



ECMWF Global Data Monitoring Report

October 2022

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

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Summary of Revisions (in reverse order)

- Revision 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 percentage of rejection.

1 Introduction

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

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

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

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

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

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

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

2 Data summary - History of events

2.1 Radiosondes

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

Ident	Time	Sep	Oct	Ident	Time	Sep	Oct
04360	(00)	27	16	02527	(00)	0	22
04360	(12)	27	15	04089	(12)	0	16
06011	(00)	30	10	17030	(00)	9	31
06011	(12)	27	8	17030	(12)	10	29
22820	(00)	37	18	17196	(00)	7	29
22820	(12)	36	18	17196	(12)	8	28
25428	(00)	21	0	17220	(00)	9	29
26708	(00)	26	15	17220	(12)	11	31
40373	(00)	35	15	17240	(00)	9	31
40375	(00)	36	13	17240	(12)	10	31
40375	(12)	34	17	23955	(00)	4	30
40394	(00)	37	14	23955	(12)	5	30
40394	(12)	37	15	27707	(00)	12	27
40417	(00)	37	17	27707	(12)	8	24
40430	(00)	35	22	41640	(00)	0	12
40437	(00)	36	22	48407	(00)	0	26
40437	(12)	35	13	65578	(12)	10	22
41024	(00)	36	18	68906	(00)	10	24
41112	(00)	36	13	68906	(12)	12	23
41112	(12)	36	17	70026	(00)	11	25
41256	(00)	33	17	70026	(12)	12	23
41316	(00)	36	19	72393	(00)	1	31
42379	(00)	25	0	82022	(00)	17	30
42701	(00)	36	0	82022	(12)	18	30
43279	(00)	34	16	89009	(12)	2	28
43279	(12)	34	13	89664	(12)	3	29
43333	(00)	18	0	96315	(00)	0	16
47418	(12)	30	0	96315	(12)	0	15
60760	(00)	33	0	96509	(12)	11	22
62306	(00)	20	5	-	-	-	-
62306	(12)	34	5	-	-	-	-
64870	(12)	26	0	-	-	-	-
65503	(12)	29	10	-	-	-	-
68592	(00)	23	11	-	-	-	-
68592	(12)	23	12	-	-	-	-
68842	(00)	30	17	-	-	-	-
68842	(12)	29	14	-	-	-	-
71907	(00)	37	2	-	-	-	-
71907	(12)	37	2	-	-	-	-
71934	(00)	30	18	-	-	-	-
71934	(12)	21	3	-	-	-	-
72233	(00)	31	12	-	-	-	-
72233	(12)	34	12	-	-	-	-
72597	(00)	29	16	-	-	-	-
72597	(12)	27	12	-	-	-	-
74004	(12)	41	14	-	-	-	-
74626	(12)	29	0	-	-	-	-
74794	(12)	68	32	-	-	-	-
78954	(00)	28	7	-	-	-	-
78954	(12)	30	7	-	-	-	-
83768	(12)	26	13	-	-	-	-
87623	(12)	22	1	-	-	-	-

2.2 Drifting Buoys

Surface pressure observations from **1712** drifting buoys were received during the month.

3 Global monitoring statistics

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

3.1 Data Availability

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

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

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

3.2 Data Quality

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

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

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

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

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

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

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

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

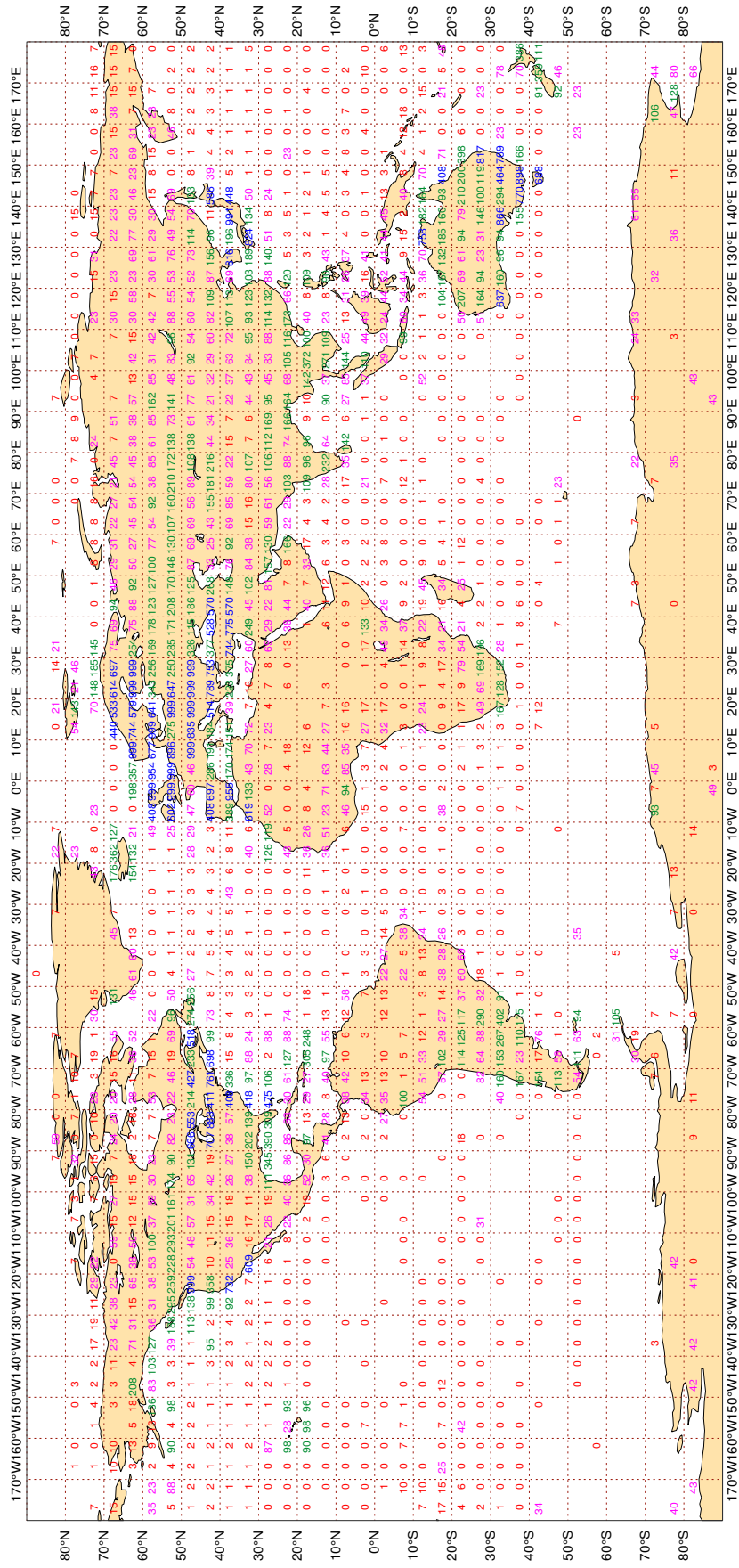
Fig	Parameter	Level/Layer
14	SATOB - Mean observed wind	1000-700 hPa
15	SATOB - Mean observed wind	400-150 hPa
16	SATOB - Mean observed minus first-guess wind	1000-700 hPa
17	SATOB - Mean observed minus first-guess wind	400-150 hPa
18	AIRCRAFT WIND - Mean observed minus first-guess	300-150 hPa

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

3.2.1 Figure 1 - Availability - SYNOP PRESSURE

ECMWF Monitoring Statistics - OCT 2022
 Availability - SYNOP/SHIP (manual, auto) pressure
 Average number of observations in 24 hours - 114561
 LAND - WMO Region I: 4825 II:19486 III: 4628 IV: 7368
 Region V:14512 VI:41229 Antarctic: 1643
 Oceans - N. Atlantic 206 Indian 769 Pacific 10784

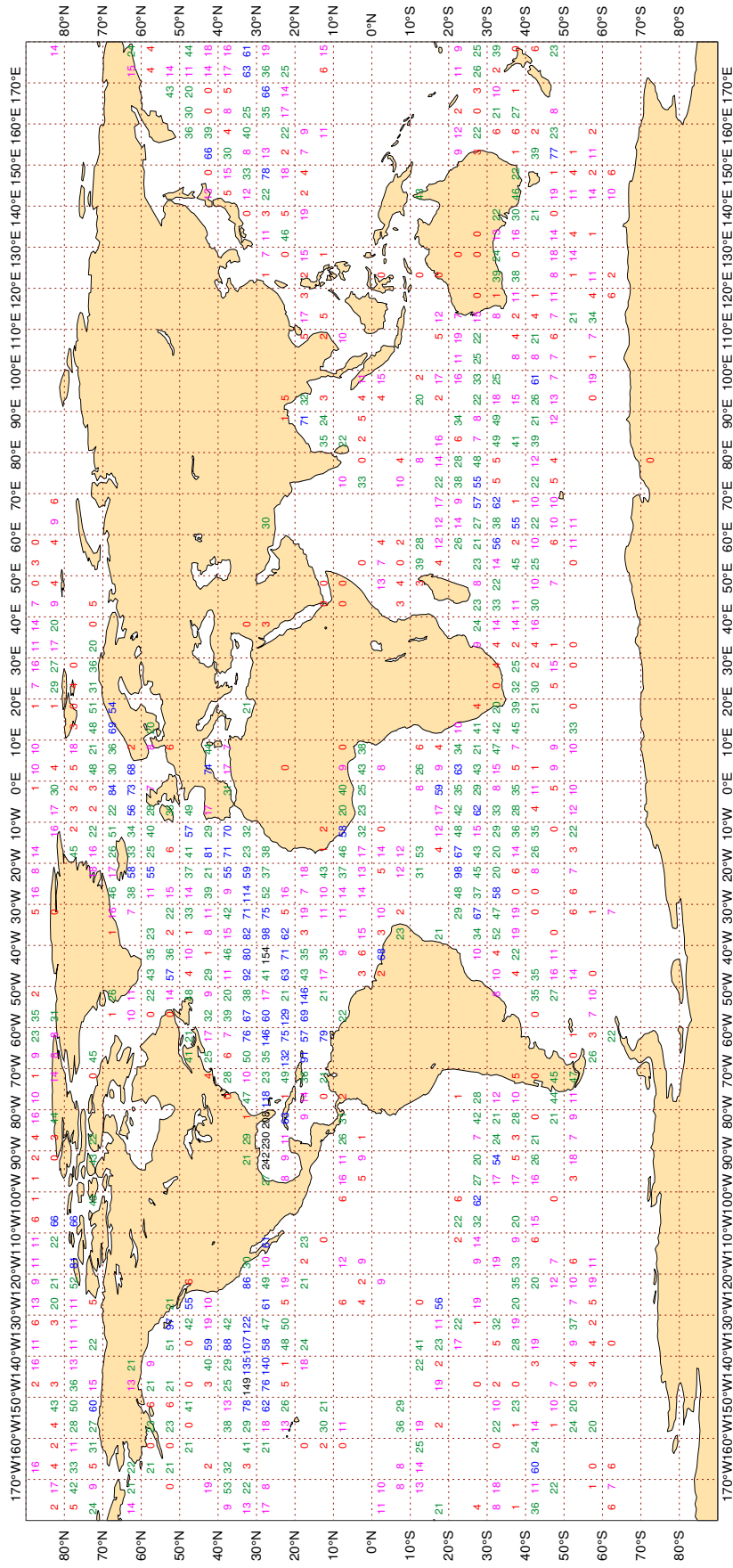
Figure 1



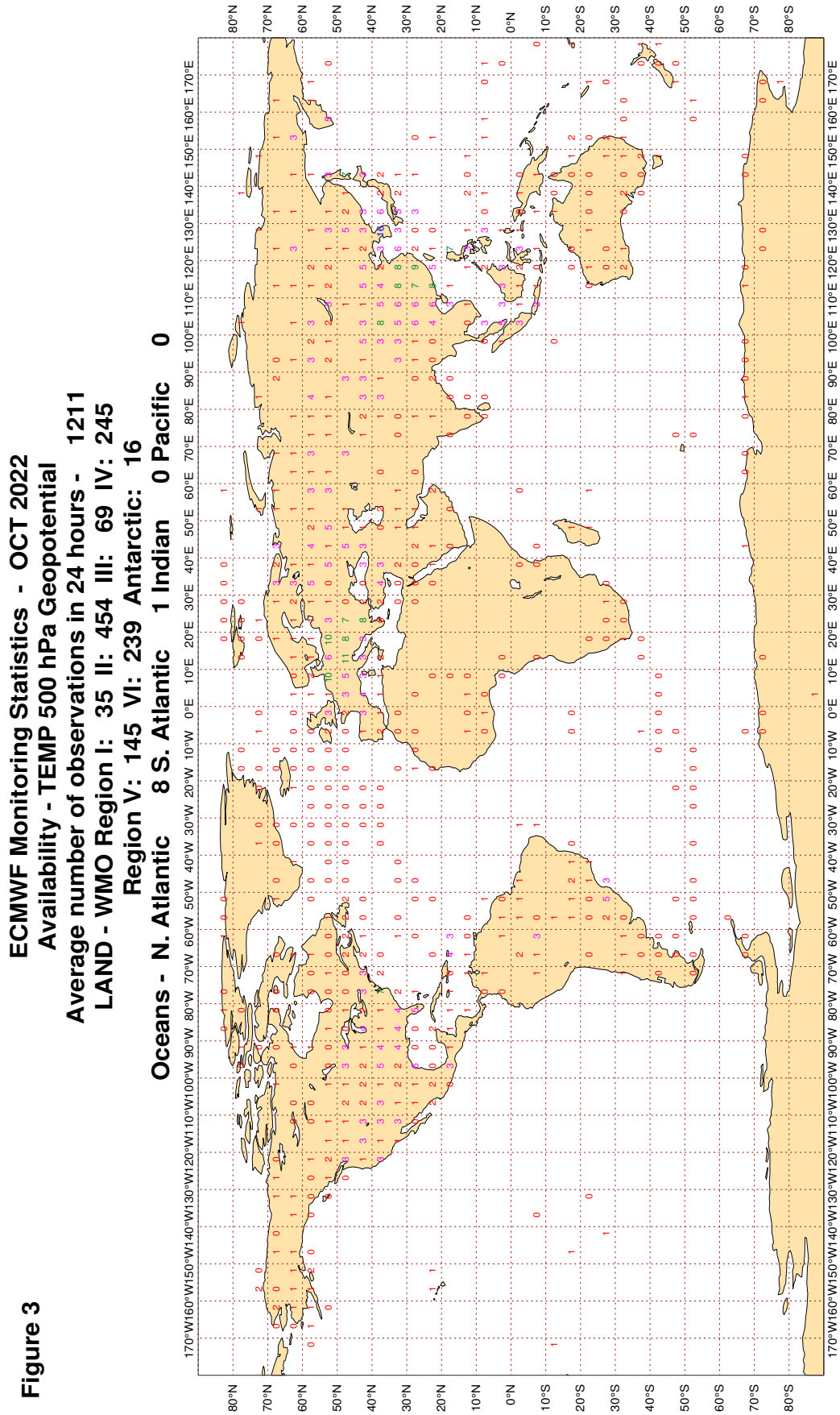
3.2.2 Figure 2 - Availability - DRIFTER PRESSURE

Figure 2

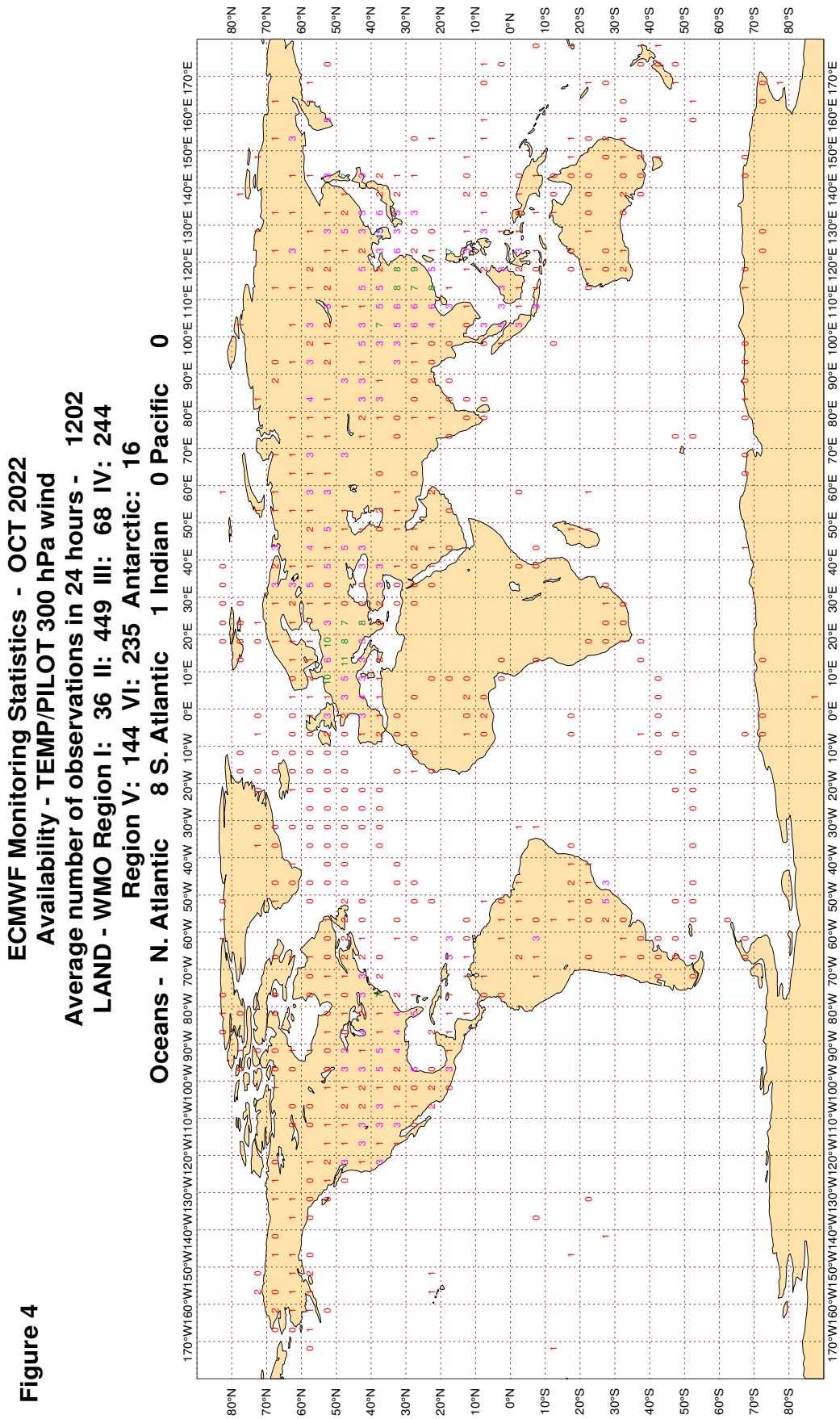
ECMWF Monitoring Statistics - OCT 2022
 Availability - DRIFTER PRESSURE
 Average number of observations in 24 hours - 21773
 Oceans - N. Atlantic 7203 S. Atlantic 2538 Indian 3036 Pacific 8996



3.2.3 Figure 3 - Availability - TEMP 500 hPa geopotential



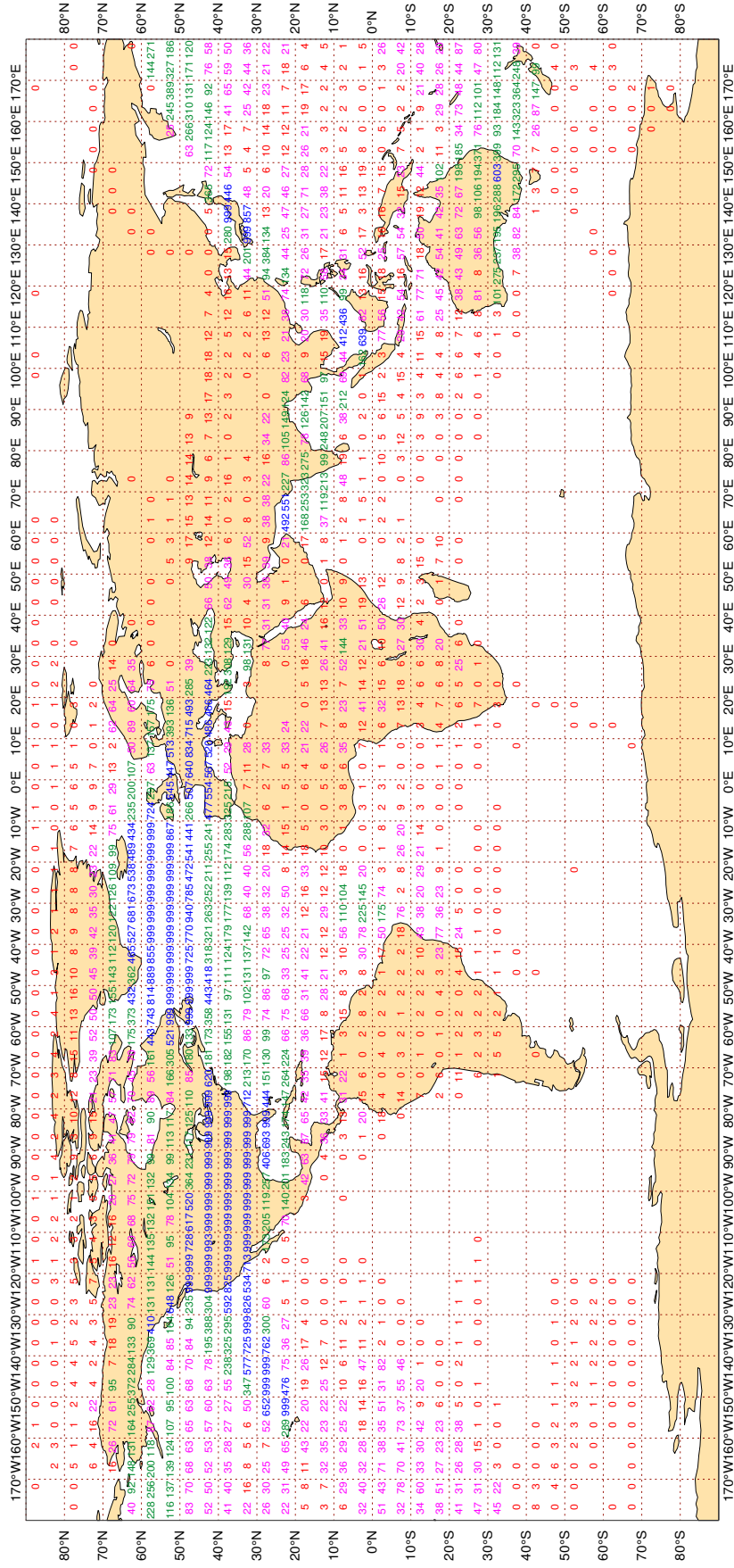
3.2.4 Figure 4 - Availability - TEMP/PILOT 300 hPa wind



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

Figure 5

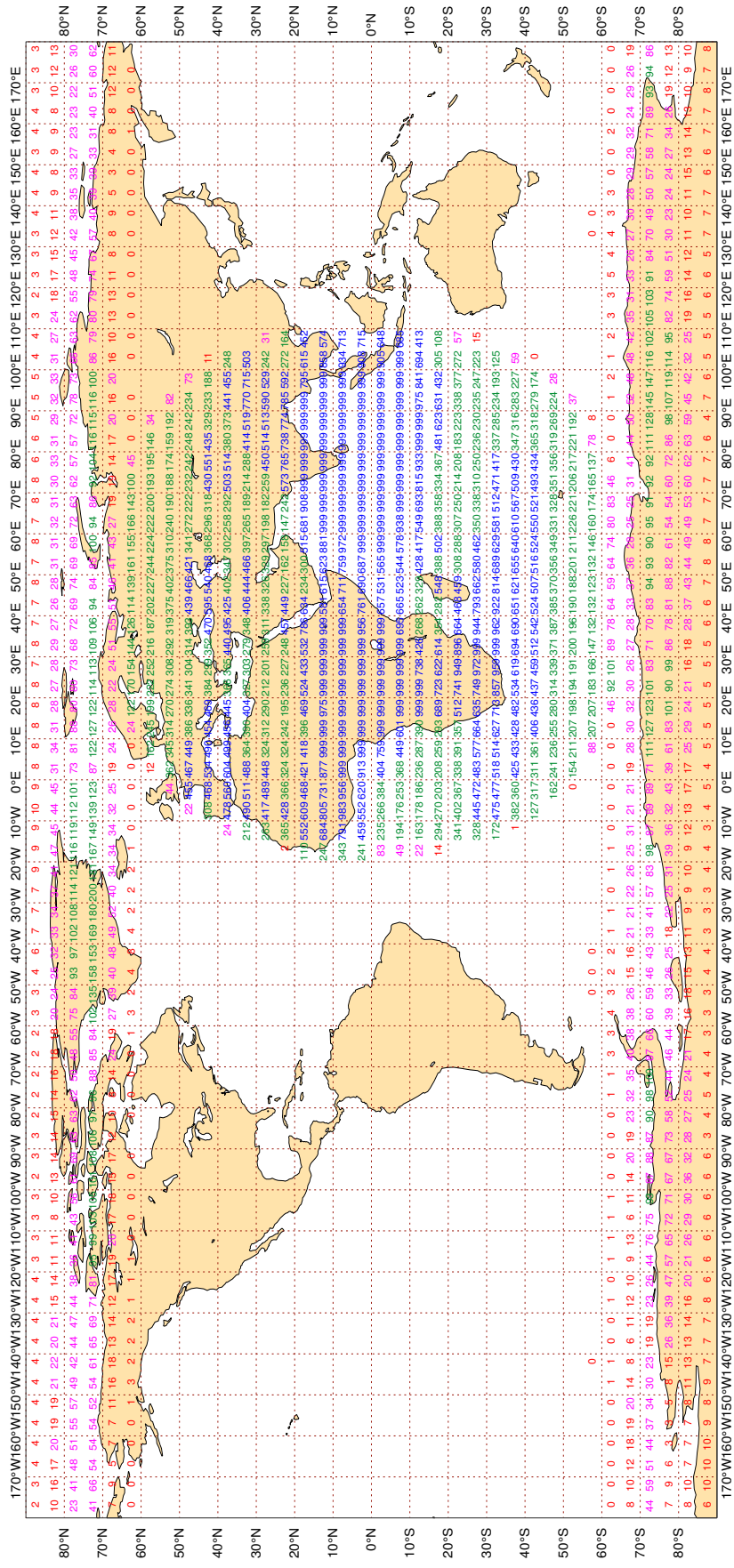
ECMWF Monitoring Statistics - OCT 2022
Availability - Aircraft winds 300-150 hPa
Average number of observations in 24 hours - 195889



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

Figure 6

ECMWF Monitoring Statistics - OCT 2022
Availability - AMV winds 400-150 hPa
Average number of observations in 24 hours - 344403



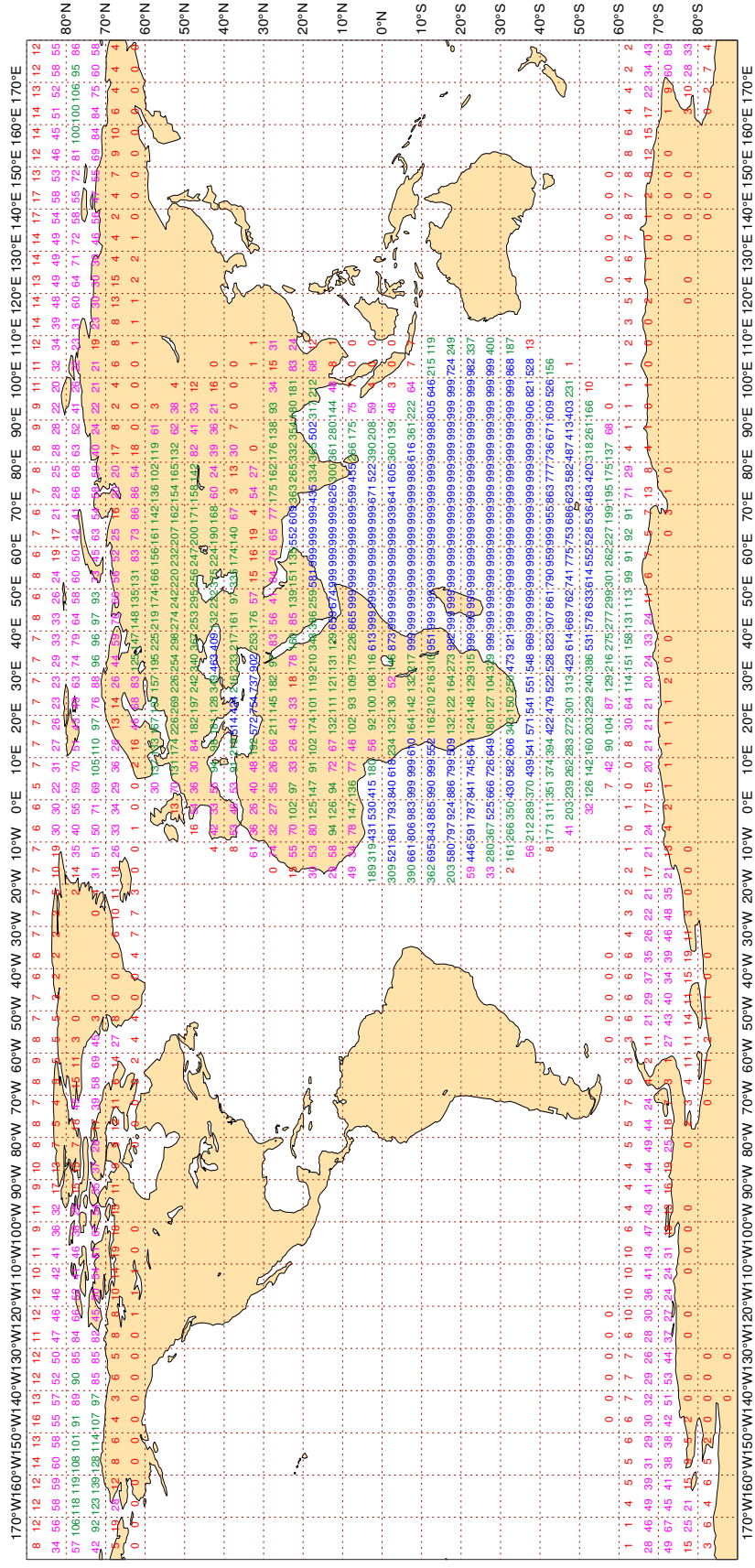
Magics 4.9.4



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

Figure 7

ECMWF Monitoring Statistics - OCT 2022
Availability - AMV winds 1000-700 hPa
Average number of observations in 24 hours - 341436

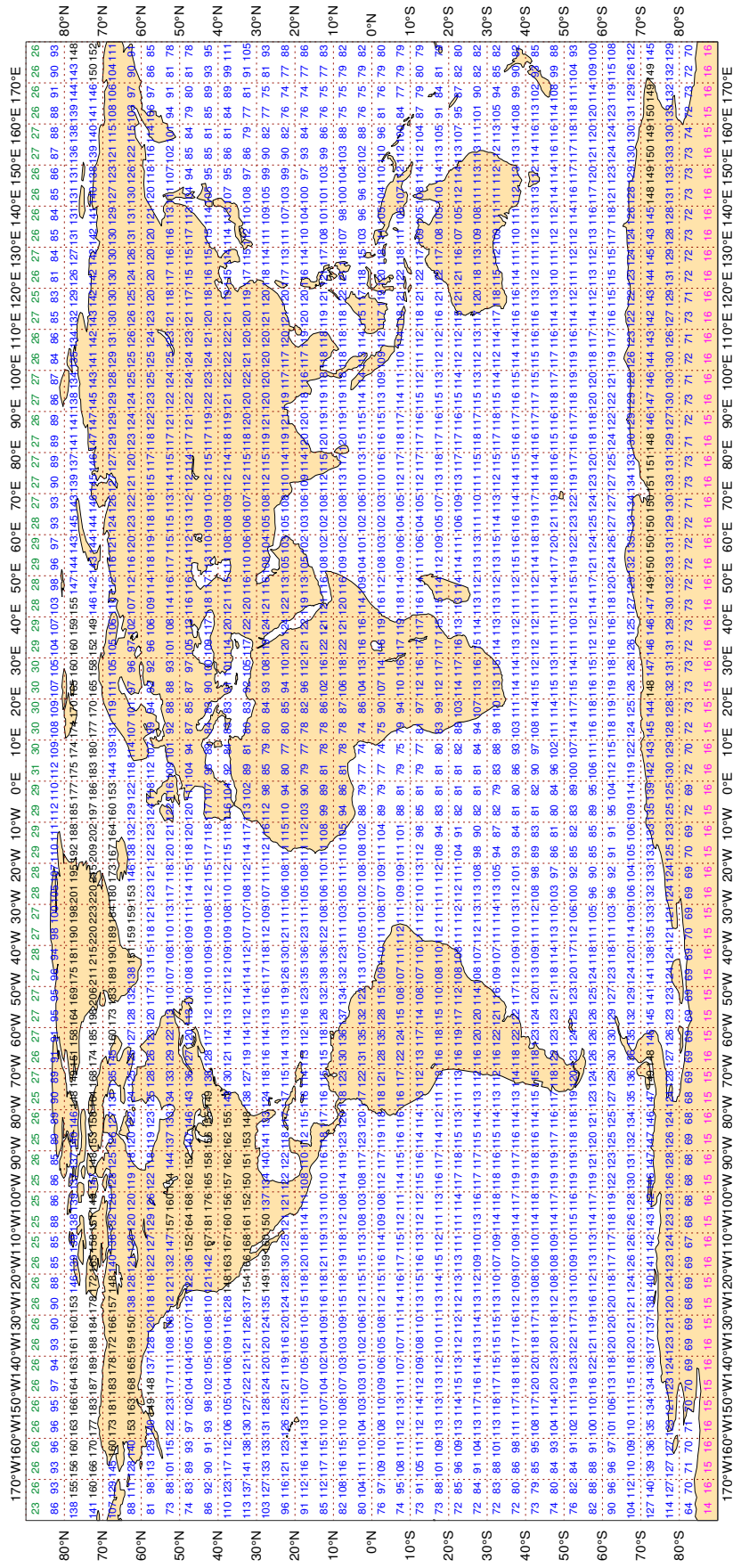


3.2.8 Figure 8 - Availability - NOAA15 ATOVS : AMSU-A

Figure 8

ECMWF Monitoring Statistics - OCT 2022
Availability - NOAA15 ATOVS : AMSU-A

Average number of observations in 24 hours - 286222

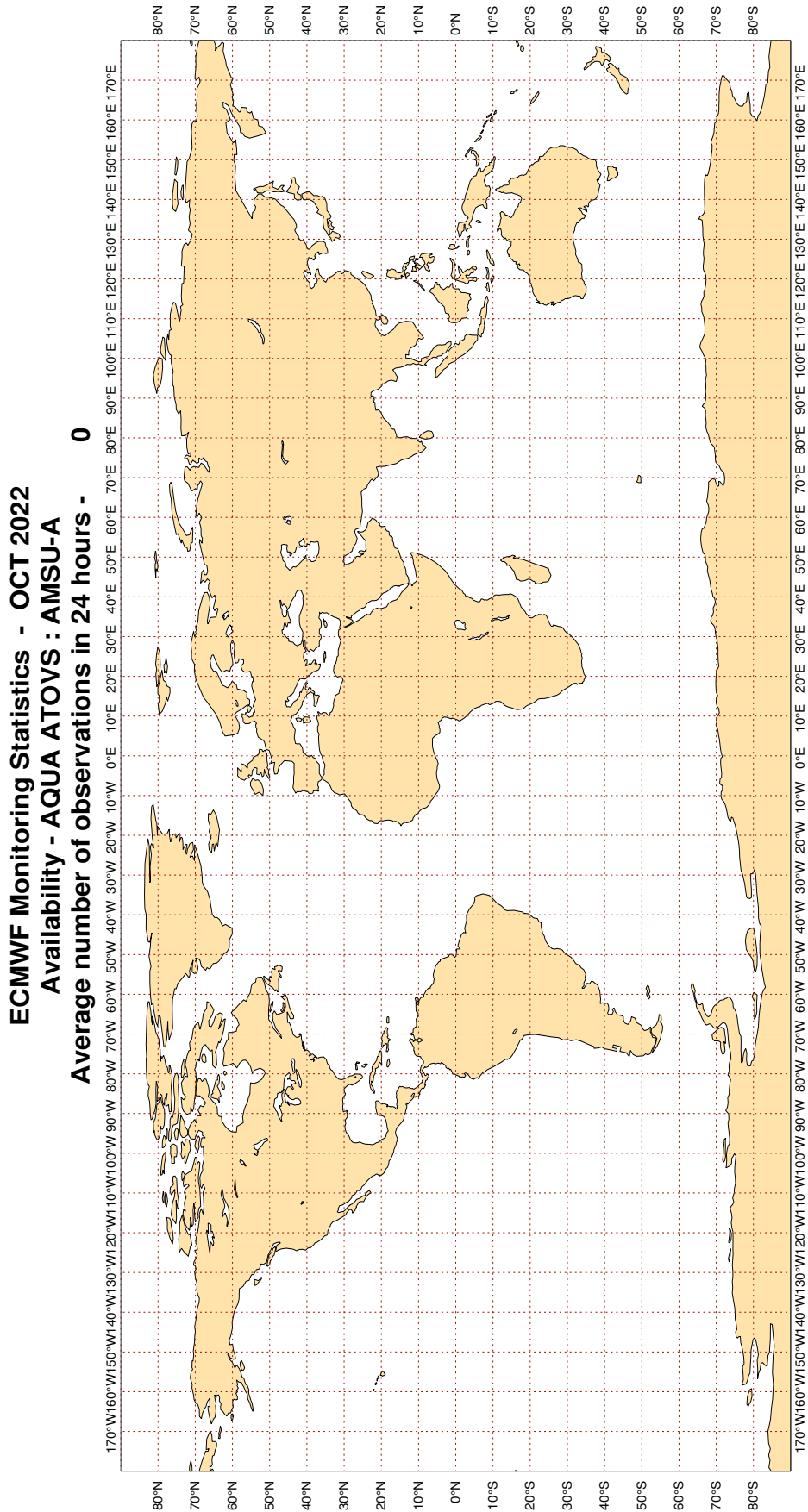


Magics 4.9.4



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

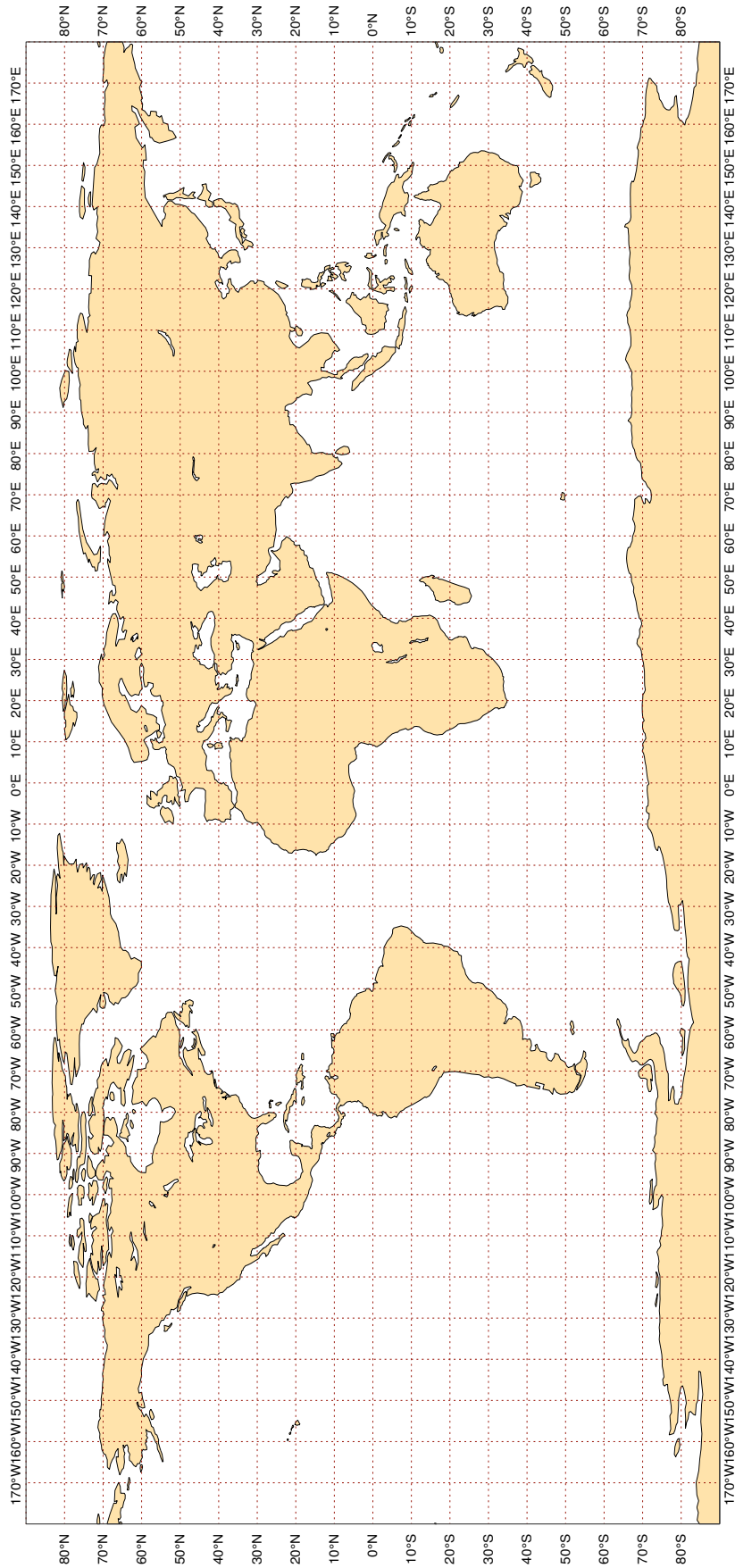
Figure 9.2



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

Figure 9.3

ECMWF Monitoring Statistics - OCT 2022
Availability - METOP ATOVS : AMSU-A
Average number of observations in 24 hours - 0



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 : OCT 2022
 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
00000	99	P	SUR	119	0	0.5	-13.5	13.5
3FJB3	99	P	SUR	31	0	0.8	3.5	3.6
45186	99	P	SUR	390	24	5.7	-1.7	6.0
7JLP	99	P	SUR	24	0	0.9	4.1	4.2
7JWH	99	P	SUR	67	0	1.2	5.0	5.1
9HA3062	99	P	SUR	18	0	1.2	-4.5	4.7
9HA4455	99	P	SUR	31	0	0.6	3.1	3.1
9HA4638	99	P	SUR	23	0	1.1	5.0	5.2
9HA5013	99	P	SUR	20	0	0.9	6.5	6.6
9HJB9	99	P	SUR	17	0	0.9	3.6	3.7
9HRJ9	99	P	SUR	47	0	0.5	3.5	3.6
9V5669	99	P	SUR	69	0	1.4	6.8	6.9
9V6408	99	P	SUR	110	0	1.7	-6.4	6.6
9V8838	99	P	SUR	15	0	5.0	6.1	7.9
9V9373	99	P	SUR	22	0	0.8	3.3	3.4
A8FG3	99	P	SUR	32	0	0.7	-6.8	6.8
ATVK	99	P	SUR	118	118	0.0	0.0	0.0
BHJG	99	P	SUR	22	0	0.7	8.4	8.5
C6FR3	99	P	SUR	15	0	3.1	5.7	6.5
C6JS	99	P	SUR	16	5	4.9	-4.2	6.4
C6NR7	99	P	SUR	113	8	5.4	6.4	8.4
C6SE5	99	P	SUR	19	0	2.8	-3.9	4.8
C6XS8	99	P	SUR	105	105	0.0	0.0	0.0
GCWP	99	P	SUR	164	0	2.2	-5.4	5.8
H3JW	99	P	SUR	19	0	3.8	3.3	5.0
H3MM	99	P	SUR	21	0	0.8	4.2	4.2
KIAB	99	P	SUR	44	0	1.2	6.4	6.6
LAPE7	99	P	SUR	61	0	0.9	4.8	4.9
LAQJ7	99	P	SUR	62	0	0.7	-4.4	4.4
ONJG	99	P	SUR	32	0	1.8	3.8	4.2
SHIP	99	P	SUR	509	1	5.8	-3.5	6.8
SJA4RSK	99	P	SUR	116	0	0.3	-4.8	4.8

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

WMO IDENT	OBS TIME	ELM	LEVEL	NUM OBS	NUM GROSS	SD	BIAS	RMS
SKEC	99	P	SUR	86	0	0.5	-3.7	3.8
TBWUK74	99	P	SUR	17	0	0.4	4.2	4.2
UABO	99	P	SUR	67	1	2.1	6.5	6.8
UBRW	99	P	SUR	22	0	7.0	-2.8	7.5
UBSH	99	P	SUR	56	0	1.7	-3.2	3.7
UCQX	99	P	SUR	44	22	6.4	8.3	10.5
V7A5139	99	P	SUR	60	0	1.2	4.1	4.2
V7AU2	99	P	SUR	21	0	2.8	4.5	5.3
V7QS7	99	P	SUR	47	0	1.1	-6.2	6.3
V7UU6	99	P	SUR	49	0	4.2	3.9	5.7
V7UX2	99	P	SUR	43	0	2.1	4.0	4.5
V7XV6	99	P	SUR	29	0	2.3	3.7	4.3
VABC	99	P	SUR	48	0	1.7	6.9	7.1
VDBY	99	P	SUR	23	0	4.9	3.0	5.8
VRCB4	99	P	SUR	17	0	0.7	-4.6	4.7
VRCG8	99	P	SUR	19	0	3.1	4.1	5.1
VRCI9	99	P	SUR	22	0	1.6	4.7	5.0
VRDB3	99	P	SUR	23	0	0.5	-5.5	5.5
VRDY5	99	P	SUR	21	0	2.4	7.7	8.0
VRFW9	99	P	SUR	17	0	0.6	4.6	4.7
VRFX4	99	P	SUR	20	0	1.4	3.4	3.7
VRGE3	99	P	SUR	32	0	0.8	-5.6	5.7
VRGO8	99	P	SUR	76	0	1.6	4.0	4.3
VRIB2	99	P	SUR	69	0	1.4	4.2	4.4
VRLJ4	99	P	SUR	30	1	3.2	9.0	9.5
VRLZ4	99	P	SUR	28	0	2.7	-3.6	4.5
VRME7	99	P	SUR	18	0	2.3	8.9	9.2
VRNR6	99	P	SUR	27	0	0.5	-5.7	5.8
VROO6	99	P	SUR	17	0	1.3	3.5	3.7
VRQS3	99	P	SUR	35	0	1.8	7.0	7.2
VRRD7	99	P	SUR	24	0	2.3	3.8	4.5
VRSR7	99	P	SUR	47	0	1.1	5.0	5.1
VRWN4	99	P	SUR	19	0	0.6	-5.3	5.3
VRWQ2	99	P	SUR	68	1	2.1	-5.0	5.4
VTOT	99	P	SUR	18	0	1.6	-3.8	4.1
VTSJ	99	P	SUR	109	109	0.0	0.0	0.0

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 : OCT 2022
 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
45201	99	SPEED	SUR	361	0	0	3.1	4.7	5.6

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 : OCT 2022
 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
44037	99	DIRN	SUR	77	0	0	17.0	37.2	40.9
45170	99	DIRN	SUR	165	0	0	18.9	-55.3	58.4
45201	99	DIRN	SUR	33	0	0	75.4	3.8	75.5
45204	99	DIRN	SUR	330	0	0	44.7	34.6	56.5
45206	99	DIRN	SUR	315	0	0	25.7	-38.6	46.4
46035	99	DIRN	SUR	145	0	0	19.8	36.8	41.8
46205	99	DIRN	SUR	75	0	0	17.4	53.3	56.0
62030	99	DIRN	SUR	73	0	0	29.4	38.0	48.0

3.2.15 Table 4 - Suspect drifters: Surface pressure (HPA)

LIST OF SUSPECT STATIONS : DRIFTER
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : SURFACE PRESSURE (HPA)
 AREA : GLOBAL
 PERIOD : OCT 2022
 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
00000	99	P	SUR	44	-79	728	1	0.5	-13.6	13.6
1601598	99	P	SUR	-36	138	42	7	2.1	7.8	8.1
3301581	99	P	SUR	-34	120	454	7	4.7	4.4	6.4
3801550	99	P	SUR	87	-140	744	284	0.5	-0.4	0.7
4201647	99	P	SUR	31	-89	589	0	0.5	-12.7	12.7
4601783	99	P	SUR	60	-145	455	455	0.0	0.0	0.0
4701658	99	P	SUR	72	-95	723	286	7.1	0.8	7.2
4701738	99	P	SUR	70	-67	713	710	5.8	-3.0	6.5
4701744	99	P	SUR	79	-107	740	740	0.0	0.0	0.0
4701747	99	P	SUR	77	-120	742	679	2.0	-12.1	12.3
4801670	99	P	SUR	86	-71	712	160	5.0	7.1	8.6
4802605	99	P	SUR	74	-150	435	205	7.8	1.9	8.0
4802655	99	P	SUR	80	-123	742	480	7.6	-6.5	9.9
5102809	99	P	SUR	5	-117	713	0	0.6	-7.9	7.9
5401581	99	P	SUR	-38	140	114	11	5.1	-6.2	8.0
5601693	99	P	SUR	-61	118	714	6	0.9	12.8	12.9
6102804	99	P	SUR	40	3	721	0	0.4	-7.0	7.0
6401588	99	P	SUR	79	21	63	23	4.7	5.4	7.1
6402587	99	P	SUR	53	-51	633	5	3.1	8.3	8.9
6402659	99	P	SUR	70	19	621	22	6.4	3.7	7.4
6501671	99	P	SUR	80	23	393	98	6.5	5.3	8.4

3.2.16 Table 5 - Suspect drifters: Wind speed (m/s)

LIST OF SUSPECT STATIONS : DRIFTER
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND SPEED (M/S)
 AREA : GLOBAL
 PERIOD : OCT 2022
 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
2200188	99	SPEED	SUR	34	128	660	0	0	4.2	-5.2	6.7
4400069	99	SPEED	SUR	41	-73	856	0	0	2.8	5.3	6.0
4500201	99	SPEED	SUR	42	83	2982	0	0	3.2	5.5	6.4

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

LIST OF SUSPECT STATIONS : DRIFTER
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND DIRECTION (DEGREES)
 PERIOD : OCT 2022
 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
2200102	99	DIRN	SUR	35	126	517	1	0	71.0	-29.4	76.8
23094	99	DIRN	SUR	13	84	129	0	0	18.1	21.4	28.0
23099	99	DIRN	SUR	13	80	312	0	0	81.3	23.1	84.5
23451	99	DIRN	SUR	15	69	93	0	0	124.0	-35.5	129.0
23453	99	DIRN	SUR	8	73	168	0	0	18.3	-38.8	42.9
23454	99	DIRN	SUR	10	73	76	0	0	60.3	-61.6	86.2
23491	99	DIRN	SUR	12	93	96	0	0	122.0	-24.0	124.3
4400037	99	DIRN	SUR	43	-68	457	0	0	20.4	37.4	42.6
44037	99	DIRN	SUR	44	-68	435	0	0	18.0	38.7	42.7
44069	99	DIRN	SUR	41	-73	733	0	0	34.2	-27.2	43.7
44078	99	DIRN	SUR	60	-40	409	0	0	11.1	-20.8	23.6
4500022	99	DIRN	SUR	45	-85	1560	7	0	51.6	20.6	55.5
4500170	99	DIRN	SUR	42	-87	790	0	0	22.3	-57.2	61.4
4500176	99	DIRN	SUR	42	-82	2403	0	0	27.0	-20.6	33.9
4500197	99	DIRN	SUR	42	-82	1308	0	0	32.0	29.5	43.5
4500201	99	DIRN	SUR	42	83	202	0	0	80.0	34.2	87.0
4500203	99	DIRN	SUR	41	-83	2687	0	0	48.5	-26.0	55.0
4500204	99	DIRN	SUR	42	-82	2307	0	0	47.4	29.6	55.9
4500205	99	DIRN	SUR	42	-82	2382	0	0	41.0	22.1	46.6
4500206	99	DIRN	SUR	42	-82	2112	0	0	22.5	-38.5	44.7
45170	99	DIRN	SUR	42	-87	991	0	0	21.5	-55.6	59.6
45197	99	DIRN	SUR	42	-82	1355	0	0	33.0	29.1	44.0
45201	99	DIRN	SUR	42	83	324	0	0	76.4	7.3	76.8
45203	99	DIRN	SUR	41	-83	1879	0	0	52.0	-24.8	57.6
45204	99	DIRN	SUR	42	-82	2104	0	0	48.0	32.0	57.6
45206	99	DIRN	SUR	42	-82	2006	0	0	30.8	-37.1	48.2
4600035	99	DIRN	SUR	57	-178	546	0	0	20.2	40.3	45.1
4600083	99	DIRN	SUR	58	-138	553	8	0	78.1	4.1	78.2
46035	99	DIRN	SUR	57	-178	801	0	0	21.9	36.2	42.3
46083	99	DIRN	SUR	58	-138	815	9	0	65.1	8.5	65.6
46145	99	DIRN	SUR	54	-132	610	0	0	17.5	25.6	31.1

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
46205	99	DIRN	SUR	54	-134	446	0	0	17.3	55.7	58.3
46208	99	DIRN	SUR	53	-133	40	0	0	17.9	37.4	41.5
6100198	99	DIRN	SUR	37	-2	166	0	0	32.4	23.2	39.8
6100280	99	DIRN	SUR	41	1	301	0	0	37.3	26.8	45.9
6200086	99	DIRN	SUR	55	6	475	0	0	12.9	27.2	30.1
6200199	99	DIRN	SUR	40	-9	467	0	0	18.5	28.1	33.6
62030	99	DIRN	SUR	50	-4	660	0	0	28.2	38.1	47.4
6600022	99	DIRN	SUR	54	14	221	0	0	71.9	47.8	86.3

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

LIST OF SUSPECT STATIONS : RADIOSONDES
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : GEOPOTENTIAL HEIGHT (METRES)
 AREA : GLOBAL
 PERIOD : OCT 2022
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

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

ONLY THE WORST LEVEL IS SHOWN (WITH UNWEIGHTED RMS)

WMO IDENT	OBS TIME	ELM	LEV	LAT	LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
01400	12	Z	1000	57	3	19	0	3.9	77.3	77.4
01400	00	Z	1000	57	3	24	0	5.6	77.5	77.7
32150	00	Z	400	47	143	30	0	44.7	54.0	70.1
47122	00	Z	500	37	127	29	2	47.1	77.4	90.6
47122	12	Z	500	37	127	30	5	52.7	87.8	102.4
47158	12	Z	500	35	127	31	4	56.3	86.5	103.2
47158	00	Z	500	35	127	31	3	55.9	95.3	110.5
52323	00	Z	30	42	97	31	3	106.4	316.5	333.9
58424	00	Z	30	31	117	30	0	164.7	127.2	208.1
62378	00	Z	400	30	31	16	0	39.6	49.1	63.1
62378	12	Z	400	30	31	13	0	50.9	56.0	75.7
96315	00	Z	1000	5	115	16	0	7.3	67.3	67.7
96315	12	Z	1000	5	115	15	0	5.1	65.5	65.7
98233	00	Z	1000	18	122	31	0	27.9	46.1	53.9
98558	12	Z	1000	11	126	31	0	26.7	15.7	31.0
98558	00	Z	1000	11	126	24	0	32.5	32.4	45.9
JNKN7J	00	Z	1000	50	-9	15	0	4.0	39.6	39.8
JNKN7J	12	Z	1000	49	-13	14	0	5.5	37.7	38.1
KMPLHP	00	Z	1000	40	-70	11	0	11.5	46.4	47.8
KMPLHP	12	Z	1000	38	-74	14	0	10.1	45.9	47.0

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 : OCT 2022
 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
04220	12	V	250	69	-53	18	3	-2.6	-5.9	20.6
04220	00	V	250	69	-53	16	5	-1.0	-2.9	15.7
04270	00	V	250	61	-45	16	4	-0.3	4.1	15.2
04270	12	V	250	61	-45	20	2	-2.0	-0.5	19.6
71811	12	V	250	50	-66	31	0	1.1	2.1	18.8
71811	00	V	200	50	-66	30	0	1.6	3.0	16.1

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

LIST OF SUSPECT STATIONS : RADIOSONDES
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND DIRECTION (DEGREES)
 AREA : GLOBAL
 PERIOD : OCT 2022
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

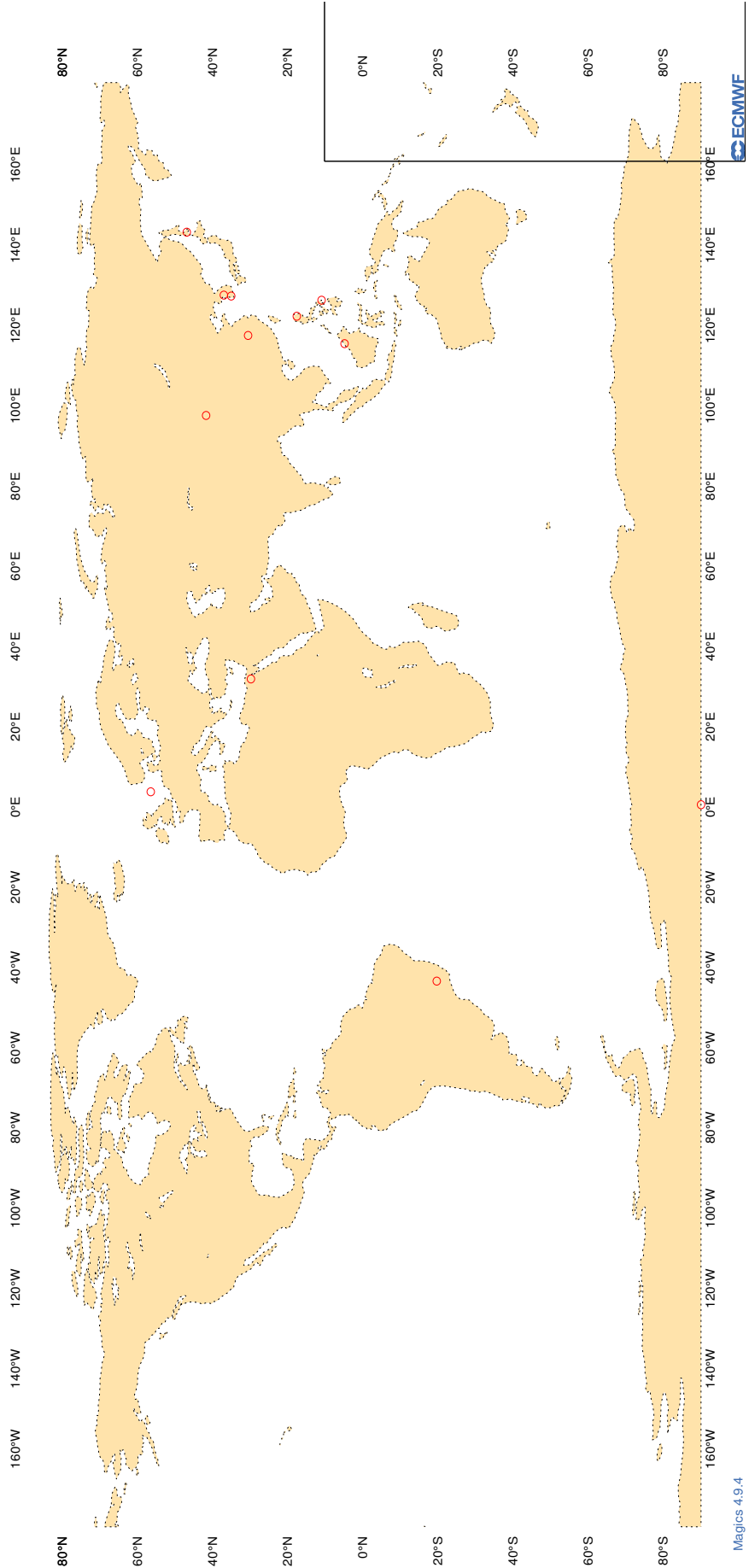
SELECTION CRITERIA: OBSERVED/FORECAST WIND SPEEDS ≥ 5 M/S
 NO. OF OBSERVATIONS ≥ 5 , AND,
 ABSOLUTE BIAS ≥ 10 DEGREES, WITH
 STANDARD DEVIATION < 30 DEGREES, AND,
 VERTICAL SPREAD < 10 DEGREES
 (AVERAGE BETWEEN 500 AND 150 HPA)

WMO IDENT	OBS TIME	ELM	LAT	LONG	NUM OBS	BIAS	MAX SPREAD	SD
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3.2.21 Figure 10 - Suspect TEMP observations - geopotential : 00 UTC

Figure 10

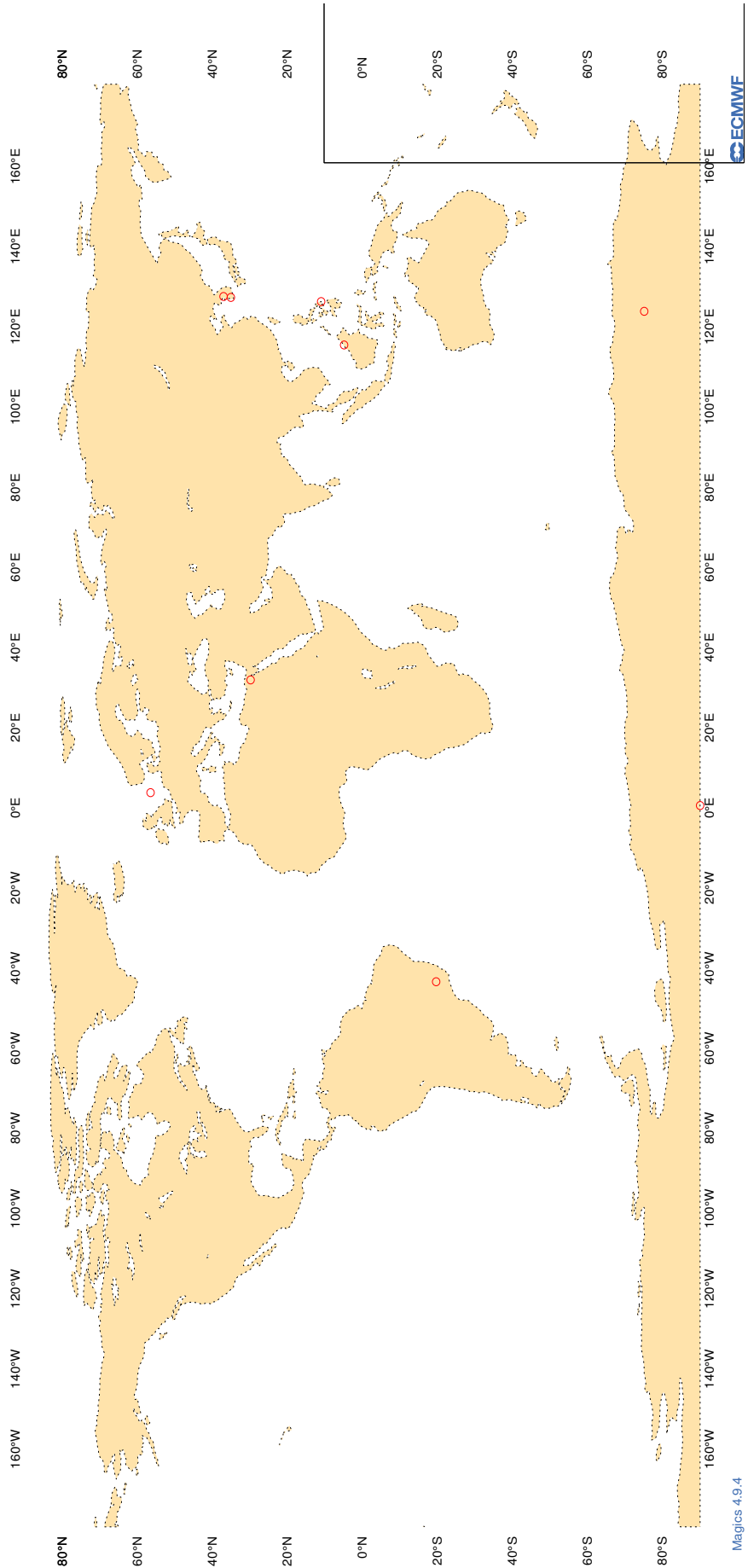
ECMWF Monitoring Statistics - OCT 2022 00 UTC
Suspect TEMP observations - GEOPOTENTIAL



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

Figure 11

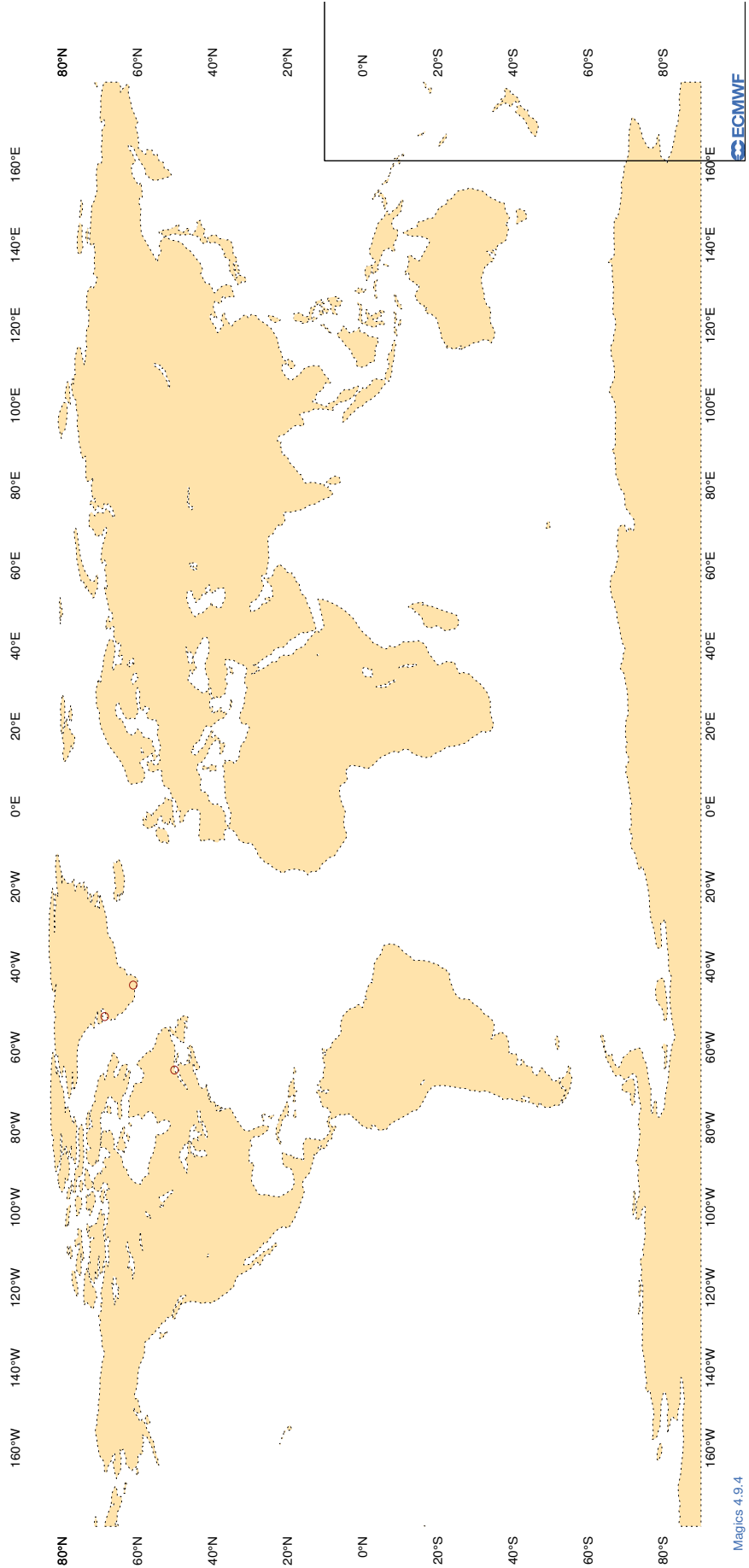
ECMWF Monitoring Statistics - OCT 2022 12 UTC
Suspect TEMP observations - GEOPOTENTIAL



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

Figure 12

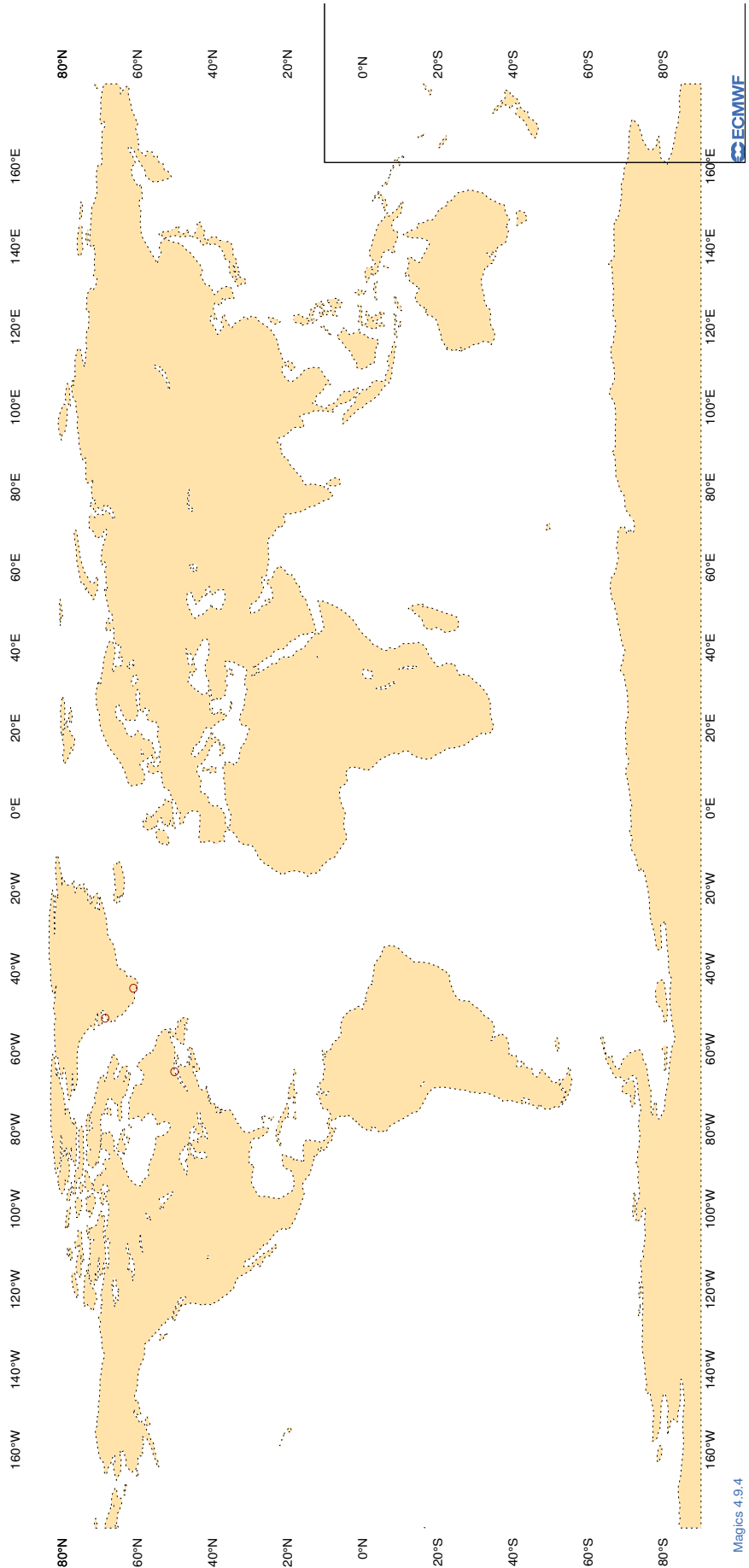
ECMWF Monitoring Statistics - OCT 2022 00 UTC
Suspect TEMP/PILOT observations - WIND



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

Figure 13

ECMWF Monitoring Statistics - OCT 2022 12 UTC
Suspect TEMP/PILOT observations - WIND



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

RADIOSONDE MONITORING STATISTICS (SHIPS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : GEOPOTENTIAL HEIGHT (METRES)
 LEVEL : 100 HPA
 AREA : GLOBAL
 PERIOD : OCT 2022
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
7JUNA4	12	Z	100	7	21.2	6.7
7JUNA4	00	Z	100	3	7.0	-5.6
9ZT9MR	00	Z	100	1	4.8	-4.8
9ZT9MR	12	Z	100	3	27.6	-26.4
ASDE09	12	Z	100	1	12.2	12.2
ATGU3F	12	Z	100	1	33.0	-33.0
ATGU3F	00	Z	100	1	44.3	-44.3
DBLK	12	Z	100	27	12.7	10.7
FPUW5G	12	Z	100	2	4.0	-3.9
GQBZLZ	12	Z	100	0	0.0	0.0
JGQH	12	Z	100	3	8.4	0.5
JGQH	00	Z	100	5	6.5	-2.9
JNKN7J	12	Z	100	15	32.7	28.3
JNKN7J	00	Z	100	15	27.3	25.7
KMPLHP	12	Z	100	14	71.1	64.5
KMPLHP	00	Z	100	12	31.6	29.8
LRQE3	12	Z	100	6	9.5	-6.0
LRQE3	00	Z	100	8	58.2	15.2
UXK5JT	12	Z	100	12	16.1	-10.0
UXK5JT	00	Z	100	12	12.1	-9.1
WDK38H	12	Z	100	22	20.7	-7.6
XKQLWQ	12	Z	100	24	27.0	25.3
XQFJRG	12	Z	100	5	7.9	-5.5
XQFJRG	00	Z	100	5	11.9	-8.5
YLV96W	00	Z	100	2	4.8	2.1
YLV96W	12	Z	100	7	23.8	1.0

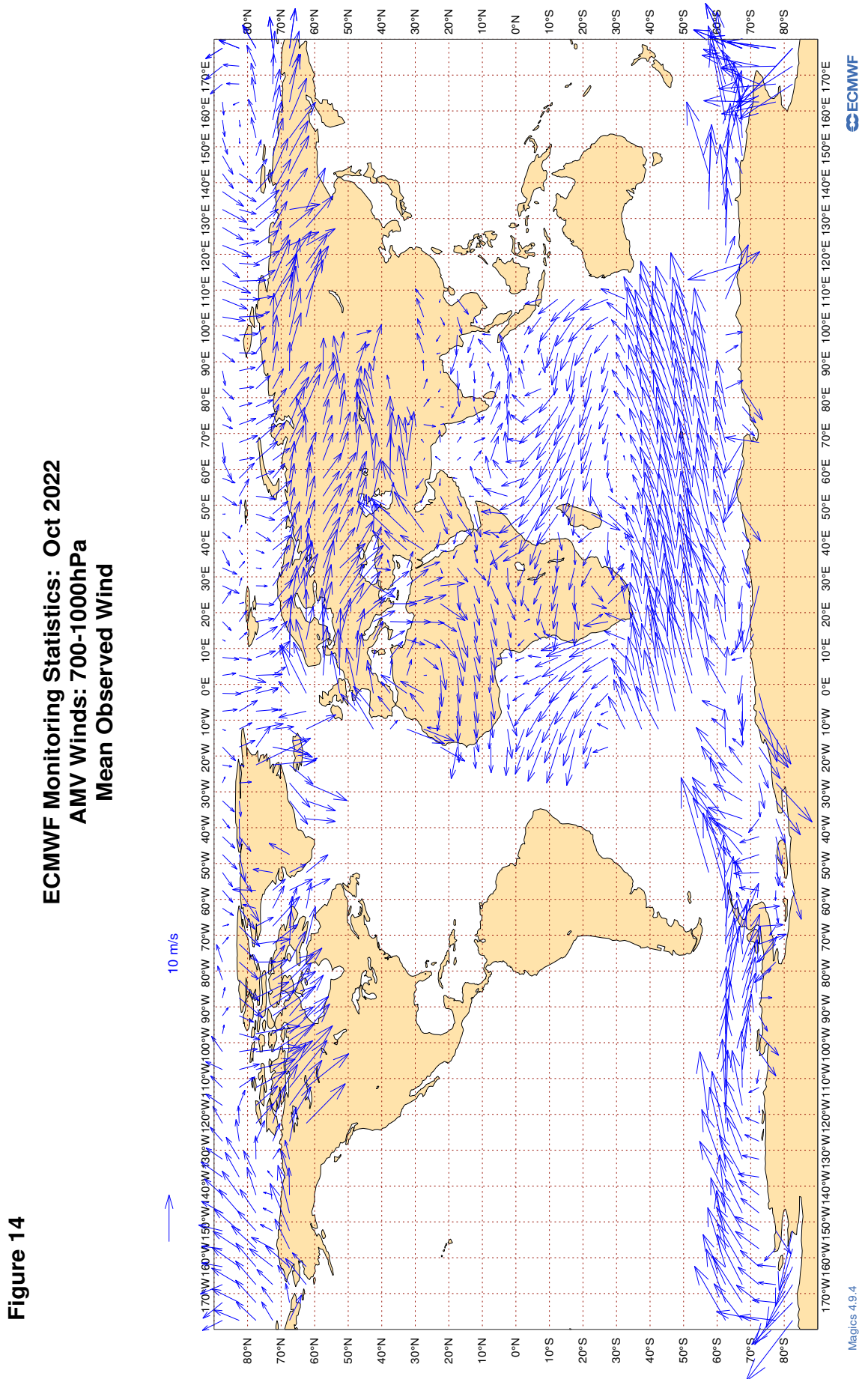
3.2.26 Table 11 - Radiosonde monitoring statistics (SHIPs): Wind (m/s)

RADIOSONDE MONITORING STATISTICS (SHIPS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND (M/S)
 LEVEL : 100 HPA
 AREA : GLOBAL
 PERIOD : OCT 2022
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
7JUNA4	12	V	100	7	3.3	-0.6	-0.1
7JUNA4	00	V	100	3	5.7	2.3	-1.3
9ZT9MR	00	V	100	1	2.7	2.5	-1.1
9ZT9MR	12	V	100	3	2.6	0.5	1.6
ASDE09	12	V	100	1	1.3	-1.3	0.1
ATGU3F	12	V	100	1	2.2	0.8	2.0
ATGU3F	00	V	100	1	1.7	-1.2	1.2
DBLK	12	V	100	27	3.3	0.2	-0.3
FPUW5G	12	V	100	2	4.0	2.3	-2.8
GQBZLZ	12	V	100	0	0.0	0.0	0.0
JGQH	12	V	100	3	4.0	-0.6	1.8
JGQH	00	V	100	5	3.3	0.3	-0.2
JNKN7J	12	V	100	15	4.1	0.5	0.7
JNKN7J	00	V	100	15	4.3	-1.0	0.1
KMPLHP	12	V	100	14	3.8	1.6	-0.6
KMPLHP	00	V	100	12	2.5	1.2	0.4
LRYQE3	12	V	100	6	3.9	-1.1	1.2
LRYQE3	00	V	100	8	3.8	-0.7	0.8
UXK5JT	12	V	100	12	3.3	-0.4	0.5
UXK5JT	00	V	100	12	2.1	0.8	-0.1
WDK38H	12	V	100	22	2.6	0.3	-0.2
XKQLWQ	12	V	100	23	3.1	0.0	-0.1
XQFJRG	12	V	100	5	3.3	-2.2	0.9
XQFJRG	00	V	100	5	2.5	0.9	-0.1
YLV96W	00	V	100	2	3.6	-0.6	1.2
YLV96W	12	V	100	7	4.0	-0.6	0.4

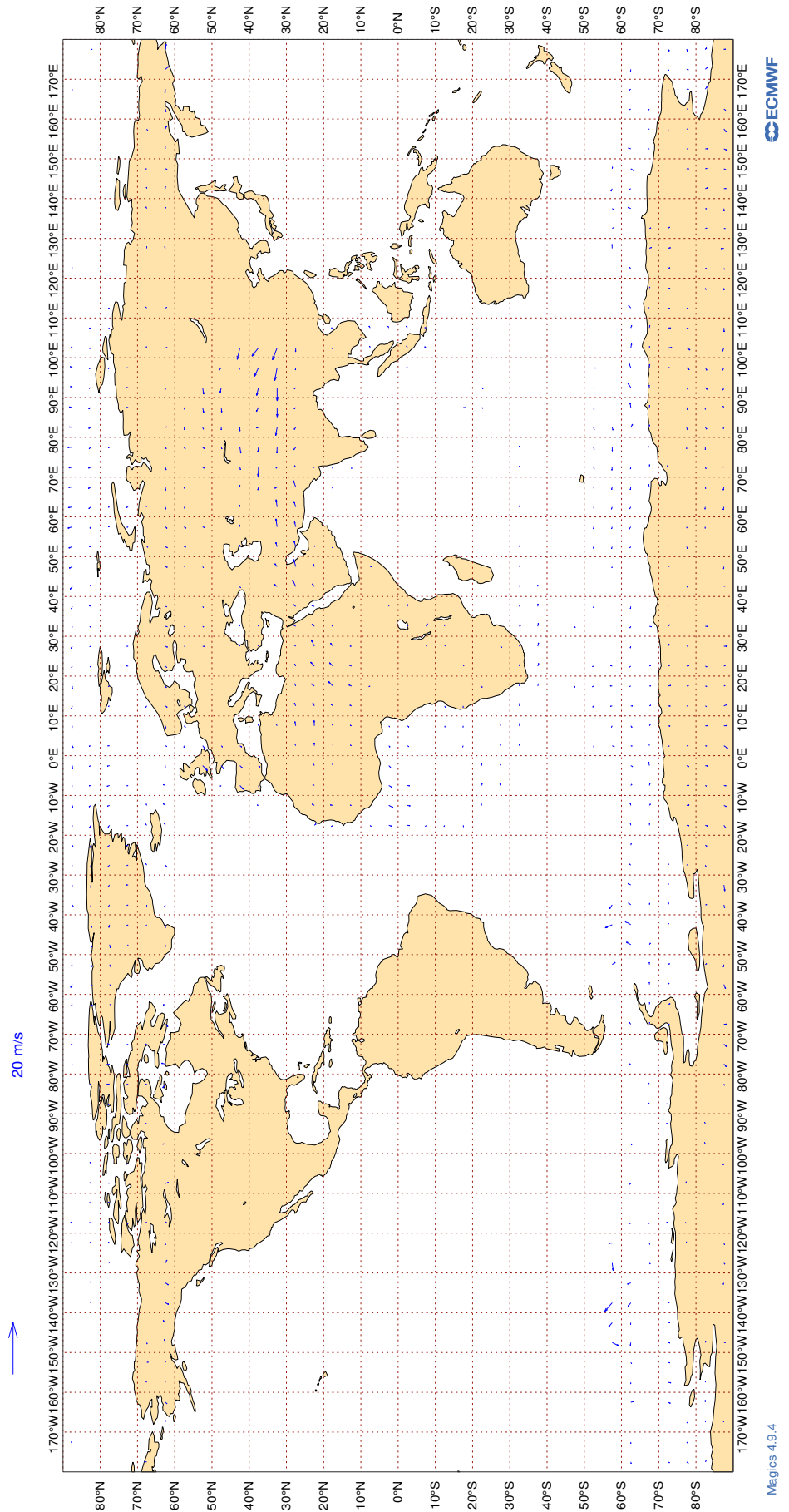
3.2.27 Figure 14 - SATOB Winds: 700-1000hPa



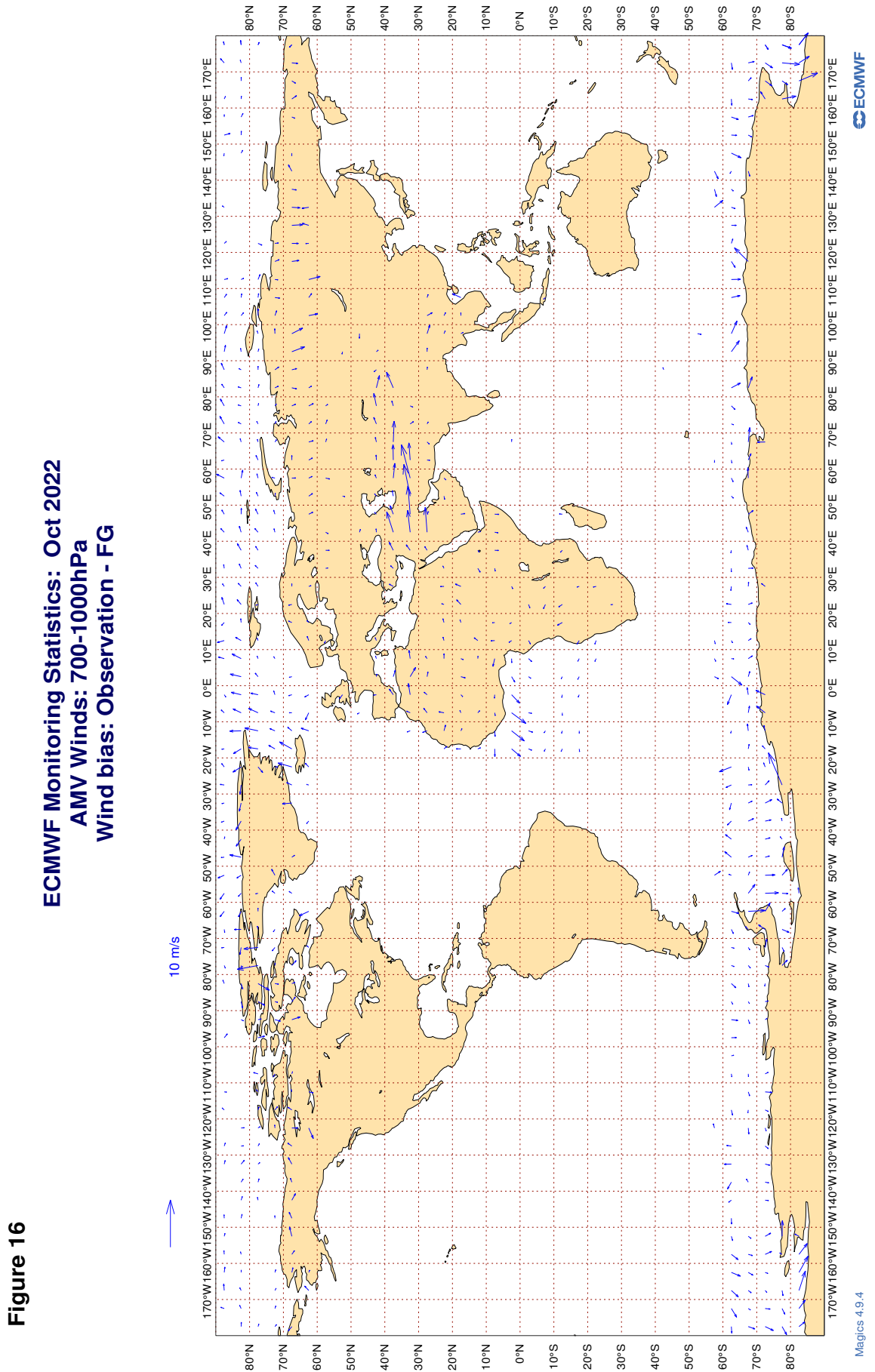
3.2.28 Figure 15 - SATOB Winds: 150- 400hPa

Figure 15

ECMWF Monitoring Statistics: Oct 2022
AMV Winds: 150- 400hPa
Wind bias: Observation - FG



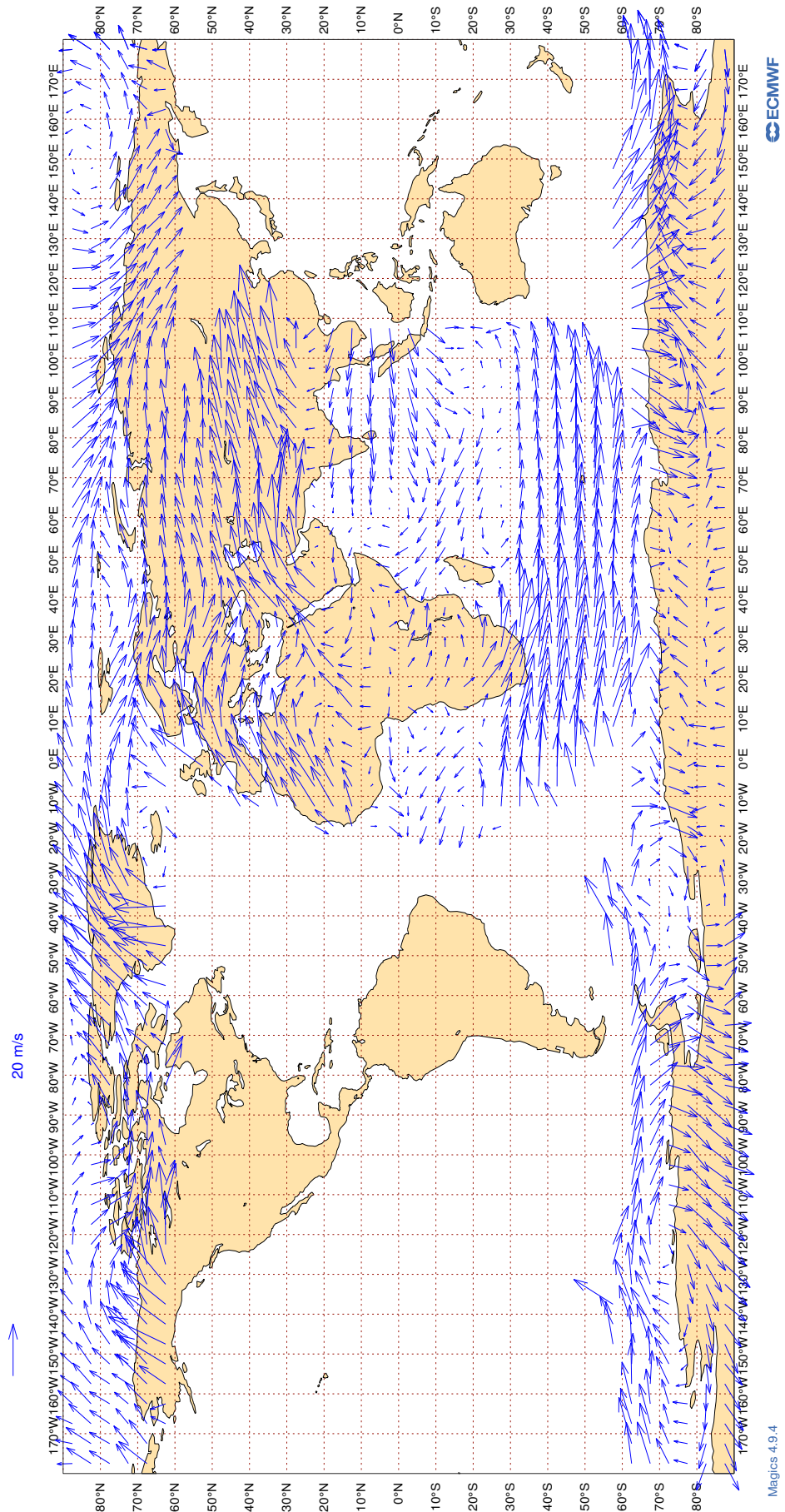
3.2.29 Figure 16 - SATOB Winds: 700-1000hPa



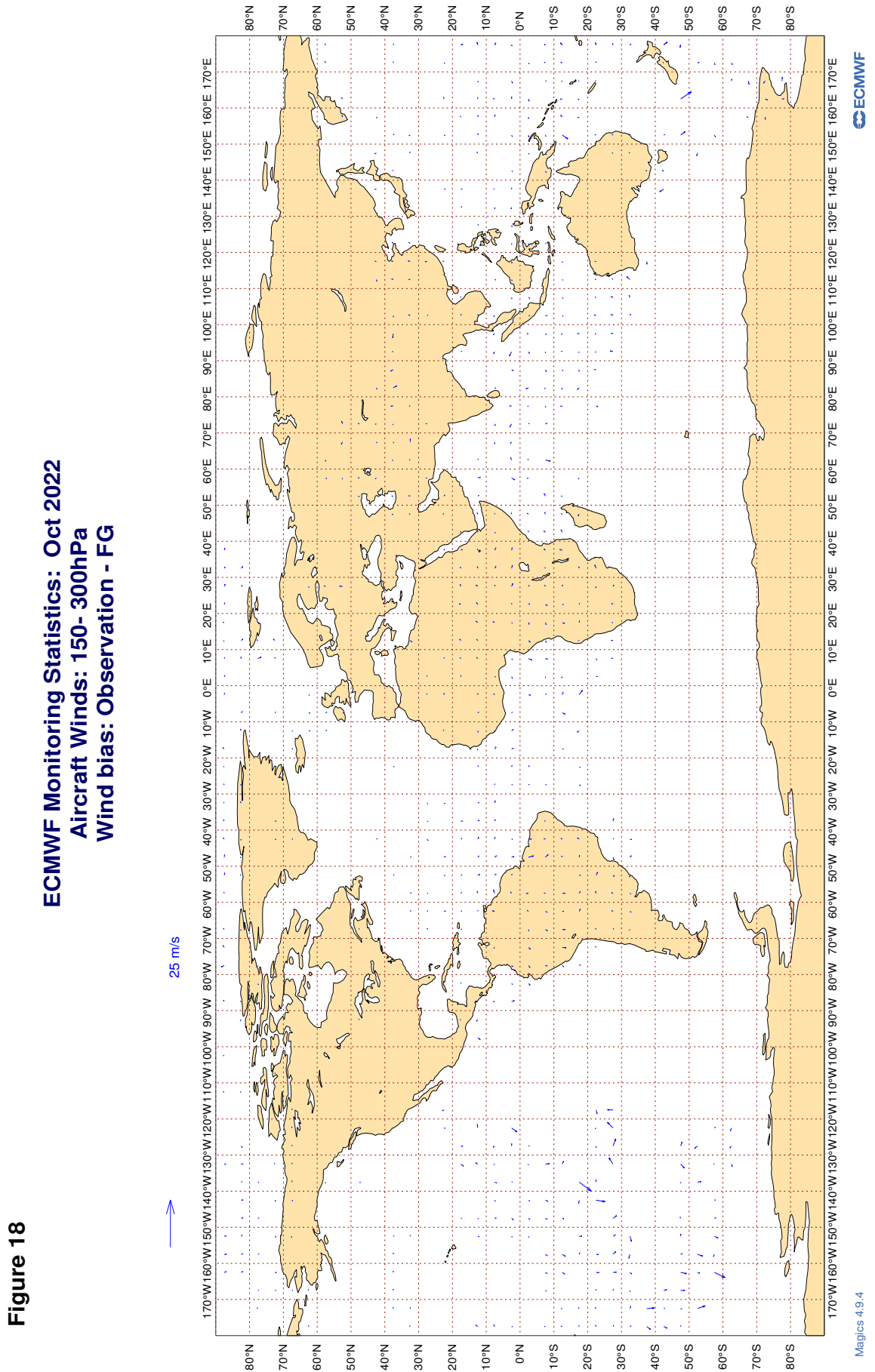
3.2.30 Figure 17 - SATOB Winds: 150- 400hPa

Figure 17

ECMWF Monitoring Statistics: Oct 2022
AMV Winds: 150- 400hPa
Mean Observed Wind



3.2.31 Figure 18 - AIRCRAFT Winds: 150- 300hPa



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 : OCT 2022
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

SELECTION CRITERIA: NO. OF OBS. >= 20

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

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
AAB	99	V	300-150	100	0	0	3.3	0.1
AAL	99	V	300-150	49154	2	0	4.3	0.1
AAR	99	V	300-150	204	0	0	3.7	-1.0
ABB	99	V	300-150	735	0	0	3.3	0.2
ABD	99	V	300-150	1435	0	0	3.6	-0.4
ABP	99	V	300-150	96	0	0	3.1	0.6
ABX	99	V	300-150	67	0	0	3.8	0.2
ACA	99	V	300-150	31371	2	0	4.4	0.0
ACI	99	V	300-150	359	0	0	5.1	0.8
AEA	99	V	300-150	925	7	1	5.8	-0.2
AFR	99	V	300-150	32389	1	0	3.7	0.0
AHO	99	V	300-150	444	0	0	3.5	-0.2
AIC	99	V	300-150	2325	1	0	4.3	0.2
AJT	99	V	300-150	212	0	0	3.5	0.1
ALE	99	V	300-150	21	0	0	4.1	1.5
ALK	99	V	300-150	2237	0	0	3.1	0.5
AMX	99	V	300-150	3523	6	0	5.9	-0.1
ANZ	99	V	300-150	17228	2	0	5.7	0.2
AOJ	99	V	300-150	138	0	0	3.5	-0.3
ASA	99	V	300-150	41	2	10	7.8	-0.1
ASJ	99	V	300-150	68	0	0	3.3	0.7
ASL	99	V	300-150	514	0	0	3.0	0.2

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
ASP	99	V	300-150	76	0	0	2.9	0.0
ASY	99	V	300-150	178	0	0	5.2	-0.1
ATC	99	V	300-150	176	0	0	6.1	0.1
ATG	99	V	300-150	25	0	0	2.9	1.0
ATN	99	V	300-150	205	0	2	4.9	0.4
AUA	99	V	300-150	4366	0	0	4.1	-0.2
AUH	99	V	300-150	46	0	0	3.2	-0.3
AVA	99	V	300-150	551	9	0	5.8	-0.4
AWC	99	V	300-150	382	0	0	3.5	0.5
AXB	99	V	300-150	20	0	0	3.3	-0.1
AXM	99	V	300-150	104	0	3	4.8	1.2
AXY	99	V	300-150	65	0	2	3.1	0.6
AZG	99	V	300-150	651	0	0	3.5	-0.2
BAF	99	V	300-150	71	0	0	3.2	-0.6
BAH	99	V	300-150	46	0	0	3.2	0.2
BAW	99	V	300-150	44363	1	0	4.1	0.0
BBC	99	V	300-150	892	2	0	5.0	0.5
BCS	99	V	300-150	3970	0	0	3.2	0.2
BEL	99	V	300-150	844	0	0	3.1	0.1
BFF	99	V	300-150	88	0	0	11.8	2.1
BLU	99	V	300-150	49	0	0	4.1	-1.2
BMW	99	V	300-150	88	0	1	3.4	-0.2
BOX	99	V	300-150	4118	0	0	3.3	0.0
BRK	99	V	300-150	55	0	0	5.4	-0.7
BTX	99	V	300-150	76	0	0	3.5	0.4
BVR	99	V	300-150	98	0	0	3.5	0.6
CAL	99	V	300-150	337	0	0	3.8	0.6
CAZ	99	V	300-150	113	0	0	3.1	-0.3
CEB	99	V	300-150	205	0	0	2.9	0.6
CEF	99	V	300-150	30	0	0	3.0	-0.5
CES	99	V	300-150	123	0	0	4.0	0.7
CFC	99	V	300-150	289	0	0	3.8	0.5
CFG	99	V	300-150	3997	0	0	3.6	-0.2
CHG	99	V	300-150	778	0	0	3.8	-0.2
CJT	99	V	300-150	985	0	0	3.9	-0.1
CKS	99	V	300-150	758	0	0	4.0	0.2
CLE	99	V	300-150	154	0	0	5.1	-1.4
CLX	99	V	300-150	5035	0	0	3.6	-0.4
CMA	99	V	300-150	22	0	0	2.8	0.0
CMB	99	V	300-150	2105	0	0	3.5	-0.2
CNK	99	V	300-150	51	0	0	5.3	0.0
CNV	99	V	300-150	192	0	0	3.0	-0.1
CPA	99	V	300-150	577	0	0	3.8	0.5

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
CRL	99	V	300-150	1468	0	0	3.4	-0.1
CRV	99	V	300-150	78	0	0	3.6	0.5
CSC	99	V	300-150	111	0	1	3.2	0.7
CSN	99	V	300-150	343	5	0	6.0	0.4
CTM	99	V	300-150	134	0	0	3.2	0.0
CWG	99	V	300-150	52	0	0	5.8	0.0
CXB	99	V	300-150	28	14	0	11.6	-1.7
DAH	99	V	300-150	735	0	0	3.3	0.2
DAL	99	V	300-150	62108	0	0	3.2	0.1
DCS	99	V	300-150	25	0	0	2.5	0.7
DGX	99	V	300-150	20	0	0	2.5	-0.6
DHK	99	V	300-150	2144	0	0	3.5	0.0
DHX	99	V	300-150	102	0	0	3.4	0.6
DJT	99	V	300-150	1713	0	0	3.2	0.2
DLH	99	V	300-150	26948	0	0	3.2	-0.1
DSO	99	V	300-150	46	0	0	3.6	0.9
DUB	99	V	300-150	30	0	0	4.5	-1.0
EAL	99	V	300-150	57	0	0	3.7	0.4
EAU	99	V	300-150	128	0	0	3.6	0.5
EDC	99	V	300-150	103	0	0	2.8	0.3
EDG	99	V	300-150	185	0	0	3.4	-0.1
EDW	99	V	300-150	1195	0	0	3.6	0.2
EFF	99	V	300-150	25	0	0	3.4	0.8
EIN	99	V	300-150	15407	0	0	3.2	0.1
EJM	99	V	300-150	1213	0	0	3.4	0.2
ELY	99	V	300-150	4094	6	0	6.2	-0.1
ELZ	99	V	300-150	37	0	0	4.0	0.7
ETD	99	V	300-150	9233	1	0	4.4	0.2
ETH	99	V	300-150	5445	1	0	4.6	0.0
EUK	99	V	300-150	1986	0	0	3.2	0.2
EUW	99	V	300-150	74	0	0	3.1	-0.1
EVE	99	V	300-150	90	0	1	4.6	0.1
EXS	99	V	300-150	326	0	0	3.3	-0.1
EXV	99	V	300-150	50	0	0	4.2	0.3
FAF	99	V	300-150	40	0	0	4.2	1.1
FBU	99	V	300-150	2017	0	0	3.5	-0.1
FDX	99	V	300-150	7202	0	0	3.4	0.2
FIN	99	V	300-150	1863	0	0	3.4	0.4
FJI	99	V	300-150	2271	0	0	4.3	0.5
FJO	99	V	300-150	21	0	0	3.1	1.6
FLC	99	V	300-150	69	0	0	3.7	1.2
FPY	99	V	300-150	2026	0	0	3.1	0.1
FWI	99	V	300-150	1062	0	0	3.6	-0.1

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
FWK	99	V	300-150	58	0	0	3.2	0.6
FXT	99	V	300-150	57	0	0	2.8	-0.2
FYG	99	V	300-150	92	0	0	3.0	0.8
GAF	99	V	300-150	161	0	0	3.1	0.4
GEC	99	V	300-150	1434	0	0	3.2	-0.1
GES	99	V	300-150	122	8	0	9.8	0.4
GFA	99	V	300-150	595	0	1	3.5	0.5
GIA	99	V	300-150	849	0	0	3.0	0.3
GJE	99	V	300-150	84	0	0	3.7	1.6
GLJ	99	V	300-150	32	0	0	3.7	0.6
GMA	99	V	300-150	50	0	0	3.7	0.4
GNJ	99	V	300-150	39	0	0	3.0	0.6
GOL	99	V	300-150	112	0	0	3.4	0.7
GRP	99	V	300-150	24	0	0	3.5	0.5
GSM	99	V	300-150	39	0	0	2.9	0.6
GTI	99	V	300-150	1812	0	0	3.8	-0.4
GTR	99	V	300-150	516	0	0	3.2	0.2
HAL	99	V	300-150	774	0	0	4.2	0.7
HFM	99	V	300-150	125	0	0	3.1	0.6
HKC	99	V	300-150	94	0	0	4.6	0.5
HLF	99	V	300-150	22	0	0	2.5	0.6
HRN	99	V	300-150	62	0	0	4.0	0.2
HRS	99	V	300-150	24	0	0	4.1	1.5
HRT	99	V	300-150	109	0	0	3.8	-0.2
HUA	99	V	300-150	126	0	0	3.3	0.4
HYP	99	V	300-150	48	0	0	3.2	0.0
IAM	99	V	300-150	175	0	0	3.4	-0.1
IBE	99	V	300-150	5458	0	0	3.6	0.2
ICE	99	V	300-150	6373	0	0	3.3	0.0
ICL	99	V	300-150	340	0	0	4.0	0.0
ICV	99	V	300-150	389	0	0	3.4	0.1
IFA	99	V	300-150	250	0	0	3.6	-0.2
IJM	99	V	300-150	129	0	0	3.1	0.0
ITY	99	V	300-150	4913	0	0	3.3	0.1
JAF	99	V	300-150	600	4	0	4.5	0.0
JAL	99	V	300-150	46	0	0	7.5	0.0
JAS	99	V	300-150	229	0	0	3.7	0.2
JBU	99	V	300-150	4268	0	0	3.3	0.2
JEF	99	V	300-150	48	0	0	3.4	-0.3
JJA	99	V	300-150	24	4	8	13.2	0.2
JME	99	V	300-150	96	0	0	3.4	0.1
JML	99	V	300-150	44	0	0	3.0	0.2
JPV	99	V	300-150	40	0	0	4.5	0.4

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
JST	99	V	300-150	66	0	0	4.5	0.5
KAC	99	V	300-150	1405	0	0	3.0	0.5
KAF	99	V	300-150	36	0	0	4.7	1.6
KAI	99	V	300-150	78	0	0	5.3	-0.7
KAL	99	V	300-150	194	1	0	4.1	1.0
KAY	99	V	300-150	154	0	0	2.7	-0.1
KFB	99	V	300-150	35	0	0	3.6	0.8
KFE	99	V	300-150	113	0	0	4.0	0.2
KIW	99	V	300-150	121	0	0	3.9	0.2
KLM	99	V	300-150	18015	2	0	4.6	0.0
KOC	99	V	300-150	32	0	0	3.3	-0.4
KQA	99	V	300-150	168	1	0	5.5	0.5
KRF	99	V	300-150	35	0	0	5.7	0.8
LAE	99	V	300-150	551	0	0	3.8	0.1
LAN	99	V	300-150	1119	12	0	6.1	0.2
LCO	99	V	300-150	343	0	0	3.8	-1.0
LDX	99	V	300-150	234	0	0	3.8	0.4
LEA	99	V	300-150	121	0	0	3.7	0.3
LNI	99	V	300-150	2842	0	0	3.0	0.5
LNK	99	V	300-150	136	0	0	3.7	0.5
LOT	99	V	300-150	3974	4	0	5.3	-0.3
LUC	99	V	300-150	60	0	0	3.0	0.6
LXJ	99	V	300-150	555	0	0	3.7	0.1
MAA	99	V	300-150	56	0	0	4.0	0.1
MAS	99	V	300-150	4999	0	0	4.2	0.8
MAU	99	V	300-150	423	0	0	4.5	1.1
MHV	99	V	300-150	34	0	0	2.7	0.2
MLM	99	V	300-150	77	0	0	3.0	0.1
MLT	99	V	300-150	71	0	0	3.3	0.7
MMD	99	V	300-150	368	0	0	3.3	0.3
MMF	99	V	300-150	33	0	0	3.5	1.4
MMZ	99	V	300-150	39	0	0	4.1	1.0
MNB	99	V	300-150	245	0	0	3.7	-0.5
MPH	99	V	300-150	665	0	0	3.9	-0.8
MSR	99	V	300-150	1727	1	0	4.1	0.0
NAG	99	V	300-150	75	0	0	2.7	0.3
NBT	99	V	300-150	3088	4	0	5.3	-0.1
NCR	99	V	300-150	318	0	0	3.4	-0.2
NJE	99	V	300-150	668	0	0	3.8	0.4
NOJ	99	V	300-150	22	0	0	3.1	0.5
NOS	99	V	300-150	812	7	0	5.1	-0.2
NSP	99	V	300-150	114	0	0	9.1	1.5
NUM	99	V	300-150	23	0	0	2.9	1.0

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
OAE	99	V	300-150	516	0	0	4.4	0.3
OBS	99	V	300-150	29	0	0	5.2	1.6
OCN	99	V	300-150	3724	0	0	3.4	0.0
OMA	99	V	300-150	1329	0	0	5.0	0.7
PAC	99	V	300-150	790	0	0	3.4	-0.1
PAL	99	V	300-150	729	1	0	4.6	0.8
PEG	99	V	300-150	36	0	0	3.8	1.0
PIA	99	V	300-150	90	0	0	3.0	0.2
PLF	99	V	300-150	57	0	0	2.5	-0.5
PVA	99	V	300-150	262	0	0	4.2	0.0
QFA	99	V	300-150	6552	1	0	5.4	0.3
QGA	99	V	300-150	28	0	0	3.5	-0.2
QID	99	V	300-150	20	0	0	3.7	-0.1
QQE	99	V	300-150	327	0	0	4.1	0.5
QTR	99	V	300-150	25412	0	0	3.6	0.2
RAM	99	V	300-150	454	1	0	4.2	0.2
RBA	99	V	300-150	162	0	0	5.9	0.3
RCH	99	V	300-150	3146	0	0	4.9	0.3
RDN	99	V	300-150	79	0	0	3.2	-0.3
RHH	99	V	300-150	33	0	0	6.3	2.8
RJA	99	V	300-150	1538	3	0	5.7	-0.2
RKK	99	V	300-150	31	0	0	4.0	-1.1
ROJ	99	V	300-150	24	0	0	4.0	1.0
RRR	99	V	300-150	284	0	0	4.8	0.6
RYR	99	V	300-150	451	0	0	3.8	-0.1
RZO	99	V	300-150	268	0	1	4.0	0.5
SAM	99	V	300-150	268	0	0	3.2	0.2
SAS	99	V	300-150	5301	0	0	3.0	0.1
SAZ	99	V	300-150	70	0	0	3.0	-0.3
SCX	99	V	300-150	69	0	0	4.3	1.3
SEY	99	V	300-150	71	0	0	4.0	0.8
SHE	99	V	300-150	76	0	0	2.6	-0.2
SIA	99	V	300-150	10179	0	0	4.2	0.3
SIO	99	V	300-150	56	0	0	3.2	-0.4
SJE	99	V	300-150	23	0	0	2.4	0.0
SLM	99	V	300-150	99	0	0	4.0	0.0
SON	99	V	300-150	51	0	0	3.0	0.4
SPA	99	V	300-150	174	0	0	3.4	0.1
SUI	99	V	300-150	37	0	0	4.2	0.0
SVA	99	V	300-150	7639	0	0	3.9	0.4
SVW	99	V	300-150	218	0	0	3.5	-0.3
SWA	99	V	300-150	21	0	5	4.0	0.6
SWR	99	V	300-150	8797	0	1	3.4	0.1

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
SYB	99	V	300-150	186	0	0	3.5	0.7
TAM	99	V	300-150	50	0	0	3.2	-0.1
TAP	99	V	300-150	2611	0	1	3.8	0.5
TAR	99	V	300-150	279	0	0	3.2	0.3
TAY	99	V	300-150	394	0	0	3.7	0.0
TEU	99	V	300-150	68	0	0	2.7	0.2
TFF	99	V	300-150	43	0	0	5.7	-0.9
TFL	99	V	300-150	1607	4	0	6.3	-0.1
TGW	99	V	300-150	824	0	0	5.5	0.7
THA	99	V	300-150	588	0	0	5.5	0.5
THT	99	V	300-150	3812	1	0	6.1	0.0
THY	99	V	300-150	13387	1	0	4.1	0.0
TLJ	99	V	300-150	77	0	0	3.5	0.3
TMN	99	V	300-150	302	0	0	4.1	0.3
TOM	99	V	300-150	8181	4	0	5.6	0.0
TOW	99	V	300-150	92	0	0	3.3	0.3
TSC	99	V	300-150	13884	0	0	3.3	0.2
TVS	99	V	300-150	28	0	0	3.8	-0.1
TWY	99	V	300-150	707	0	0	3.4	0.2
UAE	99	V	300-150	25362	0	0	3.3	0.2
UAF	99	V	300-150	61	0	0	3.0	0.5
UAL	99	V	300-150	70395	1	1	4.5	0.0
ULC	99	V	300-150	233	0	0	3.5	0.2
UPS	99	V	300-150	5418	0	0	3.6	-0.2
UZB	99	V	300-150	75	5	0	6.2	-0.8
VAL	99	V	300-150	30	0	0	4.1	1.2
VCG	99	V	300-150	83	0	0	5.2	1.5
VIR	99	V	300-150	19114	2	0	4.3	0.0
VJT	99	V	300-150	2147	0	0	3.4	0.3
VLZ	99	V	300-150	95	0	0	3.2	0.1
VMP	99	V	300-150	89	0	0	5.9	-0.1
VNA	99	V	300-150	27	0	0	3.4	1.2
VTI	99	V	300-150	477	0	0	3.1	0.5
VXS	99	V	300-150	28	0	0	3.2	-0.6
WFL	99	V	300-150	43	0	0	4.5	0.2
WGN	99	V	300-150	42	0	0	3.1	0.5
WJA	99	V	300-150	4048	2	0	5.1	0.0
WWI	99	V	300-150	83	0	0	3.8	0.6
XAX	99	V	300-150	51	0	0	4.6	0.6
XLS	99	V	300-150	47	0	0	3.8	0.0
XRO	99	V	300-150	133	0	0	3.9	0.2
YEL	99	V	300-150	36	0	0	3.3	0.1

4 EUCOS Area Monitoring Statistics

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

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

Tables 21-23 provides quality statistics of pressure and wind for all DRIFTER reports received in the area 10°N - 90°N, 70°W - 40°E. The statistics are in the same form as tables 4-6.

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

RADIOSONDE MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : GEOPOTENTIAL HEIGHT (METRES)
 LEVEL : 50 HPA
 AREA : 0 - 90N, 100W - 40E
 PERIOD : OCT 2022
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	12	Z	50	31	6.5	0.9
01001	00	Z	50	25	31.3	-27.0
01028	00	Z	50	31	6.6	0.4
01028	12	Z	50	31	5.4	-1.0
01400	12	Z	50	12	74.7	74.2
01400	00	Z	50	12	77.4	77.1
01415	00	Z	50	31	11.3	3.8
01415	12	Z	50	31	7.1	-0.2
02365	12	Z	50	21	7.1	-2.1
02365	00	Z	50	19	9.3	5.3
02836	12	Z	50	33	7.1	-1.8
02836	00	Z	50	30	5.6	0.3
02963	12	Z	50	31	6.9	0.2
02963	00	Z	50	31	7.7	4.3
03005	12	Z	50	27	9.1	-5.1
03005	00	Z	50	26	6.7	-1.7
03238	00	Z	50	28	30.7	5.2
03808	12	Z	50	30	7.3	-2.6
03808	00	Z	50	30	8.9	1.1
03918	12	Z	50	5	9.8	4.1
03918	00	Z	50	31	9.6	5.9
03953	12	Z	50	31	12.1	-9.0
03953	00	Z	50	30	13.1	-9.1
04018	00	Z	50	28	8.5	0.2
04018	12	Z	50	28	6.9	-2.8
04220	12	Z	50	20	17.8	-8.9
04220	00	Z	50	19	12.9	-6.8
04270	12	Z	50	19	22.1	-18.8
04270	00	Z	50	19	15.6	-12.4
04320	00	Z	50	18	12.2	6.1
04320	12	Z	50	22	13.6	0.3
043203	00	Z	50	0	0.0	0.0
04339	00	Z	50	18	10.5	6.7
04339	12	Z	50	18	12.4	0.9
04360	00	Z	50	14	16.9	-8.9
04360	12	Z	50	14	16.9	-11.8
06011	00	Z	50	6	7.4	-0.5
06011	12	Z	50	7	8.9	5.3
06260	00	Z	50	31	8.1	-0.4

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06260	12	Z	50	6	13.3	1.6
06610	12	Z	50	31	5.5	-1.0
06610	00	Z	50	31	9.5	-0.7
07110	12	Z	50	28	13.5	-8.6
07110	00	Z	50	29	12.7	-7.9
07510	00	Z	50	31	11.2	-3.0
07510	12	Z	50	29	15.4	-9.5
07645	00	Z	50	28	28.3	26.4
07645	12	Z	50	27	22.3	19.6
07761	00	Z	50	29	29.3	-20.5
07761	12	Z	50	29	33.2	-25.2
08001	12	Z	50	31	10.1	2.0
08001	00	Z	50	30	8.9	7.3
08221	00	Z	50	30	11.6	5.9
08221	12	Z	50	31	8.8	2.7
08302	12	Z	50	31	11.4	-9.0
08302	00	Z	50	31	8.1	-3.7
08508	12	Z	50	31	13.0	-0.5
08522	12	Z	50	29	7.4	-1.7
10035	00	Z	50	31	13.4	11.6
10035	12	Z	50	31	9.4	7.1
10393	00	Z	50	31	5.8	2.1
10393	12	Z	50	31	8.3	-4.0
10410	12	Z	50	31	8.9	-5.5
10410	00	Z	50	31	7.2	0.6
10739	00	Z	50	30	7.9	4.5
10739	12	Z	50	31	6.1	-0.1
11035	12	Z	50	31	17.3	2.6
11035	00	Z	50	31	6.0	2.7
12982	12	Z	50	31	6.4	2.1
12982	00	Z	50	31	6.0	3.7
16245	12	Z	50	31	4.3	-1.9
16245	00	Z	50	31	7.3	3.4
16429	12	Z	50	31	6.4	2.4
16429	00	Z	50	30	9.4	7.9
16622	00	Z	50	21	14.7	12.9
16754	00	Z	50	23	14.5	11.1
17607	12	Z	50	20	6.1	1.9
26435	12	Z	50	15	6.4	-0.1
60018	00	Z	50	27	11.1	9.9
60018	12	Z	50	29	6.7	2.6
7JUNA4	12	Z	50	7	89.6	38.9
7JUNA4	00	Z	50	3	6.3	-0.1

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
9ZT9MR	00	Z	50	1	1.6	-1.6
9ZT9MR	12	Z	50	3	29.6	-28.4
ASDE09	12	Z	50	1	11.7	11.7
ATGU3F	12	Z	50	1	37.1	-37.1
ATGU3F	00	Z	50	1	37.2	-37.2
FPUW5G	12	Z	50	2	2.1	1.3
GQBZLZ	12	Z	50	0	0.0	0.0
JNKN7J	12	Z	50	15	46.2	31.0
JNKN7J	00	Z	50	15	26.9	24.1
KMPLHP	12	Z	50	13	119.2	102.6
KMPLHP	00	Z	50	10	36.1	33.0
LRYQE3	12	Z	50	6	30.4	6.9
LRYQE3	00	Z	50	7	62.3	16.5
UXK5JT	12	Z	50	12	17.8	-11.1
UXK5JT	00	Z	50	12	15.1	-10.7
WDK38H	12	Z	50	22	21.0	-5.4
XKQLWQ	12	Z	50	21	38.8	36.9
XQFJRG	12	Z	50	5	3.1	-0.4
XQFJRG	00	Z	50	5	14.4	-7.1
YLV96W	00	Z	50	1	13.7	13.7
YLV96W	12	Z	50	6	28.5	1.6

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 : OCT 2022
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	12	V	50	31	3.4	0.4	-0.3
01001	00	V	50	20	3.3	-0.2	-0.7
01028	00	V	50	25	3.0	-0.4	-0.5
01028	12	V	50	31	2.5	-0.4	-0.5
01400	12	V	50	11	3.4	0.3	-0.7
01400	00	V	50	8	3.0	0.3	0.5
01415	00	V	50	24	4.0	0.0	0.1
01415	12	V	50	31	4.0	-0.1	0.5
02365	12	V	50	20	3.5	0.0	0.2
02365	00	V	50	17	3.8	-1.0	0.7
02836	12	V	50	31	4.0	0.1	0.3
02836	00	V	50	25	3.7	-0.1	-0.1
02963	12	V	50	31	3.3	-0.4	0.5
02963	00	V	50	25	3.5	-0.5	0.5
03005	12	V	50	27	3.0	-0.2	0.5
03005	00	V	50	24	3.4	0.2	0.9
03238	00	V	50	24	3.4	-0.1	0.0
03808	12	V	50	30	4.0	-0.2	-0.1
03808	00	V	50	23	4.0	-0.9	-0.3
03918	12	V	50	5	3.0	1.0	-0.2
03918	00	V	50	24	4.0	0.2	0.2
03953	12	V	50	31	4.0	0.4	-0.4
03953	00	V	50	24	4.2	0.2	-0.7
04018	00	V	50	23	2.5	-0.5	-0.1
04018	12	V	50	28	3.3	-0.2	0.0
04220	12	V	50	20	2.7	-0.3	-0.4
04220	00	V	50	16	3.4	-0.4	-0.8
04270	12	V	50	19	3.9	0.5	0.5
04270	00	V	50	17	3.3	-0.1	0.6
04320	00	V	50	16	3.0	-0.5	-1.5
04320	12	V	50	22	3.0	0.1	0.2
043203	00	V	50	0	0.0	0.0	0.0
04339	00	V	50	16	3.2	0.3	1.2
04339	12	V	50	18	3.8	0.9	-1.1
04360	00	V	50	12	4.4	-0.2	-0.2
04360	12	V	50	14	2.8	-1.0	-0.5
06011	00	V	50	5	6.1	-1.7	2.2
06011	12	V	50	7	3.4	1.3	-1.7
06260	00	V	50	25	3.5	-0.6	-0.1

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06260	12	V	50	5	4.6	1.6	0.2
06610	12	V	50	30	3.5	0.1	-0.4
06610	00	V	50	27	3.9	0.0	0.0
07110	12	V	50	28	2.9	-0.2	-0.3
07110	00	V	50	25	4.2	-0.4	-0.9
07510	00	V	50	27	3.4	0.0	-0.3
07510	12	V	50	29	3.5	0.1	-0.2
07645	00	V	50	23	4.3	1.1	-0.6
07645	12	V	50	27	4.0	0.7	-0.2
07761	00	V	50	24	3.9	1.2	-0.3
07761	12	V	50	29	3.3	-0.6	0.0
08001	12	V	50	30	4.1	0.4	-0.6
08001	00	V	50	26	3.8	0.0	-0.1
08221	00	V	50	25	4.7	0.9	-0.7
08221	12	V	50	31	4.5	-0.4	0.7
08302	12	V	50	30	4.0	-0.2	0.5
08302	00	V	50	24	4.0	0.1	0.6
08508	12	V	50	31	2.8	0.7	-0.1
08522	12	V	50	29	4.2	-1.5	-0.5
10035	00	V	50	28	3.1	0.2	0.1
10035	12	V	50	31	4.5	0.7	-0.3
10393	00	V	50	26	2.8	0.1	0.1
10393	12	V	50	31	3.8	0.5	-0.8
10410	12	V	50	31	3.5	-0.1	-0.7
10410	00	V	50	26	4.0	-0.2	-0.5
10739	00	V	50	27	4.7	-0.7	-0.4
10739	12	V	50	31	3.6	0.5	-0.1
11035	12	V	50	31	3.6	0.8	-1.2
11035	00	V	50	24	3.9	-0.7	0.1
12982	12	V	50	31	3.5	-0.5	-1.3
12982	00	V	50	27	3.5	0.2	0.5
16245	12	V	50	31	4.0	0.4	0.4
16245	00	V	50	27	4.4	1.0	-0.4
16429	12	V	50	31	3.7	0.8	-0.5
16429	00	V	50	25	4.2	-0.4	0.0
16622	00	V	50	18	4.1	0.7	0.0
16754	00	V	50	17	4.1	1.5	-1.1
17607	12	V	50	9	3.6	1.5	0.5
26435	12	V	50	15	3.9	-0.6	-0.5
60018	00	V	50	24	3.6	-0.1	0.9
60018	12	V	50	26	3.5	-0.9	-0.8
7JUNA4	12	V	50	7	3.4	0.7	0.7
7JUNA4	00	V	50	3	2.2	0.4	-0.2

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
9ZT9MR	00	V	50	1	2.9	2.4	-1.6
9ZT9MR	12	V	50	3	2.4	0.9	0.1
ASDE09	12	V	50	1	5.6	5.1	2.3
ATGU3F	12	V	50	1	5.9	4.3	4.0
ATGU3F	00	V	50	1	2.2	-1.6	1.5
FPUW5G	12	V	50	2	5.5	0.7	1.9
GQBZLZ	12	V	50	0	0.0	0.0	0.0
JNKN7J	12	V	50	15	4.2	-0.1	0.0
JNKN7J	00	V	50	15	4.2	-0.4	0.0
KMPLHP	12	V	50	13	3.3	1.0	-0.1
KMPLHP	00	V	50	10	3.2	-1.1	-0.5
LRYQE3	12	V	50	6	3.2	-0.9	1.3
LRYQE3	00	V	50	7	2.5	-1.6	0.2
UXK5JT	12	V	50	12	2.8	0.3	0.7
UXK5JT	00	V	50	12	3.1	0.6	-0.5
WDK38H	12	V	50	22	3.0	0.3	0.6
XKQLWQ	12	V	50	19	3.1	-0.4	-0.1
XQFJRG	12	V	50	5	3.7	1.8	-1.9
XQFJRG	00	V	50	5	4.7	-0.8	-0.3
YLV96W	00	V	50	1	7.4	-6.8	2.8
YLV96W	12	V	50	6	3.1	-0.4	-0.1

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

RADIOSONDE MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : GEOPOTENTIAL HEIGHT (METRES)
 LEVEL : 100 HPA
 AREA : 0 - 90N, 100W - 40E
 PERIOD : OCT 2022
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	12	Z	100	31	6.2	-2.3
01001	00	Z	100	26	29.6	-25.9
01028	00	Z	100	31	7.7	-2.8
01028	12	Z	100	31	6.0	-4.4
01400	12	Z	100	16	73.5	73.0
01400	00	Z	100	14	74.6	74.4
01415	00	Z	100	31	8.6	0.6
01415	12	Z	100	31	5.1	-1.9
02365	12	Z	100	24	6.9	-4.4
02365	00	Z	100	24	4.7	0.4
02836	12	Z	100	33	7.2	-4.2
02836	00	Z	100	31	7.0	-4.5
02963	12	Z	100	31	5.6	-1.5
02963	00	Z	100	31	4.3	-0.3
03005	12	Z	100	31	8.3	-5.8
03005	00	Z	100	29	7.9	-5.4
03238	00	Z	100	28	23.6	2.6
03808	12	Z	100	30	6.8	-4.6
03808	00	Z	100	30	6.4	-2.2
03918	12	Z	100	5	4.5	0.2
03918	00	Z	100	31	7.3	2.8
03953	12	Z	100	31	11.6	-9.7
03953	00	Z	100	30	12.3	-9.4
04018	00	Z	100	29	6.9	-1.6
04018	12	Z	100	29	5.5	-4.2
04220	12	Z	100	21	16.9	-12.0
04220	00	Z	100	21	13.6	-11.3
04270	12	Z	100	21	21.5	-17.9
04270	00	Z	100	20	16.7	-15.0
04320	00	Z	100	19	8.2	1.7
04320	12	Z	100	22	14.3	-3.0
043203	00	Z	100	0	0.0	0.0
04339	00	Z	100	19	6.4	-2.4
04339	12	Z	100	18	9.9	-3.3
04360	00	Z	100	14	15.5	-11.9
04360	12	Z	100	14	16.4	-14.4
06011	00	Z	100	10	7.1	-4.8
06011	12	Z	100	8	5.7	-1.6
06260	00	Z	100	31	8.9	-3.2

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06260	12	Z	100	6	13.5	-3.5
06610	12	Z	100	31	4.2	-1.1
06610	00	Z	100	31	7.3	-2.7
07110	12	Z	100	30	14.7	-12.1
07110	00	Z	100	30	12.5	-10.6
07510	00	Z	100	31	8.9	-3.2
07510	12	Z	100	31	13.3	-9.3
07645	00	Z	100	31	16.6	14.4
07645	12	Z	100	30	13.6	11.0
07761	00	Z	100	29	27.0	-22.6
07761	12	Z	100	29	27.7	-23.1
08001	12	Z	100	31	7.8	-1.0
08001	00	Z	100	31	6.4	3.9
08221	00	Z	100	30	8.8	5.0
08221	12	Z	100	31	8.0	1.7
08302	12	Z	100	31	11.4	-9.5
08302	00	Z	100	31	7.2	-5.3
08508	12	Z	100	31	12.6	1.5
08522	12	Z	100	31	6.4	-0.3
10035	00	Z	100	31	10.9	9.0
10035	12	Z	100	31	8.5	7.5
10393	00	Z	100	32	5.1	-0.9
10393	12	Z	100	31	6.8	-4.3
10410	12	Z	100	31	8.7	-6.6
10410	00	Z	100	31	8.1	-4.2
10739	00	Z	100	31	5.7	2.2
10739	12	Z	100	31	5.1	-0.2
11035	12	Z	100	33	16.6	-2.3
11035	00	Z	100	31	5.2	-0.9
12982	12	Z	100	31	3.9	1.9
12982	00	Z	100	31	4.1	1.2
16245	12	Z	100	31	5.0	-2.9
16245	00	Z	100	31	4.6	2.0
16429	12	Z	100	32	5.4	0.7
16429	00	Z	100	31	4.7	3.6
16622	00	Z	100	31	11.6	9.0
16754	00	Z	100	27	10.7	7.0
17607	12	Z	100	29	5.5	2.7
26435	12	Z	100	15	5.2	-1.8
60018	00	Z	100	30	8.1	6.7
60018	12	Z	100	31	5.3	1.6
7JUNA4	12	Z	100	7	21.2	6.7
7JUNA4	00	Z	100	3	7.0	-5.6

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
9ZT9MR	00	Z	100	1	4.8	-4.8
9ZT9MR	12	Z	100	3	27.6	-26.4
ASDE09	12	Z	100	1	12.2	12.2
ATGU3F	12	Z	100	1	33.0	-33.0
ATGU3F	00	Z	100	1	44.3	-44.3
FPUW5G	12	Z	100	2	4.0	-3.9
GQBZLZ	12	Z	100	0	0.0	0.0
JNKN7J	12	Z	100	15	32.7	28.3
JNKN7J	00	Z	100	15	27.3	25.7
KMPLHP	12	Z	100	14	71.1	64.5
KMPLHP	00	Z	100	12	31.6	29.8
LRYQE3	12	Z	100	6	9.5	-6.0
LRYQE3	00	Z	100	8	58.2	15.2
UXK5JT	12	Z	100	12	16.1	-10.0
UXK5JT	00	Z	100	12	12.1	-9.1
WDK38H	12	Z	100	22	20.7	-7.6
XKQLWQ	12	Z	100	24	27.0	25.3
XQFJRG	12	Z	100	5	7.9	-5.5
XQFJRG	00	Z	100	5	11.9	-8.5
YLV96W	00	Z	100	2	4.8	2.1
YLV96W	12	Z	100	7	23.8	1.0

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 : OCT 2022
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	12	V	100	31	2.4	-0.2	-0.1
01001	00	V	100	21	3.0	-0.2	-0.4
01028	00	V	100	25	2.5	-0.7	0.3
01028	12	V	100	31	3.0	-0.5	-0.3
01400	12	V	100	14	3.3	-0.3	0.4
01400	00	V	100	12	3.1	-0.2	-1.5
01415	00	V	100	25	3.6	0.0	-1.2
01415	12	V	100	31	3.1	-0.3	-1.3
02365	12	V	100	24	4.2	0.0	-0.2
02365	00	V	100	21	3.9	-0.3	-0.6
02836	12	V	100	31	4.1	-0.3	0.2
02836	00	V	100	26	2.8	0.2	-0.3
02963	12	V	100	31	3.2	-0.2	-0.5
02963	00	V	100	25	2.7	0.4	-0.2
03005	12	V	100	30	3.3	-0.5	0.0
03005	00	V	100	25	3.6	0.9	-0.2
03238	00	V	100	24	3.9	-0.5	-0.6
03808	12	V	100	30	3.7	0.0	0.1
03808	00	V	100	23	3.4	0.4	0.1
03918	12	V	100	5	2.3	-0.2	-0.9
03918	00	V	100	25	3.6	0.1	0.1
03953	12	V	100	31	3.4	-0.7	0.5
03953	00	V	100	24	3.3	0.5	0.6
04018	00	V	100	27	2.6	0.0	0.5
04018	12	V	100	29	3.1	-0.3	-0.6
04220	12	V	100	21	2.8	0.1	-0.5
04220	00	V	100	21	2.5	-0.3	0.2
04270	12	V	100	21	3.3	-0.6	0.3
04270	00	V	100	18	3.5	0.1	-0.7
04320	00	V	100	19	3.2	0.2	-1.1
04320	12	V	100	22	3.3	0.4	-1.0
043203	00	V	100	0	0.0	0.0	0.0
04339	00	V	100	19	3.0	0.2	0.3
04339	12	V	100	18	3.4	0.4	-0.1
04360	00	V	100	11	2.4	-0.4	-0.1
04360	12	V	100	14	3.3	0.1	0.9
06011	00	V	100	10	3.3	0.1	-0.2
06011	12	V	100	8	2.6	-0.4	-0.5
06260	00	V	100	25	3.9	0.1	-0.8

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06260	12	V	100	5	3.8	0.1	0.8
06610	12	V	100	31	3.7	-0.3	0.2
06610	00	V	100	27	4.2	-0.5	-1.5
07110	12	V	100	30	3.0	0.2	0.2
07110	00	V	100	25	3.3	-0.2	0.2
07510	00	V	100	27	3.3	0.2	-0.8
07510	12	V	100	31	3.7	0.2	0.0
07645	00	V	100	26	3.2	0.1	-0.1
07645	12	V	100	30	4.1	0.8	0.6
07761	00	V	100	24	3.6	0.9	0.1
07761	12	V	100	29	4.0	1.6	-0.3
08001	12	V	100	31	3.5	0.5	0.0
08001	00	V	100	28	3.3	0.0	-0.3
08221	00	V	100	25	4.0	0.4	-0.4
08221	12	V	100	31	4.0	1.3	0.0
08302	12	V	100	31	3.0	-0.3	0.4
08302	00	V	100	25	3.4	-0.2	0.6
08508	12	V	100	31	3.5	-0.2	0.2
08522	12	V	100	31	2.9	-0.1	-0.6
10035	00	V	100	29	3.1	0.8	0.0
10035	12	V	100	31	3.1	0.4	0.0
10393	00	V	100	30	3.3	0.2	0.5
10393	12	V	100	31	3.7	-0.7	-0.5
10410	12	V	100	31	3.3	0.5	0.3
10410	00	V	100	30	3.9	0.4	-0.1
10739	00	V	100	30	3.6	-0.2	-0.2
10739	12	V	100	31	3.3	0.1	0.0
11035	12	V	100	31	3.2	0.3	-0.8
11035	00	V	100	24	3.2	-0.2	0.4
12982	12	V	100	31	3.2	-0.1	-0.1
12982	00	V	100	25	3.5	-0.6	0.0
16245	12	V	100	31	3.3	0.0	-0.2
16245	00	V	100	28	3.5	0.2	0.1
16429	12	V	100	31	4.2	0.1	0.3
16429	00	V	100	30	3.2	0.2	0.4
16622	00	V	100	23	4.0	-0.3	0.2
16754	00	V	100	23	3.8	1.2	0.7
17607	12	V	100	18	3.5	1.2	0.1
26435	12	V	100	15	3.5	0.7	-0.3
60018	00	V	100	25	3.2	-0.1	-0.4
60018	12	V	100	31	3.5	0.5	0.8
7JUNA4	12	V	100	7	3.3	-0.6	-0.1
7JUNA4	00	V	100	3	5.7	2.3	-1.3

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
9ZT9MR	00	V	100	1	2.7	2.5	-1.1
9ZT9MR	12	V	100	3	2.6	0.5	1.6
ASDE09	12	V	100	1	1.3	-1.3	0.1
ATGU3F	12	V	100	1	2.2	0.8	2.0
ATGU3F	00	V	100	1	1.7	-1.2	1.2
FPUW5G	12	V	100	2	4.0	2.3	-2.8
GQBZLZ	12	V	100	0	0.0	0.0	0.0
JNKN7J	12	V	100	15	4.1	0.5	0.7
JNKN7J	00	V	100	15	4.3	-1.0	0.1
KMPLHP	12	V	100	14	3.8	1.6	-0.6
KMPLHP	00	V	100	12	2.5	1.2	0.4
LRVQE3	12	V	100	6	3.9	-1.1	1.2
LRVQE3	00	V	100	8	3.8	-0.7	0.8
UXK5JT	12	V	100	12	3.3	-0.4	0.5
UXK5JT	00	V	100	12	2.1	0.8	-0.1
WDK38H	12	V	100	22	2.6	0.3	-0.2
XKQLWQ	12	V	100	23	3.1	0.0	-0.1
XQFJRG	12	V	100	5	3.3	-2.2	0.9
XQFJRG	00	V	100	5	2.5	0.9	-0.1
YLV96W	00	V	100	2	3.6	-0.6	1.2
YLV96W	12	V	100	7	4.0	-0.6	0.4

4.5 Table 17 - Radiosonde Monitoring Statistics (EUCOS): 500 hPa Geopotential height (metres)

RADIOSONDE MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : GEOPOTENTIAL HEIGHT (METRES)
 LEVEL : 500 HPA
 AREA : 0 - 90N, 100W - 40E
 PERIOD : OCT 2022
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	12	Z	500	32	6.8	0.1
01001	00	Z	500	29	14.3	-13.1
01028	00	Z	500	31	3.0	-1.3
01028	12	Z	500	31	4.3	-1.8
01400	12	Z	500	19	77.5	77.3
01400	00	Z	500	24	77.5	77.4
01415	00	Z	500	31	5.6	3.9
01415	12	Z	500	31	3.6	2.5
02365	12	Z	500	25	3.4	1.7
02365	00	Z	500	24	5.8	4.0
02836	12	Z	500	33	4.5	-1.2
02836	00	Z	500	31	2.7	0.4
02963	12	Z	500	31	3.6	2.4
02963	00	Z	500	31	3.7	2.1
03005	12	Z	500	32	5.1	-2.9
03005	00	Z	500	30	4.3	-2.9
03238	00	Z	500	28	7.2	2.8
03808	12	Z	500	30	3.0	1.6
03808	00	Z	500	30	3.5	1.2
03918	12	Z	500	5	3.6	3.4
03918	00	Z	500	31	7.3	6.5
03953	12	Z	500	31	6.3	-4.3
03953	00	Z	500	31	5.6	-3.4
04018	00	Z	500	29	3.6	2.0
04018	12	Z	500	29	3.5	0.5
04220	12	Z	500	21	13.2	-9.2
04220	00	Z	500	21	7.9	-7.2
04270	12	Z	500	22	9.3	-7.9
04270	00	Z	500	21	9.6	-8.7
04320	00	Z	500	20	6.6	-1.1
04320	12	Z	500	22	17.7	-2.6
043203	00	Z	500	0	0.0	0.0
04339	00	Z	500	21	7.9	-7.1
04339	12	Z	500	18	8.0	-5.4
04360	00	Z	500	16	10.9	-9.1
04360	12	Z	500	15	12.0	-11.0
06011	00	Z	500	10	6.9	-2.2
06011	12	Z	500	8	3.8	1.5
06260	00	Z	500	31	6.3	-1.5

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06260	12	Z	500	6	9.9	0.2
06610	12	Z	500	31	2.6	2.0
06610	00	Z	500	31	2.6	1.8
07110	12	Z	500	30	7.9	-6.4
07110	00	Z	500	30	9.8	-8.0
07510	00	Z	500	31	4.3	2.1
07510	12	Z	500	31	4.3	1.3
07645	00	Z	500	31	4.8	3.3
07645	12	Z	500	31	5.2	3.4
07761	00	Z	500	29	14.4	-12.8
07761	12	Z	500	29	13.8	-11.9
08001	12	Z	500	31	4.0	2.2
08001	00	Z	500	31	4.0	3.3
08221	00	Z	500	30	4.8	4.3
08221	12	Z	500	31	4.9	3.9
08302	12	Z	500	31	6.6	-6.3
08302	00	Z	500	31	5.2	-5.0
08508	12	Z	500	31	14.8	6.7
08522	12	Z	500	31	6.5	5.6
10035	00	Z	500	31	13.5	13.3
10035	12	Z	500	31	12.8	12.6
10393	00	Z	500	32	3.0	1.9
10393	12	Z	500	31	2.5	1.4
10410	12	Z	500	31	2.8	-0.4
10410	00	Z	500	31	2.1	0.1
10739	00	Z	500	31	5.7	5.1
10739	12	Z	500	31	4.6	4.0
11035	12	Z	500	33	15.8	-3.3
11035	00	Z	500	31	3.6	3.0
12982	12	Z	500	31	4.5	4.1
12982	00	Z	500	31	5.0	4.5
16245	12	Z	500	31	2.4	1.4
16245	00	Z	500	31	3.2	2.9
16429	12	Z	500	32	3.2	2.7
16429	00	Z	500	31	3.9	3.1
16622	00	Z	500	31	10.1	9.7
16754	00	Z	500	28	4.2	2.9
17607	12	Z	500	29	4.0	3.3
26435	12	Z	500	15	1.7	0.5
60018	00	Z	500	30	4.1	2.9
60018	12	Z	500	32	4.6	3.7
7JUNA4	12	Z	500	9	7.3	-0.2
7JUNA4	00	Z	500	6	8.7	-6.7

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
9ZT9MR	00	Z	500	1	8.4	-8.4
9ZT9MR	12	Z	500	4	13.7	-13.5
ASDE09	12	Z	500	2	28.1	28.1
ATGU3F	12	Z	500	1	22.7	-22.7
ATGU3F	00	Z	500	1	30.1	-30.1
FPUW5G	12	Z	500	2	9.3	-8.7
GQBZLZ	12	Z	500	1	23.0	-23.0
JNKN7J	12	Z	500	15	34.0	33.7
JNKN7J	00	Z	500	17	36.2	35.7
KMPLHP	12	Z	500	14	43.9	43.2
KMPLHP	00	Z	500	12	39.6	37.4
LRQE3	12	Z	500	7	4.8	-2.2
LRQE3	00	Z	500	8	8.2	-3.6
UXK5JT	12	Z	500	12	7.4	-3.8
UXK5JT	00	Z	500	13	6.4	-4.6
WDK38H	12	Z	500	22	17.4	-4.2
XKQLWQ	12	Z	500	24	14.4	11.2
XQFJRG	12	Z	500	5	9.4	-8.4
XQFJRG	00	Z	500	5	11.1	-9.2
YLV96W	00	Z	500	3	7.4	3.5
YLV96W	12	Z	500	8	37.7	19.4

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

RADIOSONDE MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND (M/S)
 LEVEL : 500 HPA
 AREA : 0 - 90N, 100W - 40E
 PERIOD : OCT 2022
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	12	V	500	31	2.2	-0.1	0.5
01001	00	V	500	26	2.8	0.0	0.4
01028	00	V	500	30	2.1	-0.2	-0.1
01028	12	V	500	31	3.0	0.4	-0.9
01400	12	V	500	18	2.5	0.8	0.6
01400	00	V	500	24	3.2	0.0	-0.3
01415	00	V	500	28	2.4	0.2	0.8
01415	12	V	500	31	3.5	-0.5	0.0
02365	12	V	500	25	2.4	0.5	0.2
02365	00	V	500	24	3.2	0.2	0.7
02836	12	V	500	31	2.8	0.4	-0.6
02836	00	V	500	30	3.0	0.8	-0.2
02963	12	V	500	31	2.6	0.1	-0.3
02963	00	V	500	30	2.3	0.7	-0.4
03005	12	V	500	30	3.6	0.1	0.3
03005	00	V	500	28	3.3	0.2	0.4
03238	00	V	500	27	2.5	0.2	0.6
03808	12	V	500	30	3.5	0.2	0.5
03808	00	V	500	29	3.3	0.2	0.6
03918	12	V	500	5	3.6	1.2	-1.1
03918	00	V	500	30	3.0	0.2	0.4
03953	12	V	500	31	3.7	0.3	0.6
03953	00	V	500	30	3.7	0.4	0.3
04018	00	V	500	28	3.0	-0.5	1.0
04018	12	V	500	29	2.3	-0.3	-0.1
04220	12	V	500	20	2.8	0.0	-0.7
04220	00	V	500	21	12.1	-2.8	1.7
04270	12	V	500	22	2.8	-0.1	0.0
04270	00	V	500	19	3.4	0.2	1.0
04320	00	V	500	20	5.3	-1.2	-0.3
04320	12	V	500	22	9.8	-2.7	-0.2
043203	00	V	500	0	0.0	0.0	0.0
04339	00	V	500	21	2.8	-0.1	0.1
04339	12	V	500	18	3.3	-0.3	0.3
04360	00	V	500	15	2.8	0.4	0.6
04360	12	V	500	15	3.0	0.5	0.4
06011	00	V	500	10	2.9	-1.0	-1.6
06011	12	V	500	8	2.9	0.6	-0.1
06260	00	V	500	29	2.4	0.3	0.0

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06260	12	V	500	5	3.6	-1.8	1.1
06610	12	V	500	31	2.2	0.2	0.1
06610	00	V	500	30	3.1	0.7	0.4
07110	12	V	500	30	3.4	0.7	0.1
07110	00	V	500	29	3.2	-0.9	-0.3
07510	00	V	500	30	3.1	-0.1	0.4
07510	12	V	500	31	2.2	0.1	-0.5
07645	00	V	500	30	2.4	0.1	0.0
07645	12	V	500	30	2.6	0.9	-0.3
07761	00	V	500	28	2.1	0.9	0.0
07761	12	V	500	29	2.1	0.1	0.4
08001	12	V	500	31	2.2	-0.2	-0.4
08001	00	V	500	30	2.5	0.2	-0.4
08221	00	V	500	29	3.0	0.6	0.2
08221	12	V	500	31	2.7	-0.1	-0.5
08302	12	V	500	31	2.1	0.0	-0.2
08302	00	V	500	30	2.4	-0.5	0.2
08508	12	V	500	31	3.0	0.6	-0.3
08522	12	V	500	31	2.7	-0.2	-0.2
10035	00	V	500	30	2.5	0.4	0.0
10035	12	V	500	31	2.1	0.3	0.5
10393	00	V	500	30	2.6	-0.7	0.4
10393	12	V	500	31	2.8	-0.2	0.8
10410	12	V	500	31	2.0	0.3	0.1
10410	00	V	500	30	2.9	-0.2	-0.1
10739	00	V	500	30	3.0	0.3	-0.1
10739	12	V	500	31	2.5	0.2	0.0
11035	12	V	500	31	2.3	0.6	0.2
11035	00	V	500	30	2.3	0.6	0.2
12982	12	V	500	31	1.8	0.2	-0.3
12982	00	V	500	30	2.0	0.2	-0.3
16245	12	V	500	31	2.5	0.0	-0.3
16245	00	V	500	30	2.0	0.4	-0.3
16429	12	V	500	31	2.3	0.5	-0.1
16429	00	V	500	30	1.8	0.1	0.0
16622	00	V	500	30	2.8	0.2	-1.0
16754	00	V	500	26	2.8	0.2	0.4
17607	12	V	500	23	2.0	0.2	0.3
26435	12	V	500	15	2.1	0.1	0.2
60018	00	V	500	29	2.0	0.5	0.6
60018	12	V	500	31	2.3	0.6	0.1
7JUNA4	12	V	500	9	2.9	0.8	0.0
7JUNA4	00	V	500	6	3.3	0.4	0.8

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
9ZT9MR	00	V	500	1	2.3	1.8	-1.4
9ZT9MR	12	V	500	4	2.1	0.7	-1.2
ASDE09	12	V	500	2	1.7	0.7	0.7
ATGU3F	12	V	500	1	0.4	-0.4	0.0
ATGU3F	00	V	500	1	0.8	0.7	0.3
FPUW5G	12	V	500	2	1.6	0.9	0.9
GQBZLZ	12	V	500	1	2.5	-2.4	-0.8
JNKN7J	12	V	500	15	3.1	-0.1	0.3
JNKN7J	00	V	500	17	2.4	1.3	0.1
KMPLHP	12	V	500	14	3.4	0.1	-0.7
KMPLHP	00	V	500	12	2.8	0.3	0.7
LRYQE3	12	V	500	7	2.3	0.8	0.6
LRYQE3	00	V	500	8	3.3	-0.5	0.7
UXK5JT	12	V	500	12	3.5	-0.9	0.1
UXK5JT	00	V	500	13	2.1	0.4	-0.2
WDK38H	12	V	500	22	2.4	0.4	0.8
XKQLWQ	12	V	500	24	3.8	0.4	-0.5
XQFJRG	12	V	500	5	3.4	-0.1	1.3
XQFJRG	00	V	500	5	1.6	0.0	0.5
YLV96W	00	V	500	3	3.5	-1.5	-0.4
YLV96W	12	V	500	8	2.6	0.2	-0.4

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 : OCT 2022
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	12	Z	850	32	4.7	-2.8
01001	00	Z	850	30	11.6	-10.7
01028	00	Z	850	31	2.6	-1.0
01028	12	Z	850	31	3.6	-2.1
01400	12	Z	850	19	77.3	77.2
01400	00	Z	850	24	78.3	78.1
01415	00	Z	850	32	4.1	3.4
01415	12	Z	850	31	4.3	3.6
02365	12	Z	850	25	3.8	2.7
02365	00	Z	850	24	4.2	3.6
02836	12	Z	850	32	2.4	1.1
02836	00	Z	850	31	1.8	0.8
02963	12	Z	850	31	3.6	2.9
02963	00	Z	850	31	3.5	3.2
03005	12	Z	850	32	4.8	-3.4
03005	00	Z	850	30	4.0	-2.1
03238	00	Z	850	28	3.5	1.9
03808	12	Z	850	30	2.6	0.7
03808	00	Z	850	30	2.8	1.7
03918	12	Z	850	5	5.8	5.6
03918	00	Z	850	31	6.5	6.3
03953	12	Z	850	31	3.6	-1.1
03953	00	Z	850	31	3.6	-1.8
04018	00	Z	850	29	2.8	0.7
04018	12	Z	850	29	1.9	-0.1
04220	12	Z	850	21	7.0	-5.5
04220	00	Z	850	21	7.2	-6.2
04270	12	Z	850	22	7.8	-7.1
04270	00	Z	850	21	8.1	-7.2
04320	00	Z	850	20	3.6	-0.8
04320	12	Z	850	22	19.1	-3.3
043203	00	Z	850	1	17.3	-17.3
04339	00	Z	850	21	8.4	-7.5
04339	12	Z	850	18	8.4	-6.3
04360	00	Z	850	16	10.4	-9.6
04360	12	Z	850	16	9.8	-9.3
06011	00	Z	850	10	2.9	-1.0
06011	12	Z	850	8	4.0	-0.6
06260	00	Z	850	31	5.8	-1.6

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06260	12	Z	850	6	10.0	-0.9
06610	12	Z	850	31	2.4	1.7
06610	00	Z	850	31	2.4	1.6
07110	12	Z	850	30	3.6	-2.4
07110	00	Z	850	31	4.4	-3.6
07510	00	Z	850	31	2.6	1.6
07510	12	Z	850	31	3.4	2.0
07645	00	Z	850	31	2.5	-0.7
07645	12	Z	850	31	2.2	0.3
07761	00	Z	850	29	6.5	-6.0
07761	12	Z	850	29	5.5	-5.1
08001	12	Z	850	33	2.5	1.0
08001	00	Z	850	31	2.1	-0.7
08221	00	Z	850	30	3.0	2.3
08221	12	Z	850	31	4.6	3.5
08302	12	Z	850	31	7.9	-7.5
08302	00	Z	850	31	8.2	-8.0
08508	12	Z	850	31	12.9	4.9
08522	12	Z	850	31	3.8	3.4
10035	00	Z	850	31	13.0	12.9
10035	12	Z	850	31	13.4	13.3
10393	00	Z	850	31	2.1	0.7
10393	12	Z	850	31	2.1	1.0
10410	12	Z	850	31	2.1	0.8
10410	00	Z	850	31	2.2	-0.9
10739	00	Z	850	31	4.4	3.7
10739	12	Z	850	31	4.9	4.5
11035	12	Z	850	33	15.0	-2.2
11035	00	Z	850	31	2.8	1.9
12982	12	Z	850	31	2.9	2.4
12982	00	Z	850	31	3.9	3.5
16245	12	Z	850	31	2.1	1.3
16245	00	Z	850	31	3.0	2.4
16429	12	Z	850	32	2.3	1.7
16429	00	Z	850	31	3.7	3.0
16622	00	Z	850	31	10.0	9.6
16754	00	Z	850	28	3.9	3.1
17607	12	Z	850	31	3.1	2.2
26435	12	Z	850	15	1.9	-0.6
60018	00	Z	850	30	1.9	-0.3
60018	12	Z	850	32	2.6	1.3
7JUNA4	12	Z	850	9	7.9	-0.1
7JUNA4	00	Z	850	6	9.7	-4.1

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
9ZT9MR	00	Z	850	1	8.8	-8.8
9ZT9MR	12	Z	850	5	9.7	-8.8
ASDE09	12	Z	850	2	35.1	35.1
ATGU3F	12	Z	850	1	23.6	-23.6
ATGU3F	00	Z	850	1	32.8	-32.8
FPUW5G	12	Z	850	2	7.1	-7.1
GQBZLZ	12	Z	850	1	0.0	0.0
JNKN7J	12	Z	850	15	37.4	37.0
JNKN7J	00	Z	850	17	38.5	38.2
KMPLHP	12	Z	850	14	47.0	45.7
KMPLHP	00	Z	850	12	46.0	44.6
LRYQE3	12	Z	850	8	5.0	-0.8
LRYQE3	00	Z	850	8	4.0	-3.0
UXK5JT	12	Z	850	12	3.3	0.1
UXK5JT	00	Z	850	13	3.6	-2.5
WDK38H	12	Z	850	22	17.0	-4.7
XKQLWQ	12	Z	850	24	10.4	8.3
XQFJRG	12	Z	850	5	11.1	-10.0
XQFJRG	00	Z	850	5	9.9	-8.4
YLV96W	00	Z	850	3	6.7	2.7
YLV96W	12	Z	850	8	31.2	13.8

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 : OCT 2022
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	12	V	850	31	3.1	0.0	-0.7
01001	00	V	850	27	3.7	1.0	0.6
01028	00	V	850	30	3.0	0.4	-0.5
01028	12	V	850	31	2.8	0.3	0.2
01400	12	V	850	19	2.7	1.0	0.3
01400	00	V	850	24	2.4	0.5	0.7
01415	00	V	850	29	2.5	-0.1	0.2
01415	12	V	850	31	2.0	0.2	-0.1
02365	12	V	850	25	2.8	-0.6	0.0
02365	00	V	850	24	3.3	-0.5	0.2
02836	12	V	850	31	2.6	0.7	-0.1
02836	00	V	850	30	2.4	0.2	0.1
02963	12	V	850	31	2.1	0.2	-0.1
02963	00	V	850	30	2.1	-0.3	0.4
03005	12	V	850	30	3.1	0.8	0.4
03005	00	V	850	28	2.6	-0.6	0.3
03238	00	V	850	27	3.4	0.1	-0.6
03808	12	V	850	30	2.8	-0.1	-0.5
03808	00	V	850	29	2.9	-0.2	-0.8
03918	12	V	850	5	1.9	0.8	0.5
03918	00	V	850	30	2.2	-0.3	0.1
03953	12	V	850	31	3.0	-0.6	0.1
03953	00	V	850	30	3.0	-0.2	0.1
04018	00	V	850	28	2.7	-0.5	0.3
04018	12	V	850	29	3.1	0.6	0.0
04220	12	V	850	21	3.3	0.6	-0.2
04220	00	V	850	21	3.9	0.0	-0.3
04270	12	V	850	22	2.2	-0.4	-0.1
04270	00	V	850	21	2.2	0.4	0.3
04320	00	V	850	20	3.5	-0.6	0.2
04320	12	V	850	22	2.9	-0.2	-0.1
043203	00	V	850	1	3.3	2.2	2.5
04339	00	V	850	21	4.8	0.7	0.5
04339	12	V	850	18	4.3	0.2	0.1
04360	00	V	850	15	5.3	1.7	0.1
04360	12	V	850	16	6.6	2.1	0.5
06011	00	V	850	10	3.4	-0.1	-0.5
06011	12	V	850	8	2.9	1.1	-0.7
06260	00	V	850	29	2.4	-0.2	-0.3

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06260	12	V	850	5	2.7	1.8	-0.5
06610	12	V	850	31	3.8	1.5	0.4
06610	00	V	850	30	2.9	0.3	0.7
07110	12	V	850	30	3.2	-0.6	-0.7
07110	00	V	850	29	3.3	0.4	-0.5
07510	00	V	850	30	4.2	-0.4	-0.2
07510	12	V	850	31	2.6	-0.2	0.3
07645	00	V	850	30	2.3	-0.1	0.2
07645	12	V	850	30	2.6	-0.1	0.0
07761	00	V	850	28	2.1	-0.3	-0.2
07761	12	V	850	29	2.2	0.5	-0.5
08001	12	V	850	31	3.2	0.5	-0.6
08001	00	V	850	30	2.7	-0.4	0.2
08221	00	V	850	29	2.5	0.1	0.0
08221	12	V	850	31	2.3	0.0	-0.3
08302	12	V	850	31	2.1	-0.1	0.1
08302	00	V	850	30	1.8	0.2	0.1
08508	12	V	850	31	2.2	0.3	-0.6
08522	12	V	850	31	3.0	0.9	-0.4
10035	00	V	850	30	2.6	0.4	0.1
10035	12	V	850	31	2.8	0.5	0.6
10393	00	V	850	30	2.1	-0.4	0.3
10393	12	V	850	31	2.8	0.2	0.3
10410	12	V	850	31	2.6	-0.3	0.2
10410	00	V	850	30	2.6	-0.1	0.1
10739	00	V	850	30	2.5	0.3	-0.7
10739	12	V	850	31	3.0	-0.4	-0.5
11035	12	V	850	31	2.8	0.9	-0.3
11035	00	V	850	30	2.7	0.2	0.0
12982	12	V	850	31	2.8	0.2	-0.1
12982	00	V	850	30	2.4	0.1	0.2
16245	12	V	850	31	2.2	0.2	-0.2
16245	00	V	850	30	2.2	0.5	-0.6
16429	12	V	850	31	2.3	0.0	-0.1
16429	00	V	850	30	2.6	-0.7	-0.9
16622	00	V	850	30	2.2	0.4	-0.5
16754	00	V	850	27	2.3	0.6	0.3
17607	12	V	850	31	2.8	0.2	0.1
26435	12	V	850	15	2.3	0.2	-0.2
60018	00	V	850	29	3.3	0.9	0.7
60018	12	V	850	31	2.4	0.4	0.9
7JUNA4	12	V	850	9	2.7	0.4	-0.6
7JUNA4	00	V	850	6	3.4	-1.2	1.4

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
9ZT9MR	00	V	850	1	1.3	0.5	1.2
9ZT9MR	12	V	850	5	3.4	1.0	-0.1
ASDE09	12	V	850	2	2.1	0.5	-0.7
ATGU3F	12	V	850	1	0.9	0.4	-0.8
ATGU3F	00	V	850	1	1.5	1.4	0.5
FPUW5G	12	V	850	2	2.8	-1.5	0.8
GQBZLZ	12	V	850	1	1.0	1.0	0.0
JNKN7J	12	V	850	15	2.1	-0.1	0.1
JNKN7J	00	V	850	17	4.4	0.2	0.8
KMPLHP	12	V	850	14	2.8	0.6	-0.2
KMPLHP	00	V	850	12	1.9	-0.3	-0.1
LRYQE3	12	V	850	8	1.8	0.2	0.5
LRYQE3	00	V	850	8	2.6	-0.1	0.5
UXK5JT	12	V	850	12	2.5	0.7	-0.8
UXK5JT	00	V	850	13	2.4	0.0	-0.8
WDK38H	12	V	850	22	3.4	0.1	-0.5
XKQLWQ	12	V	850	24	3.2	0.5	-0.3
XQFJRG	12	V	850	5	3.1	1.7	0.1
XQFJRG	00	V	850	5	2.9	0.5	-0.3
YLV96W	00	V	850	3	1.4	0.3	0.5
YLV96W	12	V	850	8	1.9	-0.2	0.2

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

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : SURFACE PRESSURE (HPA)
 AREA : 10N - 90N, 70W - 40E
 PERIOD : OCT 2022
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

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

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
03380	99	P	SUR	54	0	1556	0	0.3	-0.2	0.4
1300001	99	P	SUR	11	-23	620	0	0.3	0.1	0.4
1300008	99	P	SUR	15	-38	614	0	0.4	0.1	0.4
1300130	99	P	SUR	28	-16	691	0	0.3	0.3	0.4
1300131	99	P	SUR	28	-17	733	0	0.4	0.2	0.4
1301603	99	P	SUR	32	-48	739	0	0.3	0.0	0.3
1301608	99	P	SUR	32	-48	739	0	0.3	-0.1	0.3
1301610	99	P	SUR	53	-10	416	0	0.5	-0.5	0.7
1301612	99	P	SUR	25	-56	741	0	0.4	-0.2	0.4
1301619	99	P	SUR	34	-69	740	0	0.4	-0.3	0.5
1301629	99	P	SUR	18	-24	743	0	0.3	0.2	0.4
1301699	99	P	SUR	27	-31	656	0	0.3	-0.5	0.6
1301700	99	P	SUR	20	-55	665	0	0.4	-0.1	0.4
1301706	99	P	SUR	19	-49	682	0	0.4	0.0	0.4
1301708	99	P	SUR	14	-17	44	0	0.4	-0.3	0.5
1301712	99	P	SUR	22	-45	709	0	0.3	0.0	0.3
1301713	99	P	SUR	16	-45	718	0	0.6	0.4	0.7
1301714	99	P	SUR	24	-41	706	0	0.3	0.1	0.3
1301718	99	P	SUR	24	-35	704	0	0.3	0.1	0.3
1301719	99	P	SUR	24	-43	710	0	0.4	0.6	0.7
1301720	99	P	SUR	26	-28	705	0	0.3	0.1	0.3
1301721	99	P	SUR	32	-14	735	0	0.2	-0.1	0.2
1301722	99	P	SUR	22	-40	710	0	0.3	0.1	0.3
1301723	99	P	SUR	36	-15	709	0	0.3	0.7	0.7
1301724	99	P	SUR	35	-12	710	0	0.3	0.0	0.3
1301725	99	P	SUR	26	-23	708	0	0.3	0.1	0.3
1301726	99	P	SUR	25	-26	702	0	0.2	0.1	0.3
1301731	99	P	SUR	25	-29	735	0	0.3	0.2	0.4
1301735	99	P	SUR	27	-39	706	0	0.3	-0.3	0.4
1301736	99	P	SUR	27	-45	706	0	0.3	0.3	0.4
1301737	99	P	SUR	26	-60	706	0	0.3	0.0	0.3
1301756	99	P	SUR	11	-64	712	5	2.4	-0.8	2.5
1801556	99	P	SUR	15	-67	2866	0	0.5	-0.1	0.5
1801560	99	P	SUR	22	-67	2742	0	0.3	0.2	0.3
1801564	99	P	SUR	30	35	118	0	0.3	0.0	0.3
1801599	99	P	SUR	18	-53	3948	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
3801561	99	P	SUR	45	-66	744	0	0.5	0.4	0.6
4100043	99	P	SUR	21	-65	4449	0	0.3	-1.5	1.5
4100044	99	P	SUR	22	-59	4452	0	0.3	0.4	0.5
4100046	99	P	SUR	24	-68	4446	0	0.3	0.3	0.4
4100048	99	P	SUR	32	-70	4448	0	0.4	0.3	0.5
4100049	99	P	SUR	27	-63	4446	0	0.3	-1.3	1.4
4100052	99	P	SUR	18	-65	242	0	0.4	-1.2	1.2
4100053	99	P	SUR	18	-66	4349	0	0.4	-0.9	1.0
4100056	99	P	SUR	18	-65	4347	0	0.4	-1.1	1.2
4100139	99	P	SUR	20	-38	740	0	0.3	0.2	0.4
4100300	99	P	SUR	16	-57	729	0	0.4	0.0	0.4
4101557	99	P	SUR	30	-22	741	0	0.2	0.1	0.3
4101613	99	P	SUR	29	-55	743	0	0.3	0.4	0.5
4101616	99	P	SUR	32	-40	743	0	0.3	0.0	0.3
4101618	99	P	SUR	26	-45	743	0	0.3	0.2	0.4
4101621	99	P	SUR	26	-40	743	0	0.3	0.2	0.4
4101663	99	P	SUR	30	-32	743	0	0.3	-0.1	0.3
4101664	99	P	SUR	49	-19	743	0	0.6	-0.4	0.7
4101665	99	P	SUR	67	1	662	0	0.4	-0.5	0.6
4101696	99	P	SUR	33	-40	743	0	0.3	0.0	0.3
4101702	99	P	SUR	32	-27	743	0	0.6	0.0	0.6
4101714	99	P	SUR	29	-69	740	0	0.4	0.0	0.4
4101717	99	P	SUR	17	-31	743	0	1.1	0.0	1.1
4101718	99	P	SUR	42	-37	742	0	0.5	0.1	0.5
4101719	99	P	SUR	39	-29	742	0	0.6	0.0	0.7
4101720	99	P	SUR	26	-42	740	0	0.4	-0.3	0.5
4101723	99	P	SUR	27	-62	741	0	0.3	0.1	0.3
4101724	99	P	SUR	22	-67	743	0	0.3	-0.4	0.5
4101725	99	P	SUR	18	-63	740	0	0.3	-0.2	0.4
4101727	99	P	SUR	35	-23	743	0	0.3	-0.2	0.3
4101728	99	P	SUR	30	-37	741	0	0.4	0.2	0.4
4101729	99	P	SUR	32	-45	740	0	0.3	0.1	0.3
4101743	99	P	SUR	32	-49	738	0	0.3	0.0	0.3
4101753	99	P	SUR	32	-52	741	0	0.3	0.3	0.4
4101755	99	P	SUR	30	-62	741	0	0.3	0.1	0.3
4101756	99	P	SUR	12	-62	719	0	0.5	-0.9	1.0
4101842	99	P	SUR	69	16	664	0	0.4	-0.6	0.7
4101843	99	P	SUR	69	2	690	0	0.4	-0.2	0.4
4101844	99	P	SUR	16	-53	685	0	0.4	0.2	0.4
4101845	99	P	SUR	62	-1	692	0	0.3	0.0	0.3
4101848	99	P	SUR	29	-62	682	0	0.3	0.2	0.4
4101850	99	P	SUR	41	-12	671	0	0.3	-0.2	0.4
4101851	99	P	SUR	23	-58	668	0	0.3	0.0	0.3

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
4102547	99	P	SUR	23	-61	692	0	0.3	0.3	0.5
4102548	99	P	SUR	21	-70	683	0	0.3	0.0	0.3
4102549	99	P	SUR	22	-63	694	0	0.4	0.4	0.5
4102551	99	P	SUR	19	-53	696	0	0.4	0.0	0.4
4102558	99	P	SUR	13	-61	719	0	0.5	-0.4	0.6
4102559	99	P	SUR	14	-61	575	0	0.4	-0.1	0.5
4102560	99	P	SUR	15	-61	723	0	0.6	-0.4	0.7
4102566	99	P	SUR	36	-51	655	0	0.8	-1.0	1.3
4102567	99	P	SUR	38	-49	647	0	0.7	-0.2	0.8
4102632	99	P	SUR	32	-68	698	0	0.4	-1.0	1.0
41043	99	P	SUR	21	-65	2740	0	0.3	-1.5	1.5
41044	99	P	SUR	22	-59	2128	0	0.3	0.5	0.6
41046	99	P	SUR	24	-68	2775	0	0.3	0.3	0.5
41048	99	P	SUR	32	-70	2527	0	0.4	0.3	0.5
41049	99	P	SUR	28	-63	2752	0	0.3	-1.3	1.4
41052	99	P	SUR	18	-65	171	0	0.3	-1.1	1.2
41053	99	P	SUR	19	-66	2137	0	0.4	-1.0	1.0
41056	99	P	SUR	18	-66	2072	0	0.4	-1.2	1.2
4200059	99	P	SUR	15	-67	4452	0	0.4	-0.1	0.4
4200060	99	P	SUR	16	-63	4444	0	0.4	0.1	0.4
4200085	99	P	SUR	18	-67	3302	0	0.4	-0.9	1.0
4201703	99	P	SUR	44	-26	694	0	0.4	-0.1	0.4
42059	99	P	SUR	15	-68	2799	0	0.4	-0.1	0.5
42060	99	P	SUR	16	-63	2280	0	0.4	0.1	0.4
42085	99	P	SUR	18	-67	2059	0	0.4	-0.9	1.0
4400005	99	P	SUR	43	-69	741	0	0.4	-0.3	0.5
4400008	99	P	SUR	40	-69	4438	0	0.5	-0.9	1.1
4400011	99	P	SUR	41	-67	4458	0	0.4	0.3	0.5
4400027	99	P	SUR	44	-67	4449	0	0.4	-0.4	0.6
4400032	99	P	SUR	44	-69	704	0	0.7	-0.2	0.7
4400033	99	P	SUR	44	-69	691	0	0.5	-0.5	0.7
4400034	99	P	SUR	44	-68	707	0	0.4	-0.2	0.5
44005	99	P	SUR	43	-69	1120	0	0.4	-0.3	0.5
4400777	99	P	SUR	32	-30	740	0	0.3	0.0	0.3
44008	99	P	SUR	41	-69	2548	0	0.5	-0.9	1.1
4400857	99	P	SUR	35	-43	742	0	0.3	0.0	0.3
44011	99	P	SUR	41	-67	2323	0	0.4	0.3	0.5
4401563	99	P	SUR	18	-56	740	0	0.3	-0.5	0.6
4401572	99	P	SUR	35	-59	63	0	0.6	-1.4	1.6
4401576	99	P	SUR	30	-59	742	0	0.3	0.2	0.4
4401581	99	P	SUR	30	-59	743	0	0.3	0.0	0.3
4401582	99	P	SUR	32	-28	743	0	0.3	0.2	0.3
4401584	99	P	SUR	31	-39	741	0	0.3	0.4	0.6

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
4401585	99	P	SUR	25	-38	741	0	0.3	0.2	0.4
4401587	99	P	SUR	73	0	742	0	0.5	0.1	0.5
4401588	99	P	SUR	69	-14	743	0	0.4	-0.1	0.4
4401859	99	P	SUR	18	-57	742	0	0.4	-0.1	0.4
4401863	99	P	SUR	12	-48	705	0	1.7	0.6	1.8
4401864	99	P	SUR	20	-62	671	0	0.3	0.0	0.3
4401867	99	P	SUR	35	-58	743	0	0.4	0.0	0.4
4401872	99	P	SUR	31	-60	743	0	0.3	-0.1	0.3
4401874	99	P	SUR	26	-63	743	0	0.3	-0.2	0.4
4402603	99	P	SUR	58	-8	656	0	0.4	0.0	0.4
4402604	99	P	SUR	44	-20	688	0	0.4	-0.3	0.5
4402605	99	P	SUR	56	8	259	0	1.9	-1.7	2.5
4402606	99	P	SUR	57	-24	655	0	0.4	0.0	0.4
4402607	99	P	SUR	46	-19	653	0	0.5	-0.3	0.5
4402608	99	P	SUR	63	-31	664	0	0.4	-0.1	0.4
4402609	99	P	SUR	62	-24	688	0	0.5	-0.2	0.5
4402611	99	P	SUR	48	-22	641	0	0.6	-0.3	0.7
4402613	99	P	SUR	41	-18	649	0	0.3	-0.5	0.6
4402614	99	P	SUR	56	-6	76	0	0.4	-2.3	2.3
4402615	99	P	SUR	46	-12	652	0	0.4	0.0	0.4
4402618	99	P	SUR	30	-60	698	0	0.4	0.1	0.4
4402656	99	P	SUR	38	-37	640	0	0.3	0.2	0.4
4402660	99	P	SUR	30	-16	724	0	0.3	0.2	0.4
4402663	99	P	SUR	39	-15	689	0	0.4	-0.2	0.4
4402665	99	P	SUR	25	-64	722	0	0.3	0.3	0.4
4402670	99	P	SUR	22	-36	688	0	0.3	0.0	0.3
4402671	99	P	SUR	16	-55	682	0	0.4	0.1	0.4
4402672	99	P	SUR	16	-41	676	1	0.5	0.0	0.5
4402673	99	P	SUR	13	-42	670	0	0.4	0.2	0.4
4402674	99	P	SUR	17	-49	690	0	0.3	0.3	0.4
4402675	99	P	SUR	30	-33	665	0	0.3	0.0	0.3
4402676	99	P	SUR	26	-38	675	0	0.3	0.2	0.4
44027	99	P	SUR	44	-67	3218	0	0.4	-0.4	0.6
4402721	99	P	SUR	49	-35	707	0	0.4	-0.1	0.4
4402723	99	P	SUR	46	-54	706	0	0.4	0.0	0.4
4402726	99	P	SUR	47	-42	710	0	0.3	-0.1	0.3
4402727	99	P	SUR	56	-25	715	0	0.4	-0.2	0.5
4402732	99	P	SUR	50	-50	77	0	0.3	0.2	0.4
4402733	99	P	SUR	55	-53	162	0	0.4	0.0	0.5
4402734	99	P	SUR	54	-55	172	0	0.4	-0.2	0.5
4402735	99	P	SUR	54	-55	173	0	0.5	-0.2	0.5
4402736	99	P	SUR	49	-51	68	0	0.3	0.2	0.3
4402745	99	P	SUR	47	-50	20	0	0.2	0.0	0.2

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
4402746	99	P	SUR	49	-52	57	0	0.3	0.2	0.4
4402749	99	P	SUR	56	-49	710	0	0.3	-0.3	0.4
4402750	99	P	SUR	56	-45	700	0	0.3	-0.6	0.7
4402878	99	P	SUR	42	-59	691	0	0.4	0.5	0.6
44032	99	P	SUR	44	-69	707	0	0.7	-0.2	0.7
44033	99	P	SUR	44	-69	694	0	0.5	-0.5	0.7
44034	99	P	SUR	44	-68	710	0	0.5	-0.2	0.5
4403556	99	P	SUR	47	-14	743	0	0.4	0.2	0.5
4403557	99	P	SUR	56	-12	729	0	0.4	0.5	0.6
4403558	99	P	SUR	47	-26	741	0	0.6	-0.2	0.6
4403568	99	P	SUR	46	-51	743	0	0.3	0.3	0.4
4403569	99	P	SUR	45	-49	744	0	0.4	0.1	0.4
44078	99	P	SUR	60	-40	423	0	0.4	-1.1	1.2
44137	99	P	SUR	42	-62	716	0	0.4	0.0	0.5
44139	99	P	SUR	44	-57	738	0	0.4	0.2	0.4
44150	99	P	SUR	43	-64	737	0	0.4	0.0	0.4
44258	99	P	SUR	45	-63	650	0	0.4	0.0	0.4
44488	99	P	SUR	45	-61	743	0	0.4	0.2	0.4
44489	99	P	SUR	46	-61	720	0	0.4	0.2	0.4
4601782	99	P	SUR	41	-28	633	0	0.3	0.2	0.4
4601813	99	P	SUR	84	35	724	0	0.4	-0.1	0.4
4701518	99	P	SUR	77	-17	209	0	0.6	-0.1	0.6
4701519	99	P	SUR	72	-21	93	0	0.3	-0.1	0.3
4701738	99	P	SUR	70	-67	713	710	5.8	-3.0	6.5
4801668	99	P	SUR	83	-8	712	0	0.5	0.0	0.5
4801723	99	P	SUR	73	24	735	0	0.3	0.0	0.3
4801761	99	P	SUR	83	-5	744	0	0.5	-0.1	0.5
4801763	99	P	SUR	86	-62	744	0	0.5	-0.3	0.6
4801765	99	P	SUR	86	-63	744	0	0.5	-0.3	0.6
4801767	99	P	SUR	84	-15	744	0	3.1	-1.6	3.5
4801770	99	P	SUR	87	-33	744	0	0.4	-0.3	0.6
4801771	99	P	SUR	84	-61	744	0	0.5	0.0	0.5
4802506	99	P	SUR	86	-23	744	0	0.5	0.2	0.5
4802663	99	P	SUR	85	-62	743	0	0.5	0.3	0.6
5801965	99	P	SUR	45	-66	724	1	0.4	0.5	0.7
6100001	99	P	SUR	43	8	630	0	0.3	0.1	0.3
6100002	99	P	SUR	42	5	740	0	0.3	0.0	0.3
6100196	99	P	SUR	42	4	729	0	0.3	0.4	0.5
6100197	99	P	SUR	40	4	730	0	0.3	0.5	0.6
6100198	99	P	SUR	37	-2	724	0	0.4	0.5	0.7
6100280	99	P	SUR	41	1	732	0	0.3	0.5	0.6
6100281	99	P	SUR	40	0	721	0	0.4	0.5	0.6
6100417	99	P	SUR	38	0	733	0	0.4	0.4	0.6

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
6100430	99	P	SUR	40	2	732	0	0.3	0.3	0.4
6101003	99	P	SUR	40	25	155	0	0.4	0.0	0.4
6101007	99	P	SUR	36	25	139	0	0.4	-0.5	0.7
6101008	99	P	SUR	37	22	150	0	0.4	-0.2	0.5
6101009	99	P	SUR	35	25	2	2	0.0	0.0	0.0
6102786	99	P	SUR	32	15	679	0	0.3	-1.0	1.0
6102792	99	P	SUR	39	8	225	0	0.3	-0.2	0.4
6102793	99	P	SUR	38	3	724	0	0.3	0.4	0.5
6102796	99	P	SUR	41	8	687	0	0.3	-0.2	0.3
6102797	99	P	SUR	37	-3	706	0	0.4	-3.3	3.3
6102799	99	P	SUR	41	9	377	0	0.5	0.0	0.5
6102804	99	P	SUR	40	3	721	0	0.4	-7.0	7.0
6102805	99	P	SUR	40	2	721	0	0.3	0.0	0.3
6102806	99	P	SUR	40	1	735	0	0.3	-0.2	0.3
6102807	99	P	SUR	40	1	700	0	0.3	0.1	0.3
6200001	99	P	SUR	45	-5	724	0	0.4	0.3	0.5
6200024	99	P	SUR	44	-3	453	0	0.4	0.5	0.7
6200025	99	P	SUR	44	-6	733	0	0.5	0.3	0.6
6200082	99	P	SUR	44	-8	733	0	0.5	0.0	0.5
6200083	99	P	SUR	43	-9	734	0	0.5	0.0	0.5
6200084	99	P	SUR	42	-9	734	0	0.5	0.2	0.5
6200085	99	P	SUR	36	-7	718	0	0.3	0.2	0.4
6200086	99	P	SUR	55	6	485	0	0.3	-0.2	0.4
6200087	99	P	SUR	55	7	486	0	0.4	-0.4	0.6
6200091	99	P	SUR	53	-5	744	0	0.4	-0.2	0.5
6200092	99	P	SUR	51	-11	744	0	0.5	-0.3	0.5
6200093	99	P	SUR	55	-10	744	0	0.5	-0.4	0.6
6200094	99	P	SUR	52	-7	744	0	0.4	-0.1	0.4
6200095	99	P	SUR	53	-16	743	0	0.5	-0.4	0.6
6200191	99	P	SUR	41	-10	638	0	0.6	-0.4	0.7
6200192	99	P	SUR	40	-10	640	0	0.4	-0.2	0.5
6200199	99	P	SUR	40	-9	632	0	0.4	0.0	0.4
6200200	99	P	SUR	36	-8	600	0	0.3	0.0	0.3
6201065	99	P	SUR	54	7	732	0	0.3	1.1	1.1
6201066	99	P	SUR	55	7	739	0	0.3	0.3	0.5
6201081	99	P	SUR	38	-9	635	0	0.3	-0.4	0.5
6202623	99	P	SUR	72	27	743	0	0.3	-0.4	0.5
6202624	99	P	SUR	65	3	743	0	0.3	-0.5	0.6
6202627	99	P	SUR	59	-8	685	0	0.4	0.0	0.4
6202630	99	P	SUR	44	-8	743	0	0.4	0.0	0.4
6202632	99	P	SUR	65	-53	743	0	0.5	-0.2	0.6
6202633	99	P	SUR	79	3	743	0	1.7	-0.5	1.7
6202637	99	P	SUR	68	-2	743	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
6202639	99	P	SUR	31	-43	743	0	0.2	0.0	0.2
6202640	99	P	SUR	33	-38	743	0	0.4	0.0	0.4
6202643	99	P	SUR	22	-60	743	0	0.3	0.0	0.3
6202644	99	P	SUR	34	-44	743	0	0.5	-0.3	0.5
62029	99	P	SUR	49	-12	1523	0	0.4	-0.4	0.6
62030	99	P	SUR	50	-4	1878	0	0.4	0.0	0.4
6203516	99	P	SUR	43	-58	614	0	0.4	-0.1	0.4
6203588	99	P	SUR	56	-46	623	0	0.3	0.5	0.6
6203607	99	P	SUR	36	-34	741	0	0.2	0.1	0.3
6203612	99	P	SUR	31	-52	742	0	0.4	0.1	0.4
6203614	99	P	SUR	32	-65	240	0	0.3	0.1	0.3
6203615	99	P	SUR	27	-61	743	0	0.3	-0.1	0.3
6203616	99	P	SUR	23	-58	742	0	0.3	0.1	0.3
6203617	99	P	SUR	20	-56	742	0	0.4	0.2	0.4
6203621	99	P	SUR	32	-24	740	0	0.2	-0.1	0.3
6203622	99	P	SUR	42	-29	742	0	0.8	-0.2	0.8
6203625	99	P	SUR	31	-30	741	0	0.3	-0.3	0.4
6203632	99	P	SUR	25	-37	741	0	0.3	0.2	0.4
6203633	99	P	SUR	68	15	741	0	0.5	0.0	0.5
6203634	99	P	SUR	29	-32	740	0	0.3	0.1	0.3
6203639	99	P	SUR	31	-25	740	0	0.2	-0.2	0.3
6203640	99	P	SUR	23	-36	740	0	0.3	-0.3	0.4
6203642	99	P	SUR	15	-50	742	0	0.4	-0.2	0.5
6203643	99	P	SUR	25	-62	740	0	0.3	0.4	0.5
6203651	99	P	SUR	46	-36	743	0	0.4	0.2	0.4
6203730	99	P	SUR	26	-65	656	0	0.3	0.2	0.4
6203734	99	P	SUR	15	-24	96	0	0.4	0.1	0.4
6203737	99	P	SUR	27	-42	684	0	0.3	0.4	0.5
6203741	99	P	SUR	62	-17	665	0	0.4	-0.1	0.4
6203742	99	P	SUR	62	-13	674	0	0.4	0.1	0.4
6203744	99	P	SUR	62	-7	667	0	0.4	0.1	0.5
6203745	99	P	SUR	67	-16	667	0	0.4	0.0	0.5
6203747	99	P	SUR	68	14	657	0	0.4	-0.1	0.4
6203750	99	P	SUR	69	14	671	0	0.4	0.0	0.4
6203753	99	P	SUR	60	-24	656	0	0.5	-0.3	0.6
6203755	99	P	SUR	41	-19	663	0	0.4	-0.8	0.9
6203760	99	P	SUR	56	13	651	0	0.3	-0.4	0.5
6203765	99	P	SUR	23	-43	684	0	0.3	0.4	0.5
6203767	99	P	SUR	22	-51	678	0	0.5	-0.8	0.9
6203768	99	P	SUR	33	-16	690	0	0.3	0.2	0.4
6203771	99	P	SUR	24	-37	668	0	0.3	0.1	0.3
6203772	99	P	SUR	30	-60	682	0	0.3	0.1	0.3
6203773	99	P	SUR	30	-47	694	0	0.3	-0.3	0.5

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
6203776	99	P	SUR	33	-28	664	0	0.3	-0.1	0.3
6203777	99	P	SUR	38	-62	214	0	0.6	-0.2	0.6
6203825	99	P	SUR	67	-2	711	0	0.6	0.2	0.6
6203827	99	P	SUR	62	-6	735	0	0.4	0.0	0.4
6203838	99	P	SUR	13	-51	707	0	0.4	0.2	0.4
6203839	99	P	SUR	22	-47	711	0	0.3	0.0	0.3
6203840	99	P	SUR	28	-41	718	0	0.3	0.2	0.4
6203841	99	P	SUR	29	-16	715	0	0.3	-1.4	1.5
6203842	99	P	SUR	40	-34	705	0	0.4	-0.1	0.4
6203843	99	P	SUR	28	-18	78	0	2.4	-3.3	4.1
6203844	99	P	SUR	45	-17	712	0	0.4	0.1	0.4
6203845	99	P	SUR	49	-33	714	0	0.4	-0.2	0.5
6203846	99	P	SUR	30	-23	706	0	0.2	-0.1	0.3
6203848	99	P	SUR	37	-59	699	0	0.4	0.0	0.4
6203849	99	P	SUR	36	-24	712	0	0.3	0.0	0.3
6203850	99	P	SUR	38	-24	699	0	0.3	0.1	0.3
6203853	99	P	SUR	57	-11	700	0	0.4	0.1	0.4
6203854	99	P	SUR	57	-21	708	0	0.3	0.1	0.4
6203855	99	P	SUR	63	1	700	0	0.3	0.0	0.3
6203856	99	P	SUR	61	-2	723	0	0.4	0.3	0.5
6203857	99	P	SUR	60	-4	735	0	0.4	0.0	0.4
6203863	99	P	SUR	68	-18	692	0	1.4	0.1	1.4
6203864	99	P	SUR	67	-10	714	0	0.4	-0.1	0.5
6203865	99	P	SUR	71	-8	700	0	0.4	0.0	0.4
6203866	99	P	SUR	61	-3	725	0	0.3	0.2	0.4
6203867	99	P	SUR	49	-11	734	0	0.4	0.1	0.4
62050	99	P	SUR	50	-4	1491	0	0.4	0.0	0.4
62081	99	P	SUR	51	-13	1509	0	0.5	-0.2	0.5
62091	99	P	SUR	53	-5	743	0	0.4	-0.2	0.5
62092	99	P	SUR	51	-11	743	0	0.5	-0.3	0.5
62093	99	P	SUR	55	-10	743	0	0.4	-0.4	0.6
62094	99	P	SUR	52	-7	743	0	0.4	-0.1	0.4
62095	99	P	SUR	53	-16	742	0	0.5	-0.4	0.6
62102	99	P	SUR	58	2	1564	0	0.5	0.2	0.6
62103	99	P	SUR	50	-3	1520	0	0.4	-0.3	0.5
62104	99	P	SUR	57	1	1564	0	0.4	0.0	0.4
62105	99	P	SUR	55	-13	1516	0	0.5	-0.4	0.6
62107	99	P	SUR	50	-6	1911	0	0.4	-0.2	0.5
62112	99	P	SUR	58	0	1536	0	0.4	0.3	0.5
62113	99	P	SUR	58	0	1564	0	0.6	0.3	0.6
62114	99	P	SUR	58	0	1947	0	0.4	0.1	0.5
62115	99	P	SUR	58	-3	1442	0	0.5	0.0	0.5
62116	99	P	SUR	58	1	1564	0	0.5	0.1	0.5

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
62118	99	P	SUR	58	1	1564	0	0.3	0.4	0.5
62119	99	P	SUR	57	2	1555	0	0.4	0.3	0.5
62120	99	P	SUR	56	2	1562	0	0.3	-0.2	0.4
62121	99	P	SUR	54	3	1565	0	0.4	0.5	0.7
62122	99	P	SUR	57	2	1947	0	0.4	0.2	0.4
62124	99	P	SUR	54	-4	1469	0	0.5	0.1	0.5
62129	99	P	SUR	58	0	795	0	0.5	0.5	0.7
62130	99	P	SUR	59	1	1564	0	0.4	-0.1	0.4
62131	99	P	SUR	54	1	1317	0	0.4	0.5	0.7
62132	99	P	SUR	56	2	1561	0	0.3	0.4	0.5
62133	99	P	SUR	57	1	1561	0	0.5	0.2	0.6
62135	99	P	SUR	54	2	1561	0	0.3	0.3	0.4
62138	99	P	SUR	54	0	1946	0	0.4	0.8	0.9
62140	99	P	SUR	57	1	1944	0	0.4	0.2	0.5
62141	99	P	SUR	57	1	1535	0	3.8	2.0	4.3
62143	99	P	SUR	58	2	1564	0	0.4	0.7	0.8
62144	99	P	SUR	53	2	1565	0	0.4	0.3	0.5
62145	99	P	SUR	53	3	1946	0	0.3	0.4	0.5
62146	99	P	SUR	57	2	1556	0	0.5	0.1	0.5
62148	99	P	SUR	54	2	1552	0	0.4	1.0	1.0
62149	99	P	SUR	54	1	1556	0	0.3	0.8	0.8
62150	99	P	SUR	54	1	1263	0	0.3	1.3	1.3
62151	99	P	SUR	57	2	1581	0	0.3	0.3	0.4
62152	99	P	SUR	57	2	1547	0	0.4	0.6	0.7
62153	99	P	SUR	57	2	1942	0	0.3	0.2	0.4
62154	99	P	SUR	56	2	1562	0	0.3	0.2	0.4
62155	99	P	SUR	58	1	1564	0	0.4	0.6	0.7
62157	99	P	SUR	58	0	1565	0	0.4	0.1	0.4
62160	99	P	SUR	57	2	1940	0	0.4	0.5	0.6
62161	99	P	SUR	58	1	1564	0	0.5	0.1	0.5
62162	99	P	SUR	57	1	1546	0	0.4	0.0	0.4
62163	99	P	SUR	48	-9	1511	0	0.4	-0.2	0.5
62164	99	P	SUR	57	1	1559	0	0.3	0.2	0.4
62165	99	P	SUR	54	1	1545	0	0.4	0.6	0.7
62168	99	P	SUR	58	1	1564	0	0.4	0.2	0.4
62170	99	P	SUR	51	2	1563	0	0.3	-0.1	0.3
62296	99	P	SUR	53	2	1565	0	0.3	0.1	0.3
62297	99	P	SUR	59	2	1947	0	0.4	0.1	0.4
62302	99	P	SUR	61	-2	1532	0	0.6	0.0	0.6
62304	99	P	SUR	51	2	1558	0	0.4	-0.1	0.4
62305	99	P	SUR	50	0	1562	0	0.4	-0.1	0.4
62442	99	P	SUR	49	-16	1521	0	0.6	-0.3	0.7
6301001	99	P	SUR	64	5	737	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
6301004	99	P	SUR	72	20	17	0	1.7	-1.2	2.0
6301572	99	P	SUR	65	-28	741	0	0.7	-0.2	0.7
6301575	99	P	SUR	76	-17	742	0	1.0	-0.2	1.0
6301576	99	P	SUR	58	-18	740	0	0.5	-0.1	0.5
6301577	99	P	SUR	66	-2	743	0	0.4	0.1	0.5
6301846	99	P	SUR	83	35	1481	56	2.4	-0.8	2.5
63055	99	P	SUR	61	2	1557	0	0.5	0.0	0.5
63056	99	P	SUR	60	2	1563	0	0.6	0.5	0.8
63057	99	P	SUR	59	2	1564	0	0.4	-0.1	0.4
63058	99	P	SUR	53	2	1292	0	0.3	0.0	0.3
63059	99	P	SUR	58	-1	1534	85	3.1	1.0	3.2
63101	99	P	SUR	61	1	1564	0	0.6	0.1	0.6
63102	99	P	SUR	61	1	1564	0	0.5	0.0	0.5
63103	99	P	SUR	61	1	1564	0	0.7	0.4	0.8
63108	99	P	SUR	61	2	1563	0	0.5	0.0	0.5
63109	99	P	SUR	60	2	1563	0	0.4	-0.4	0.5
63110	99	P	SUR	60	2	1563	0	0.5	-0.2	0.5
63111	99	P	SUR	61	2	1946	0	0.4	-0.4	0.6
63112	99	P	SUR	61	1	1558	0	0.4	-0.4	0.6
63115	99	P	SUR	62	1	1560	0	0.4	-0.1	0.4
63117	99	P	SUR	61	1	1938	0	0.6	0.5	0.8
63118	99	P	SUR	60	2	1563	0	0.5	-0.4	0.6
6401531	99	P	SUR	53	-9	608	0	0.4	-0.2	0.5
6401575	99	P	SUR	69	14	231	0	0.4	-0.1	0.4
6401578	99	P	SUR	78	-19	740	0	0.6	0.2	0.6
6401583	99	P	SUR	76	-7	741	0	0.8	0.1	0.8
6401584	99	P	SUR	87	35	741	0	0.5	0.2	0.5
6401587	99	P	SUR	77	-18	741	0	0.5	-0.1	0.5
6401588	99	P	SUR	79	21	63	23	4.7	5.4	7.1
6401589	99	P	SUR	74	-16	740	0	0.9	0.1	0.9
6401590	99	P	SUR	87	6	741	0	0.5	-0.1	0.5
6401591	99	P	SUR	72	-21	739	0	0.6	0.3	0.7
6401592	99	P	SUR	69	8	742	0	0.3	0.0	0.3
6401758	99	P	SUR	63	-2	739	18	1.5	-0.2	1.5
6401759	99	P	SUR	56	-39	743	0	0.3	0.2	0.4
6401760	99	P	SUR	62	-52	742	0	0.4	0.0	0.4
6401761	99	P	SUR	68	-54	269	3	0.5	-0.1	0.5
6401762	99	P	SUR	67	-1	743	0	0.4	0.0	0.4
6401763	99	P	SUR	66	12	743	0	0.3	-0.1	0.4
6401839	99	P	SUR	71	15	615	0	0.5	0.0	0.5
6401843	99	P	SUR	70	16	552	0	0.7	0.0	0.7
6402539	99	P	SUR	69	13	622	0	0.4	-0.1	0.4
6402544	99	P	SUR	72	12	626	0	0.3	0.0	0.3

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
6402547	99	P	SUR	59	-20	612	0	0.4	0.0	0.4
6402551	99	P	SUR	52	-49	643	0	0.3	0.3	0.4
6402552	99	P	SUR	76	9	649	0	0.4	0.0	0.4
6402557	99	P	SUR	76	14	47	0	0.7	0.5	0.9
6402560	99	P	SUR	73	5	621	0	0.4	-0.3	0.5
6402562	99	P	SUR	59	-49	610	0	0.4	-0.1	0.4
6402563	99	P	SUR	72	22	660	0	0.6	0.3	0.7
6402587	99	P	SUR	53	-51	633	5	3.1	8.3	8.9
6402592	99	P	SUR	52	-48	655	0	0.3	-0.8	0.8
6402594	99	P	SUR	57	-54	669	0	0.6	-0.1	0.6
6402596	99	P	SUR	62	-29	660	0	0.5	0.0	0.5
6402597	99	P	SUR	48	-42	669	0	0.6	0.0	0.6
6402599	99	P	SUR	54	-37	620	0	0.4	0.0	0.4
6402611	99	P	SUR	49	-29	660	0	0.5	0.2	0.5
6402615	99	P	SUR	15	-45	678	0	0.3	0.3	0.4
6402616	99	P	SUR	28	-44	671	0	0.3	-0.2	0.3
6402617	99	P	SUR	25	-43	676	0	0.3	0.4	0.5
6402618	99	P	SUR	25	-32	689	0	0.3	0.2	0.3
6402619	99	P	SUR	39	-16	691	0	0.4	0.0	0.4
6402620	99	P	SUR	44	-10	670	0	0.4	0.3	0.5
6402621	99	P	SUR	43	-18	694	0	0.4	0.3	0.5
6402622	99	P	SUR	40	-20	692	0	0.4	0.1	0.4
6402655	99	P	SUR	70	3	660	0	0.5	0.1	0.5
6402659	99	P	SUR	70	19	621	22	6.4	3.7	7.4
6402661	99	P	SUR	63	-13	617	0	0.6	0.0	0.6
6402663	99	P	SUR	66	-21	293	0	0.5	-0.2	0.5
6402665	99	P	SUR	71	33	293	0	0.5	0.3	0.6
6402666	99	P	SUR	64	-21	617	0	0.4	-0.4	0.6
6402667	99	P	SUR	64	-20	590	0	0.4	-1.0	1.0
6402668	99	P	SUR	71	29	609	0	0.4	0.1	0.4
64041	99	P	SUR	61	-3	1535	0	0.5	-0.2	0.5
64045	99	P	SUR	59	-12	1517	2	0.6	-0.3	0.7
64046	99	P	SUR	61	-4	1521	0	0.4	-0.4	0.6
6501670	99	P	SUR	79	22	140	0	4.4	0.7	4.4
6501671	99	P	SUR	80	23	393	98	6.5	5.3	8.4
6501674	99	P	SUR	80	23	150	0	1.1	-0.1	1.1
6501679	99	P	SUR	68	-26	636	0	0.5	0.0	0.5
6600021	99	P	SUR	55	14	279	0	0.3	0.1	0.3
6600022	99	P	SUR	54	14	271	0	0.3	-0.2	0.4
7801563	99	P	SUR	45	-66	744	0	0.5	0.5	0.7

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

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND SPEED (M/S)
 AREA : 10N - 90N, 70W - 40E
 PERIOD : OCT 2022
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

TIME = 99 => AVERAGE OF ALL OBSERVATIONS

GROSS ERROR LIMIT FOR VECTOR WIND = 25 M/S

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
1300001	99	SPEED	SUR	11	-23	620	0	0	1.3	0.5	1.4
1300002	99	SPEED	SUR	20	-23	618	0	0	0.7	0.1	0.7
1300008	99	SPEED	SUR	15	-38	614	0	0	1.0	-0.1	1.0
1300130	99	SPEED	SUR	28	-16	48	0	0	3.1	-4.2	5.2
1300131	99	SPEED	SUR	28	-17	728	0	0	1.9	1.5	2.4
1801556	99	SPEED	SUR	15	-67	2866	0	0	1.6	0.1	1.6
1801560	99	SPEED	SUR	22	-67	2742	0	0	0.9	-0.2	1.0
1801564	99	SPEED	SUR	30	35	169	0	0	1.7	2.8	3.3
1801599	99	SPEED	SUR	18	-53	4034	0	0	1.3	-0.2	1.3
4100026	99	SPEED	SUR	12	-38	229	0	0	1.2	0.0	1.2
4100043	99	SPEED	SUR	21	-65	4450	0	0	1.1	0.0	1.1
4100046	99	SPEED	SUR	24	-68	4446	0	0	1.3	0.2	1.3
4100049	99	SPEED	SUR	27	-63	4447	0	0	1.3	0.1	1.3
4100052	99	SPEED	SUR	18	-65	4296	0	0	1.2	0.0	1.2
4100053	99	SPEED	SUR	18	-66	4349	0	0	1.4	1.0	1.7
4100056	99	SPEED	SUR	18	-65	4347	0	0	1.4	-0.4	1.5
4100139	99	SPEED	SUR	20	-38	740	0	0	0.9	-0.1	0.9
4100300	99	SPEED	SUR	16	-57	725	0	0	1.0	-0.4	1.0
41043	99	SPEED	SUR	21	-65	2741	0	0	1.0	0.0	1.0
41046	99	SPEED	SUR	24	-68	2775	0	0	1.2	0.0	1.2
41049	99	SPEED	SUR	28	-63	2753	0	0	1.3	0.1	1.3
41052	99	SPEED	SUR	18	-65	1876	0	0	1.2	0.1	1.2
41053	99	SPEED	SUR	19	-66	2137	0	0	1.4	0.4	1.5
41056	99	SPEED	SUR	18	-66	2072	0	0	1.3	-0.3	1.3
4200059	99	SPEED	SUR	15	-67	4455	0	0	1.4	0.4	1.4
4200085	99	SPEED	SUR	18	-67	3341	0	0	1.6	-0.4	1.6
42059	99	SPEED	SUR	15	-68	2800	0	0	1.2	0.2	1.2
42085	99	SPEED	SUR	18	-67	2076	0	0	1.4	-0.1	1.5
4400005	99	SPEED	SUR	43	-69	741	0	0	1.1	-0.2	1.1
4400008	99	SPEED	SUR	40	-69	4449	0	0	1.3	0.0	1.3
4400027	99	SPEED	SUR	44	-67	4449	0	0	1.2	-0.1	1.2
4400032	99	SPEED	SUR	44	-69	704	0	0	1.2	-0.2	1.2
4400033	99	SPEED	SUR	44	-69	691	0	0	1.2	-0.1	1.2
4400034	99	SPEED	SUR	44	-68	707	0	0	1.3	-0.2	1.3

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
440037	99	SPEED	SUR	43	-68	600	0	0	1.2	-0.3	1.3
44005	99	SPEED	SUR	43	-69	1120	0	0	1.2	-0.1	1.2
44008	99	SPEED	SUR	41	-69	2562	0	0	1.3	-0.1	1.3
44027	99	SPEED	SUR	44	-67	3218	0	0	1.2	0.0	1.2
44032	99	SPEED	SUR	44	-69	707	0	0	1.3	-0.1	1.3
44033	99	SPEED	SUR	44	-69	694	0	0	1.3	0.2	1.3
44034	99	SPEED	SUR	44	-68	710	0	0	1.4	-0.2	1.4
44037	99	SPEED	SUR	44	-68	603	0	0	1.3	-0.3	1.3
44078	99	SPEED	SUR	60	-40	423	0	0	1.6	-1.2	2.0
44150	99	SPEED	SUR	43	-64	737	0	0	1.4	0.0	1.4
44258	99	SPEED	SUR	45	-63	649	0	0	2.4	-0.3	2.4
44488	99	SPEED	SUR	45	-61	743	0	0	1.5	0.5	1.5
44489	99	SPEED	SUR	46	-61	720	0	0	1.4	1.0	1.7
6100001	99	SPEED	SUR	43	8	627	0	0	1.2	-0.6	1.4
6100002	99	SPEED	SUR	42	5	736	0	0	1.4	-0.4	1.5
6100196	99	SPEED	SUR	42	4	676	0	0	1.3	-0.9	1.6
6100197	99	SPEED	SUR	40	4	729	0	0	1.2	-0.4	1.3
6100198	99	SPEED	SUR	37	-2	359	0	0	1.6	-1.5	2.2
6100280	99	SPEED	SUR	41	1	718	0	0	1.3	-0.5	1.4
6100281	99	SPEED	SUR	40	0	705	0	0	1.6	0.1	1.6
6100417	99	SPEED	SUR	38	0	713	0	0	1.3	-0.3	1.3
6100430	99	SPEED	SUR	40	2	707	0	0	1.5	0.2	1.5
6101003	99	SPEED	SUR	40	25	157	0	0	1.5	-0.6	1.6
6101007	99	SPEED	SUR	36	25	140	0	0	1.2	-0.5	1.3
6101008	99	SPEED	SUR	37	22	150	0	0	1.8	-0.3	1.8
6101009	99	SPEED	SUR	35	25	29	0	0	2.5	-4.0	4.7
6200001	99	SPEED	SUR	45	-5	721	0	0	1.8	-1.2	2.2
6200024	99	SPEED	SUR	44	-3	420	0	0	1.6	-0.2	1.6
6200025	99	SPEED	SUR	44	-6	729	0	0	1.8	-0.3	1.8
6200082	99	SPEED	SUR	44	-8	731	0	0	1.7	-1.1	2.0
6200083	99	SPEED	SUR	43	-9	732	0	0	1.5	-0.7	1.6
6200084	99	SPEED	SUR	42	-9	730	0	0	1.6	-1.0	1.9
6200085	99	SPEED	SUR	36	-7	707	0	0	1.3	-0.5	1.4
6200086	99	SPEED	SUR	55	6	486	0	0	1.8	1.6	2.4
6200087	99	SPEED	SUR	55	7	486	0	0	1.5	1.1	1.8
6200091	99	SPEED	SUR	53	-5	744	0	0	1.3	0.1	1.3
6200092	99	SPEED	SUR	51	-11	744	0	0	1.3	0.2	1.4
6200093	99	SPEED	SUR	55	-10	744	0	0	1.3	-0.6	1.5
6200094	99	SPEED	SUR	52	-7	744	0	0	1.4	-1.2	1.8
6200095	99	SPEED	SUR	53	-16	743	0	0	1.4	0.2	1.4
6200192	99	SPEED	SUR	40	-10	640	0	0	1.1	-0.2	1.1

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF

ELEMENT MONITORED : WIND SPEED (M/S)

(CONTINU

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
6200199	99	SPEED	SUR	40	-9	632	0	0	1.1	-0.7	1.3
6201066	99	SPEED	SUR	55	7	739	0	0	1.5	0.1	1.5
6201081	99	SPEED	SUR	38	-9	635	0	0	1.5	0.1	1.5
62029	99	SPEED	SUR	49	-12	1523	4	0	1.4	1.0	1.7
62030	99	SPEED	SUR	50	-4	747	0	0	1.2	1.5	1.9
62050	99	SPEED	SUR	50	-4	1473	0	0	1.3	0.7	1.4
62081	99	SPEED	SUR	51	-13	1509	0	0	1.4	0.9	1.6
62091	99	SPEED	SUR	53	-5	743	0	0	1.3	0.1	1.3
62092	99	SPEED	SUR	51	-11	743	0	0	1.4	0.6	1.5
62093	99	SPEED	SUR	55	-10	743	0	0	1.3	-0.3	1.3
62094	99	SPEED	SUR	52	-7	743	0	0	1.3	-0.9	1.6
62095	99	SPEED	SUR	53	-16	742	0	0	1.4	0.5	1.5
62102	99	SPEED	SUR	58	2	1564	0	0	1.4	-0.2	1.4
62103	99	SPEED	SUR	50	-3	1520	4	0	1.5	-0.5	1.6
62104	99	SPEED	SUR	57	1	1564	0	0	1.3	-0.2	1.3
62105	99	SPEED	SUR	55	-13	1516	0	0	1.2	0.9	1.5
62107	99	SPEED	SUR	50	-6	1591	0	0	1.4	-0.1	1.5
62112	99	SPEED	SUR	58	0	1536	0	0	1.6	-0.6	1.7
62113	99	SPEED	SUR	58	0	1564	0	0	1.6	0.5	1.6
62114	99	SPEED	SUR	58	0	1947	0	0	1.5	0.9	1.8
62118	99	SPEED	SUR	58	1	1564	0	0	1.4	0.7	1.6
62119	99	SPEED	SUR	57	2	1557	0	0	1.4	-0.2	1.4
62120	99	SPEED	SUR	56	2	1562	0	0	1.2	0.2	1.2
62121	99	SPEED	SUR	54	3	1565	0	0	1.3	-0.9	1.6
62122	99	SPEED	SUR	57	2	1947	0	0	1.2	-0.2	1.2
62129	99	SPEED	SUR	58	0	795	0	0	1.3	0.8	1.5
62131	99	SPEED	SUR	54	1	1317	0	0	1.9	-0.1	1.9
62132	99	SPEED	SUR	56	2	1561	0	0	1.8	-1.1	2.1
62133	99	SPEED	SUR	57	1	1561	0	0	1.7	0.2	1.7
62140	99	SPEED	SUR	57	1	1944	0	0	1.2	0.0	1.2
62143	99	SPEED	SUR	58	2	1564	0	0	2.3	-1.2	2.5
62144	99	SPEED	SUR	53	2	1565	0	0	1.8	-0.8	2.0
62145	99	SPEED	SUR	53	3	1946	0	0	1.3	0.4	1.3
62146	99	SPEED	SUR	57	2	1556	0	0	1.3	-0.3	1.4
62148	99	SPEED	SUR	54	2	1552	0	0	1.6	-0.5	1.7
62149	99	SPEED	SUR	54	1	1556	0	0	1.3	0.0	1.3
62150	99	SPEED	SUR	54	1	1263	0	0	1.6	-0.3	1.6
62152	99	SPEED	SUR	57	2	1547	0	0	1.6	-1.1	1.9
62153	99	SPEED	SUR	57	2	1942	0	0	3.4	-1.9	3.9
62154	99	SPEED	SUR	56	2	1562	0	0	1.3	0.2	1.3
62155	99	SPEED	SUR	58	1	1564	0	0	1.4	0.4	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
62163	99	SPEED	SUR	48	-9	1497	2	0	1.3	0.3	1.4
62164	99	SPEED	SUR	57	1	1559	0	0	1.5	-1.2	2.0
62165	99	SPEED	SUR	54	1	1545	0	0	1.4	-1.0	1.7
62170	99	SPEED	SUR	51	2	1563	0	0	1.5	-0.1	1.5
62304	99	SPEED	SUR	51	2	1542	0	0	1.6	0.6	1.7
62305	99	SPEED	SUR	50	0	1562	0	0	1.6	0.6	1.7
62442	99	SPEED	SUR	49	-16	1521	0	0	1.6	0.7	1.8
6301001	99	SPEED	SUR	64	5	737	0	0	1.3	-0.5	1.4
6301004	99	SPEED	SUR	72	20	17	0	0	2.9	-3.3	4.4
63055	99	SPEED	SUR	61	2	1557	0	0	1.5	-1.9	2.4
63056	99	SPEED	SUR	60	2	1563	0	0	1.3	0.5	1.4
63057	99	SPEED	SUR	59	2	1564	0	0	2.3	-1.0	2.5
63058	99	SPEED	SUR	53	2	1292	0	0	1.1	-0.1	1.1
63101	99	SPEED	SUR	61	1	1564	0	0	1.4	-0.6	1.5
63103	99	SPEED	SUR	61	1	1564	0	0	1.6	0.0	1.6
63106	99	SPEED	SUR	61	2	1497	0	0	1.7	-0.5	1.8
63108	99	SPEED	SUR	61	2	1563	0	0	1.4	0.2	1.4
63109	99	SPEED	SUR	60	2	1561	0	0	1.3	0.3	1.3
63110	99	SPEED	SUR	60	2	1563	0	0	1.4	-0.4	1.4
63112	99	SPEED	SUR	61	1	1558	0	0	1.3	-0.4	1.3
63115	99	SPEED	SUR	62	1	1560	0	0	1.3	-0.5	1.4
63117	99	SPEED	SUR	61	1	1938	0	0	1.4	-0.5	1.5
64041	99	SPEED	SUR	61	-3	1535	0	0	1.3	0.0	1.3
64045	99	SPEED	SUR	59	-12	1517	0	0	1.4	0.8	1.6
64046	99	SPEED	SUR	61	-4	1507	0	0	1.2	0.7	1.4
6600021	99	SPEED	SUR	55	14	279	0	0	1.0	0.5	1.2
6600022	99	SPEED	SUR	54	14	271	0	0	1.4	-0.2	1.4

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

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND DIRECTION (DEGREES)
 AREA : 10N - 90N, 70W - 40E
 PERIOD : OCT 2022
 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
00000	99	DIRN	SUR	44	-79	5	0	0	2.5	-44.8	44.9
1300001	99	DIRN	SUR	11	-23	429	0	0	19.7	5.3	20.4
1300002	99	DIRN	SUR	20	-23	608	0	0	8.6	-3.1	9.1
1300008	99	DIRN	SUR	15	-38	602	0	0	10.7	5.3	11.9
1300130	99	DIRN	SUR	28	-16	19	0	0	5.4	-1.4	5.6
1300131	99	DIRN	SUR	28	-17	316	0	0	34.2	16.2	37.9
1801556	99	DIRN	SUR	15	-67	2700	0	0	21.3	5.0	21.9
1801560	99	DIRN	SUR	22	-67	2561	0	0	12.2	1.4	12.3
1801579	99	DIRN	SUR	29	-80	896	0	0	15.9	4.1	16.4
1801599	99	DIRN	SUR	18	-53	3851	0	0	14.2	5.3	15.2
4100001	99	DIRN	SUR	35	-72	3859	0	0	16.6	9.1	19.0
4100002	99	DIRN	SUR	32	-75	3251	0	0	20.2	1.7	20.3
4100004	99	DIRN	SUR	33	-79	3575	0	0	13.7	4.1	14.3
4100008	99	DIRN	SUR	31	-81	541	0	0	17.9	0.6	17.9
4100009	99	DIRN	SUR	29	-80	3442	0	0	21.5	5.1	22.0
4100010	99	DIRN	SUR	29	-78	3187	0	0	17.5	6.8	18.8
4100013	99	DIRN	SUR	33	-78	3702	0	0	15.0	6.0	16.2
4100024	99	DIRN	SUR	34	-78	656	0	0	19.7	4.0	20.1
4100025	99	DIRN	SUR	35	-75	3937	0	0	16.7	0.8	16.7
4100026	99	DIRN	SUR	12	-38	215	0	0	19.7	-0.4	19.7
4100029	99	DIRN	SUR	33	-80	528	0	0	20.9	2.1	21.0
4100033	99	DIRN	SUR	32	-80	673	0	0	18.6	6.5	19.7
4100037	99	DIRN	SUR	34	-77	606	0	0	17.2	-0.3	17.2
4100038	99	DIRN	SUR	34	-78	696	0	0	17.4	-0.1	17.5
4100043	99	DIRN	SUR	21	-65	3998	0	0	21.4	-2.3	21.5
4100046	99	DIRN	SUR	24	-68	3266	0	0	22.5	8.8	24.2
4100047	99	DIRN	SUR	27	-71	3037	0	0	34.8	7.8	35.7
4100049	99	DIRN	SUR	27	-63	3246	0	0	20.4	0.3	20.5
4100052	99	DIRN	SUR	18	-65	3946	0	0	16.4	5.8	17.4
4100053	99	DIRN	SUR	18	-66	1952	0	0	27.3	9.1	28.8
4100056	99	DIRN	SUR	18	-65	3766	0	0	22.6	4.5	23.1
4100064	99	DIRN	SUR	34	-77	527	0	0	21.3	-3.9	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
410066	99	DIRN	SUR	33	-80	531	0	0	18.5	4.4	19.0
41001	99	DIRN	SUR	35	-72	2404	0	0	16.8	8.9	19.0
4100139	99	DIRN	SUR	20	-38	699	0	0	12.1	5.9	13.5
41002	99	DIRN	SUR	32	-75	1962	0	0	19.9	0.9	20.0
4100300	99	DIRN	SUR	16	-57	719	0	0	12.1	-9.4	15.3
41004	99	DIRN	SUR	33	-79	2404	0	0	15.7	3.1	16.0
41008	99	DIRN	SUR	31	-81	775	0	0	18.9	0.2	18.9
41009	99	DIRN	SUR	29	-80	1983	0	0	17.5	3.2	17.8
41010	99	DIRN	SUR	29	-79	1802	0	0	19.9	8.7	21.7
41013	99	DIRN	SUR	33	-78	2266	0	0	13.8	4.8	14.6
41024	99	DIRN	SUR	34	-79	597	0	0	15.7	4.3	16.3
41025	99	DIRN	SUR	35	-76	2121	0	0	18.1	-0.8	18.1
4102647	99	DIRN	SUR	27	-84	1	0	0	0.0	159.5	159.5
4102649	99	DIRN	SUR	26	-83	2120	0	0	20.3	-4.1	20.7
41029	99	DIRN	SUR	33	-80	732	0	0	23.6	3.2	23.8
41033	99	DIRN	SUR	32	-80	591	0	0	18.6	6.0	19.6
41037	99	DIRN	SUR	34	-77	603	0	0	15.4	-0.6	15.5
41038	99	DIRN	SUR	34	-78	640	0	0	17.6	0.2	17.6
41043	99	DIRN	SUR	21	-65	2370	0	0	15.0	-3.8	15.5
41046	99	DIRN	SUR	24	-68	1909	0	0	17.6	8.4	19.5
41047	99	DIRN	SUR	28	-72	1994	0	0	29.2	7.6	30.2
41049	99	DIRN	SUR	28	-63	2029	0	0	18.4	-1.1	18.4
41052	99	DIRN	SUR	18	-65	1699	0	0	16.6	5.1	17.4
41053	99	DIRN	SUR	19	-66	1158	0	0	23.4	6.7	24.4
41056	99	DIRN	SUR	18	-66	1747	0	0	20.0	5.6	20.8
41064	99	DIRN	SUR	34	-77	516	0	0	21.4	-3.6	21.7
41066	99	DIRN	SUR	33	-80	533	0	0	20.1	5.3	20.8
4200013	99	DIRN	SUR	27	-83	1152	0	0	19.4	-4.5	19.9
4200022	99	DIRN	SUR	28	-84	1139	0	0	15.2	-3.2	15.5
4200036	99	DIRN	SUR	29	-85	3740	0	0	14.2	1.5	14.3
4200056	99	DIRN	SUR	20	-85	3517	0	0	17.9	8.3	19.7
4200059	99	DIRN	SUR	15	-67	4311	0	0	20.9	7.5	22.2
4200085	99	DIRN	SUR	18	-67	2926	0	0	29.7	18.7	35.1
42013	99	DIRN	SUR	27	-83	861	0	0	19.7	-4.4	20.2
42022	99	DIRN	SUR	28	-84	834	0	0	15.3	-3.5	15.7
42036	99	DIRN	SUR	29	-85	2100	0	0	16.0	-1.2	16.0
42056	99	DIRN	SUR	20	-85	2187	0	0	19.0	9.8	21.3
42059	99	DIRN	SUR	15	-68	2740	0	0	15.5	4.3	16.1
42085	99	DIRN	SUR	18	-67	1732	0	0	24.7	13.9	28.3
4400005	99	DIRN	SUR	43	-69	563	0	0	14.0	6.1	15.3
4400007	99	DIRN	SUR	44	-70	2956	0	0	16.3	8.4	18.4

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
4400008	99	DIRN	SUR	40	-69	3432	0	0	18.4	11.1	21.5
4400009	99	DIRN	SUR	38	-75	3261	0	0	19.7	7.4	21.1
4400013	99	DIRN	SUR	42	-71	3105	0	0	17.3	6.4	18.5
4400014	99	DIRN	SUR	37	-75	268	0	0	28.2	0.2	28.2
4400017	99	DIRN	SUR	41	-72	3711	0	0	17.5	4.2	18.0
4400018	99	DIRN	SUR	42	-70	3219	0	0	15.6	8.3	17.7
4400020	99	DIRN	SUR	41	-70	3455	0	0	17.2	5.5	18.0
4400022	99	DIRN	SUR	41	-74	529	0	0	14.5	1.3	14.6
4400027	99	DIRN	SUR	44	-67	3458	0	0	13.5	11.2	17.5
4400029	99	DIRN	SUR	43	-71	528	0	0	17.8	6.5	19.0
4400030	99	DIRN	SUR	43	-70	529	0	0	17.5	5.5	18.3
4400032	99	DIRN	SUR	44	-69	527	0	0	16.8	3.9	17.2
4400033	99	DIRN	SUR	44	-69	452	0	0	20.8	13.5	24.8
4400034	99	DIRN	SUR	44	-68	538	0	0	16.2	8.2	18.1
4400037	99	DIRN	SUR	43	-68	457	0	0	20.4	37.4	42.6
4400039	99	DIRN	SUR	41	-73	432	0	0	42.1	2.3	42.1
4400040	99	DIRN	SUR	41	-74	741	0	0	19.8	-4.8	20.4
4400041	99	DIRN	SUR	37	-77	1191	0	0	16.2	5.3	17.0
4400042	99	DIRN	SUR	38	-76	4461	0	0	18.2	1.7	18.3
4400058	99	DIRN	SUR	38	-76	3405	0	0	22.4	1.1	22.4
4400062	99	DIRN	SUR	39	-76	4822	0	0	18.0	5.3	18.8
4400063	99	DIRN	SUR	39	-76	4657	0	0	16.7	2.9	17.0
4400064	99	DIRN	SUR	37	-76	4417	0	0	19.1	1.5	19.1
4400065	99	DIRN	SUR	40	-74	3481	0	0	15.4	6.8	16.8
4400066	99	DIRN	SUR	40	-73	3658	0	0	25.8	8.2	27.1
4400072	99	DIRN	SUR	37	-76	4311	0	0	21.8	4.0	22.1
4400075	99	DIRN	SUR	40	-71	3336	0	0	18.8	-11.1	21.8
4400076	99	DIRN	SUR	40	-71	766	0	0	19.7	-7.3	21.0
4400077	99	DIRN	SUR	40	-71	3279	0	0	22.5	-8.6	24.1
44005	99	DIRN	SUR	43	-69	823	0	0	14.6	5.8	15.7
44007	99	DIRN	SUR	44	-70	1962	0	0	17.8	8.7	19.8
44008	99	DIRN	SUR	41	-69	1823	0	0	18.5	7.9	20.2
44009	99	DIRN	SUR	39	-75	2500	0	0	21.2	5.7	21.9
44013	99	DIRN	SUR	42	-71	1941	0	0	17.1	4.4	17.7
44014	99	DIRN	SUR	37	-75	259	0	0	30.3	0.1	30.3
44017	99	DIRN	SUR	41	-72	2341	0	0	16.6	2.4	16.8
44018	99	DIRN	SUR	42	-70	2043	0	0	16.2	7.0	17.7
44020	99	DIRN	SUR	42	-70	2052	0	0	15.7	4.1	16.2
44022	99	DIRN	SUR	41	-74	455	0	0	15.2	1.8	15.3
44027	99	DIRN	SUR	44	-67	2396	0	0	13.8	8.8	16.3
44029	99	DIRN	SUR	43	-71	745	0	0	20.6	7.3	21.8

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
44030	99	DIRN	SUR	43	-70	515	0	0	18.0	5.9	18.9
44032	99	DIRN	SUR	44	-69	512	0	0	17.1	3.9	17.5
44033	99	DIRN	SUR	44	-69	436	0	0	19.3	12.1	22.8
44034	99	DIRN	SUR	44	-68	518	0	0	16.3	7.8	18.0
44037	99	DIRN	SUR	44	-68	435	0	0	18.0	38.7	42.7
44039	99	DIRN	SUR	41	-73	423	0	0	41.5	1.9	41.6
44040	99	DIRN	SUR	41	-74	715	0	0	16.2	-6.2	17.4
44041	99	DIRN	SUR	37	-77	893	0	0	16.4	6.3	17.5
44042	99	DIRN	SUR	38	-76	2404	0	0	20.5	2.1	20.6
44058	99	DIRN	SUR	38	-76	1330	0	0	24.3	-0.4	24.3
44062	99	DIRN	SUR	39	-76	3197	0	0	18.4	6.8	19.6
44063	99	DIRN	SUR	39	-76	2991	0	0	16.6	3.2	16.9
44064	99	DIRN	SUR	37	-76	2497	0	0	20.8	2.4	21.0
44065	99	DIRN	SUR	40	-74	2084	0	0	15.8	5.1	16.6
44066	99	DIRN	SUR	40	-73	2651	0	0	29.0	7.5	30.0
44069	99	DIRN	SUR	41	-73	733	0	0	34.2	-27.2	43.7
44072	99	DIRN	SUR	37	-76	2215	0	0	23.9	4.5	24.3
44075	99	DIRN	SUR	40	-71	1723	0	0	17.4	-13.8	22.2
44076	99	DIRN	SUR	40	-71	418	0	0	20.8	-7.0	22.0
44077	99	DIRN	SUR	40	-71	1670	0	0	22.3	-10.7	24.7
44078	99	DIRN	SUR	60	-40	409	0	0	11.1	-20.8	23.6
44150	99	DIRN	SUR	43	-64	535	0	0	22.7	13.4	26.4
44258	99	DIRN	SUR	45	-63	450	0	0	18.1	8.6	20.1
44488	99	DIRN	SUR	45	-61	563	0	0	21.3	9.7	23.4
44489	99	DIRN	SUR	46	-61	469	0	0	17.5	-0.4	17.5
4500003	99	DIRN	SUR	45	-83	3675	0	0	18.0	8.2	19.8
4500005	99	DIRN	SUR	42	-82	3818	0	0	13.5	6.6	15.0
4500008	99	DIRN	SUR	44	-82	3792	0	0	14.0	5.5	15.0
4500012	99	DIRN	SUR	44	-77	3451	0	0	16.7	4.8	17.4
4500162	99	DIRN	SUR	45	-83	129	0	0	9.4	5.6	10.9
4500163	99	DIRN	SUR	44	-84	1594	0	0	14.8	4.1	15.4
4500165	99	DIRN	SUR	42	-83	3249	0	0	27.3	13.0	30.2
4500167	99	DIRN	SUR	42	-80	1453	0	0	28.2	0.6	28.2
4500175	99	DIRN	SUR	46	-85	6129	0	0	28.6	4.4	29.0
4500176	99	DIRN	SUR	42	-82	2403	0	0	27.0	-20.6	33.9
4500196	99	DIRN	SUR	42	-82	2623	0	0	20.1	15.8	25.6
4500197	99	DIRN	SUR	42	-82	1308	0	0	32.0	29.5	43.5
4500202	99	DIRN	SUR	42	-83	2087	0	0	43.2	0.9	43.2
4500203	99	DIRN	SUR	41	-83	2687	0	0	48.5	-26.0	55.0
4500204	99	DIRN	SUR	42	-82	2307	0	0	47.4	29.6	55.9
4500205	99	DIRN	SUR	42	-82	2382	0	0	41.0	22.1	46.6

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
4500206	99	DIRN	SUR	42	-82	2112	0	0	22.5	-38.5	44.7
45003	99	DIRN	SUR	45	-83	2085	0	0	18.8	2.3	18.9
45005	99	DIRN	SUR	42	-82	2376	0	0	14.1	3.9	14.6
45008	99	DIRN	SUR	44	-82	2579	0	0	16.3	2.7	16.5
45012	99	DIRN	SUR	44	-77	1835	0	0	16.6	2.2	16.8
45132	99	DIRN	SUR	43	-81	651	0	0	17.1	-4.6	17.8
45135	99	DIRN	SUR	44	-77	597	0	0	17.9	3.2	18.2
45137	99	DIRN	SUR	46	-81	612	0	0	19.1	-0.4	19.1
45139	99	DIRN	SUR	43	-80	444	0	0	21.8	3.0	22.0
45142	99	DIRN	SUR	43	-79	569	0	0	19.8	-9.8	22.1
45143	99	DIRN	SUR	45	-81	559	0	0	23.5	-11.2	26.1
45147	99	DIRN	SUR	42	-83	578	0	0	15.6	-0.6	15.7
45149	99	DIRN	SUR	44	-82	617	0	0	17.5	7.8	19.2
45151	99	DIRN	SUR	45	-79	408	0	0	18.0	-1.5	18.1
45152	99	DIRN	SUR	46	-80	420	0	0	20.0	3.5	20.3
45154	99	DIRN	SUR	46	-83	571	0	0	19.2	-1.5	19.2
45159	99	DIRN	SUR	44	-79	377	0	0	23.4	6.8	24.3
45162	99	DIRN	SUR	45	-83	115	0	0	9.1	5.6	10.7
45163	99	DIRN	SUR	44	-84	1446	0	0	15.7	2.2	15.9
45165	99	DIRN	SUR	42	-83	1893	0	0	26.2	9.3	27.8
45167	99	DIRN	SUR	42	-80	1475	0	0	28.8	-1.4	28.9
45175	99	DIRN	SUR	46	-85	4107	0	0	27.2	1.7	27.2
45176	99	DIRN	SUR	42	-82	1765	0	0	28.0	-18.7	33.6
45196	99	DIRN	SUR	42	-82	2001	0	0	20.1	14.5	24.8
45197	99	DIRN	SUR	42	-82	1355	0	0	33.0	29.1	44.0
45202	99	DIRN	SUR	42	-83	1784	0	0	44.8	0.5	44.8
45203	99	DIRN	SUR	41	-83	1879	0	0	52.0	-24.8	57.6
45204	99	DIRN	SUR	42	-82	2104	0	0	48.0	32.0	57.6
45205	99	DIRN	SUR	42	-82	1885	0	0	39.7	19.8	44.3
45206	99	DIRN	SUR	42	-82	2006	0	0	30.8	-37.1	48.2
6100198	99	DIRN	SUR	37	-2	166	0	0	32.4	23.2	39.8
6100281	99	DIRN	SUR	40	0	173	0	0	35.7	-8.0	36.6
6100417	99	DIRN	SUR	38	0	417	0	0	15.7	5.0	16.4
6200001	99	DIRN	SUR	45	-5	605	0	0	18.2	0.4	18.2
6200024	99	DIRN	SUR	44	-3	232	0	0	20.4	3.2	20.7
6200025	99	DIRN	SUR	44	-6	404	0	0	21.8	4.7	22.3
6200082	99	DIRN	SUR	44	-8	630	0	0	16.6	-11.1	19.9
6200083	99	DIRN	SUR	43	-9	631	0	0	14.5	3.5	14.9
6200084	99	DIRN	SUR	42	-9	581	0	0	14.2	8.3	16.5
6200085	99	DIRN	SUR	36	-7	373	0	0	19.0	9.5	21.2
6200091	99	DIRN	SUR	53	-5	713	0	0	14.1	3.4	14.5

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF

ELEMENT MONITORED : WIND DIRECTION (DEGREES)

(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
6200092	99	DIRN	SUR	51	-11	703	0	0	15.4	4.0	15.9
6200093	99	DIRN	SUR	55	-10	726	0	0	17.4	1.9	17.5
6200094	99	DIRN	SUR	52	-7	702	0	0	12.9	9.0	15.7
6200095	99	DIRN	SUR	53	-16	713	0	0	20.8	5.3	21.5
6200192	99	DIRN	SUR	40	-10	567	0	0	14.3	-3.6	14.8
6200199	99	DIRN	SUR	40	-9	467	0	0	18.5	28.1	33.6
6201081	99	DIRN	SUR	38	-9	518	0	0	17.0	2.6	17.2
62029	99	DIRN	SUR	49	-12	1439	4	0	16.6	-5.8	17.6
62030	99	DIRN	SUR	50	-4	660	0	0	28.2	38.1	47.4
62050	99	DIRN	SUR	50	-4	1375	0	0	15.8	6.1	16.9
62081	99	DIRN	SUR	51	-13	1449	0	0	15.9	-4.2	16.4
62091	99	DIRN	SUR	53	-5	704	0	0	14.3	2.8	14.5
62092	99	DIRN	SUR	51	-11	696	0	0	15.6	3.6	16.0
62093	99	DIRN	SUR	55	-10	721	0	0	17.6	1.4	17.7
62094	99	DIRN	SUR	52	-7	697	0	0	13.0	8.4	15.5
62095	99	DIRN	SUR	53	-16	711	0	0	21.0	4.9	21.5
62103	99	DIRN	SUR	50	-3	1411	4	0	19.7	3.4	20.0
62105	99	DIRN	SUR	55	-13	1461	0	0	13.0	-4.7	13.9
62107	99	DIRN	SUR	50	-6	1413	0	0	14.8	6.2	16.0
62112	99	DIRN	SUR	58	0	1479	0	0	12.0	-4.1	12.7
62114	99	DIRN	SUR	58	0	1896	0	0	11.8	-1.0	11.8
62163	99	DIRN	SUR	48	-9	1408	2	0	18.0	11.8	21.5
62305	99	DIRN	SUR	50	0	1417	0	0	19.5	5.6	20.3
62442	99	DIRN	SUR	49	-16	1412	0	0	26.9	4.6	27.3
64041	99	DIRN	SUR	61	-3	1463	0	0	10.1	7.6	12.6
64045	99	DIRN	SUR	59	-12	1441	0	0	13.7	-12.7	18.7
64046	99	DIRN	SUR	61	-4	1441	0	0	10.3	0.9	10.4

4.12 Table 24 - List of Assimilated BUFR Encoded Radiosonde Stations

ASDE09	ATGU3FT	DBLK	FPUW5GN	GQBZLZL	JGQH	JNKN7JF	KMPLHPW	LRYQE3U
UXK5JTU	WDK38HS	XKQLWQB	XQFJRGX	YLV96WM	7JUNA4N	9ZT9MRK	01001	01004
01010	01028	01241	01400	01415	01492	02365	02527	02836
02963	03005	03023	03238	03354	03502	03743	03808	03882
03918	03953	04018	04089	04220	04270	04320	04339	04360
04417	06011	06260	06458	06610	07110	07145	07510	07645
07761	08001	08023	08190	08221	08302	08383	08430	08508
08522	08536	10035	10113	10184	10238	10304	10393	10410
10548	10618	10739	10771	10868	10954	10962	11010	11035
11120	11240	11520	11747	11952	12120	12374	12425	12575
12843	12982	13275	13388	14015	14240	14430	15420	15614
16045	16064	16113	16144	16245	16332	16429	16546	16622
16716	16754	17030	17064	17095	17196	17220	17240	17351
17607	20674	22008	23205	23472	23884	23921	24641	24908
26038	26435	26629	26708	26850	27459	27707	27713	27962
28225	28661	29612	29698	30557	30673	34172	35121	40179
40186	42369	42971	43150	43371	45004	47102	47104	47138
47155	47169	47183	47186	47230	47401	47412	47582	47600
47646	47678	47741	47778	47807	47827	47909	47918	47945
47971	47991	48601	48615	48650	48657	48698	50527	50557
50774	50953	51076	51243	51431	51463	51644	51656	51709
51777	51828	51839	52203	52267	52323	52418	52533	52652
52681	52818	52836	52866	52983	53068	53463	53513	53543
53614	53772	53845	53915	54102	54135	54161	54218	54292
54374	54511	54662	54727	54857	55299	55591	56029	56046
56080	56137	56146	56187	56492	56571	56651	56691	56739
56778	56964	56985	57083	57127	57131	57178	57245	57461
57494	57516	57541	57687	57749	57816	57957	57972	57993
58027	58150	58203	58238	58362	58424	58457	58606	58633
58665	58725	58847	59023	59134	59211	59265	59280	59293
59316	59431	59758	59981	60018	60155	60390	60571	60630
60656	60680	60715	61901	61980	61998	63894	63985	65344
66160	67083	68263	68424	68442	68512	68816	68842	70026
70133	70200	70219	70231	70261	70273	70308	70316	70326
70350	70361	70398	71043	71081	71082	71109	71119	71603
71722	71802	71811	71815	71816	71823	71836	71845	71867
71906	71907	71908	71909	71913	71917	71924	71925	71926
71934	71945	71957	71964	72202	72206	72208	72210	72215
72230	72233	72235	72240	72248	72249	72251	72261	72265
72293	72305	72317	72318	72327	72340	72357	72363	72364
72365	72376	72388	72402	72413	72426	72440	72456	72476
72489	72493	72501	72518	72528	72558	72562	72572	72582
72597	72632	72634	72645	72649	72659	72662	72672	72681
72694	72712	72747	72764	72768	72776	72786	72797	73033
73110	74389	74455	74560	76225	76256	76394	76405	76458
76526	76595	76612	76644	76654	76679	76692	76743	76805
76903	78384	78397	78583	78897	78954	81405	82965	83768
85442	85586	85799	85934	87155	87344	87418	87582	87623
87715	87860	88889	89002	89062	89564	89571	89592	89611
89625	89642	89662	89859	91165	91212	91285	91348	91408
91592	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	96413	96441
96471	96481	96996						

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

ASDE09	ATGU3FT	DBLK	FPUW5GN	GQBZLZL	JNKN7JF	KMPLHPW	LRYQE3U	UXK5JTU
WDK38HS	XKQLWQB	XQFJRGX	YLV96WM	7JUNA4N	9ZT9MRK	01010	01028	01415
01492	02365	02527	02836	02963	06610	07110	07145	07510
07645	07761	08001	08023	08190	08221	08302	08383	08430
08536	11010	11035	11120	11240	12575	17607	40186	47155
47183	47230	50557	50774	50953	51076	51243	51644	51656
51709	51828	51839	52203	52267	52323	52652	52681	52818
52836	52866	52983	53068	53513	53543	53614	53845	53915
54135	54218	54292	54374	54727	54857	55299	55591	56029
56046	56080	56137	56146	56187	56492	56571	56651	56691
56778	56964	56985	57127	57131	57178	57245	57461	57516
57541	57687	57749	57816	57957	57993	58027	58150	58203
58362	58424	58457	58665	58725	58847	59023	59134	59211
59265	59280	59293	59316	59431	59758	59981	65344	72413
76743	76903	89642	89859	91925	91938	91948	93417	93817
94653								

5 Annex - Explanations of figures and tables

5.1 General

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

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

5.2 Data Availability

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

5.3 Data Quality

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

It should be noted that:

- (i) all results are based on software that may undergo further development;
- (ii) although the quality of the ECMWF first-guess fields is of a generally high standard this is only true to a limited extent in the tropics, where small-scale processes such as convection are of much greater importance than in mid-latitudes, and the observations will sometimes not be representative of the scales of motion given by the first-guess;
- (iii) the first-guess fields themselves will vary in accuracy depending on the density and quality of data, particularly in the upstream regions and over Antarctica and the southern hemisphere mid-latitudes. Direct comparisons between stations (or airlines) should preferably be restricted to observations in a reasonably homogeneous climatic region.

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

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

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

The corresponding limits for wind (table 8) are:

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

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

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

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

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

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

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

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

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