ECMWF Global Data Monitoring Report

September 2021

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 28 (June 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
31538	(00)	17	5	02527	(00)	5	30
40948	(00)	14	0	17220	(00)	4	20
42182	(00)	25	13	26435	(12)	3	15
43150	(00)	18	0	29572	(00)	14	30
44373	(00)	31	8	29572	(12)	7	28
44373	(12)	30	7	33041	(00)	15	30
67083	(00)	30	3	42701	(00)	1	16
67083	(12)	30	2	43285	(00)	1	15
70414	(00)	20	5	61687	(12)	12	26
71836	(00)	30	17	68842	(12)	0	18
71836	(12)	31	18	74004	(12)	17	34
72632	(00)	39	28	74005	(00)	1	13
76805	(00)	18	0	74006	(00)	0	16
76805	(12)	14	0	91348	(00)	0	27
82400	(00)	30	14	91348	(12)	0	28
82400	(12)	29	17	-	-	-	-
82965	(12)	30	10	-	-	-	-
83208	(12)	31	10	-	-	-	-
83525	(12)	29	9	-	-	-	-
83649	(12)	30	9	-	-	-	-
83768	(12)	29	9	-	-	-	-
91592	(00)	33	14	-	-	-	-
91610	(00)	27	3	-	-	-	-

2.2 Drifting Buoys

Surface pressure observations from **1873** drifting buoys were received during the month.

3 Global monitoring statistics

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

3.1 Data Availability

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

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

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

3.2 Data Quality

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

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

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

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

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

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

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

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

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

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

3.2.1 Figure 1 - Availability - SYNOP PRESSURE

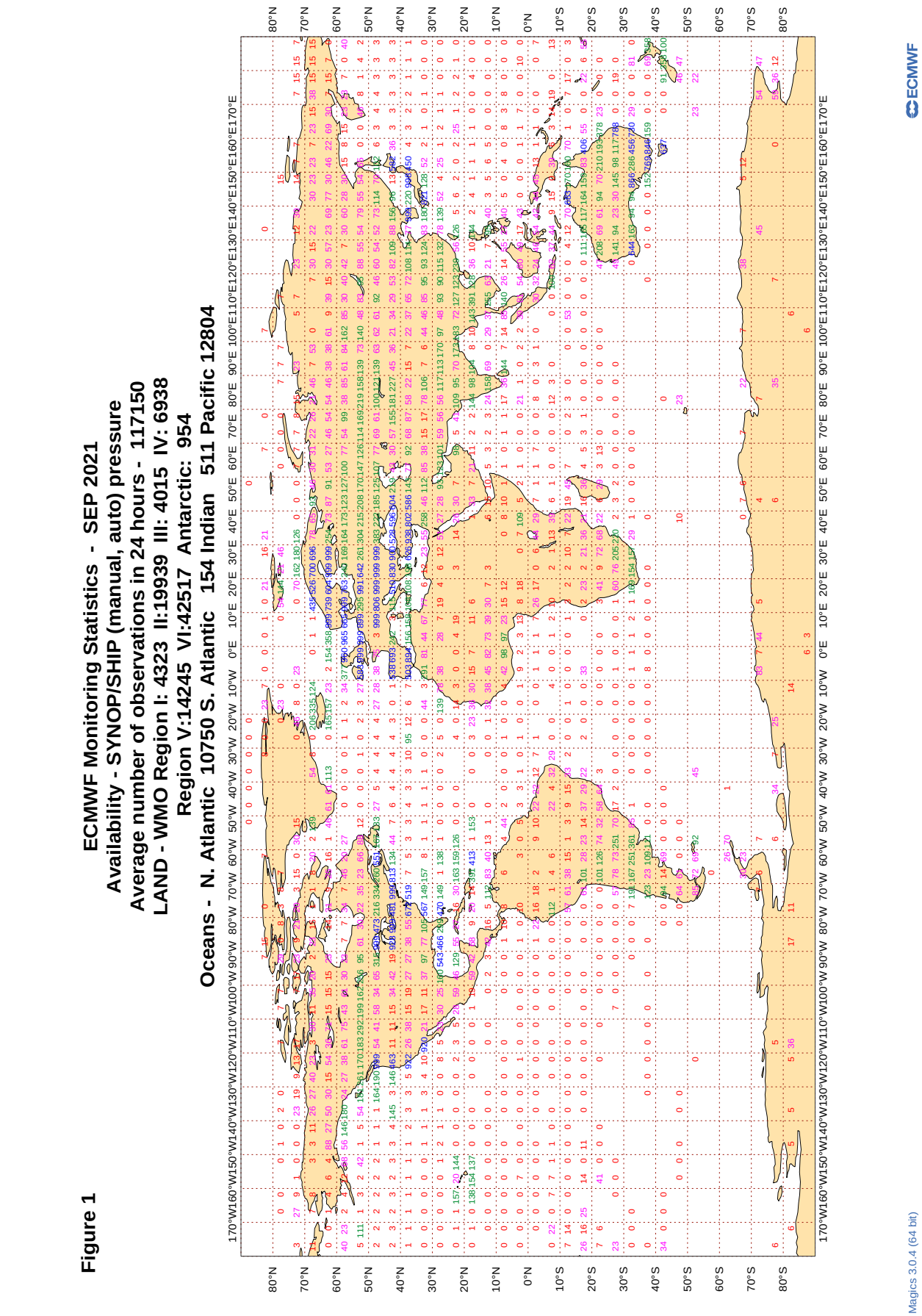


Figure 1

3.2.2 Figure 2 - Availability - DRIFTER PRESSURE

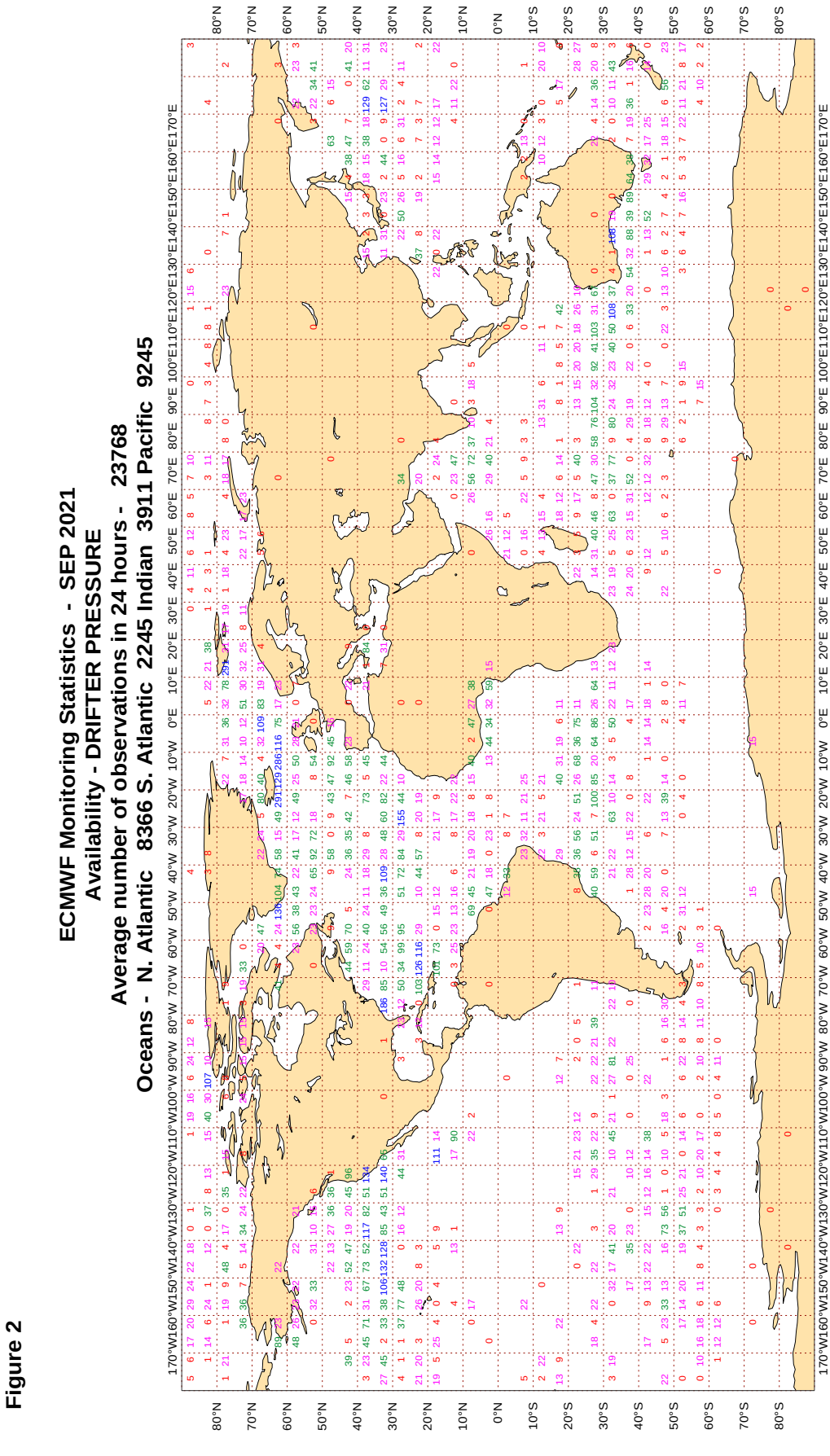


Figure 2

3.2.3 Figure 3 - Availability - TEMP 500 hPa geopotential

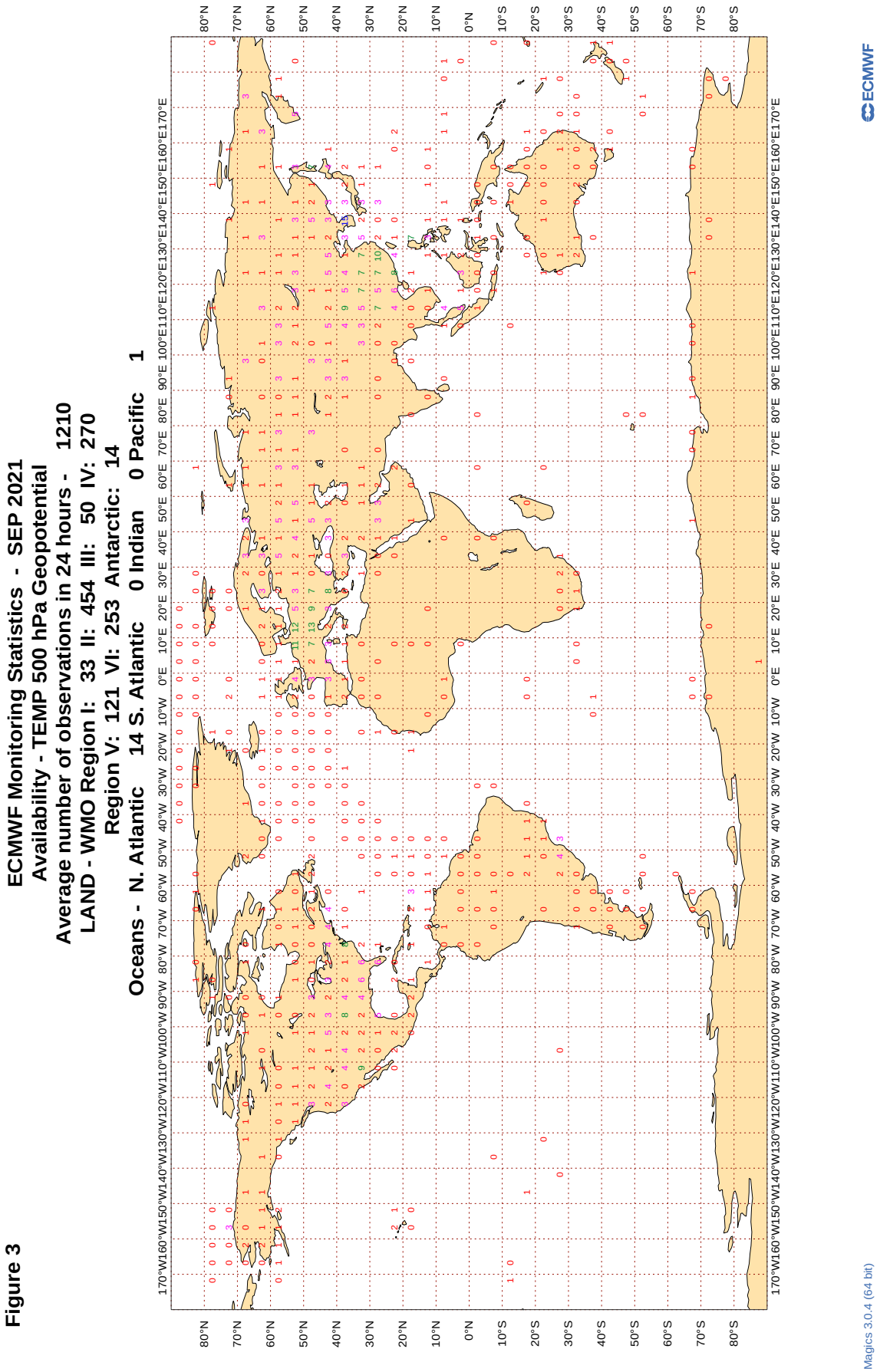


Figure 3

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

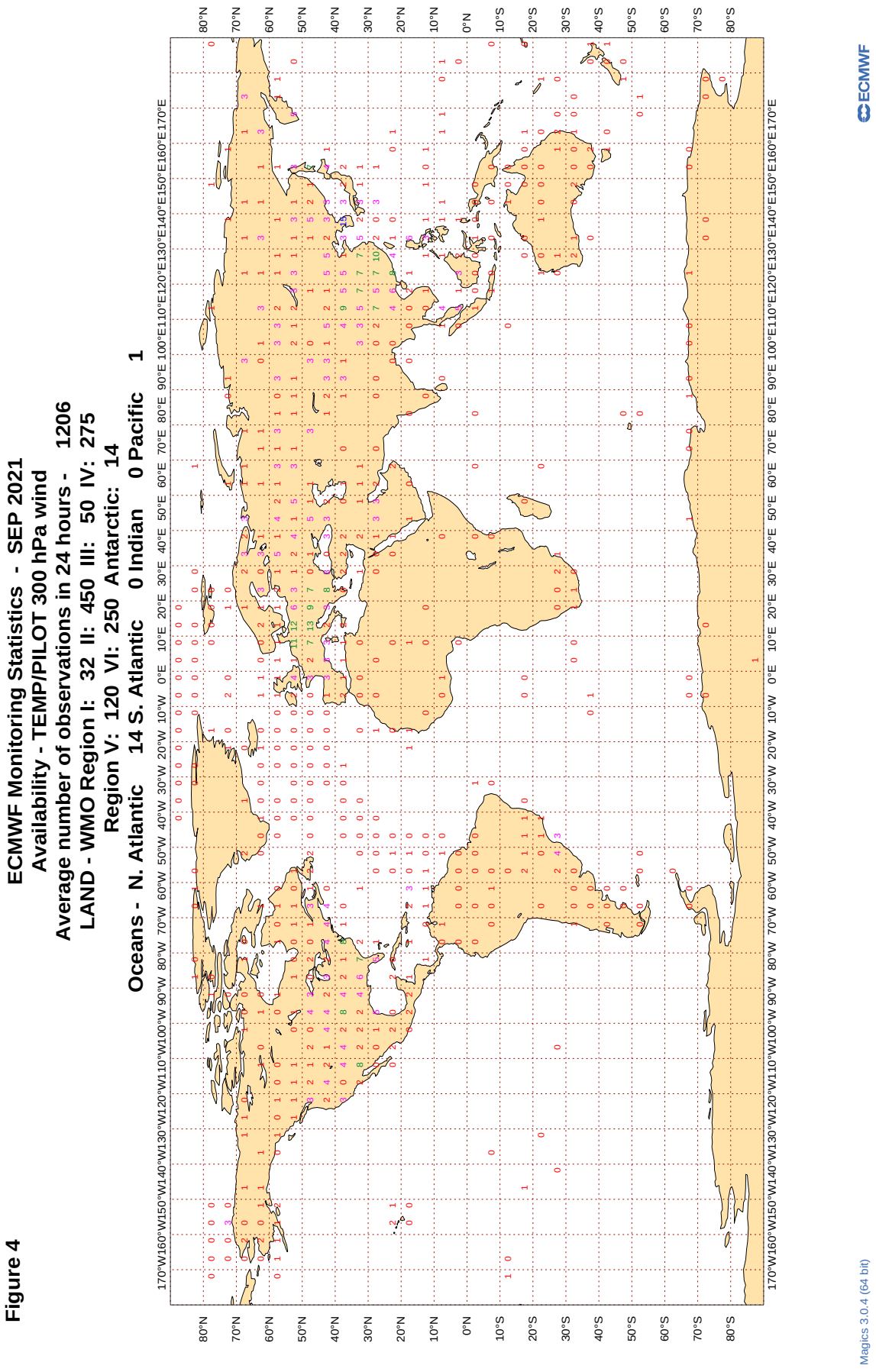


Figure 4

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

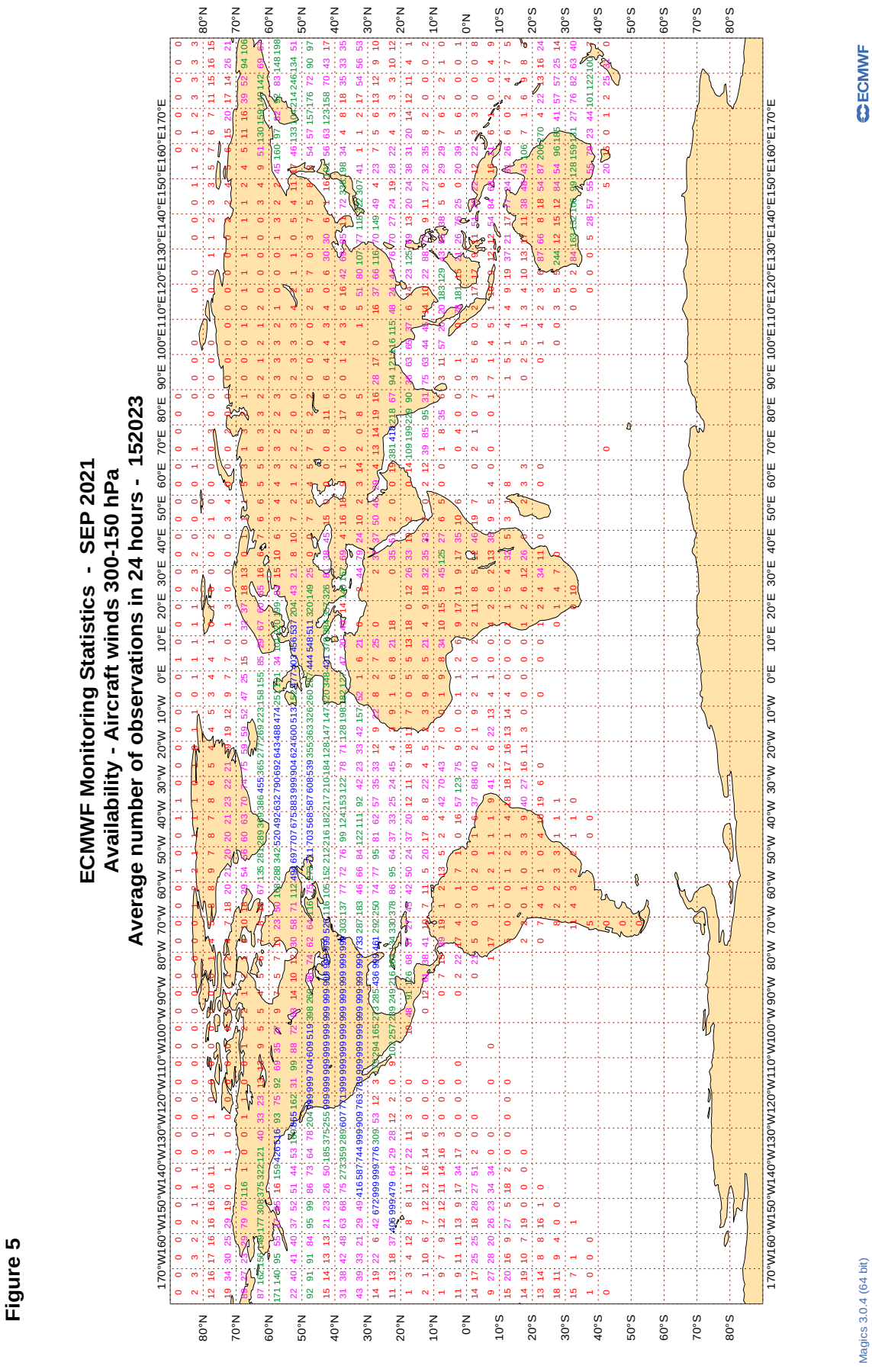


Figure 5

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

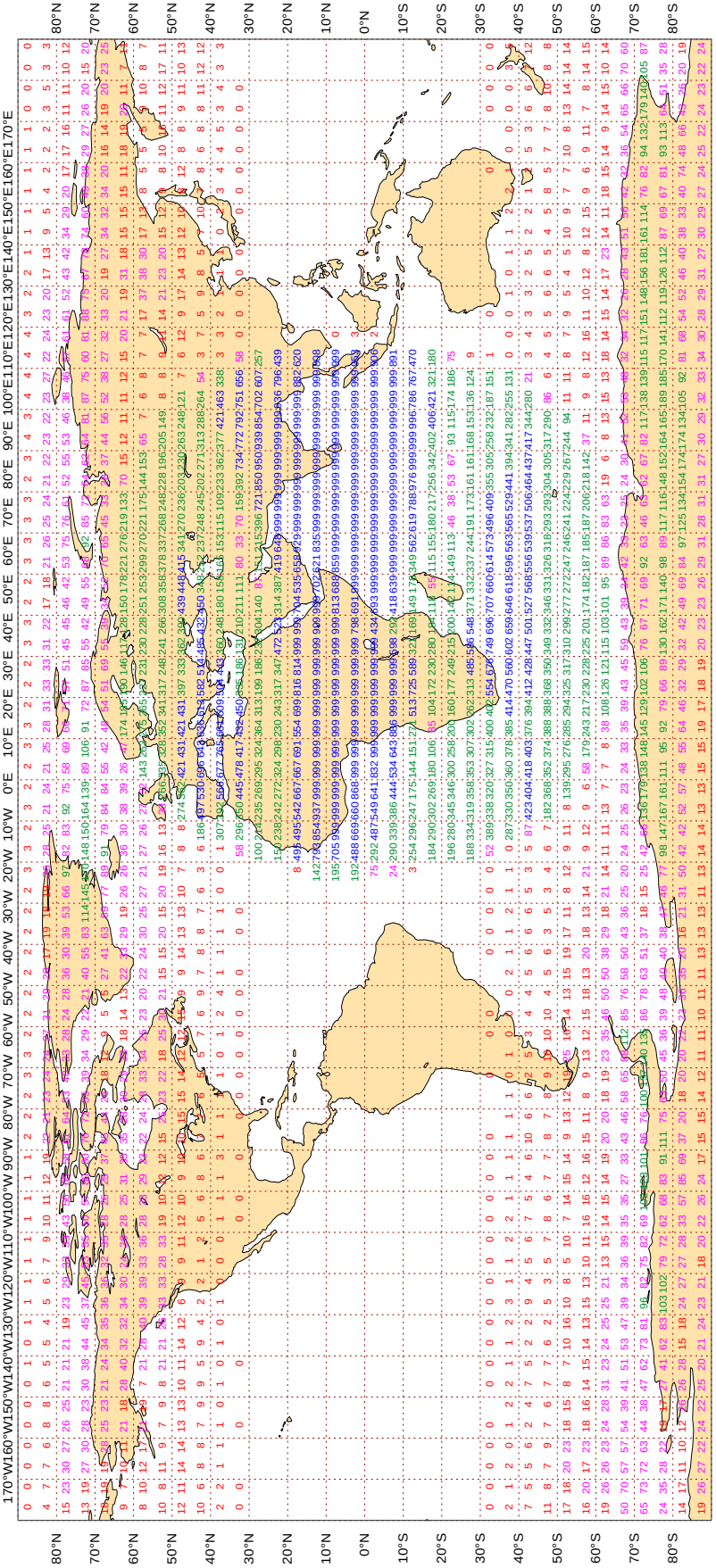


Figure 6

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

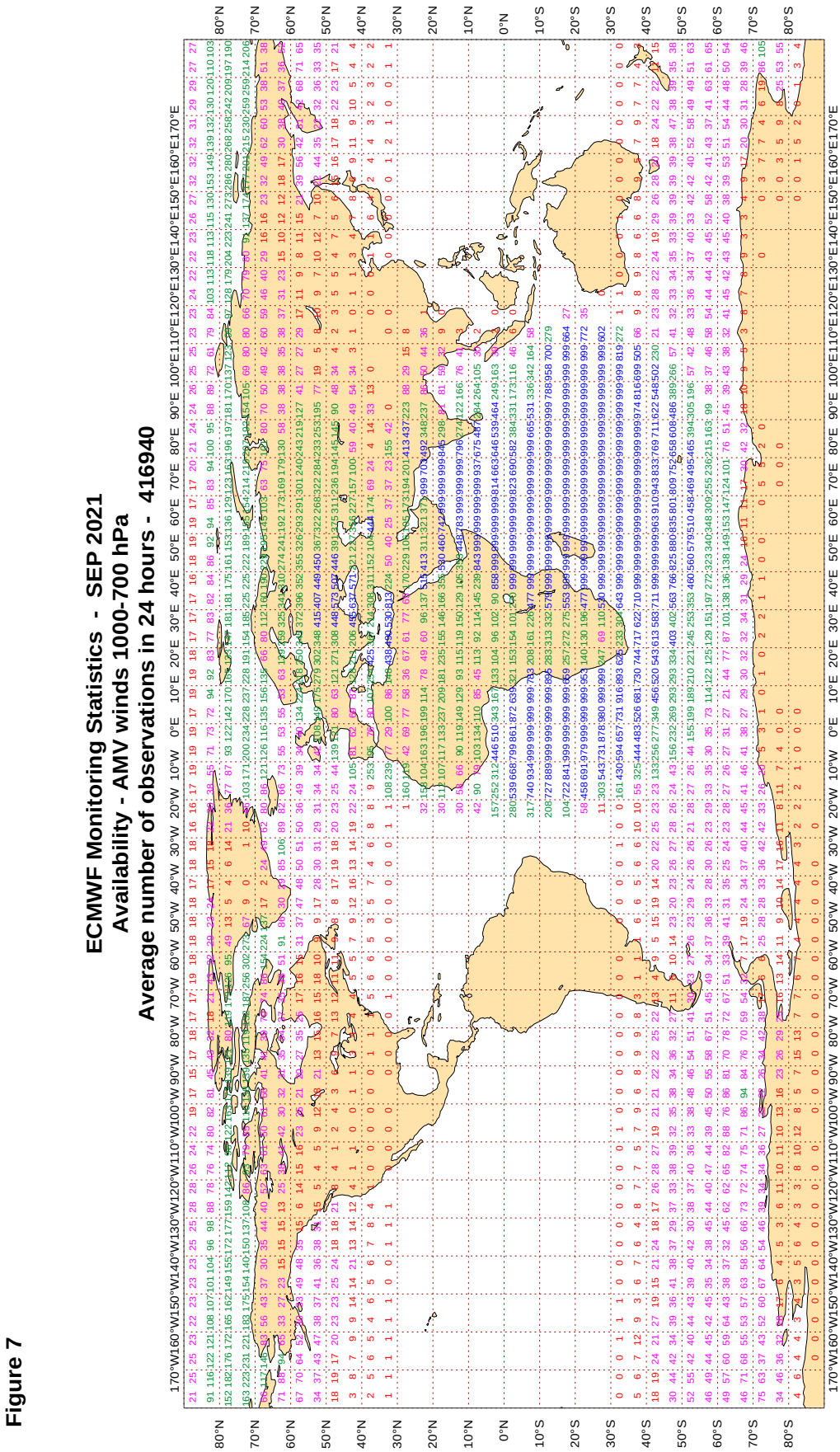


Figure 7

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

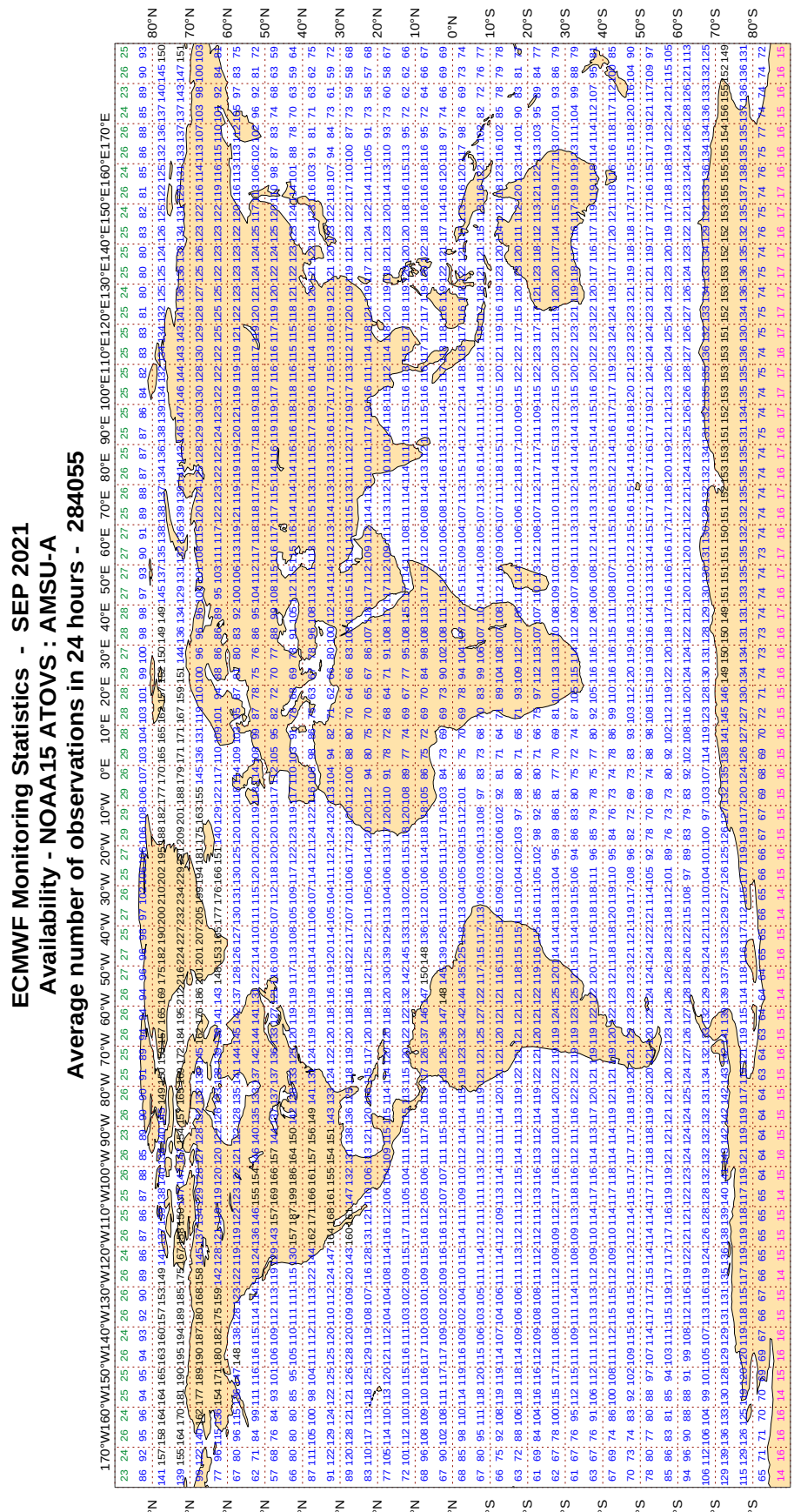


Figure 8

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

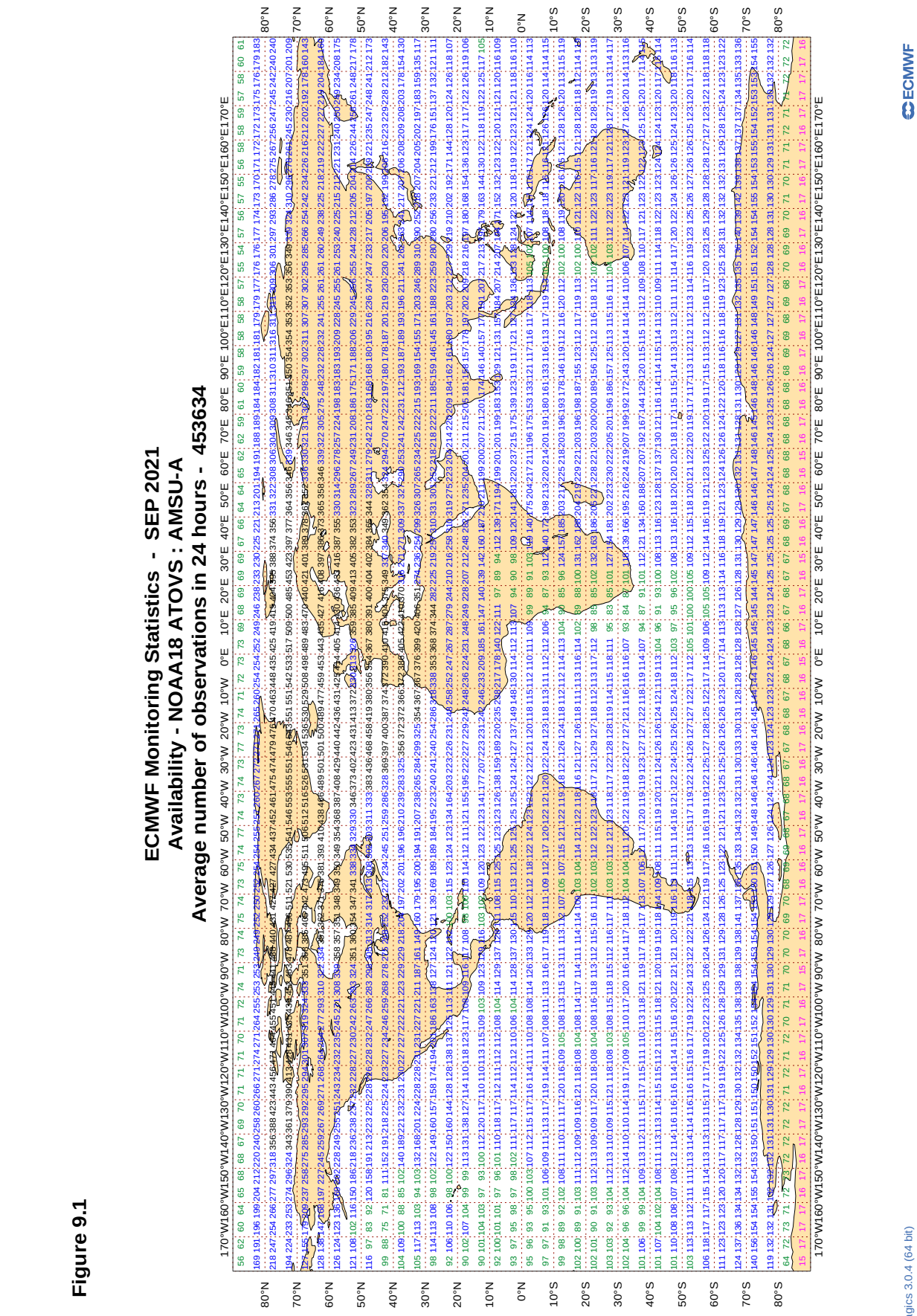


Figure 9.1

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

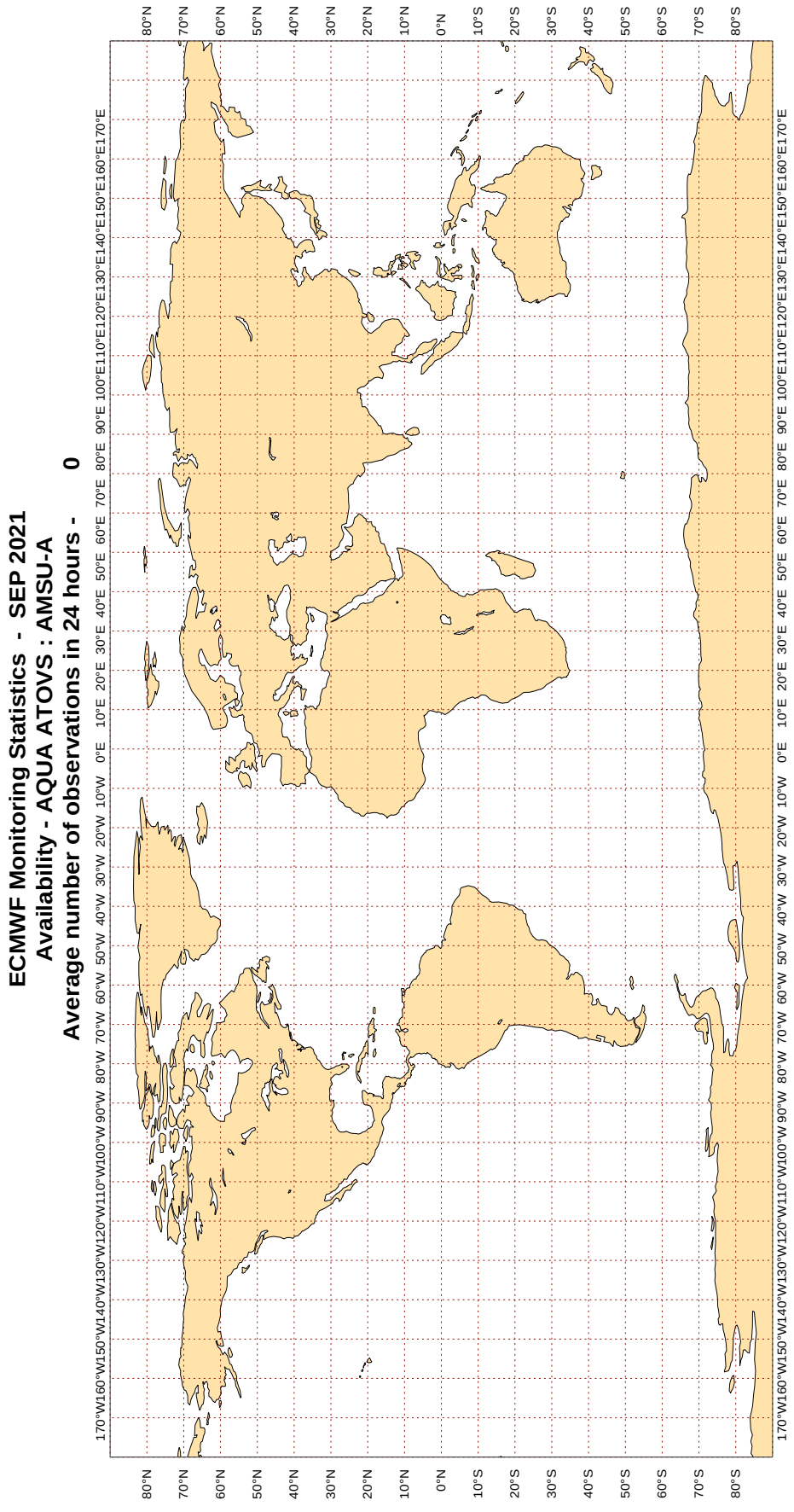


Figure 9.2

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

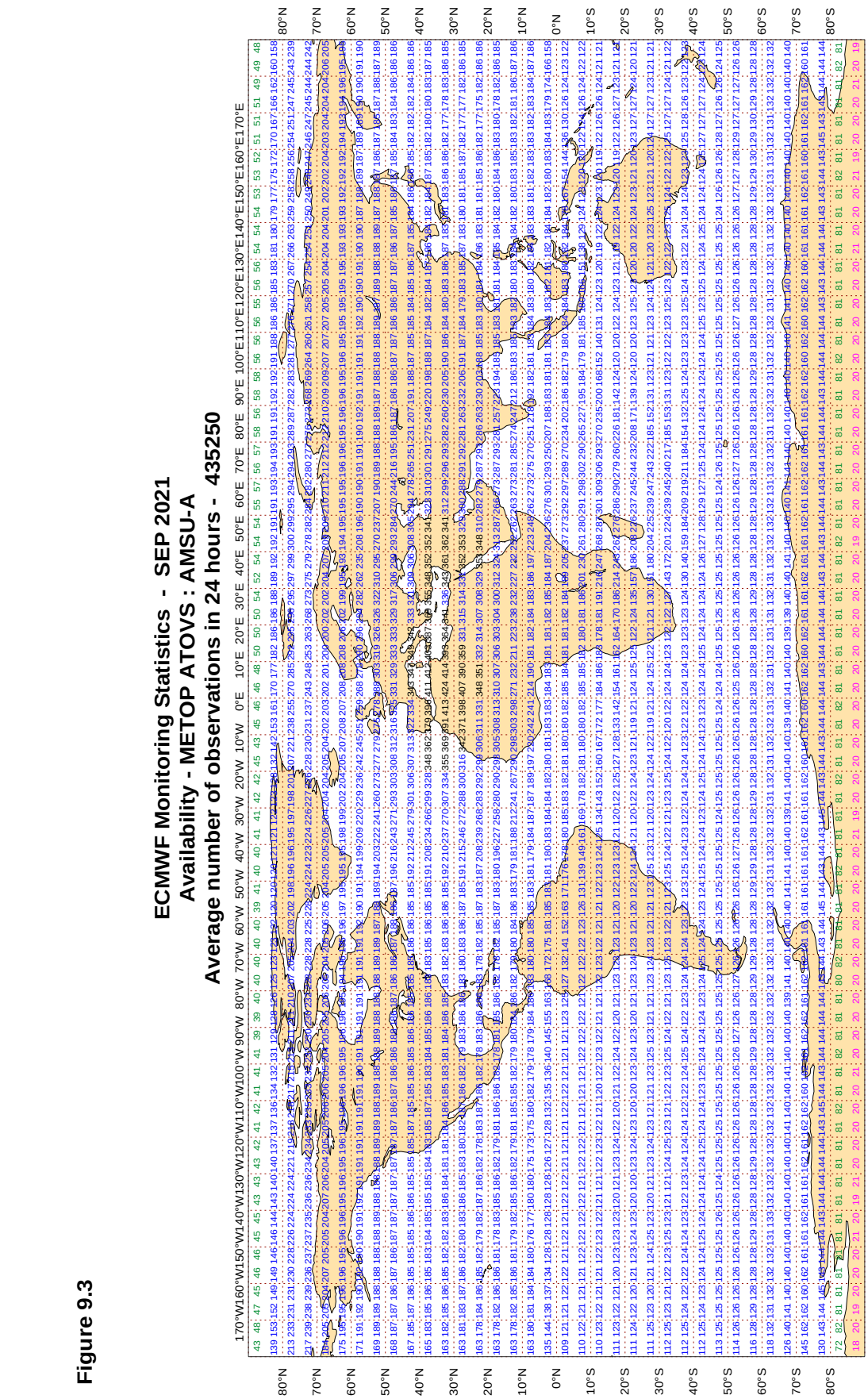


Figure 9.3

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

```
          LIST OF SUSPECT STATIONS        : SHIPS + FIXED MARINE PLATFORMS
                    MONITORING CENTRE     : ECMWF
                    ELEMENT MONITORED     : SURFACE PRESSURE (HPA)
                    AREA                  : GLOBAL
                    PERIOD                : SEP 2021
                    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
3EFP6	99	P	SUR	26	0	0.6	4.5	4.5
3FBD9	99	P	SUR	21	0	0.5	-4.4	4.4
7JFI	99	P	SUR	25	0	0.5	-4.5	4.6
7KEG	99	P	SUR	32	0	2.0	-4.0	4.5
7KGP	99	P	SUR	16	0	0.6	-4.3	4.4
9HA4902	99	P	SUR	16	0	1.6	4.9	5.1
9V2734	99	P	SUR	25	0	2.0	-3.1	3.7
9V6250	99	P	SUR	21	0	0.8	-3.9	4.0
9V9400	99	P	SUR	19	0	5.8	-0.1	5.8
9V9404	99	P	SUR	65	0	1.6	6.4	6.6
9V9793	99	P	SUR	34	0	2.2	4.4	4.9
AVFX	99	P	SUR	126	0	0.5	3.7	3.7
C6AP4	99	P	SUR	22	0	1.7	4.6	4.9
C6AV5	99	P	SUR	30	0	1.6	-4.7	4.9
C6BQ8	99	P	SUR	17	0	0.8	7.9	7.9
C6CN5	99	P	SUR	33	0	0.7	-4.6	4.7
C6LG6	99	P	SUR	116	0	0.7	-3.4	3.5
C6SY3	99	P	SUR	20	0	0.8	4.1	4.2
C6YM6	99	P	SUR	33	0	1.7	3.2	3.6
CFG6460	99	P	SUR	17	16	0.0	-9.5	9.5
CFK5151	99	P	SUR	37	1	5.7	-2.2	6.1
FMFT	99	P	SUR	48	0	1.1	-3.4	3.5
JMJRCES	99	P	SUR	109	0	1.4	-5.7	5.9
LANT5	99	P	SUR	25	0	0.4	4.2	4.2
LAQL7	99	P	SUR	23	1	1.4	3.2	3.5
LAQM7	99	P	SUR	18	0	0.6	4.8	4.9
LAVD4	99	P	SUR	23	0	0.9	3.2	3.3
LAZU5	99	P	SUR	35	0	0.8	3.4	3.5
OZ2049	99	P	SUR	40	0	0.6	-8.5	8.5
PBGJ	99	P	SUR	28	0	1.6	-5.5	5.7
S6LT4	99	P	SUR	18	0	1.6	-3.2	3.6
SJA4RSK	99	P	SUR	90	0	0.5	-4.5	4.5

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

WMO IDENT	OBS TIME	ELM	LEVEL	NUM OBS	NUM GROSS	SD	BIAS	RMS
UASX	99	P	SUR	25	0	2.1	6.0	6.4
UBRW	99	P	SUR	24	0	3.5	-9.4	10.0
UCQX	99	P	SUR	16	5	2.6	1.0	2.8
V7QS7	99	P	SUR	38	0	0.9	-6.4	6.5
VRAR6	99	P	SUR	17	0	0.5	10.4	10.5
VRCI8	99	P	SUR	23	0	1.1	-3.2	3.4
VRCI9	99	P	SUR	32	0	2.1	4.1	4.6
VRDB3	99	P	SUR	18	0	0.6	-4.7	4.7
VRLJ3	99	P	SUR	21	0	0.5	5.1	5.1
VRLJ4	99	P	SUR	21	0	0.8	7.0	7.1
VRME7	99	P	SUR	30	0	1.1	10.8	10.8
VRNL2	99	P	SUR	23	0	1.4	-3.9	4.2
VROO4	99	P	SUR	15	0	1.2	8.3	8.4
VRPF8	99	P	SUR	37	2	0.7	6.2	6.2
VRRB6	99	P	SUR	80	0	2.7	4.3	5.1
VRSQ7	99	P	SUR	20	0	1.3	-6.0	6.2
WDH6745	99	P	SUR	33	0	0.8	3.5	3.6
WDJ3199	99	P	SUR	38	0	2.5	4.9	5.5
WDJ4838	99	P	SUR	46	0	0.5	5.0	5.1
WRJP	99	P	SUR	34	0	2.2	3.3	4.0

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 2021
                    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
42394	99	SPEED	SUR	44	44	100	0.0	0.0	0.0

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 2021
                    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
42019	99	DIRN	SUR	282	0	0	90.6	-0.1	90.6
44150	99	DIRN	SUR	97	0	0	22.7	-34.2	41.1
45141	99	DIRN	SUR	72	0	0	31.6	34.8	47.0
45196	99	DIRN	SUR	463	0	0	24.0	41.0	47.5
45197	99	DIRN	SUR	542	0	0	49.3	-34.2	60.0
46092	99	DIRN	SUR	85	0	0	44.3	-49.2	66.2
46303	99	DIRN	SUR	50	0	0	25.9	63.7	68.8

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 2021
                    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
0022958	99	P	SUR	36	125	565	0	5.7	9.2	10.8
1401721	99	P	SUR	-20	70	545	58	6.1	-5.5	8.2
1601531	99	P	SUR	-29	43	680	49	1.7	8.1	8.3
1801556	99	P	SUR	31	-74	4001	1535	0.5	-0.4	0.6
1801560	99	P	SUR	32	-79	3779	1141	0.5	-0.3	0.5
1801580	99	P	SUR	20	-66	3834	1437	0.5	-0.4	0.7
1801585	99	P	SUR	19	-120	3946	1524	0.5	-0.5	0.7
2601503	99	P	SUR	86	116	721	179	8.2	2.6	8.6
4401847	99	P	SUR	58	-163	117	65	7.8	5.5	9.5
4601840	99	P	SUR	40	-141	497	462	0.9	-13.6	13.6
4701658	99	P	SUR	72	-95	483	0	1.6	7.8	7.9
4701744	99	P	SUR	81	-97	489	489	0.0	0.0	0.0
4801625	99	P	SUR	79	-2	62	0	0.8	4.7	4.8
4801670	99	P	SUR	84	-159	689	409	5.0	9.5	10.7
4801704	99	P	SUR	77	-147	88	25	1.4	13.4	13.5
4803912	99	P	SUR	59	-167	937	442	0.5	-0.4	0.6
5801955	99	P	SUR	59	-167	552	239	0.4	-0.4	0.6
5801957	99	P	SUR	61	-168	423	357	0.4	-0.6	0.7
6101009	99	P	SUR	35	25	41	36	0.5	-0.6	0.8
6301511	99	P	SUR	58	-47	690	0	1.5	6.9	7.1
6401844	99	P	SUR	64	-23	516	57	4.3	10.0	10.8

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 2021
                    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
0031260	99	SPEED	SUR	-18	-39	568	0	0	1.8	5.3	5.6
0031374	99	SPEED	SUR	-25	-43	646	0	0	2.0	-6.6	6.9
42394	99	SPEED	SUR	28	-89	260	260	100	0.0	0.0	0.0
4400069	99	SPEED	SUR	41	-73	1390	0	0	2.5	5.2	5.8
45164	99	SPEED	SUR	42	-82	30	0	0	2.0	-5.7	6.0
6101005	99	SPEED	SUR	38	26	172	0	0	2.5	-8.8	9.2

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

```
          LIST OF SUSPECT STATIONS         : DRIFTER
                    MONITORING CENTRE      : ECMWF
                    ELEMENT MONITORED      : WIND DIRECTION (DEGREES)
                    PERIOD                 : SEP 2021
                    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
1300008	99	DIRN	SUR	15	-38	545	11	0	133.2	24.8	135.5
1300131	99	DIRN	SUR	28	-17	401	0	0	36.1	-78.5	86.3
1500008	99	DIRN	SUR	-20	-16	55	0	0	11.9	-44.2	45.8
2100229	99	DIRN	SUR	37	131	656	0	0	56.8	24.1	61.7
2200297	99	DIRN	SUR	34	125	600	1	0	87.2	-51.8	101.4
2200298	99	DIRN	SUR	35	125	543	0	0	17.7	-46.7	49.9
23092	99	DIRN	SUR	18	89	130	0	0	66.4	24.9	70.9
23093	99	DIRN	SUR	16	88	165	0	0	21.4	27.6	34.9
23454	99	DIRN	SUR	10	73	173	0	0	12.2	-24.3	27.2
23491	99	DIRN	SUR	12	93	326	0	0	46.8	-107.9	117.6
23497	99	DIRN	SUR	11	72	146	0	0	93.2	-75.3	119.8
4200019	99	DIRN	SUR	28	-95	1416	0	0	82.9	-1.9	82.9
4200085	99	DIRN	SUR	18	-67	3064	0	0	27.2	21.4	34.6
42019	99	DIRN	SUR	28	-95	2154	0	0	84.2	-1.9	84.2
44078	99	DIRN	SUR	60	-40	4320	0	0	15.7	-20.3	25.6
44150	99	DIRN	SUR	43	-64	677	0	0	23.0	-32.8	40.0
4500023	99	DIRN	SUR	47	-89	5189	0	0	33.0	28.3	43.5
4500196	99	DIRN	SUR	42	-82	2729	0	0	26.8	40.4	48.5
4500197	99	DIRN	SUR	42	-82	2760	0	0	47.6	-35.8	59.6
45023	99	DIRN	SUR	47	-89	7333	0	0	32.7	28.1	43.2
45141	99	DIRN	SUR	61	-115	511	0	0	28.9	36.3	46.4
45196	99	DIRN	SUR	42	-82	3798	0	0	26.1	40.7	48.3
45197	99	DIRN	SUR	42	-82	4245	0	0	48.1	-36.7	60.4
4600092	99	DIRN	SUR	37	-122	346	0	0	41.1	-49.3	64.2
46092	99	DIRN	SUR	37	-122	638	0	0	40.0	-55.6	68.5
46303	99	DIRN	SUR	49	-123	385	0	0	34.9	57.2	66.9
46304	99	DIRN	SUR	49	-123	352	0	0	34.6	23.8	42.0
4803911	99	DIRN	SUR	61	-168	773	0	0	109.6	-23.3	112.0
5200001	99	DIRN	SUR	2	165	631	0	0	13.8	24.7	28.3
52001	99	DIRN	SUR	2	165	624	0	0	14.0	24.4	28.1
5300040	99	DIRN	SUR	-8	95	187	0	0	167.5	37.0	171.5

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
53040	99	DIRN	SUR	-8	95	173	0	0	161.6	56.0	171.0
6100430	99	DIRN	SUR	40	2	401	0	0	31.6	21.2	38.1
6101009	99	DIRN	SUR	35	25	32	0	0	67.1	22.0	70.6
6200086	99	DIRN	SUR	55	6	244	0	0	13.8	27.1	30.4
6200200	99	DIRN	SUR	36	-8	450	0	0	160.4	-54.5	169.4
6301003	99	DIRN	SUR	74	24	506	0	0	14.0	23.0	27.0
6301004	99	DIRN	SUR	72	20	425	0	0	14.2	23.4	27.4
6401856	99	DIRN	SUR	66	-21	500	22	0	67.9	-13.1	69.2
6402725	99	DIRN	SUR	70	3	1902	57	0	98.3	42.2	107.0
6600022	99	DIRN	SUR	54	14	151	1	0	48.6	-101.8	112.8

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

```
          LIST OF SUSPECT STATIONS         : RADIOSONDES
                    MONITORING CENTRE      : ECMWF
                    ELEMENT MONITORED      : GEOPOTENTIAL HEIGHT (METRES)
                    AREA                   : GLOBAL
                    PERIOD                 : SEP 2021
                    STANDARD OF COMPARISON: FIRST-GUESS FIELD


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


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

WMO IDENT	OBS TIME	ELM	LEV	LAT	LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
01400	00	Z	1000	57	3	28	0	5.6	78.4	78.6
01400	12	Z	1000	57	3	29	0	4.0	79.7	79.8
38064	12	Z	150	45	66	27	1	51.4	113.5	124.6
38064	00	Z	100	45	66	28	0	63.8	115.2	131.7
38341	00	Z	100	43	71	28	0	92.5	87.6	127.4
38341	12	Z	150	43	71	29	1	51.8	83.3	98.1
52323	00	Z	50	42	97	29	0	115.2	184.0	217.1
71802	00	Z	850	48	-53	31	0	13.8	-35.5	38.1
76394	12	Z	200	26	-100	17	0	108.7	118.5	160.8
76394	00	Z	200	26	-100	16	0	113.7	130.5	173.1
76644	12	Z	1000	21	-90	28	0	3.3	27.9	28.1
98233	12	Z	1000	18	122	29	0	30.9	25.5	40.1
98233	00	Z	1000	18	122	27	0	32.0	32.2	45.4
98558	12	Z	1000	11	126	24	0	21.2	62.5	66.0
98558	00	Z	1000	11	126	11	0	16.5	63.6	65.7
CVSAL	12	Z	1000	17	-23	18	0	49.5	21.9	54.1
JNKN7J	12	Z	1000	49	-42	11	0	5.0	41.8	42.1
JNKN7J	00	Z	1000	45	-57	10	0	4.0	40.6	40.8
KMPLHP	12	Z	150	55	-13	10	0	62.4	99.8	117.7

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

```
          LIST OF SUSPECT STATIONS        : RADIOSONDES
                    MONITORING CENTRE     : ECMWF
                    ELEMENT MONITORED     : WIND (M/S)
                    AREA                  : GLOBAL
                    PERIOD                : SEP 2021
                    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

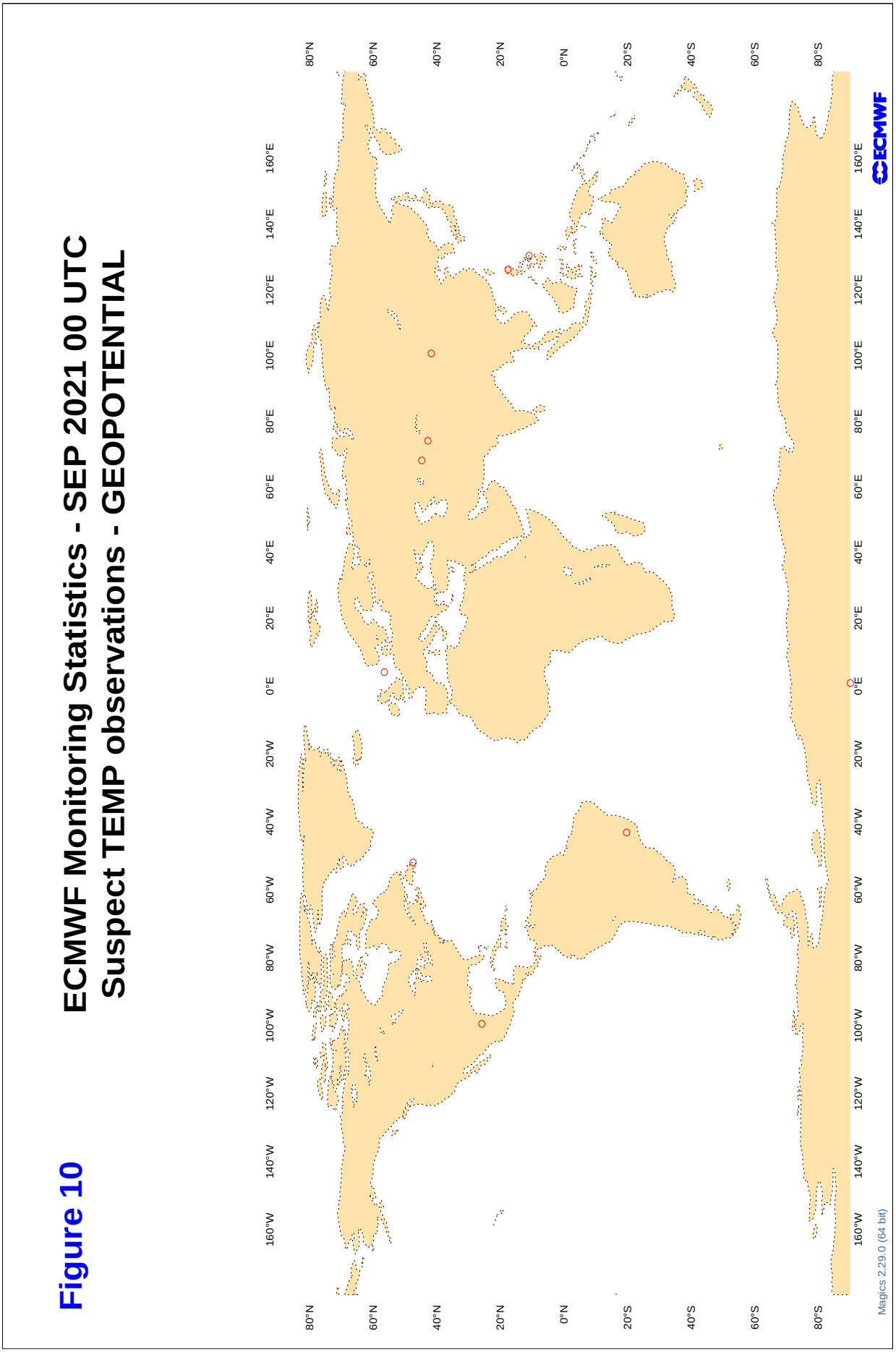
3.2.20 Table 9 - Suspect radiosondes: Wind direction (degrees)

```
          LIST OF SUSPECT STATIONS        : RADIOSONDES
                    MONITORING CENTRE     : ECMWF
                    ELEMENT MONITORED     : WIND DIRECTION (DEGREES)
                    AREA                  : GLOBAL
                    PERIOD                : SEP 2021
                    STANDARD OF COMPARISON: FIRST-GUESS FIELD

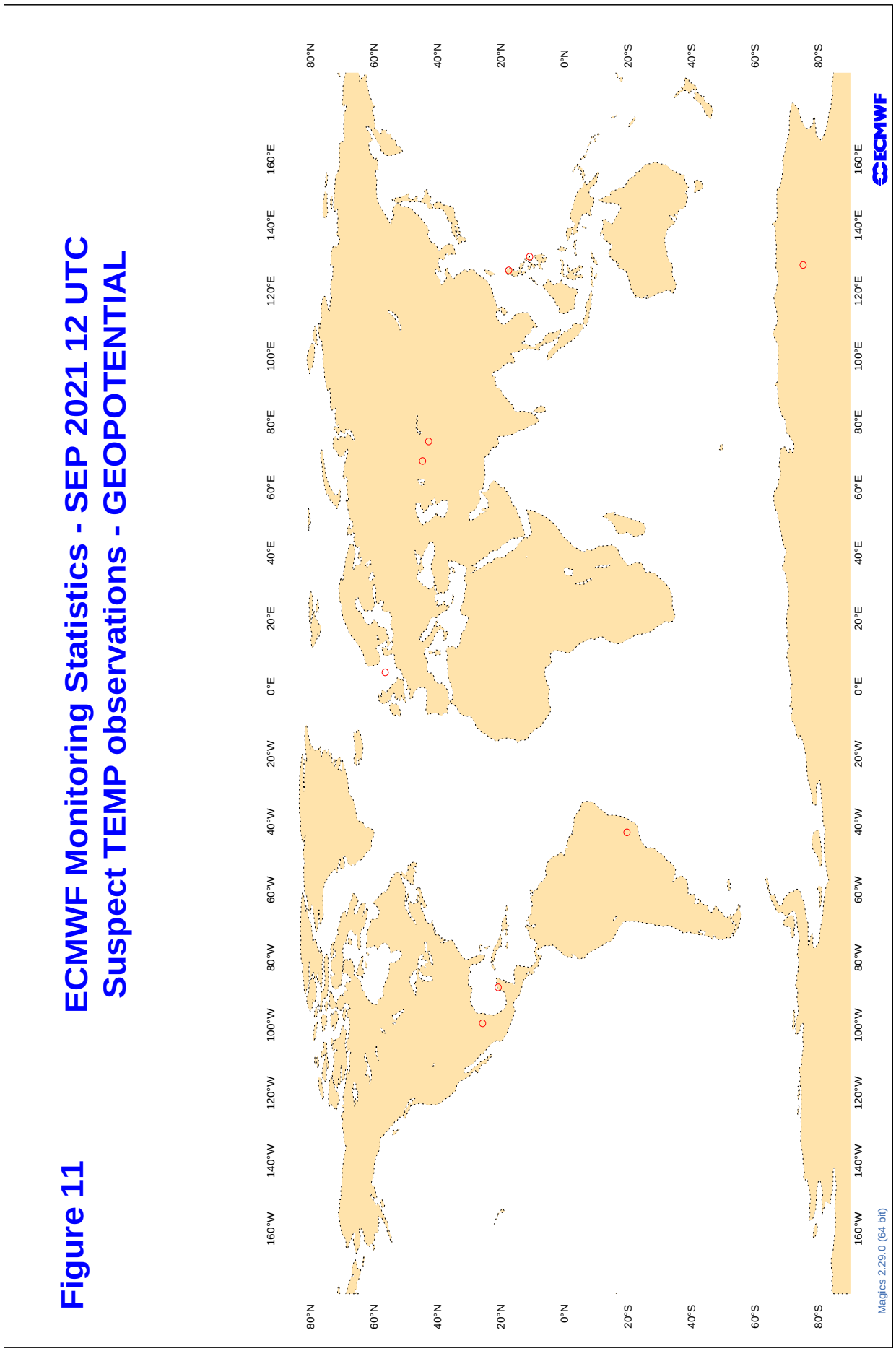

SELECTION CRITERIA: OBSERVED/FORECAST WIND SPEEDS >= 5 M/S
                    NO. OF OBSERVATIONS   >= 5, AND,
                    ABSOLUTE BIAS         >= 10 DEGREES, WITH
                    STANDARD DEVIATION    <  30 DEGREES, AND,
                    VERTICAL SPREAD       < 10 DEGREES
         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

WMO IDENT	OBS TIME	ELM	LAT	LONG	NUM OBS	BIAS	MAX SPREAD	SD

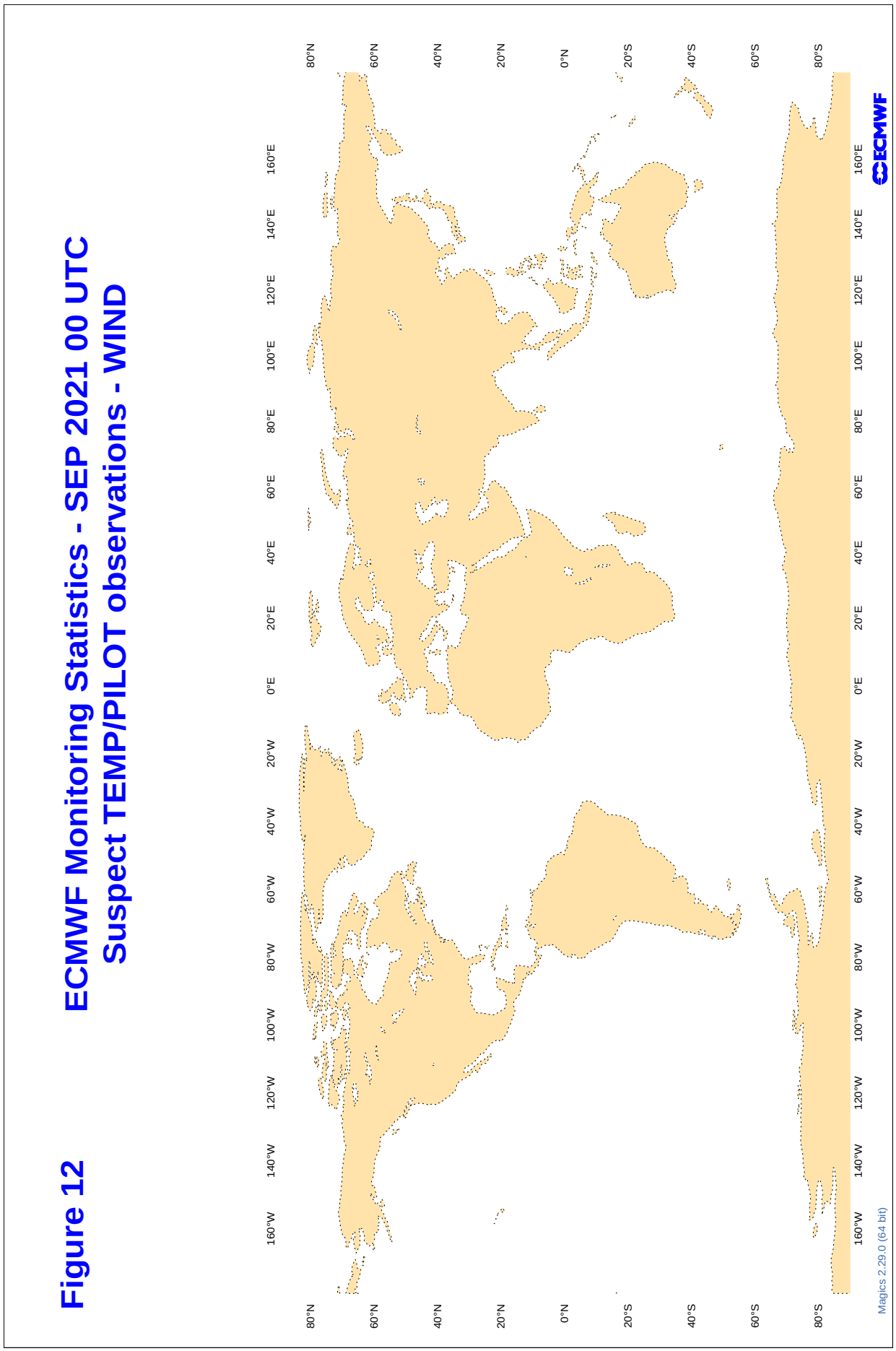
3.2.21 Figure 10 - Suspect TEMP observations - geopotential : 00 UTC



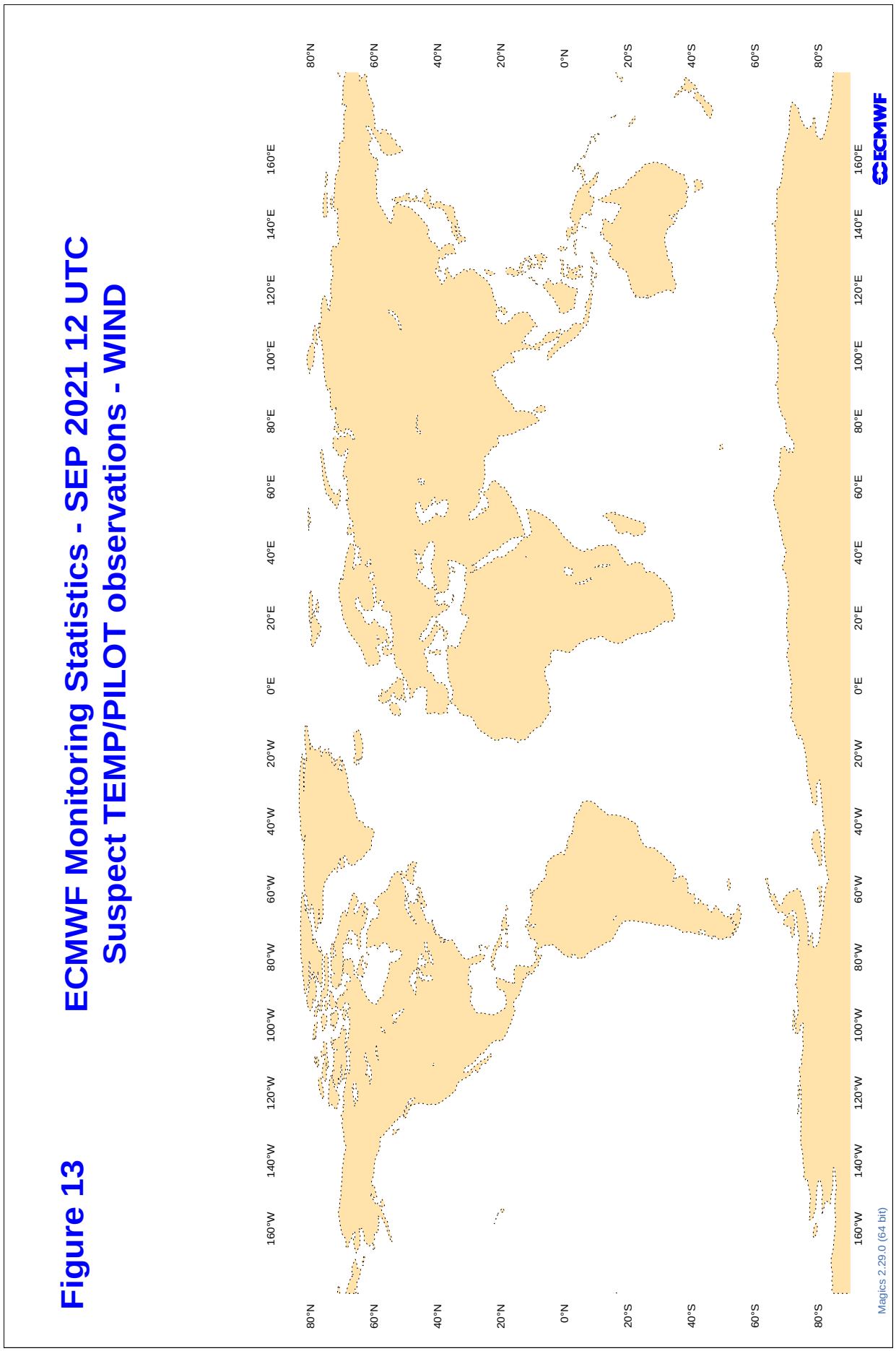
3.2.22 Figure 11 - Suspect TEMP observations - geopotential : 12 UTC



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



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



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

```
RADIOSONDE MONITORING STATISTICS (SHIPS)
         MONITORING CENTRE     : ECMWF
         ELEMENT MONITORED     : GEOPOTENTIAL HEIGHT (METRES)
         LEVEL                 : 100 HPA
         AREA                  : GLOBAL
         PERIOD                : SEP 2021
         STANDARD OF COMPARISON: FIRST-GUESS FIELD
```

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
7JUNA4	12	Z	100	6	18.6	16.2
7JUNA4	00	Z	100	6	8.5	0.3
ASDE09	12	Z	100	1	16.2	16.2
ATGU3F	12	Z	100	9	26.2	8.3
ATGU3F	00	Z	100	6	25.2	-15.7
BPMWB2	12	Z	100	5	26.4	12.5
BPMWB2	00	Z	100	7	19.2	11.5
CVSAL	12	Z	100	15	47.5	34.8
CVSAL	00	Z	100	1	77.4	77.4
DSQL7	12	Z	100	11	6.8	-5.7
DSQL7	00	Z	100	12	6.7	-5.9
FPUW5G	12	Z	100	7	11.9	-8.6
HTXUH4	00	Z	100	5	31.9	18.0
JGQH	00	Z	100	1	8.3	8.3
JGQH	12	Z	100	1	11.6	11.6
JNKN7J	12	Z	100	11	100.3	95.9
JNKN7J	00	Z	100	9	32.3	31.1
JPBN	00	Z	100	0	0.0	0.0
JPBN	12	Z	100	0	0.0	0.0
KJJF9X	12	Z	100	7	18.9	17.6
KJJF9X	00	Z	100	9	10.7	4.4
KMPLHP	12	Z	100	10	133.8	123.5
KMPLHP	00	Z	100	9	28.1	26.0
LRYQE3	12	Z	100	9	45.6	39.9
LRYQE3	00	Z	100	10	19.2	12.6
SMLQ	12	Z	100	12	7.4	-7.0
SMLQ	00	Z	100	12	10.4	-8.7
UXK5JT	12	Z	100	6	9.4	6.1
UXK5JT	00	Z	100	4	9.7	7.9
WDK38H	12	Z	100	14	52.3	6.3
WDK38H	00	Z	100	14	9.0	-8.5
XKQLWQ	12	Z	100	22	34.0	32.5
XQFJRG	12	Z	100	4	21.6	6.7
XQFJRG	00	Z	100	4	16.5	-15.3
YLV96W	12	Z	100	7	12.3	6.6
YLV96W	00	Z	100	7	12.6	-4.9
ZSNO	12	Z	100	4	15.1	8.7
ZVQEQC	12	Z	100	27	18.6	17.7

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 2021
         STANDARD OF COMPARISON: FIRST-GUESS FIELD
```

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
7JUNA4	12	V	100	6	2.9	-1.8	0.6
7JUNA4	00	V	100	6	3.5	-0.9	-2.4
ASDE09	12	V	100	1	1.9	-1.7	-0.8
ATGU3F	12	V	100	9	2.4	-0.3	0.2
ATGU3F	00	V	100	6	2.2	1.9	0.1
BPMWB2	12	V	100	5	4.3	0.2	0.6
BPMWB2	00	V	100	7	3.5	1.8	-0.2
CVSAL	12	V	100	15	5.2	0.7	1.3
CVSAL	00	V	100	1	0.5	0.3	0.4
DSQL7	12	V	100	11	2.3	0.4	0.2
DSQL7	00	V	100	11	2.3	-0.6	0.2
FPUW5G	12	V	100	7	2.9	-0.4	0.7
HTXUH4	00	V	100	4	2.6	1.1	0.9
JGQH	00	V	100	1	2.0	-0.1	-2.0
JGQH	12	V	100	1	5.2	-4.6	2.5
JNKN7J	12	V	100	11	3.3	-0.9	0.0
JNKN7J	00	V	100	9	4.5	1.0	-0.8
JPBN	00	V	100	0	0.0	0.0	0.0
JPBN	12	V	100	0	0.0	0.0	0.0
KJJF9X	12	V	100	7	3.3	0.8	-0.7
KJJF9X	00	V	100	9	3.9	-1.2	0.2
KMPLHP	12	V	100	10	2.6	-0.1	-0.5
KMPLHP	00	V	100	9	3.6	0.8	1.6
LRYQE3	12	V	100	9	4.8	-0.9	1.1
LRYQE3	00	V	100	9	3.6	1.2	0.4
SMLQ	12	V	100	12	1.9	-0.7	-0.5
SMLQ	00	V	100	12	1.9	-0.2	-0.3
UXK5JT	12	V	100	6	2.4	-0.2	-0.7
UXK5JT	00	V	100	4	3.6	-1.5	0.8
WDK38H	12	V	100	13	2.0	0.4	-0.2
WDK38H	00	V	100	12	1.9	0.1	-0.7
XKQLWQ	12	V	100	22	3.1	0.3	-0.5
XQFJRG	12	V	100	4	3.9	-1.0	1.7
XQFJRG	00	V	100	4	3.0	-0.1	-0.6
YLV96W	12	V	100	7	2.5	1.5	0.2
YLV96W	00	V	100	7	2.7	1.5	0.7
ZSNO	12	V	100	4	3.3	-0.8	0.2
ZVQEQC	12	V	100	27	3.3	-0.1	0.5

3.2.27 Figure 14 - SATOB Winds: 700-1000hPa

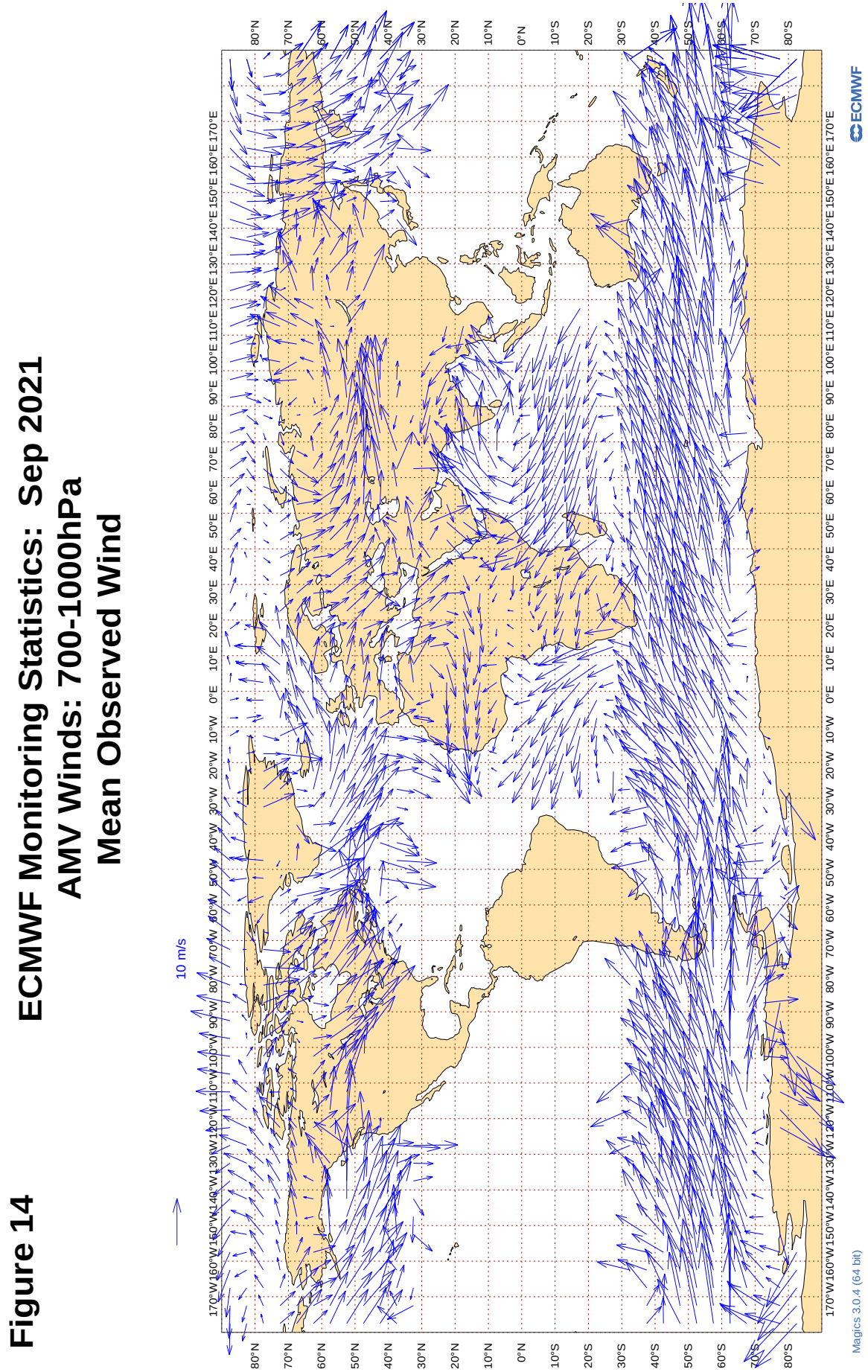


Figure 14

3.2.28 Figure 15 - SATOB Winds: 150- 400hPa

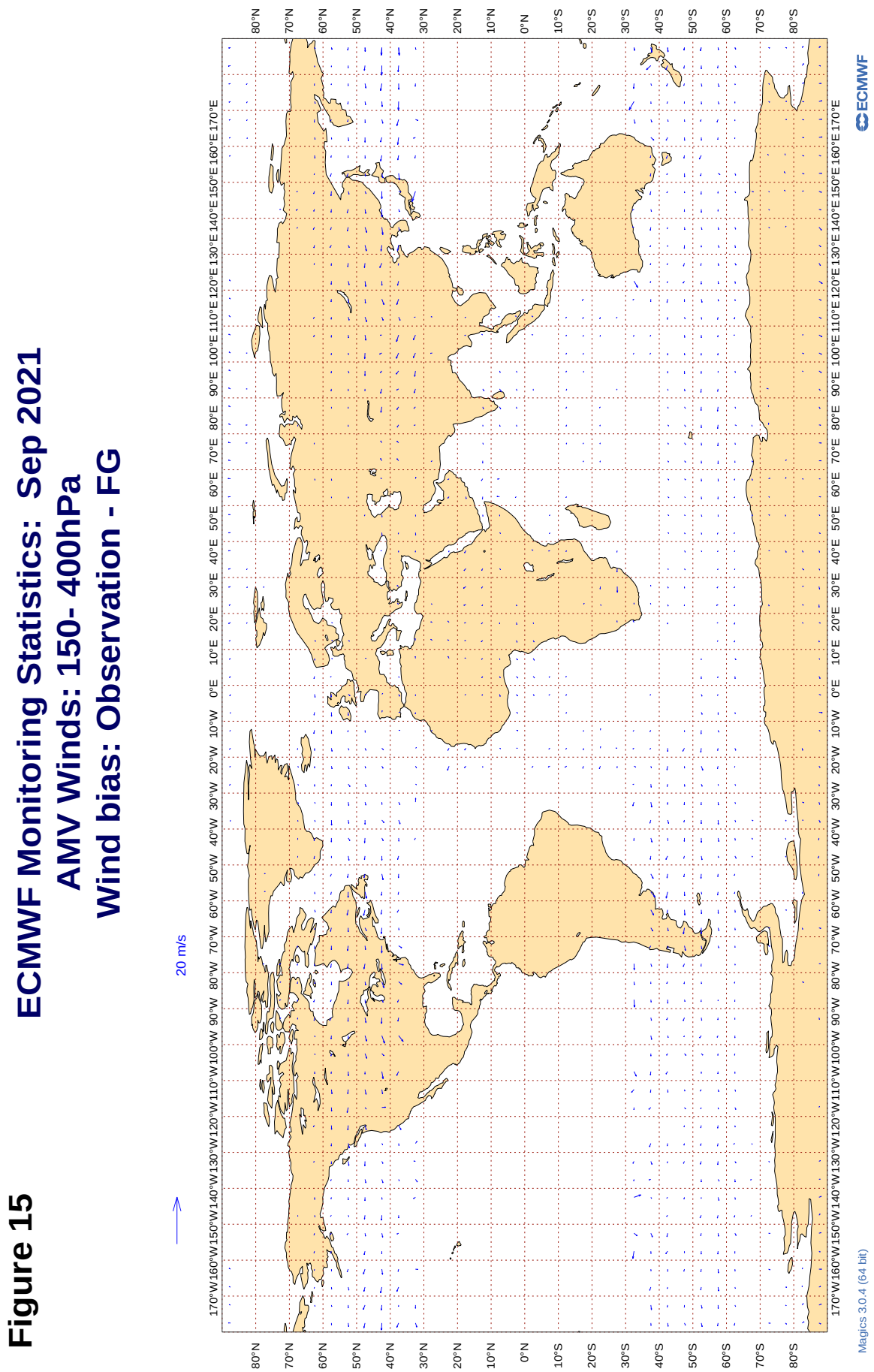


Figure 15

3.2.29 Figure 16 - SATOB Winds: 700-1000hPa

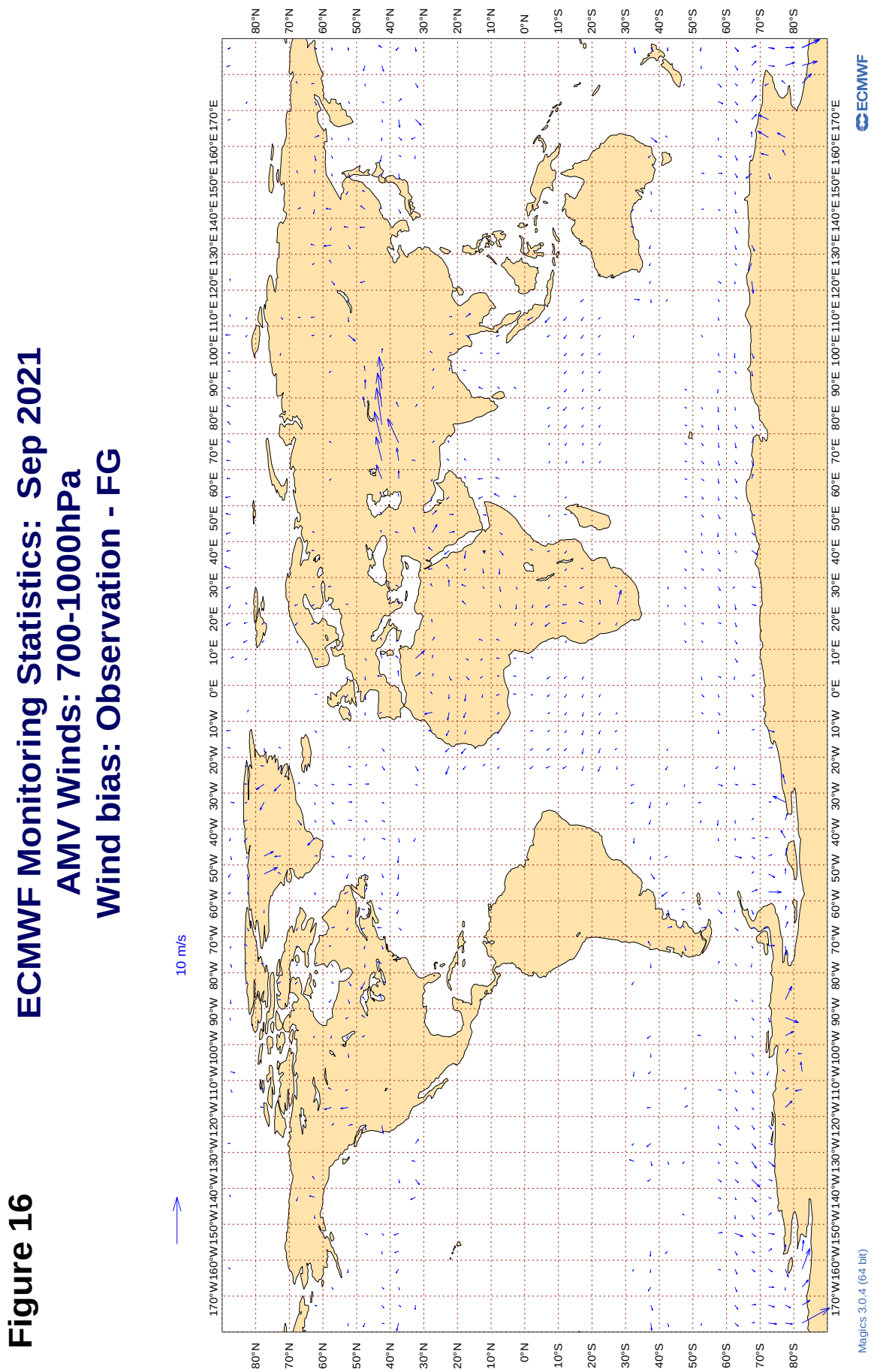


Figure 16

3.2.30 Figure 17 - SATOB Winds: 150- 400hPa

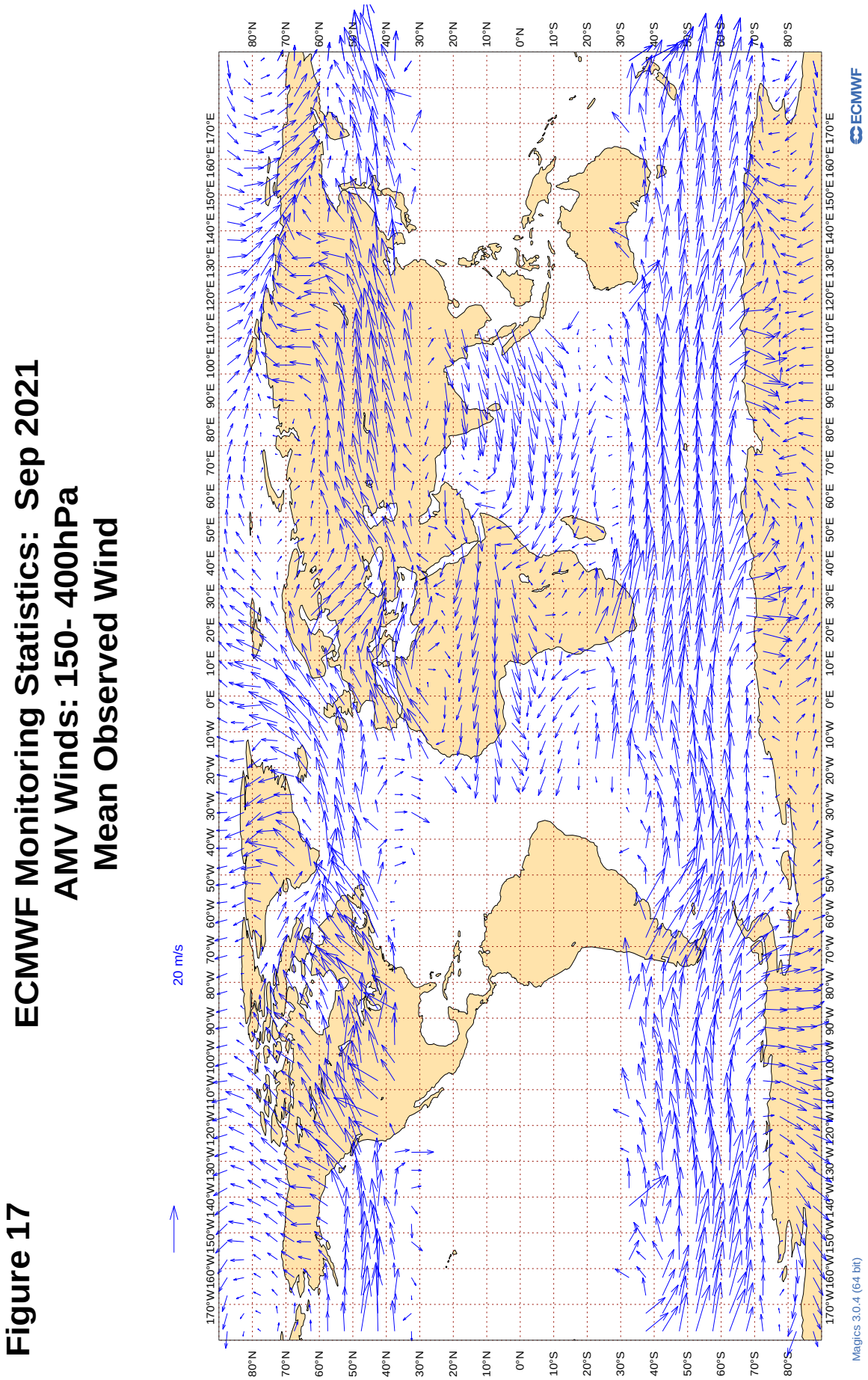


Figure 17

3.2.31 Figure 18 - AIRCRAFT Winds: 150- 300hPa

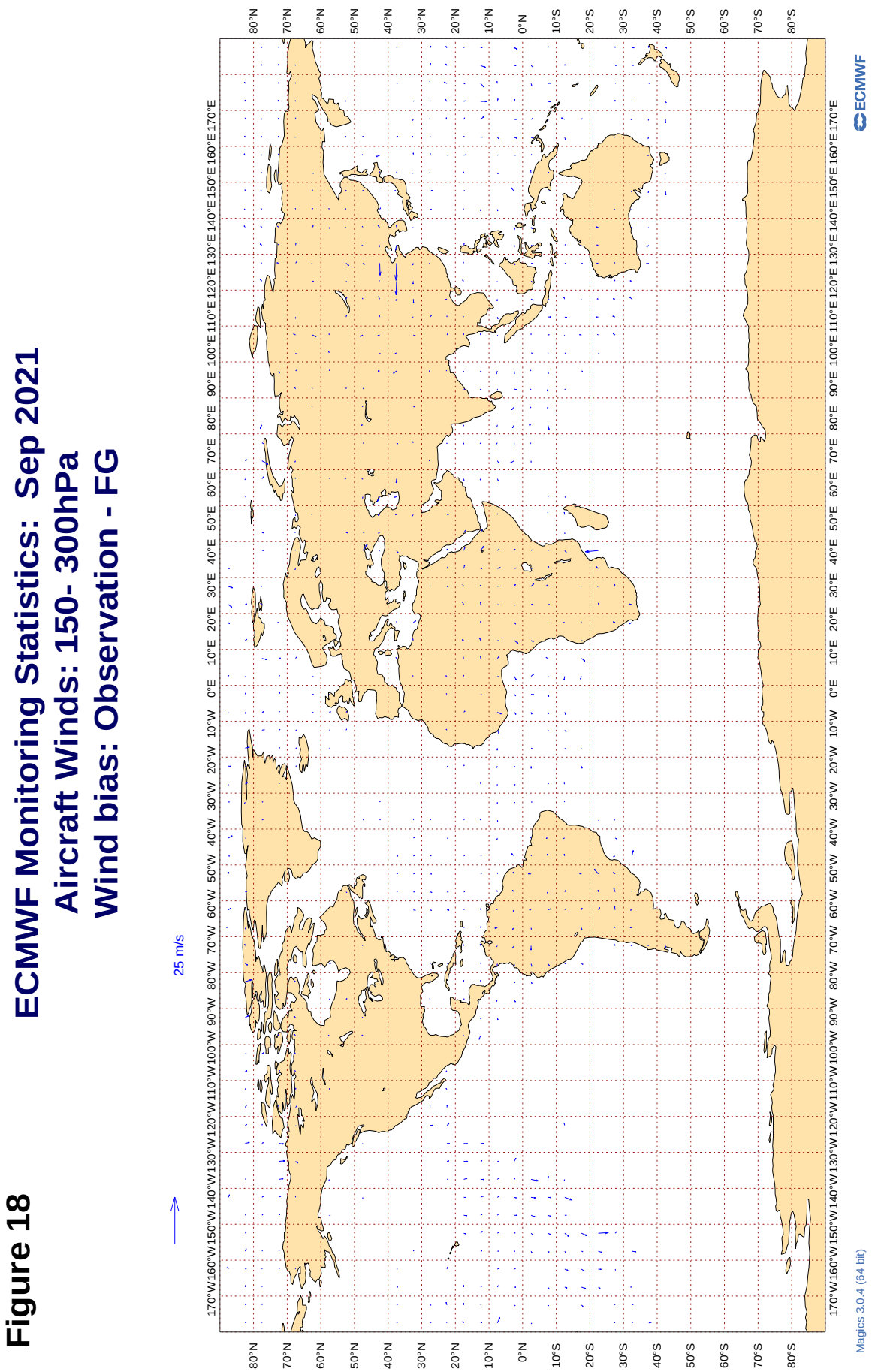


Figure 18

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 2021
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	25092	3	0	5.2	0.2
AAR	99	V	300-150	192	0	0	4.1	-1.0
ABB	99	V	300-150	2001	0	0	3.4	0.3
ABD	99	V	300-150	1392	0	0	4.2	-0.1
ABG	99	V	300-150	306	0	0	4.3	0.5
ABP	99	V	300-150	45	0	0	3.9	0.4
ABW	99	V	300-150	631	0	0	3.8	-0.1
ABX	99	V	300-150	112	0	0	3.8	-0.4
ACA	99	V	300-150	16790	5	0	5.5	0.1
ACI	99	V	300-150	85	0	0	3.3	0.8
AEA	99	V	300-150	523	5	0	6.0	0.2
AFL	99	V	300-150	1889	0	0	3.6	0.3
AFR	99	V	300-150	22589	1	0	4.2	0.2
AHO	99	V	300-150	272	0	0	3.9	0.5
AIC	99	V	300-150	1672	1	0	4.6	0.3
AJT	99	V	300-150	678	0	0	3.8	0.2
ALE	99	V	300-150	76	0	0	3.5	0.6
ALK	99	V	300-150	1362	0	0	4.0	0.6
AMX	99	V	300-150	1988	6	0	6.4	0.1
ANZ	99	V	300-150	6121	4	0	6.3	0.1
AOJ	99	V	300-150	142	0	0	3.5	-0.2
ASA	99	V	300-150	120	1	3	6.2	0.4
ASL	99	V	300-150	531	0	0	3.8	0.4
ASP	99	V	300-150	42	0	0	3.2	0.5
ASY	99	V	300-150	54	0	0	3.7	1.1
ATC	99	V	300-150	100	0	0	4.1	0.9
ATN	99	V	300-150	69	0	3	4.4	-0.0
AUA	99	V	300-150	3168	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
AVA	99	V	300-150	28	0	0	5.0	0.9
AWC	99	V	300-150	303	0	0	3.5	0.5
AXB	99	V	300-150	33	0	0	3.1	0.3
AXY	99	V	300-150	171	0	0	3.2	0.3
AZA	99	V	300-150	2835	0	0	3.7	0.5
AZG	99	V	300-150	829	0	0	3.6	0.1
AZV	99	V	300-150	868	0	0	3.6	0.3
BAF	99	V	300-150	50	0	0	3.5	-0.3
BAW	99	V	300-150	25878	3	0	5.3	0.2
BBC	99	V	300-150	253	0	0	4.6	0.0
BCS	99	V	300-150	2343	0	0	3.6	0.2
BEL	99	V	300-150	1072	0	0	3.6	0.3
BFF	99	V	300-150	67	0	0	11.4	2.9
BFY	99	V	300-150	38	0	0	4.7	0.6
BOX	99	V	300-150	3563	0	0	3.6	0.1
BOX	99	V	300-150	43	0	0	3.8	-0.0
BPA	99	V	300-150	143	0	0	3.3	0.3
BRI	99	V	300-150	20	0	0	5.3	-0.2
BTX	99	V	300-150	65	0	0	3.9	0.3
BVR	99	V	300-150	39	0	0	4.0	0.7
CAJ	99	V	300-150	73	0	0	3.8	0.2
CAL	99	V	300-150	315	0	0	4.0	0.2
CAZ	99	V	300-150	70	0	0	3.9	-0.1
CEB	99	V	300-150	99	0	0	4.3	0.7
CES	99	V	300-150	54	7	0	7.8	1.4
CFC	99	V	300-150	345	0	0	3.8	-0.1
CFG	99	V	300-150	2341	0	0	4.1	-0.2
CHG	99	V	300-150	84	0	0	3.9	-0.1
CJT	99	V	300-150	1284	0	0	4.0	-0.4
CKS	99	V	300-150	1782	0	0	3.5	-0.1
CLU	99	V	300-150	1217	0	0	4.0	-0.3
CLX	99	V	300-150	4432	0	0	3.9	-0.1
CMB	99	V	300-150	2181	0	0	3.8	0.1
CNV	99	V	300-150	260	0	0	4.5	0.7
CPA	99	V	300-150	504	0	0	4.1	-0.1
CRL	99	V	300-150	647	0	0	3.5	0.2
CRV	99	V	300-150	72	0	0	3.2	0.2
CSN	99	V	300-150	204	11	0	7.2	0.2
CTM	99	V	300-150	129	0	0	3.3	0.3
CUB	99	V	300-150	34	0	0	3.9	0.7
CWG	99	V	300-150	36	0	0	3.8	-0.0
CXB	99	V	300-150	52	0	0	3.0	-0.8
CXF	99	V	300-150	38	0	0	2.7	0.1

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
DAL	99	V	300-150	29973	0	0	3.5	0.3
DCW	99	V	300-150	33	0	0	3.5	0.9
DGX	99	V	300-150	65	0	0	3.1	-0.4
DHK	99	V	300-150	826	0	0	4.7	-0.1
DJT	99	V	300-150	679	0	0	3.7	0.3
DLH	99	V	300-150	19211	0	0	3.5	0.2
DSO	99	V	300-150	78	0	0	3.2	-0.0
DUB	99	V	300-150	45	0	0	4.3	0.4
EAU	99	V	300-150	100	0	0	3.5	0.7
EAV	99	V	300-150	34	0	0	2.8	0.2
EDC	99	V	300-150	109	0	0	3.4	0.2
EDG	99	V	300-150	415	0	0	3.6	0.2
EDW	99	V	300-150	524	0	0	3.5	0.5
EFF	99	V	300-150	32	0	0	3.9	-0.4
EIN	99	V	300-150	4682	0	0	3.6	0.3
EJM	99	V	300-150	663	0	0	3.7	0.3
ELX	99	V	300-150	23	0	0	3.8	-0.6
ELY	99	V	300-150	2441	5	0	6.5	0.0
ETD	99	V	300-150	7397	3	0	5.3	0.4
ETH	99	V	300-150	6150	2	0	5.0	0.2
EVE	99	V	300-150	119	0	0	4.5	0.2
EXS	99	V	300-150	84	0	0	3.7	-0.6
FAL	99	V	300-150	25	0	0	5.5	1.7
FBU	99	V	300-150	1086	0	0	3.9	0.5
FDX	99	V	300-150	7086	0	0	3.5	0.3
FIN	99	V	300-150	830	0	0	3.5	-0.2
FJI	99	V	300-150	402	0	0	3.3	0.5
FLJ	99	V	300-150	36	0	3	3.0	-0.4
FWI	99	V	300-150	943	0	0	3.2	0.3
FWK	99	V	300-150	60	0	0	3.6	0.8
FYG	99	V	300-150	114	0	0	3.8	0.2
GAF	99	V	300-150	118	0	0	3.8	-0.2
GBG	99	V	300-150	85	0	0	3.3	-0.4
GCK	99	V	300-150	93	0	0	4.3	0.7
GCT	99	V	300-150	32	0	0	3.5	-0.3
GEC	99	V	300-150	1567	0	0	3.7	0.1
GES	99	V	300-150	25	0	0	4.2	0.5
GFA	99	V	300-150	462	0	0	4.7	0.3
GIA	99	V	300-150	32	0	0	3.3	0.1
GJE	99	V	300-150	52	0	0	3.7	-0.1
GLJ	99	V	300-150	39	0	0	3.7	0.0
GMA	99	V	300-150	23	0	0	3.5	-0.2
GNJ	99	V	300-150	76	0	0	4.0	0.8

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
GRP	99	V	300-150	61	0	0	3.8	0.7
GTI	99	V	300-150	2125	0	0	4.2	0.0
HAL	99	V	300-150	281	0	1	4.0	0.2
HFM	99	V	300-150	148	0	0	3.7	0.2
HKC	99	V	300-150	53	0	0	5.4	0.3
HRT	99	V	300-150	93	0	0	4.9	0.8
HUA	99	V	300-150	91	0	0	4.0	1.0
HVN	99	V	300-150	79	0	0	4.4	-0.4
HZS	99	V	300-150	36	0	0	3.7	0.0
IAM	99	V	300-150	68	0	0	4.4	1.5
IBE	99	V	300-150	2869	0	0	3.7	0.3
ICE	99	V	300-150	4435	0	0	3.7	0.0
ICL	99	V	300-150	660	0	0	4.0	0.2
ICV	99	V	300-150	414	0	0	3.8	-0.1
IFA	99	V	300-150	148	0	0	4.0	-0.1
IJM	99	V	300-150	192	0	1	4.8	0.6
IND	99	V	300-150	23	0	0	3.2	0.5
JAF	99	V	300-150	171	6	0	6.9	0.3
JAS	99	V	300-150	56	0	0	3.4	0.3
JBU	99	V	300-150	678	0	0	3.8	0.5
JCO	99	V	300-150	24	0	0	3.8	-0.8
JET	99	V	300-150	72	0	0	3.4	0.2
JME	99	V	300-150	105	0	0	3.2	0.3
JTL	99	V	300-150	33	0	0	3.2	0.2
KAC	99	V	300-150	419	0	0	3.8	0.7
KAI	99	V	300-150	55	0	0	3.9	-0.6
KAL	99	V	300-150	63	2	0	3.9	0.6
KAR	99	V	300-150	28	0	0	4.2	0.5
KAY	99	V	300-150	229	0	0	3.5	0.1
KLM	99	V	300-150	15134	3	0	5.2	0.2
KQA	99	V	300-150	194	1	0	4.3	0.6
KRF	99	V	300-150	34	0	0	4.0	0.7
KUG	99	V	300-150	52	0	0	2.7	0.4
LCO	99	V	300-150	280	0	0	3.9	-1.5
LGT	99	V	300-150	144	0	1	3.8	-1.0
LMJ	99	V	300-150	27	0	0	3.4	0.7
LNX	99	V	300-150	90	0	0	3.9	-0.7
LOT	99	V	300-150	3767	6	0	6.7	-0.1
LUC	99	V	300-150	31	0	0	4.8	0.7
LXJ	99	V	300-150	611	0	0	3.5	0.3
MAA	99	V	300-150	38	0	0	2.8	1.0
MAS	99	V	300-150	700	0	0	4.9	0.9
MAU	99	V	300-150	173	0	0	5.0	1.2

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
MED	99	V	300-150	22	0	0	3.5	0.6
MEZ	99	V	300-150	26	0	0	6.9	-0.5
MHV	99	V	300-150	114	0	0	3.6	0.3
MJF	99	V	300-150	43	0	0	4.0	0.1
MLM	99	V	300-150	82	0	0	3.4	0.0
MLT	99	V	300-150	454	0	0	3.3	0.3
MMD	99	V	300-150	220	0	0	3.6	0.3
MMZ	99	V	300-150	228	0	0	4.5	-0.1
MPH	99	V	300-150	777	0	0	3.8	-0.7
MSR	99	V	300-150	2232	2	0	4.4	0.3
NCR	99	V	300-150	387	0	0	3.2	-0.1
NEW	99	V	300-150	36	0	0	4.2	-1.3
NJE	99	V	300-150	435	0	0	3.7	0.3
NOJ	99	V	300-150	69	0	0	4.1	-0.1
NOS	99	V	300-150	547	8	0	6.7	0.0
NWS	99	V	300-150	585	0	0	3.2	0.2
OAE	99	V	300-150	676	0	0	4.6	0.4
OCN	99	V	300-150	271	0	0	4.0	0.4
OMA	99	V	300-150	382	0	0	4.3	0.5
PAC	99	V	300-150	536	0	0	3.8	0.0
PAL	99	V	300-150	465	0	0	4.1	0.8
PAT	99	V	300-150	29	0	0	4.5	-0.9
PEG	99	V	300-150	140	0	0	3.2	-0.1
PIA	99	V	300-150	115	0	0	3.6	0.6
PLM	99	V	300-150	1050	0	0	3.7	0.2
PVG	99	V	300-150	104	0	0	3.5	0.6
QAF	99	V	300-150	124	0	0	3.3	0.2
QFA	99	V	300-150	1291	4	0	4.3	0.4
QGA	99	V	300-150	32	0	0	3.5	-0.3
QID	99	V	300-150	40	0	0	4.4	-0.2
QQE	99	V	300-150	159	0	1	3.9	0.4
QTR	99	V	300-150	25330	0	0	3.9	0.4
RAM	99	V	300-150	60	5	2	4.5	0.6
RCH	99	V	300-150	4639	0	0	4.7	0.4
RJA	99	V	300-150	1214	8	0	6.4	0.1
RKK	99	V	300-150	28	0	0	3.4	0.7
RKS	99	V	300-150	30	0	0	4.0	0.8
ROJ	99	V	300-150	67	7	0	7.4	0.4
RRR	99	V	300-150	147	0	0	4.1	0.8
RUN	99	V	300-150	140	0	0	3.5	0.2
RYR	99	V	300-150	150	0	1	3.1	0.3
RZO	99	V	300-150	227	0	1	4.1	0.5
SAM	99	V	300-150	298	0	0	4.2	0.3

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
SAS	99	V	300-150	2253	0	0	3.3	-0.1
SCX	99	V	300-150	97	0	1	4.4	0.5
SEY	99	V	300-150	93	0	0	4.6	1.0
SIA	99	V	300-150	3665	0	0	4.6	0.4
SIO	99	V	300-150	71	0	0	3.4	0.5
SIS	99	V	300-150	21	0	0	3.5	0.1
SJJ	99	V	300-150	32	0	0	3.3	0.2
SLM	99	V	300-150	102	0	0	3.1	0.2
SOO	99	V	300-150	589	0	0	4.1	-0.1
SPA	99	V	300-150	90	0	0	4.0	0.6
SVA	99	V	300-150	3328	0	0	3.8	0.5
SVF	99	V	300-150	29	0	0	4.5	-0.5
SVW	99	V	300-150	301	0	0	4.3	0.6
SWA	99	V	300-150	210	1	2	7.1	0.2
SWR	99	V	300-150	5851	0	1	3.7	0.3
SYB	99	V	300-150	129	0	0	3.8	-0.5
TAM	99	V	300-150	26	0	4	5.2	0.3
TAP	99	V	300-150	2562	0	0	3.7	0.7
TAR	99	V	300-150	232	0	0	3.2	0.2
TAY	99	V	300-150	530	0	0	3.8	0.1
TEU	99	V	300-150	83	0	0	3.3	-0.0
TFF	99	V	300-150	75	0	0	5.0	-0.6
TFL	99	V	300-150	1290	4	0	6.1	-0.1
TGW	99	V	300-150	141	0	0	5.0	1.0
THA	99	V	300-150	53	0	0	5.6	0.1
THT	99	V	300-150	2887	3	0	7.8	0.2
THY	99	V	300-150	12978	2	0	4.7	0.1
TMN	99	V	300-150	296	0	0	4.1	0.2
TOM	99	V	300-150	475	5	0	6.9	0.0
TOW	99	V	300-150	58	0	0	3.6	-0.2
TPA	99	V	300-150	307	0	0	3.6	0.8
TRK	99	V	300-150	97	0	0	3.6	0.2
TSC	99	V	300-150	1288	0	0	3.8	0.5
TVS	99	V	300-150	34	0	0	4.2	-0.4
TWY	99	V	300-150	818	0	0	3.7	0.2
UAE	99	V	300-150	18824	0	0	3.9	0.3
UAL	99	V	300-150	41385	4	1	5.8	0.1
UKN	99	V	300-150	36	0	0	3.5	0.2
ULC	99	V	300-150	24	0	0	3.7	1.4
UPS	99	V	300-150	4834	0	0	3.9	-0.1
UTN	99	V	300-150	195	0	0	3.7	-0.3
UZB	99	V	300-150	96	6	0	5.3	-0.4
VCG	99	V	300-150	84	0	0	3.7	1.1

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
VCJ	99	V	300-150	59	0	0	4.2	1.2
VCN	99	V	300-150	78	0	0	3.3	-0.1
VIR	99	V	300-150	8430	2	0	4.7	0.0
VJT	99	V	300-150	1676	0	0	3.6	0.4
VMP	99	V	300-150	64	0	0	5.9	0.3
VTI	99	V	300-150	128	0	0	3.8	0.5
WJA	99	V	300-150	1064	6	0	6.3	-0.1
WRC	99	V	300-150	154	0	0	3.6	0.5
Ws?	99	V	300-150	3571	0	0	4.5	0.3
XAX	99	V	300-150	44	0	0	4.9	0.4
XOJ	99	V	300-150	35	0	0	3.0	-0.3
XRO	99	V	300-150	52	0	0	4.2	0.8
YEL	99	V	300-150	39	0	0	3.9	0.2

4 EUCOS Area Monitoring Statistics

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

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

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

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RADIOSONDE MONITORING STATISTICS (EUCOS)
         MONITORING CENTRE     : ECMWF
         ELEMENT MONITORED     : GEOPOTENTIAL HEIGHT (METRES)
         LEVEL                 :  50 HPA
         AREA                  : 0 - 90N, 100W - 40E
         PERIOD                : SEP 2021
         STANDARD OF COMPARISON: FIRST-GUESS FIELD
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WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	00	Z	50	25	22.4	-15.8
01001	12	Z	50	26	17.4	-6.0
01028	00	Z	50	30	7.8	-5.1
01028	12	Z	50	29	7.0	-5.4
01400	00	Z	50	18	82.8	82.4
01400	12	Z	50	20	75.2	74.8
01415	12	Z	50	29	6.3	-2.0
01415	00	Z	50	29	8.3	1.3
02365	12	Z	50	22	10.5	-6.9
02365	00	Z	50	22	7.0	-2.6
02836	00	Z	50	29	6.0	-1.9
02836	12	Z	50	32	9.6	-6.1
02963	12	Z	50	30	7.6	-5.0
02963	00	Z	50	29	6.5	2.9
03005	00	Z	50	25	7.6	-2.5
03005	12	Z	50	30	12.6	-5.5
03238	00	Z	50	30	6.8	1.4
03808	00	Z	50	25	5.6	2.5
03808	12	Z	50	29	7.7	-2.1
03918	00	Z	50	29	6.8	1.3
03918	12	Z	50	3	6.3	4.9
03953	12	Z	50	30	7.3	-3.6
03953	00	Z	50	30	8.6	-2.4
04018	00	Z	50	28	10.1	-0.8
04018	12	Z	50	28	11.5	-8.2
04220	00	Z	50	30	4.5	0.0
04220	12	Z	50	29	7.1	-5.4
04270	00	Z	50	20	8.9	-1.9
04270	12	Z	50	22	6.8	-4.8
04320	00	Z	50	28	14.6	-10.0
04320	12	Z	50	29	16.4	-11.3
04339	12	Z	50	29	16.3	-2.3
04339	00	Z	50	29	18.1	-9.8
04360	12	Z	50	23	16.6	-7.7
04360	00	Z	50	23	15.6	-13.2
06011	00	Z	50	26	10.6	-0.2
06011	12	Z	50	23	11.1	7.4
06260	00	Z	50	30	6.4	2.6
06260	12	Z	50	15	6.6	-3.0

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06610	00	Z	50	30	8.4	6.5
06610	12	Z	50	31	5.7	0.5
066103	12	Z	50	0	0.0	0.0
07110	00	Z	50	29	9.6	-3.3
07110	12	Z	50	29	8.0	0.4
07510	12	Z	50	29	11.2	2.1
07510	00	Z	50	29	7.5	-1.7
07645	12	Z	50	28	17.7	-13.8
07645	00	Z	50	29	10.7	-5.6
07761	00	Z	50	24	19.4	-9.3
07761	12	Z	50	22	24.4	-9.3
08001	00	Z	50	29	11.9	9.6
08001	12	Z	50	30	7.6	1.5
08221	12	Z	50	29	6.3	1.8
08221	00	Z	50	29	8.3	6.6
08302	12	Z	50	30	7.8	-6.3
08302	00	Z	50	27	5.5	0.9
08508	12	Z	50	30	6.1	1.7
08522	12	Z	50	30	4.6	0.1
10035	12	Z	50	30	13.4	12.2
10035	00	Z	50	29	18.8	18.3
10393	12	Z	50	30	7.2	-0.9
10393	00	Z	50	30	5.9	4.3
10410	12	Z	50	30	5.7	-3.4
10410	00	Z	50	30	5.5	1.7
10739	00	Z	50	30	8.5	6.9
10739	12	Z	50	31	6.0	-1.7
11035	12	Z	50	28	31.3	15.2
11035	00	Z	50	26	8.7	7.7
12982	00	Z	50	28	9.9	8.0
12982	12	Z	50	30	5.2	2.5
16245	12	Z	50	29	5.5	-0.5
16245	00	Z	50	29	9.8	8.0
16429	12	Z	50	30	5.1	0.3
16429	00	Z	50	30	11.9	10.4
16622	00	Z	50	28	18.9	17.5
16754	00	Z	50	28	16.0	13.4
17607	12	Z	50	22	8.5	6.6
26435	12	Z	50	15	5.5	-4.2
60018	00	Z	50	29	10.0	8.5
60018	12	Z	50	29	4.9	-1.4
7JUNA4	12	Z	50	0	0.0	0.0
7JUNA4	00	Z	50	0	0.0	0.0

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
ASDE09	12	Z	50	1	13.1	13.1
ATGU3F	12	Z	50	8	42.3	22.7
ATGU3F	00	Z	50	4	17.7	-6.7
BPMWB2	12	Z	50	5	35.6	20.3
BPMWB2	00	Z	50	6	30.1	26.4
CVSAL	12	Z	50	16	56.8	43.4
CVSAL	00	Z	50	1	70.0	70.0
FPUW5G	12	Z	50	7	12.5	-9.7
HTXUH4	00	Z	50	2	43.9	24.8
JNKN7J	12	Z	50	1	52.5	52.5
JNKN7J	00	Z	50	0	0.0	0.0
KJJF9X	12	Z	50	5	23.9	20.6
KJJF9X	00	Z	50	9	15.0	10.3
KMPLHP	12	Z	50	1	17.7	-17.7
KMPLHP	00	Z	50	0	0.0	0.0
LRYQE3	12	Z	50	0	0.0	0.0
LRYQE3	00	Z	50	0	0.0	0.0
SMLQ	12	Z	50	2	5.2	-4.7
SMLQ	00	Z	50	6	7.7	-5.8
UXK5JT	12	Z	50	6	13.4	9.5
UXK5JT	00	Z	50	4	15.9	12.8
WDK38H	12	Z	50	9	107.1	31.8
WDK38H	00	Z	50	11	7.5	-6.4
XKQLWQ	12	Z	50	20	43.7	41.7
XQFJRG	12	Z	50	3	57.9	28.9
XQFJRG	00	Z	50	4	15.9	-13.9
YLV96W	12	Z	50	0	0.0	0.0
YLV96W	00	Z	50	1	0.6	-0.6
ZVQEQC	12	Z	50	27	15.9	14.5

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 2021
         STANDARD OF COMPARISON: FIRST-GUESS FIELD
```

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	00	V	50	20	2.5	0.1	-0.4
01001	12	V	50	26	3.3	0.0	0.1
01028	00	V	50	25	2.7	0.4	-0.3
01028	12	V	50	29	2.7	0.3	-0.1
01400	00	V	50	16	2.4	0.2	0.0
01400	12	V	50	17	3.3	0.2	-0.9
01415	12	V	50	28	3.0	-0.2	-0.7
01415	00	V	50	24	3.1	-0.9	-0.2
02365	12	V	50	21	3.0	-0.3	-0.7
02365	00	V	50	18	3.8	0.7	-0.2
02836	00	V	50	23	3.3	0.6	-0.4
02836	12	V	50	30	3.5	-0.3	0.3
02963	12	V	50	30	2.9	0.8	0.0
02963	00	V	50	25	2.3	-0.3	0.6
03005	00	V	50	18	2.6	0.2	0.1
03005	12	V	50	29	3.3	0.9	0.0
03238	00	V	50	23	3.3	0.6	-0.3
03808	00	V	50	19	3.1	0.2	-0.5
03808	12	V	50	29	3.0	0.3	0.2
03918	00	V	50	29	3.3	0.0	0.4
03918	12	V	50	2	3.0	2.6	-0.2
03953	12	V	50	30	3.3	-0.3	-0.3
03953	00	V	50	22	3.4	0.7	-0.2
04018	00	V	50	22	3.4	0.1	0.5
04018	12	V	50	28	3.6	0.0	0.2
04220	00	V	50	23	3.7	0.5	0.3
04220	12	V	50	29	3.4	-0.6	0.4
04270	00	V	50	18	4.4	0.2	0.1
04270	12	V	50	21	3.5	-0.1	1.2
04320	00	V	50	22	2.8	0.6	0.1
04320	12	V	50	29	3.0	-0.5	0.0
04339	12	V	50	28	2.8	0.9	-0.1
04339	00	V	50	23	3.6	-0.1	1.1
04360	12	V	50	23	4.0	-0.6	0.0
04360	00	V	50	21	3.2	-0.2	1.1
06011	00	V	50	22	2.8	0.4	0.4
06011	12	V	50	23	3.2	0.1	0.2
06260	00	V	50	23	3.5	-0.1	0.5
06260	12	V	50	15	3.2	-0.5	-0.2

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06610	00	V	50	26	3.0	0.7	0.0
06610	12	V	50	30	3.3	-0.1	0.2
066103	12	V	50	0	0.0	0.0	0.0
07110	00	V	50	22	2.6	0.1	0.8
07110	12	V	50	29	3.1	0.3	0.2
07510	12	V	50	29	3.4	0.5	0.1
07510	00	V	50	25	3.1	-0.2	0.2
07645	12	V	50	28	4.1	0.4	-0.5
07645	00	V	50	22	3.4	0.2	0.2
07761	00	V	50	19	3.6	-0.5	-0.1
07761	12	V	50	22	3.5	0.4	0.0
08001	00	V	50	21	3.8	-0.7	1.0
08001	12	V	50	30	3.7	-0.1	-0.3
08221	12	V	50	29	4.3	0.3	-0.8
08221	00	V	50	25	4.2	-0.8	0.7
08302	12	V	50	30	3.5	0.2	0.2
08302	00	V	50	22	3.8	-0.5	0.0
08508	12	V	50	30	3.2	0.0	-0.2
08522	12	V	50	30	3.1	0.1	-0.4
10035	12	V	50	30	2.8	0.0	0.1
10035	00	V	50	28	2.8	0.2	-0.5
10393	12	V	50	30	3.0	-0.1	0.2
10393	00	V	50	25	2.8	0.5	0.3
10410	12	V	50	30	2.8	0.0	0.4
10410	00	V	50	29	2.7	0.6	0.1
10739	00	V	50	29	3.0	-0.2	-0.4
10739	12	V	50	30	3.3	0.6	0.1
11035	12	V	50	27	2.8	-0.3	0.0
11035	00	V	50	19	2.9	0.5	0.2
12982	00	V	50	25	2.1	0.2	-0.5
12982	12	V	50	30	2.5	-0.3	0.2
16245	12	V	50	29	3.5	-0.3	0.0
16245	00	V	50	24	3.8	0.0	-0.8
16429	12	V	50	30	2.8	0.0	0.2
16429	00	V	50	23	3.5	0.8	0.5
16622	00	V	50	22	2.8	0.8	-0.4
16754	00	V	50	21	3.8	-0.2	-0.9
17607	12	V	50	1	2.6	-0.3	-2.6
26435	12	V	50	15	2.8	-0.8	-0.7
60018	00	V	50	23	2.8	-0.4	0.5
60018	12	V	50	29	3.2	0.4	-0.1
7JUNA4	12	V	50	0	0.0	0.0	0.0
7JUNA4	00	V	50	0	0.0	0.0	0.0

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
ASDE09	12	V	50	1	2.6	2.6	0.3
ATGU3F	12	V	50	8	3.1	1.4	0.3
ATGU3F	00	V	50	4	3.1	0.9	0.9
BPMWB2	12	V	50	5	2.4	-0.5	0.0
BPMWB2	00	V	50	6	3.1	-1.1	-0.7
CVSAL	12	V	50	16	4.2	-1.6	0.6
CVSAL	00	V	50	1	5.5	1.5	5.3
FPUW5G	12	V	50	7	2.3	0.6	0.4
HTXUH4	00	V	50	2	3.8	2.3	2.1
JNKN7J	12	V	50	1	2.6	-2.5	0.7
JNKN7J	00	V	50	0	0.0	0.0	0.0
KJJF9X	12	V	50	5	3.1	0.2	-0.4
KJJF9X	00	V	50	9	3.9	0.8	1.5
KMPLHP	12	V	50	1	2.8	1.0	-2.6
KMPLHP	00	V	50	0	0.0	0.0	0.0
LRYQE3	12	V	50	0	0.0	0.0	0.0
LRYQE3	00	V	50	0	0.0	0.0	0.0
SMLQ	12	V	50	2	2.7	-0.3	-0.5
SMLQ	00	V	50	6	2.5	0.4	-0.9
UXK5JT	12	V	50	6	3.1	-0.4	-0.6
UXK5JT	00	V	50	4	2.3	-1.2	0.8
WDK38H	12	V	50	8	2.3	0.1	-0.3
WDK38H	00	V	50	11	2.1	0.4	0.9
XKQLWQ	12	V	50	17	3.4	0.8	-1.5
XQFJRG	12	V	50	3	4.0	2.3	-0.6
XQFJRG	00	V	50	4	2.4	0.7	1.5
YLV96W	12	V	50	0	0.0	0.0	0.0
YLV96W	00	V	50	1	3.6	3.4	-1.2
ZVQEQC	12	V	50	27	2.9	0.4	0.7

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 2021
         STANDARD OF COMPARISON: FIRST-GUESS FIELD
```

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	00	Z	100	25	21.8	-17.0
01001	12	Z	100	26	15.4	-9.0
01028	00	Z	100	30	9.3	-8.0
01028	12	Z	100	29	8.1	-7.0
01400	00	Z	100	26	80.5	80.1
01400	12	Z	100	24	75.2	74.9
01415	12	Z	100	29	6.8	-2.0
01415	00	Z	100	30	7.2	1.8
02365	12	Z	100	23	10.9	-7.7
02365	00	Z	100	23	7.0	-5.0
02836	00	Z	100	30	6.2	-3.4
02836	12	Z	100	32	8.8	-5.7
02963	12	Z	100	30	6.9	-5.0
02963	00	Z	100	30	5.0	-1.2
03005	00	Z	100	30	7.0	-3.9
03005	12	Z	100	32	10.1	-5.2
03238	00	Z	100	30	5.0	1.5
03808	00	Z	100	26	4.7	1.1
03808	12	Z	100	31	5.6	-2.8
03918	00	Z	100	30	6.4	1.7
03918	12	Z	100	3	1.9	1.1
03953	12	Z	100	30	6.3	-3.6
03953	00	Z	100	30	7.4	-3.3
04018	00	Z	100	29	7.5	-3.5
04018	12	Z	100	28	11.1	-7.3
04220	00	Z	100	30	3.7	-1.8
04220	12	Z	100	29	6.6	-5.6
04270	00	Z	100	20	7.8	-2.2
04270	12	Z	100	22	6.5	-4.4
04320	00	Z	100	28	13.1	-10.6
04320	12	Z	100	29	12.4	-8.3
04339	12	Z	100	29	14.3	-1.6
04339	00	Z	100	29	14.5	-10.3
04360	12	Z	100	23	15.5	-11.9
04360	00	Z	100	23	16.4	-13.3
06011	00	Z	100	28	8.0	0.6
06011	12	Z	100	30	7.7	5.2
06260	00	Z	100	30	4.9	-0.9
06260	12	Z	100	15	5.2	-2.1

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06610	00	Z	100	31	3.7	0.6
06610	12	Z	100	31	4.7	-1.5
066103	12	Z	100	0	0.0	0.0
07110	00	Z	100	30	11.3	-7.0
07110	12	Z	100	30	7.1	-2.6
07510	12	Z	100	30	8.9	-2.5
07510	00	Z	100	29	7.5	-4.4
07645	12	Z	100	29	15.0	-12.0
07645	00	Z	100	30	11.2	-8.0
07761	00	Z	100	24	19.0	-11.6
07761	12	Z	100	24	20.9	-12.4
08001	00	Z	100	29	8.6	4.7
08001	12	Z	100	30	5.8	0.5
08221	12	Z	100	30	4.3	1.1
08221	00	Z	100	29	7.5	5.7
08302	12	Z	100	30	8.6	-6.7
08302	00	Z	100	28	4.3	-0.4
08508	12	Z	100	30	5.6	3.5
08522	12	Z	100	30	5.4	3.0
10035	12	Z	100	30	12.8	12.0
10035	00	Z	100	30	16.7	16.4
10393	12	Z	100	31	5.8	-3.1
10393	00	Z	100	30	3.5	1.1
10410	12	Z	100	30	5.7	-4.4
10410	00	Z	100	30	4.6	-0.6
10739	00	Z	100	30	5.6	4.1
10739	12	Z	100	31	5.5	-2.2
11035	12	Z	100	33	27.4	10.3
11035	00	Z	100	28	5.6	2.8
12982	00	Z	100	30	5.9	4.7
12982	12	Z	100	30	3.3	-0.5
16245	12	Z	100	30	5.1	-1.4
16245	00	Z	100	30	6.4	3.8
16429	12	Z	100	30	4.9	-0.7
16429	00	Z	100	30	8.6	6.3
16622	00	Z	100	30	13.3	12.4
16754	00	Z	100	29	12.5	9.6
17607	12	Z	100	28	5.5	2.8
26435	12	Z	100	15	6.9	-5.8
60018	00	Z	100	29	8.7	7.8
60018	12	Z	100	30	5.9	3.3
7JUNA4	12	Z	100	6	18.6	16.2
7JUNA4	00	Z	100	6	8.5	0.3

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
ASDE09	12	Z	100	1	16.2	16.2
ATGU3F	12	Z	100	9	26.2	8.3
ATGU3F	00	Z	100	6	25.2	-15.7
BPMWB2	12	Z	100	5	26.4	12.5
BPMWB2	00	Z	100	7	19.2	11.5
CVSAL	12	Z	100	15	47.5	34.8
CVSAL	00	Z	100	1	77.4	77.4
FPUW5G	12	Z	100	7	11.9	-8.6
HTXUH4	00	Z	100	5	31.9	18.0
JNKN7J	12	Z	100	11	100.3	95.9
JNKN7J	00	Z	100	9	32.3	31.1
KJJF9X	12	Z	100	7	18.9	17.6
KJJF9X	00	Z	100	9	10.7	4.4
KMPLHP	12	Z	100	10	133.8	123.5
KMPLHP	00	Z	100	9	28.1	26.0
LRYQE3	12	Z	100	9	45.6	39.9
LRYQE3	00	Z	100	10	19.2	12.6
SMLQ	12	Z	100	12	7.4	-7.0
SMLQ	00	Z	100	12	10.4	-8.7
UXK5JT	12	Z	100	6	9.4	6.1
UXK5JT	00	Z	100	4	9.7	7.9
WDK38H	12	Z	100	14	52.3	6.3
WDK38H	00	Z	100	14	9.0	-8.5
XKQLWQ	12	Z	100	22	34.0	32.5
XQFJRG	12	Z	100	4	21.6	6.7
XQFJRG	00	Z	100	4	16.5	-15.3
YLV96W	12	Z	100	7	12.3	6.6
YLV96W	00	Z	100	7	12.6	-4.9
ZVQEQC	12	Z	100	27	18.6	17.7

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 2021
         STANDARD OF COMPARISON: FIRST-GUESS FIELD
```

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	00	V	100	20	3.6	1.2	-1.0
01001	12	V	100	26	3.0	-0.5	-0.7
01028	00	V	100	25	2.6	0.5	-0.3
01028	12	V	100	29	3.0	0.4	0.1
01400	00	V	100	20	3.3	-0.5	0.5
01400	12	V	100	21	2.8	0.7	0.0
01415	12	V	100	29	3.2	-0.1	-0.7
01415	00	V	100	22	4.3	-0.9	0.0
02365	12	V	100	23	3.9	0.9	0.7
02365	00	V	100	18	3.6	1.0	-0.6
02836	00	V	100	24	3.1	0.6	-0.2
02836	12	V	100	30	2.8	0.6	0.2
02963	12	V	100	30	2.3	-0.1	0.1
02963	00	V	100	25	2.4	0.0	-0.5
03005	00	V	100	20	3.4	-0.2	-0.1
03005	12	V	100	30	3.1	0.4	-1.0
03238	00	V	100	23	3.5	1.4	-0.7
03808	00	V	100	21	2.6	0.8	0.8
03808	12	V	100	30	3.0	-0.1	0.2
03918	00	V	100	30	3.6	0.2	-0.4
03918	12	V	100	3	1.8	0.3	1.1
03953	12	V	100	30	3.3	0.2	-0.2
03953	00	V	100	22	2.5	0.0	-0.4
04018	00	V	100	27	3.7	0.4	1.0
04018	12	V	100	28	3.0	1.2	0.4
04220	00	V	100	29	2.2	0.4	-0.5
04220	12	V	100	29	2.3	0.0	0.4
04270	00	V	100	19	3.4	-0.4	0.0
04270	12	V	100	21	3.3	0.2	-0.3
04320	00	V	100	26	1.9	0.1	0.4
04320	12	V	100	29	2.4	-0.1	0.0
04339	12	V	100	29	2.8	0.1	-0.2
04339	00	V	100	28	2.8	0.0	-0.3
04360	12	V	100	23	3.1	0.6	-0.4
04360	00	V	100	23	3.3	-0.1	0.3
06011	00	V	100	22	2.6	0.1	0.0
06011	12	V	100	30	3.1	-0.5	-0.4
06260	00	V	100	23	2.8	0.1	0.1
06260	12	V	100	15	3.4	-0.4	-0.3

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06610	00	V	100	29	2.4	0.3	0.0
06610	12	V	100	30	2.9	0.2	-0.1
066103	12	V	100	0	0.0	0.0	0.0
07110	00	V	100	22	2.4	0.4	-0.2
07110	12	V	100	30	2.7	0.1	0.0
07510	12	V	100	30	3.4	1.1	0.5
07510	00	V	100	25	3.3	0.8	-1.2
07645	12	V	100	29	3.1	0.4	-0.8
07645	00	V	100	23	3.8	0.6	0.7
07761	00	V	100	19	4.5	1.2	-0.5
07761	12	V	100	24	4.2	0.9	0.1
08001	00	V	100	21	3.8	0.6	-0.1
08001	12	V	100	30	3.0	-0.2	0.6
08221	12	V	100	30	3.5	0.4	0.4
08221	00	V	100	25	4.0	0.6	0.3
08302	12	V	100	30	3.4	0.3	0.1
08302	00	V	100	23	3.6	0.7	-0.1
08508	12	V	100	30	3.7	-0.4	1.1
08522	12	V	100	30	3.6	0.7	-0.8
10035	12	V	100	30	2.6	0.0	-0.2
10035	00	V	100	28	2.4	0.0	0.2
10393	12	V	100	30	3.2	0.0	-0.5
10393	00	V	100	30	2.5	0.3	-0.2
10410	12	V	100	30	2.7	0.2	-0.3
10410	00	V	100	30	3.3	-0.2	-0.3
10739	00	V	100	30	3.4	0.4	-0.8
10739	12	V	100	30	2.8	0.0	-0.2
11035	12	V	100	28	2.8	0.5	-0.1
11035	00	V	100	21	3.6	1.1	0.3
12982	00	V	100	24	2.2	0.3	0.0
12982	12	V	100	30	2.9	-0.1	0.3
16245	12	V	100	30	4.0	-0.2	0.1
16245	00	V	100	25	4.3	0.1	-0.6
16429	12	V	100	30	3.9	0.3	0.8
16429	00	V	100	27	4.0	0.6	-0.6
16622	00	V	100	21	4.0	1.0	1.2
16754	00	V	100	24	4.4	0.3	-0.4
17607	12	V	100	2	1.8	1.2	-0.6
26435	12	V	100	15	3.1	0.1	0.0
60018	00	V	100	23	4.0	0.0	-0.5
60018	12	V	100	30	3.7	0.5	0.5
7JUNA4	12	V	100	6	2.9	-1.8	0.6
7JUNA4	00	V	100	6	3.5	-0.9	-2.4

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
ASDE09	12	V	100	1	1.9	-1.7	-0.8
ATGU3F	12	V	100	9	2.4	-0.3	0.2
ATGU3F	00	V	100	6	2.2	1.9	0.1
BPMWB2	12	V	100	5	4.3	0.2	0.6
BPMWB2	00	V	100	7	3.5	1.8	-0.2
CVSAL	12	V	100	15	5.2	0.7	1.3
CVSAL	00	V	100	1	0.5	0.3	0.4
FPUW5G	12	V	100	7	2.9	-0.4	0.7
HTXUH4	00	V	100	4	2.6	1.1	0.9
JNKN7J	12	V	100	11	3.3	-0.9	0.0
JNKN7J	00	V	100	9	4.5	1.0	-0.8
KJJF9X	12	V	100	7	3.3	0.8	-0.7
KJJF9X	00	V	100	9	3.9	-1.2	0.2
KMPLHP	12	V	100	10	2.6	-0.1	-0.5
KMPLHP	00	V	100	9	3.6	0.8	1.6
LRYQE3	12	V	100	9	4.8	-0.9	1.1
LRYQE3	00	V	100	9	3.6	1.2	0.4
SMLQ	12	V	100	12	1.9	-0.7	-0.5
SMLQ	00	V	100	12	1.9	-0.2	-0.3
UXK5JT	12	V	100	6	2.4	-0.2	-0.7
UXK5JT	00	V	100	4	3.6	-1.5	0.8
WDK38H	12	V	100	13	2.0	0.4	-0.2
WDK38H	00	V	100	12	1.9	0.1	-0.7
XKQLWQ	12	V	100	22	3.1	0.3	-0.5
XQFJRG	12	V	100	4	3.9	-1.0	1.7
XQFJRG	00	V	100	4	3.0	-0.1	-0.6
YLV96W	12	V	100	7	2.5	1.5	0.2
YLV96W	00	V	100	7	2.7	1.5	0.7
ZVQEQC	12	V	100	27	3.3	-0.1	0.5

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 2021
         STANDARD OF COMPARISON: FIRST-GUESS FIELD
```

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	00	Z	500	30	14.1	-12.0
01001	12	Z	500	31	12.0	-9.5
01028	00	Z	500	30	4.4	-2.2
01028	12	Z	500	29	3.3	-0.9
01400	00	Z	500	28	80.2	80.0
01400	12	Z	500	29	79.7	79.5
01415	12	Z	500	29	5.0	3.9
01415	00	Z	500	30	6.1	2.9
02365	12	Z	500	25	3.0	-1.0
02365	00	Z	500	24	3.1	0.5
02836	00	Z	500	30	2.9	0.8
02836	12	Z	500	32	2.9	1.2
02963	12	Z	500	30	3.2	2.5
02963	00	Z	500	30	4.4	3.1
03005	00	Z	500	32	3.7	-1.4
03005	12	Z	500	32	4.1	-1.9
03238	00	Z	500	30	4.0	3.5
03808	00	Z	500	27	4.1	3.7
03808	12	Z	500	31	3.6	2.6
03918	00	Z	500	30	8.3	7.3
03918	12	Z	500	3	5.6	4.8
03953	12	Z	500	30	3.6	-0.1
03953	00	Z	500	30	3.0	0.9
04018	00	Z	500	29	3.4	-1.1
04018	12	Z	500	28	4.1	-1.2
04220	00	Z	500	30	3.7	0.9
04220	12	Z	500	29	3.3	-0.9
04270	00	Z	500	21	3.2	-0.3
04270	12	Z	500	24	4.5	-3.0
04320	00	Z	500	28	3.6	-0.2
04320	12	Z	500	29	5.3	-1.0
04339	12	Z	500	30	15.5	2.6
04339	00	Z	500	29	4.3	-0.1
04360	12	Z	500	24	10.6	-10.3
04360	00	Z	500	25	12.6	-11.9
06011	00	Z	500	30	6.9	4.2
06011	12	Z	500	30	6.2	3.6
06260	00	Z	500	30	3.9	1.2
06260	12	Z	500	15	2.4	1.5

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06610	00	Z	500	31	3.4	2.9
06610	12	Z	500	31	2.8	1.4
066103	12	Z	500	0	0.0	0.0
07110	00	Z	500	30	7.8	-5.6
07110	12	Z	500	30	4.5	-2.0
07510	12	Z	500	30	4.5	0.5
07510	00	Z	500	29	3.0	-0.3
07645	12	Z	500	31	7.0	-3.5
07645	00	Z	500	33	5.0	-4.0
07761	00	Z	500	24	9.4	-8.1
07761	12	Z	500	24	7.5	-4.7
08001	00	Z	500	29	3.9	3.0
08001	12	Z	500	30	3.8	2.5
08221	12	Z	500	30	5.2	4.7
08221	00	Z	500	29	5.2	4.1
08302	12	Z	500	30	4.1	-3.2
08302	00	Z	500	28	3.4	-2.5
08508	12	Z	500	30	6.9	6.2
08522	12	Z	500	30	6.8	6.5
10035	12	Z	500	30	16.1	16.0
10035	00	Z	500	30	17.5	17.4
10393	12	Z	500	33	2.4	1.2
10393	00	Z	500	31	3.7	3.0
10410	12	Z	500	31	1.9	0.3
10410	00	Z	500	30	3.0	1.8
10739	00	Z	500	30	6.2	5.9
10739	12	Z	500	30	5.0	3.4
11035	12	Z	500	33	13.7	7.5
11035	00	Z	500	28	4.9	4.2
12982	00	Z	500	30	3.8	3.5
12982	12	Z	500	31	3.2	2.2
16245	12	Z	500	30	3.3	1.7
16245	00	Z	500	30	3.8	2.8
16429	12	Z	500	30	4.2	2.7
16429	00	Z	500	30	5.9	4.7
16622	00	Z	500	30	11.1	10.6
16754	00	Z	500	30	4.8	2.8
17607	12	Z	500	28	4.6	3.8
26435	12	Z	500	15	2.4	1.6
60018	00	Z	500	29	5.3	4.8
60018	12	Z	500	30	6.1	5.8
7JUNA4	12	Z	500	6	6.8	3.2
7JUNA4	00	Z	500	6	6.6	6.2

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
ASDE09	12	Z	500	1	34.9	34.9
ATGU3F	12	Z	500	11	15.4	-11.0
ATGU3F	00	Z	500	6	14.8	-12.8
BPMWB2	12	Z	500	5	14.2	9.8
BPMWB2	00	Z	500	7	8.7	4.8
CVSAL	12	Z	500	18	52.1	28.2
CVSAL	00	Z	500	1	79.0	79.0
FPUW5G	12	Z	500	8	9.4	-8.0
HTXUH4	00	Z	500	5	35.4	15.9
JNKN7J	12	Z	500	11	45.0	44.3
JNKN7J	00	Z	500	11	35.1	34.9
KJJF9X	12	Z	500	7	13.7	13.1
KJJF9X	00	Z	500	10	5.3	1.8
KMPLHP	12	Z	500	10	47.1	43.5
KMPLHP	00	Z	500	9	34.4	34.0
LRYQE3	12	Z	500	10	22.7	18.1
LRYQE3	00	Z	500	9	22.9	15.8
SMLQ	12	Z	500	12	2.9	-2.4
SMLQ	00	Z	500	12	2.7	-2.1
UXK5JT	12	Z	500	6	3.5	0.5
UXK5JT	00	Z	500	6	2.3	-1.4
WDK38H	12	Z	500	22	5.5	-4.4
WDK38H	00	Z	500	23	6.6	-5.6
XKQLWQ	12	Z	500	22	21.3	21.0
XQFJRG	12	Z	500	4	10.4	-9.8
XQFJRG	00	Z	500	4	14.4	-11.7
YLV96W	12	Z	500	10	3.9	-1.1
YLV96W	00	Z	500	7	4.7	-2.1
ZVQEQC	12	Z	500	27	20.9	20.7

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 2021
         STANDARD OF COMPARISON: FIRST-GUESS FIELD
```

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	00	V	500	29	2.5	0.0	-0.4
01001	12	V	500	30	3.2	-0.6	-0.3
01028	00	V	500	30	2.1	0.3	-0.1
01028	12	V	500	29	2.3	0.0	-0.3
01400	00	V	500	28	2.2	0.2	0.3
01400	12	V	500	29	2.0	0.4	0.0
01415	12	V	500	29	2.6	-0.3	0.2
01415	00	V	500	30	2.4	0.5	0.6
02365	12	V	500	25	2.7	-0.3	-0.4
02365	00	V	500	24	2.1	0.0	0.1
02836	00	V	500	30	1.9	0.0	0.0
02836	12	V	500	30	2.7	-0.2	-0.5
02963	12	V	500	30	2.1	0.5	-0.1
02963	00	V	500	29	2.2	0.5	-0.2
03005	00	V	500	28	2.8	-0.6	0.7
03005	12	V	500	30	3.5	0.0	0.0
03238	00	V	500	30	2.5	0.3	0.0
03808	00	V	500	26	2.8	0.2	0.1
03808	12	V	500	30	2.1	-0.1	0.1
03918	00	V	500	30	2.7	0.8	-0.5
03918	12	V	500	3	2.5	-0.4	2.0
03953	12	V	500	30	2.6	0.1	0.6
03953	00	V	500	30	3.2	0.0	0.9
04018	00	V	500	29	2.3	0.1	0.2
04018	12	V	500	28	2.9	0.1	0.7
04220	00	V	500	30	3.2	-0.7	0.2
04220	12	V	500	29	2.3	0.9	-0.2
04270	00	V	500	21	3.0	0.3	-0.3
04270	12	V	500	23	3.0	-0.1	-1.1
04320	00	V	500	28	2.6	0.4	0.3
04320	12	V	500	29	2.3	0.1	-0.1
04339	12	V	500	30	3.5	0.2	0.2
04339	00	V	500	29	2.3	0.2	0.3
04360	12	V	500	24	2.9	0.0	0.6
04360	00	V	500	25	2.9	-0.4	0.8
06011	00	V	500	30	3.5	0.0	-0.4
06011	12	V	500	30	3.0	0.5	0.4
06260	00	V	500	27	2.2	0.2	0.3
06260	12	V	500	15	3.1	-0.3	-0.2

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06610	00	V	500	30	2.1	0.2	0.0
06610	12	V	500	30	2.5	0.0	-0.2
066103	12	V	500	0	0.0	0.0	0.0
07110	00	V	500	30	2.9	-0.3	0.4
07110	12	V	500	30	2.3	0.2	0.1
07510	12	V	500	30	2.4	0.1	-0.1
07510	00	V	500	29	2.5	-0.2	0.5
07645	12	V	500	29	2.6	-0.2	-0.3
07645	00	V	500	30	3.0	0.0	0.1
07761	00	V	500	24	2.1	0.7	0.4
07761	12	V	500	24	3.3	0.0	0.1
08001	00	V	500	29	3.3	-0.3	-0.5
08001	12	V	500	30	3.0	0.0	0.5
08221	12	V	500	30	2.9	-0.3	-0.3
08221	00	V	500	29	2.5	0.9	0.2
08302	12	V	500	30	2.9	0.2	0.6
08302	00	V	500	28	3.5	0.7	-1.0
08508	12	V	500	30	2.3	-0.3	-0.1
08522	12	V	500	30	2.3	0.3	-0.1
10035	12	V	500	30	1.8	-0.4	-0.4
10035	00	V	500	29	2.5	-0.3	-0.1
10393	12	V	500	30	2.5	0.2	0.0
10393	00	V	500	30	1.8	-0.3	0.2
10410	12	V	500	30	1.6	0.4	0.2
10410	00	V	500	30	2.1	0.3	-0.1
10739	00	V	500	30	1.8	0.0	0.0
10739	12	V	500	30	1.8	-0.4	0.1
11035	12	V	500	28	1.9	-0.2	0.2
11035	00	V	500	28	2.1	0.1	0.3
12982	00	V	500	30	1.9	-0.1	-0.4
12982	12	V	500	30	2.4	0.5	-0.1
16245	12	V	500	30	2.6	-0.2	-0.3
16245	00	V	500	30	2.2	-0.1	0.0
16429	12	V	500	30	3.0	0.3	-0.2
16429	00	V	500	30	3.9	0.8	0.1
16622	00	V	500	30	2.7	0.2	-0.3
16754	00	V	500	26	2.3	0.9	0.2
17607	12	V	500	14	2.9	0.9	0.5
26435	12	V	500	15	2.7	0.9	-0.4
60018	00	V	500	29	2.7	0.4	-0.2
60018	12	V	500	30	3.0	0.1	0.6
7JUNA4	12	V	500	6	3.2	2.1	-0.3
7JUNA4	00	V	500	6	1.9	0.5	0.1

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
ASDE09	12	V	500	1	3.7	-2.3	2.9
ATGU3F	12	V	500	11	2.4	0.0	-0.2
ATGU3F	00	V	500	6	2.8	-0.3	1.0
BPMWB2	12	V	500	5	2.1	1.1	0.7
BPMWB2	00	V	500	7	1.6	-0.2	0.0
CVSAL	12	V	500	18	2.9	1.0	0.0
CVSAL	00	V	500	1	2.1	1.5	1.5
FPUW5G	12	V	500	8	3.1	-0.5	0.5
HTXUH4	00	V	500	5	1.6	-0.1	-0.2
JNKN7J	12	V	500	11	2.4	0.6	0.8
JNKN7J	00	V	500	11	2.8	0.2	-0.9
KJJF9X	12	V	500	7	2.1	0.3	-0.2
KJJF9X	00	V	500	10	2.2	-0.2	0.5
KMPLHP	12	V	500	10	3.5	-0.9	1.5
KMPLHP	00	V	500	9	2.7	-1.2	0.2
LRYQE3	12	V	500	10	2.6	0.7	-0.6
LRYQE3	00	V	500	9	5.1	1.2	0.8
SMLQ	12	V	500	12	1.7	0.5	-0.2
SMLQ	00	V	500	12	2.3	0.2	-0.8
UXK5JT	12	V	500	6	2.1	0.7	0.0
UXK5JT	00	V	500	6	1.5	-0.2	-0.3
WDK38H	12	V	500	22	2.0	0.1	-0.1
WDK38H	00	V	500	23	1.9	-0.3	0.0
XKQLWQ	12	V	500	22	2.0	-0.2	0.5
XQFJRG	12	V	500	4	1.1	-0.5	0.1
XQFJRG	00	V	500	4	2.3	-0.4	-0.3
YLV96W	12	V	500	10	2.3	0.7	1.0
YLV96W	00	V	500	7	2.5	1.0	-0.4
ZVQEQC	12	V	500	27	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 2021
         STANDARD OF COMPARISON: FIRST-GUESS FIELD
```

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	00	Z	850	32	8.5	-7.7
01001	12	Z	850	31	9.8	-8.0
01028	00	Z	850	30	2.5	-0.8
01028	12	Z	850	29	2.7	-0.4
01400	00	Z	850	28	79.8	79.6
01400	12	Z	850	29	79.8	79.7
01415	12	Z	850	29	4.4	3.9
01415	00	Z	850	30	5.2	4.7
02365	12	Z	850	25	2.5	-0.9
02365	00	Z	850	24	1.7	-0.1
02836	00	Z	850	30	2.4	1.5
02836	12	Z	850	31	2.9	1.9
02963	12	Z	850	30	3.7	2.9
02963	00	Z	850	30	4.4	3.8
03005	00	Z	850	32	3.6	-2.2
03005	12	Z	850	32	2.7	-1.5
03238	00	Z	850	30	3.4	2.3
03808	00	Z	850	27	3.0	2.1
03808	12	Z	850	31	2.8	1.3
03918	00	Z	850	30	7.4	7.1
03918	12	Z	850	3	7.7	7.6
03953	12	Z	850	30	2.7	-0.9
03953	00	Z	850	30	2.1	-0.2
04018	00	Z	850	29	2.4	-0.1
04018	12	Z	850	28	2.5	-0.7
04220	00	Z	850	30	3.5	2.0
04220	12	Z	850	29	2.7	1.7
04270	00	Z	850	21	3.3	-0.7
04270	12	Z	850	24	3.2	-0.8
04320	00	Z	850	28	3.9	-0.3
04320	12	Z	850	29	4.0	-0.4
04339	12	Z	850	30	17.4	5.4
04339	00	Z	850	29	4.8	0.6
04360	12	Z	850	25	10.8	-10.3
04360	00	Z	850	25	12.1	-11.4
06011	00	Z	850	30	4.2	3.2
06011	12	Z	850	30	5.0	3.5
06260	00	Z	850	30	3.8	0.6
06260	12	Z	850	15	2.1	0.3

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06610	00	Z	850	31	2.9	2.6
06610	12	Z	850	31	2.2	0.8
066103	12	Z	850	1	6.4	6.4
07110	00	Z	850	30	3.7	-2.5
07110	12	Z	850	30	3.4	-2.1
07510	12	Z	850	30	4.0	3.3
07510	00	Z	850	29	3.3	2.0
07645	12	Z	850	31	3.3	-2.1
07645	00	Z	850	33	3.5	-2.8
07761	00	Z	850	24	3.0	-2.2
07761	12	Z	850	23	3.6	-2.8
08001	00	Z	850	29	2.2	0.4
08001	12	Z	850	30	2.4	0.2
08221	12	Z	850	30	3.8	2.9
08221	00	Z	850	29	3.3	1.7
08302	12	Z	850	30	6.5	-6.0
08302	00	Z	850	28	5.9	-5.4
08508	12	Z	850	30	4.3	3.6
08522	12	Z	850	30	4.0	3.5
10035	12	Z	850	30	15.5	15.4
10035	00	Z	850	30	15.9	15.9
10393	12	Z	850	30	1.7	0.6
10393	00	Z	850	30	1.8	0.9
10410	12	Z	850	32	1.6	-0.2
10410	00	Z	850	30	1.4	0.3
10739	00	Z	850	30	4.9	4.6
10739	12	Z	850	30	5.1	4.7
11035	12	Z	850	34	7.0	4.9
11035	00	Z	850	28	3.8	3.2
12982	00	Z	850	30	3.3	3.1
12982	12	Z	850	31	2.8	2.2
16245	12	Z	850	30	3.1	2.6
16245	00	Z	850	30	3.9	3.2
16429	12	Z	850	30	3.8	2.4
16429	00	Z	850	30	5.6	3.7
16622	00	Z	850	30	10.3	9.8
16754	00	Z	850	30	2.9	0.9
17607	12	Z	850	29	2.4	1.5
26435	12	Z	850	15	3.1	1.1
60018	00	Z	850	29	2.1	0.0
60018	12	Z	850	30	2.9	1.4
7JUNA4	12	Z	850	6	4.9	3.1
7JUNA4	00	Z	850	6	7.8	6.3

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
ASDE09	12	Z	850	1	36.1	36.1
ATGU3F	12	Z	850	11	14.8	-11.2
ATGU3F	00	Z	850	7	13.7	-10.7
BPMWB2	12	Z	850	5	7.5	5.8
BPMWB2	00	Z	850	7	5.8	2.6
CVSAL	12	Z	850	18	53.3	22.7
CVSAL	00	Z	850	1	80.1	80.1
FPUW5G	12	Z	850	9	9.0	-8.6
HTXUH4	00	Z	850	5	38.1	18.2
JNKN7J	12	Z	850	11	41.9	41.6
JNKN7J	00	Z	850	11	39.9	39.7
KJJF9X	12	Z	850	7	5.8	4.7
KJJF9X	00	Z	850	9	6.7	3.1
KMPLHP	12	Z	850	10	38.1	36.9
KMPLHP	00	Z	850	9	40.0	39.6
LRYQE3	12	Z	850	10	26.7	20.4
LRYQE3	00	Z	850	10	26.8	18.9
SMLQ	12	Z	850	12	3.3	-1.5
SMLQ	00	Z	850	12	3.6	-0.7
UXK5JT	12	Z	850	6	7.1	-6.2
UXK5JT	00	Z	850	6	5.0	-4.7
WDK38H	12	Z	850	22	7.0	-5.3
WDK38H	00	Z	850	23	5.8	-4.9
XKQLWQ	12	Z	850	22	14.4	14.0
XQFJRG	12	Z	850	4	13.0	-12.9
XQFJRG	00	Z	850	4	9.3	-8.8
YLV96W	12	Z	850	10	3.5	-1.5
YLV96W	00	Z	850	7	4.3	-2.2
ZVQEQC	12	Z	850	27	15.5	15.4

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

```
RADIOSONDE MONITORING STATISTICS (EUCOS)
         MONITORING CENTRE     : ECMWF
         ELEMENT MONITORED     : WIND (M/S)
         LEVEL                 : 850 HPA
         AREA                  : 0 - 90N, 100W - 40E
         PERIOD                : SEP 2021
         STANDARD OF COMPARISON: FIRST-GUESS FIELD
```

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	00	V	850	29	3.8	-0.4	-0.3
01001	12	V	850	30	2.7	-0.4	0.4
01028	00	V	850	30	2.5	0.1	-0.6
01028	12	V	850	29	2.4	-0.1	0.3
01400	00	V	850	28	2.3	-0.1	-0.5
01400	12	V	850	29	2.1	0.0	-0.1
01415	12	V	850	29	2.7	0.6	0.8
01415	00	V	850	30	2.5	-0.2	0.1
02365	12	V	850	25	3.4	-0.2	-0.6
02365	00	V	850	24	2.9	0.0	0.0
02836	00	V	850	30	2.3	-0.2	0.8
02836	12	V	850	30	2.6	0.2	-0.2
02963	12	V	850	30	2.5	0.2	0.3
02963	00	V	850	30	2.1	0.2	0.2
03005	00	V	850	28	3.6	-0.2	-0.7
03005	12	V	850	30	2.6	0.2	0.5
03238	00	V	850	30	2.2	0.3	0.3
03808	00	V	850	26	2.1	0.0	0.4
03808	12	V	850	30	2.0	0.0	-0.1
03918	00	V	850	30	2.1	0.2	0.1
03918	12	V	850	3	1.8	0.7	0.7
03953	12	V	850	30	2.7	-0.4	0.3
03953	00	V	850	30	3.0	0.3	0.3
04018	00	V	850	29	3.4	0.8	-0.4
04018	12	V	850	28	3.0	-0.5	-0.1
04220	00	V	850	30	2.4	0.2	0.3
04220	12	V	850	29	3.1	0.2	0.3
04270	00	V	850	21	2.1	0.3	0.0
04270	12	V	850	23	2.5	0.1	-0.6
04320	00	V	850	28	3.5	-0.2	1.0
04320	12	V	850	29	2.9	-0.2	-0.2
04339	12	V	850	30	6.6	1.4	1.4
04339	00	V	850	29	6.0	1.5	1.8
04360	12	V	850	25	6.0	1.8	0.3
04360	00	V	850	25	3.2	1.1	0.3
06011	00	V	850	30	2.8	1.0	0.1
06011	12	V	850	30	3.3	0.2	-0.2
06260	00	V	850	30	1.9	-0.1	-0.1
06260	12	V	850	15	2.4	-0.2	0.0

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06610	00	V	850	30	2.0	0.8	0.5
06610	12	V	850	30	2.6	0.7	0.3
066103	12	V	850	1	4.6	1.8	4.2
07110	00	V	850	30	2.5	-0.2	0.4
07110	12	V	850	30	2.4	-0.2	-0.3
07510	12	V	850	30	2.7	0.5	-0.1
07510	00	V	850	29	3.2	0.1	0.1
07645	12	V	850	29	3.5	-0.4	-0.1
07645	00	V	850	30	2.7	0.0	0.8
07761	00	V	850	24	3.1	0.2	-0.9
07761	12	V	850	23	2.6	-0.3	-0.5
08001	00	V	850	29	3.0	0.5	-0.3
08001	12	V	850	30	3.1	0.0	0.1
08221	12	V	850	30	2.5	0.2	1.0
08221	00	V	850	29	3.2	0.6	0.5
08302	12	V	850	30	3.3	-0.3	-0.5
08302	00	V	850	28	4.9	0.1	0.6
08508	12	V	850	30	2.8	0.3	-0.1
08522	12	V	850	30	2.7	0.1	0.2
10035	12	V	850	30	2.1	0.0	0.1
10035	00	V	850	29	2.3	-0.1	0.0
10393	12	V	850	30	2.9	-0.4	-0.2
10393	00	V	850	30	2.1	-0.5	-0.3
10410	12	V	850	30	2.0	0.2	-0.4
10410	00	V	850	30	2.3	-0.1	-0.3
10739	00	V	850	30	2.4	-0.1	0.1
10739	12	V	850	30	2.3	-0.4	-0.1
11035	12	V	850	29	3.1	0.6	-0.2
11035	00	V	850	28	2.3	0.0	0.2
12982	00	V	850	30	2.7	0.3	0.5
12982	12	V	850	30	2.2	0.4	-0.3
16245	12	V	850	30	2.7	-0.2	-0.2
16245	00	V	850	30	2.7	0.4	-1.0
16429	12	V	850	30	3.1	0.2	0.8
16429	00	V	850	30	2.8	0.0	-0.1
16622	00	V	850	30	2.2	0.3	-0.1
16754	00	V	850	30	2.0	0.0	-0.1
17607	12	V	850	28	3.0	1.1	0.4
26435	12	V	850	15	3.3	0.3	-0.2
60018	00	V	850	29	3.5	0.3	0.7
60018	12	V	850	30	3.1	1.1	0.7
7JUNA4	12	V	850	6	1.9	0.0	-0.4
7JUNA4	00	V	850	6	1.9	-0.4	0.0

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
ASDE09	12	V	850	1	1.0	-0.1	1.0
ATGU3F	12	V	850	11	2.3	-0.5	0.6
ATGU3F	00	V	850	7	3.3	-2.3	-0.7
BPMWB2	12	V	850	5	3.0	0.3	0.9
BPMWB2	00	V	850	7	2.6	0.4	-0.3
CVSAL	12	V	850	18	2.2	1.0	0.9
CVSAL	00	V	850	1	1.3	-1.3	0.0
FPUW5G	12	V	850	9	1.6	-0.2	0.3
HTXUH4	00	V	850	5	4.3	1.4	-0.5
JNKN7J	12	V	850	11	1.9	-0.3	-0.6
JNKN7J	00	V	850	11	2.0	0.8	0.0
KJJF9X	12	V	850	7	2.5	0.6	-0.8
KJJF9X	00	V	850	9	2.1	-0.1	0.1
KMPLHP	12	V	850	10	2.3	0.3	0.2
KMPLHP	00	V	850	9	3.2	-0.2	1.2
LRYQE3	12	V	850	10	2.6	-0.3	0.1
LRYQE3	00	V	850	10	3.1	0.4	-0.5
SMLQ	12	V	850	12	3.6	-1.0	-0.1
SMLQ	00	V	850	12	2.1	0.0	-0.2
UXK5JT	12	V	850	6	3.2	0.7	-0.4
UXK5JT	00	V	850	6	1.7	0.9	0.2
WDK38H	12	V	850	22	2.0	-0.2	-0.2
WDK38H	00	V	850	23	2.5	-0.1	-0.3
XKQLWQ	12	V	850	22	2.3	-0.1	0.3
XQFJRG	12	V	850	4	1.8	-0.3	-0.9
XQFJRG	00	V	850	4	2.3	-0.8	-0.3
YLV96W	12	V	850	10	2.1	0.0	0.1
YLV96W	00	V	850	7	2.1	0.3	0.0
ZVQEQC	12	V	850	27	2.8	0.4	0.1

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 2021
         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
0000000	99	P	SUR	44	-39	44	0	0.3	0.2	0.3
03380	99	P	SUR	54	0	1802	0	0.3	-0.1	0.3
1300001	99	P	SUR	11	-23	594	0	0.5	-0.0	0.5
1300008	99	P	SUR	15	-38	594	0	0.4	-0.1	0.4
1300130	99	P	SUR	28	-16	718	0	0.4	0.2	0.5
1300131	99	P	SUR	28	-17	718	0	0.4	0.2	0.5
1301569	99	P	SUR	25	-61	685	0	0.4	-0.6	0.8
1301603	99	P	SUR	33	-58	719	0	0.5	-0.2	0.5
1301608	99	P	SUR	31	-54	719	0	0.3	-0.4	0.5
1301610	99	P	SUR	54	-13	718	0	0.5	0.4	0.6
1301612	99	P	SUR	34	-26	720	0	0.3	-0.2	0.3
1301619	99	P	SUR	27	-68	720	0	0.4	-0.2	0.4
1301699	99	P	SUR	26	-27	694	0	0.3	-0.4	0.5
1301700	99	P	SUR	13	-21	696	0	0.5	0.0	0.5
1701632	99	P	SUR	27	-60	704	0	0.6	0.1	0.6
1801565	99	P	SUR	24	-65	4099	103	0.6	-0.3	0.7
1801568	99	P	SUR	17	-66	3971	565	0.5	-0.5	0.7
1801580	99	P	SUR	20	-66	3834	1437	0.5	-0.4	0.7
4100040	99	P	SUR	15	-53	4315	0	0.3	0.4	0.5
4100043	99	P	SUR	21	-65	4311	0	0.5	-1.1	1.2
4100044	99	P	SUR	22	-59	4311	8	0.7	0.2	0.8
4100046	99	P	SUR	24	-68	4312	0	0.4	0.2	0.5
4100048	99	P	SUR	32	-70	4303	0	0.4	0.2	0.4
4100049	99	P	SUR	27	-63	4315	0	0.4	-0.8	0.9
4100052	99	P	SUR	18	-65	4286	0	0.4	-1.1	1.2
4100053	99	P	SUR	18	-66	4278	0	0.4	-0.3	0.5
4100056	99	P	SUR	18	-65	4293	0	0.4	-1.5	1.6
4100139	99	P	SUR	20	-38	590	0	0.3	-0.0	0.3
4100300	99	P	SUR	16	-57	719	0	0.4	0.1	0.4
4101531	99	P	SUR	31	-45	718	0	0.3	-0.1	0.3
4101556	99	P	SUR	36	-66	222	0	0.4	-0.3	0.5
4101557	99	P	SUR	40	-64	720	0	0.5	0.1	0.5
4101565	99	P	SUR	34	-42	476	0	0.3	0.3	0.4
4101567	99	P	SUR	27	-42	717	0	0.2	0.4	0.5
4101609	99	P	SUR	26	-26	720	0	0.3	0.0	0.3
4101613	99	P	SUR	26	-38	720	0	0.3	0.3	0.4

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
4101614	99	P	SUR	25	-27	670	0	0.3	-0.1	0.3
4101616	99	P	SUR	31	-31	720	0	0.3	-0.1	0.3
4101618	99	P	SUR	30	-30	720	0	0.3	0.1	0.3
4101621	99	P	SUR	31	-29	720	0	0.3	0.2	0.4
4101627	99	P	SUR	53	-39	479	0	1.0	0.3	1.0
4101652	99	P	SUR	62	-25	720	0	0.4	-0.2	0.4
4101654	99	P	SUR	67	2	693	0	0.3	0.0	0.3
4101656	99	P	SUR	63	-25	720	0	0.5	0.0	0.5
4101657	99	P	SUR	69	-6	705	0	0.5	-0.0	0.5
4101658	99	P	SUR	62	-12	719	0	0.3	0.0	0.3
4101663	99	P	SUR	33	-42	720	0	0.3	-0.1	0.3
4101664	99	P	SUR	56	-50	720	0	0.4	0.1	0.4
4101696	99	P	SUR	32	-45	720	0	0.3	-0.2	0.3
4101698	99	P	SUR	13	-60	668	0	0.4	-0.1	0.4
4101702	99	P	SUR	37	-43	720	0	0.6	0.0	0.6
4101707	99	P	SUR	25	-61	720	0	0.4	-0.1	0.4
4101714	99	P	SUR	35	-61	719	0	0.4	-0.3	0.5
4101717	99	P	SUR	45	-12	720	0	0.3	-0.0	0.3
4101718	99	P	SUR	28	-56	720	0	0.4	0.5	0.7
4101719	99	P	SUR	32	-33	718	0	0.3	-0.1	0.3
4101720	99	P	SUR	33	-23	720	0	0.3	-0.0	0.3
4101743	99	P	SUR	33	-59	648	0	2.3	-0.3	2.3
4101752	99	P	SUR	49	-17	720	0	0.4	-0.0	0.4
4101753	99	P	SUR	30	-52	720	0	0.3	0.2	0.4
4101755	99	P	SUR	31	-41	720	0	0.3	-0.0	0.3
4101756	99	P	SUR	12	-62	40	0	0.2	-1.0	1.0
4101842	99	P	SUR	61	-15	694	0	0.3	-0.2	0.4
4101843	99	P	SUR	62	-16	702	0	0.3	-0.0	0.3
4101845	99	P	SUR	62	-21	692	0	0.4	-0.0	0.4
4101850	99	P	SUR	45	-11	697	0	0.3	0.0	0.3
4102627	99	P	SUR	37	-58	238	0	0.4	-0.0	0.4
4102628	99	P	SUR	32	-56	238	0	0.4	0.1	0.4
4102629	99	P	SUR	31	-34	239	0	0.3	-0.1	0.3
4102630	99	P	SUR	14	-63	292	0	0.4	-0.1	0.4
4102632	99	P	SUR	16	-69	686	0	0.3	-1.0	1.0
4102634	99	P	SUR	15	-66	671	0	0.4	-0.1	0.4
4102635	99	P	SUR	14	-62	668	0	0.4	0.2	0.5
4102636	99	P	SUR	14	-63	289	0	0.4	-0.2	0.4
41040	99	P	SUR	15	-53	4760	0	0.4	0.4	0.5
41043	99	P	SUR	21	-65	4286	0	0.5	-1.1	1.2
41044	99	P	SUR	22	-59	3736	10	0.8	0.2	0.9
41046	99	P	SUR	24	-68	6140	0	0.4	0.2	0.5
41048	99	P	SUR	32	-70	6565	0	0.4	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
41049	99	P	SUR	28	-63	6050	0	0.4	-0.8	0.9
41052	99	P	SUR	18	-65	2890	0	0.4	-1.1	1.2
41053	99	P	SUR	19	-66	2856	0	0.4	-0.3	0.5
41056	99	P	SUR	18	-66	2929	0	0.4	-1.6	1.6
4200059	99	P	SUR	15	-67	4315	0	0.4	-1.1	1.2
4200060	99	P	SUR	16	-63	4304	0	0.4	-0.0	0.4
4200085	99	P	SUR	18	-67	4245	0	0.3	0.2	0.4
4201703	99	P	SUR	42	-61	677	0	0.4	0.2	0.5
42059	99	P	SUR	15	-68	4283	0	0.4	-1.1	1.2
42060	99	P	SUR	16	-63	3839	0	0.4	-0.0	0.4
42085	99	P	SUR	18	-67	3371	0	0.4	0.1	0.4
4400005	99	P	SUR	43	-69	719	0	0.4	-0.6	0.8
4400008	99	P	SUR	41	-69	4316	0	0.4	-0.7	0.8
4400011	99	P	SUR	41	-67	4281	0	0.6	0.3	0.6
4400024	99	P	SUR	42	-66	703	0	0.5	-0.7	0.8
4400027	99	P	SUR	44	-67	354	0	0.5	0.3	0.5
4400032	99	P	SUR	44	-69	717	0	0.4	0.1	0.5
4400033	99	P	SUR	44	-69	380	0	0.5	0.8	0.9
4400034	99	P	SUR	44	-68	714	0	0.4	0.0	0.4
4400037	99	P	SUR	43	-68	692	0	0.5	0.1	0.5
44005	99	P	SUR	43	-69	1858	0	0.4	-0.6	0.8
4400777	99	P	SUR	42	-45	720	0	0.4	0.0	0.4
44008	99	P	SUR	41	-69	6005	0	0.4	-0.7	0.8
4400857	99	P	SUR	31	-57	716	0	1.2	0.0	1.2
44011	99	P	SUR	41	-67	6019	0	0.6	0.3	0.6
4401540	99	P	SUR	30	-35	470	0	1.7	1.0	2.0
4401557	99	P	SUR	28	-45	720	0	0.3	-0.1	0.3
4401563	99	P	SUR	35	-22	720	0	0.2	-0.4	0.5
4401569	99	P	SUR	64	8	720	0	0.4	-0.2	0.4
4401572	99	P	SUR	28	-57	720	1	1.0	0.5	1.1
4401574	99	P	SUR	48	-45	62	4	0.5	-0.1	0.5
4401576	99	P	SUR	25	-40	719	0	0.2	0.2	0.3
4401577	99	P	SUR	23	-38	719	0	0.2	0.1	0.2
4401581	99	P	SUR	29	-46	719	0	0.3	0.2	0.4
4401582	99	P	SUR	38	-21	720	0	0.3	0.2	0.3
4401828	99	P	SUR	57	-23	627	0	0.4	0.4	0.5
4401837	99	P	SUR	35	-25	716	0	0.2	0.1	0.3
4401848	99	P	SUR	48	-41	686	0	0.5	-0.1	0.5
4401850	99	P	SUR	58	-22	689	2	1.1	-0.1	1.1
4401851	99	P	SUR	47	-12	687	0	0.3	0.2	0.4
4401854	99	P	SUR	32	-65	720	0	0.4	-0.6	0.7
4401870	99	P	SUR	31	-49	720	0	0.3	-0.1	0.3
4401872	99	P	SUR	25	-60	719	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
4401874	99	P	SUR	23	-44	720	0	0.3	0.2	0.3
44024	99	P	SUR	42	-66	1754	0	0.5	-0.7	0.8
4402603	99	P	SUR	51	-36	698	0	0.4	0.0	0.4
4402604	99	P	SUR	52	-46	696	0	0.4	-0.0	0.4
4402605	99	P	SUR	57	-21	691	0	0.4	0.2	0.4
4402606	99	P	SUR	53	-45	691	0	0.4	0.2	0.4
4402607	99	P	SUR	50	-38	694	0	0.4	-0.1	0.4
4402608	99	P	SUR	54	-37	694	0	0.4	-0.0	0.4
4402609	99	P	SUR	53	-35	697	0	0.4	0.0	0.4
4402610	99	P	SUR	45	-39	700	0	0.3	0.0	0.3
4402611	99	P	SUR	52	-37	695	0	0.4	-0.2	0.5
4402612	99	P	SUR	46	-37	695	0	0.6	0.3	0.7
4402613	99	P	SUR	48	-22	693	0	0.3	-0.0	0.3
4402614	99	P	SUR	50	-40	689	0	0.4	-0.1	0.4
4402615	99	P	SUR	49	-21	695	0	0.3	0.2	0.4
4402616	99	P	SUR	50	-30	694	0	0.3	0.2	0.4
4402617	99	P	SUR	51	-43	691	0	0.4	-0.0	0.4
4402618	99	P	SUR	31	-36	704	0	0.3	0.1	0.3
4402655	99	P	SUR	43	-61	693	0	0.6	0.2	0.6
4402656	99	P	SUR	42	-63	696	0	0.4	0.3	0.5
4402660	99	P	SUR	43	-19	707	0	0.3	0.2	0.4
4402663	99	P	SUR	49	-24	701	0	0.3	-0.2	0.3
4402665	99	P	SUR	39	-16	707	0	0.3	0.2	0.4
4402687	99	P	SUR	37	-21	492	0	0.5	0.1	0.5
44027	99	P	SUR	44	-67	931	0	0.5	0.3	0.5
4402720	99	P	SUR	59	-61	704	0	0.5	-0.0	0.5
4402721	99	P	SUR	56	-58	703	0	0.4	0.1	0.4
4402722	99	P	SUR	54	-56	707	0	0.4	-0.1	0.4
4402723	99	P	SUR	55	-58	707	0	0.4	-0.1	0.4
4402725	99	P	SUR	60	-63	705	0	0.4	0.0	0.4
4402727	99	P	SUR	59	-60	705	1	0.4	-0.2	0.4
44032	99	P	SUR	44	-69	1315	0	0.4	0.2	0.5
44033	99	P	SUR	44	-69	701	0	0.5	0.8	0.9
44034	99	P	SUR	44	-68	1311	0	0.5	0.0	0.5
44037	99	P	SUR	44	-68	1272	0	0.5	0.1	0.5
44078	99	P	SUR	60	-40	5200	0	0.6	-1.1	1.2
44137	99	P	SUR	42	-62	759	0	0.4	-0.1	0.4
44139	99	P	SUR	44	-57	810	0	0.5	0.1	0.5
44150	99	P	SUR	43	-64	836	0	0.4	-0.1	0.4
44258	99	P	SUR	45	-63	178	0	0.6	0.1	0.6
44488	99	P	SUR	45	-61	839	0	0.4	0.1	0.4
44489	99	P	SUR	46	-61	745	0	0.4	0.1	0.4
44490	99	P	SUR	45	-66	813	0	0.6	0.2	0.6

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
4601782	99	P	SUR	44	-57	695	0	0.6	0.4	0.7
4700546	99	P	SUR	34	-24	485	0	0.3	-0.8	0.9
4801625	99	P	SUR	79	-2	62	0	0.8	4.7	4.8
4801723	99	P	SUR	71	7	705	0	0.4	0.2	0.4
6100001	99	P	SUR	43	8	720	0	0.4	0.1	0.4
6100002	99	P	SUR	42	5	701	0	0.4	0.0	0.4
6100196	99	P	SUR	42	4	718	0	0.5	0.5	0.7
6100197	99	P	SUR	40	4	718	0	0.5	0.5	0.7
6100198	99	P	SUR	37	-2	718	0	0.5	0.3	0.6
6100280	99	P	SUR	41	1	718	0	0.6	0.4	0.7
6100281	99	P	SUR	40	0	39	0	0.2	0.1	0.2
6100417	99	P	SUR	38	0	718	0	0.5	0.3	0.6
6100430	99	P	SUR	40	2	718	0	0.5	0.1	0.5
6101003	99	P	SUR	40	25	172	0	1.0	-0.1	1.0
6101005	99	P	SUR	38	26	12	12	0.0	0.0	0.0
6101007	99	P	SUR	36	25	57	0	0.9	-0.3	0.9
6101008	99	P	SUR	37	22	96	0	0.8	-0.2	0.8
6101009	99	P	SUR	35	25	41	36	0.5	-0.6	0.8
6102782	99	P	SUR	39	18	694	0	0.4	0.3	0.5
6102784	99	P	SUR	34	15	695	0	0.3	0.2	0.4
6102786	99	P	SUR	38	18	694	0	0.4	0.3	0.5
6102787	99	P	SUR	39	17	691	0	0.4	0.2	0.4
6102788	99	P	SUR	34	17	690	0	0.3	0.3	0.4
6102789	99	P	SUR	35	15	693	0	0.3	0.3	0.4
6102791	99	P	SUR	41	7	702	0	0.4	0.3	0.5
6102792	99	P	SUR	39	8	663	0	0.5	-0.1	0.5
6102793	99	P	SUR	40	3	4	4	0.0	0.0	0.0
6102794	99	P	SUR	40	3	3	3	0.0	0.0	0.0
6102795	99	P	SUR	40	3	4	4	0.0	0.0	0.0
6200024	99	P	SUR	44	-3	717	0	0.4	0.3	0.5
6200025	99	P	SUR	44	-6	718	0	0.4	0.5	0.6
6200082	99	P	SUR	44	-8	718	0	0.4	0.2	0.4
6200083	99	P	SUR	43	-9	718	0	0.4	0.4	0.5
6200084	99	P	SUR	42	-9	718	0	0.5	0.2	0.5
6200085	99	P	SUR	36	-7	718	0	0.4	0.5	0.6
6200086	99	P	SUR	55	6	280	0	0.3	-0.2	0.3
6200087	99	P	SUR	55	7	334	0	0.3	-0.2	0.4
6200091	99	P	SUR	53	-5	719	0	0.3	0.1	0.3
6200092	99	P	SUR	51	-11	720	0	0.3	-0.0	0.3
6200093	99	P	SUR	55	-10	720	0	0.4	-0.0	0.4
6200094	99	P	SUR	52	-7	629	0	0.3	0.1	0.3
6200095	99	P	SUR	53	-16	720	0	0.4	-0.2	0.4
62001	99	P	SUR	45	-5	1844	0	0.4	0.0	0.4

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
6200192	99	P	SUR	40	-10	586	0	0.5	-1.2	1.3
6200199	99	P	SUR	40	-9	586	0	0.4	-0.9	1.0
6200200	99	P	SUR	36	-8	505	3	3.1	-2.1	3.8
6201030	99	P	SUR	44	-4	174	0	0.4	0.3	0.5
6201065	99	P	SUR	54	7	3390	0	0.3	1.1	1.2
6201066	99	P	SUR	55	7	1016	0	0.3	0.4	0.5
6202613	99	P	SUR	28	-64	720	0	0.4	-0.1	0.4
6202614	99	P	SUR	25	-60	720	0	0.4	-0.1	0.5
6202623	99	P	SUR	66	-5	718	0	0.3	-0.2	0.4
6202624	99	P	SUR	60	-26	719	0	0.4	-0.0	0.4
6202626	99	P	SUR	53	-13	628	48	2.2	-1.1	2.4
6202627	99	P	SUR	60	-23	695	0	0.4	-0.0	0.4
6202629	99	P	SUR	41	-40	720	0	0.5	-0.3	0.6
6202630	99	P	SUR	46	-4	719	0	0.4	-0.4	0.6
6202631	99	P	SUR	59	-11	720	0	0.3	0.2	0.4
6202632	99	P	SUR	62	-25	720	0	0.4	-0.0	0.4
6202633	99	P	SUR	63	-13	720	0	0.4	-0.1	0.4
6202634	99	P	SUR	79	2	720	0	0.4	-0.1	0.4
6202635	99	P	SUR	62	-2	720	0	0.3	0.2	0.4
6202636	99	P	SUR	66	9	719	0	0.3	-0.5	0.6
6202637	99	P	SUR	64	-4	719	0	0.3	0.1	0.3
6202639	99	P	SUR	32	-27	720	0	0.3	-0.1	0.3
6202640	99	P	SUR	39	-60	720	0	0.6	-0.6	0.9
6202643	99	P	SUR	30	-63	720	0	0.4	-0.1	0.4
6202644	99	P	SUR	29	-42	720	0	0.3	-0.4	0.5
6202645	99	P	SUR	28	-65	720	0	0.4	-0.3	0.5
6202684	99	P	SUR	65	-4	467	0	0.3	0.5	0.6
62029	99	P	SUR	49	-13	1833	0	0.3	0.1	0.3
6203507	99	P	SUR	41	-67	690	0	0.4	0.4	0.5
6203508	99	P	SUR	43	-68	691	0	0.4	0.3	0.5
6203513	99	P	SUR	44	-60	243	11	4.3	-0.6	4.3
6203516	99	P	SUR	45	-59	692	0	0.4	0.2	0.5
6203574	99	P	SUR	60	-15	686	0	0.4	0.4	0.6
6203588	99	P	SUR	67	-19	690	0	0.5	0.9	1.1
6203601	99	P	SUR	36	-53	720	0	0.4	-0.3	0.5
6203612	99	P	SUR	27	-39	719	0	0.3	-0.0	0.3
6203613	99	P	SUR	27	-38	719	2	0.7	0.3	0.7
6203614	99	P	SUR	17	-53	720	0	0.7	0.2	0.8
6203615	99	P	SUR	25	-62	720	0	0.4	0.0	0.4
6203616	99	P	SUR	27	-40	720	0	0.3	0.1	0.3
6203621	99	P	SUR	40	-22	720	0	0.3	0.2	0.4
6203622	99	P	SUR	42	-27	720	0	0.3	0.1	0.3
6203624	99	P	SUR	19	-62	719	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
6203625	99	P	SUR	41	-26	720	0	0.3	0.3	0.5
6203626	99	P	SUR	60	-1	720	0	0.4	-0.3	0.5
6203627	99	P	SUR	26	-59	720	0	0.7	0.1	0.7
6203631	99	P	SUR	20	-64	720	0	0.4	-0.3	0.5
6203632	99	P	SUR	27	-28	720	0	0.3	-0.0	0.3
6203633	99	P	SUR	54	-34	719	0	0.3	0.2	0.4
6203634	99	P	SUR	35	-15	718	1	1.2	0.2	1.3
6203635	99	P	SUR	15	-52	718	0	0.5	0.1	0.5
6203637	99	P	SUR	58	-11	720	0	0.6	0.4	0.7
6203639	99	P	SUR	44	-20	719	0	0.4	0.4	0.6
6203640	99	P	SUR	41	-16	720	0	0.3	0.2	0.4
6203641	99	P	SUR	44	-7	436	7	1.5	0.3	1.6
6203643	99	P	SUR	23	-57	720	0	0.4	0.3	0.5
6203644	99	P	SUR	12	-35	720	0	0.4	-0.2	0.4
6203649	99	P	SUR	44	-38	659	0	0.4	0.3	0.5
6203730	99	P	SUR	26	-43	693	0	0.2	0.2	0.3
6203732	99	P	SUR	19	-48	691	0	0.8	-0.2	0.8
6203734	99	P	SUR	11	-19	700	0	0.6	0.0	0.6
6203735	99	P	SUR	14	-44	698	0	0.9	0.1	1.0
6203736	99	P	SUR	29	-21	684	0	0.3	-0.2	0.4
6203737	99	P	SUR	29	-41	689	0	0.3	0.4	0.5
6203747	99	P	SUR	62	-17	208	0	0.7	0.2	0.8
6203748	99	P	SUR	61	-11	140	0	0.6	0.1	0.6
6203749	99	P	SUR	62	-12	692	0	0.4	0.0	0.4
6203750	99	P	SUR	61	-14	694	0	0.4	0.1	0.4
6203751	99	P	SUR	63	-13	692	0	0.7	0.9	1.1
6203752	99	P	SUR	62	-18	696	0	0.4	-0.1	0.4
6203753	99	P	SUR	61	-27	695	0	0.4	-0.3	0.5
6203755	99	P	SUR	49	-9	690	0	0.3	-0.7	0.8
6203760	99	P	SUR	59	-6	698	0	0.4	0.2	0.4
6203762	99	P	SUR	25	-27	698	0	0.3	-0.1	0.3
6203764	99	P	SUR	29	-21	696	0	0.3	0.2	0.4
6203765	99	P	SUR	25	-37	694	0	0.3	0.2	0.4
6203766	99	P	SUR	25	-29	694	0	0.3	-2.1	2.1
6203767	99	P	SUR	19	-32	696	0	0.3	-0.3	0.5
6203768	99	P	SUR	34	-14	697	0	0.3	0.3	0.4
6203769	99	P	SUR	34	-12	423	0	0.4	0.4	0.5
6203771	99	P	SUR	26	-29	696	0	0.3	0.1	0.3
6203772	99	P	SUR	25	-38	695	1	0.3	0.1	0.3
6203773	99	P	SUR	28	-33	689	0	0.3	-0.2	0.3
6203774	99	P	SUR	28	-16	336	0	0.3	-0.5	0.6
6203776	99	P	SUR	32	-18	693	0	0.3	0.0	0.3
6203777	99	P	SUR	24	-34	696	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
6203838	99	P	SUR	11	-29	543	0	0.3	-0.0	0.3
6203839	99	P	SUR	17	-27	544	0	0.3	-0.1	0.3
6203840	99	P	SUR	20	-21	706	0	0.4	0.3	0.5
62050	99	P	SUR	50	-4	1831	0	0.3	-0.0	0.3
62081	99	P	SUR	51	-13	1834	0	0.3	-0.1	0.3
62091	99	P	SUR	53	-5	710	0	0.3	0.1	0.3
62092	99	P	SUR	51	-11	710	0	0.3	-0.0	0.3
62093	99	P	SUR	55	-10	710	0	0.4	-0.1	0.4
62094	99	P	SUR	52	-7	623	0	0.3	0.1	0.3
62095	99	P	SUR	53	-16	710	0	0.4	-0.2	0.4
62102	99	P	SUR	58	2	1845	0	0.5	0.4	0.6
62103	99	P	SUR	50	-3	1835	0	0.4	-0.1	0.4
62104	99	P	SUR	57	1	1846	0	0.4	0.1	0.4
62107	99	P	SUR	50	-6	2414	0	0.4	-0.3	0.5
62112	99	P	SUR	58	0	1844	0	0.4	0.4	0.5
62113	99	P	SUR	58	0	1847	0	0.4	0.2	0.5
62114	99	P	SUR	58	0	3346	0	0.4	0.4	0.6
62115	99	P	SUR	58	-3	1744	0	0.3	0.1	0.4
62116	99	P	SUR	58	1	1835	0	0.4	0.2	0.5
62118	99	P	SUR	58	1	1846	0	0.3	0.5	0.6
62119	99	P	SUR	57	2	1815	0	0.4	0.3	0.5
62120	99	P	SUR	56	2	1847	0	0.3	0.1	0.3
62121	99	P	SUR	54	3	1844	0	0.4	0.4	0.6
62122	99	P	SUR	57	2	2426	0	0.4	0.3	0.4
62124	99	P	SUR	54	-4	1802	0	0.3	0.2	0.3
62129	99	P	SUR	58	0	1638	0	0.4	0.2	0.5
62130	99	P	SUR	59	1	1847	0	0.4	0.1	0.4
62131	99	P	SUR	54	1	1841	0	0.3	0.7	0.7
62132	99	P	SUR	56	2	1845	0	0.4	0.5	0.6
62133	99	P	SUR	57	1	1844	0	0.5	0.3	0.6
62134	99	P	SUR	58	1	1847	0	0.3	0.7	0.8
62135	99	P	SUR	54	2	1821	0	0.3	0.5	0.6
62138	99	P	SUR	54	0	2023	0	0.4	0.6	0.7
62140	99	P	SUR	57	1	2424	0	0.3	0.3	0.4
62143	99	P	SUR	58	2	1846	0	0.4	0.7	0.8
62144	99	P	SUR	53	2	1846	0	0.3	0.4	0.5
62145	99	P	SUR	53	3	2387	0	0.3	0.5	0.6
62146	99	P	SUR	57	2	1846	0	0.4	0.1	0.4
62148	99	P	SUR	54	2	1844	0	0.4	1.1	1.2
62149	99	P	SUR	54	1	1789	0	0.2	0.9	0.9
62151	99	P	SUR	57	2	2217	0	0.3	0.3	0.5
62152	99	P	SUR	57	2	1561	0	0.4	0.5	0.6
62153	99	P	SUR	57	2	2424	0	0.4	0.4	0.5

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
62154	99	P	SUR	56	2	1841	0	0.3	0.2	0.3
62155	99	P	SUR	58	1	1844	0	0.3	0.5	0.6
62157	99	P	SUR	58	0	1826	0	0.4	0.1	0.4
62160	99	P	SUR	57	2	2424	0	0.3	0.5	0.6
62161	99	P	SUR	58	1	1845	0	0.4	0.0	0.4
62162	99	P	SUR	57	1	1844	0	0.3	0.3	0.4
62163	99	P	SUR	48	-8	1836	0	0.3	0.3	0.5
62164	99	P	SUR	57	1	1830	0	0.3	0.5	0.6
62165	99	P	SUR	54	1	1399	0	0.3	0.8	0.8
62168	99	P	SUR	58	1	1845	0	0.3	0.2	0.4
62170	99	P	SUR	51	2	1831	0	0.3	0.0	0.3
62296	99	P	SUR	53	2	1844	0	0.3	0.2	0.3
62297	99	P	SUR	59	2	2426	0	0.4	0.2	0.4
62302	99	P	SUR	61	-2	1842	0	0.6	0.2	0.7
62304	99	P	SUR	51	2	1771	0	0.3	-0.0	0.3
62305	99	P	SUR	50	0	2787	0	0.3	0.0	0.3
62442	99	P	SUR	49	-17	1832	0	0.4	-0.2	0.4
6301001	99	P	SUR	64	5	719	0	0.4	-0.1	0.4
6301003	99	P	SUR	74	24	597	0	0.3	-0.3	0.5
6301004	99	P	SUR	72	20	594	0	0.3	-0.3	0.4
6301510	99	P	SUR	80	16	689	0	0.4	-0.4	0.5
6301511	99	P	SUR	58	-47	690	0	1.5	6.9	7.1
6301564	99	P	SUR	58	-38	720	0	0.8	0.3	0.8
6301567	99	P	SUR	54	-20	718	0	0.5	-0.1	0.5
6301570	99	P	SUR	63	-39	719	0	0.5	0.0	0.5
6301571	99	P	SUR	50	-44	719	0	0.4	0.0	0.4
6301574	99	P	SUR	85	39	472	17	0.5	-0.1	0.5
63055	99	P	SUR	61	2	1811	0	0.5	-0.0	0.5
63056	99	P	SUR	60	2	1847	0	0.7	0.7	1.0
63057	99	P	SUR	59	2	1847	0	0.3	0.0	0.3
63058	99	P	SUR	53	2	3195	0	0.5	0.5	0.7
63059	99	P	SUR	58	-1	1840	0	0.3	0.6	0.7
63101	99	P	SUR	61	1	1845	0	0.5	0.4	0.6
63102	99	P	SUR	61	1	1845	0	0.4	0.1	0.4
63103	99	P	SUR	61	1	1845	0	0.4	0.3	0.5
63104	99	P	SUR	61	2	1847	0	0.4	0.1	0.4
63108	99	P	SUR	61	2	1811	0	0.4	0.1	0.4
63109	99	P	SUR	60	2	1845	0	0.4	-0.2	0.4
63110	99	P	SUR	60	2	1847	0	0.5	0.8	0.9
63111	99	P	SUR	61	2	2424	0	0.4	-0.2	0.5
63112	99	P	SUR	61	1	1824	0	0.3	-0.2	0.4
63115	99	P	SUR	62	1	1847	0	0.4	0.1	0.4
63117	99	P	SUR	61	1	2426	0	0.5	0.7	0.9

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
63118	99	P	SUR	58	2	1837	0	0.4	0.0	0.4
6401531	99	P	SUR	52	-43	695	0	0.4	0.0	0.4
6401573	99	P	SUR	56	-38	719	0	0.4	-0.1	0.5
6401574	99	P	SUR	61	-53	719	0	0.3	0.5	0.6
6401575	99	P	SUR	65	-4	719	0	0.4	0.1	0.4
6401576	99	P	SUR	74	-19	702	1	1.0	0.3	1.0
6401577	99	P	SUR	73	2	720	26	2.3	0.2	2.3
6401578	99	P	SUR	79	-19	708	1	0.5	0.2	0.5
6401758	99	P	SUR	66	-29	536	0	0.5	-0.1	0.5
6401759	99	P	SUR	64	-40	720	0	0.4	0.0	0.4
6401760	99	P	SUR	67	-33	719	0	0.5	-0.0	0.5
6401761	99	P	SUR	61	-47	719	0	0.4	0.2	0.4
6401762	99	P	SUR	65	1	720	0	0.3	0.2	0.3
6401763	99	P	SUR	61	-6	720	0	0.4	0.4	0.5
6401838	99	P	SUR	64	-18	688	0	0.5	-1.5	1.5
6401839	99	P	SUR	61	-12	626	1	0.3	0.2	0.4
6401840	99	P	SUR	63	-12	669	0	0.3	0.2	0.4
6401841	99	P	SUR	61	-15	690	0	0.3	0.3	0.5
6401842	99	P	SUR	63	-26	663	0	0.5	-0.0	0.5
6401843	99	P	SUR	63	-20	641	0	0.4	0.2	0.5
6401844	99	P	SUR	64	-23	516	57	4.3	10.0	10.8
6401845	99	P	SUR	63	-22	1	0	0.0	-6.7	6.7
6401846	99	P	SUR	62	-10	237	0	0.3	-0.1	0.3
6401847	99	P	SUR	63	-8	237	0	0.4	0.1	0.4
6401852	99	P	SUR	66	-22	239	0	0.8	0.0	0.8
6401856	99	P	SUR	66	-21	710	0	0.5	-0.2	0.6
6401857	99	P	SUR	63	-24	684	52	3.4	1.5	3.7
6401858	99	P	SUR	65	-36	94	0	0.6	-0.1	0.6
6401859	99	P	SUR	61	-9	178	0	0.4	0.3	0.5
6401860	99	P	SUR	63	-18	124	0	0.4	-0.3	0.5
6401861	99	P	SUR	64	-22	182	0	0.5	-0.4	0.6
6401862	99	P	SUR	64	-12	238	0	0.4	0.3	0.5
6401863	99	P	SUR	66	-35	194	0	0.6	0.1	0.6
6401864	99	P	SUR	63	-35	238	0	0.5	-0.3	0.6
6401865	99	P	SUR	60	-47	83	0	0.3	-0.0	0.3
6401866	99	P	SUR	64	-18	239	0	0.5	-0.2	0.5
6402539	99	P	SUR	53	-43	688	0	0.4	-0.0	0.4
6402541	99	P	SUR	69	-9	481	0	0.4	0.2	0.4
6402542	99	P	SUR	63	-13	1	1	0.0	0.0	0.0
6402543	99	P	SUR	62	-39	683	0	0.5	-0.0	0.5
6402544	99	P	SUR	71	12	582	0	0.3	0.4	0.5
6402545	99	P	SUR	73	17	494	0	0.3	0.0	0.3
6402546	99	P	SUR	71	17	43	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
6402547	99	P	SUR	61	-55	589	0	0.4	0.3	0.5
6402548	99	P	SUR	69	6	643	0	0.4	0.2	0.4
6402549	99	P	SUR	75	13	659	0	0.3	0.1	0.3
6402550	99	P	SUR	73	22	553	0	0.3	0.1	0.3
6402551	99	P	SUR	62	-53	694	0	0.4	0.2	0.5
6402552	99	P	SUR	65	-5	641	0	0.3	0.2	0.4
6402554	99	P	SUR	58	5	240	0	0.3	0.7	0.7
6402557	99	P	SUR	69	-4	693	0	0.3	0.2	0.4
6402559	99	P	SUR	60	-45	658	0	0.4	0.2	0.4
6402560	99	P	SUR	69	-2	660	0	0.3	-0.0	0.3
6402562	99	P	SUR	66	-35	724	0	0.6	-0.1	0.6
6402563	99	P	SUR	65	-8	672	0	0.4	0.2	0.4
6402587	99	P	SUR	67	-61	305	0	0.4	0.1	0.4
6402588	99	P	SUR	67	-60	302	0	0.3	0.1	0.3
6402589	99	P	SUR	67	-58	283	0	0.3	-0.1	0.3
6402590	99	P	SUR	67	-59	297	0	0.3	-0.2	0.4
6402591	99	P	SUR	67	-57	281	0	0.3	0.3	0.5
6402592	99	P	SUR	60	-47	683	0	0.4	-0.8	0.9
6402593	99	P	SUR	60	-43	690	0	0.5	-0.2	0.6
6402594	99	P	SUR	61	-48	685	0	0.3	-0.0	0.3
6402595	99	P	SUR	60	-46	688	0	0.6	-0.4	0.7
6402596	99	P	SUR	59	-47	665	0	0.4	-0.1	0.4
6402597	99	P	SUR	60	-46	693	0	0.3	-0.1	0.4
6402598	99	P	SUR	60	-48	673	0	0.3	-0.0	0.3
6402599	99	P	SUR	60	-46	682	0	0.3	0.0	0.3
6402600	99	P	SUR	85	-43	490	0	0.4	0.6	0.7
6402610	99	P	SUR	60	-43	692	0	0.7	-0.6	0.9
6402611	99	P	SUR	59	-44	660	0	0.4	0.2	0.4
6402612	99	P	SUR	67	-60	311	0	0.4	-0.1	0.4
6402614	99	P	SUR	67	-58	296	0	0.3	0.2	0.3
6402619	99	P	SUR	44	-12	697	0	0.3	0.2	0.4
6402620	99	P	SUR	46	-15	695	0	0.4	0.4	0.5
6402621	99	P	SUR	44	-11	694	0	0.3	0.4	0.5
6402622	99	P	SUR	43	-13	696	0	0.3	0.2	0.4
6402624	99	P	SUR	80	27	704	0	0.6	0.0	0.6
6402653	99	P	SUR	64	-22	85	15	5.9	2.2	6.3
6402654	99	P	SUR	59	-15	587	0	0.4	0.1	0.4
6402655	99	P	SUR	61	-18	630	0	0.3	0.2	0.4
6402656	99	P	SUR	67	-22	643	0	0.5	0.5	0.7
6402657	99	P	SUR	63	-20	657	0	0.5	0.2	0.6
6402658	99	P	SUR	66	-18	617	0	0.5	0.1	0.5
6402659	99	P	SUR	63	-23	679	0	0.4	0.0	0.5
6402660	99	P	SUR	66	-23	536	0	0.7	-0.4	0.8

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
6402661	99	P	SUR	61	-22	673	0	0.4	0.0	0.4
6402663	99	P	SUR	60	-29	635	0	0.4	-0.2	0.4
6402665	99	P	SUR	63	-11	649	0	0.4	0.4	0.5
6402666	99	P	SUR	64	-21	692	1	1.3	-0.1	1.3
6402667	99	P	SUR	62	-25	672	0	0.4	-0.2	0.5
6402668	99	P	SUR	64	-37	690	0	0.5	0.2	0.6
6402677	99	P	SUR	65	-30	231	0	0.5	-0.2	0.6
6402678	99	P	SUR	61	-36	238	0	0.4	0.0	0.4
6402679	99	P	SUR	68	-3	239	0	0.3	0.2	0.4
6402680	99	P	SUR	65	-34	239	0	0.5	-0.3	0.6
6402681	99	P	SUR	65	-7	239	0	0.4	0.2	0.4
6402722	99	P	SUR	70	4	551	0	0.4	0.2	0.4
6402725	99	P	SUR	70	3	2114	0	0.4	0.3	0.5
64041	99	P	SUR	61	-3	1842	0	0.6	0.1	0.6
64045	99	P	SUR	59	-12	1831	0	0.4	-0.2	0.5
6501545	99	P	SUR	76	14	679	0	0.4	0.2	0.4
6501546	99	P	SUR	76	14	682	0	0.4	0.1	0.4
6501547	99	P	SUR	76	14	677	0	0.4	0.0	0.4
6501548	99	P	SUR	76	14	679	0	0.4	0.2	0.5
6501549	99	P	SUR	76	14	682	0	0.4	0.3	0.5
6501670	99	P	SUR	75	16	657	0	0.3	0.2	0.3
6501671	99	P	SUR	76	14	654	0	0.4	0.0	0.4
6501672	99	P	SUR	75	15	647	0	0.3	0.1	0.3
6501673	99	P	SUR	75	12	623	0	0.3	0.2	0.4
6501674	99	P	SUR	75	9	591	0	0.3	0.2	0.4
6501675	99	P	SUR	75	2	558	0	0.4	0.2	0.4
6501676	99	P	SUR	75	7	564	0	0.4	0.3	0.5
6501677	99	P	SUR	75	0	541	0	0.4	0.2	0.5
6501678	99	P	SUR	75	-2	511	0	0.4	-0.0	0.4
6501679	99	P	SUR	75	5	578	0	0.4	0.2	0.4
6501680	99	P	SUR	75	-7	483	0	0.4	0.1	0.4
6501681	99	P	SUR	75	-10	459	0	0.5	0.3	0.6
6501682	99	P	SUR	75	-5	508	0	0.4	0.1	0.4
6501683	99	P	SUR	75	-11	466	0	0.5	0.1	0.5
6501684	99	P	SUR	75	-13	35	1	2.5	0.8	2.7
6501685	99	P	SUR	76	13	687	0	0.4	-0.0	0.4
6501686	99	P	SUR	76	14	683	0	0.4	0.0	0.4
6501687	99	P	SUR	76	13	689	0	0.4	0.1	0.4
6501688	99	P	SUR	76	14	683	0	0.4	-0.0	0.4
6501689	99	P	SUR	76	14	2781	0	0.4	0.2	0.4
6600021	99	P	SUR	55	14	97	0	0.3	0.6	0.7
6600022	99	P	SUR	54	14	191	0	0.3	-0.3	0.4

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

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          DRIFTER MONITORING STATISTICS (EUCOS)
                   MONITORING CENTRE     : ECMWF
                   ELEMENT MONITORED     : WIND SPEED (M/S)
                   AREA                  : 10N - 90N, 70W - 40E
                   PERIOD                : SEP 2021
                   STANDARD OF COMPARISON: FIRST-GUESS FIELD


TIME = 99 => AVERAGE OF ALL OBSERVATIONS


GROSS ERROR LIMIT FOR VECTOR WIND = 25 M/S
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WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
1300001	99	SPEED	SUR	11	-23	594	0	0	1.6	0.2	1.6
1300002	99	SPEED	SUR	20	-23	594	0	0	0.8	0.1	0.8
1300008	99	SPEED	SUR	15	-38	594	11	0	0.8	-0.0	0.8
1300130	99	SPEED	SUR	28	-16	715	0	0	0.9	0.0	0.9
1300131	99	SPEED	SUR	28	-17	711	0	0	2.1	2.0	2.9
1801565	99	SPEED	SUR	24	-65	3996	0	0	1.7	-0.3	1.8
1801568	99	SPEED	SUR	17	-66	3406	0	0	1.0	-0.0	1.0
1801580	99	SPEED	SUR	20	-66	2336	0	0	3.2	0.8	3.2
4100040	99	SPEED	SUR	15	-53	4315	0	0	0.9	0.4	1.0
4100043	99	SPEED	SUR	21	-65	4308	0	0	1.3	0.0	1.3
4100044	99	SPEED	SUR	22	-59	1605	0	0	0.8	-0.0	0.8
4100046	99	SPEED	SUR	24	-68	4308	0	0	1.3	-0.0	1.3
4100048	99	SPEED	SUR	32	-70	4308	0	0	1.1	0.2	1.1
4100049	99	SPEED	SUR	27	-63	4313	0	0	1.1	0.2	1.2
4100052	99	SPEED	SUR	18	-65	4286	0	0	1.0	-0.2	1.1
4100053	99	SPEED	SUR	18	-66	4278	0	0	1.4	0.8	1.6
4100056	99	SPEED	SUR	18	-65	4293	0	0	1.1	-0.3	1.2
4100139	99	SPEED	SUR	20	-38	590	0	0	0.9	-0.1	0.9
4100300	99	SPEED	SUR	16	-57	719	0	0	0.9	-0.2	1.0
41040	99	SPEED	SUR	15	-53	4760	0	0	0.9	0.0	0.9
41043	99	SPEED	SUR	21	-65	4284	0	0	1.3	-0.0	1.3
41044	99	SPEED	SUR	22	-59	1463	0	0	0.9	-0.1	0.9
41046	99	SPEED	SUR	24	-68	6132	0	0	1.4	-0.1	1.4
41048	99	SPEED	SUR	32	-70	6573	0	0	1.2	-0.0	1.2
41049	99	SPEED	SUR	28	-63	6047	0	0	1.3	0.1	1.3
41052	99	SPEED	SUR	18	-65	2890	0	0	1.1	-0.1	1.1
41053	99	SPEED	SUR	19	-66	2856	0	0	1.4	0.3	1.5
41056	99	SPEED	SUR	18	-66	2929	0	0	1.2	-0.2	1.2
4200059	99	SPEED	SUR	15	-67	4314	0	0	0.8	0.3	0.9
4200085	99	SPEED	SUR	18	-67	4248	0	0	1.3	-0.3	1.4
42059	99	SPEED	SUR	15	-68	4282	0	0	0.9	-0.0	0.9
42085	99	SPEED	SUR	18	-67	3373	0	0	1.3	-0.1	1.3
4400005	99	SPEED	SUR	43	-69	719	0	0	1.4	-0.6	1.5
4400008	99	SPEED	SUR	41	-69	4314	0	0	1.5	0.1	1.5

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

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
4400011	99	SPEED	SUR	41	-67	4302	0	0	1.5	-0.7	1.6
4400024	99	SPEED	SUR	42	-66	703	0	0	1.3	-0.7	1.5
4400027	99	SPEED	SUR	44	-67	719	0	0	1.4	-0.5	1.5
4400032	99	SPEED	SUR	44	-69	719	0	0	1.4	-0.5	1.5
4400033	99	SPEED	SUR	44	-69	709	0	0	1.6	-0.4	1.6
4400034	99	SPEED	SUR	44	-68	714	0	0	1.4	-1.2	1.8
4400037	99	SPEED	SUR	43	-68	692	0	0	1.4	-0.5	1.5
44005	99	SPEED	SUR	43	-69	1858	0	0	1.4	-0.6	1.5
44008	99	SPEED	SUR	41	-69	6002	0	0	1.6	-0.3	1.6
44011	99	SPEED	SUR	41	-67	6053	0	0	1.6	-1.0	1.8
44024	99	SPEED	SUR	42	-66	1754	0	0	1.4	-0.6	1.5
44027	99	SPEED	SUR	44	-67	1846	0	0	1.4	-0.5	1.5
44032	99	SPEED	SUR	44	-69	1319	0	0	1.4	-0.4	1.5
44033	99	SPEED	SUR	44	-69	1305	0	0	1.5	-0.1	1.5
44034	99	SPEED	SUR	44	-68	1311	0	0	1.5	-1.2	1.9
44037	99	SPEED	SUR	44	-68	1272	0	0	1.5	-0.5	1.6
44078	99	SPEED	SUR	60	-40	5202	0	0	1.9	-1.5	2.4
44137	99	SPEED	SUR	42	-62	759	0	0	1.5	-0.2	1.5
44139	99	SPEED	SUR	44	-57	811	0	0	1.3	-0.2	1.3
44150	99	SPEED	SUR	43	-64	830	0	0	1.4	-0.4	1.4
44258	99	SPEED	SUR	45	-63	178	0	0	1.4	0.3	1.4
44488	99	SPEED	SUR	45	-61	834	0	0	1.6	0.4	1.7
44489	99	SPEED	SUR	46	-61	742	0	0	1.6	0.9	1.8
44490	99	SPEED	SUR	45	-66	812	0	0	1.6	-1.0	1.8
6100001	99	SPEED	SUR	43	8	715	0	0	1.4	-0.3	1.4
6100002	99	SPEED	SUR	42	5	701	0	0	1.4	-0.1	1.4
6100196	99	SPEED	SUR	42	4	717	0	0	1.6	-0.2	1.7
6100197	99	SPEED	SUR	40	4	707	0	0	1.5	-0.2	1.5
6100198	99	SPEED	SUR	37	-2	714	0	0	1.4	-0.4	1.5
6100280	99	SPEED	SUR	41	1	712	0	0	1.7	-0.5	1.7
6100281	99	SPEED	SUR	40	0	39	0	0	1.6	0.9	1.8
6100417	99	SPEED	SUR	38	0	716	0	0	1.5	0.2	1.5
6100430	99	SPEED	SUR	40	2	583	0	0	2.0	0.5	2.0
6101003	99	SPEED	SUR	40	25	172	0	0	2.1	-0.1	2.1
6101005	99	SPEED	SUR	38	26	172	0	0	2.5	-8.8	9.2
6101007	99	SPEED	SUR	36	25	98	0	0	3.3	-3.0	4.4
6101008	99	SPEED	SUR	37	22	96	0	0	1.9	-0.1	1.9
6101009	99	SPEED	SUR	35	25	98	0	0	3.3	-2.8	4.4
6200024	99	SPEED	SUR	44	-3	707	0	0	1.4	-0.4	1.5
6200025	99	SPEED	SUR	44	-6	680	0	0	1.5	-1.0	1.8
6200082	99	SPEED	SUR	44	-8	707	0	0	1.2	-0.6	1.4

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

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
6200083	99	SPEED	SUR	43	-9	707	0	0	1.2	-0.7	1.4
6200084	99	SPEED	SUR	42	-9	694	0	0	1.2	-1.0	1.5
6200085	99	SPEED	SUR	36	-7	710	0	0	1.3	-0.1	1.3
6200086	99	SPEED	SUR	55	6	279	0	0	1.3	1.3	1.9
6200087	99	SPEED	SUR	55	7	334	0	0	1.4	1.2	1.8
6200091	99	SPEED	SUR	53	-5	719	0	0	1.1	-0.0	1.1
6200092	99	SPEED	SUR	51	-11	720	0	0	1.1	0.6	1.3
6200093	99	SPEED	SUR	55	-10	720	0	0	1.2	-0.4	1.2
6200094	99	SPEED	SUR	52	-7	629	0	0	1.2	-0.4	1.3
6200095	99	SPEED	SUR	53	-16	720	0	0	1.1	0.4	1.2
62001	99	SPEED	SUR	45	-5	1844	0	0	1.1	0.5	1.3
6200192	99	SPEED	SUR	40	-10	321	0	0	1.6	-0.1	1.6
6200200	99	SPEED	SUR	36	-8	576	0	0	1.1	0.2	1.1
6201030	99	SPEED	SUR	44	-4	171	0	0	1.4	0.1	1.4
6201065	99	SPEED	SUR	54	7	1	0	0	0.0	-1.8	1.8
6201066	99	SPEED	SUR	55	7	1016	0	0	1.3	0.3	1.4
62029	99	SPEED	SUR	49	-13	1833	0	0	1.2	1.0	1.5
62081	99	SPEED	SUR	51	-13	1834	0	0	1.0	0.7	1.2
62091	99	SPEED	SUR	53	-5	710	0	0	1.1	0.0	1.1
62092	99	SPEED	SUR	51	-11	710	0	0	1.2	0.8	1.5
62093	99	SPEED	SUR	55	-10	710	0	0	1.2	-0.1	1.2
62094	99	SPEED	SUR	52	-7	623	0	0	1.2	-0.2	1.2
62095	99	SPEED	SUR	53	-16	710	0	0	1.2	0.6	1.3
62102	99	SPEED	SUR	58	2	1845	0	0	1.3	0.2	1.4
62103	99	SPEED	SUR	50	-3	1835	0	0	1.1	-0.3	1.1
62104	99	SPEED	SUR	57	1	1495	0	0	1.3	-0.1	1.3
62107	99	SPEED	SUR	50	-6	2404	0	0	1.4	0.2	1.4
62112	99	SPEED	SUR	58	0	1844	0	0	1.5	-0.2	1.5
62113	99	SPEED	SUR	58	0	1847	0	0	1.6	0.5	1.7
62114	99	SPEED	SUR	58	0	3346	0	0	1.6	0.6	1.7
62118	99	SPEED	SUR	58	1	1846	0	0	1.3	0.7	1.5
62119	99	SPEED	SUR	57	2	1815	0	0	1.7	-0.8	1.9
62120	99	SPEED	SUR	56	2	1847	0	0	1.2	0.1	1.2
62121	99	SPEED	SUR	54	3	1844	0	0	1.1	-0.5	1.2
62122	99	SPEED	SUR	57	2	2426	0	0	1.2	-0.1	1.2
62129	99	SPEED	SUR	58	0	204	0	0	1.6	0.2	1.6
62131	99	SPEED	SUR	54	1	1841	0	0	1.7	-0.4	1.7
62132	99	SPEED	SUR	56	2	1845	0	0	1.8	-1.0	2.1
62133	99	SPEED	SUR	57	1	1844	0	0	1.6	0.3	1.6
62134	99	SPEED	SUR	58	1	1847	0	0	1.4	0.2	1.4
62140	99	SPEED	SUR	57	1	2417	0	0	1.2	-0.0	1.2

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

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
62143	99	SPEED	SUR	58	2	1846	0	0	1.6	-0.2	1.6
62144	99	SPEED	SUR	53	2	1846	0	0	1.9	-0.7	2.0
62145	99	SPEED	SUR	53	3	2387	0	0	1.2	0.6	1.4
62146	99	SPEED	SUR	57	2	1731	0	0	1.4	-0.0	1.4
62148	99	SPEED	SUR	54	2	1844	0	0	1.4	-0.2	1.4
62149	99	SPEED	SUR	54	1	1789	0	0	1.2	0.2	1.2
62153	99	SPEED	SUR	57	2	2424	0	0	2.0	-0.8	2.2
62154	99	SPEED	SUR	56	2	1841	0	0	1.3	0.2	1.3
62155	99	SPEED	SUR	58	1	1362	0	0	1.3	-0.1	1.3
62164	99	SPEED	SUR	57	1	1830	0	0	1.4	-0.8	1.6
62165	99	SPEED	SUR	54	1	1406	0	0	1.4	-0.4	1.4
62170	99	SPEED	SUR	51	2	1831	0	0	1.3	0.2	1.3
62304	99	SPEED	SUR	51	2	1771	0	0	1.4	0.8	1.6
62305	99	SPEED	SUR	50	0	2739	0	0	1.4	0.7	1.5
6301001	99	SPEED	SUR	64	5	719	0	0	1.2	-0.2	1.2
6301003	99	SPEED	SUR	74	24	596	0	0	1.0	-0.2	1.0
6301004	99	SPEED	SUR	72	20	593	0	0	1.2	-0.4	1.2
63055	99	SPEED	SUR	61	2	1811	0	0	1.3	-0.7	1.5
63056	99	SPEED	SUR	60	2	1847	0	0	1.6	0.2	1.6
63057	99	SPEED	SUR	59	2	1847	0	0	2.2	-0.8	2.3
63058	99	SPEED	SUR	53	2	2020	0	0	1.1	0.0	1.1
63101	99	SPEED	SUR	61	1	1845	0	0	1.6	-0.3	1.6
63103	99	SPEED	SUR	61	1	1845	0	0	1.8	0.1	1.8
63104	99	SPEED	SUR	61	2	1847	0	0	1.4	-0.2	1.4
63106	99	SPEED	SUR	61	2	1567	0	0	2.0	-0.6	2.0
63108	99	SPEED	SUR	61	2	1811	0	0	1.6	0.0	1.6
63109	99	SPEED	SUR	60	2	1754	0	0	1.4	0.1	1.4
63110	99	SPEED	SUR	60	2	1847	0	0	1.5	-0.3	1.5
63112	99	SPEED	SUR	61	1	1824	0	0	1.4	-0.3	1.4
63115	99	SPEED	SUR	62	1	1847	0	0	1.5	-0.5	1.5
63117	99	SPEED	SUR	61	1	2426	0	0	1.6	-0.2	1.6
6401856	99	SPEED	SUR	66	-21	710	22	0	3.1	4.2	5.2
6401857	99	SPEED	SUR	63	-24	684	0	0	1.7	3.0	3.4
6402725	99	SPEED	SUR	70	3	2114	57	0	1.0	2.1	2.3
64041	99	SPEED	SUR	61	-3	1842	3	0	1.5	0.1	1.5
64045	99	SPEED	SUR	59	-12	1834	0	0	1.3	1.0	1.6
6600021	99	SPEED	SUR	55	14	97	0	0	1.0	0.1	1.0
6600022	99	SPEED	SUR	54	14	191	1	0	1.2	0.3	1.2

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

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DRIFTER MONITORING STATISTICS (EUCOS)
         MONITORING CENTRE     : ECMWF
         ELEMENT MONITORED     : WIND DIRECTION (DEGREES)
         AREA                  : 10N - 90N, 70W - 40E
         PERIOD                : SEP 2021
         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	335	0	0	26.3	3.6	26.5
1300002	99	DIRN	SUR	20	-23	565	0	0	9.6	2.0	9.8
1300008	99	DIRN	SUR	15	-38	545	11	0	133.2	24.8	135.5
1300130	99	DIRN	SUR	28	-16	606	0	0	12.6	6.8	14.3
1300131	99	DIRN	SUR	28	-17	401	0	0	36.1	-78.5	86.3
1801560	99	DIRN	SUR	32	-79	1800	0	0	27.1	4.8	27.5
1801565	99	DIRN	SUR	24	-65	3401	0	0	22.7	2.6	22.8
1801568	99	DIRN	SUR	17	-66	2970	0	0	14.8	6.3	16.0
1801580	99	DIRN	SUR	20	-66	1918	0	0	49.7	-9.8	50.7
4100001	99	DIRN	SUR	35	-72	1317	0	0	19.8	0.2	19.8
4100002	99	DIRN	SUR	32	-75	3076	0	0	18.2	5.1	18.9
4100004	99	DIRN	SUR	33	-79	3278	0	0	22.0	5.7	22.7
4100008	99	DIRN	SUR	31	-81	553	0	0	19.4	0.0	19.4
4100009	99	DIRN	SUR	29	-80	2687	0	0	22.1	4.3	22.6
4100010	99	DIRN	SUR	29	-78	2541	0	0	23.9	8.3	25.3
4100013	99	DIRN	SUR	33	-78	3201	0	0	20.4	4.4	20.8
4100024	99	DIRN	SUR	34	-78	518	0	0	19.6	-11.0	22.5
4100025	99	DIRN	SUR	35	-75	3493	0	0	14.4	5.7	15.5
4100029	99	DIRN	SUR	33	-80	531	0	0	20.4	1.2	20.5
4100033	99	DIRN	SUR	32	-80	558	0	0	21.3	2.5	21.5
4100037	99	DIRN	SUR	34	-77	556	0	0	21.2	0.9	21.3
4100038	99	DIRN	SUR	34	-78	524	0	0	16.7	-15.7	22.9
4100040	99	DIRN	SUR	15	-53	4069	0	0	12.0	5.1	13.0
4100043	99	DIRN	SUR	21	-65	3361	0	0	22.3	4.9	22.9
4100044	99	DIRN	SUR	22	-59	1438	0	0	27.1	-2.8	27.3
4100046	99	DIRN	SUR	24	-68	2597	0	0	23.1	2.0	23.2
4100047	99	DIRN	SUR	27	-71	2564	0	0	23.2	11.2	25.7
4100048	99	DIRN	SUR	32	-70	3248	0	0	14.8	0.6	14.8
4100049	99	DIRN	SUR	27	-63	3049	0	0	15.1	2.2	15.2
4100052	99	DIRN	SUR	18	-65	3510	0	0	17.7	5.4	18.5
4100053	99	DIRN	SUR	18	-66	1781	0	0	15.8	3.5	16.2
4100056	99	DIRN	SUR	18	-65	3403	0	0	18.0	8.1	19.8

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

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
4100064	99	DIRN	SUR	34	-77	555	0	0	28.3	7.8	29.4
41001	99	DIRN	SUR	35	-72	1920	0	0	21.3	4.7	21.8
4100139	99	DIRN	SUR	20	-38	522	0	0	10.2	3.0	10.6
41002	99	DIRN	SUR	32	-75	4223	0	0	18.2	4.8	18.8
4100300	99	DIRN	SUR	16	-57	631	0	0	12.8	9.5	15.9
41004	99	DIRN	SUR	33	-79	4739	0	0	22.6	3.0	22.8
41008	99	DIRN	SUR	31	-81	1369	0	0	19.0	-0.3	19.0
41009	99	DIRN	SUR	29	-80	3609	0	0	22.0	1.7	22.1
41010	99	DIRN	SUR	29	-79	3319	0	0	24.5	6.1	25.3
41013	99	DIRN	SUR	33	-78	4360	0	0	21.7	4.1	22.1
41024	99	DIRN	SUR	34	-79	965	0	0	21.4	-11.5	24.3
41025	99	DIRN	SUR	35	-76	4907	0	0	15.8	3.4	16.2
41029	99	DIRN	SUR	33	-80	1264	0	0	20.8	0.5	20.8
41033	99	DIRN	SUR	32	-80	956	0	0	21.2	2.0	21.3
41037	99	DIRN	SUR	34	-77	995	0	0	21.3	0.2	21.3
41038	99	DIRN	SUR	34	-78	950	0	0	17.7	-16.4	24.1
41040	99	DIRN	SUR	15	-53	4455	0	0	12.5	4.1	13.2
41043	99	DIRN	SUR	21	-65	3275	0	0	22.6	2.9	22.8
41044	99	DIRN	SUR	22	-59	1289	0	0	28.0	-3.4	28.2
41046	99	DIRN	SUR	24	-68	3538	0	0	23.8	5.2	24.3
41047	99	DIRN	SUR	28	-72	3420	0	0	22.6	9.4	24.5
41048	99	DIRN	SUR	32	-70	4814	0	0	15.4	1.2	15.5
41049	99	DIRN	SUR	28	-63	4017	0	0	14.9	2.1	15.1
41052	99	DIRN	SUR	18	-65	2277	0	0	18.3	5.0	19.0
41053	99	DIRN	SUR	19	-66	1341	0	0	17.8	3.6	18.2
41056	99	DIRN	SUR	18	-66	2190	0	0	18.7	8.8	20.6
41064	99	DIRN	SUR	34	-77	988	0	0	29.8	7.4	30.8
4200013	99	DIRN	SUR	27	-83	728	0	0	24.5	-4.2	24.9
4200022	99	DIRN	SUR	28	-84	775	0	0	21.7	-7.3	22.9
4200023	99	DIRN	SUR	26	-83	620	0	0	23.2	-5.0	23.8
4200026	99	DIRN	SUR	25	-83	563	0	0	25.7	-0.8	25.8
4200036	99	DIRN	SUR	29	-85	2398	0	0	20.5	3.0	20.7
4200056	99	DIRN	SUR	20	-85	3661	0	0	14.0	4.8	14.8
4200058	99	DIRN	SUR	14	-75	3417	0	0	9.4	4.9	10.6
4200059	99	DIRN	SUR	15	-67	4062	0	0	14.1	8.6	16.6
4200085	99	DIRN	SUR	18	-67	3064	0	0	27.2	21.4	34.6
42013	99	DIRN	SUR	27	-83	912	0	0	24.0	-4.6	24.5
42022	99	DIRN	SUR	28	-84	967	0	0	21.8	-8.0	23.2
42023	99	DIRN	SUR	26	-83	890	0	0	25.6	-6.5	26.4
42026	99	DIRN	SUR	25	-84	751	0	0	27.5	-1.9	27.6
42036	99	DIRN	SUR	29	-85	3045	0	0	21.5	2.5	21.7

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

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
42056	99	DIRN	SUR	20	-85	3545	0	0	14.5	4.4	15.1
42058	99	DIRN	SUR	14	-75	3332	0	0	9.7	0.3	9.7
42059	99	DIRN	SUR	15	-68	3966	0	0	14.3	12.8	19.2
42085	99	DIRN	SUR	18	-67	2259	0	0	26.4	19.7	33.0
4400005	99	DIRN	SUR	43	-69	551	0	0	16.5	6.7	17.8
4400007	99	DIRN	SUR	44	-70	3006	0	0	18.9	8.1	20.5
4400008	99	DIRN	SUR	41	-69	3500	0	0	15.7	9.2	18.2
4400009	99	DIRN	SUR	38	-75	3769	0	0	19.3	3.8	19.7
4400011	99	DIRN	SUR	41	-67	3594	0	0	18.8	10.7	21.6
4400013	99	DIRN	SUR	42	-71	3192	2	0	17.4	12.0	21.1
4400014	99	DIRN	SUR	37	-75	3447	0	0	16.0	5.5	16.9
4400017	99	DIRN	SUR	41	-72	3623	0	0	21.7	9.0	23.5
4400020	99	DIRN	SUR	41	-70	3945	0	0	22.0	5.7	22.7
4400022	99	DIRN	SUR	41	-74	479	0	0	16.8	1.2	16.9
4400024	99	DIRN	SUR	42	-66	595	0	0	16.3	9.3	18.8
4400027	99	DIRN	SUR	44	-67	556	0	0	15.4	2.6	15.6
4400029	99	DIRN	SUR	43	-71	543	0	0	16.5	-0.1	16.5
4400030	99	DIRN	SUR	43	-70	493	0	0	17.9	1.4	18.0
4400032	99	DIRN	SUR	44	-69	514	0	0	17.8	4.7	18.4
4400033	99	DIRN	SUR	44	-69	438	0	0	19.7	4.4	20.2
4400034	99	DIRN	SUR	44	-68	474	0	0	16.8	15.4	22.8
4400037	99	DIRN	SUR	43	-68	561	0	0	18.2	11.7	21.7
4400039	99	DIRN	SUR	41	-73	395	0	0	18.0	10.9	21.0
4400040	99	DIRN	SUR	41	-74	761	0	0	20.3	-3.0	20.5
4400042	99	DIRN	SUR	38	-76	4820	0	0	23.5	-0.8	23.5
4400058	99	DIRN	SUR	38	-76	5090	0	0	20.8	-0.4	20.8
4400062	99	DIRN	SUR	39	-76	4214	0	0	20.5	-3.4	20.8
4400063	99	DIRN	SUR	39	-76	1461	0	0	28.9	8.0	30.0
4400065	99	DIRN	SUR	40	-74	3436	0	0	20.7	5.2	21.4
4400066	99	DIRN	SUR	40	-73	3534	0	0	20.7	8.7	22.5
4400072	99	DIRN	SUR	37	-76	4976	0	0	24.7	-1.4	24.7
4400073	99	DIRN	SUR	43	-71	157	0	0	17.9	6.6	19.0
4400075	99	DIRN	SUR	40	-71	3613	0	0	19.3	-14.8	24.4
4400076	99	DIRN	SUR	40	-71	3624	0	0	16.5	-15.0	22.3
4400077	99	DIRN	SUR	40	-71	3757	0	0	18.4	-14.2	23.3
44005	99	DIRN	SUR	43	-69	1382	0	0	16.6	5.8	17.6
44007	99	DIRN	SUR	44	-70	4300	0	0	18.6	8.3	20.4
44008	99	DIRN	SUR	41	-69	4763	0	0	16.6	9.5	19.1
44009	99	DIRN	SUR	39	-75	5076	0	0	19.4	2.7	19.6
44011	99	DIRN	SUR	41	-67	4745	0	0	18.6	1.6	18.6
44013	99	DIRN	SUR	42	-71	4339	6	0	18.7	10.9	21.6

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
44014	99	DIRN	SUR	37	-75	4715	0	0	17.1	4.7	17.7
44017	99	DIRN	SUR	41	-72	4897	0	0	21.7	8.8	23.4
44020	99	DIRN	SUR	42	-70	5373	0	0	19.7	6.2	20.7
44022	99	DIRN	SUR	41	-74	712	0	0	15.0	2.5	15.2
44024	99	DIRN	SUR	42	-66	1428	0	0	16.0	8.4	18.1
44027	99	DIRN	SUR	44	-67	1364	0	0	15.0	1.9	15.1
44029	99	DIRN	SUR	43	-71	1339	1	0	17.4	-0.2	17.4
44030	99	DIRN	SUR	43	-70	870	0	0	17.4	1.7	17.5
44032	99	DIRN	SUR	44	-69	911	0	0	16.9	4.0	17.4
44033	99	DIRN	SUR	44	-69	756	0	0	19.6	5.1	20.2
44034	99	DIRN	SUR	44	-68	810	0	0	15.7	14.9	21.7
44037	99	DIRN	SUR	44	-68	1013	0	0	18.7	11.2	21.8
44039	99	DIRN	SUR	41	-73	713	0	0	17.2	10.6	20.2
44040	99	DIRN	SUR	41	-74	1072	0	0	17.8	-2.3	18.0
44042	99	DIRN	SUR	38	-76	5577	0	0	24.3	-1.6	24.3
44058	99	DIRN	SUR	38	-76	6507	0	0	21.2	-1.2	21.2
44062	99	DIRN	SUR	39	-76	5633	0	0	22.0	-3.4	22.2
44063	99	DIRN	SUR	39	-76	1876	0	0	30.0	7.1	30.8
44065	99	DIRN	SUR	40	-74	4331	0	0	22.0	4.7	22.5
44066	99	DIRN	SUR	40	-73	5266	0	0	20.0	7.8	21.4
44069	99	DIRN	SUR	41	-73	1755	0	0	24.1	2.6	24.2
44072	99	DIRN	SUR	37	-76	5596	0	0	25.0	-2.1	25.1
44073	99	DIRN	SUR	43	-71	295	0	0	19.6	4.4	20.0
44075	99	DIRN	SUR	40	-71	4471	0	0	19.4	-15.1	24.5
44076	99	DIRN	SUR	40	-71	4535	0	0	17.3	-14.7	22.7
44077	99	DIRN	SUR	40	-71	4642	0	0	18.8	-14.3	23.6
44078	99	DIRN	SUR	60	-40	4320	0	0	15.7	-20.3	25.6
44137	99	DIRN	SUR	42	-62	622	0	0	15.5	-1.1	15.5
44139	99	DIRN	SUR	44	-57	678	0	0	12.8	7.8	15.0
44150	99	DIRN	SUR	43	-64	677	0	0	23.0	-32.8	40.0
44258	99	DIRN	SUR	45	-63	145	0	0	15.3	3.9	15.8
44488	99	DIRN	SUR	45	-61	670	0	0	23.7	13.0	27.1
44489	99	DIRN	SUR	46	-61	549	0	0	23.7	3.3	23.9
44490	99	DIRN	SUR	45	-66	623	0	0	21.5	4.9	22.1
4500003	99	DIRN	SUR	45	-83	3589	0	0	18.2	4.1	18.7
4500005	99	DIRN	SUR	42	-82	3516	0	0	23.3	5.2	23.8
4500008	99	DIRN	SUR	44	-82	3405	0	0	16.2	1.8	16.3
4500012	99	DIRN	SUR	44	-77	3737	0	0	17.8	8.3	19.6
4500162	99	DIRN	SUR	45	-83	1693	0	0	19.1	3.0	19.3
4500163	99	DIRN	SUR	44	-84	1649	0	0	20.1	1.8	20.2
4500165	99	DIRN	SUR	42	-83	2934	0	0	37.6	2.1	37.7

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

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
4500175	99	DIRN	SUR	46	-85	59	0	0	5.7	-7.5	9.4
4500196	99	DIRN	SUR	42	-82	2729	0	0	26.8	40.4	48.5
4500197	99	DIRN	SUR	42	-82	2760	0	0	47.6	-35.8	59.6
45003	99	DIRN	SUR	45	-83	4990	0	0	17.8	5.2	18.5
45005	99	DIRN	SUR	42	-82	4822	0	0	23.6	4.4	24.0
45008	99	DIRN	SUR	44	-82	5195	0	0	18.3	4.7	18.9
45012	99	DIRN	SUR	44	-77	5189	0	0	19.0	6.0	19.9
45132	99	DIRN	SUR	43	-81	701	0	0	19.3	-4.0	19.7
45135	99	DIRN	SUR	44	-77	695	0	0	20.1	1.9	20.2
45139	99	DIRN	SUR	43	-80	561	0	0	24.7	-1.6	24.7
45142	99	DIRN	SUR	43	-79	672	0	0	26.1	-4.1	26.4
45143	99	DIRN	SUR	45	-81	708	0	0	17.2	1.8	17.3
45147	99	DIRN	SUR	42	-83	649	0	0	19.3	11.2	22.3
45149	99	DIRN	SUR	44	-82	630	0	0	20.5	1.1	20.6
45151	99	DIRN	SUR	45	-79	662	0	0	18.5	0.8	18.5
45152	99	DIRN	SUR	46	-80	574	0	0	16.4	-13.5	21.2
45154	99	DIRN	SUR	46	-83	662	0	0	19.1	0.5	19.1
45159	99	DIRN	SUR	44	-79	553	0	0	27.0	4.5	27.3
45162	99	DIRN	SUR	45	-83	2079	0	0	19.3	2.7	19.5
45163	99	DIRN	SUR	44	-84	2405	0	0	20.0	2.2	20.2
45165	99	DIRN	SUR	42	-83	3535	0	0	36.8	1.4	36.8
45175	99	DIRN	SUR	46	-85	103	0	0	8.2	-16.1	18.0
45196	99	DIRN	SUR	42	-82	3798	0	0	26.1	40.7	48.3
45197	99	DIRN	SUR	42	-82	4245	0	0	48.1	-36.7	60.4
6100198	99	DIRN	SUR	37	-2	449	0	0	20.1	-5.6	20.9
6100281	99	DIRN	SUR	40	0	26	0	0	30.5	0.4	30.5
6100417	99	DIRN	SUR	38	0	465	0	0	20.9	1.0	21.0
6200024	99	DIRN	SUR	44	-3	411	0	0	24.3	4.7	24.8
6200025	99	DIRN	SUR	44	-6	320	0	0	24.3	7.8	25.5
6200082	99	DIRN	SUR	44	-8	498	0	0	15.6	2.3	15.8
6200083	99	DIRN	SUR	43	-9	396	0	0	15.0	4.9	15.7
6200084	99	DIRN	SUR	42	-9	390	0	0	18.2	0.8	18.2
6200085	99	DIRN	SUR	36	-7	444	0	0	17.0	5.9	18.0
6200091	99	DIRN	SUR	53	-5	546	0	0	16.7	3.1	17.0
6200092	99	DIRN	SUR	51	-11	659	0	0	17.3	4.1	17.8
6200093	99	DIRN	SUR	55	-10	633	0	0	17.4	8.2	19.2
6200094	99	DIRN	SUR	52	-7	518	0	0	17.2	2.8	17.5
6200095	99	DIRN	SUR	53	-16	651	0	0	12.6	-1.7	12.7
62001	99	DIRN	SUR	45	-5	1502	0	0	17.7	8.3	19.5
6200192	99	DIRN	SUR	40	-10	226	0	0	17.3	6.8	18.5
6200200	99	DIRN	SUR	36	-8	450	0	0	160.4	-54.5	169.4

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

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
6201030	99	DIRN	SUR	44	-4	94	0	0	16.1	9.7	18.8
62029	99	DIRN	SUR	49	-13	1442	0	0	13.4	-8.9	16.1
62081	99	DIRN	SUR	51	-13	1725	0	0	12.5	-6.7	14.2
62091	99	DIRN	SUR	53	-5	502	0	0	17.5	-0.9	17.5
62092	99	DIRN	SUR	51	-11	636	0	0	17.6	1.0	17.7
62093	99	DIRN	SUR	55	-10	614	0	0	17.0	5.1	17.7
62094	99	DIRN	SUR	52	-7	500	0	0	17.8	-0.2	17.8
62095	99	DIRN	SUR	53	-16	636	0	0	13.3	-5.2	14.3
62103	99	DIRN	SUR	50	-3	1434	0	0	17.7	9.0	19.8
62107	99	DIRN	SUR	50	-6	1984	0	0	17.6	2.6	17.8
62112	99	DIRN	SUR	58	0	1543	0	0	13.4	-1.6	13.5
62114	99	DIRN	SUR	58	0	2880	0	0	13.6	-1.6	13.7
62305	99	DIRN	SUR	50	0	2275	0	0	22.7	5.7	23.4
6401856	99	DIRN	SUR	66	-21	500	22	0	67.9	-13.1	69.2
6401857	99	DIRN	SUR	63	-24	622	0	0	24.7	-5.5	25.3
64041	99	DIRN	SUR	61	-3	1677	3	0	18.6	8.4	20.4
64045	99	DIRN	SUR	59	-12	1652	0	0	15.0	-9.3	17.7

4.12 Table 24 - List of Assimilated BUFR Encoded Radiosonde Stations

ASDE09	ATGU3FT	BPMWB2N	DSQL7	FPUW5GN	HTXUH4H	JNKN7JF	KJJF9XN	KMPLHPW
LRYQE3U	SMLQ	USSIO	UXK5JTU	WDK38HS	XKQLWQB	XQFJRGX	YLV96WM	ZVQEQCM
7JUNA4N	01001	01004	01010	01028	01241	01400	01415	01492
02365	02527	02836	02963	03005	03238	03354	03502	03743
03808	03882	03953	04018	04220	04270	04320	04339	04360
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	12843	12982
13275	13388	14015	14240	14430	15420	15614	16045	16064
16113	16144	16245	16332	16429	16546	16622	16716	16754
17030	17095	17130	17196	17220	17240	17351	17607	20674
22008	23205	23472	23884	24908	26038	26435	26708	26850
27459	27707	27713	28225	28661	29612	29698	30673	33041
37789	40179	40186	43599	45004	47102	47104	47138	47155
47169	47186	47401	47412	47418	47582	47600	47646	47678
47741	47778	47807	47827	47909	47918	47945	47971	47991
48698	50527	50557	50774	50953	51076	51243	51431	51463
51644	51656	51709	51777	51828	51839	52203	52267	52323
52418	52533	52652	52681	52818	52836	52866	52983	53068
53463	53513	53543	53614	53772	53845	53915	54102	54135
54161	54218	54292	54374	54511	54662	54727	54857	55299
55591	56029	56046	56080	56137	56146	56187	56492	56571
56651	56691	56739	56778	56964	56985	57083	57127	57131
57178	57245	57447	57461	57494	57516	57687	57749	57816
57957	57972	57993	58027	58150	58203	58238	58362	58424
58457	58606	58633	58665	58725	58847	59023	59134	59211
59265	59280	59293	59316	59431	59758	59981	60018	60096
60155	60390	60571	60630	60656	60680	61660	61901	61980
61998	63985	68263	68424	68442	68512	68816	68842	70026
70133	70200	70219	70231	70261	70308	70316	70326	70350
70361	70398	71043	71081	71082	71109	71119	71603	71722
71802	71811	71815	71816	71823	71836	71845	71867	71906
71907	71908	71909	71913	71917	71924	71926	71934	71945
71957	72201	72206	72208	72210	72214	72215	72230	72233
72235	72240	72248	72249	72250	72251	72261	72265	72274
72293	72305	72317	72327	72340	72363	72364	72365	72376
72388	72413	72426	72440	72451	72476	72489	72493	72501
72518	72520	72528	72558	72562	72572	72582	72597	72632
72634	72645	72649	72659	72662	72672	72694	72712	72764
72768	72776	72786	72797	73033	73110	74389	74560	76225
76256	76394	76405	76458	76526	76595	76612	76644	76654
76679	76692	76743	76903	78897	78954	81405	83768	85442
85586	85799	85934	87155	87344	87576	87623	87715	87860
88889	89002	89062	89564	89571	89592	89611	89625	89642
89859	91165	91212	91285	91592	91610	91765	91925	91938
91948	91958	93112	93417	93817	93844	94120	94150	94170
94203	94299	94302	94312	94326	94332	94374	94403	94430
94461	94510	94578	94610	94637	94638	94653	94659	94672
94711	94767	94776	94802	94821	94866	94910	94975	94995
94996	94998	95282	95527	96996				

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

ASDE09	ATGU3FT	BPMWB2N	DSQL7	FPUW5GN	HTXUH4H	JNKN7JF	KJJF9XN	KMPLHPW
LRYQE3U	SMLQ	UXK5JTU	WDK38HS	XKQLWQB	XQFJRGX	YLV96WM	ZVQEQCM	7JUNA4N
01001	01004	01010	01028	01241	01400	01415	01492	02365
02527	02836	02963	03953	06610	07110	07145	07510	07645
07761	08001	08023	08190	08221	08302	08383	08430	08536
11010	11035	11120	11240	16045	16064	16113	17607	40186
47155	51243	51656	52652	53543	56046	56492	56651	57245
59023	59293	63894	72413	76743	76903	89642	89859	91925
91938	93817	94767						

5 Annex - Explanations of figures and tables

5.1 General

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

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

5.2 Data Availability

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

5.3 Data Quality

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

It should be noted that:

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

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

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

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

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

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

The corresponding limits for wind (table 8) are:

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

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

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

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

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

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

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

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

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