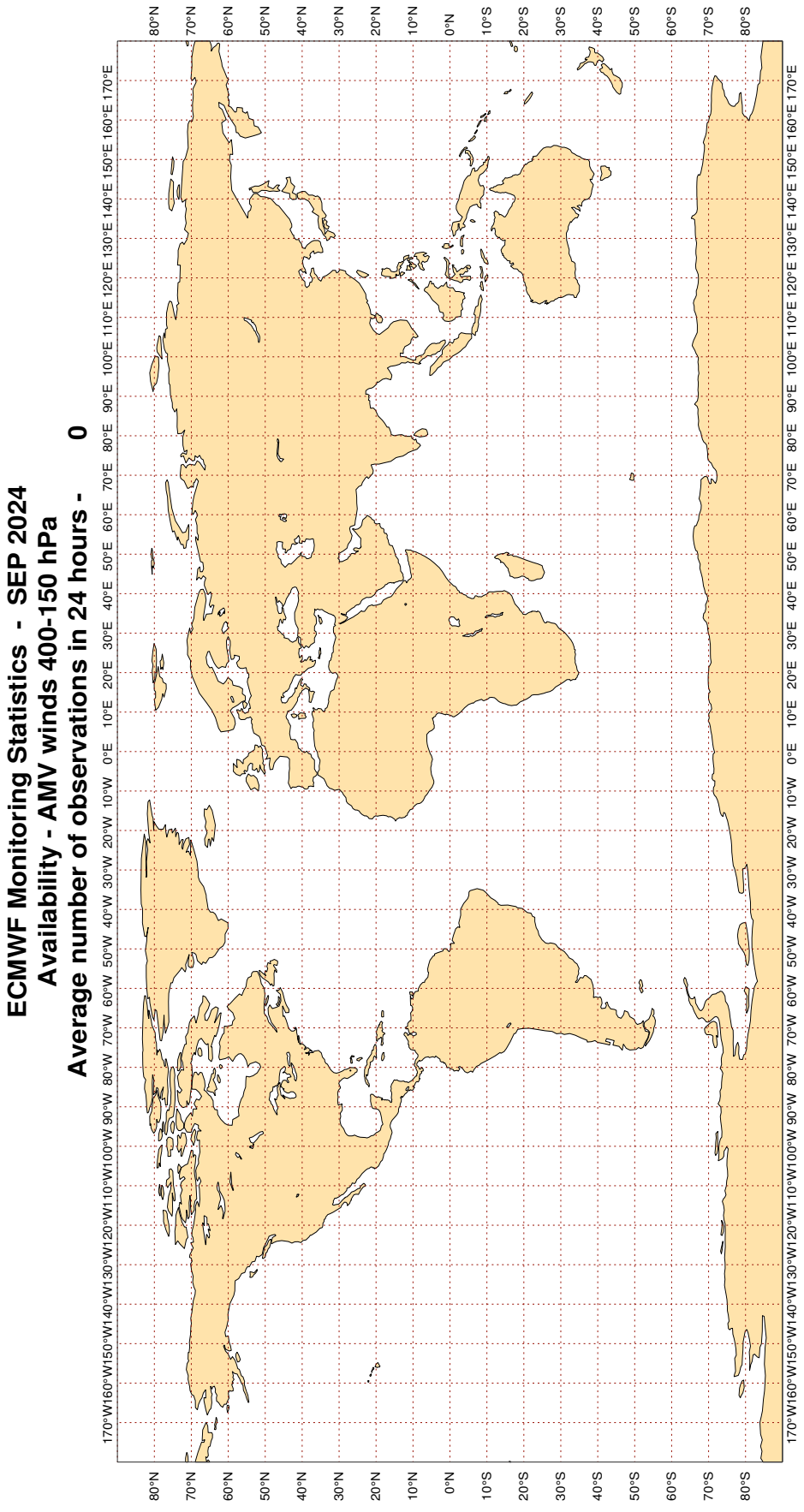


Figure 6

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

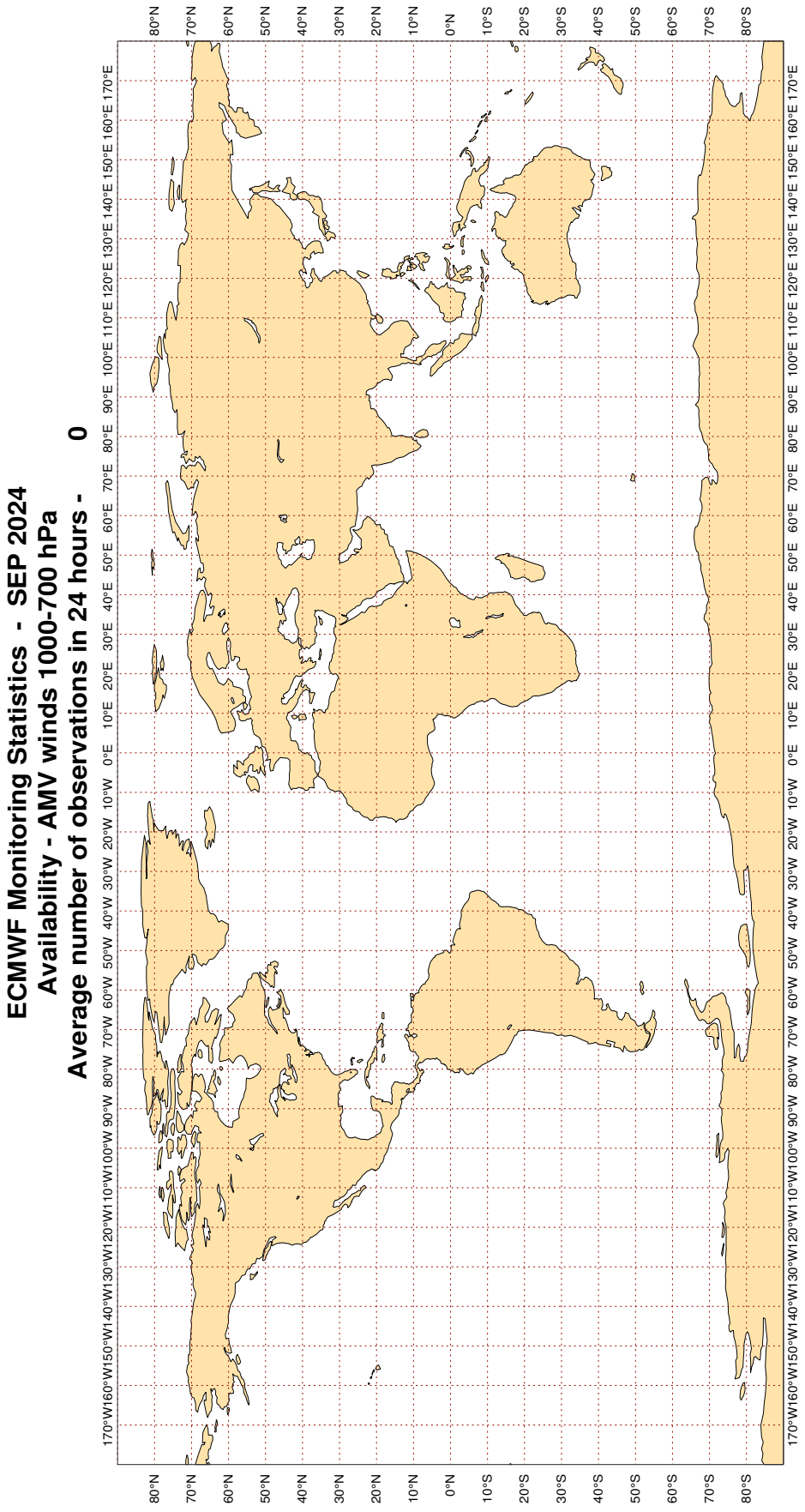
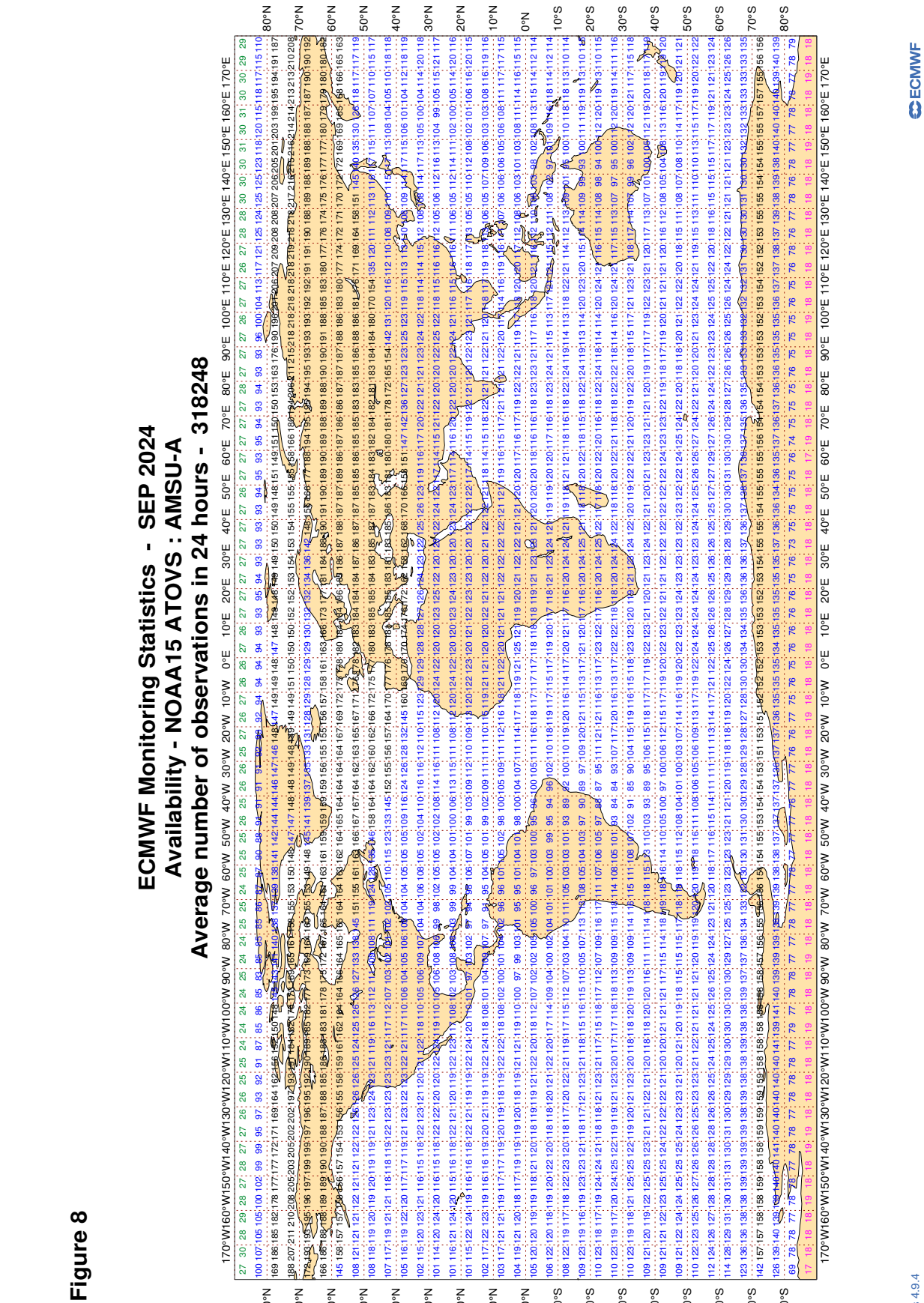


Figure 7

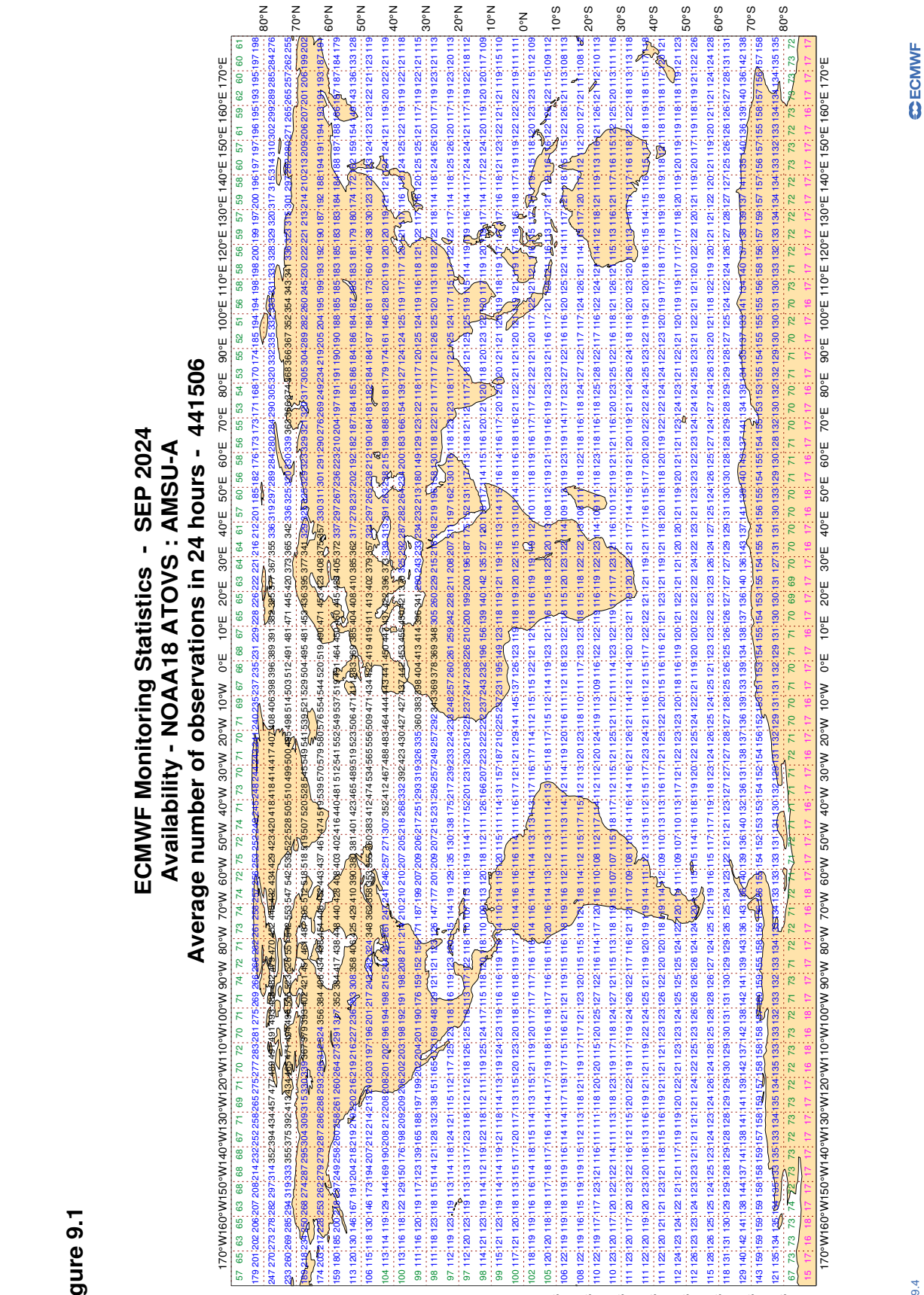
3.2.8 Figure 8 - Availability - NOAA15 ATOVS : AMSU-A

Figure 8



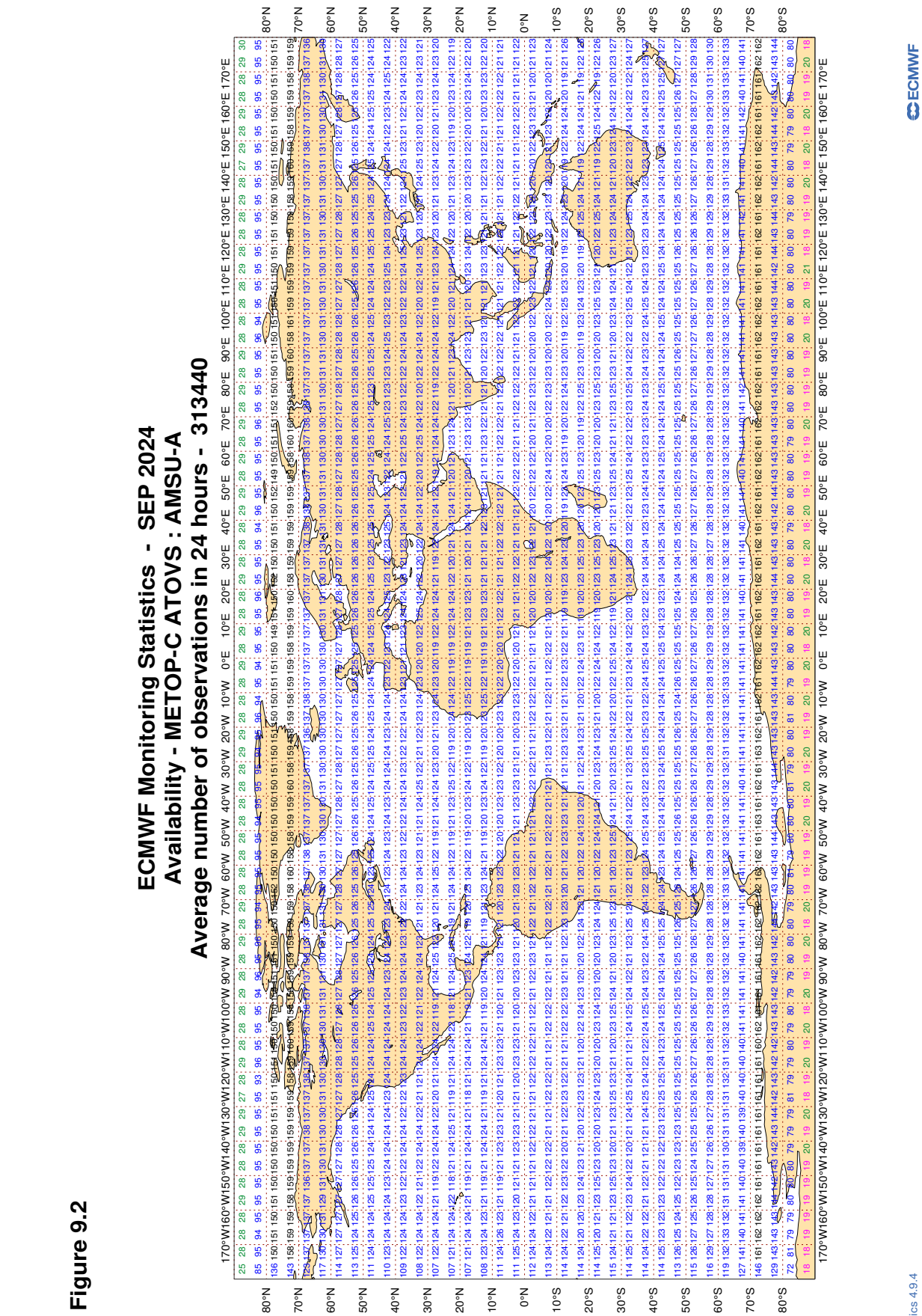
3.2.9 Figure 9.1 - Availability - NOAA18 ATOVS : AMSU-A

Figure 9.1



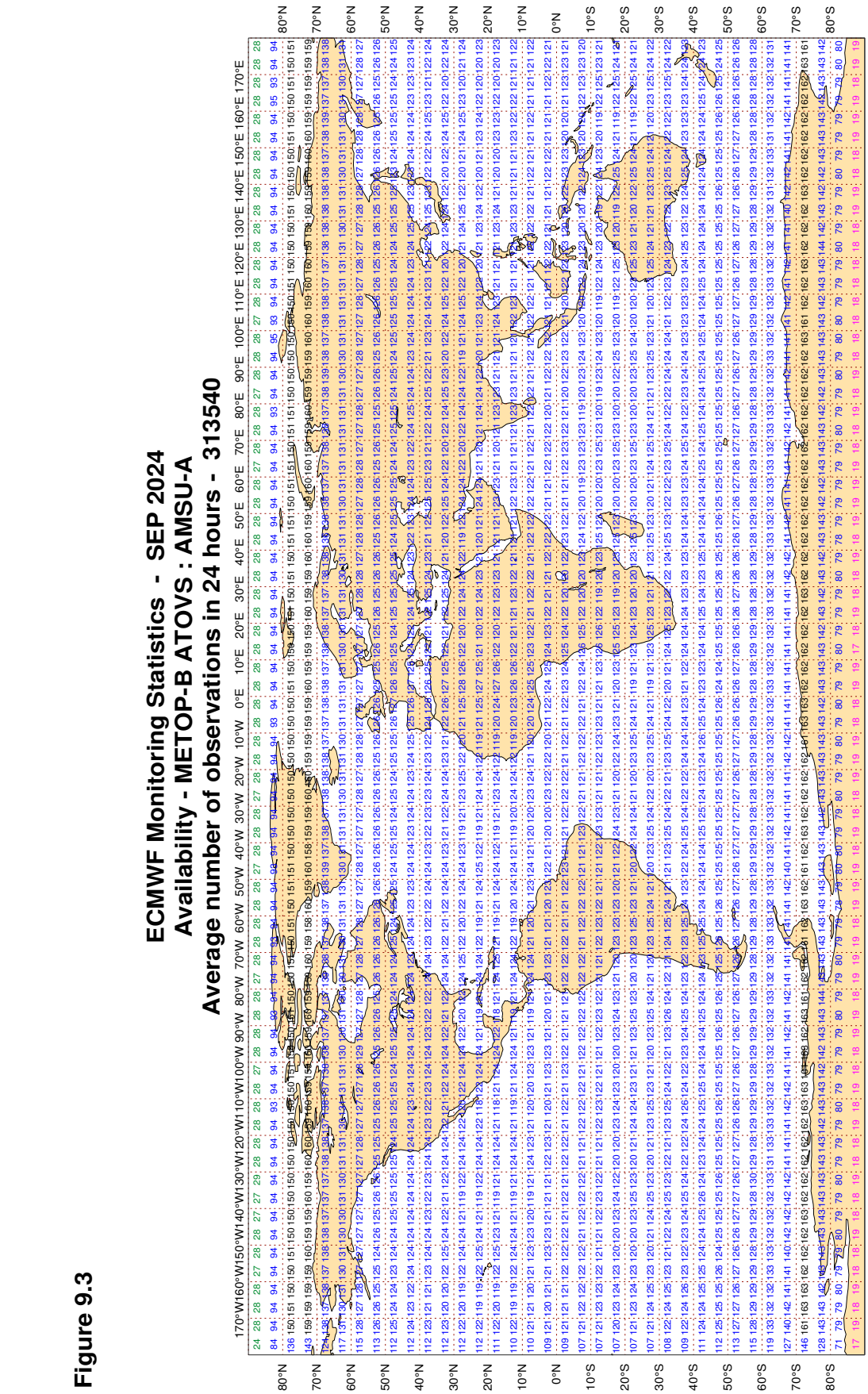
3.2.10 Figure 9.2 - Availability - AQUA ATOVS : AMSU-A

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                : SEP 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
2CYD8	99	P	SUR	33	0	0.7	-5.1	5.1
32ST0	99	P	SUR	108	9	1.9	9.4	9.6
3E3566	99	P	SUR	62	0	1.7	5.1	5.4
3EBY2	99	P	SUR	18	1	4.3	8.8	9.8
3FEN2	99	P	SUR	65	0	0.9	3.5	3.6
3FOS8	99	P	SUR	52	0	1.8	3.2	3.7
41082	99	P	SUR	120	0	1.2	-8.3	8.4
45201	99	P	SUR	108	19	6.2	5.9	8.6
7JUN	99	P	SUR	48	0	1.0	-3.5	3.6
7KBS	99	P	SUR	18	0	0.6	5.6	5.6
9HA3513	99	P	SUR	17	0	0.8	4.8	4.8
9HA3793	99	P	SUR	18	14	0.5	14.4	14.4
9HA4330	99	P	SUR	20	0	1.5	-3.2	3.5
9HA4638	99	P	SUR	55	1	1.9	6.9	7.1
9HA4777	99	P	SUR	67	1	3.9	3.8	5.5
9HA5209	99	P	SUR	77	24	3.6	11.4	11.9
9HA5677	99	P	SUR	30	28	1.5	9.8	9.9
9HA5682	99	P	SUR	17	1	3.2	-5.9	6.8
9HJB9	99	P	SUR	22	0	2.6	4.9	5.6
9V3913	99	P	SUR	78	0	1.3	5.6	5.7
9V8372	99	P	SUR	28	0	0.6	6.8	6.9
9V9375	99	P	SUR	29	0	2.6	4.8	5.4
9V9402	99	P	SUR	35	2	1.1	12.5	12.6
9V9404	99	P	SUR	52	0	2.5	7.8	8.1
9V9450	99	P	SUR	95	0	2.2	4.9	5.3
A8AK7	99	P	SUR	21	0	0.9	4.3	4.4
ATAH2	99	P	SUR	23	0	2.4	-4.8	5.4
BKIY	99	P	SUR	17	2	0.8	5.0	5.0
C6FB3	99	P	SUR	17	0	0.7	-6.6	6.7
D5264	99	P	SUR	18	0	1.7	5.9	6.1
D5ZH9	99	P	SUR	60	0	3.2	4.5	5.5
DUUFU3N	99	P	SUR	46	0	3.1	-3.1	4.3

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
KBYV56K	99	P	SUR	23	0	1.1	9.5	9.6
KSKM	99	P	SUR	46	0	0.4	3.2	3.2
LAHR7	99	P	SUR	26	0	1.0	5.8	5.9
LAMP5	99	P	SUR	17	0	2.2	-4.0	4.6
LAOL5	99	P	SUR	32	0	1.6	3.7	4.0
LAQL7	99	P	SUR	44	0	1.5	5.1	5.3
LAZV5	99	P	SUR	24	0	0.7	-3.2	3.3
OXBB2	99	P	SUR	23	0	0.5	3.9	4.0
OZHS2	99	P	SUR	61	0	0.6	6.3	6.4
SBPQ	99	P	SUR	92	0	0.3	-4.8	4.8
SKEC	99	P	SUR	27	27	0.0	0.0	0.0
TNXNNFX	99	P	SUR	23	0	0.8	-3.2	3.3
UBBO5	99	P	SUR	21	0	2.0	-11.4	11.5
UHXO	99	P	SUR	38	1	4.2	4.4	6.1
V7A2005	99	P	SUR	34	0	1.1	3.4	3.5
V7A4787	99	P	SUR	84	0	2.1	3.0	3.7
V7A5254	99	P	SUR	79	3	1.6	9.5	9.7
V7A6081	99	P	SUR	51	0	1.3	4.4	4.6
V7A6082	99	P	SUR	89	0	3.5	4.1	5.5
V7A6509	99	P	SUR	17	0	1.3	8.1	8.2
V7QJ3	99	P	SUR	19	0	4.0	3.9	5.6
V7QK9	99	P	SUR	39	0	1.1	4.4	4.6
V7QT7	99	P	SUR	32	0	1.4	7.7	7.8
VRDW2	99	P	SUR	87	0	0.7	-4.5	4.6
VREX4	99	P	SUR	17	1	1.5	9.6	9.7
VRGO6	99	P	SUR	15	0	0.8	-6.4	6.5
VRGO8	99	P	SUR	42	0	0.9	3.6	3.7
VRLJ4	99	P	SUR	16	1	2.7	8.6	9.1
VRME7	99	P	SUR	28	0	0.5	10.9	10.9
VROD3	99	P	SUR	45	0	3.8	3.1	4.9
VRQS3	99	P	SUR	22	0	2.1	9.9	10.1
VRRH6	99	P	SUR	16	0	1.6	4.2	4.5
VRRI5	99	P	SUR	42	0	3.4	3.4	4.8
VRRQ4	99	P	SUR	16	0	1.0	6.5	6.6
VRVC3	99	P	SUR	15	0	5.2	5.8	7.8
VRVC6	99	P	SUR	19	0	0.3	4.1	4.1
VRVO3	99	P	SUR	18	0	0.7	8.9	8.9
VRVR2	99	P	SUR	21	0	0.7	-7.5	7.6
VRWN4	99	P	SUR	23	0	0.9	-5.8	5.9
VRZK8	99	P	SUR	71	0	0.9	4.5	4.6
WCY2920	99	P	SUR	106	0	0.8	-3.9	4.0

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
WDK5676	99	P	SUR	120	0	0.7	-3.6	3.7
WDK7414	99	P	SUR	27	0	1.3	-3.6	3.8
WGEB	99	P	SUR	116	0	0.5	6.0	6.1
WMCS	99	P	SUR	41	2	4.0	4.0	5.7
WSFABLK	99	P	SUR	27	0	0.6	-4.7	4.7
WTEP	99	P	SUR	111	11	5.7	0.1	5.7
WYM9567	99	P	SUR	120	0	0.7	-3.0	3.1
XSPQWLM	99	P	SUR	15	0	0.5	3.1	3.1
ZCEU8	99	P	SUR	34	0	1.2	5.0	5.1
ZGFY4	99	P	SUR	36	0	0.6	-8.8	8.8

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

```
          LIST OF SUSPECT STATIONS        : SHIPS + FIXED MARINE PLATFORMS
                    MONITORING CENTRE     : ECMWF
                    ELEMENT MONITORED     : WIND SPEED (M/S)
                    AREA                  : GLOBAL
                    PERIOD                : SEP 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

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                : SEP 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
44489	99	DIRN	SUR	86	0	0	16.3	-31.4	35.3
45165	99	DIRN	SUR	71	0	0	56.9	56.4	80.1
45174	99	DIRN	SUR	65	0	0	31.4	42.0	52.4
45199	99	DIRN	SUR	48	0	0	18.1	40.7	44.6
45207	99	DIRN	SUR	55	0	0	29.6	-37.4	47.7
45209	99	DIRN	SUR	54	0	0	23.0	-37.1	43.7
46131	99	DIRN	SUR	50	0	0	23.3	50.0	55.2
46145	99	DIRN	SUR	72	0	0	17.7	-38.1	42.0

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                 : SEP 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
1501718	99	P	SUR	-34	-42	719	197	5.0	6.6	8.3
1701718	99	P	SUR	20	-66	707	707	0.0	0.0	0.0
2302627	99	P	SUR	11	73	613	550	2.9	-10.8	11.2
2501583	99	P	SUR	80	-160	470	0	3.0	4.7	5.6
3201836	99	P	SUR	10	-159	720	165	5.7	-8.3	10.1
3301510	99	P	SUR	-31	5	35	21	6.4	-4.0	7.5
3301523	99	P	SUR	-15	-39	712	0	0.3	-4.0	4.0
3301702	99	P	SUR	-38	19	719	115	7.3	0.6	7.3
3401636	99	P	SUR	-31	-117	720	0	0.3	-5.2	5.2
3801723	99	P	SUR	53	-133	728	540	4.4	9.9	10.9
4100082	99	P	SUR	36	-75	4286	7	1.2	-8.4	8.5
41082	99	P	SUR	36	-75	716	1	1.2	-8.4	8.5
4500201	99	P	SUR	42	83	3839	657	6.3	5.8	8.6
45201	99	P	SUR	42	83	645	111	6.3	5.8	8.6
4601763	99	P	SUR	27	-162	400	296	1.5	12.9	13.0
4601776	99	P	SUR	27	-129	510	0	3.3	4.4	5.5
4602563	99	P	SUR	34	-171	719	682	2.7	-11.1	11.5
4701533	99	P	SUR	70	167	45	29	0.2	-0.1	0.2
4701543	99	P	SUR	74	-140	577	577	0.0	0.0	0.0
4701545	99	P	SUR	84	168	577	577	0.0	0.0	0.0
4701549	99	P	SUR	81	127	85	30	4.2	-4.4	6.0
4701555	99	P	SUR	64	-22	37	0	0.3	-5.8	5.8
4701558	99	P	SUR	79	-18	60	0	0.5	-4.7	4.7
4701580	99	P	SUR	77	-150	420	18	6.1	0.8	6.1
4801771	99	P	SUR	54	-32	720	720	0.0	0.0	0.0
4802662	99	P	SUR	70	-125	710	695	1.9	10.1	10.3
5103563	99	P	SUR	34	-151	469	194	7.9	-2.0	8.1
5501735	99	P	SUR	-44	-138	720	720	0.0	0.0	0.0
5601757	99	P	SUR	-17	120	90	90	0.0	0.0	0.0
5801978	99	P	SUR	56	-42	145	5	4.9	5.5	7.3
7801693	99	P	SUR	19	-174	720	0	0.3	-4.4	4.4
7801698	99	P	SUR	63	2	65	65	0.0	0.0	0.0

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

WMO IDENT	OBS TIME	ELM	ME LEVEL	LAT	N LONG	N OBS	GROSS	SD	BIAS	RMS
7810258	99	P	SUR	33	-117	34	0	0.5	-6.7	6.7
7810259	99	P	SUR	33	-117	79	0	0.4	-6.8	6.8
7810260	99	P	SUR	33	-117	32	0	0.5	-7.0	7.0
7810261	99	P	SUR	33	-117	37	0	0.4	-6.6	6.6
7810262	99	P	SUR	33	-117	38	0	0.4	-6.9	6.9
7810263	99	P	SUR	33	-117	30	0	0.4	-7.4	7.4
7810264	99	P	SUR	33	-117	38	0	0.6	-7.0	7.0
7810265	99	P	SUR	33	-117	35	0	0.5	-6.8	6.8
7810266	99	P	SUR	33	-117	109	0	0.6	-6.5	6.5
7810267	99	P	SUR	33	-117	31	0	0.4	-6.8	6.8
7810268	99	P	SUR	33	-117	34	0	0.5	-6.7	6.7
7810269	99	P	SUR	33	-117	34	0	3.2	-6.3	7.1
7810270	99	P	SUR	33	-117	33	0	0.5	-6.6	6.6
7810271	99	P	SUR	33	-117	35	0	0.4	-6.8	6.8
7810272	99	P	SUR	33	-117	32	0	0.4	-6.9	6.9
7810273	99	P	SUR	33	-117	37	0	3.2	-6.7	7.4
7810274	99	P	SUR	33	-117	36	0	0.5	-6.7	6.8
7810275	99	P	SUR	33	-117	36	0	0.4	-6.8	6.8
7810276	99	P	SUR	33	-117	32	0	0.4	-6.8	6.8
7810277	99	P	SUR	33	-117	34	0	0.7	-6.9	6.9
7810278	99	P	SUR	33	-117	34	0	0.4	-6.7	6.7
7810279	99	P	SUR	33	-117	37	0	0.5	-6.7	6.8
7810280	99	P	SUR	33	-117	33	0	0.8	-6.8	6.8
7810281	99	P	SUR	33	-117	78	0	0.0	-6.9	6.9
7810282	99	P	SUR	33	-117	79	0	0.4	-7.0	7.0
7810283	99	P	SUR	33	-117	34	0	0.4	-6.9	6.9
7810284	99	P	SUR	33	-117	35	0	0.5	-6.5	6.5
7810285	99	P	SUR	33	-117	33	0	0.5	-7.1	7.1
7810286	99	P	SUR	33	-117	34	0	0.5	-6.7	6.7

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                : SEP 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
2300454	99	SPEED	SUR	10	73	197	0	0	1.3	-5.8	5.9
23454	99	SPEED	SUR	10	73	175	0	0	1.4	-6.0	6.2
3200305	99	SPEED	SUR	-8	-95	25	0	0	0.6	-7.9	7.9

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

```
          LIST OF SUSPECT STATIONS         : DRIFTER
                    MONITORING CENTRE      : ECMWF
                    ELEMENT MONITORED      : WIND DIRECTION (DEGREES)
                    PERIOD                 : SEP 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
1300009	99	DIRN	SUR	8	-38	182	0	0	44.7	53.9	70.0
2300094	99	DIRN	SUR	14	84	172	0	0	17.2	21.8	27.8
23094	99	DIRN	SUR	14	84	151	0	0	18.1	21.8	28.3
4100300	99	DIRN	SUR	16	-57	67	0	0	145.9	31.6	149.3
4400488	99	DIRN	SUR	45	-61	601	0	0	17.6	-21.7	27.9
4400489	99	DIRN	SUR	45	-61	529	0	0	17.7	-29.6	34.5
44488	99	DIRN	SUR	45	-61	566	0	0	17.7	-21.7	28.0
44489	99	DIRN	SUR	46	-61	519	0	0	17.0	-30.1	34.5
4500013	99	DIRN	SUR	43	-88	884	0	0	22.6	-24.9	33.6
4500164	99	DIRN	SUR	42	-82	510	0	0	29.2	-20.8	35.9
4500165	99	DIRN	SUR	45	-83	2597	0	0	59.5	49.0	77.1
4500174	99	DIRN	SUR	42	-88	2596	0	0	19.9	44.7	48.9
4500199	99	DIRN	SUR	43	-88	579	0	0	19.0	38.8	43.2
4500200	99	DIRN	SUR	42	-83	446	0	0	15.0	22.2	26.8
4500206	99	DIRN	SUR	42	-82	2315	0	0	24.0	-20.9	31.8
4500207	99	DIRN	SUR	42	-81	1796	0	0	27.3	-35.6	44.8
4500209	99	DIRN	SUR	43	-82	1360	0	0	24.1	-40.1	46.8
4500218	99	DIRN	SUR	44	-88	516	0	0	19.3	-20.6	28.2
45013	99	DIRN	SUR	43	-88	455	0	0	23.2	-24.5	33.7
45164	99	DIRN	SUR	42	-82	498	0	0	28.4	-21.8	35.8
45165	99	DIRN	SUR	45	-83	439	0	0	60.1	49.8	78.0
45170	99	DIRN	SUR	42	-87	458	0	0	27.8	20.5	34.5
45174	99	DIRN	SUR	42	-88	386	0	0	25.5	45.2	51.9
45198	99	DIRN	SUR	42	-88	423	0	0	61.0	-11.2	62.1
45199	99	DIRN	SUR	43	-88	300	0	0	21.4	38.7	44.2
45200	99	DIRN	SUR	42	-83	88	0	0	13.2	22.1	25.7
45206	99	DIRN	SUR	42	-82	362	0	0	23.6	-20.2	31.1
45207	99	DIRN	SUR	42	-81	321	0	0	26.7	-37.1	45.7
45209	99	DIRN	SUR	43	-82	311	0	0	25.8	-37.5	45.5
45218	99	DIRN	SUR	44	-88	537	0	0	20.0	-20.7	28.8
4600092	99	DIRN	SUR	37	-122	294	0	0	22.2	31.1	38.2

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

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
4600125	99	DIRN	SUR	48	-123	525	0	0	28.0	29.7	40.8
4600145	99	DIRN	SUR	54	-132	439	0	0	19.7	-36.6	41.6
46092	99	DIRN	SUR	37	-122	235	0	0	22.9	25.5	34.3
46125	99	DIRN	SUR	48	-123	81	0	0	26.3	27.3	37.9
46131	99	DIRN	SUR	50	-125	293	0	0	24.9	48.8	54.8
46145	99	DIRN	SUR	54	-132	419	0	0	21.3	-37.2	42.8
6301004	99	DIRN	SUR	72	20	563	0	0	12.8	-34.3	36.6
6600022	99	DIRN	SUR	54	14	148	1	0	63.2	44.6	77.3

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                : SEP 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	29	0	3.9	77.4	77.5
01400	00	Z	1000	57	3	30	0	3.9	77.6	77.7
17607	12	Z	250	35	33	25	0	58.5	-59.3	83.3
22217	12	Z	150	67	32	25	1	94.5	14.9	95.7
22217	00	Z	50	67	32	16	4	170.7	-94.5	195.1
36003	12	Z	50	52	77	20	0	130.2	55.6	141.6
38341	12	Z	250	43	71	19	7	67.3	-73.3	99.5
38341	00	Z	200	43	71	22	8	158.8	-13.7	159.4
40800	00	Z	300	33	52	24	12	69.4	-20.2	72.3
65344	12	Z	1000	6	2	17	0	6.9	33.5	34.2
68994	00	Z	1000	-47	38	30	0	12.4	30.9	33.3
68994	12	Z	1000	-47	38	29	0	11.4	27.0	29.3
78988	00	Z	1000	12	-69	27	0	30.0	12.5	32.5
78988	12	Z	1000	12	-69	28	0	30.6	20.8	37.0
91680	12	Z	1000	-18	177	30	0	0.0	32.0	32.0
91680	00	Z	1000	-18	177	30	0	4.4	32.7	33.0
96645	00	Z	250	-3	112	24	1	55.1	-55.6	78.3

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                : SEP 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	150	35	33	18	0	-21.7	-5.7	27.0
38341	12	V	100	43	71	15	0	-7.3	-0.5	16.5
38341	00	V	150	43	71	20	1	-9.6	-6.0	16.7
40179	12	V	150	32	35	18	0	-20.4	-9.7	26.7
40179	00	V	150	32	35	19	0	-18.5	-7.1	25.0
40800	00	V	200	33	52	21	1	-0.7	-2.1	16.0
48407	00	V	150	15	105	22	0	4.5	-1.0	15.2

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                : SEP 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
34247	00	DD	50	41	24	-16.0	7.1	23.9
34247	12	DD	50	41	23	-16.4	5.2	25.4
51463	00	DD	44	88	29	-10.4	4.3	7.0
51463	12	DD	44	88	29	-10.4	2.8	6.6
54340	00	DD	42	124	29	-12.1	0.7	5.4
54340	12	DD	42	124	30	-12.6	2.5	5.3

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

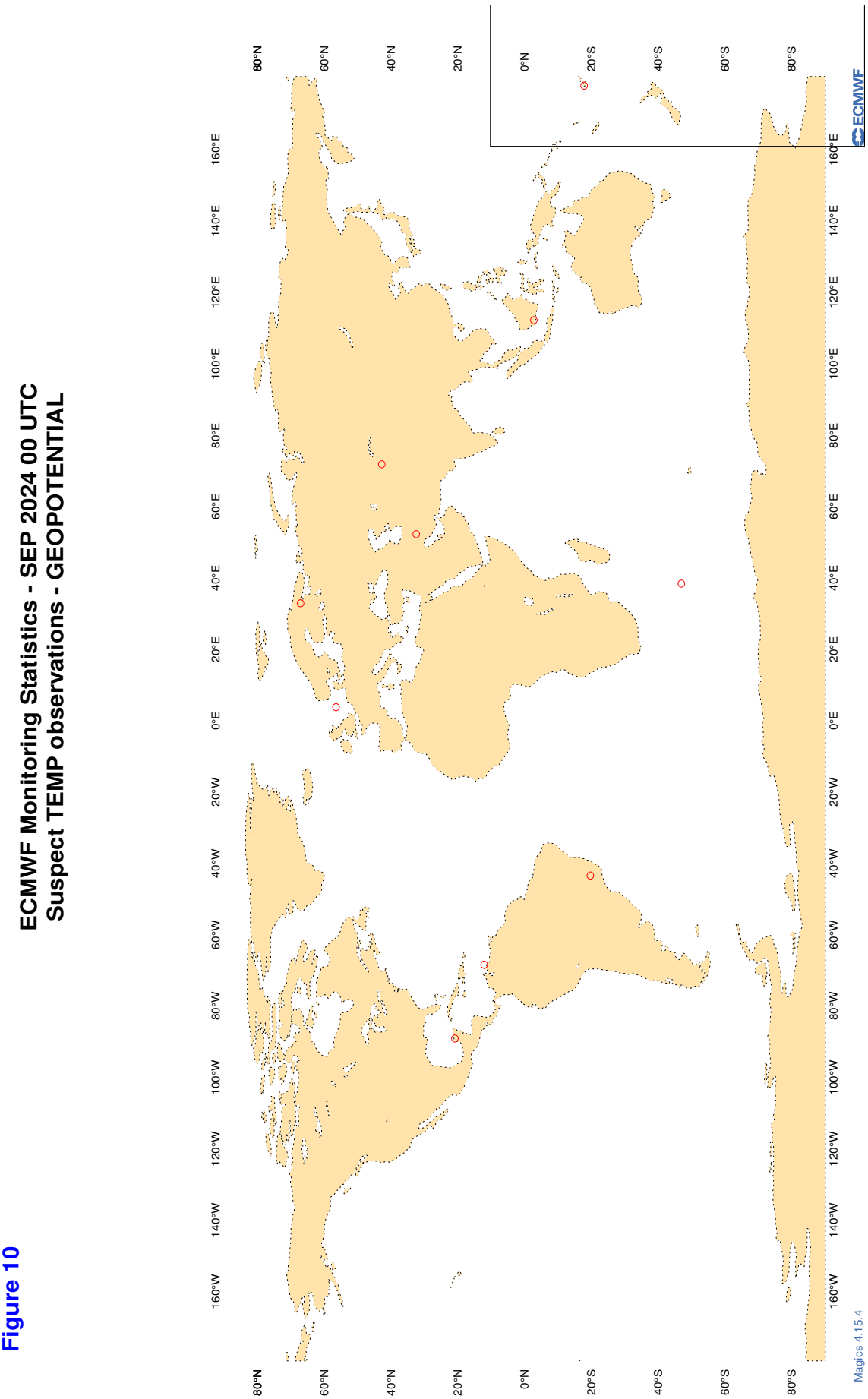
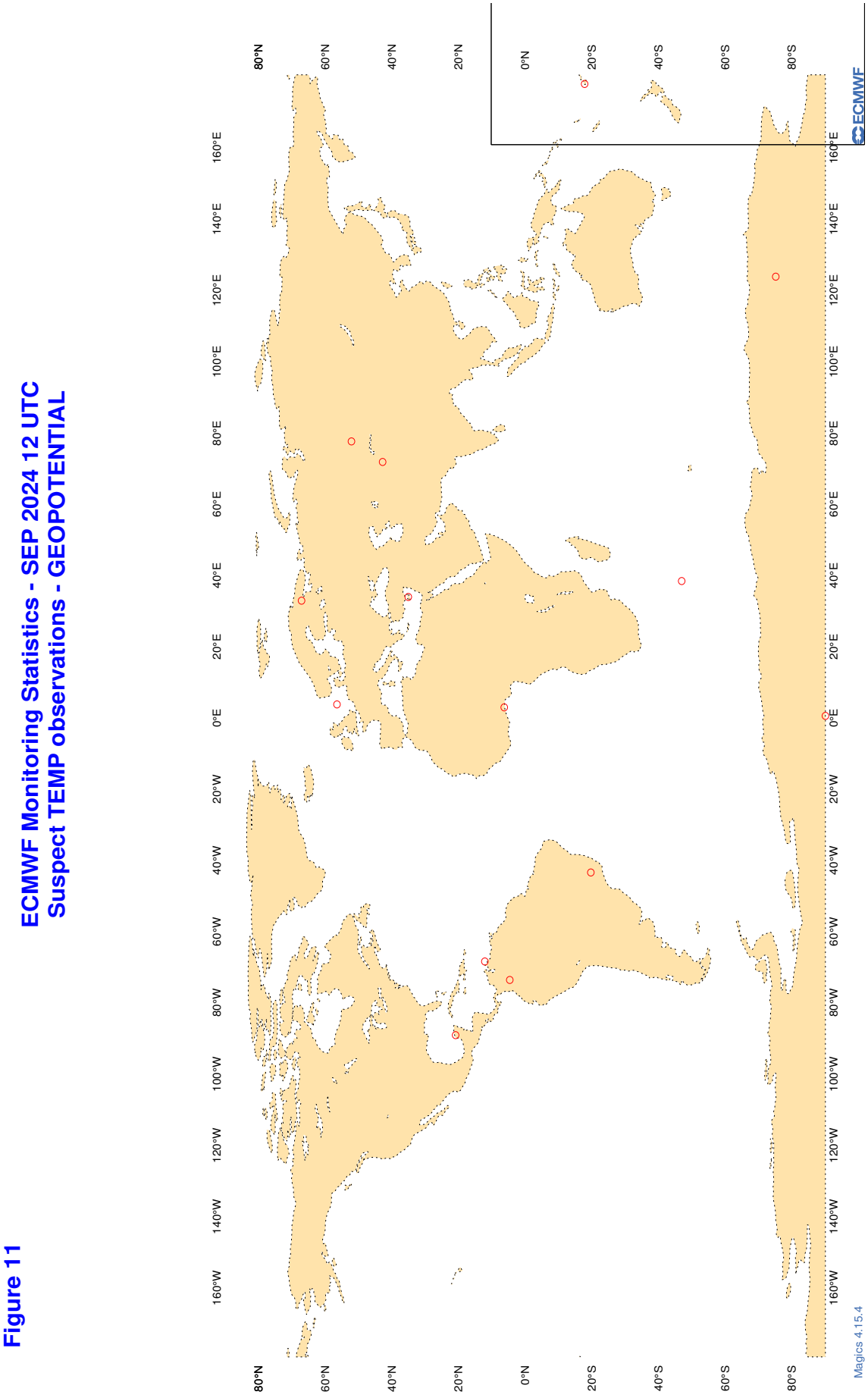
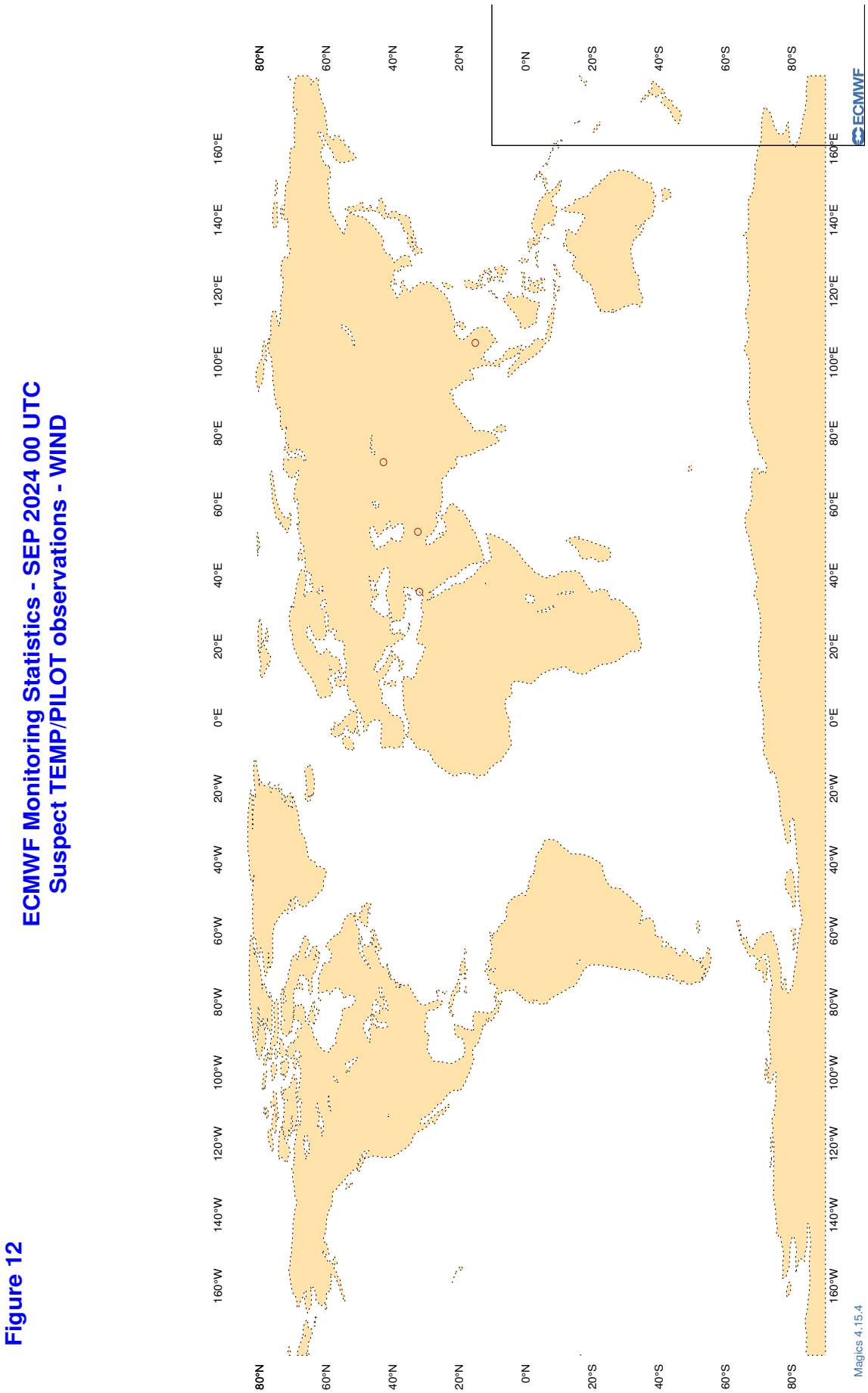


Figure 10

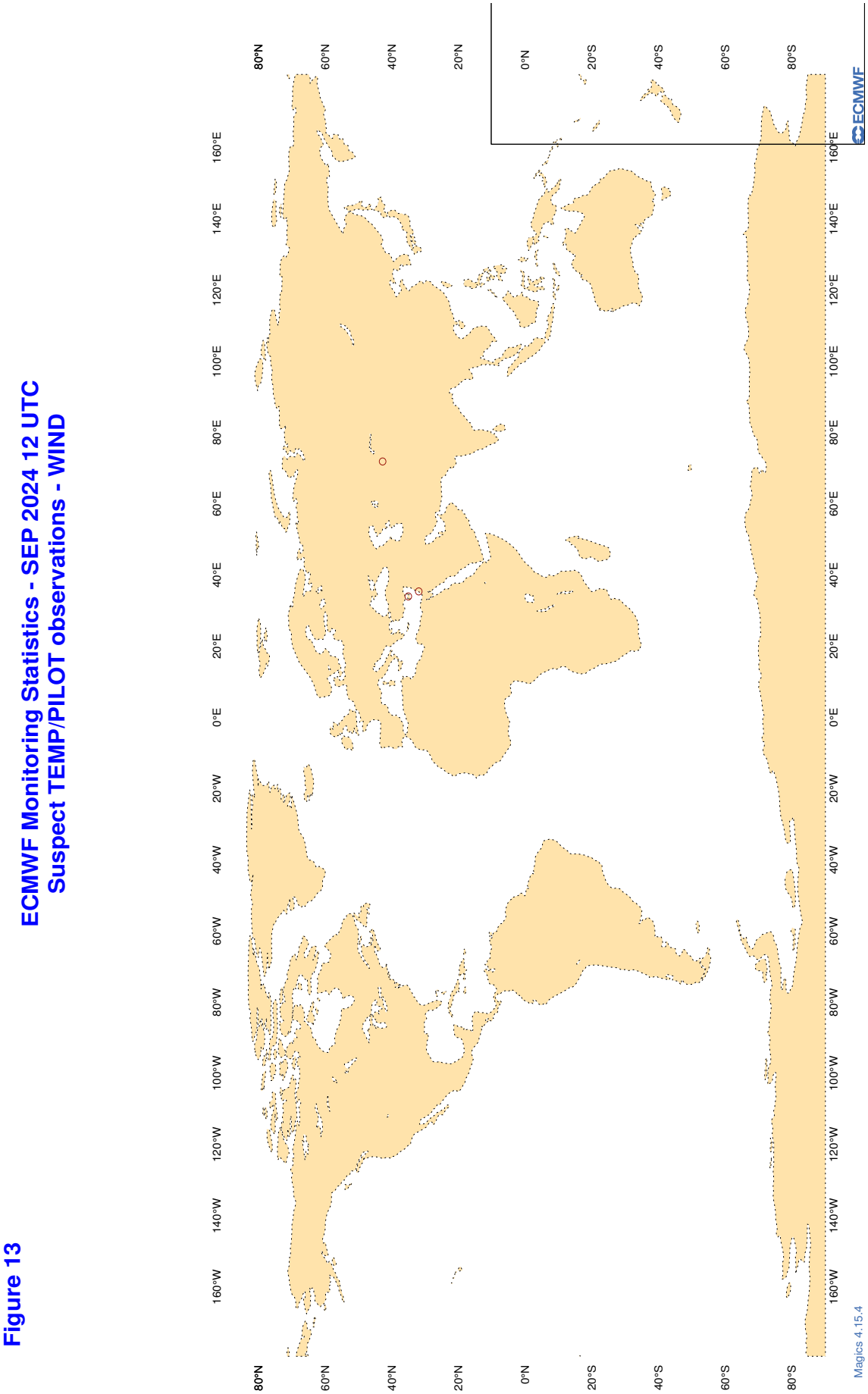
3.2.22 Figure 11 - Suspect TEMP observations - geopotential : 12 UTC



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

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
2EERVT	00	Z	100	5	11.3	-0.7
2EERVT	12	Z	100	6	4.5	4.2
7JUNA4	12	Z	100	10	13.2	-9.1
7JUNA4	00	Z	100	6	7.6	-6.3
7KPB	00	Z	100	1	10.5	10.5
7KPB	12	Z	100	7	4.9	-1.2
ASDE09	12	Z	100	1	147.2	-147.2
ATGU3F	12	Z	100	13	30.1	-28.6
ATGU3F	00	Z	100	7	30.2	-28.9
DBLK	12	Z	100	30	8.9	7.3
DBLK	00	Z	100	30	10.3	7.5
FPUW5G	12	Z	100	1	2.2	2.2
JNKN7J	12	Z	100	5	25.3	21.4
JNKN7J	00	Z	100	5	25.8	24.1
KJJF9X	12	Z	100	8	69.5	-41.6
KJJF9X	00	Z	100	7	18.5	-15.4
LAGY8	00	Z	100	4	129.4	-129.2
LAGZ8	12	Z	100	3	50.2	49.6
LAGZ8	00	Z	100	1	41.2	41.2
LRYQE3	12	Z	100	5	60.5	47.9
LRYQE3	00	Z	100	4	7.7	-6.4
SMLQ	12	Z	100	16	5.2	-2.1
SMLQ	00	Z	100	14	5.7	-2.4
UXK5JT	12	Z	100	6	13.6	-12.4
UXK5JT	00	Z	100	4	18.6	-16.5
WDK38H	12	Z	100	13	17.0	-8.8
XKQLWQ	12	Z	100	22	72.1	5.4
YLV96W	12	Z	100	9	16.9	-14.7
YLV96W	00	Z	100	10	9.3	-5.6
ZSNO	00	Z	100	1	124.9	-124.9
ZVQEQC	12	Z	100	26	20.2	3.9
ZVQEQC	00	Z	100	26	7.9	6.1

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

WMO IDENT	OB TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
2EERVT	00	V	100	5	2.3	0.7	0.4
2EERVT	12	V	100	5	1.9	0.1	0.7
7JUNA4	12	V	100	10	3.3	0.2	0.0
7JUNA4	00	V	100	6	2.8	0.2	1.2
7KPB	00	V	100	1	1.8	1.4	1.2
7KPB	12	V	100	7	3.0	0.6	1.1
ASDE09	12	V	100	1	1.3	0.8	-1.0
ATGU3F	12	V	100	13	3.3	-0.2	0.1
ATGU3F	00	V	100	7	3.5	-2.1	0.0
DBLK	12	V	100	30	5.2	-0.6	1.6
DBLK	00	V	100	30	4.4	0.1	1.7
FPUW5G	12	V	100	0	0.0	0.0	0.0
JNKN7J	12	V	100	5	2.6	0.4	1.5
JNKN7J	00	V	100	5	2.7	0.4	0.0
KJJF9X	12	V	100	8	2.3	0.2	0.1
KJJF9X	00	V	100	7	3.1	-0.1	0.1
LAGY8	00	V	100	4	5.4	3.8	-0.7
LAGZ8	12	V	100	3	4.0	0.2	1.5
LAGZ8	00	V	100	1	1.2	-1.2	0.2
LRYQE3	12	V	100	5	3.2	1.0	-0.6
LRYQE3	00	V	100	4	2.0	-0.3	0.7
SMLQ	12	V	100	16	2.4	-0.2	-0.1
SMLQ	00	V	100	13	2.7	-0.9	-0.1
UXK5JT	12	V	100	6	4.5	0.1	0.3
UXK5JT	00	V	100	4	3.9	-0.6	-1.4
WDK38H	12	V	100	13	2.5	0.1	0.1
XKQLWQ	12	V	100	20	4.5	0.9	-0.9
YLV96W	12	V	100	9	2.1	0.5	0.1
YLV96W	00	V	100	10	2.8	0.2	-0.2
ZSNO	00	V	100	1	13.3	13.0	2.6
ZVQEQC	12	V	100	22	4.1	-0.7	0.0
ZVQEQC	00	V	100	26	3.7	0.6	-0.6

3.2.27 Figure 14 - SATOB Winds: 700-1000hPa

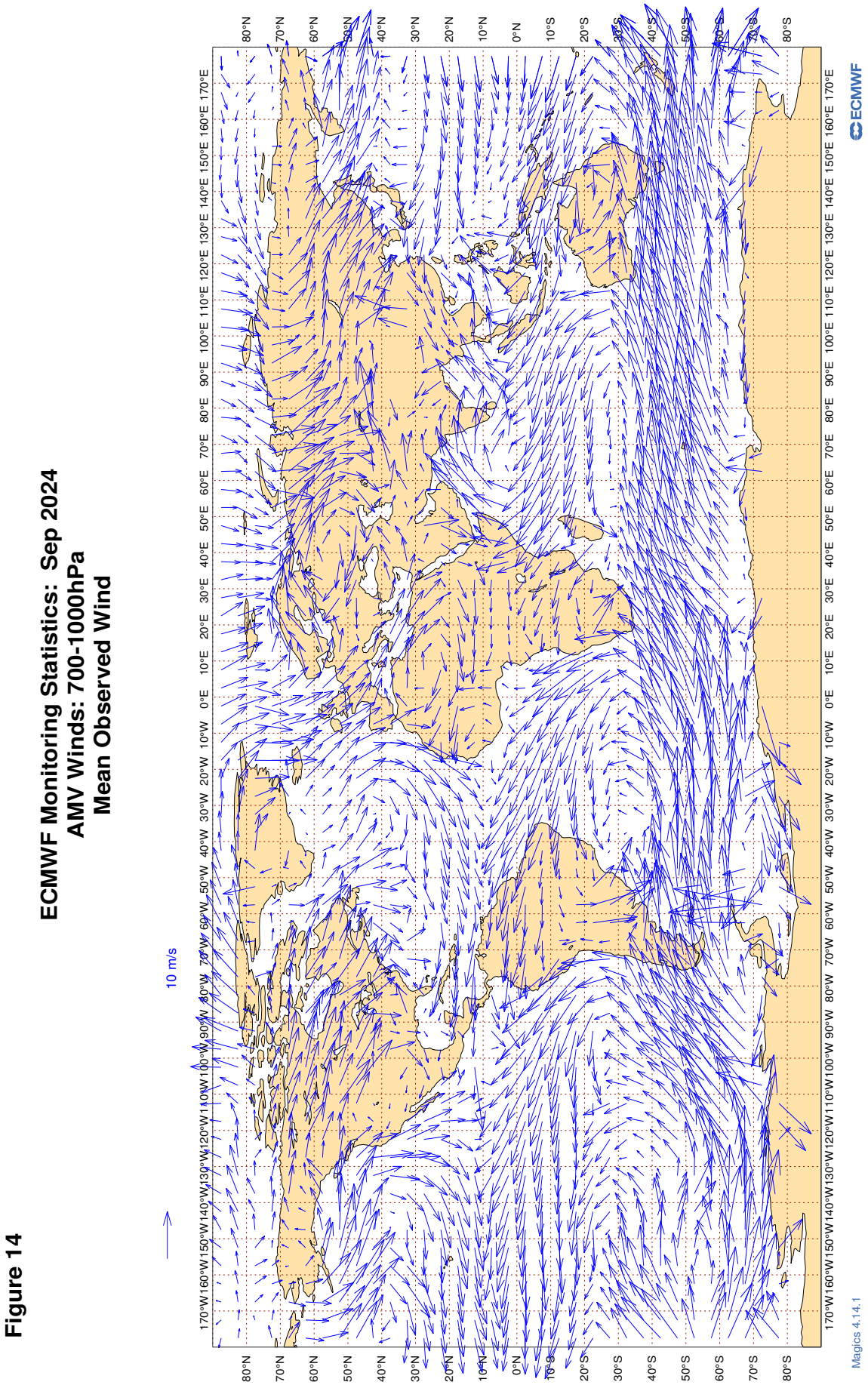


Figure 14

3.2.28 Figure 15 - SATOB Winds: 150- 400hPa

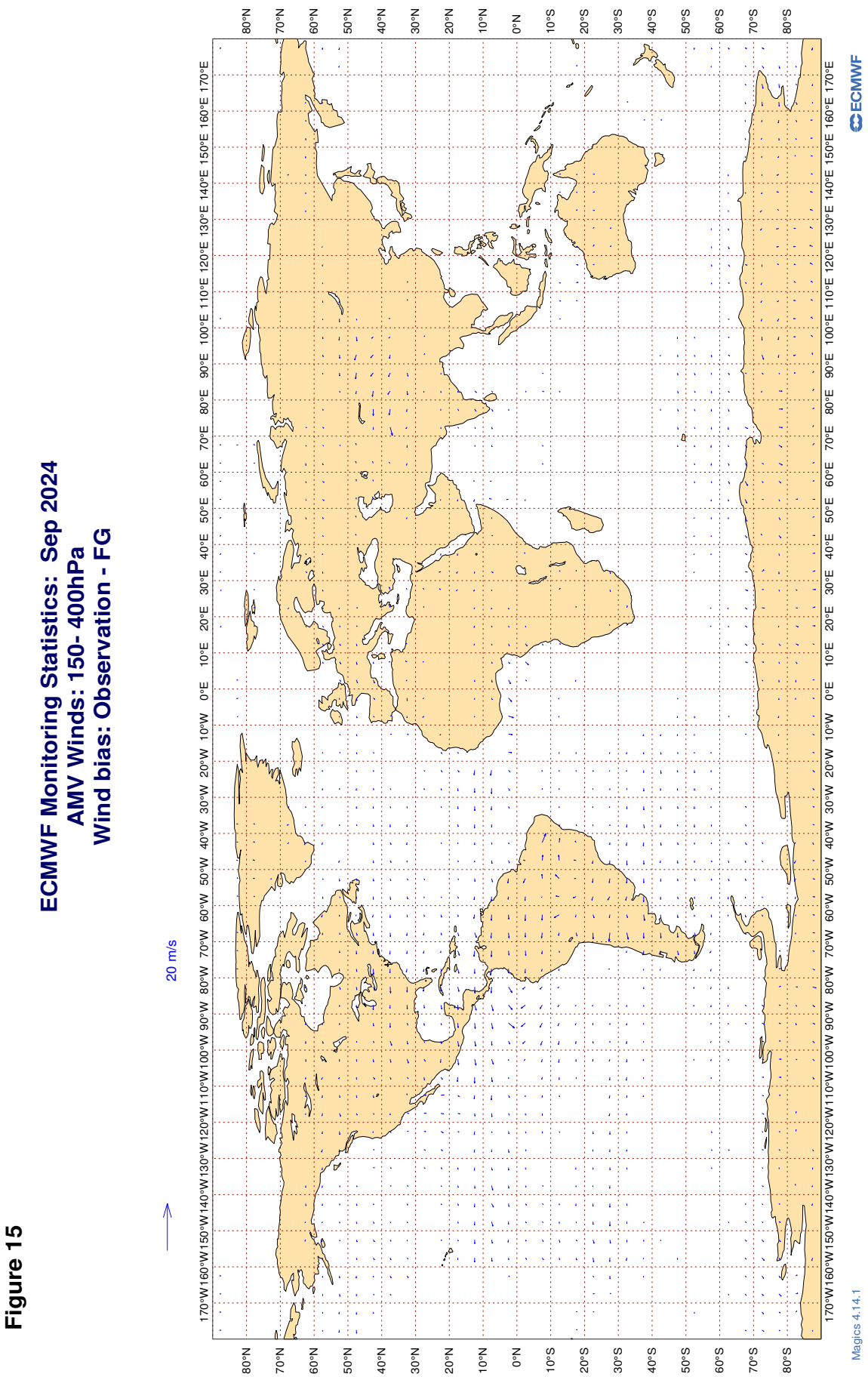


Figure 15

3.2.29 Figure 16 - SATOB Winds: 700-1000hPa

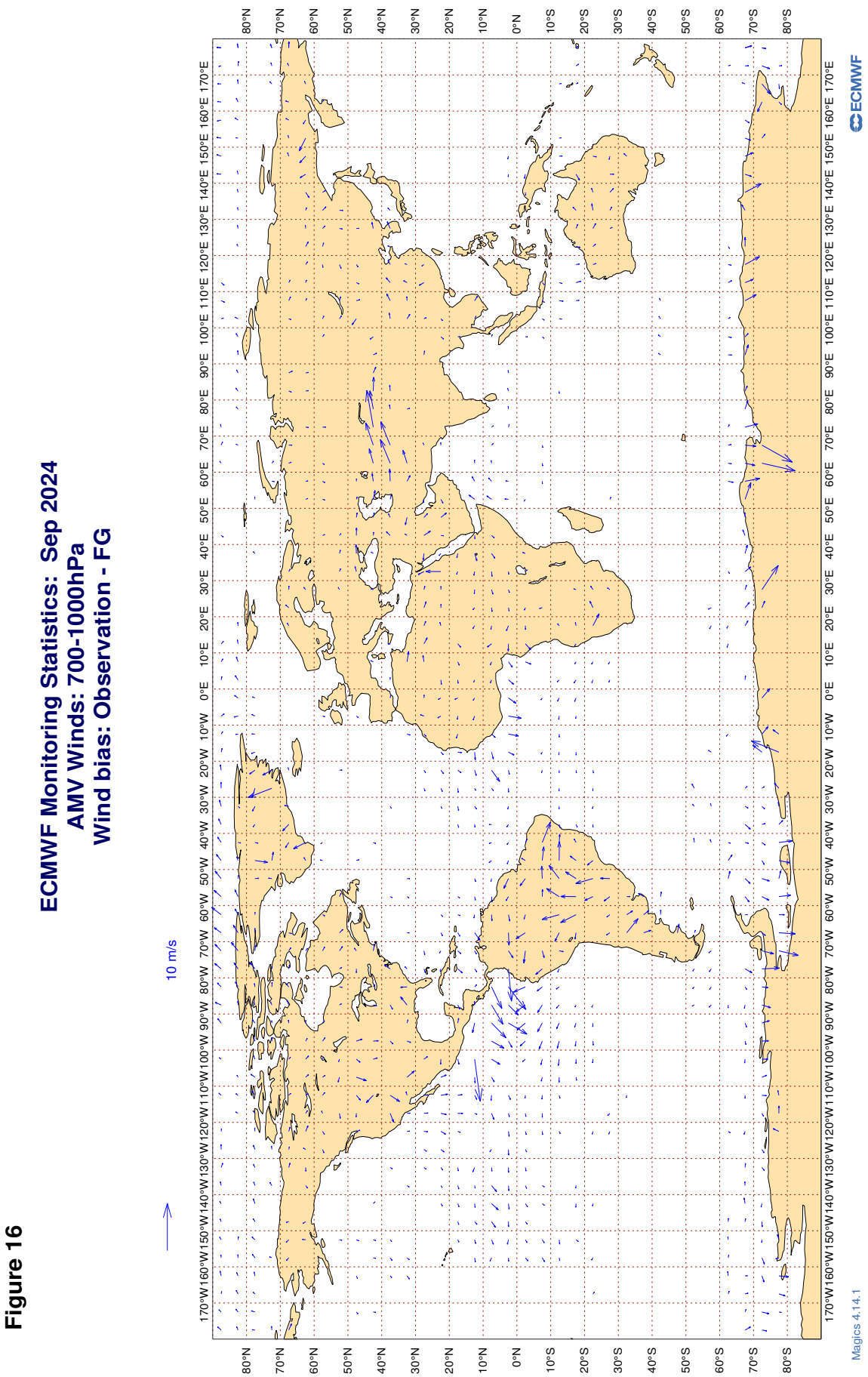


Figure 16

3.2.30 Figure 17 - SATOB Winds: 150- 400hPa

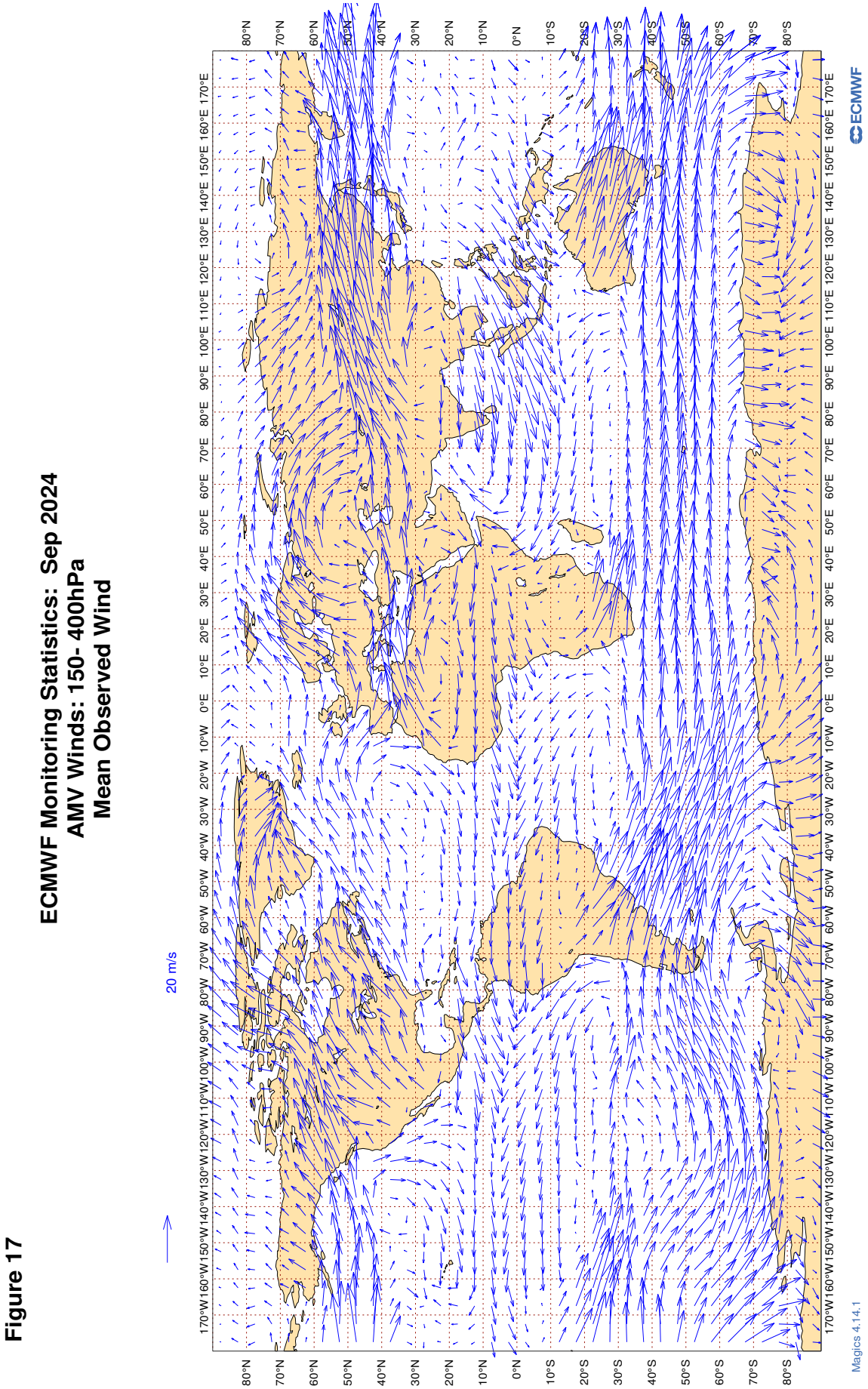


Figure 17

3.2.31 Figure 18 - AIRCRAFT Winds: 150- 300hPa

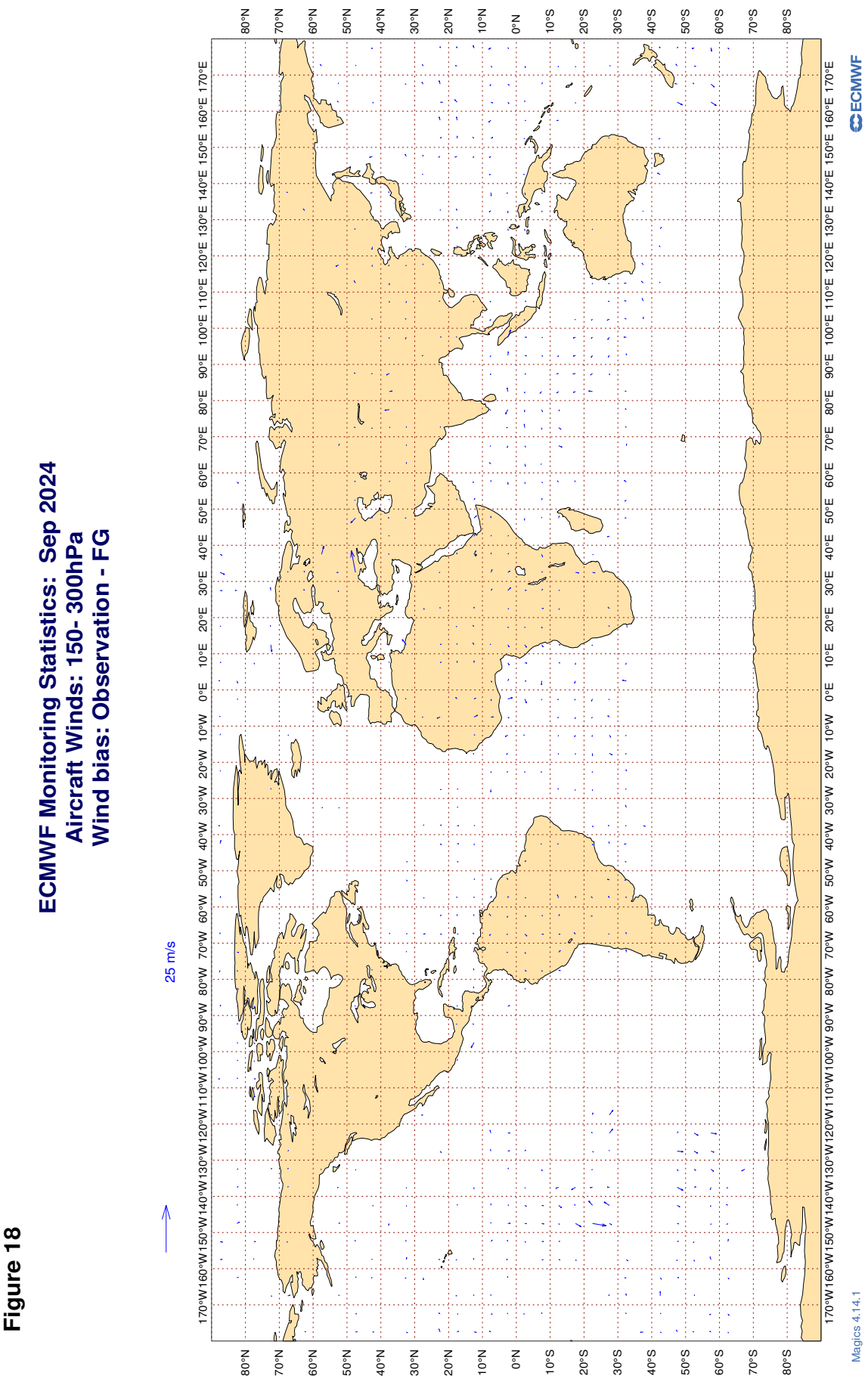


Figure 18

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 : SEP 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
AAL	99	V	300-150	54725	4	0	5.0	0.1
AAR	99	V	300-150	182	0	0	4.4	-1.4
ABD	99	V	300-150	968	0	0	4.0	-0.3
ABP	99	V	300-150	30	0	0	3.5	0.5
ACA	99	V	300-150	39464	3	0	4.6	0.1
ACI	99	V	300-150	238	0	0	3.1	0.4
ADS	99	V	300-150	24	0	0	3.6	-0.3
ADY	99	V	300-150	152	0	1	3.3	0.1
ADZ	99	V	300-150	485	0	0	3.5	-0.2
AEA	99	V	300-150	541	4	0	6.7	0.4
AFR	99	V	300-150	37831	1	0	3.8	0.0
AIC	99	V	300-150	4886	1	0	4.9	0.1
AJO	99	V	300-150	33	0	0	3.6	0.0
AJT	99	V	300-150	176	0	0	3.2	0.3
ALE	99	V	300-150	30	0	0	2.1	0.6
ALK	99	V	300-150	2176	0	0	3.0	0.3
AME	99	V	300-150	31	0	0	5.2	0.8
AMX	99	V	300-150	6139	10	0	6.4	0.0
ANA	99	V	300-150	166	0	0	5.0	-0.2
ANZ	99	V	300-150	14597	0	0	3.5	0.3
AOJ	99	V	300-150	207	0	0	3.5	-0.4
ASA	99	V	300-150	42	0	10	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
ASL	99	V	300-150	1218	0	0	3.3	0.2
ASP	99	V	300-150	41	0	0	3.2	-0.8
ASY	99	V	300-150	95	0	0	6.5	1.2
ATC	99	V	300-150	325	0	0	5.3	0.2
ATG	99	V	300-150	68	0	1	4.2	-0.2
ATN	99	V	300-150	62	0	5	5.0	0.6
AUA	99	V	300-150	5687	3	0	5.0	-0.1
AVA	99	V	300-150	732	3	0	6.2	0.2
AWC	99	V	300-150	98	0	0	3.5	-0.4
AXB	99	V	300-150	37	0	0	3.3	0.7
AXM	99	V	300-150	46	0	13	6.0	0.0
AXY	99	V	300-150	21	0	0	4.3	1.2
AZG	99	V	300-150	938	0	0	3.8	0.0
BAF	99	V	300-150	75	0	0	3.6	-0.3
BAH	99	V	300-150	30	0	0	2.1	-0.1
BAW	99	V	300-150	50535	2	0	4.3	0.1
BBC	99	V	300-150	841	2	0	4.7	0.3
BCS	99	V	300-150	1362	0	0	3.2	0.3
BEL	99	V	300-150	1590	0	0	3.1	0.4
BFF	99	V	300-150	22	0	0	6.1	0.2
BLU	99	V	300-150	45	0	0	3.5	-1.3
BMW	99	V	300-150	26	0	0	3.1	0.1
BOX	99	V	300-150	4885	0	0	3.5	0.1
BOX	99	V	300-150	70	0	0	2.6	0.1
BQA	99	V	300-150	34	0	0	3.5	0.6
BQB	99	V	300-150	37	0	0	3.1	0.0
BTX	99	V	300-150	138	0	0	4.2	0.6
BVR	99	V	300-150	45	0	0	3.7	-0.3
CAL	99	V	300-150	1339	0	0	4.0	0.3
CBJ	99	V	300-150	137	0	0	4.2	0.3
CCA	99	V	300-150	336	0	1	4.3	0.2
CEB	99	V	300-150	616	0	0	3.9	0.3
CES	99	V	300-150	2142	0	0	3.8	0.3
CFC	99	V	300-150	278	0	0	3.8	0.0
CFG	99	V	300-150	7437	0	0	3.3	0.3
CHG	99	V	300-150	157	0	0	3.2	0.3
CHH	99	V	300-150	345	0	0	4.7	0.2
CJT	99	V	300-150	609	0	0	3.9	0.0
CKS	99	V	300-150	626	0	0	3.7	0.0
CLX	99	V	300-150	5005	0	0	3.9	-0.2
CLY	99	V	300-150	34	0	0	3.2	0.5
CMB	99	V	300-150	1210	0	0	3.5	-0.3
CND	99	V	300-150	231	0	0	3.6	0.1

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
CNK	99	V	300-150	30	0	0	3.3	-0.7
CNV	99	V	300-150	170	0	0	2.8	0.0
CPA	99	V	300-150	2596	0	0	4.1	0.2
CPI	99	V	300-150	63	0	3	3.2	-0.1
CPJ	99	V	300-150	26	0	0	3.1	0.0
CRL	99	V	300-150	1188	0	0	2.9	0.3
CRV	99	V	300-150	103	0	0	2.7	0.4
CSC	99	V	300-150	1164	0	0	3.8	0.2
CSG	99	V	300-150	56	0	0	3.4	0.2
CSN	99	V	300-150	530	0	0	4.7	-0.1
CSS	99	V	300-150	309	0	0	4.1	0.7
CTM	99	V	300-150	262	0	0	3.4	0.8
CTV	99	V	300-150	173	0	0	3.3	0.5
CXA	99	V	300-150	84	0	0	5.0	0.3
DAH	99	V	300-150	1098	0	0	3.2	0.3
DAL	99	V	300-150	77721	0	0	3.3	0.1
DCM	99	V	300-150	112	0	0	3.2	0.0
DCS	99	V	300-150	33	15	0	18.1	0.3
DGX	99	V	300-150	21	0	0	2.7	-0.2
DHK	99	V	300-150	3836	0	0	3.5	0.0
DHX	99	V	300-150	663	0	0	4.3	0.2
DJT	99	V	300-150	2021	0	0	3.3	0.3
DLH	99	V	300-150	30533	1	0	3.8	0.0
DSO	99	V	300-150	69	0	1	3.8	0.3
DUB	99	V	300-150	100	0	0	2.9	0.6
EAU	99	V	300-150	113	0	0	3.3	-0.2
EDC	99	V	300-150	57	0	0	3.4	-0.2
EDG	99	V	300-150	242	2	0	7.5	0.4
EDW	99	V	300-150	1365	0	0	3.5	0.5
EIN	99	V	300-150	18011	0	0	3.1	0.2
EJM	99	V	300-150	1325	0	0	3.6	0.1
ELY	99	V	300-150	6650	9	0	5.9	0.0
ETD	99	V	300-150	17665	1	0	4.5	0.1
ETH	99	V	300-150	8946	1	0	4.5	0.1
EUK	99	V	300-150	1784	0	0	3.0	0.3
EUW	99	V	300-150	48	0	0	2.7	-0.2
EVA	99	V	300-150	842	0	0	4.9	0.3
EVE	99	V	300-150	174	0	0	4.4	0.7
EXS	99	V	300-150	4116	0	0	3.0	0.1
EXV	99	V	300-150	74	0	0	2.9	0.0
EZY	99	V	300-150	61	0	0	2.5	0.2
FBU	99	V	300-150	2526	0	0	3.5	-0.1
FDX	99	V	300-150	7372	0	0	3.1	0.1

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
FFM	99	V	300-150	30	0	0	4.9	-0.6
FIN	99	V	300-150	1756	0	0	4.1	0.4
FJI	99	V	300-150	2355	0	0	3.4	0.3
FJO	99	V	300-150	92	0	0	2.9	0.1
FLC	99	V	300-150	31	0	0	4.1	0.3
FLI	99	V	300-150	33	0	0	2.8	-0.5
FPO	99	V	300-150	37	0	0	3.0	0.3
FPY	99	V	300-150	4016	0	0	2.9	0.2
FRX	99	V	300-150	36	0	0	4.0	-1.1
FWI	99	V	300-150	905	0	0	2.9	0.2
FXT	99	V	300-150	32	0	0	2.6	-0.5
FYG	99	V	300-150	59	0	0	3.1	0.0
GAF	99	V	300-150	105	0	0	3.1	-0.5
GCK	99	V	300-150	160	0	0	3.6	0.0
GEC	99	V	300-150	1974	0	0	3.4	0.2
GES	99	V	300-150	223	0	0	3.5	0.1
GFA	99	V	300-150	1987	0	0	4.9	0.1
GIA	99	V	300-150	1739	0	0	3.2	0.2
GJE	99	V	300-150	276	0	0	3.7	-0.1
GJW	99	V	300-150	34	0	0	2.9	0.1
GLJ	99	V	300-150	20	0	0	3.1	0.8
GNJ	99	V	300-150	45	0	0	2.9	0.4
GRB	99	V	300-150	31	0	0	11.6	5.9
GSM	99	V	300-150	44	0	0	4.6	1.5
GTI	99	V	300-150	2047	0	0	3.7	0.0
GTR	99	V	300-150	180	0	0	3.3	0.5
HAL	99	V	300-150	536	0	0	3.5	0.2
HCR	99	V	300-150	33	0	0	3.8	-0.2
HFM	99	V	300-150	21	0	0	3.3	-0.2
HGO	99	V	300-150	50	0	0	4.4	0.2
HKC	99	V	300-150	55	0	0	4.9	-0.3
HLF	99	V	300-150	42	0	0	4.1	0.8
HRN	99	V	300-150	56	0	0	4.1	1.0
HRT	99	V	300-150	106	0	0	3.5	-0.1
HUE	99	V	300-150	69	0	0	6.1	1.3
HVN	99	V	300-150	1223	1	0	5.0	0.3
HYS	99	V	300-150	633	0	0	3.4	0.3
HZS	99	V	300-150	110	0	0	3.3	0.0
IAM	99	V	300-150	73	0	0	3.6	0.9
IBE	99	V	300-150	7301	0	0	3.5	0.3
ICE	99	V	300-150	9949	0	0	3.2	0.2
ICL	99	V	300-150	127	0	0	3.6	-0.5
ICV	99	V	300-150	249	0	0	3.9	-0.2

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
IFA	99	V	300-150	577	0	0	3.5	0.2
IFC	99	V	300-150	66	0	0	3.8	0.8
IGA	99	V	300-150	35	0	0	4.3	0.3
IGO	99	V	300-150	724	0	0	3.0	0.4
IJM	99	V	300-150	148	0	0	2.9	0.1
IND	99	V	300-150	35	0	0	4.1	0.3
ITY	99	V	300-150	8811	0	0	3.2	0.2
JAF	99	V	300-150	523	9	0	8.2	-0.2
JAL	99	V	300-150	816	0	0	6.4	0.0
JAS	99	V	300-150	173	0	0	4.8	0.3
JBU	99	V	300-150	13377	0	0	3.2	0.2
JCO	99	V	300-150	132	0	0	3.5	0.3
JCT	99	V	300-150	32	0	0	3.1	-0.3
JME	99	V	300-150	75	0	0	3.4	0.4
JNY	99	V	300-150	58	0	0	3.4	0.5
JST	99	V	300-150	823	0	0	3.6	0.6
JTL	99	V	300-150	35	0	0	3.7	0.2
JZR	99	V	300-150	36	0	0	3.5	0.2
KAC	99	V	300-150	2357	0	0	3.2	0.2
KAF	99	V	300-150	20	0	0	3.9	0.6
KAI	99	V	300-150	97	0	0	4.6	0.5
KAL	99	V	300-150	429	0	1	3.9	0.1
KAY	99	V	300-150	248	0	0	3.4	0.2
KCE	99	V	300-150	63	0	0	2.7	0.1
KFE	99	V	300-150	63	0	0	3.7	0.2
KIW	99	V	300-150	46	0	0	3.2	0.0
KLM	99	V	300-150	17650	3	0	4.7	0.2
KPO	99	V	300-150	112	0	0	6.0	0.5
KQA	99	V	300-150	406	1	0	4.6	0.7
KRH	99	V	300-150	69	0	0	2.9	0.5
KUG	99	V	300-150	29	0	0	3.5	0.5
LAE	99	V	300-150	179	0	0	3.2	0.2
LCO	99	V	300-150	492	0	0	3.4	-0.7
LDX	99	V	300-150	67	0	0	3.6	-0.6
LEA	99	V	300-150	43	0	0	3.2	-0.7
LEX	99	V	300-150	26	0	0	3.4	1.1
LNI	99	V	300-150	1455	0	0	3.1	0.3
LNX	99	V	300-150	139	0	0	3.8	0.4
LOT	99	V	300-150	4417	6	0	6.5	-0.2
LRQ	99	V	300-150	29	0	0	3.4	1.2
LVA	99	V	300-150	58	0	0	3.4	0.3
LXJ	99	V	300-150	911	0	0	3.3	0.3
MAS	99	V	300-150	6458	0	0	4.4	0.5

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
MAU	99	V	300-150	472	0	0	4.8	1.0
MED	99	V	300-150	59	0	0	4.6	1.2
MLM	99	V	300-150	140	0	0	3.4	0.3
MMD	99	V	300-150	316	0	0	3.5	0.1
MMF	99	V	300-150	106	0	0	3.3	0.0
MNB	99	V	300-150	317	0	0	3.3	0.2
MPH	99	V	300-150	499	0	0	3.8	-1.0
MSR	99	V	300-150	2650	1	0	4.2	0.2
MXD	99	V	300-150	532	0	0	4.0	0.5
NAS	99	V	300-150	36	0	0	3.3	-0.7
NBT	99	V	300-150	4063	9	0	6.3	0.0
NCR	99	V	300-150	406	0	0	3.6	0.0
NEW	99	V	300-150	65	0	0	3.9	-0.2
NJE	99	V	300-150	773	0	0	3.6	0.1
NOJ	99	V	300-150	47	0	0	2.6	-0.5
NOS	99	V	300-150	1492	7	0	6.2	0.1
NSH	99	V	300-150	35	0	0	3.5	0.1
NUM	99	V	300-150	85	0	0	3.5	0.5
OAE	99	V	300-150	493	0	0	3.8	0.1
OBS	99	V	300-150	25	0	0	4.1	1.3
OCN	99	V	300-150	4848	0	0	3.3	0.2
OMA	99	V	300-150	2275	0	0	5.6	0.2
ORF	99	V	300-150	31	0	0	3.0	0.2
PAC	99	V	300-150	35	0	0	4.2	1.6
PAK	99	V	300-150	35	0	0	3.2	0.0
PAL	99	V	300-150	1857	0	0	4.2	0.4
PAT	99	V	300-150	33	0	0	2.5	0.4
PEX	99	V	300-150	139	0	0	3.0	-0.2
PIA	99	V	300-150	422	0	0	3.9	0.4
PLF	99	V	300-150	54	0	0	2.5	-0.1
PLM	99	V	300-150	75	0	0	4.7	0.8
PVA	99	V	300-150	373	0	0	3.8	0.1
QAF	99	V	300-150	94	0	0	3.6	0.5
QFA	99	V	300-150	5654	0	0	4.7	0.2
QFX	99	V	300-150	69	0	0	2.8	0.9
QNT	99	V	300-150	27	0	0	4.0	-0.8
QQE	99	V	300-150	447	0	0	3.5	0.1
QTR	99	V	300-150	39670	0	0	3.9	0.2
RAM	99	V	300-150	713	11	0	8.0	0.2
RBA	99	V	300-150	361	0	0	5.3	0.4
RCH	99	V	300-150	3586	0	0	4.4	0.3
RDN	99	V	300-150	35	0	0	3.3	-0.4
RHH	99	V	300-150	46	0	0	2.6	0.9

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
RJA	99	V	300-150	2310	8	0	7.3	-0.1
RKS	99	V	300-150	35	0	0	4.5	1.1
ROJ	99	V	300-150	82	0	0	4.2	-0.3
ROM	99	V	300-150	26	0	0	2.6	0.3
RRR	99	V	300-150	191	0	0	4.9	0.9
RYR	99	V	300-150	906	0	0	2.9	0.3
RZO	99	V	300-150	934	0	0	4.0	0.1
SAM	99	V	300-150	353	0	0	3.7	0.0
SAS	99	V	300-150	6585	0	0	3.0	0.2
SAZ	99	V	300-150	50	0	0	4.4	-0.3
SCX	99	V	300-150	53	0	0	3.3	0.4
SEY	99	V	300-150	94	0	0	4.1	0.3
SIA	99	V	300-150	17956	0	0	4.3	0.3
SIO	99	V	300-150	90	0	0	4.1	0.0
SIS	99	V	300-150	33	0	0	2.9	-1.2
SJE	99	V	300-150	52	0	0	3.6	1.2
SKV	99	V	300-150	93	0	0	3.7	0.3
SLM	99	V	300-150	165	0	1	2.9	0.4
SPA	99	V	300-150	132	0	0	3.4	0.1
SPM	99	V	300-150	50	0	0	2.9	1.3
SSG	99	V	300-150	35	0	0	2.6	-0.5
SUI	99	V	300-150	25	0	0	4.0	-1.4
SVA	99	V	300-150	11893	0	0	4.1	0.3
SVW	99	V	300-150	247	0	0	3.2	0.5
SWA	99	V	300-150	21	0	0	7.8	1.5
SWR	99	V	300-150	13036	0	0	3.3	0.3
SYB	99	V	300-150	227	0	0	3.8	0.1
TAG	99	V	300-150	31	0	0	3.0	0.2
TAM	99	V	300-150	106	0	0	3.0	0.2
TAP	99	V	300-150	4028	0	0	3.6	0.3
TAR	99	V	300-150	472	0	0	3.1	0.3
TAY	99	V	300-150	230	0	0	4.0	-0.5
TCJ	99	V	300-150	20	0	0	2.4	0.3
TEU	99	V	300-150	117	0	0	3.1	-0.2
TFF	99	V	300-150	104	0	0	3.5	0.3
TFL	99	V	300-150	1265	6	0	5.8	0.1
TGW	99	V	300-150	1019	0	0	5.2	0.2
THA	99	V	300-150	6318	0	0	4.4	0.3
THT	99	V	300-150	2327	3	0	6.1	0.0
THY	99	V	300-150	26115	2	0	4.5	0.1
TMN	99	V	300-150	450	0	0	3.8	0.4
TOM	99	V	300-150	5922	8	0	6.5	0.0
TOR	99	V	300-150	31	0	0	3.7	0.3

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
TRE	99	V	300-150	83	0	0	4.9	0.4
TRK	99	V	300-150	69	0	0	2.8	0.6
TSC	99	V	300-150	23447	0	0	3.5	0.3
TVR	99	V	300-150	258	0	0	4.2	0.3
TVS	99	V	300-150	57	0	0	3.6	0.0
TWY	99	V	300-150	886	0	0	3.6	0.0
UAE	99	V	300-150	38094	0	0	3.6	0.2
UAF	99	V	300-150	42	0	0	3.6	0.3
UAL	99	V	300-150	84664	2	1	4.6	0.0
UBT	99	V	300-150	3651	9	0	6.7	0.1
UGD	99	V	300-150	54	0	0	2.6	0.4
UKN	99	V	300-150	49	0	0	2.8	0.1
ULC	99	V	300-150	70	0	0	3.6	-0.2
UNI	99	V	300-150	87	0	0	3.6	0.8
UPS	99	V	300-150	5493	0	0	3.6	-0.3
URO	99	V	300-150	106	0	0	3.5	0.4
UZB	99	V	300-150	748	1	0	4.4	0.2
UZS	99	V	300-150	25	0	0	3.6	0.0
VCG	99	V	300-150	30	0	0	2.9	-0.6
VCJ	99	V	300-150	51	0	0	3.0	0.5
VIR	99	V	300-150	23649	2	0	4.3	0.1
VJC	99	V	300-150	281	0	1	4.1	0.3
VJH	99	V	300-150	392	0	0	3.5	0.0
VJT	99	V	300-150	2149	0	0	3.5	0.3
VLZ	99	V	300-150	44	0	0	4.6	-0.4
VOZ	99	V	300-150	144	0	0	2.8	0.2
VTI	99	V	300-150	3645	0	0	4.3	0.5
VXM	99	V	300-150	20	0	0	3.6	0.9
VXS	99	V	300-150	127	0	1	3.5	0.0
WFL	99	V	300-150	64	0	0	3.8	1.5
WJA	99	V	300-150	5469	2	0	4.5	0.2
WMN	99	V	300-150	47	0	0	2.5	0.1
WWI	99	V	300-150	51	0	0	3.0	0.0
XAX	99	V	300-150	1193	0	0	4.4	0.3
XFL	99	V	300-150	42	0	0	3.4	-0.5
XRO	99	V	300-150	38	0	0	4.0	1.1

4 EUCOS Area Monitoring Statistics

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

Tables 13, 14 (50 hPa level), 15, 16 (100 hPa level) 17, 18 (500 hPa level) 19 and 20 (850 hPa level) provide quality statistics for all TEMPSHIPS and PILOTSHIPS received during the month in the area $10\,°$N - $90\,°$N, $70\,°$W - $40\,°$E and for TEMPS and PILOTS from selected land stations within the same area. The statistics are in the same form as tables 10 and 11.
Tables 21-23 provides quality statistics of pressure and wind for all DRIFTER reports received in the area $10\,°$N - $90\,°$N, $70\,°$W - $40\,°$E. The statistics are in the same form as tables 4-6.

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

```
RADIOSONDE MONITORING STATISTICS (EUCOS)
         MONITORING CENTRE     : ECMWF
         ELEMENT MONITORED     : GEOPOTENTIAL HEIGHT (METRES)
         LEVEL                 :  50 HPA
         AREA                  : 0 - 90N, 100W - 40E
         PERIOD                : SEP 2024
         STANDARD OF COMPARISON: FIRST-GUESS FIELD
```

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	12	Z	50	29	8.9	-3.0
01001	00	Z	50	29	7.2	0.9
01028	00	Z	50	29	11.2	-3.5
01028	12	Z	50	29	11.6	-9.5
01400	00	Z	50	30	78.0	77.6
01400	12	Z	50	28	73.3	72.8
01415	12	Z	50	26	8.7	-6.0
01415	00	Z	50	28	8.2	-0.5
02365	00	Z	50	16	5.4	0.8
02365	12	Z	50	17	7.8	-4.7
02591	00	Z	50	28	8.9	6.7
02591	12	Z	50	29	4.2	-0.4
02836	12	Z	50	32	9.1	-7.5
02836	00	Z	50	30	5.5	-1.8
02963	00	Z	50	26	7.7	-1.2
02963	12	Z	50	29	24.0	2.7
03005	00	Z	50	27	7.2	-1.9
03005	12	Z	50	29	9.5	-5.3
03238	12	Z	50	2	9.1	0.9
03238	00	Z	50	25	7.8	0.6
03808	00	Z	50	27	6.6	-0.2
03808	12	Z	50	30	6.3	-2.4
03918	00	Z	50	28	9.7	7.0
03918	12	Z	50	1	7.7	-7.7
03953	00	Z	50	28	10.0	-8.5
03953	12	Z	50	30	16.1	-14.0
04018	00	Z	50	29	6.6	-2.2
04018	12	Z	50	30	13.5	-11.8
04220	12	Z	50	28	25.9	-23.4
04220	00	Z	50	28	21.3	-19.1
04270	00	Z	50	29	35.9	-32.0
04270	12	Z	50	29	27.3	-20.8
04320	00	Z	50	30	22.1	-12.0
04320	12	Z	50	29	13.0	-9.0
043207	12	Z	50	0	0.0	0.0
04339	12	Z	50	28	22.0	-17.4
04339	00	Z	50	25	27.6	-22.7
043398	12	Z	50	0	0.0	0.0
04360	12	Z	50	27	19.8	-17.1

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
04360	00	Z	50	26	20.6	-18.5
06011	12	Z	50	27	42.1	-9.4
06260	00	Z	50	29	6.7	2.9
06260	12	Z	50	4	6.1	-4.5
06610	12	Z	50	30	28.3	3.6
06610	00	Z	50	31	8.4	3.6
07110	00	Z	50	27	35.2	-33.7
07110	12	Z	50	28	34.0	-26.1
07510	12	Z	50	26	34.7	-30.7
07510	00	Z	50	25	35.6	-32.0
07645	00	Z	50	26	42.2	-39.9
07645	12	Z	50	27	37.4	-35.1
07761	12	Z	50	25	29.0	11.3
07761	00	Z	50	23	12.9	-3.9
08001	00	Z	50	29	6.5	0.2
08001	12	Z	50	30	5.7	-1.1
08221	00	Z	50	30	6.8	3.1
08221	12	Z	50	30	6.3	-0.7
08302	12	Z	50	29	13.6	-11.4
08302	00	Z	50	29	9.6	-6.3
08508	12	Z	50	27	5.0	-1.2
08522	12	Z	50	30	5.2	-1.9
10035	00	Z	50	27	15.5	14.4
10035	12	Z	50	28	10.1	9.1
10393	00	Z	50	30	7.2	0.5
10393	12	Z	50	30	7.5	-1.4
10410	00	Z	50	30	6.4	1.0
10410	12	Z	50	30	7.2	-3.3
10739	12	Z	50	31	6.7	2.7
10739	00	Z	50	30	10.9	7.6
11035	12	Z	50	28	12.0	7.0
11035	00	Z	50	29	15.0	-0.5
12982	12	Z	50	30	6.9	-3.5
12982	00	Z	50	30	6.8	2.8
16245	12	Z	50	30	5.9	-1.6
16245	00	Z	50	27	6.5	3.7
16429	00	Z	50	30	9.8	7.8
16429	12	Z	50	29	7.8	1.6
16622	00	Z	50	26	16.4	14.6
16754	00	Z	50	23	12.9	11.1
17607	12	Z	50	24	20.2	-10.8
26435	12	Z	50	12	8.7	-8.2
2EERVT	00	Z	50	4	16.8	-6.7

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
2EERVT	12	Z	50	5	5.3	3.0
60018	00	Z	50	29	10.1	7.4
60018	12	Z	50	28	6.2	-2.8
7JUNA4	12	Z	50	9	20.6	-14.6
7JUNA4	00	Z	50	6	10.9	-6.6
ASDE09	12	Z	50	1	148.1	-148.1
ATGU3F	12	Z	50	13	33.9	-31.9
ATGU3F	00	Z	50	4	34.3	-32.1
FPUW5G	12	Z	50	1	0.9	-0.9
JNKN7J	12	Z	50	5	31.2	22.5
JNKN7J	00	Z	50	4	25.6	23.9
KJJF9X	12	Z	50	8	78.9	-54.1
KJJF9X	00	Z	50	5	22.5	-20.8
LAGY8	00	Z	50	4	130.9	-130.8
LAGZ8	12	Z	50	3	44.2	43.6
LAGZ8	00	Z	50	1	49.6	49.6
LRYQE3	12	Z	50	4	140.9	114.7
LRYQE3	00	Z	50	4	10.9	-8.8
SMLQ	12	Z	50	16	6.4	-4.1
SMLQ	00	Z	50	13	6.3	-4.2
UXK5JT	12	Z	50	6	19.5	-15.4
UXK5JT	00	Z	50	2	23.5	-23.0
WDK38H	12	Z	50	13	23.7	-5.6
XKQLWQ	12	Z	50	16	57.2	49.0
YLV96W	12	Z	50	9	24.4	-22.1
YLV96W	00	Z	50	10	14.6	-8.2
ZVQEQC	12	Z	50	25	20.7	-1.0
ZVQEQC	00	Z	50	25	8.3	6.5

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

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	12	V	50	28	2.8	0.1	-0.3
01001	00	V	50	29	3.4	0.4	-0.1
01028	00	V	50	28	2.6	-0.5	-0.3
01028	12	V	50	29	3.0	-1.0	0.0
01400	00	V	50	25	3.0	0.4	0.5
01400	12	V	50	28	3.0	0.6	1.1
01415	12	V	50	26	2.7	-0.1	0.0
01415	00	V	50	26	3.0	0.6	0.0
02365	00	V	50	16	2.7	0.0	-0.3
02365	12	V	50	17	3.1	0.0	-0.5
02591	00	V	50	23	3.0	-0.6	0.6
02591	12	V	50	29	2.7	-0.8	0.1
02836	12	V	50	30	3.0	0.1	-0.1
02836	00	V	50	30	3.4	-0.8	0.0
02963	00	V	50	23	3.0	0.2	0.0
02963	12	V	50	29	3.0	-0.1	-0.4
03005	00	V	50	27	3.0	0.8	0.2
03005	12	V	50	29	2.7	0.0	-0.7
03238	12	V	50	2	2.8	2.1	0.5
03238	00	V	50	25	2.8	-0.2	-0.1
03808	00	V	50	26	3.5	0.6	0.2
03808	12	V	50	30	3.2	0.2	0.6
03918	00	V	50	28	3.7	-0.2	0.3
03918	12	V	50	1	3.4	3.3	-0.7
03953	00	V	50	28	3.3	0.5	-0.7
03953	12	V	50	30	3.0	-0.2	0.1
04018	00	V	50	26	3.5	0.3	-0.3
04018	12	V	50	29	3.9	-0.3	-0.4
04220	12	V	50	28	2.9	-0.1	0.4
04220	00	V	50	27	2.9	0.1	0.6
04270	00	V	50	29	3.3	0.1	0.0
04270	12	V	50	29	3.0	-0.1	0.3
04320	00	V	50	30	3.0	-0.2	-0.3
04320	12	V	50	29	3.2	0.0	-0.5
043207	12	V	50	0	0.0	0.0	0.0
04339	12	V	50	28	3.5	0.3	0.2
04339	00	V	50	25	2.9	0.0	-0.3
043398	12	V	50	0	0.0	0.0	0.0
04360	12	V	50	27	2.9	-0.3	0.5

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
04360	00	V	50	26	3.3	0.4	0.6
06011	12	V	50	27	3.0	-0.2	0.2
06260	00	V	50	29	3.0	0.7	-0.1
06260	12	V	50	4	2.6	0.7	-1.1
06610	12	V	50	30	3.8	0.1	0.0
06610	00	V	50	29	3.7	1.1	0.5
07110	00	V	50	25	2.9	0.8	0.7
07110	12	V	50	28	3.1	0.0	0.1
07510	12	V	50	26	3.7	0.7	-0.6
07510	00	V	50	23	3.9	-0.3	1.0
07645	00	V	50	25	3.5	-0.2	0.8
07645	12	V	50	27	4.3	0.2	0.0
07761	12	V	50	25	3.9	0.0	-0.3
07761	00	V	50	23	3.9	0.7	-0.2
08001	00	V	50	29	3.5	0.6	0.0
08001	12	V	50	30	3.4	0.6	0.5
08221	00	V	50	30	3.6	0.2	-0.2
08221	12	V	50	30	3.6	0.3	0.0
08302	12	V	50	29	4.1	1.4	0.0
08302	00	V	50	29	3.9	-0.2	-0.4
08508	12	V	50	27	3.2	0.7	0.3
08522	12	V	50	30	3.0	-0.1	-0.1
10035	00	V	50	27	2.8	0.5	0.1
10035	12	V	50	28	2.9	0.7	-0.2
10393	00	V	50	30	3.6	0.2	-1.2
10393	12	V	50	30	3.0	-0.3	0.0
10410	00	V	50	28	3.6	-0.4	0.7
10410	12	V	50	30	3.1	0.8	0.2
10739	12	V	50	28	2.8	-0.7	-0.2
10739	00	V	50	30	3.1	-0.2	-0.5
11035	12	V	50	28	2.8	0.9	-0.2
11035	00	V	50	27	2.9	0.9	0.3
12982	12	V	50	30	2.7	0.0	-0.4
12982	00	V	50	30	3.2	0.3	-0.2
16245	12	V	50	30	3.4	0.3	-0.4
16245	00	V	50	27	3.5	0.5	-0.8
16429	00	V	50	30	3.9	-0.5	-0.2
16429	12	V	50	29	4.3	0.6	-0.4
16622	00	V	50	25	3.5	0.5	0.0
16754	00	V	50	19	3.8	0.5	0.5
17607	12	V	50	12	8.9	7.7	-2.6
26435	12	V	50	11	2.8	-1.0	0.0
2EERVT	00	V	50	4	4.2	-2.0	0.1

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
2EERVT	12	V	50	5	4.7	0.6	-1.9
60018	00	V	50	27	3.1	-0.9	-1.3
60018	12	V	50	28	3.3	-0.1	0.4
7JUNA4	12	V	50	9	2.9	0.6	0.2
7JUNA4	00	V	50	6	2.1	0.4	-0.5
ASDE09	12	V	50	1	5.2	2.2	-4.7
ATGU3F	12	V	50	13	3.7	-1.2	0.0
ATGU3F	00	V	50	4	2.4	-0.8	1.4
FPUW5G	12	V	50	0	0.0	0.0	0.0
JNKN7J	12	V	50	5	3.0	0.9	-1.3
JNKN7J	00	V	50	4	1.4	0.5	-0.8
KJJF9X	12	V	50	8	2.8	-1.1	-0.2
KJJF9X	00	V	50	5	3.6	-1.9	0.0
LAGY8	00	V	50	4	3.0	-0.4	2.3
LAGZ8	12	V	50	3	1.8	0.6	-0.4
LAGZ8	00	V	50	1	3.9	3.4	2.0
LRYQE3	12	V	50	4	2.4	-0.3	0.4
LRYQE3	00	V	50	4	2.0	-0.2	0.8
SMLQ	12	V	50	16	2.9	-1.2	-0.4
SMLQ	00	V	50	13	2.6	-0.5	0.0
UXK5JT	12	V	50	6	2.9	-1.5	-0.7
UXK5JT	00	V	50	2	1.1	0.9	0.0
WDK38H	12	V	50	12	3.0	0.2	0.8
XKQLWQ	12	V	50	15	8.2	3.6	0.2
YLV96W	12	V	50	9	3.0	-0.4	1.0
YLV96W	00	V	50	10	2.3	0.5	-0.4
ZVQEQC	12	V	50	22	4.5	0.6	0.5
ZVQEQC	00	V	50	25	3.8	0.6	-0.2

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

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	12	Z	100	30	7.9	-3.3
01001	00	Z	100	29	7.2	1.3
01028	00	Z	100	29	8.0	-3.9
01028	12	Z	100	29	10.1	-8.4
01400	00	Z	100	30	77.4	77.3
01400	12	Z	100	29	73.9	73.6
01415	12	Z	100	30	6.5	-2.1
01415	00	Z	100	29	8.3	1.3
02365	00	Z	100	16	4.7	-0.2
02365	12	Z	100	17	6.0	-3.8
02591	00	Z	100	30	7.0	6.1
02591	12	Z	100	30	4.5	2.7
02836	12	Z	100	32	7.5	-6.1
02836	00	Z	100	30	5.2	-3.6
02963	00	Z	100	29	6.8	-1.8
02963	12	Z	100	30	23.8	5.0
03005	00	Z	100	27	5.4	-2.8
03005	12	Z	100	29	7.9	-5.2
03238	12	Z	100	2	4.6	-2.1
03238	00	Z	100	25	5.5	-0.4
03808	00	Z	100	27	3.9	-0.3
03808	12	Z	100	30	4.8	-0.7
03918	00	Z	100	28	5.8	3.4
03918	12	Z	100	1	6.0	-6.0
03953	00	Z	100	29	10.5	-9.1
03953	12	Z	100	30	13.6	-12.4
04018	00	Z	100	29	6.1	-2.1
04018	12	Z	100	30	10.4	-7.9
04220	12	Z	100	28	20.3	-19.0
04220	00	Z	100	29	18.0	-16.1
04270	00	Z	100	29	29.1	-27.3
04270	12	Z	100	29	24.9	-19.2
04320	00	Z	100	30	15.3	-8.6
04320	12	Z	100	29	9.7	-6.9
043207	12	Z	100	0	0.0	0.0
04339	12	Z	100	29	19.7	-15.3
04339	00	Z	100	28	24.3	-21.3
043398	12	Z	100	0	0.0	0.0
04360	12	Z	100	28	16.0	-13.7

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
04360	00	Z	100	26	17.6	-16.2
06011	12	Z	100	29	39.8	-6.9
06260	00	Z	100	29	5.5	0.6
06260	12	Z	100	4	2.8	0.0
06610	12	Z	100	30	19.8	2.7
06610	00	Z	100	31	6.2	1.1
07110	00	Z	100	26	28.9	-27.7
07110	12	Z	100	28	25.6	-22.6
07510	12	Z	100	26	26.8	-24.2
07510	00	Z	100	25	28.8	-27.1
07645	00	Z	100	26	33.5	-31.9
07645	12	Z	100	27	30.6	-28.9
07761	12	Z	100	28	17.6	3.5
07761	00	Z	100	24	13.9	-5.3
08001	00	Z	100	29	7.2	0.2
08001	12	Z	100	30	5.3	-1.1
08221	00	Z	100	30	5.9	3.8
08221	12	Z	100	30	4.5	-0.2
08302	12	Z	100	30	10.9	-8.8
08302	00	Z	100	29	8.5	-6.1
08508	12	Z	100	29	5.5	2.9
08522	12	Z	100	30	4.8	2.1
10035	00	Z	100	28	14.1	13.0
10035	12	Z	100	28	10.2	9.2
10393	00	Z	100	30	5.5	-0.7
10393	12	Z	100	30	5.2	-1.9
10410	00	Z	100	30	6.2	-0.9
10410	12	Z	100	30	6.6	-2.4
10739	12	Z	100	32	5.4	2.2
10739	00	Z	100	30	8.4	5.7
11035	12	Z	100	29	7.4	4.4
11035	00	Z	100	30	13.6	-3.4
12982	12	Z	100	30	4.6	-2.7
12982	00	Z	100	30	4.7	2.1
16245	12	Z	100	30	4.7	-1.8
16245	00	Z	100	27	5.3	2.7
16429	00	Z	100	30	8.5	6.8
16429	12	Z	100	29	6.0	-0.5
16622	00	Z	100	29	11.6	10.2
16754	00	Z	100	28	11.8	10.0
17607	12	Z	100	24	68.0	-58.9
26435	12	Z	100	15	6.1	-5.8
2EERVT	00	Z	100	5	11.3	-0.7

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
2EERVT	12	Z	100	6	4.5	4.2
60018	00	Z	100	30	9.5	8.4
60018	12	Z	100	30	4.3	2.0
7JUNA4	12	Z	100	10	13.2	-9.1
7JUNA4	00	Z	100	6	7.6	-6.3
ASDE09	12	Z	100	1	147.2	-147.2
ATGU3F	12	Z	100	13	30.1	-28.6
ATGU3F	00	Z	100	7	30.2	-28.9
FPUW5G	12	Z	100	1	2.2	2.2
JNKN7J	12	Z	100	5	25.3	21.4
JNKN7J	00	Z	100	5	25.8	24.1
KJJF9X	12	Z	100	8	69.5	-41.6
KJJF9X	00	Z	100	7	18.5	-15.4
LAGY8	00	Z	100	4	129.4	-129.2
LAGZ8	12	Z	100	3	50.2	49.6
LAGZ8	00	Z	100	1	41.2	41.2
LRYQE3	12	Z	100	5	60.5	47.9
LRYQE3	00	Z	100	4	7.7	-6.4
SMLQ	12	Z	100	16	5.2	-2.1
SMLQ	00	Z	100	14	5.7	-2.4
UXK5JT	12	Z	100	6	13.6	-12.4
UXK5JT	00	Z	100	4	18.6	-16.5
WDK38H	12	Z	100	13	17.0	-8.8
XKQLWQ	12	Z	100	22	72.1	5.4
YLV96W	12	Z	100	9	16.9	-14.7
YLV96W	00	Z	100	10	9.3	-5.6
ZVQEQC	12	Z	100	26	20.2	3.9
ZVQEQC	00	Z	100	26	7.9	6.1

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

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	12	V	100	30	2.5	0.0	-0.4
01001	00	V	100	29	3.4	1.0	0.8
01028	00	V	100	28	2.9	-0.3	-0.2
01028	12	V	100	29	2.3	0.1	-0.3
01400	00	V	100	29	2.4	0.5	-0.7
01400	12	V	100	29	3.0	0.9	-0.7
01415	12	V	100	29	2.2	-0.2	0.4
01415	00	V	100	27	3.0	0.0	-0.3
02365	00	V	100	16	3.0	-0.3	0.7
02365	12	V	100	17	2.9	0.1	-0.3
02591	00	V	100	30	2.5	-0.1	-0.1
02591	12	V	100	30	2.7	0.1	-0.3
02836	12	V	100	30	2.8	-1.0	0.2
02836	00	V	100	30	2.8	-0.3	-0.4
02963	00	V	100	26	2.6	0.0	-0.4
02963	12	V	100	30	2.7	-0.2	-0.2
03005	00	V	100	27	2.8	0.0	-0.2
03005	12	V	100	29	2.5	-0.3	-0.2
03238	12	V	100	2	1.6	-1.0	-0.6
03238	00	V	100	25	2.9	-0.1	-0.2
03808	00	V	100	26	2.9	1.3	-0.1
03808	12	V	100	30	2.9	0.5	-0.2
03918	00	V	100	28	2.9	0.4	-0.1
03918	12	V	100	1	4.7	-4.5	-1.4
03953	00	V	100	29	2.7	0.4	-0.1
03953	12	V	100	30	2.4	0.4	-0.2
04018	00	V	100	29	5.2	-0.4	-0.3
04018	12	V	100	30	3.3	0.4	0.0
04220	12	V	100	28	2.5	0.4	0.1
04220	00	V	100	27	2.5	0.2	0.0
04270	00	V	100	29	5.1	-1.5	0.6
04270	12	V	100	29	5.1	-1.1	0.2
04320	00	V	100	30	2.1	0.4	0.0
04320	12	V	100	29	2.9	0.1	-0.1
043207	12	V	100	0	0.0	0.0	0.0
04339	12	V	100	29	2.5	0.0	-0.3
04339	00	V	100	28	3.0	-0.4	-0.1
043398	12	V	100	0	0.0	0.0	0.0
04360	12	V	100	28	3.0	-0.4	0.4

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
04360	00	V	100	26	3.3	0.5	0.8
06011	12	V	100	29	2.6	0.4	-0.8
06260	00	V	100	29	2.7	0.5	-0.1
06260	12	V	100	4	4.7	2.5	3.0
06610	12	V	100	30	3.3	-0.5	-1.2
06610	00	V	100	30	3.5	0.4	-0.2
07110	00	V	100	24	2.6	0.4	0.4
07110	12	V	100	28	2.6	0.6	-0.1
07510	12	V	100	26	3.2	-0.1	-0.2
07510	00	V	100	23	3.0	0.5	-0.5
07645	00	V	100	25	3.2	0.5	-0.2
07645	12	V	100	27	3.8	0.0	0.0
07761	12	V	100	26	4.7	0.0	0.0
07761	00	V	100	23	4.4	0.9	-0.2
08001	00	V	100	29	2.8	0.4	0.7
08001	12	V	100	30	2.7	0.4	0.2
08221	00	V	100	30	3.3	-0.4	0.5
08221	12	V	100	30	3.4	0.7	0.5
08302	12	V	100	30	4.0	-0.3	0.9
08302	00	V	100	29	3.8	-0.4	0.6
08508	12	V	100	29	3.4	0.3	0.8
08522	12	V	100	30	3.5	0.3	-0.1
10035	00	V	100	28	2.2	0.3	-0.6
10035	12	V	100	28	2.5	0.3	-0.6
10393	00	V	100	30	2.8	-0.1	-0.3
10393	12	V	100	30	2.8	-0.1	-0.7
10410	00	V	100	30	2.2	0.1	-0.2
10410	12	V	100	30	2.4	0.1	-0.3
10739	12	V	100	30	2.9	0.6	-0.5
10739	00	V	100	30	2.9	0.5	-0.1
11035	12	V	100	29	3.0	0.5	-0.1
11035	00	V	100	28	3.0	0.4	0.4
12982	12	V	100	30	2.7	0.5	-0.1
12982	00	V	100	30	3.4	1.0	-0.2
16245	12	V	100	30	3.5	0.3	0.7
16245	00	V	100	27	3.5	0.5	-0.8
16429	00	V	100	30	4.1	-0.1	0.4
16429	12	V	100	29	4.1	-0.3	0.4
16622	00	V	100	29	3.9	0.6	-0.2
16754	00	V	100	28	4.0	0.7	1.1
17607	12	V	100	14	14.3	-11.8	-4.2
26435	12	V	100	14	2.5	0.6	-0.3
2EERVT	00	V	100	5	2.3	0.7	0.4

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
2EERVT	12	V	100	5	1.9	0.1	0.7
60018	00	V	100	29	3.7	-0.3	-0.4
60018	12	V	100	30	4.1	-0.1	1.0
7JUNA4	12	V	100	10	3.3	0.2	0.0
7JUNA4	00	V	100	6	2.8	0.2	1.2
ASDE09	12	V	100	1	1.3	0.8	-1.0
ATGU3F	12	V	100	13	3.3	-0.2	0.1
ATGU3F	00	V	100	7	3.5	-2.1	0.0
FPUW5G	12	V	100	0	0.0	0.0	0.0
JNKN7J	12	V	100	5	2.6	0.4	1.5
JNKN7J	00	V	100	5	2.7	0.4	0.0
KJJF9X	12	V	100	8	2.3	0.2	0.1
KJJF9X	00	V	100	7	3.1	-0.1	0.1
LAGY8	00	V	100	4	5.4	3.8	-0.7
LAGZ8	12	V	100	3	4.0	0.2	1.5
LAGZ8	00	V	100	1	1.2	-1.2	0.2
LRYQE3	12	V	100	5	3.2	1.0	-0.6
LRYQE3	00	V	100	4	2.0	-0.3	0.7
SMLQ	12	V	100	16	2.4	-0.2	-0.1
SMLQ	00	V	100	13	2.7	-0.9	-0.1
UXK5JT	12	V	100	6	4.5	0.1	0.3
UXK5JT	00	V	100	4	3.9	-0.6	-1.4
WDK38H	12	V	100	13	2.5	0.1	0.1
XKQLWQ	12	V	100	20	4.5	0.9	-0.9
YLV96W	12	V	100	9	2.1	0.5	0.1
YLV96W	00	V	100	10	2.8	0.2	-0.2
ZVQEQC	12	V	100	22	4.1	-0.7	0.0
ZVQEQC	00	V	100	26	3.7	0.6	-0.6

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

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	12	Z	500	30	4.7	1.2
01001	00	Z	500	30	8.3	3.2
01028	00	Z	500	29	4.3	-1.2
01028	12	Z	500	29	4.7	-2.8
01400	00	Z	500	30	79.6	79.4
01400	12	Z	500	29	78.5	78.4
01415	12	Z	500	30	5.5	4.0
01415	00	Z	500	30	4.8	3.9
02365	00	Z	500	16	2.8	1.7
02365	12	Z	500	17	2.1	0.3
02591	00	Z	500	30	8.9	8.2
02591	12	Z	500	30	9.2	8.9
02836	12	Z	500	32	3.2	1.1
02836	00	Z	500	30	3.1	1.6
02963	00	Z	500	30	4.6	3.9
02963	12	Z	500	30	29.8	12.2
03005	00	Z	500	27	2.5	-0.8
03005	12	Z	500	30	2.8	-1.3
03238	12	Z	500	2	1.1	-0.6
03238	00	Z	500	25	3.9	3.1
03808	00	Z	500	28	4.1	3.1
03808	12	Z	500	30	3.6	2.2
03918	00	Z	500	28	7.6	6.8
03918	12	Z	500	1	3.0	3.0
03953	00	Z	500	30	4.3	-2.1
03953	12	Z	500	30	3.6	-2.1
04018	00	Z	500	29	3.2	0.6
04018	12	Z	500	30	3.8	-0.3
04220	12	Z	500	28	7.3	-6.0
04220	00	Z	500	29	5.9	-3.8
04270	00	Z	500	30	12.4	-11.3
04270	12	Z	500	30	11.6	-10.0
04320	00	Z	500	30	5.7	0.7
04320	12	Z	500	30	6.3	3.2
043207	12	Z	500	0	0.0	0.0
04339	12	Z	500	30	8.8	-7.5
04339	00	Z	500	30	12.5	-11.7
043398	12	Z	500	0	0.0	0.0
04360	12	Z	500	28	9.3	-7.9

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
04360	00	Z	500	28	7.3	-6.7
06011	12	Z	500	31	17.2	-0.6
06260	00	Z	500	29	3.3	0.9
06260	12	Z	500	4	2.5	0.0
06610	12	Z	500	31	6.5	2.3
06610	00	Z	500	32	2.5	1.5
07110	00	Z	500	29	8.9	-7.9
07110	12	Z	500	29	8.5	-6.5
07510	12	Z	500	28	5.5	-3.6
07510	00	Z	500	26	7.9	-5.3
07645	00	Z	500	30	15.0	-14.0
07645	12	Z	500	29	11.4	-10.4
07761	12	Z	500	28	7.2	-1.9
07761	00	Z	500	25	7.4	-5.0
08001	00	Z	500	29	4.0	3.1
08001	12	Z	500	30	3.3	2.4
08221	00	Z	500	30	4.2	3.9
08221	12	Z	500	31	3.7	2.8
08302	12	Z	500	30	8.0	-7.7
08302	00	Z	500	29	6.5	-6.2
08508	12	Z	500	29	7.8	6.9
08522	12	Z	500	30	6.1	5.5
10035	00	Z	500	28	14.4	14.1
10035	12	Z	500	29	13.7	13.5
10393	00	Z	500	30	3.4	2.0
10393	12	Z	500	30	2.9	1.3
10410	00	Z	500	30	2.2	1.0
10410	12	Z	500	30	2.9	1.0
10739	12	Z	500	32	4.9	4.1
10739	00	Z	500	30	5.6	5.2
11035	12	Z	500	29	6.0	4.0
11035	00	Z	500	31	12.5	-5.1
12982	12	Z	500	32	3.0	1.9
12982	00	Z	500	30	3.1	2.5
16245	12	Z	500	30	3.3	1.0
16245	00	Z	500	28	2.9	2.0
16429	00	Z	500	30	3.9	2.4
16429	12	Z	500	30	3.6	1.8
16622	00	Z	500	29	9.4	9.0
16754	00	Z	500	29	4.5	3.8
17607	12	Z	500	25	17.1	-7.2
26435	12	Z	500	15	2.4	1.5
2EERVT	00	Z	500	6	6.5	-1.6

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
2EERVT	12	Z	500	6	47.0	-15.9
60018	00	Z	500	30	4.0	3.2
60018	12	Z	500	30	4.0	3.1
7JUNA4	12	Z	500	11	4.0	-0.7
7JUNA4	00	Z	500	8	9.7	2.6
ASDE09	12	Z	500	1	142.5	-142.5
ATGU3F	12	Z	500	14	25.8	-24.6
ATGU3F	00	Z	500	7	25.5	-25.1
FPUW5G	12	Z	500	1	11.4	11.4
JNKN7J	12	Z	500	5	36.8	36.0
JNKN7J	00	Z	500	5	32.3	30.9
KJJF9X	12	Z	500	10	30.5	-19.7
KJJF9X	00	Z	500	8	16.1	-8.1
LAGY8	00	Z	500	4	142.9	-142.8
LAGZ8	12	Z	500	3	69.2	69.0
LAGZ8	00	Z	500	1	68.0	68.0
LRYQE3	12	Z	500	5	4.8	3.4
LRYQE3	00	Z	500	4	6.2	-3.4
SMLQ	12	Z	500	16	5.8	4.6
SMLQ	00	Z	500	15	4.1	2.4
UXK5JT	12	Z	500	8	7.6	-5.8
UXK5JT	00	Z	500	5	35.6	-22.6
WDK38H	12	Z	500	14	9.7	-6.4
XKQLWQ	12	Z	500	22	18.2	16.6
YLV96W	12	Z	500	9	8.2	-4.7
YLV96W	00	Z	500	10	4.2	-1.7
ZVQEQC	12	Z	500	28	16.5	2.0
ZVQEQC	00	Z	500	26	4.4	3.3

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

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

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	12	V	500	30	2.3	-0.1	-0.1
01001	00	V	500	30	3.2	-0.2	0.3
01028	00	V	500	29	3.0	0.3	-0.3
01028	12	V	500	29	2.8	0.2	0.1
01400	00	V	500	30	2.1	-0.7	0.2
01400	12	V	500	29	2.6	-0.2	0.6
01415	12	V	500	30	2.6	0.2	0.4
01415	00	V	500	28	2.6	0.0	0.3
02365	00	V	500	16	2.1	0.4	-0.2
02365	12	V	500	17	1.9	0.4	0.0
02591	00	V	500	30	2.7	-0.5	0.3
02591	12	V	500	30	2.3	-0.1	0.2
02836	12	V	500	30	2.6	0.2	0.7
02836	00	V	500	30	2.2	-0.1	0.4
02963	00	V	500	30	2.1	0.3	-0.1
02963	12	V	500	30	2.1	0.0	0.0
03005	00	V	500	27	2.1	0.0	0.0
03005	12	V	500	30	3.4	0.1	0.2
03238	12	V	500	2	1.5	-0.3	-0.2
03238	00	V	500	25	2.0	-0.4	-0.1
03808	00	V	500	27	2.7	0.1	0.2
03808	12	V	500	30	3.0	0.3	0.4
03918	00	V	500	28	2.3	0.2	-0.2
03918	12	V	500	1	3.0	3.0	-0.4
03953	00	V	500	30	2.6	0.0	-0.2
03953	12	V	500	30	2.5	-0.3	0.2
04018	00	V	500	29	2.8	0.7	0.2
04018	12	V	500	30	2.6	0.5	0.0
04220	12	V	500	28	1.8	0.2	-0.2
04220	00	V	500	29	2.8	0.3	-0.6
04270	00	V	500	30	2.7	0.0	-0.1
04270	12	V	500	30	2.6	-0.3	0.0
04320	00	V	500	30	2.6	0.1	-0.5
04320	12	V	500	30	2.6	0.3	-0.5
043207	12	V	500	0	0.0	0.0	0.0
04339	12	V	500	30	2.8	0.8	0.1
04339	00	V	500	30	2.4	0.0	-0.2
043398	12	V	500	0	0.0	0.0	0.0
04360	12	V	500	28	3.0	0.5	0.0

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
04360	00	V	500	28	3.0	0.0	0.0
06011	12	V	500	30	2.1	0.3	-0.1
06260	00	V	500	29	2.2	0.7	-0.1
06260	12	V	500	4	3.9	1.2	0.7
06610	12	V	500	30	3.0	-0.6	0.3
06610	00	V	500	31	2.8	-0.4	-0.5
07110	00	V	500	27	2.1	-0.2	0.0
07110	12	V	500	28	2.3	0.4	0.5
07510	12	V	500	25	3.9	-0.7	0.1
07510	00	V	500	25	2.4	0.2	0.6
07645	00	V	500	29	3.1	0.4	0.4
07645	12	V	500	27	2.4	0.0	0.3
07761	12	V	500	27	3.3	-0.2	0.4
07761	00	V	500	25	2.4	0.6	0.0
08001	00	V	500	29	3.1	0.6	0.2
08001	12	V	500	30	2.1	0.2	-0.2
08221	00	V	500	30	1.9	-0.2	0.2
08221	12	V	500	30	2.0	0.3	-0.2
08302	12	V	500	30	2.1	-0.2	0.1
08302	00	V	500	29	2.0	0.4	0.4
08508	12	V	500	29	2.1	0.1	0.3
08522	12	V	500	30	2.1	0.3	0.2
10035	00	V	500	28	2.0	0.0	0.1
10035	12	V	500	29	2.1	-0.1	-0.1
10393	00	V	500	30	2.0	0.5	-0.3
10393	12	V	500	30	2.1	0.4	0.2
10410	00	V	500	30	2.1	0.1	0.6
10410	12	V	500	30	3.1	-0.4	0.0
10739	12	V	500	30	2.4	0.2	0.4
10739	00	V	500	30	2.6	0.0	-0.1
11035	12	V	500	29	2.2	0.0	0.0
11035	00	V	500	30	3.8	0.8	0.0
12982	12	V	500	30	2.1	-0.7	0.0
12982	00	V	500	30	3.4	-1.2	-0.1
16245	12	V	500	30	2.5	0.9	0.1
16245	00	V	500	28	2.3	0.7	0.1
16429	00	V	500	30	2.7	0.1	0.5
16429	12	V	500	30	2.5	0.6	0.0
16622	00	V	500	29	2.8	-0.9	0.0
16754	00	V	500	29	2.3	0.9	-0.2
17607	12	V	500	21	5.9	-2.6	-0.6
26435	12	V	500	15	1.8	-0.2	0.4
2EERVT	00	V	500	6	3.4	-1.4	-1.1

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
2EERVT	12	V	500	6	10.8	3.9	-2.6
60018	00	V	500	30	1.9	0.2	0.2
60018	12	V	500	30	2.0	-0.1	0.0
7JUNA4	12	V	500	11	2.8	0.9	1.0
7JUNA4	00	V	500	8	5.7	-1.1	-1.3
ASDE09	12	V	500	1	1.3	-1.1	0.6
ATGU3F	12	V	500	14	2.1	0.7	0.3
ATGU3F	00	V	500	7	8.8	-1.6	-1.5
FPUW5G	12	V	500	1	0.7	0.1	-0.7
JNKN7J	12	V	500	5	2.4	0.5	-1.0
JNKN7J	00	V	500	5	4.5	1.3	-1.8
KJJF9X	12	V	500	10	3.6	0.5	-1.4
KJJF9X	00	V	500	8	3.2	0.7	0.3
LAGY8	00	V	500	4	1.8	-0.3	0.0
LAGZ8	12	V	500	3	2.2	-0.9	0.7
LAGZ8	00	V	500	1	0.6	-0.4	0.4
LRYQE3	12	V	500	5	1.7	0.2	0.7
LRYQE3	00	V	500	4	3.0	-0.4	0.5
SMLQ	12	V	500	16	2.9	-0.5	0.0
SMLQ	00	V	500	14	1.6	0.6	0.5
UXK5JT	12	V	500	8	2.4	1.1	0.3
UXK5JT	00	V	500	5	2.0	0.1	0.1
WDK38H	12	V	500	14	1.9	-0.1	0.7
XKQLWQ	12	V	500	22	8.7	-0.5	-2.7
YLV96W	12	V	500	9	2.7	-0.4	0.5
YLV96W	00	V	500	10	1.7	0.7	-0.4
ZVQEQC	12	V	500	22	3.2	0.5	0.2
ZVQEQC	00	V	500	26	2.3	0.3	0.2

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

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	12	Z	850	30	4.2	0.4
01001	00	Z	850	30	6.7	5.0
01028	00	Z	850	29	3.2	-0.5
01028	12	Z	850	29	3.2	-0.5
01400	00	Z	850	30	78.9	78.8
01400	12	Z	850	29	78.3	78.2
01415	12	Z	850	30	4.5	3.6
01415	00	Z	850	30	4.4	3.7
02365	00	Z	850	16	3.5	2.2
02365	12	Z	850	17	2.9	1.7
02591	00	Z	850	30	8.1	7.7
02591	12	Z	850	30	8.3	8.1
02836	12	Z	850	30	2.7	1.9
02836	00	Z	850	30	3.3	2.1
02963	00	Z	850	30	4.6	4.1
02963	12	Z	850	30	19.0	6.9
03005	00	Z	850	27	2.3	-1.1
03005	12	Z	850	31	2.3	-0.5
03238	12	Z	850	2	1.6	1.3
03238	00	Z	850	25	3.8	2.3
03808	00	Z	850	28	2.8	1.8
03808	12	Z	850	30	2.8	1.3
03918	00	Z	850	28	6.9	6.3
03918	12	Z	850	1	7.3	7.3
03953	00	Z	850	30	2.9	-1.2
03953	12	Z	850	30	2.5	-1.0
04018	00	Z	850	29	2.7	0.5
04018	12	Z	850	30	2.0	0.4
04220	12	Z	850	27	5.7	-4.7
04220	00	Z	850	29	4.4	-3.7
04270	00	Z	850	29	9.9	-9.5
04270	12	Z	850	30	8.5	-7.8
04320	00	Z	850	30	4.0	1.3
04320	12	Z	850	30	4.2	2.5
043207	12	Z	850	1	0.6	-0.6
04339	12	Z	850	30	10.4	-9.2
04339	00	Z	850	30	11.7	-11.1
043398	12	Z	850	1	4.3	-4.3
04360	12	Z	850	28	9.0	-8.5

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
04360	00	Z	850	28	9.3	-8.6
06011	12	Z	850	31	5.5	-2.9
06260	00	Z	850	30	2.8	1.1
06260	12	Z	850	4	3.9	0.2
06610	12	Z	850	31	3.8	2.5
06610	00	Z	850	33	3.3	1.8
07110	00	Z	850	31	3.7	-2.4
07110	12	Z	850	30	4.3	-2.7
07510	12	Z	850	29	4.0	3.0
07510	00	Z	850	26	3.7	2.6
07645	00	Z	850	31	7.7	-7.4
07645	12	Z	850	31	7.2	-6.9
07761	12	Z	850	28	6.2	-3.8
07761	00	Z	850	27	6.9	-4.9
08001	00	Z	850	29	2.0	1.0
08001	12	Z	850	30	3.1	1.1
08221	00	Z	850	30	1.9	0.9
08221	12	Z	850	31	2.2	1.3
08302	12	Z	850	30	9.2	-8.9
08302	00	Z	850	29	8.3	-8.0
08508	12	Z	850	30	6.9	5.8
08522	12	Z	850	30	3.7	3.4
10035	00	Z	850	28	14.1	14.0
10035	12	Z	850	29	12.6	12.4
10393	00	Z	850	30	2.6	1.3
10393	12	Z	850	30	2.9	0.8
10410	00	Z	850	30	2.7	0.1
10410	12	Z	850	30	1.6	0.1
10739	12	Z	850	32	4.6	4.3
10739	00	Z	850	30	5.2	4.7
11035	12	Z	850	31	3.1	2.0
11035	00	Z	850	31	7.3	-3.3
12982	12	Z	850	32	2.7	1.9
12982	00	Z	850	30	3.0	2.0
16245	12	Z	850	31	3.2	2.7
16245	00	Z	850	30	3.6	3.1
16429	00	Z	850	30	3.4	2.7
16429	12	Z	850	30	3.3	2.1
16622	00	Z	850	29	9.4	9.0
16754	00	Z	850	29	2.2	0.9
17607	12	Z	850	25	1.9	0.2
26435	12	Z	850	15	1.7	0.5
2EERVT	00	Z	850	6	4.4	-0.8

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
2EERVT	12	Z	850	7	4.5	-1.0
60018	00	Z	850	30	3.4	-2.2
60018	12	Z	850	30	2.4	-0.6
7JUNA4	12	Z	850	11	3.3	1.3
7JUNA4	00	Z	850	8	8.1	2.4
ASDE09	12	Z	850	1	0.0	0.0
ATGU3F	12	Z	850	15	29.3	-20.9
ATGU3F	00	Z	850	9	25.1	-23.5
FPUW5G	12	Z	850	1	12.3	12.3
JNKN7J	12	Z	850	5	39.1	38.7
JNKN7J	00	Z	850	6	42.2	42.0
KJJF9X	12	Z	850	10	15.4	-10.8
KJJF9X	00	Z	850	8	7.5	-1.7
LAGY8	00	Z	850	4	0.0	0.0
LAGZ8	12	Z	850	3	78.5	78.5
LAGZ8	00	Z	850	1	74.9	74.9
LRYQE3	12	Z	850	5	3.6	2.5
LRYQE3	00	Z	850	4	4.6	-3.4
SMLQ	12	Z	850	16	4.6	3.7
SMLQ	00	Z	850	15	3.9	2.5
UXK5JT	12	Z	850	8	6.8	-4.0
UXK5JT	00	Z	850	5	3.2	-1.8
WDK38H	12	Z	850	14	10.4	-7.0
XKQLWQ	12	Z	850	22	24.3	0.5
YLV96W	12	Z	850	9	5.4	-3.0
YLV96W	00	Z	850	11	3.6	-0.8
ZVQEQC	12	Z	850	29	16.7	-2.0
ZVQEQC	00	Z	850	27	2.8	0.1

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

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	12	V	850	30	3.4	0.4	-0.8
01001	00	V	850	30	3.5	-0.6	-0.5
01028	00	V	850	29	3.1	0.1	-0.2
01028	12	V	850	29	2.9	0.5	-0.1
01400	00	V	850	30	2.2	0.0	0.2
01400	12	V	850	29	2.1	-0.1	0.1
01415	12	V	850	30	2.6	0.0	0.5
01415	00	V	850	28	3.0	1.1	0.4
02365	00	V	850	16	2.8	-0.7	-1.2
02365	12	V	850	17	3.6	0.4	0.8
02591	00	V	850	30	2.1	0.1	0.3
02591	12	V	850	30	2.3	-0.1	0.0
02836	12	V	850	30	3.1	-0.1	0.2
02836	00	V	850	30	2.4	-0.1	0.7
02963	00	V	850	30	2.8	0.2	0.1
02963	12	V	850	30	2.2	0.6	0.2
03005	00	V	850	27	2.5	-0.3	0.0
03005	12	V	850	30	3.4	-0.1	-0.2
03238	12	V	850	2	1.6	0.4	1.4
03238	00	V	850	25	2.3	-0.1	-0.2
03808	00	V	850	27	3.0	0.7	-0.1
03808	12	V	850	30	2.3	0.0	-0.3
03918	00	V	850	28	2.3	-0.1	0.0
03918	12	V	850	1	1.9	1.9	0.3
03953	00	V	850	30	2.6	0.0	0.9
03953	12	V	850	30	2.9	-0.4	-0.3
04018	00	V	850	29	2.8	0.1	0.0
04018	12	V	850	30	2.8	0.7	0.1
04220	12	V	850	27	3.3	0.1	0.0
04220	00	V	850	29	3.1	-0.4	-0.7
04270	00	V	850	29	2.7	-0.2	0.0
04270	12	V	850	30	3.4	0.4	0.5
04320	00	V	850	30	2.5	0.1	0.1
04320	12	V	850	30	2.7	-0.3	0.9
043207	12	V	850	1	3.5	-2.3	2.7
04339	12	V	850	30	4.7	1.5	0.9
04339	00	V	850	30	4.0	0.6	1.1
043398	12	V	850	1	7.7	5.7	5.2
04360	12	V	850	28	3.9	0.5	0.6

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
04360	00	V	850	28	4.4	-0.9	0.0
06011	12	V	850	30	2.6	0.1	-0.3
06260	00	V	850	30	2.5	-0.6	-0.2
06260	12	V	850	4	2.9	-0.7	1.3
06610	12	V	850	30	2.4	0.1	-0.1
06610	00	V	850	31	2.7	0.0	0.0
07110	00	V	850	29	2.6	0.2	-0.2
07110	12	V	850	29	2.9	-0.9	-1.0
07510	12	V	850	26	2.8	0.7	0.1
07510	00	V	850	25	2.6	0.6	-0.3
07645	00	V	850	29	3.3	0.2	-0.1
07645	12	V	850	28	2.7	0.1	0.1
07761	12	V	850	27	2.3	-0.5	0.2
07761	00	V	850	26	3.3	0.3	0.1
08001	00	V	850	29	2.7	0.5	-0.4
08001	12	V	850	30	2.3	0.3	0.1
08221	00	V	850	30	2.7	0.2	0.4
08221	12	V	850	30	2.6	0.2	0.4
08302	12	V	850	30	3.0	-0.2	-0.3
08302	00	V	850	29	2.3	-0.8	0.0
08508	12	V	850	30	3.2	-0.4	0.2
08522	12	V	850	30	3.3	-1.2	-0.3
10035	00	V	850	28	2.1	0.2	0.2
10035	12	V	850	29	1.7	0.4	-0.1
10393	00	V	850	30	2.4	0.3	-0.2
10393	12	V	850	30	2.8	0.8	0.3
10410	00	V	850	30	2.1	0.5	-0.4
10410	12	V	850	30	2.6	0.3	0.3
10739	12	V	850	30	2.5	0.0	-0.4
10739	00	V	850	30	2.7	0.6	0.4
11035	12	V	850	30	2.4	0.2	0.5
11035	00	V	850	30	2.8	0.2	0.7
12982	12	V	850	30	2.7	0.0	-0.9
12982	00	V	850	30	2.2	-0.4	0.2
16245	12	V	850	30	2.7	-0.4	-0.2
16245	00	V	850	29	3.3	0.8	-0.2
16429	00	V	850	30	3.6	0.0	0.7
16429	12	V	850	30	2.5	-0.9	0.5
16622	00	V	850	29	2.0	-0.2	0.2
16754	00	V	850	29	3.3	0.2	-0.2
17607	12	V	850	24	3.1	0.2	0.0
26435	12	V	850	15	2.1	0.5	0.3
2EERVT	00	V	850	6	2.2	0.3	-1.7

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
2EERVT	12	V	850	7	2.4	0.6	0.8
60018	00	V	850	30	3.6	-0.6	0.6
60018	12	V	850	30	2.6	-0.8	-0.2
7JUNA4	12	V	850	11	3.9	-0.6	-0.1
7JUNA4	00	V	850	8	2.8	-0.7	0.2
ASDE09	12	V	850	1	2.1	1.5	1.4
ATGU3F	12	V	850	15	4.3	1.8	-0.1
ATGU3F	00	V	850	9	5.9	-1.8	-1.5
FPUW5G	12	V	850	1	1.1	0.0	-1.1
JNKN7J	12	V	850	5	2.5	1.2	0.1
JNKN7J	00	V	850	6	2.2	-1.1	0.0
KJJF9X	12	V	850	9	2.7	1.2	-0.5
KJJF9X	00	V	850	8	4.1	0.3	-1.9
LAGY8	00	V	850	4	2.2	-1.3	0.7
LAGZ8	12	V	850	3	1.5	0.3	0.3
LAGZ8	00	V	850	1	3.5	-0.7	3.4
LRYQE3	12	V	850	5	3.0	-0.5	1.3
LRYQE3	00	V	850	4	3.9	-1.6	-1.0
SMLQ	12	V	850	16	3.3	1.1	-0.8
SMLQ	00	V	850	14	2.3	-0.8	0.6
UXK5JT	12	V	850	8	1.6	0.3	-0.5
UXK5JT	00	V	850	5	2.2	0.2	0.7
WDK38H	12	V	850	14	2.9	0.1	0.5
XKQLWQ	12	V	850	22	4.2	0.0	-1.2
YLV96W	12	V	850	9	2.6	0.0	0.3
YLV96W	00	V	850	11	2.6	0.0	0.3
ZVQEQC	12	V	850	22	2.6	0.2	0.4
ZVQEQC	00	V	850	27	2.4	-0.1	-0.2

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                 : SEP 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
1000044	99	P	SUR	55	10	158	0	0.4	-3.1	3.2
1300001	99	P	SUR	11	-23	718	0	0.4	0.1	0.4
1300008	99	P	SUR	15	-38	578	0	0.3	0.0	0.3
1300131	99	P	SUR	28	-17	717	0	0.3	-0.2	0.4
1301629	99	P	SUR	23	-69	377	0	0.3	-0.1	0.3
1301712	99	P	SUR	24	-64	720	0	0.3	0.0	0.3
1301714	99	P	SUR	29	-63	720	0	0.4	0.1	0.4
1301718	99	P	SUR	30	-46	720	0	0.4	0.0	0.4
1301725	99	P	SUR	27	-48	720	0	0.4	0.0	0.4
1301726	99	P	SUR	25	-53	720	0	0.4	-0.1	0.4
1301731	99	P	SUR	21	-50	717	0	0.3	0.2	0.3
1301735	99	P	SUR	23	-40	720	0	0.3	-1.2	1.2
1301736	99	P	SUR	32	-45	720	0	0.4	0.0	0.4
1301737	99	P	SUR	30	-54	720	0	0.3	-0.1	0.4
1301767	99	P	SUR	28	-25	717	0	0.2	-0.8	0.9
1301769	99	P	SUR	28	-29	720	0	0.2	0.4	0.5
1301770	99	P	SUR	25	-52	720	0	0.4	0.0	0.4
1301771	99	P	SUR	28	-24	636	0	0.2	0.0	0.2
1301773	99	P	SUR	31	-16	720	0	0.2	0.0	0.2
1301778	99	P	SUR	25	-27	719	0	0.3	-0.1	0.3
1301782	99	P	SUR	58	-49	720	0	0.3	-0.1	0.3
1301784	99	P	SUR	38	-22	720	0	0.2	0.1	0.2
1301785	99	P	SUR	37	-17	710	0	0.2	0.1	0.3
1301786	99	P	SUR	35	-26	711	0	0.2	0.2	0.3
1301787	99	P	SUR	33	-13	713	0	0.3	-0.2	0.3
1301788	99	P	SUR	35	-13	717	0	0.3	0.1	0.3
1301789	99	P	SUR	28	-16	325	0	0.4	-0.3	0.5
1301792	99	P	SUR	21	-48	272	0	0.3	-0.4	0.5
1301793	99	P	SUR	62	-13	680	0	0.4	0.1	0.4
1301794	99	P	SUR	32	-16	708	0	0.6	-0.1	0.6
1301795	99	P	SUR	21	-67	717	0	0.4	-0.1	0.4
1301797	99	P	SUR	19	-55	688	0	0.3	0.1	0.3
1301798	99	P	SUR	29	-39	720	0	0.3	0.3	0.5
1301799	99	P	SUR	31	-31	712	0	0.2	0.2	0.3
1301800	99	P	SUR	76	12	295	0	0.4	-0.1	0.4
1301801	99	P	SUR	60	-9	720	0	0.3	0.2	0.4

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
1301802	99	P	SUR	62	2	695	3	0.3	-0.3	0.4
1301804	99	P	SUR	62	-24	720	0	0.4	-0.8	0.9
1301807	99	P	SUR	76	21	719	0	0.5	0.2	0.6
1301810	99	P	SUR	38	-41	720	0	0.4	-0.3	0.5
1301811	99	P	SUR	43	-36	719	0	0.4	0.0	0.5
1301812	99	P	SUR	48	-40	720	0	0.4	0.0	0.4
1301814	99	P	SUR	44	-25	720	0	0.5	0.1	0.5
1301816	99	P	SUR	45	-45	720	0	0.4	0.2	0.4
1301817	99	P	SUR	27	-62	720	0	0.3	0.1	0.4
1301818	99	P	SUR	35	-61	720	0	0.3	0.0	0.3
1301819	99	P	SUR	26	-26	720	0	0.3	-0.1	0.3
1301820	99	P	SUR	29	-32	720	0	0.3	-0.2	0.3
1301822	99	P	SUR	22	-28	720	0	0.3	0.3	0.4
1301823	99	P	SUR	25	-27	720	0	0.2	0.1	0.3
1501638	99	P	SUR	18	-49	720	0	0.3	-0.1	0.3
1701715	99	P	SUR	22	-58	688	0	0.3	-0.2	0.4
1701716	99	P	SUR	18	-41	275	0	0.3	-0.2	0.4
1701718	99	P	SUR	20	-66	707	707	0.0	0.0	0.0
1801556	99	P	SUR	30	-67	2171	0	0.5	-0.1	0.5
1801561	99	P	SUR	18	-67	1063	0	0.3	0.0	0.3
1801607	99	P	SUR	19	-66	4108	0	0.5	0.2	0.6
1801671	99	P	SUR	48	-29	711	0	0.5	0.0	0.5
1801673	99	P	SUR	49	-46	718	0	1.1	0.4	1.1
1801674	99	P	SUR	40	-28	698	1	0.5	-0.3	0.5
1801676	99	P	SUR	46	-47	719	0	0.3	0.1	0.3
1801678	99	P	SUR	38	-15	720	0	0.2	0.4	0.5
1801777	99	P	SUR	43	-37	720	0	0.4	0.1	0.4
1801778	99	P	SUR	44	-47	720	0	0.3	0.3	0.4
1801803	99	P	SUR	64	-2	130	0	1.9	1.7	2.5
1801804	99	P	SUR	68	-19	123	0	0.4	0.1	0.4
1801853	99	P	SUR	53	-56	714	0	0.3	0.2	0.4
2801966	99	P	SUR	31	17	698	0	0.4	0.0	0.4
2801968	99	P	SUR	49	-50	720	0	0.3	0.0	0.3
2802008	99	P	SUR	66	-38	438	0	0.4	-0.3	0.5
2802075	99	P	SUR	55	-9	716	0	0.5	-0.3	0.6
2802077	99	P	SUR	64	-58	720	1	0.3	0.0	0.3
2802078	99	P	SUR	72	25	719	0	0.3	-0.3	0.4
2802100	99	P	SUR	67	-10	709	0	0.4	0.1	0.4
2802160	99	P	SUR	49	-54	719	0	0.3	0.3	0.4
3801569	99	P	SUR	45	-33	705	0	0.6	-0.2	0.6
3801596	99	P	SUR	32	-42	713	0	0.4	-0.3	0.5
3801616	99	P	SUR	69	-26	720	0	0.4	0.1	0.4
3801676	99	P	SUR	69	-9	720	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
3801702	99	P	SUR	67	-29	718	0	0.4	-0.2	0.5
3801758	99	P	SUR	49	-53	719	0	0.3	0.3	0.4
4100040	99	P	SUR	15	-53	4314	0	0.3	-1.2	1.2
4100043	99	P	SUR	21	-65	4315	0	0.3	0.1	0.3
4100044	99	P	SUR	22	-59	4316	0	0.3	-0.3	0.5
4100049	99	P	SUR	28	-62	4316	0	0.3	-0.4	0.5
4100052	99	P	SUR	18	-65	3125	0	0.4	-1.2	1.3
4100053	99	P	SUR	18	-66	4308	0	0.4	-0.9	1.0
4100056	99	P	SUR	18	-65	4251	0	0.4	-1.0	1.1
4100139	99	P	SUR	20	-38	590	0	0.3	0.0	0.3
4100300	99	P	SUR	16	-57	113	0	0.3	-0.1	0.3
4101665	99	P	SUR	69	-8	720	0	0.3	-0.4	0.6
4101725	99	P	SUR	18	-63	720	0	0.4	-0.2	0.5
4101727	99	P	SUR	30	-62	720	0	0.4	0.1	0.4
4101728	99	P	SUR	30	-53	720	0	0.4	0.3	0.5
4101729	99	P	SUR	29	-55	720	0	0.3	0.0	0.3
4101753	99	P	SUR	29	-44	720	0	0.4	0.1	0.4
4101755	99	P	SUR	36	-57	720	0	0.5	0.1	0.5
4101845	99	P	SUR	72	13	720	0	0.4	0.0	0.5
4101851	99	P	SUR	27	-61	720	0	0.4	-1.0	1.1
4101859	99	P	SUR	17	-52	720	0	0.3	-0.1	0.4
4101861	99	P	SUR	23	-40	717	0	0.4	0.2	0.5
4101862	99	P	SUR	16	-42	720	0	0.3	-0.6	0.7
4101863	99	P	SUR	22	-36	720	0	0.3	0.0	0.3
4101870	99	P	SUR	18	-24	720	0	0.3	-0.1	0.3
4101873	99	P	SUR	25	-18	720	0	0.4	-0.1	0.4
4101875	99	P	SUR	23	-22	720	0	0.3	0.1	0.3
41040	99	P	SUR	15	-53	719	0	0.4	-1.2	1.3
41043	99	P	SUR	21	-65	720	0	0.3	0.1	0.3
41044	99	P	SUR	22	-59	720	0	0.4	-0.3	0.5
41049	99	P	SUR	28	-62	720	0	0.3	-0.4	0.5
41052	99	P	SUR	18	-65	525	0	0.4	-1.2	1.2
41053	99	P	SUR	19	-66	719	0	0.4	-0.9	1.0
41056	99	P	SUR	18	-66	716	0	0.4	-1.1	1.2
4200060	99	P	SUR	16	-63	4316	0	0.4	-0.4	0.6
4200085	99	P	SUR	18	-67	4246	0	0.4	-0.8	0.9
42060	99	P	SUR	16	-63	720	0	0.4	-0.4	0.6
42085	99	P	SUR	18	-67	716	0	0.4	-0.8	0.9
4400008	99	P	SUR	40	-69	4315	0	0.4	-0.8	0.8
4400011	99	P	SUR	41	-67	4316	0	0.4	0.2	0.5
4400027	99	P	SUR	44	-67	4318	0	0.3	-0.8	0.8
4400032	99	P	SUR	44	-69	713	0	0.3	0.0	0.3
4400033	99	P	SUR	44	-69	719	0	0.3	-1.3	1.4

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
4400034	99	P	SUR	44	-68	719	0	0.3	-0.4	0.5
4400037	99	P	SUR	43	-68	13	0	0.2	0.8	0.8
4400488	99	P	SUR	45	-61	718	0	0.3	0.1	0.3
4400489	99	P	SUR	45	-61	715	0	0.3	0.2	0.3
44008	99	P	SUR	41	-69	720	0	0.4	-0.8	0.9
44011	99	P	SUR	41	-67	720	0	0.4	0.2	0.5
4401582	99	P	SUR	33	-69	718	0	0.5	0.2	0.5
4401584	99	P	SUR	34	-64	720	0	0.3	-0.1	0.4
4401588	99	P	SUR	69	15	717	0	0.4	-0.2	0.4
4402618	99	P	SUR	38	-49	668	0	0.5	0.1	0.5
4402656	99	P	SUR	27	-34	720	0	0.3	-0.1	0.3
4402674	99	P	SUR	23	-64	720	0	0.3	0.2	0.4
4402675	99	P	SUR	31	-64	720	0	0.3	-0.1	0.3
4402676	99	P	SUR	27	-39	720	0	0.3	0.1	0.3
44027	99	P	SUR	44	-67	720	0	0.3	-0.7	0.8
4402721	99	P	SUR	20	-50	720	0	0.3	0.2	0.4
4402729	99	P	SUR	52	-18	720	0	0.3	0.0	0.3
4402730	99	P	SUR	34	-30	661	0	0.3	-0.2	0.4
4402731	99	P	SUR	43	-31	689	0	0.5	0.2	0.5
4402733	99	P	SUR	52	-32	717	0	0.4	0.0	0.5
4402736	99	P	SUR	30	-17	720	0	0.3	0.0	0.3
4402737	99	P	SUR	54	-37	720	0	0.5	-0.2	0.5
4402739	99	P	SUR	45	-20	718	0	0.3	0.0	0.3
4402743	99	P	SUR	30	-24	717	0	0.2	-1.0	1.0
4402744	99	P	SUR	31	-52	718	0	0.4	0.0	0.4
4402747	99	P	SUR	32	-28	720	0	0.3	0.0	0.3
4402749	99	P	SUR	61	-16	719	0	0.3	-0.2	0.4
4402750	99	P	SUR	54	-34	720	0	0.5	-0.4	0.7
4402878	99	P	SUR	42	-62	1	1	0.0	0.0	0.0
4402882	99	P	SUR	39	-54	662	0	0.5	0.3	0.6
4402884	99	P	SUR	27	-67	709	0	0.3	0.4	0.5
4402885	99	P	SUR	26	-43	656	0	0.4	0.3	0.5
44032	99	P	SUR	44	-69	713	0	0.3	0.0	0.3
44033	99	P	SUR	44	-69	719	0	0.3	-1.3	1.4
44034	99	P	SUR	44	-68	719	0	0.3	-0.4	0.5
4403568	99	P	SUR	31	-38	719	0	0.3	0.2	0.4
4403569	99	P	SUR	24	-22	720	7	2.3	0.5	2.3
44037	99	P	SUR	44	-68	13	0	0.3	0.8	0.8
44078	99	P	SUR	60	-40	713	0	0.5	-0.7	0.9
44137	99	P	SUR	42	-62	718	0	0.5	-0.1	0.5
44139	99	P	SUR	44	-57	708	0	0.4	-0.1	0.4
44150	99	P	SUR	43	-64	454	0	0.4	-0.1	0.5
44258	99	P	SUR	45	-63	717	0	0.3	0.0	0.3

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
44488	99	P	SUR	45	-61	718	0	0.3	0.1	0.4
44489	99	P	SUR	46	-61	715	0	0.3	0.2	0.4
4601782	99	P	SUR	26	-46	718	0	0.4	0.5	0.6
4701530	99	P	SUR	87	7	720	0	0.4	-0.4	0.6
4701555	99	P	SUR	64	-22	37	0	0.3	-5.8	5.8
4701558	99	P	SUR	79	-18	60	0	0.5	-4.7	4.7
4701561	99	P	SUR	66	-21	717	0	0.5	0.0	0.5
4801763	99	P	SUR	82	-18	441	0	0.5	-2.5	2.6
4801771	99	P	SUR	54	-32	720	720	0.0	0.0	0.0
4802506	99	P	SUR	58	-8	716	0	0.3	-0.7	0.8
4802582	99	P	SUR	64	-32	720	0	1.6	0.3	1.6
4802594	99	P	SUR	84	-26	719	0	0.4	-0.6	0.7
4802598	99	P	SUR	82	-3	536	0	0.4	-0.2	0.5
4802608	99	P	SUR	85	-32	720	0	0.4	-0.1	0.4
4802664	99	P	SUR	83	-55	720	0	0.4	-0.3	0.5
4802669	99	P	SUR	86	-8	675	0	0.4	-0.3	0.5
4803914	99	P	SUR	22	-55	3998	0	0.3	0.1	0.3
4803997	99	P	SUR	49	-47	717	0	0.3	-0.1	0.4
4804003	99	P	SUR	59	-55	718	0	0.4	0.0	0.4
4804016	99	P	SUR	14	-46	701	0	0.3	-0.1	0.3
4804120	99	P	SUR	65	-8	707	0	0.3	0.3	0.4
4804174	99	P	SUR	49	-54	719	0	0.3	0.3	0.4
5801955	99	P	SUR	18	-65	1939	0	0.5	0.0	0.5
5801958	99	P	SUR	31	-67	653	0	0.2	0.0	0.2
5801959	99	P	SUR	25	-67	1016	0	0.3	0.3	0.4
5801972	99	P	SUR	44	-51	719	0	0.4	0.0	0.4
5801975	99	P	SUR	38	-30	711	0	0.3	0.0	0.3
5801976	99	P	SUR	48	-25	708	0	0.4	0.0	0.4
5801977	99	P	SUR	18	-58	704	0	0.4	0.0	0.4
5801978	99	P	SUR	56	-42	145	5	4.9	5.5	7.3
5801983	99	P	SUR	31	-19	645	0	0.3	0.1	0.3
5802034	99	P	SUR	50	-2	719	0	0.5	-0.3	0.5
5802070	99	P	SUR	74	25	719	0	0.3	0.0	0.3
5802072	99	P	SUR	73	31	720	0	0.3	-0.2	0.3
5802086	99	P	SUR	86	-64	720	0	0.5	-0.2	0.5
5802095	99	P	SUR	62	-19	673	0	0.4	-0.2	0.5
5802096	99	P	SUR	65	-21	715	0	0.4	0.4	0.6
5802156	99	P	SUR	89	6	101	0	0.4	0.5	0.6
6100001	99	P	SUR	43	8	692	0	0.4	-0.1	0.5
6100002	99	P	SUR	42	5	716	0	0.4	-0.1	0.5
6100196	99	P	SUR	42	4	720	0	0.5	0.0	0.5
6100197	99	P	SUR	40	4	720	0	0.4	0.1	0.4
6100198	99	P	SUR	37	-2	719	0	0.4	0.3	0.5

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
6100280	99	P	SUR	41	1	719	0	0.4	0.1	0.4
6100281	99	P	SUR	40	0	720	0	0.4	-0.1	0.4
6100417	99	P	SUR	38	0	720	0	0.3	0.3	0.4
6100430	99	P	SUR	40	2	719	0	0.3	0.0	0.3
6101007	99	P	SUR	36	25	222	0	0.4	-0.6	0.8
6101009	99	P	SUR	35	25	232	0	0.4	-0.5	0.7
6101031	99	P	SUR	42	8	618	0	0.3	0.0	0.3
6101032	99	P	SUR	42	10	1640	0	0.4	-0.2	0.5
6200001	99	P	SUR	45	-5	720	0	0.3	0.0	0.3
6200024	99	P	SUR	44	-3	702	0	0.4	0.3	0.5
6200025	99	P	SUR	44	-6	488	0	0.4	0.2	0.5
6200050	99	P	SUR	50	-4	718	0	0.3	0.0	0.3
6200081	99	P	SUR	51	-13	674	0	0.4	-0.1	0.4
6200083	99	P	SUR	43	-9	720	0	0.5	0.1	0.5
6200084	99	P	SUR	42	-9	720	0	0.4	0.1	0.4
6200085	99	P	SUR	36	-7	720	0	0.3	0.3	0.4
6200087	99	P	SUR	55	7	102	0	0.4	-0.3	0.6
6200091	99	P	SUR	53	-5	720	0	0.3	-0.1	0.3
6200092	99	P	SUR	51	-11	720	0	0.4	-0.2	0.4
6200093	99	P	SUR	55	-10	720	0	0.3	-0.1	0.3
6200094	99	P	SUR	52	-7	720	0	0.4	-0.1	0.4
6200095	99	P	SUR	53	-16	718	0	0.4	-0.1	0.4
6200103	99	P	SUR	50	-3	133	0	0.4	0.0	0.4
6200163	99	P	SUR	47	-8	713	0	0.3	-0.1	0.3
6200191	99	P	SUR	41	-10	418	0	0.3	-0.6	0.7
6200192	99	P	SUR	40	-10	419	0	0.4	-0.5	0.7
6200442	99	P	SUR	49	-16	699	0	0.4	-0.1	0.4
6201066	99	P	SUR	55	7	618	0	0.3	0.3	0.4
6201081	99	P	SUR	38	-9	419	0	0.2	-0.3	0.4
6202114	99	P	SUR	54	6	91	0	0.3	0.0	0.3
6202598	99	P	SUR	31	-20	719	0	0.2	0.0	0.2
6202637	99	P	SUR	71	30	639	0	0.4	0.1	0.4
6203607	99	P	SUR	25	-46	719	0	0.4	-0.2	0.5
6203612	99	P	SUR	46	-31	719	13	2.6	-0.2	2.6
6203615	99	P	SUR	37	-51	720	0	0.4	-0.2	0.5
6203621	99	P	SUR	27	-62	719	0	0.3	0.0	0.3
6203625	99	P	SUR	30	-50	720	0	0.3	-0.2	0.4
6203632	99	P	SUR	36	-52	719	0	0.6	0.1	0.6
6203634	99	P	SUR	26	-45	720	0	0.4	0.3	0.5
6203639	99	P	SUR	26	-39	720	0	0.4	-0.2	0.4
6203651	99	P	SUR	33	-18	709	0	0.2	0.0	0.2
6203656	99	P	SUR	63	-35	455	46	2.6	-1.2	2.9
6203664	99	P	SUR	79	1	719	48	2.7	0.7	2.8

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
6203668	99	P	SUR	84	35	718	0	1.4	-0.4	1.4
6203669	99	P	SUR	80	16	720	0	0.5	-0.2	0.5
6203753	99	P	SUR	54	-34	720	0	0.5	-0.4	0.6
6203768	99	P	SUR	29	-44	718	0	0.4	0.1	0.4
6203771	99	P	SUR	24	-53	720	0	0.4	-0.1	0.4
6203773	99	P	SUR	35	-35	720	0	0.3	-0.7	0.8
6203823	99	P	SUR	63	-3	720	0	0.3	0.2	0.4
6203825	99	P	SUR	70	9	716	0	0.4	0.1	0.4
6203830	99	P	SUR	61	-11	720	0	0.3	-0.2	0.4
6203832	99	P	SUR	62	-17	720	0	0.4	0.0	0.4
6203839	99	P	SUR	32	-48	720	0	0.4	-0.2	0.4
6203840	99	P	SUR	25	-69	720	0	0.4	0.2	0.4
6203842	99	P	SUR	25	-49	720	0	0.3	0.0	0.3
6203846	99	P	SUR	26	-38	720	0	0.3	-0.2	0.4
6203853	99	P	SUR	75	32	720	0	0.3	0.1	0.3
6203854	99	P	SUR	55	-28	720	0	0.4	0.1	0.4
6203865	99	P	SUR	49	-7	719	0	0.3	0.1	0.3
6203890	99	P	SUR	13	-46	720	0	0.3	-0.4	0.5
6203894	99	P	SUR	22	-33	720	0	0.3	0.1	0.3
6204603	99	P	SUR	44	8	649	0	0.5	0.3	0.6
6204604	99	P	SUR	37	11	588	0	0.4	-2.2	2.2
6204612	99	P	SUR	37	9	480	0	0.4	0.1	0.4
6204613	99	P	SUR	40	3	717	0	0.4	-0.5	0.6
6204614	99	P	SUR	41	1	221	0	0.4	-0.1	0.5
62050	99	P	SUR	50	-4	1438	0	0.3	0.0	0.3
62081	99	P	SUR	51	-13	1354	0	0.4	-0.1	0.4
62091	99	P	SUR	53	-5	720	0	0.3	-0.1	0.3
62092	99	P	SUR	51	-11	720	0	0.4	-0.2	0.4
62093	99	P	SUR	55	-10	720	0	0.3	-0.1	0.3
62094	99	P	SUR	52	-7	720	0	0.4	-0.1	0.4
62095	99	P	SUR	53	-16	718	0	0.4	-0.1	0.4
62102	99	P	SUR	58	2	1278	0	0.4	0.2	0.4
62103	99	P	SUR	50	-3	266	0	0.4	0.0	0.4
62104	99	P	SUR	57	1	1440	0	0.3	0.0	0.3
62105	99	P	SUR	55	-13	1440	0	0.6	-0.2	0.6
62107	99	P	SUR	50	-6	1440	0	0.4	-0.4	0.5
62112	99	P	SUR	58	0	1440	0	0.3	0.3	0.4
62113	99	P	SUR	58	0	1439	0	0.3	-0.1	0.4
62114	99	P	SUR	58	0	832	0	0.4	0.5	0.6
62115	99	P	SUR	58	-3	1440	0	0.3	0.0	0.3
62116	99	P	SUR	58	1	1438	0	0.3	0.0	0.3
62118	99	P	SUR	58	1	1418	0	0.2	0.4	0.5
62119	99	P	SUR	57	2	1435	0	0.3	0.1	0.3

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
62120	99	P	SUR	56	2	1438	0	0.5	0.1	0.5
62121	99	P	SUR	54	3	1379	0	0.4	0.3	0.5
62122	99	P	SUR	57	2	1416	0	0.3	0.1	0.4
62124	99	P	SUR	54	-4	1242	0	0.3	0.1	0.3
62127	99	P	SUR	54	1	1435	0	0.4	0.3	0.5
62129	99	P	SUR	58	0	1002	0	0.3	0.1	0.3
62130	99	P	SUR	59	1	1439	0	0.4	0.1	0.4
62131	99	P	SUR	54	1	1439	0	0.4	0.6	0.7
62132	99	P	SUR	56	2	1439	0	0.5	0.5	0.7
62133	99	P	SUR	57	1	1437	0	0.4	0.1	0.4
62134	99	P	SUR	58	1	1416	0	0.2	0.3	0.4
62135	99	P	SUR	54	2	14	0	0.1	0.7	0.7
62138	99	P	SUR	54	0	1419	0	0.5	0.4	0.6
62140	99	P	SUR	57	1	1440	0	0.4	0.2	0.4
62143	99	P	SUR	58	2	1440	0	0.4	0.8	0.9
62144	99	P	SUR	53	2	1439	0	0.3	0.3	0.5
62145	99	P	SUR	53	3	1439	0	0.3	0.3	0.4
62146	99	P	SUR	57	2	1439	0	0.4	0.3	0.5
62148	99	P	SUR	54	2	1439	0	0.4	0.5	0.6
62149	99	P	SUR	54	1	1211	0	0.3	0.5	0.6
62151	99	P	SUR	57	2	1439	0	0.3	0.3	0.4
62152	99	P	SUR	57	2	1439	0	0.3	0.5	0.6
62153	99	P	SUR	57	2	1356	0	0.4	0.5	0.6
62154	99	P	SUR	56	2	1439	0	0.3	0.1	0.3
62155	99	P	SUR	58	1	1440	0	0.3	0.4	0.5
62157	99	P	SUR	58	0	1440	0	0.4	-0.1	0.4
62160	99	P	SUR	57	2	1439	0	0.4	0.4	0.5
62161	99	P	SUR	58	1	1440	0	0.4	-0.3	0.5
62162	99	P	SUR	57	1	362	0	0.2	0.2	0.3
62163	99	P	SUR	48	-9	1428	0	0.3	-0.1	0.3
62164	99	P	SUR	57	1	1427	0	0.3	0.2	0.3
62165	99	P	SUR	54	1	1439	0	0.5	0.4	0.6
62168	99	P	SUR	58	1	1388	0	0.3	0.2	0.3
62170	99	P	SUR	51	2	1440	0	0.4	-0.1	0.4
62297	99	P	SUR	59	2	1439	0	0.3	0.2	0.4
62302	99	P	SUR	61	-2	1416	0	0.4	0.0	0.4
62304	99	P	SUR	51	2	1434	0	0.5	-0.1	0.5
62305	99	P	SUR	50	0	1440	0	0.4	-0.3	0.5
62442	99	P	SUR	49	-16	1439	0	0.4	-0.1	0.4
6301001	99	P	SUR	64	5	720	0	0.3	-0.1	0.3
6301004	99	P	SUR	72	20	644	0	0.4	-0.3	0.5
6301582	99	P	SUR	77	12	718	14	3.4	1.1	3.6
63055	99	P	SUR	61	2	1392	0	0.3	0.0	0.3

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
63056	99	P	SUR	60	2	1439	0	0.3	0.4	0.5
63057	99	P	SUR	59	2	1439	0	0.3	0.1	0.3
63058	99	P	SUR	53	2	838	0	0.3	0.1	0.3
63059	99	P	SUR	58	-1	1440	0	0.3	0.5	0.6
63101	99	P	SUR	61	1	846	0	0.4	0.2	0.4
63102	99	P	SUR	61	1	1440	0	0.3	0.0	0.3
63103	99	P	SUR	61	1	1440	0	0.4	0.3	0.5
63108	99	P	SUR	61	2	1416	0	0.3	-0.1	0.3
63109	99	P	SUR	60	2	1439	0	0.3	-0.2	0.4
63110	99	P	SUR	60	2	1439	0	0.3	-0.1	0.3
63111	99	P	SUR	61	2	1438	0	0.4	-0.3	0.4
63112	99	P	SUR	61	1	1440	0	0.3	-0.3	0.4
63115	99	P	SUR	62	1	1434	0	0.5	0.2	0.5
63117	99	P	SUR	61	1	750	0	0.4	0.2	0.4
63118	99	P	SUR	58	2	1438	0	0.3	-0.2	0.4
6400045	99	P	SUR	59	-12	718	0	0.3	-0.4	0.5
6401583	99	P	SUR	62	-18	719	0	0.4	0.2	0.4
6401584	99	P	SUR	61	-12	719	0	0.3	0.2	0.3
6401603	99	P	SUR	75	17	562	4	5.6	-2.2	6.0
6401759	99	P	SUR	64	-17	719	0	0.6	-0.1	0.6
6401763	99	P	SUR	66	12	720	0	0.4	0.0	0.4
6402615	99	P	SUR	24	-69	720	0	0.4	0.2	0.4
6402616	99	P	SUR	26	-47	720	0	0.4	-0.1	0.4
6402617	99	P	SUR	29	-56	720	0	0.4	0.3	0.5
6402618	99	P	SUR	21	-49	720	0	0.3	-0.1	0.3
6402619	99	P	SUR	22	-50	720	0	0.3	0.0	0.3
6402621	99	P	SUR	28	-24	720	0	0.2	0.4	0.4
6402622	99	P	SUR	26	-30	720	0	0.3	0.1	0.3
64041	99	P	SUR	61	-3	1406	0	0.3	0.1	0.3
64045	99	P	SUR	59	-12	1435	0	0.3	-0.4	0.5
6600021	99	P	SUR	55	14	49	0	0.3	-1.0	1.0
6600022	99	P	SUR	54	14	166	0	0.3	-0.3	0.4
6600024	99	P	SUR	55	13	170	0	0.3	-1.3	1.3
6801771	99	P	SUR	45	-46	714	0	0.3	0.0	0.3
6801790	99	P	SUR	37	-21	710	0	0.2	0.0	0.2
6801791	99	P	SUR	30	-32	720	0	0.2	0.3	0.4
6801879	99	P	SUR	11	-35	720	0	0.4	-0.1	0.5
6801907	99	P	SUR	68	-13	708	0	0.4	0.0	0.4
6801974	99	P	SUR	51	-55	720	0	0.3	0.0	0.3
7801572	99	P	SUR	21	-54	710	0	0.3	0.0	0.3
7801588	99	P	SUR	30	-19	686	0	0.3	0.2	0.3
7801697	99	P	SUR	44	-38	719	0	0.4	-0.3	0.5
7801698	99	P	SUR	63	2	65	65	0.0	0.0	0.0

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
7801699	99	P	SUR	34	-59	719	0	0.3	0.0	0.3
7810292	99	P	SUR	39	-36	717	0	0.4	0.1	0.4
7810293	99	P	SUR	41	-56	720	0	0.4	0.3	0.5
7810295	99	P	SUR	42	-50	719	0	0.4	0.0	0.4
7810296	99	P	SUR	38	-48	681	0	0.4	-0.2	0.5
7810297	99	P	SUR	36	-43	719	0	0.4	0.0	0.4
7810298	99	P	SUR	38	-60	720	0	0.4	-0.1	0.4
7810299	99	P	SUR	38	-41	720	0	0.5	-0.1	0.5
7810310	99	P	SUR	39	-46	696	0	0.5	-0.1	0.5
7810312	99	P	SUR	38	-70	712	0	0.4	0.2	0.5
7810313	99	P	SUR	41	-61	686	0	0.4	0.2	0.5
7810314	99	P	SUR	41	-61	720	0	0.5	0.1	0.5
7810315	99	P	SUR	42	-37	726	0	0.4	-0.1	0.4
7810316	99	P	SUR	39	-34	719	0	0.4	0.0	0.4
7810317	99	P	SUR	38	-34	720	0	0.4	-0.1	0.4
7810318	99	P	SUR	37	-55	720	0	0.4	0.2	0.5
7810319	99	P	SUR	45	-41	716	0	0.5	0.0	0.5
7810320	99	P	SUR	40	-67	720	0	0.4	0.1	0.5
7810321	99	P	SUR	42	-53	722	0	0.5	0.1	0.5
7810322	99	P	SUR	24	-67	717	0	0.3	0.4	0.5
7810323	99	P	SUR	30	-63	717	0	0.3	0.2	0.4
7810324	99	P	SUR	28	-66	715	0	0.4	0.0	0.4
7810325	99	P	SUR	29	-65	719	0	0.4	0.0	0.4
7810327	99	P	SUR	32	-67	721	0	0.4	0.1	0.4
7810328	99	P	SUR	32	-68	720	0	0.4	0.1	0.5
7810329	99	P	SUR	33	-69	719	0	0.6	0.1	0.6
7810331	99	P	SUR	32	-67	720	0	0.4	-0.1	0.4
7810377	99	P	SUR	36	-68	721	0	0.4	0.1	0.4
7810378	99	P	SUR	36	-68	719	0	0.4	0.0	0.4
7810379	99	P	SUR	39	-60	725	0	0.4	0.2	0.5
7810380	99	P	SUR	36	-67	720	0	0.4	0.3	0.5
7811002	99	P	SUR	54	-56	720	0	0.4	0.2	0.4

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                : SEP 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
1000044	99	SPEED	SUR	55	10	158	0	0	1.6	1.2	2.0
1300001	99	SPEED	SUR	11	-23	718	0	0	1.4	0.4	1.4
1300008	99	SPEED	SUR	15	-38	578	0	0	1.2	0.2	1.2
1300131	99	SPEED	SUR	28	-17	707	0	0	2.0	2.3	3.0
1801561	99	SPEED	SUR	18	-67	1750	0	0	1.4	0.0	1.4
1801607	99	SPEED	SUR	19	-66	4108	0	0	1.0	0.4	1.1
4100040	99	SPEED	SUR	15	-53	4315	0	0	1.2	0.2	1.2
4100043	99	SPEED	SUR	21	-65	4313	0	0	0.9	0.0	0.9
4100044	99	SPEED	SUR	22	-59	4315	0	0	0.9	-0.2	0.9
4100049	99	SPEED	SUR	28	-62	4316	0	0	1.1	0.0	1.1
4100052	99	SPEED	SUR	18	-65	3123	0	0	1.4	-0.1	1.4
4100053	99	SPEED	SUR	18	-66	4308	0	0	1.6	0.3	1.6
4100056	99	SPEED	SUR	18	-65	4251	0	0	1.3	-0.2	1.3
4100139	99	SPEED	SUR	20	-38	531	0	0	1.0	0.1	1.0
4100300	99	SPEED	SUR	16	-57	111	0	0	1.0	-1.0	1.4
41040	99	SPEED	SUR	15	-53	720	0	0	1.2	0.2	1.2
41043	99	SPEED	SUR	21	-65	719	0	0	0.9	0.0	0.9
41044	99	SPEED	SUR	22	-59	720	0	0	0.9	-0.2	0.9
41049	99	SPEED	SUR	28	-62	720	0	0	1.2	0.0	1.2
41052	99	SPEED	SUR	18	-65	525	0	0	1.5	0.0	1.5
41053	99	SPEED	SUR	19	-66	719	0	0	1.7	-0.1	1.7
41056	99	SPEED	SUR	18	-66	716	0	0	1.3	-0.1	1.3
4200060	99	SPEED	SUR	16	-63	4315	0	0	1.3	0.2	1.3
4200085	99	SPEED	SUR	18	-67	4246	0	0	1.5	-0.2	1.5
42060	99	SPEED	SUR	16	-63	720	0	0	1.3	0.3	1.4
42085	99	SPEED	SUR	18	-67	716	0	0	1.4	0.1	1.5
4400008	99	SPEED	SUR	40	-69	4313	0	0	1.4	0.0	1.4
4400011	99	SPEED	SUR	41	-67	4315	0	0	1.2	0.0	1.2
4400027	99	SPEED	SUR	44	-67	4296	0	0	1.0	-0.6	1.2
4400032	99	SPEED	SUR	44	-69	713	0	0	1.3	-0.2	1.3
4400033	99	SPEED	SUR	44	-69	719	0	0	1.4	-0.2	1.4
4400034	99	SPEED	SUR	44	-68	719	0	0	1.1	-0.8	1.4
4400037	99	SPEED	SUR	43	-68	13	0	0	2.0	-3.9	4.4
4400488	99	SPEED	SUR	45	-61	718	0	0	1.3	0.7	1.4

DRIFTER MONITORING STATISTICS (EUCOS)
MONITORING CENTRE : ECMWF
ELEMENT MONITORED : WIND SPEED (M/S) (CONTINU

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
4400489	99	SPEED	SUR	45	-61	715	0	0	1.3	1.2	1.7
44008	99	SPEED	SUR	41	-69	720	0	0	1.4	0.0	1.4
44011	99	SPEED	SUR	41	-67	720	0	0	1.2	0.0	1.2
44027	99	SPEED	SUR	44	-67	716	0	0	1.0	-0.5	1.2
44032	99	SPEED	SUR	44	-69	713	0	0	1.4	-0.2	1.4
44033	99	SPEED	SUR	44	-69	719	0	0	1.4	0.1	1.4
44034	99	SPEED	SUR	44	-68	719	0	0	1.2	-0.8	1.4
44037	99	SPEED	SUR	44	-68	13	0	0	2.2	-3.8	4.4
44078	99	SPEED	SUR	60	-40	713	0	0	1.7	-0.7	1.8
44137	99	SPEED	SUR	42	-62	718	0	0	1.1	0.0	1.1
44139	99	SPEED	SUR	44	-57	708	0	0	1.4	0.2	1.4
44150	99	SPEED	SUR	43	-64	454	0	0	1.3	0.6	1.4
44258	99	SPEED	SUR	45	-63	717	0	0	1.3	0.4	1.3
44488	99	SPEED	SUR	45	-61	718	0	0	1.3	1.1	1.7
44489	99	SPEED	SUR	46	-61	715	0	0	1.3	1.3	1.8
4803914	99	SPEED	SUR	22	-55	3998	0	0	1.0	0.3	1.0
5801955	99	SPEED	SUR	18	-65	1939	0	0	1.8	-0.4	1.8
5801958	99	SPEED	SUR	31	-67	653	0	0	1.0	0.4	1.1
5801959	99	SPEED	SUR	25	-67	1016	0	0	0.8	0.2	0.9
6100001	99	SPEED	SUR	43	8	692	0	0	1.9	-0.2	1.9
6100002	99	SPEED	SUR	42	5	716	0	0	1.5	0.0	1.5
6100196	99	SPEED	SUR	42	4	712	0	0	1.6	-0.5	1.7
6100197	99	SPEED	SUR	40	4	709	0	0	1.3	-0.5	1.3
6100198	99	SPEED	SUR	37	-2	703	0	0	1.2	-0.7	1.4
6100280	99	SPEED	SUR	41	1	717	0	0	1.7	-0.5	1.8
6100281	99	SPEED	SUR	40	0	714	0	0	1.9	0.5	2.0
6100417	99	SPEED	SUR	38	0	709	0	0	1.3	-0.3	1.4
6100430	99	SPEED	SUR	40	2	707	0	0	1.9	-0.2	2.0
6101007	99	SPEED	SUR	36	25	223	0	0	1.5	-0.6	1.7
6101009	99	SPEED	SUR	35	25	232	0	0	1.6	1.1	2.0
6101031	99	SPEED	SUR	42	8	1642	0	0	1.7	0.3	1.8
6101032	99	SPEED	SUR	42	10	1641	0	0	1.9	0.6	2.0
6200001	99	SPEED	SUR	45	-5	717	0	0	1.0	-0.4	1.1
6200024	99	SPEED	SUR	44	-3	694	0	0	1.5	-0.6	1.7
6200025	99	SPEED	SUR	44	-6	480	0	0	1.6	-1.1	1.9
6200050	99	SPEED	SUR	50	-4	717	0	0	1.3	-0.2	1.3
6200081	99	SPEED	SUR	51	-13	674	0	0	1.1	0.0	1.1
6200083	99	SPEED	SUR	43	-9	717	0	0	1.1	-0.2	1.1
6200084	99	SPEED	SUR	42	-9	713	0	0	1.4	-0.7	1.6
6200085	99	SPEED	SUR	36	-7	707	0	0	1.3	-0.7	1.5
6200087	99	SPEED	SUR	55	7	102	0	0	1.5	1.3	1.9

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
6200091	99	SPEED	SUR	53	-5	720	0	0	1.2	0.1	1.2
6200092	99	SPEED	SUR	51	-11	720	0	0	1.2	0.6	1.3
6200093	99	SPEED	SUR	55	-10	720	0	0	0.9	-0.4	1.0
6200094	99	SPEED	SUR	52	-7	720	0	0	1.3	-0.8	1.5
6200095	99	SPEED	SUR	53	-16	718	0	0	0.9	0.2	1.0
6200103	99	SPEED	SUR	50	-3	133	0	0	1.3	-0.4	1.4
6200163	99	SPEED	SUR	47	-8	713	0	0	1.0	0.2	1.0
6200442	99	SPEED	SUR	49	-16	699	0	0	1.2	0.0	1.2
6201066	99	SPEED	SUR	55	7	618	0	0	1.5	0.3	1.6
6202114	99	SPEED	SUR	54	6	91	0	0	1.5	-0.2	1.5
62050	99	SPEED	SUR	50	-4	1434	0	0	1.3	0.3	1.3
62081	99	SPEED	SUR	51	-13	1354	0	0	1.1	0.6	1.2
62091	99	SPEED	SUR	53	-5	720	0	0	1.2	0.4	1.2
62092	99	SPEED	SUR	51	-11	720	0	0	1.2	0.6	1.3
62093	99	SPEED	SUR	55	-10	720	0	0	1.0	-0.3	1.0
62094	99	SPEED	SUR	52	-7	720	0	0	1.3	-0.8	1.5
62095	99	SPEED	SUR	53	-16	718	0	0	1.0	0.3	1.0
62102	99	SPEED	SUR	58	2	1278	0	0	1.4	0.3	1.4
62103	99	SPEED	SUR	50	-3	266	0	0	1.4	-0.6	1.5
62104	99	SPEED	SUR	57	1	1440	0	0	1.2	-0.2	1.2
62105	99	SPEED	SUR	55	-13	1434	0	0	0.9	0.5	1.1
62107	99	SPEED	SUR	50	-6	1440	0	0	1.5	0.4	1.5
62112	99	SPEED	SUR	58	0	1436	0	0	1.4	-0.1	1.4
62114	99	SPEED	SUR	58	0	832	0	0	1.7	0.8	1.9
62118	99	SPEED	SUR	58	1	1418	0	0	1.4	0.6	1.6
62119	99	SPEED	SUR	57	2	1325	0	0	3.1	-2.8	4.2
62120	99	SPEED	SUR	56	2	1438	0	0	1.1	-0.5	1.2
62121	99	SPEED	SUR	54	3	1379	0	0	1.4	-0.4	1.5
62122	99	SPEED	SUR	57	2	1416	0	0	1.5	-0.3	1.5
62129	99	SPEED	SUR	58	0	998	0	0	1.5	0.0	1.5
62131	99	SPEED	SUR	54	1	18	0	0	1.3	-6.6	6.7
62133	99	SPEED	SUR	57	1	1437	0	0	1.8	0.2	1.8
62134	99	SPEED	SUR	58	1	1416	0	0	1.6	-1.8	2.4
62140	99	SPEED	SUR	57	1	956	0	0	1.1	-0.1	1.1
62143	99	SPEED	SUR	58	2	1440	0	0	1.9	-0.9	2.1
62144	99	SPEED	SUR	53	2	1439	0	0	1.7	-0.8	1.9
62145	99	SPEED	SUR	53	3	1439	0	0	1.5	0.3	1.5
62146	99	SPEED	SUR	57	2	1439	0	0	1.3	-0.1	1.3
62148	99	SPEED	SUR	54	2	1439	0	0	1.5	-0.4	1.5
62149	99	SPEED	SUR	54	1	1371	0	0	1.5	-0.2	1.5
62152	99	SPEED	SUR	57	2	312	0	0	1.6	-0.9	1.8

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	1439	0	0	1.3	0.0	1.3
62155	99	SPEED	SUR	58	1	1440	0	0	1.3	0.2	1.3
62163	99	SPEED	SUR	48	-9	1428	0	0	1.0	0.6	1.2
62164	99	SPEED	SUR	57	1	1427	0	0	1.4	-0.8	1.6
62165	99	SPEED	SUR	54	1	1439	0	0	1.6	-0.5	1.6
62170	99	SPEED	SUR	51	2	1440	0	0	1.4	0.5	1.5
62304	99	SPEED	SUR	51	2	1428	0	0	1.6	0.8	1.7
62442	99	SPEED	SUR	49	-16	1439	0	0	1.2	0.7	1.3
6301001	99	SPEED	SUR	64	5	720	0	0	1.3	-0.2	1.3
6301004	99	SPEED	SUR	72	20	644	0	0	1.3	-0.5	1.4
63055	99	SPEED	SUR	61	2	1392	0	0	1.6	-1.2	2.0
63056	99	SPEED	SUR	60	2	1439	0	0	1.5	0.3	1.5
63057	99	SPEED	SUR	59	2	1439	0	0	2.1	-0.2	2.1
63058	99	SPEED	SUR	53	2	852	0	0	1.3	-0.6	1.5
63101	99	SPEED	SUR	61	1	846	0	0	1.6	0.2	1.6
63103	99	SPEED	SUR	61	1	1440	0	0	1.6	-0.1	1.6
63108	99	SPEED	SUR	61	2	1414	0	0	1.7	-0.3	1.7
63109	99	SPEED	SUR	60	2	1439	0	0	1.6	0.2	1.6
63110	99	SPEED	SUR	60	2	1439	0	0	1.6	-0.1	1.6
63112	99	SPEED	SUR	61	1	1440	0	0	1.3	-0.1	1.3
63115	99	SPEED	SUR	62	1	1434	0	0	1.4	-0.2	1.4
63117	99	SPEED	SUR	61	1	750	0	0	1.6	0.2	1.6
64041	99	SPEED	SUR	61	-3	1406	0	0	1.3	-0.2	1.3
6600021	99	SPEED	SUR	55	14	49	0	0	1.1	0.2	1.1
6600022	99	SPEED	SUR	54	14	166	1	0	1.5	0.0	1.5
6600024	99	SPEED	SUR	55	13	166	0	0	1.0	0.7	1.3

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                : SEP 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	385	0	0	26.3	1.3	26.3
1300008	99	DIRN	SUR	15	-38	417	0	0	17.8	3.2	18.1
1300131	99	DIRN	SUR	28	-17	374	0	0	12.3	8.0	14.7
1801561	99	DIRN	SUR	18	-67	784	0	0	25.0	-3.8	25.3
1801562	99	DIRN	SUR	33	-75	2658	0	0	24.5	5.7	25.2
1801565	99	DIRN	SUR	34	-77	1050	0	0	17.0	1.0	17.0
1801577	99	DIRN	SUR	29	-85	1384	0	0	19.7	2.9	19.9
1801607	99	DIRN	SUR	19	-66	3328	0	0	12.5	5.0	13.5
4100001	99	DIRN	SUR	35	-72	2495	0	0	14.6	0.4	14.6
4100002	99	DIRN	SUR	32	-75	3332	0	0	23.3	5.7	24.0
4100004	99	DIRN	SUR	33	-79	3496	0	0	17.2	10.2	20.0
4100008	99	DIRN	SUR	31	-81	3476	0	0	21.7	10.0	23.9
4100009	99	DIRN	SUR	29	-80	2731	0	0	24.7	1.0	24.8
4100010	99	DIRN	SUR	29	-78	2699	0	0	26.6	5.0	27.1
4100013	99	DIRN	SUR	33	-78	3543	0	0	18.8	5.3	19.6
4100024	99	DIRN	SUR	34	-78	534	0	0	19.2	3.5	19.5
4100025	99	DIRN	SUR	35	-75	3670	0	0	21.5	7.5	22.8
4100029	99	DIRN	SUR	33	-80	564	0	0	17.4	-10.2	20.2
4100033	99	DIRN	SUR	32	-80	612	0	0	17.0	1.7	17.1
4100037	99	DIRN	SUR	34	-77	606	0	0	19.1	-5.3	19.8
4100038	99	DIRN	SUR	34	-78	558	0	0	17.3	0.0	17.3
4100040	99	DIRN	SUR	15	-53	2880	0	0	19.8	2.1	19.9
4100043	99	DIRN	SUR	21	-65	3314	0	0	11.5	4.2	12.2
4100044	99	DIRN	SUR	22	-59	3776	0	0	12.4	7.0	14.3
4100047	99	DIRN	SUR	27	-71	2209	0	0	23.4	5.0	23.9
4100049	99	DIRN	SUR	28	-62	3103	0	0	18.3	7.1	19.6
4100052	99	DIRN	SUR	18	-65	2305	0	0	17.8	9.0	20.0
4100053	99	DIRN	SUR	18	-66	2412	0	0	20.8	-3.6	21.1
4100056	99	DIRN	SUR	18	-65	3333	0	0	18.1	8.6	20.1
4100064	99	DIRN	SUR	34	-77	295	0	0	15.6	1.3	15.6
4100066	99	DIRN	SUR	33	-80	578	0	0	22.7	-13.6	26.5
4100069	99	DIRN	SUR	29	-81	474	0	0	29.0	0.2	29.0

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

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
4100082	99	DIRN	SUR	36	-75	3233	0	0	17.3	-11.2	20.5
4100083	99	DIRN	SUR	36	-75	2845	0	0	16.2	-6.9	17.6
41001	99	DIRN	SUR	35	-72	409	0	0	14.0	0.0	14.0
4100139	99	DIRN	SUR	20	-38	449	0	0	10.3	3.0	10.7
41002	99	DIRN	SUR	32	-75	533	0	0	23.6	5.7	24.3
4100300	99	DIRN	SUR	16	-57	67	0	0	145.9	31.6	149.3
41004	99	DIRN	SUR	33	-79	577	0	0	17.9	10.0	20.5
41008	99	DIRN	SUR	31	-81	573	0	0	22.5	10.4	24.8
41009	99	DIRN	SUR	29	-80	433	0	0	25.0	-0.1	25.0
41010	99	DIRN	SUR	29	-79	436	0	0	26.0	6.1	26.7
41013	99	DIRN	SUR	33	-78	585	0	0	19.0	5.7	19.9
41024	99	DIRN	SUR	34	-79	548	0	0	19.8	4.2	20.2
41025	99	DIRN	SUR	35	-76	609	0	0	19.2	7.3	20.5
41029	99	DIRN	SUR	33	-80	558	0	0	17.8	-9.6	20.2
41033	99	DIRN	SUR	32	-80	596	0	0	16.9	1.2	16.9
41037	99	DIRN	SUR	34	-77	599	0	0	19.3	-5.3	20.0
41038	99	DIRN	SUR	34	-78	562	0	0	17.6	1.2	17.7
41040	99	DIRN	SUR	15	-53	462	0	0	18.0	0.7	18.0
41043	99	DIRN	SUR	21	-65	542	0	0	11.6	3.6	12.1
41044	99	DIRN	SUR	22	-59	612	0	0	13.3	6.2	14.7
41047	99	DIRN	SUR	28	-72	337	0	0	24.7	4.6	25.2
41049	99	DIRN	SUR	28	-62	483	0	0	20.1	6.4	21.1
41052	99	DIRN	SUR	18	-65	378	0	0	18.5	8.5	20.4
41053	99	DIRN	SUR	19	-66	415	0	0	22.2	-3.3	22.4
41056	99	DIRN	SUR	18	-66	544	0	0	18.6	9.2	20.8
41064	99	DIRN	SUR	34	-77	295	0	0	17.9	2.2	18.0
41066	99	DIRN	SUR	33	-80	568	0	0	22.6	-14.0	26.6
41069	99	DIRN	SUR	29	-81	482	0	0	30.5	-0.2	30.5
41082	99	DIRN	SUR	36	-75	533	0	0	17.9	-11.2	21.1
41083	99	DIRN	SUR	36	-75	483	0	0	16.5	-6.9	17.9
4200013	99	DIRN	SUR	27	-83	836	0	0	20.2	-1.7	20.2
4200023	99	DIRN	SUR	26	-83	812	1	0	20.6	-3.7	21.0
4200026	99	DIRN	SUR	25	-83	799	2	0	19.0	-6.3	20.0
4200036	99	DIRN	SUR	29	-85	3094	0	0	27.1	6.8	28.0
4200056	99	DIRN	SUR	20	-85	3388	0	0	17.9	8.1	19.6
4200058	99	DIRN	SUR	15	-75	4143	0	0	17.1	9.5	19.6
4200060	99	DIRN	SUR	16	-63	3153	0	0	17.8	9.0	20.0
4200085	99	DIRN	SUR	18	-67	3081	0	0	24.2	13.8	27.9
42013	99	DIRN	SUR	27	-83	406	0	0	23.7	0.1	23.7
42023	99	DIRN	SUR	26	-83	192	0	0	17.5	-4.0	18.0
42026	99	DIRN	SUR	25	-84	380	0	0	17.8	-5.0	18.5

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
42036	99	DIRN	SUR	29	-85	496	0	0	24.9	7.3	26.0
42056	99	DIRN	SUR	20	-85	531	0	0	18.8	7.6	20.2
42058	99	DIRN	SUR	15	-75	679	0	0	17.1	9.5	19.6
42060	99	DIRN	SUR	16	-63	517	0	0	18.4	9.5	20.7
42085	99	DIRN	SUR	18	-67	480	0	0	23.2	10.8	25.6
4400007	99	DIRN	SUR	44	-70	2676	0	0	18.0	6.4	19.1
4400008	99	DIRN	SUR	40	-69	3396	0	0	16.6	18.1	24.6
4400009	99	DIRN	SUR	38	-75	3748	0	0	14.2	6.0	15.4
4400011	99	DIRN	SUR	41	-67	3133	0	0	14.2	10.2	17.5
4400013	99	DIRN	SUR	42	-71	3047	0	0	15.3	8.7	17.6
4400014	99	DIRN	SUR	37	-75	3282	0	0	15.4	7.7	17.2
4400020	99	DIRN	SUR	41	-70	3487	0	0	17.9	2.2	18.0
4400025	99	DIRN	SUR	40	-73	3495	0	0	13.2	5.1	14.2
4400027	99	DIRN	SUR	44	-67	3140	0	0	12.1	14.6	19.0
4400029	99	DIRN	SUR	43	-71	297	0	0	16.8	3.3	17.1
4400030	99	DIRN	SUR	43	-70	507	0	0	15.1	1.9	15.2
4400032	99	DIRN	SUR	44	-69	483	0	0	14.2	7.0	15.8
4400033	99	DIRN	SUR	44	-69	429	0	0	19.2	11.2	22.2
4400034	99	DIRN	SUR	44	-68	478	0	0	14.9	9.1	17.5
4400037	99	DIRN	SUR	43	-68	7	0	0	6.7	102.2	102.4
4400041	99	DIRN	SUR	37	-77	1089	0	0	15.6	6.3	16.9
4400042	99	DIRN	SUR	38	-76	3755	0	0	15.8	3.0	16.0
4400043	99	DIRN	SUR	39	-76	4118	0	0	19.4	6.3	20.4
4400058	99	DIRN	SUR	38	-76	1071	0	0	18.1	3.9	18.5
4400062	99	DIRN	SUR	39	-76	4039	0	0	19.3	-0.2	19.3
4400063	99	DIRN	SUR	39	-76	3666	0	0	17.9	6.0	18.8
4400064	99	DIRN	SUR	37	-76	4402	0	0	17.2	3.5	17.5
4400072	99	DIRN	SUR	37	-76	4361	0	0	16.2	4.1	16.7
4400073	99	DIRN	SUR	43	-71	798	0	0	15.5	3.5	15.8
4400079	99	DIRN	SUR	36	-75	3283	0	0	17.4	-9.2	19.7
4400488	99	DIRN	SUR	45	-61	601	0	0	17.6	-21.7	27.9
4400489	99	DIRN	SUR	45	-61	529	0	0	17.7	-29.6	34.5
44007	99	DIRN	SUR	44	-70	450	0	0	18.1	6.6	19.2
44008	99	DIRN	SUR	41	-69	549	0	0	17.1	17.6	24.5
44009	99	DIRN	SUR	39	-75	612	0	0	13.5	6.1	14.8
44011	99	DIRN	SUR	41	-67	504	0	0	13.9	9.7	16.9
44013	99	DIRN	SUR	42	-71	475	0	0	15.1	8.4	17.3
44014	99	DIRN	SUR	37	-75	532	0	0	15.6	7.3	17.3
44020	99	DIRN	SUR	42	-70	563	0	0	17.5	3.0	17.7
44025	99	DIRN	SUR	40	-73	575	0	0	14.9	5.4	15.8
44027	99	DIRN	SUR	44	-67	499	0	0	11.6	14.1	18.3

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
44029	99	DIRN	SUR	43	-71	291	0	0	17.4	2.9	17.6
44030	99	DIRN	SUR	43	-70	499	0	0	15.8	2.0	15.9
44032	99	DIRN	SUR	44	-69	462	0	0	16.7	6.0	17.8
44033	99	DIRN	SUR	44	-69	393	0	0	19.5	10.6	22.2
44034	99	DIRN	SUR	44	-68	458	0	0	15.6	8.8	17.9
44037	99	DIRN	SUR	44	-68	6	0	0	8.0	97.9	98.2
44041	99	DIRN	SUR	37	-77	114	0	0	15.7	6.5	17.0
44042	99	DIRN	SUR	38	-76	499	0	0	15.9	2.2	16.1
44043	99	DIRN	SUR	39	-76	481	0	0	19.5	6.5	20.5
44058	99	DIRN	SUR	38	-76	133	0	0	16.0	6.0	17.1
44062	99	DIRN	SUR	39	-76	522	0	0	19.9	-0.4	19.9
44063	99	DIRN	SUR	39	-76	428	0	0	18.9	6.3	19.9
44064	99	DIRN	SUR	37	-76	537	0	0	15.7	4.0	16.2
44072	99	DIRN	SUR	37	-76	527	0	0	16.0	4.8	16.7
44073	99	DIRN	SUR	43	-71	180	0	0	15.6	4.5	16.2
44078	99	DIRN	SUR	60	-40	611	0	0	37.0	-15.3	40.0
44079	99	DIRN	SUR	36	-75	542	0	0	17.5	-8.9	19.7
44137	99	DIRN	SUR	42	-62	611	0	0	12.0	-7.6	14.2
44139	99	DIRN	SUR	44	-57	655	0	0	17.4	-3.6	17.8
44150	99	DIRN	SUR	43	-64	380	0	0	11.9	-1.1	11.9
44258	99	DIRN	SUR	45	-63	593	0	0	15.0	1.1	15.1
44488	99	DIRN	SUR	45	-61	566	0	0	17.7	-21.7	28.0
44489	99	DIRN	SUR	46	-61	519	0	0	17.0	-30.1	34.5
4500003	99	DIRN	SUR	45	-83	2881	0	0	18.3	4.3	18.8
4500005	99	DIRN	SUR	42	-82	3338	0	0	17.2	4.6	17.8
4500008	99	DIRN	SUR	44	-82	3130	0	0	14.1	6.2	15.4
4500012	99	DIRN	SUR	44	-77	2563	0	0	18.7	3.6	19.1
4500132	99	DIRN	SUR	42	-81	558	0	0	18.8	0.8	18.8
4500135	99	DIRN	SUR	44	-77	466	0	0	15.0	3.8	15.5
4500137	99	DIRN	SUR	46	-81	476	0	0	16.7	-1.1	16.7
4500139	99	DIRN	SUR	43	-80	342	0	0	18.0	3.0	18.3
4500142	99	DIRN	SUR	43	-79	460	0	0	18.5	-4.1	19.0
4500143	99	DIRN	SUR	45	-81	492	0	0	18.3	1.2	18.3
4500159	99	DIRN	SUR	44	-79	412	0	0	20.4	1.4	20.4
4500162	99	DIRN	SUR	45	-83	1354	0	0	20.9	-1.4	21.0
4500163	99	DIRN	SUR	44	-84	1347	0	0	14.5	3.1	14.8
4500164	99	DIRN	SUR	42	-82	510	0	0	29.2	-20.8	35.9
4500165	99	DIRN	SUR	45	-83	2597	0	0	59.5	49.0	77.1
4500175	99	DIRN	SUR	46	-85	984	0	0	20.3	1.5	20.4
4500176	99	DIRN	SUR	42	-82	2470	0	0	18.3	-14.7	23.4
4500178	99	DIRN	SUR	45	-73	907	0	0	20.4	-0.6	20.5

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
4500196	99	DIRN	SUR	42	-82	2399	0	0	21.1	0.2	21.1
4500200	99	DIRN	SUR	42	-83	446	0	0	15.0	22.2	26.8
4500203	99	DIRN	SUR	41	-83	2251	0	0	26.6	4.3	26.9
4500204	99	DIRN	SUR	42	-82	2820	0	0	20.4	-7.4	21.7
4500206	99	DIRN	SUR	42	-82	2315	0	0	24.0	-20.9	31.8
4500207	99	DIRN	SUR	42	-81	1796	0	0	27.3	-35.6	44.8
4500208	99	DIRN	SUR	42	-81	1840	0	0	23.3	-10.2	25.4
4500209	99	DIRN	SUR	43	-82	1360	0	0	24.1	-40.1	46.8
45003	99	DIRN	SUR	45	-83	472	0	0	18.9	3.8	19.2
45005	99	DIRN	SUR	42	-82	545	0	0	18.0	5.6	18.9
45008	99	DIRN	SUR	44	-82	507	0	0	13.6	6.9	15.3
45012	99	DIRN	SUR	44	-77	413	0	0	20.0	2.9	20.2
45132	99	DIRN	SUR	43	-81	545	0	0	19.7	-0.4	19.8
45135	99	DIRN	SUR	44	-77	448	0	0	16.7	3.4	17.1
45137	99	DIRN	SUR	46	-81	447	0	0	15.9	-1.8	16.0
45139	99	DIRN	SUR	43	-80	349	0	0	18.7	3.8	19.1
45142	99	DIRN	SUR	43	-79	448	0	0	20.2	-4.0	20.6
45143	99	DIRN	SUR	45	-81	479	0	0	19.4	0.0	19.5
45147	99	DIRN	SUR	42	-82	342	0	0	28.6	-8.8	29.9
45149	99	DIRN	SUR	44	-82	478	0	0	18.5	-6.3	19.6
45151	99	DIRN	SUR	45	-79	300	0	0	15.6	-6.6	17.0
45152	99	DIRN	SUR	46	-80	301	0	0	13.1	4.5	13.9
45154	99	DIRN	SUR	46	-83	415	0	0	18.2	6.1	19.2
45159	99	DIRN	SUR	44	-79	365	0	0	18.4	0.1	18.4
45162	99	DIRN	SUR	45	-83	437	0	0	21.1	-0.3	21.1
45163	99	DIRN	SUR	44	-84	433	0	0	16.0	4.6	16.7
45164	99	DIRN	SUR	42	-82	498	0	0	28.4	-21.8	35.8
45165	99	DIRN	SUR	45	-83	439	0	0	60.1	49.8	78.0
45175	99	DIRN	SUR	46	-85	337	0	0	19.7	0.4	19.7
45176	99	DIRN	SUR	42	-82	497	0	0	19.6	-12.9	23.5
45178	99	DIRN	SUR	45	-73	279	0	0	18.3	-1.5	18.4
45196	99	DIRN	SUR	42	-82	452	0	0	21.2	0.8	21.2
45200	99	DIRN	SUR	42	-83	88	0	0	13.2	22.1	25.7
45203	99	DIRN	SUR	41	-83	383	0	0	26.2	5.8	26.8
45204	99	DIRN	SUR	42	-82	438	0	0	19.5	-5.9	20.3
45206	99	DIRN	SUR	42	-82	362	0	0	23.6	-20.2	31.1
45207	99	DIRN	SUR	42	-81	321	0	0	26.7	-37.1	45.7
45208	99	DIRN	SUR	42	-81	312	0	0	23.9	-12.1	26.8
45209	99	DIRN	SUR	43	-82	311	0	0	25.8	-37.5	45.5
4803914	99	DIRN	SUR	22	-55	3443	0	0	11.6	3.8	12.2
5801955	99	DIRN	SUR	18	-65	1785	0	0	16.1	4.1	16.6

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
5801958	99	DIRN	SUR	31	-67	265	0	0	10.7	3.7	11.4
5801959	99	DIRN	SUR	25	-67	1014	0	0	10.0	-2.9	10.5
6100198	99	DIRN	SUR	37	-2	560	0	0	12.8	-7.0	14.6
6100281	99	DIRN	SUR	40	0	351	0	0	39.2	-0.9	39.2
6100417	99	DIRN	SUR	38	0	448	0	0	16.2	7.5	17.8
6200001	99	DIRN	SUR	45	-5	656	0	0	15.7	-1.7	15.8
6200024	99	DIRN	SUR	44	-3	455	0	0	27.1	8.2	28.3
6200025	99	DIRN	SUR	44	-6	354	0	0	14.0	-0.4	14.0
6200050	99	DIRN	SUR	50	-4	632	0	0	14.7	1.2	14.8
6200081	99	DIRN	SUR	51	-13	608	0	0	21.4	-1.2	21.5
6200083	99	DIRN	SUR	43	-9	547	0	0	14.7	4.6	15.5
6200084	99	DIRN	SUR	42	-9	460	0	0	11.9	17.7	21.3
6200085	99	DIRN	SUR	36	-7	458	0	0	14.9	7.2	16.5
6200091	99	DIRN	SUR	53	-5	610	0	0	15.4	8.1	17.4
6200092	99	DIRN	SUR	51	-11	648	0	0	14.4	5.2	15.3
6200093	99	DIRN	SUR	55	-10	656	0	0	10.8	5.0	11.9
6200094	99	DIRN	SUR	52	-7	620	0	0	13.1	-2.2	13.2
6200095	99	DIRN	SUR	53	-16	669	0	0	12.0	5.2	13.0
6200103	99	DIRN	SUR	50	-3	125	0	0	15.0	1.3	15.0
6200163	99	DIRN	SUR	47	-8	636	0	0	10.7	-1.7	10.8
6200442	99	DIRN	SUR	49	-16	620	0	0	27.2	-11.6	29.6
62050	99	DIRN	SUR	50	-4	1253	0	0	15.7	1.5	15.7
62081	99	DIRN	SUR	51	-13	1211	0	0	21.4	-1.1	21.4
62091	99	DIRN	SUR	53	-5	607	0	0	16.3	7.4	17.8
62092	99	DIRN	SUR	51	-11	640	0	0	14.8	4.6	15.5
62093	99	DIRN	SUR	55	-10	644	0	0	11.1	4.0	11.8
62094	99	DIRN	SUR	52	-7	608	0	0	13.4	-2.7	13.7
62095	99	DIRN	SUR	53	-16	670	0	0	12.3	4.5	13.1
62103	99	DIRN	SUR	50	-3	248	0	0	15.4	2.0	15.6
62105	99	DIRN	SUR	55	-13	1328	0	0	10.9	-11.0	15.5
62107	99	DIRN	SUR	50	-6	1280	0	0	17.4	2.8	17.6
62112	99	DIRN	SUR	58	0	1236	0	0	12.2	-5.2	13.2
62114	99	DIRN	SUR	58	0	719	0	0	10.1	-2.5	10.4
62163	99	DIRN	SUR	48	-9	1274	0	0	11.2	-1.8	11.3
62442	99	DIRN	SUR	49	-16	1271	0	0	27.3	-11.1	29.5
64041	99	DIRN	SUR	61	-3	1195	0	0	11.6	6.9	13.5

4.12 Table 24 - List of Assimilated BUFR Encoded Radiosonde Stations

ASDE09	ATGU3FT	DBLK	FPUW5GN	JNKN7JF	KJJF9XN	LAGY8	LAGZ8	LRYQE3U
SMLQ	UXK5JTU	WDK38HS	XKQLWQB	YLV96WM	ZVQEQCM	2EERVTP	7JUNA4N	7KPB
01001	01004	01010	01028	01241	01400	01415	01492	02185
02365	02591	02836	02963	03005	03023	03238	03354	03743
03808	03882	03918	03953	04018	04220	04270	04320	04339
04360	04417	06011	06260	06458	06610	07110	07145	07510
07645	07761	08001	08023	08190	08221	08302	08383	08430
08508	08522	08536	10035	10113	10184	10238	10304	10393
10410	10548	10618	10739	10771	10868	10954	10962	11010
11035	11120	11240	11520	11747	11952	12120	12374	12425
12575	12843	12982	13275	13388	14015	14240	14430	15420
15614	16045	16064	16113	16144	16224	16245	16332	16429
16546	16622	16716	16754	17030	17064	17095	17196	17220
17240	17351	17516	17607	20674	22008	22522	22820	22845
23205	23472	23884	23921	23955	24266	24641	24688	24908
24947	26038	26435	26477	26629	26708	27459	27707	27713
27962	28225	28445	28661	28695	29612	29698	30557	30673
30935	31004	31770	31873	31977	34122	34172	34731	35121
40179	40186	42027	42056	42079	42111	42123	42182	42314
42339	42348	42361	42399	42410	42492	42516	42623	42634
42647	42675	42724	42867	42874	42971	43003	43014	43041
43049	43063	43086	43128	43150	43185	43243	43279	43285
43295	43346	43353	43369	43371	43466	45004	47102	47104
47138	47155	47169	47186	47191	47193	47194	47230	47401
47412	47418	47582	47646	47678	47741	47778	47807	47827
47909	47918	47945	47971	47991	48601	48615	48650	48657
48698	50527	50557	50774	50953	51076	51243	51431	51463
51644	51656	51709	51777	51828	51839	52203	52267	52323
52418	52533	52652	52681	52818	52836	52866	52983	53068
53463	53513	53543	53614	53772	53845	53915	54102	54135
54161	54218	54292	54340	54374	54511	54662	54727	54857
55299	55591	56029	56046	56080	56137	56146	56187	56492
56571	56651	56691	56739	56778	56964	56985	57083	57127
57131	57178	57245	57461	57494	57516	57541	57687	57749
57816	57957	57972	57993	58027	58150	58203	58238	58362
58424	58457	58606	58633	58665	58725	58847	59023	59134
59211	59265	59280	59293	59316	59431	59758	59981	60018
60155	60253	60715	61901	61980	61998	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	72261	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	76256
76394	76405	76458	76526	76595	76612	76644	76654	76679
76692	76743	76805	76903	78384	78397	78486	78583	78897
78954	78970	78988	80001	81405	82965	84622	85442	85586
85799	85934	87155	87344	87418	87582	87623	87715	87860
88889	89002	89055	89564	89571	89592	89611	89625	89642
89859	91165	91212	91285	91334	91348	91376	91408	91413
91592	91925	91938	91948	91958	93112	93417	93817	93844
94001	94005	94120	94155	94170	94203	94299	94302	94312

94326	94332	94403	94430	94461	94510	94578	94610	94637
94653	94659	94672	94711	94767	94775	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	DBLK	FPUW5GN	JNKN7JF	KJJF9XN	LAGY8	LAGZ8	LRYQE3U
SMLQ	UXK5JTU	WDK38HS	XKQLWQB	YLV96WM	ZVQEQCM	2EERVTP	7JUNA4N	7KPB
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	43285	47191	47193
47194	48698	50527	50557	50774	50953	51076	51243	51431
51463	51644	51656	51709	51777	51828	51839	52203	52267
52323	52418	52533	52652	52681	52818	52836	52866	52983
53068	53463	53513	53543	53614	53772	53845	53915	54102
54135	54161	54218	54292	54340	54374	54511	54662	54727
54857	55299	55591	56029	56046	56080	56137	56146	56187
56492	56571	56651	56691	56739	56778	56964	56985	57083
57127	57131	57178	57245	57461	57494	57516	57541	57687
57749	57816	57957	57972	57993	58027	58150	58203	58238
58362	58424	58457	58606	58633	58665	58725	58847	59023
59134	59211	59265	59280	59293	59316	59431	59758	59981
60253	67083	72413	76743	76903	84622	89002	89514	89642
89859	91925	91938	91948	91958	93817	94001	94005	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.