



ECMWF Global Data Monitoring Report

January 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	Dec	Jan	Ident	Time	Dec	Jan
01004	(12)	30	7	29698	(00)	9	31
01010	(12)	29	15	29698	(12)	10	31
01415	(12)	31	9	33008	(00)	0	14
03918	(00)	31	11	40766	(12)	0	19
06610	(12)	34	8	42369	(00)	19	31
10393	(12)	31	8	42410	(00)	4	29
11952	(12)	32	9	42410	(12)	1	28
16045	(12)	31	6	42809	(00)	0	29
16064	(12)	31	10	42809	(12)	1	28
16245	(12)	31	5	42867	(00)	2	31
16429	(12)	31	9	42867	(12)	2	31
16546	(12)	31	6	43279	(00)	2	30
38341	(00)	31	18	43279	(12)	1	31
40800	(00)	22	0	43346	(00)	0	22
40809	(12)	22	0	61442	(00)	0	16
40841	(12)	27	12	61442	(12)	0	19
40848	(00)	21	7	61980	(12)	17	30
43599	(12)	16	0	64500	(12)	7	20
47138	(12)	31	0	70414	(00)	0	11
48453	(00)	31	5	72357	(00)	0	19
48698	(00)	19	5	72357	(12)	0	18
48698	(12)	26	7	72582	(00)	8	24
68263	(00)	30	14	72582	(12)	17	28
68263	(12)	31	13	89022	(12)	7	28
68842	(12)	21	0	98618	(00)	4	30
74005	(00)	17	5	98618	(12)	4	30
76225	(00)	27	1	-	-	-	-
76458	(00)	22	9	-	-	-	-
76612	(12)	23	12	-	-	-	-
76644	(00)	30	0	-	-	-	-
76644	(12)	29	18	-	-	-	-
76743	(12)	24	7	-	-	-	-
78583	(00)	30	0	-	-	-	-
78583	(12)	31	0	-	-	-	-
78807	(00)	29	0	-	-	-	-
82400	(00)	19	0	-	-	-	-
82400	(12)	18	0	-	-	-	-
89002	(12)	31	7	-	-	-	-
89662	(12)	25	0	-	-	-	-
91643	(00)	24	11	-	-	-	-
98646	(00)	15	0	-	-	-	-
98646	(12)	14	0	-	-	-	-

2.2 Drifting Buoys

Surface pressure observations from **1768** drifting buoys were received during the month.

3 Global monitoring statistics

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

3.1 Data Availability

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

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

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

3.2 Data Quality

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

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

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

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

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

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

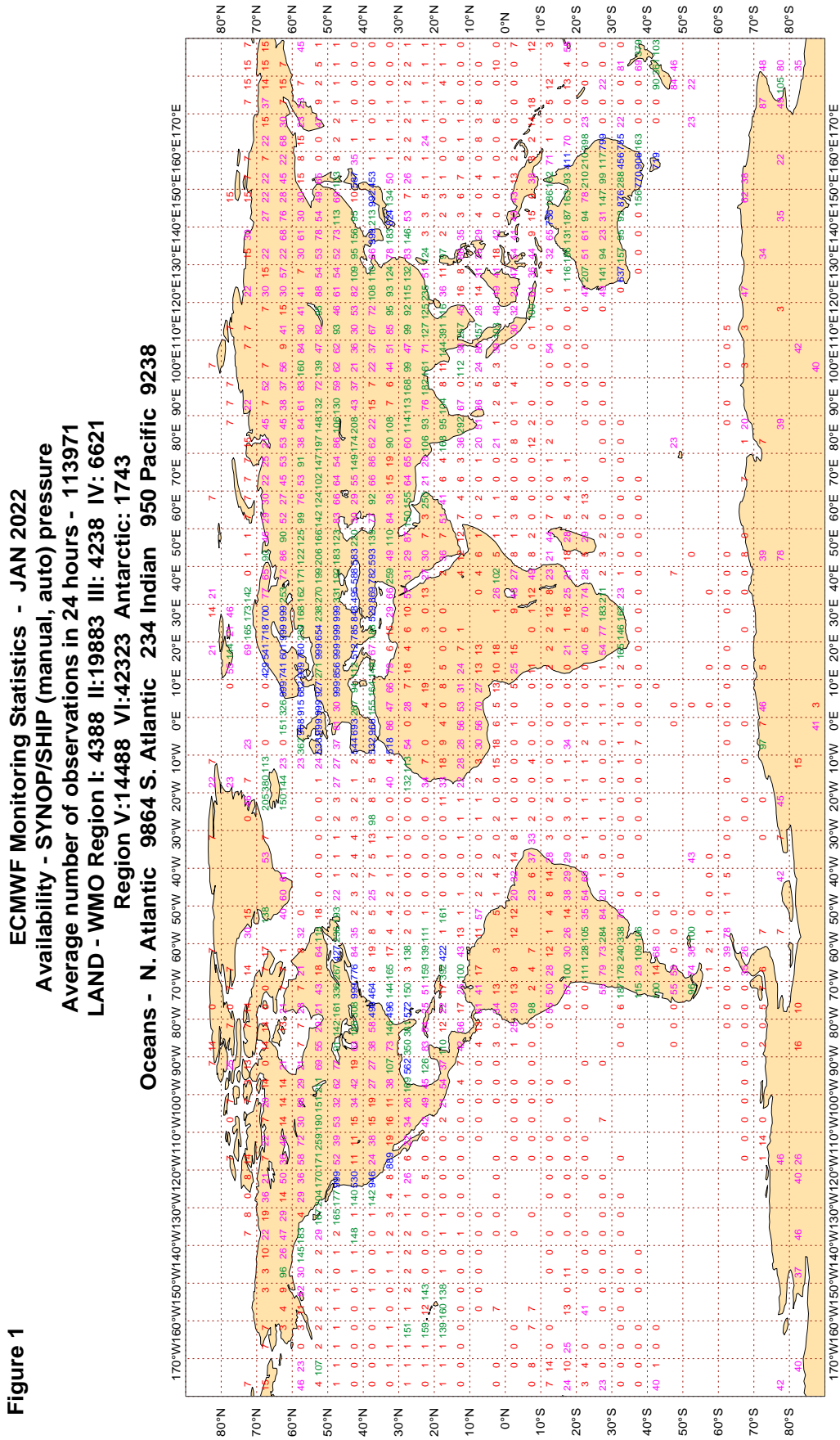
Tab	Parameter	Observation Time
10	Geopotential	00 and 12 UTC
11	Wind	00 and 12 UTC

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

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

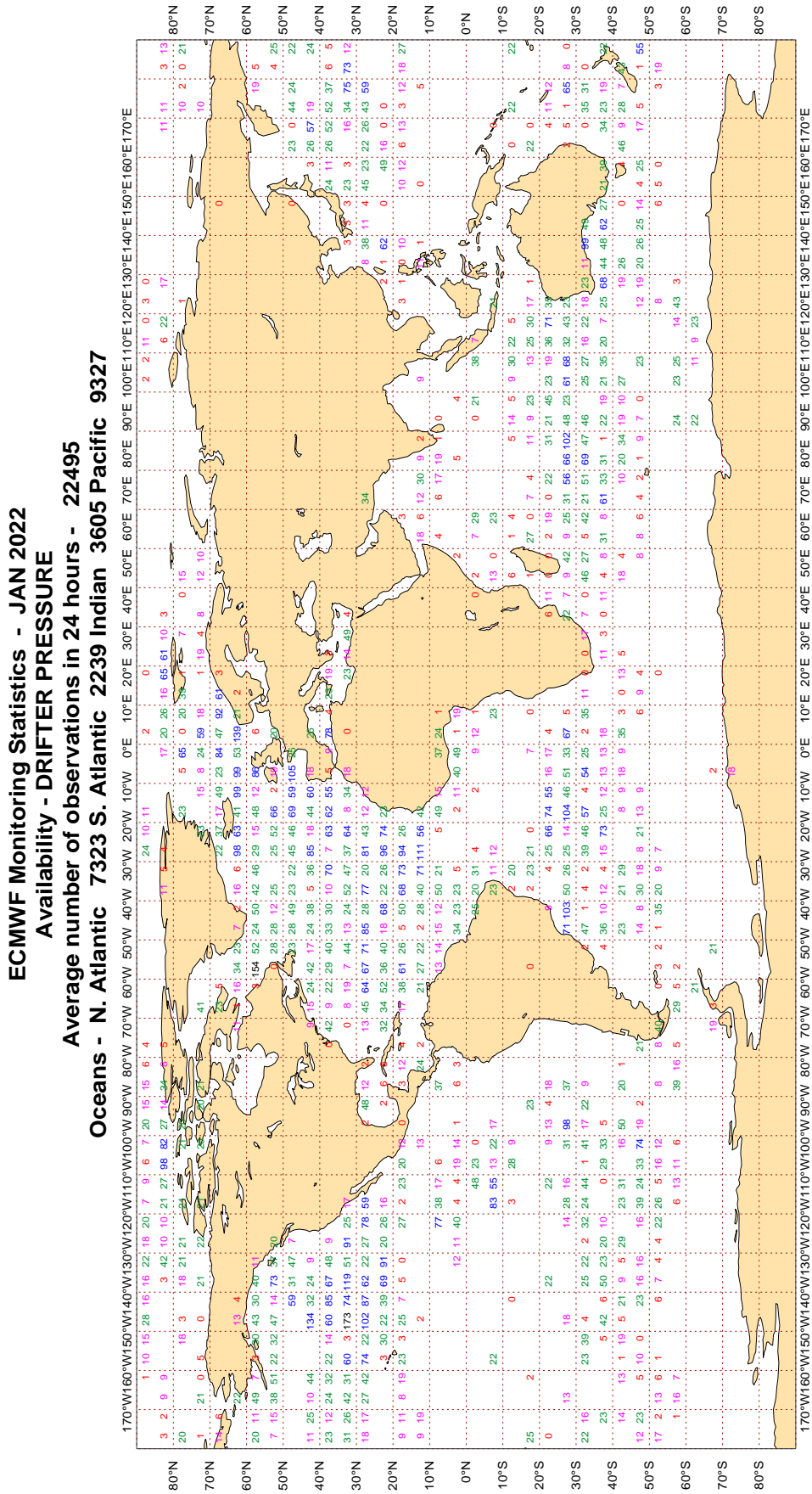
Table 12 provides quality statistics of aircraft wind observations stratified by airline carrier.

3.2.1 Figure 1 - Availability - SYNOP PRESSURE



3.2.2 Figure 2 - Availability - DRIFTER PRESSURE

Figure 2

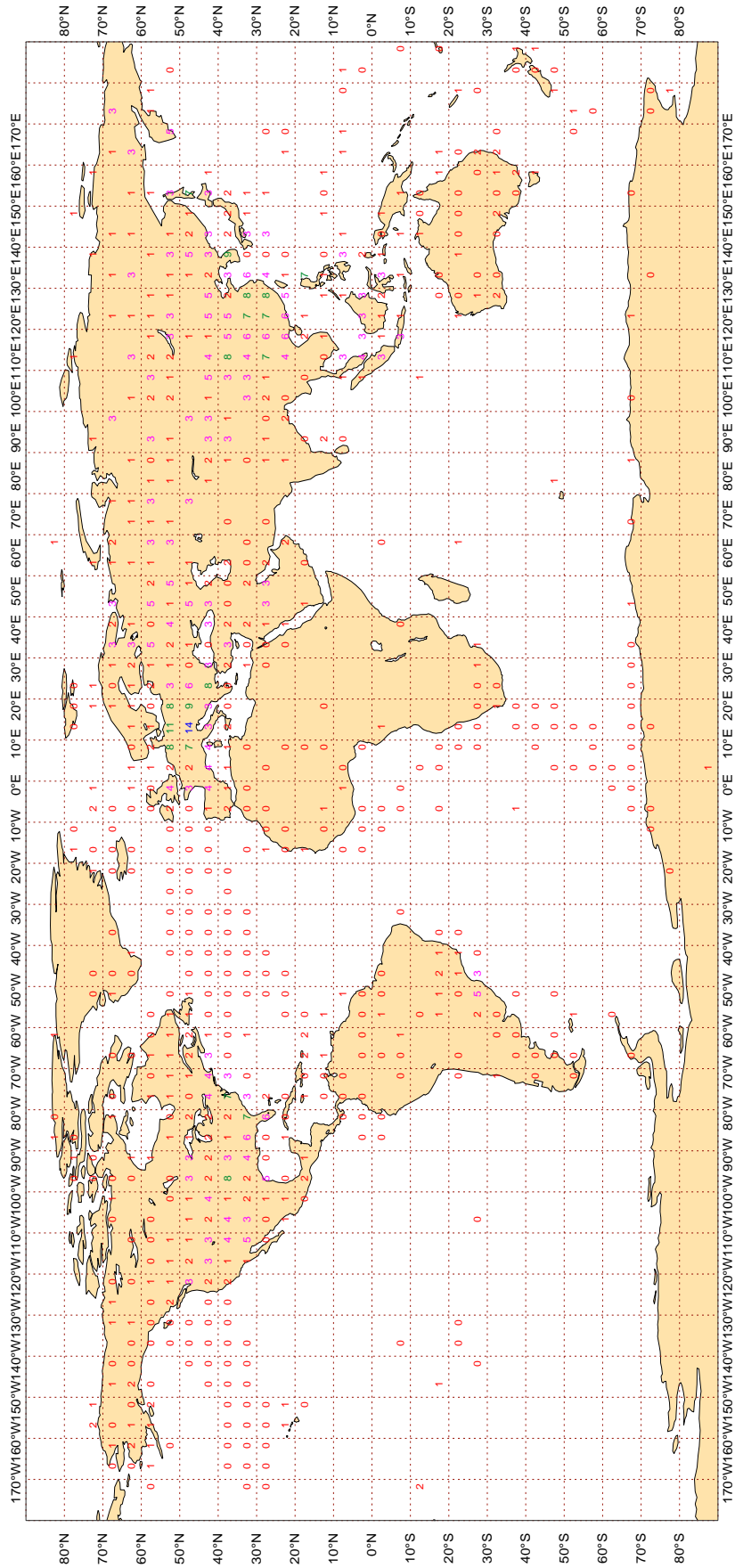


Magics 3.0.4 (64 bit)

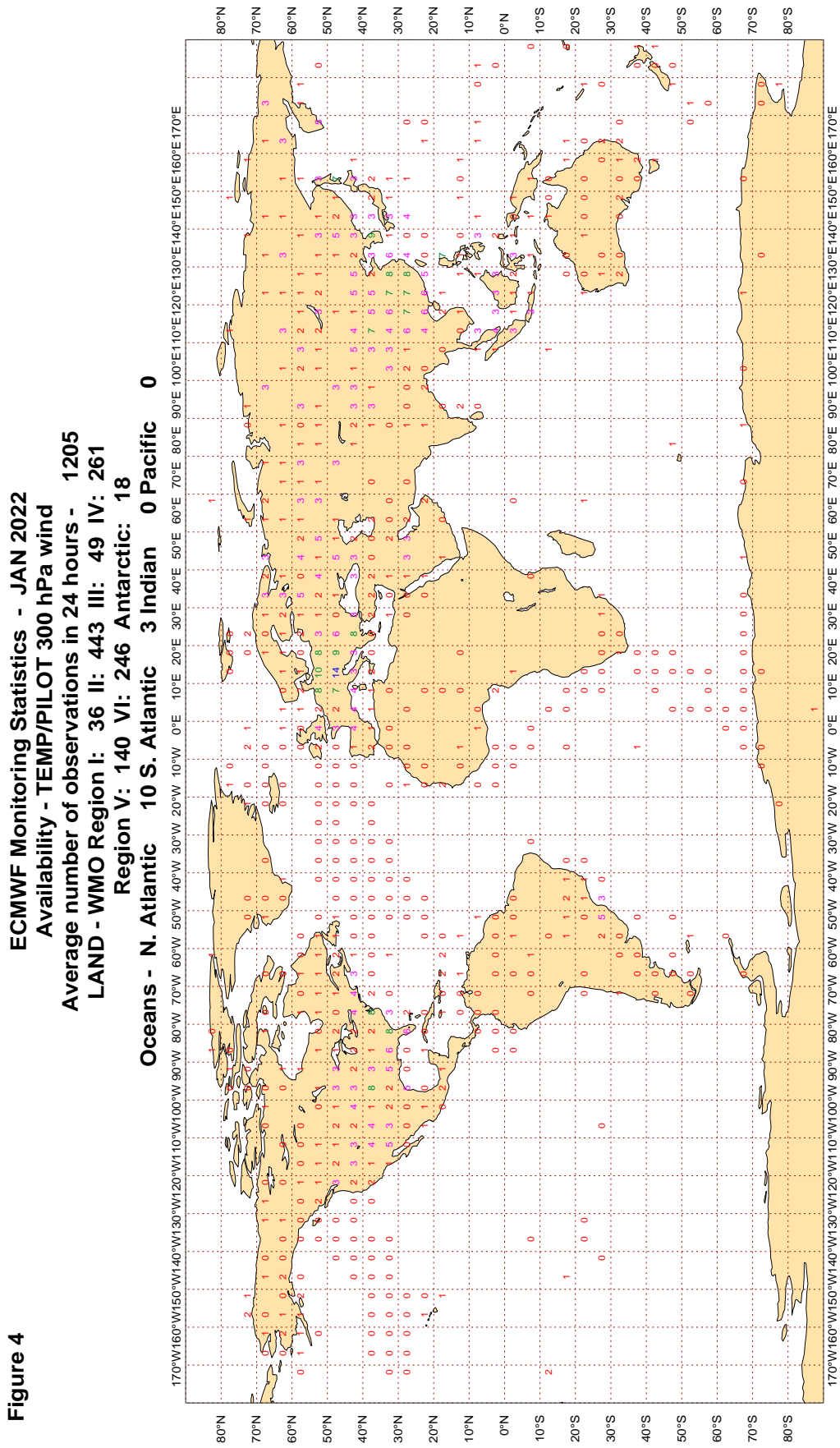
3.2.3 Figure 3 - Availability - TEMP 500 hPa geopotential

Figure 3

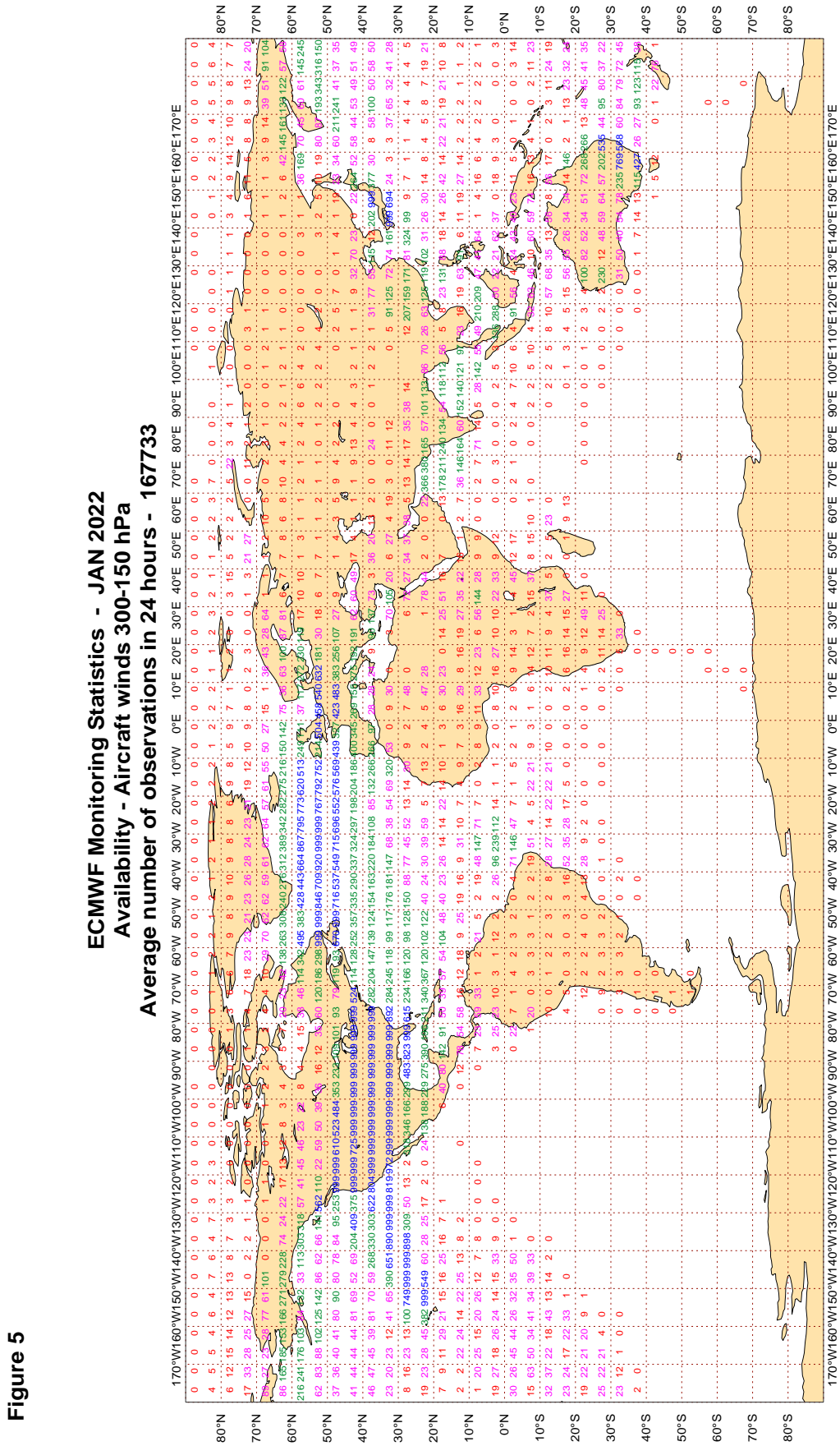
ECMWF Monitoring Statistics - JAN 2022
 Availability - TEMP 500 hPa Geopotential
 Average number of observations in 24 hours - 1210
 LAND - WMO Region I: 34 II: 449 III: 50 IV: 256
 Region V: 141 VI: 250 Antarctic: 18
 Oceans - N. Atlantic 10 S. Atlantic 3 Indian 0 Pacific 0



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



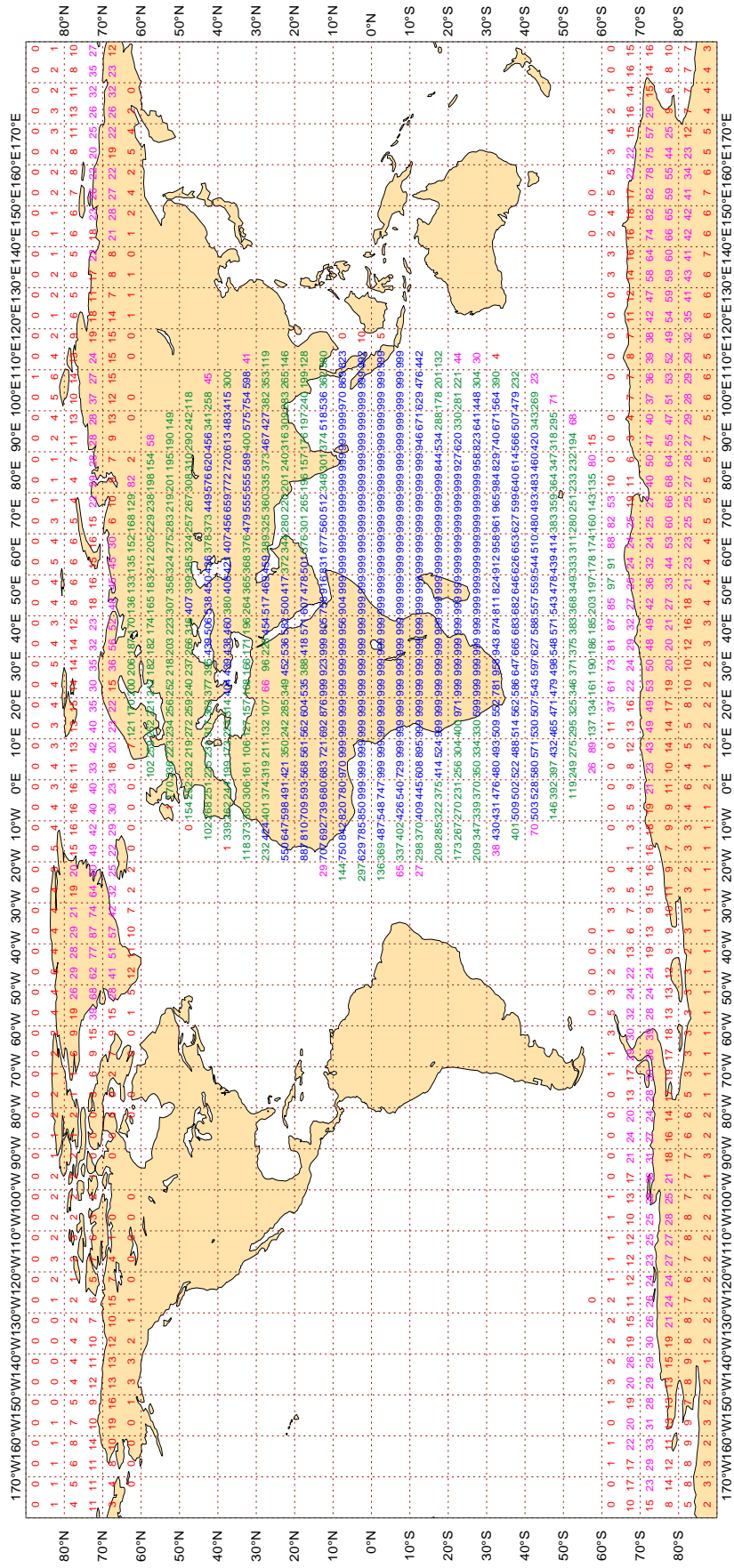
3.2.5 Figure 5 - Availability - AIRCRAFT winds 300-150 hPa



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

Figure 6

ECMWF Monitoring Statistics - JAN 2022
Availability - AMV winds 400-150 hPa
Average number of observations in 24 hours - 406758



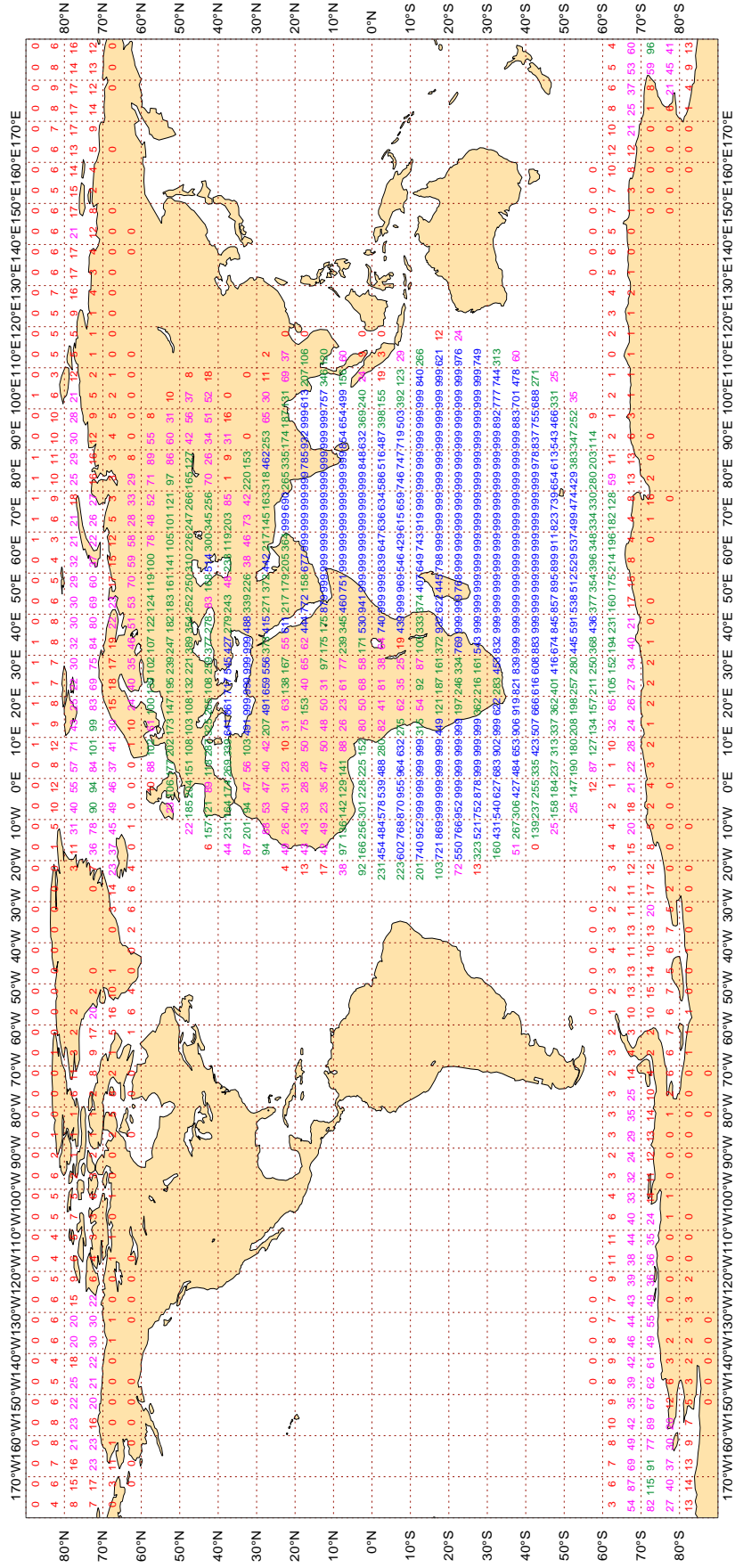
Magics 3.0.4 (64 bit)



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

Figure 7

ECMWF Monitoring Statistics - JAN 2022
Availability - AMV winds 1000-700 hPa
Average number of observations in 24 hours - 329151

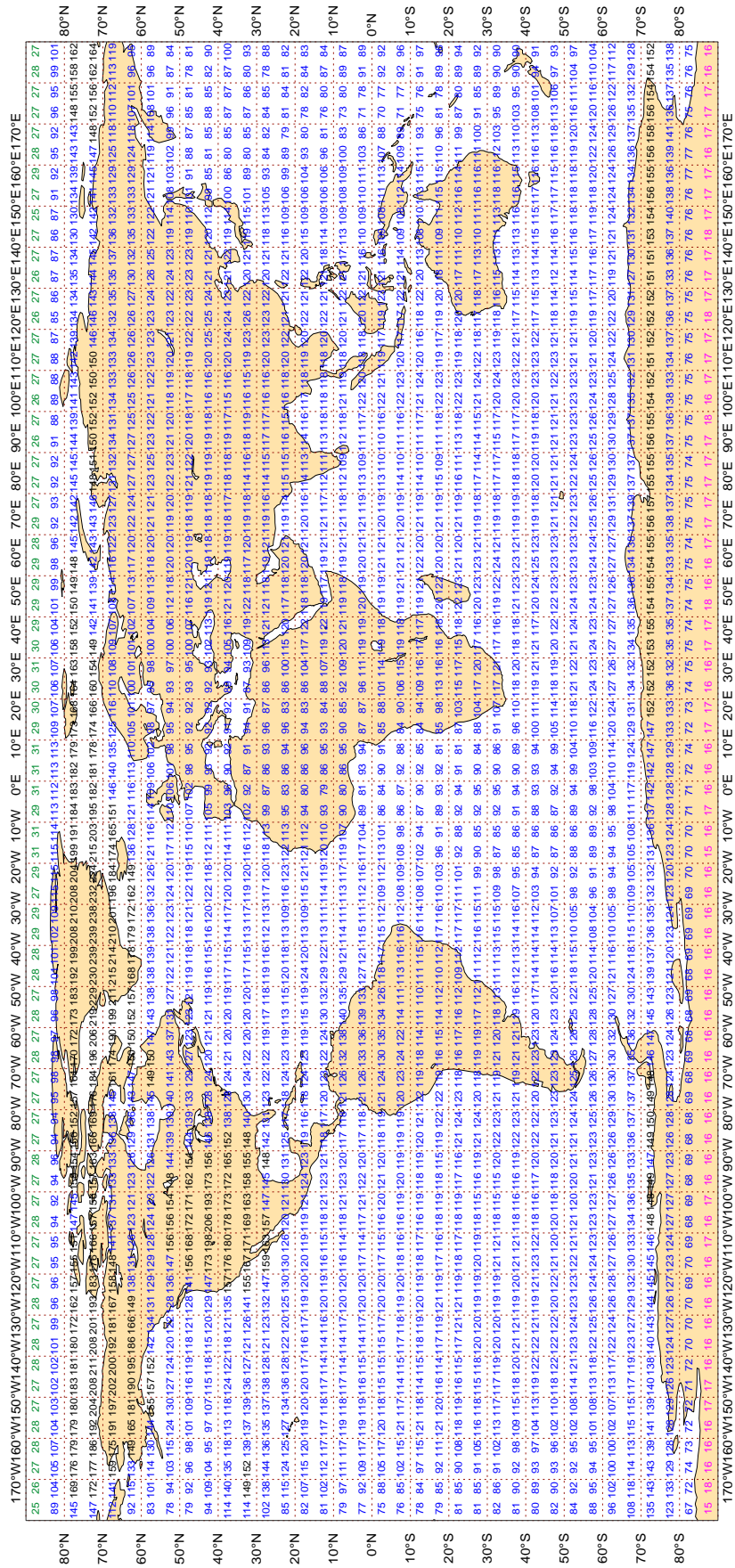


3.2.8 Figure 8 - Availability - NOAA15 ATOVS : AMSU-A

Figure 8

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

Average number of observations in 24 hours - 295862



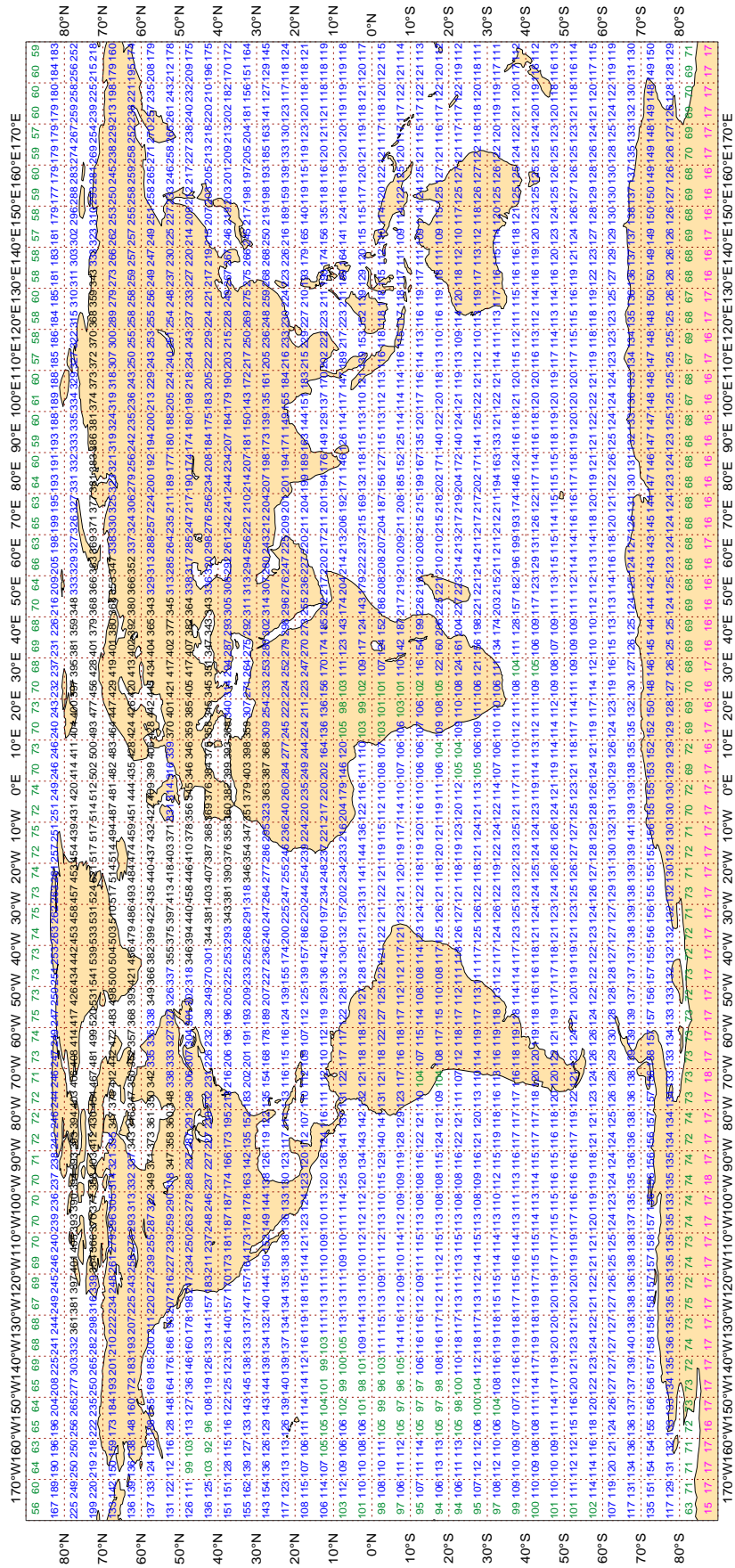
Magics 3.0.4 (64 bit)



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

Figure 9.1

ECMWF Monitoring Statistics - JAN 2022
 Availability - NOAA18 ATOVS : AMSU-A
 Average number of observations in 24 hours - 452321



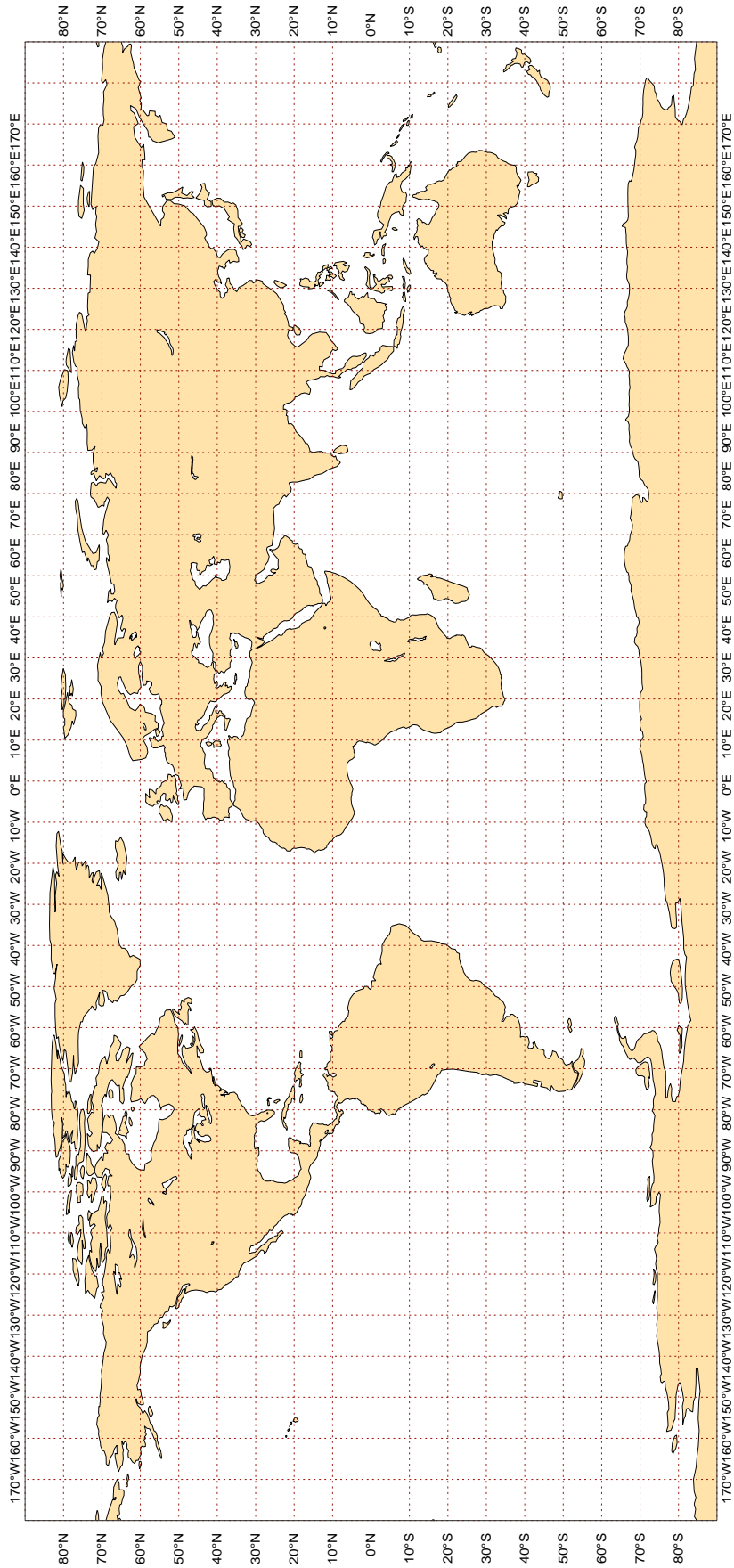
Magics 3.0.4 (64 bit)



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

Figure 9.2

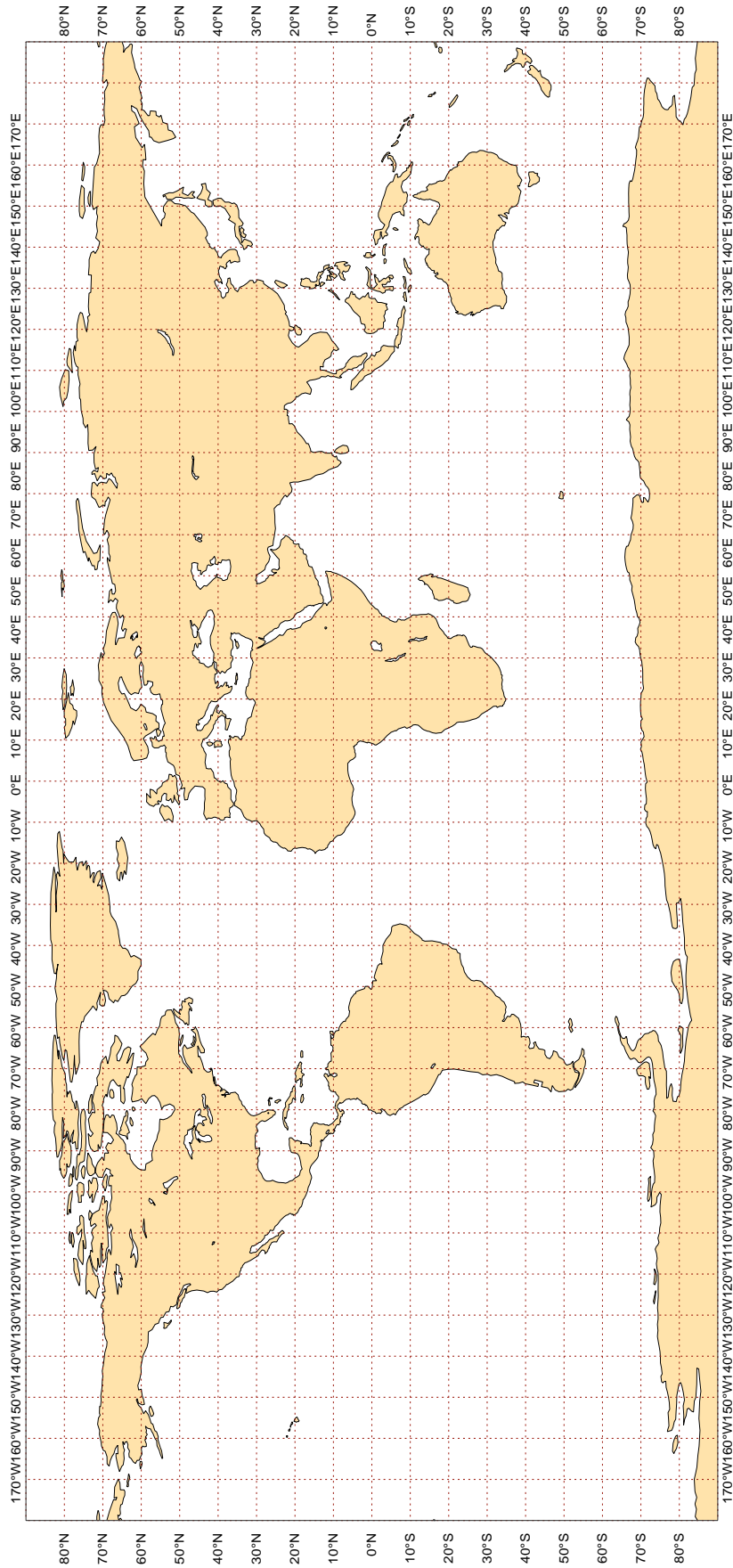
ECMWF Monitoring Statistics - JAN 2022
Availability - AQUA ATOVS : AMSU-A
Average number of observations in 24 hours - 0



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

Figure 9.3

ECMWF Monitoring Statistics - JAN 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 : JAN 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
3EVK3	99	P	SUR	42	0	0.9	-4.8	4.9
3FSA9	99	P	SUR	23	0	1.5	-3.0	3.4
44058	99	P	SUR	137	37	3.7	0.8	3.8
4XFC	99	P	SUR	17	0	1.6	7.3	7.4
7JVW	99	P	SUR	26	0	0.9	-3.3	3.5
7KEG	99	P	SUR	61	0	2.3	-5.2	5.7
9HA2583	99	P	SUR	26	0	1.5	-4.6	4.9
9HA5209	99	P	SUR	23	0	4.7	6.7	8.2
9V8776	99	P	SUR	22	1	2.1	6.5	6.9
9V9400	99	P	SUR	60	0	3.1	-3.5	4.7
9V9401	99	P	SUR	50	0	1.8	-4.3	4.6
9V9793	99	P	SUR	50	0	1.5	5.3	5.5
ATVK	99	P	SUR	129	62	7.1	3.3	7.8
AVFX	99	P	SUR	89	0	0.4	4.3	4.3
BKIC	99	P	SUR	45	3	1.8	12.8	13.0
BKIY	99	P	SUR	45	0	1.1	4.3	4.4
C6AV5	99	P	SUR	21	0	1.0	-4.8	4.9
C6FR3	99	P	SUR	18	18	0.0	0.0	0.0
C6LG6	99	P	SUR	101	0	0.8	-4.5	4.5
C6SW3	99	P	SUR	18	0	3.0	3.5	4.6
C6TQ6	99	P	SUR	16	0	2.8	-7.0	7.5
JMJRCES	99	P	SUR	30	1	0.6	-6.3	6.3
KIAB	99	P	SUR	22	0	1.5	4.8	5.0
LAIG7	99	P	SUR	22	0	2.2	4.3	4.9
LANT5	99	P	SUR	31	0	0.9	3.6	3.7
LAQM7	99	P	SUR	52	0	1.3	3.7	3.9
LOCW	99	P	SUR	34	4	1.2	-4.2	4.3
OUJK2	99	P	SUR	16	0	0.7	6.2	6.2
OZ2049	99	P	SUR	56	1	1.0	-9.2	9.2
PDGW	99	P	SUR	16	0	3.5	-3.0	4.6
PINX	99	P	SUR	29	0	0.5	-3.8	3.8
S6LT3	99	P	SUR	34	0	1.4	4.6	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
S6NQ	99	P	SUR	20	0	1.4	4.7	4.9
SJA4RSK	99	P	SUR	113	0	0.5	-4.9	4.9
UASX	99	P	SUR	23	1	2.2	-3.8	4.3
UBSH	99	P	SUR	41	2	5.4	-3.8	6.6
UBUO6	99	P	SUR	19	0	0.8	-3.5	3.6
V7A2078	99	P	SUR	81	0	0.7	3.2	3.3
V7A2557	99	P	SUR	33	0	0.5	11.4	11.4
V7A5144	99	P	SUR	40	0	1.6	-4.3	4.6
V7BN6	99	P	SUR	16	0	6.5	0.0	6.5
V7QS7	99	P	SUR	26	0	1.4	-6.0	6.2
VRCZ7	99	P	SUR	33	0	3.3	3.7	5.0
VRNL9	99	P	SUR	22	0	2.0	-4.6	5.0
VRNR6	99	P	SUR	31	1	2.9	-4.9	5.7
VROS8	99	P	SUR	21	0	0.7	3.3	3.4
VTSJ	99	P	SUR	134	98	8.0	-4.9	9.4
VWXS	99	P	SUR	116	0	1.8	-4.0	4.3
WDC6055	99	P	SUR	20	5	0.6	-2.0	2.0
WDD2875	99	P	SUR	16	0	2.1	-3.5	4.0
WDH7562	99	P	SUR	17	1	1.1	-3.2	3.3
ZGFY4	99	P	SUR	51	0	1.0	-12.2	12.3

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

LIST OF SUSPECT STATIONS : SHIPS + FIXED MARINE PLATFORMS
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND SPEED (M/S)
 AREA : GLOBAL
 PERIOD : JAN 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
44137	99	SPEED	SUR	102	0	0	4.3	-5.9	7.3
46183	99	SPEED	SUR	45	0	0	5.2	-5.6	7.7

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

LIST OF SUSPECT STATIONS : SHIPS + FIXED MARINE PLATFORMS
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND DIRECTION (DEGREES)
 AREA : GLOBAL
 PERIOD : JAN 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
46303	99	DIRN	SUR	55	0	0	30.9	62.3	69.6
62129	99	DIRN	SUR	23	9	0	53.7	88.7	103.7

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

LIST OF SUSPECT STATIONS : DRIFTER
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : SURFACE PRESSURE (HPA)
 AREA : GLOBAL
 PERIOD : JAN 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
0022955	99	P	SUR	27	124	706	3	5.2	4.4	6.8
0022958	99	P	SUR	30	125	706	706	0.0	0.0	0.0
2101539	99	P	SUR	56	-134	196	179	5.7	2.3	6.1
2101688	99	P	SUR	41	175	743	130	7.6	-1.0	7.7
4402718	99	P	SUR	61	-63	160	81	2.4	0.1	2.4
4602507	99	P	SUR	54	-153	479	279	3.7	11.8	12.4
4602731	99	P	SUR	52	-131	237	0	2.8	6.6	7.2
4701658	99	P	SUR	72	-95	681	681	0.0	0.0	0.0
4701735	99	P	SUR	72	-120	681	681	0.0	0.0	0.0
4701738	99	P	SUR	70	-67	684	664	7.2	3.5	8.0
4701744	99	P	SUR	80	-100	698	698	0.0	0.0	0.0
4801670	99	P	SUR	86	-151	712	569	8.1	-1.3	8.2
6101009	99	P	SUR	35	25	32	18	0.4	0.1	0.4
6203649	99	P	SUR	49	-25	30	0	2.2	-10.2	10.4
6301511	99	P	SUR	53	-25	713	0	1.3	7.3	7.5
6301564	99	P	SUR	59	-19	156	38	6.8	-3.2	7.5
6402587	99	P	SUR	57	-60	666	227	5.2	-0.7	5.2
6402588	99	P	SUR	63	-70	287	159	5.3	-4.9	7.2
6402589	99	P	SUR	56	-59	705	186	3.8	-1.1	3.9
6402656	99	P	SUR	58	-43	657	0	3.3	5.8	6.6
6501545	99	P	SUR	79	10	95	0	2.5	6.8	7.3
6501676	99	P	SUR	77	-3	677	44	4.0	8.8	9.7

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

LIST OF SUSPECT STATIONS : DRIFTER
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND SPEED (M/S)
 AREA : GLOBAL
 PERIOD : JAN 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
4400069	99	SPEED	SUR	41	-73	511	0	0	2.9	5.4	6.1
44137	99	SPEED	SUR	42	-62	687	0	0	4.3	-5.7	7.1
46183	99	SPEED	SUR	54	-131	292	0	0	5.2	-5.7	7.7
46185	99	SPEED	SUR	52	-130	64	0	0	2.7	-5.4	6.1
46204	99	SPEED	SUR	51	-129	56	0	0	3.7	-8.7	9.5

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

LIST OF SUSPECT STATIONS : DRIFTER
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND DIRECTION (DEGREES)
 PERIOD : JAN 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
1300008	99	DIRN	SUR	15	-38	579	0	0	100.6	14.6	101.6
1300131	99	DIRN	SUR	28	-17	464	0	0	66.9	-117.1	134.9
2200102	99	DIRN	SUR	35	126	620	0	0	20.0	-26.6	33.2
2200298	99	DIRN	SUR	35	125	650	0	0	15.7	-49.4	51.8
23095	99	DIRN	SUR	10	94	111	0	0	44.5	23.4	50.3
23099	99	DIRN	SUR	13	80	153	0	0	117.3	-7.1	117.5
23491	99	DIRN	SUR	12	93	152	0	0	43.4	76.1	87.6
23497	99	DIRN	SUR	11	72	91	0	0	66.3	-29.1	72.4
46132	99	DIRN	SUR	50	-128	627	0	0	17.7	21.2	27.7
46303	99	DIRN	SUR	49	-123	399	0	0	28.6	62.1	68.3
46304	99	DIRN	SUR	49	-123	367	0	0	36.9	21.3	42.6
5100307	99	DIRN	SUR	8	-125	445	0	0	40.0	-22.3	45.8
51307	99	DIRN	SUR	8	-125	426	0	0	39.0	-23.5	45.5
5200001	99	DIRN	SUR	2	165	724	0	0	14.9	23.6	27.9
52001	99	DIRN	SUR	2	165	719	0	0	15.0	23.5	27.9
6101009	99	DIRN	SUR	35	25	22	0	0	83.4	-32.5	89.5
6200086	99	DIRN	SUR	55	6	360	0	0	11.0	25.0	27.3
62129	99	DIRN	SUR	58	0	283	121	0	52.8	92.0	106.0
6301003	99	DIRN	SUR	74	24	702	0	0	17.2	20.4	26.7
6301004	99	DIRN	SUR	72	20	194	0	0	18.5	20.7	27.7

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

LIST OF SUSPECT STATIONS : RADIOSONDES
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : GEOPOTENTIAL HEIGHT (METRES)
 AREA : GLOBAL
 PERIOD : JAN 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	00	Z	1000	57	3	23	0	5.6	78.3	78.5
01400	12	Z	1000	57	3	26	0	6.8	76.5	76.8
21432	00	Z	250	76	138	31	1	29.0	-81.5	86.5
21432	12	Z	250	76	138	31	0	29.2	-76.3	81.7
25403	00	Z	500	66	151	29	1	34.0	-38.7	51.5
29862	12	Z	250	54	91	16	11	133.0	-106.8	170.6
29862	00	Z	200	54	91	13	6	101.9	-161.2	190.7
36872	00	Z	30	43	77	20	0	80.9	-199.0	214.8
38064	00	Z	250	45	66	25	0	49.9	63.4	80.7
38064	12	Z	250	45	66	24	0	39.1	61.5	72.9
43150	00	Z	1000	18	83	30	0	0.0	57.9	57.9
61442	00	Z	850	18	-16	16	0	12.0	-80.1	81.0
64500	12	Z	850	0	9	20	1	47.2	2.3	47.3
64500	00	Z	850	0	9	17	0	52.5	-14.7	54.5
83566	00	Z	1000	-20	-44	29	0	8.4	-70.7	71.2
83566	12	Z	1000	-20	-44	29	0	8.1	-65.6	66.1
98233	12	Z	1000	18	122	31	0	31.0	35.6	47.2
98233	00	Z	1000	18	122	30	0	27.4	42.2	50.3
98558	12	Z	925	11	126	14	0	24.4	-30.7	39.2
98558	00	Z	925	11	126	10	0	37.7	-12.0	39.6
ASDE09	12	Z	1000	54	10	10	0	6.1	36.5	37.0
JNKN7J	00	Z	1000	49	-19	10	0	3.9	37.9	38.1
JNKN7J	12	Z	1000	54	10	14	0	3.9	37.4	37.6
KMPLHP	00	Z	1000	37	-74	12	0	12.8	34.3	36.6

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

LIST OF SUSPECT STATIONS : RADIOSONDES
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND (M/S)
 AREA : GLOBAL
 PERIOD : JAN 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
29862	12	V	150	54	91	12	0	1.4	-3.2	15.4
29862	00	V	150	54	91	12	0	6.7	0.0	16.5

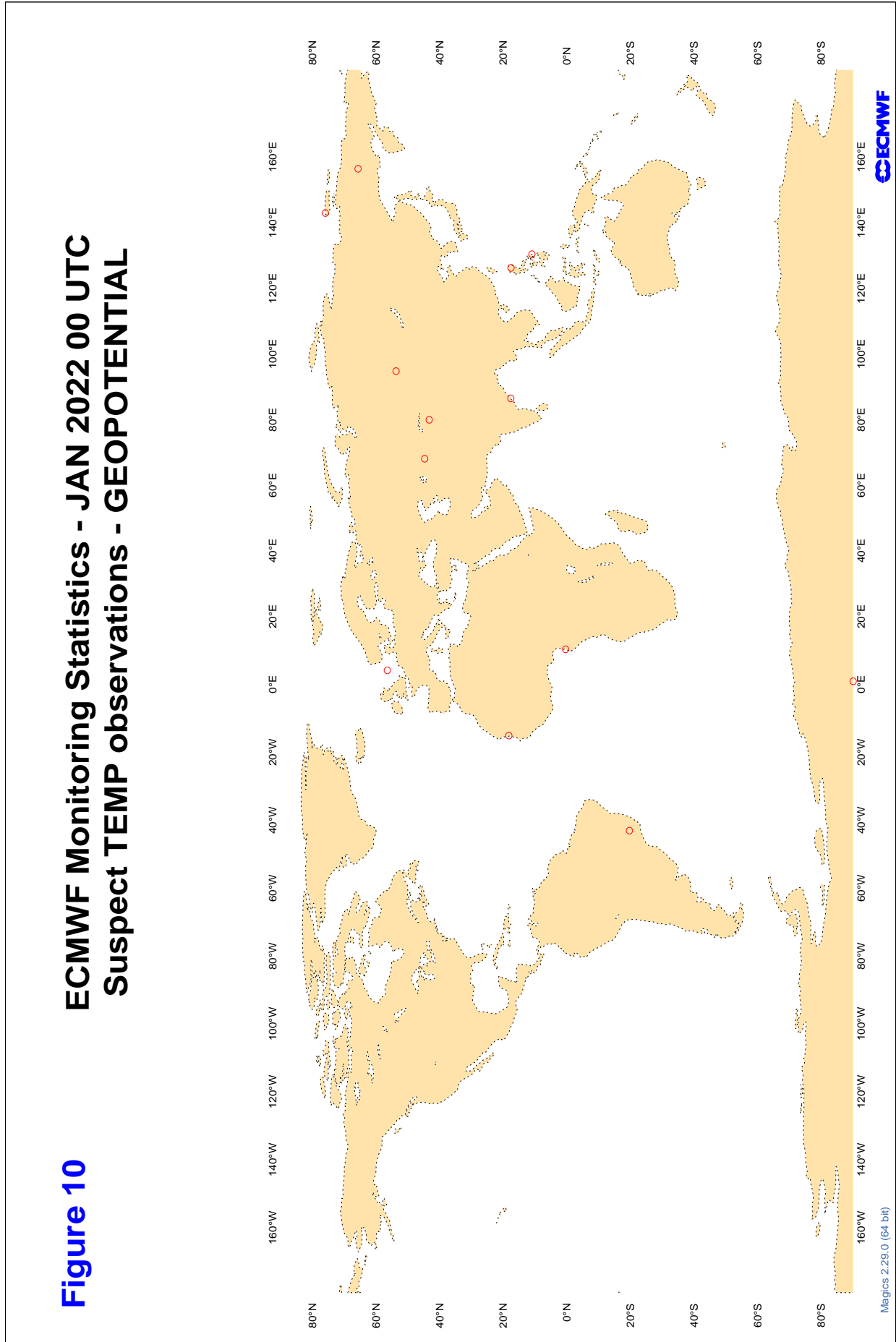
3.2.20 Table 9 - Suspect radiosondes: Wind direction (degrees)

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

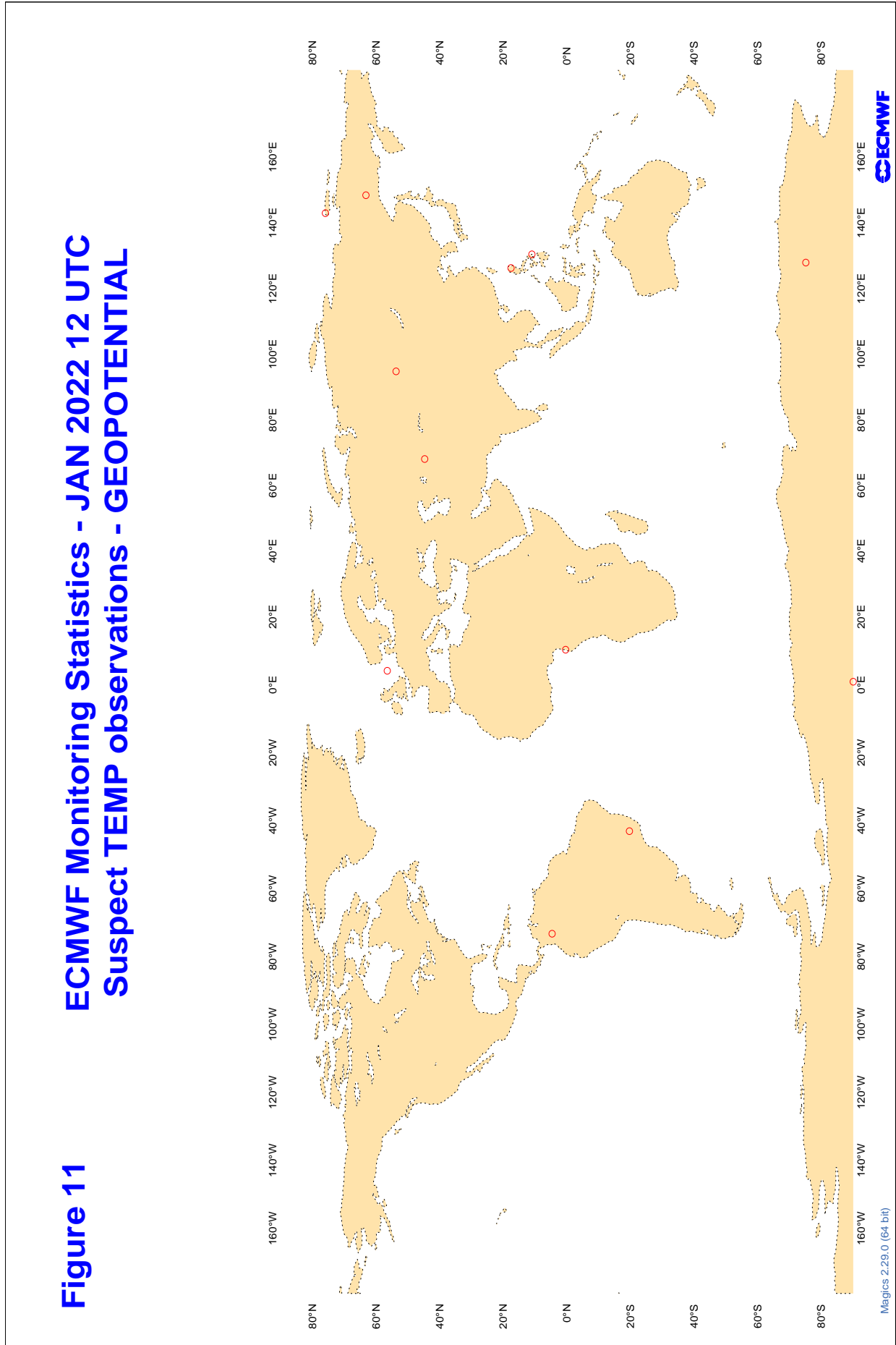
SELECTION CRITERIA: OBSERVED/FORECAST WIND SPEEDS \geq 5 M/S
 NO. OF OBSERVATIONS \geq 5, AND,
 ABSOLUTE BIAS \geq 10 DEGREES, WITH
 STANDARD DEVIATION $<$ 30 DEGREES, AND,
 VERTICAL SPREAD $<$ 10 DEGREES
 (AVERAGE BETWEEN 500 AND 150 HPA)

WMO IDENT	OBS TIME	ELM	LAT	LONG	NUM OBS	BIAS	MAX SPREAD	SD
33791	12	DD	48	33	30	11.2	4.2	11.0

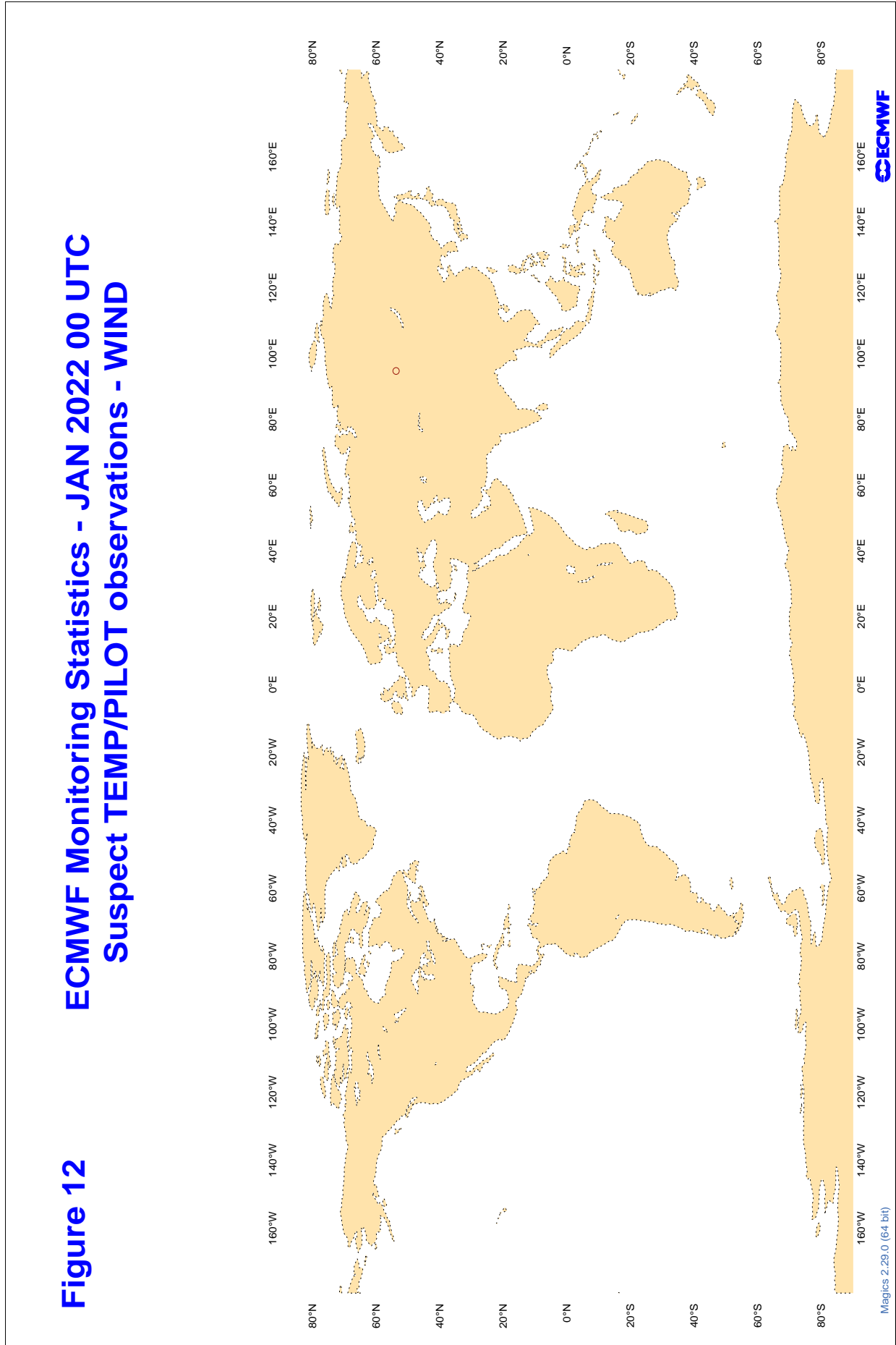
3.2.21 Figure 10 - Suspect TEMP observations - geopotential : 00 UTC



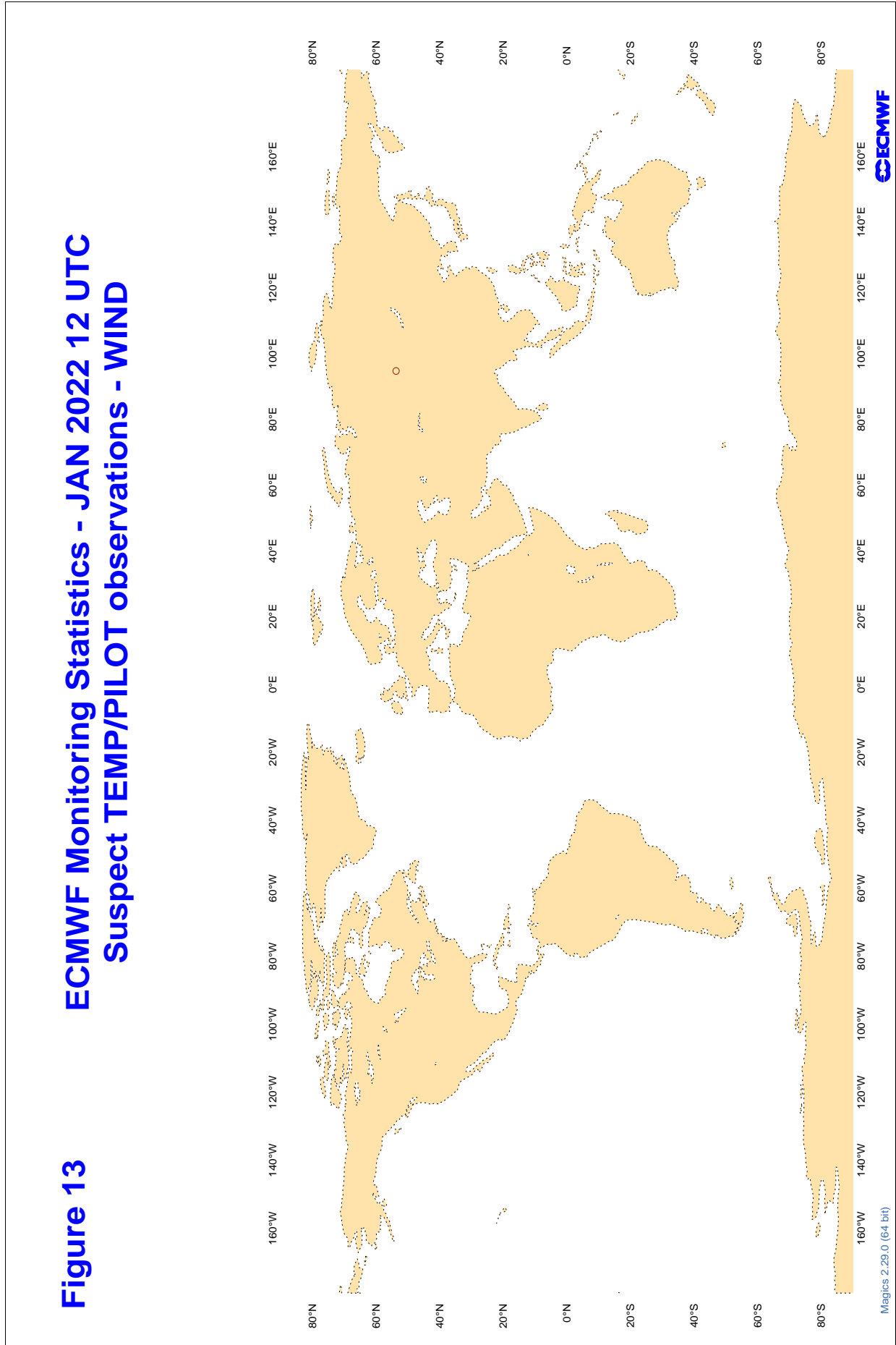
3.2.22 Figure 11 - Suspect TEMP observations - geopotential : 12 UTC



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



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



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

RADIOSONDE MONITORING STATISTICS (SHIPS)

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

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
2EERT	12	Z	100	5	8.3	-6.1
2EERT	00	Z	100	5	8.3	1.3
7JUNA4	12	Z	100	7	119.0	-39.1
7JUNA4	00	Z	100	6	7.4	5.3
ASDE09	12	Z	100	10	15.4	8.8
ATGU3F	00	Z	100	1	6.6	-6.6
BPMWB2	12	Z	100	6	11.5	3.0
BPMWB2	00	Z	100	6	11.1	7.2
CHQUR4	12	Z	100	1	37.1	37.1
CHQUR4	00	Z	100	15	13.5	-0.5
DBBE	00	Z	100	3	9.4	-8.1
DBLK	12	Z	100	1	1.5	-1.5
HTXUH4	12	Z	100	3	83.4	-46.3
HTXUH4	00	Z	100	4	24.4	12.9
JNKN7J	12	Z	100	13	23.6	18.6
JNKN7J	00	Z	100	11	27.5	23.7
KJJF9X	12	Z	100	9	10.2	9.8
KJJF9X	00	Z	100	8	13.0	8.9
KMPLHP	12	Z	100	7	28.7	25.2
KMPLHP	00	Z	100	11	29.2	27.2
LRYQE3	12	Z	100	11	24.4	-10.5
LRYQE3	00	Z	100	9	10.8	-2.7
UXK5JT	12	Z	100	10	10.1	3.2
UXK5JT	00	Z	100	9	11.1	-1.9
WDK38H	12	Z	100	16	10.5	-0.5
XKQLWQ	12	Z	100	20	66.2	58.2
XQFJRG	12	Z	100	7	18.1	-6.2
XQFJRG	00	Z	100	8	17.1	-6.6
YLV96W	12	Z	100	4	12.0	-1.5
YLV96W	00	Z	100	5	13.0	-11.3
ZSNO	12	Z	100	6	17.9	-9.9
ZVQEQC	12	Z	100	1	12.2	-12.2
ZVQEQC	00	Z	100	3	5.0	1.3

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

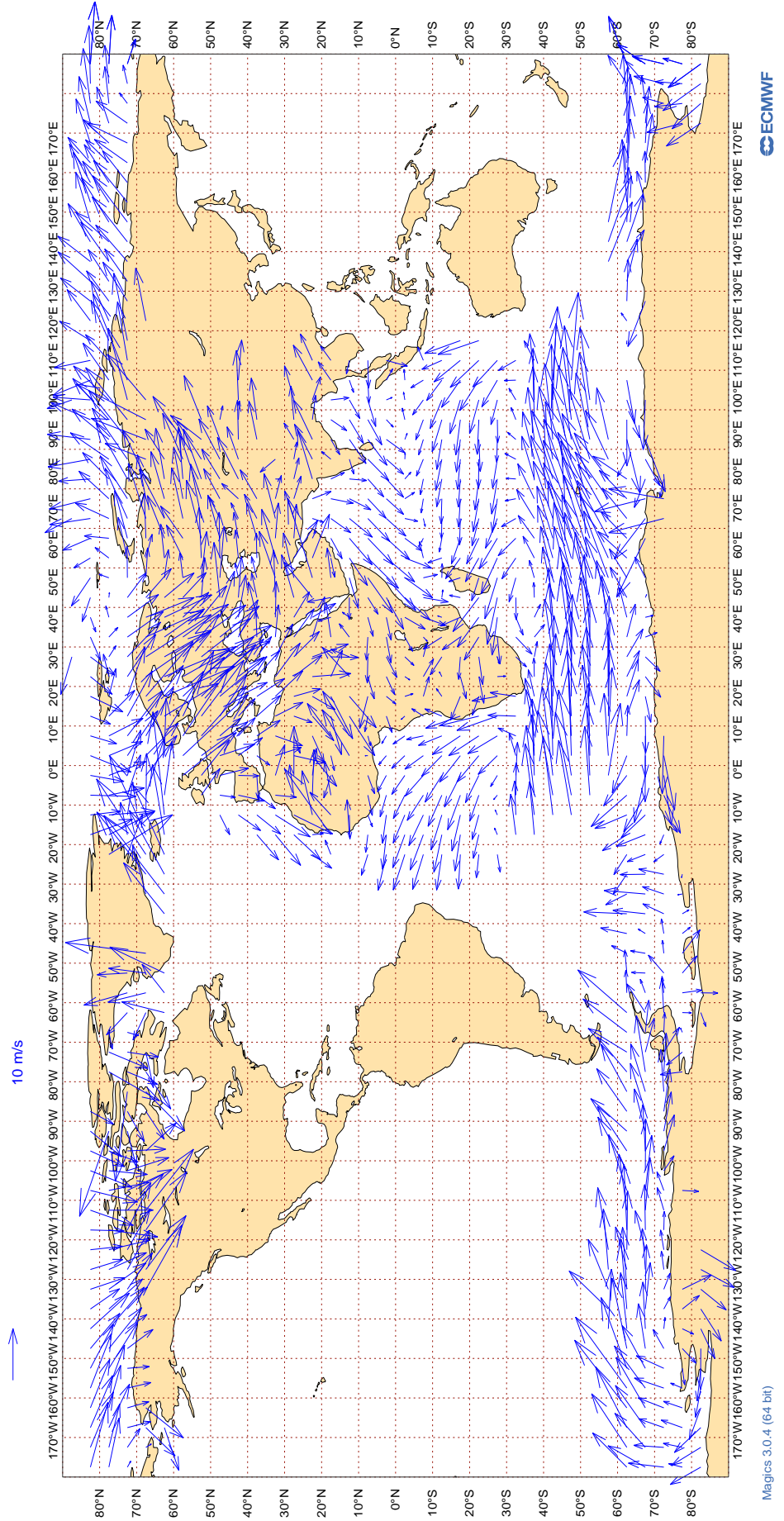
RADIOSONDE MONITORING STATISTICS (SHIPS)

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

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
2EERVT	12	V	100	5	3.3	-0.7	-0.5
2EERVT	00	V	100	5	4.1	-0.9	0.4
7JUNA4	12	V	100	7	5.7	0.8	1.8
7JUNA4	00	V	100	6	2.0	-0.1	0.6
ASDE09	12	V	100	9	2.5	0.4	1.3
ATGU3F	00	V	100	1	2.2	2.2	-0.2
BPMWB2	12	V	100	6	2.2	-1.5	0.0
BPMWB2	00	V	100	6	5.7	-1.8	1.7
CHQUR4	12	V	100	1	2.5	1.5	-2.0
CHQUR4	00	V	100	15	3.5	0.0	-1.4
DBBE	00	V	100	3	5.5	4.3	-1.3
DBLK	12	V	100	1	1.9	1.9	0.0
HTXUH4	12	V	100	3	2.5	0.3	1.1
HTXUH4	00	V	100	4	4.0	-0.2	1.9
JNKN7J	12	V	100	13	3.4	0.0	-0.5
JNKN7J	00	V	100	11	3.3	-0.7	1.1
KJJF9X	12	V	100	9	3.6	-0.7	-0.4
KJJF9X	00	V	100	8	2.1	0.3	0.9
KMPLHP	12	V	100	7	3.5	-0.6	-0.2
KMPLHP	00	V	100	11	2.8	0.0	0.3
LRYQE3	12	V	100	11	4.5	-0.2	1.3
LRYQE3	00	V	100	9	4.1	-1.4	0.4
UXK5JT	12	V	100	10	4.0	-0.9	0.8
UXK5JT	00	V	100	9	3.8	0.6	1.3
WDK38H	12	V	100	12	5.2	1.0	-0.2
XKQLWQ	12	V	100	19	6.2	-2.3	1.5
XQFJRG	12	V	100	7	2.7	-0.7	-0.5
XQFJRG	00	V	100	8	2.7	0.7	-0.6
YLV96W	12	V	100	4	3.6	0.0	0.7
YLV96W	00	V	100	5	2.3	0.2	0.3
ZSNO	12	V	100	6	4.7	2.2	0.2
ZVQEQC	12	V	100	1	1.0	1.0	0.0
ZVQEQC	00	V	100	3	2.2	-1.4	0.7

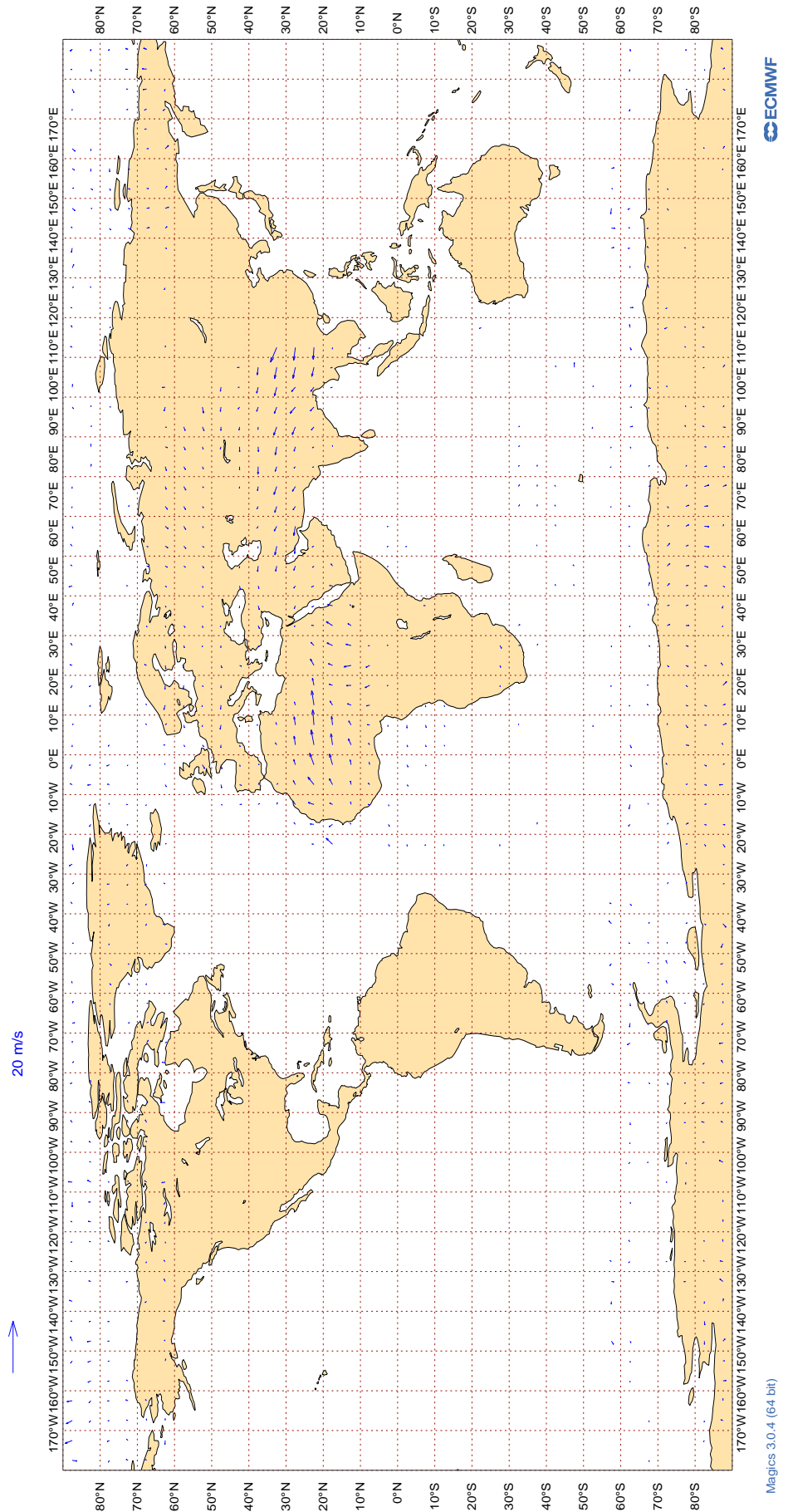
3.2.27 Figure 14 - SATOB Winds: 700-1000hPa

Figure 14
ECMWF Monitoring Statistics: Jan 2022
AMV Winds: 700-1000hPa
Mean Observed Wind



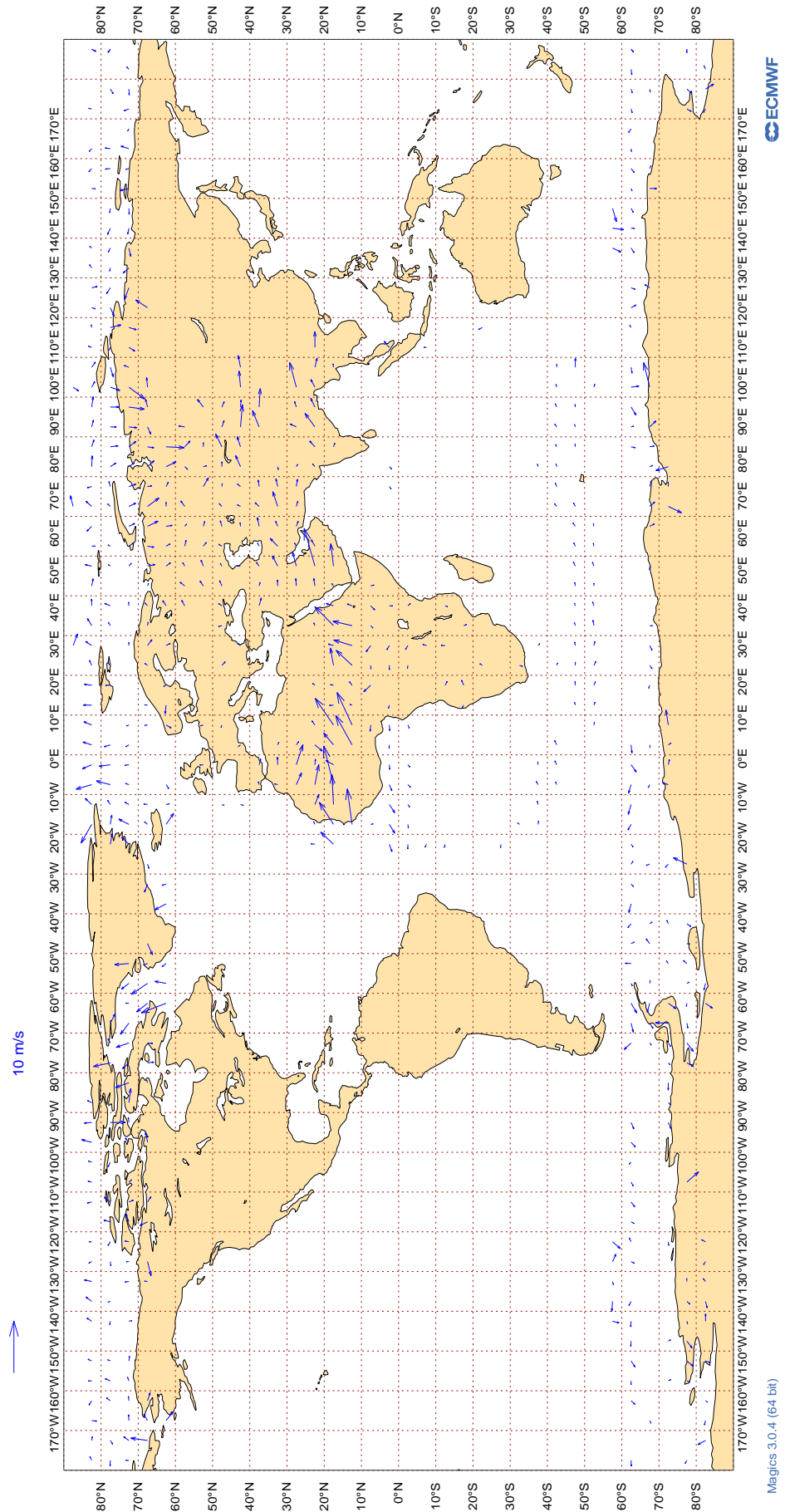
3.2.28 Figure 15 - SATOB Winds: 150- 400hPa

Figure 15
ECMWF Monitoring Statistics: Jan 2022
AMV Winds: 150- 400hPa
Wind bias: Observation - FG



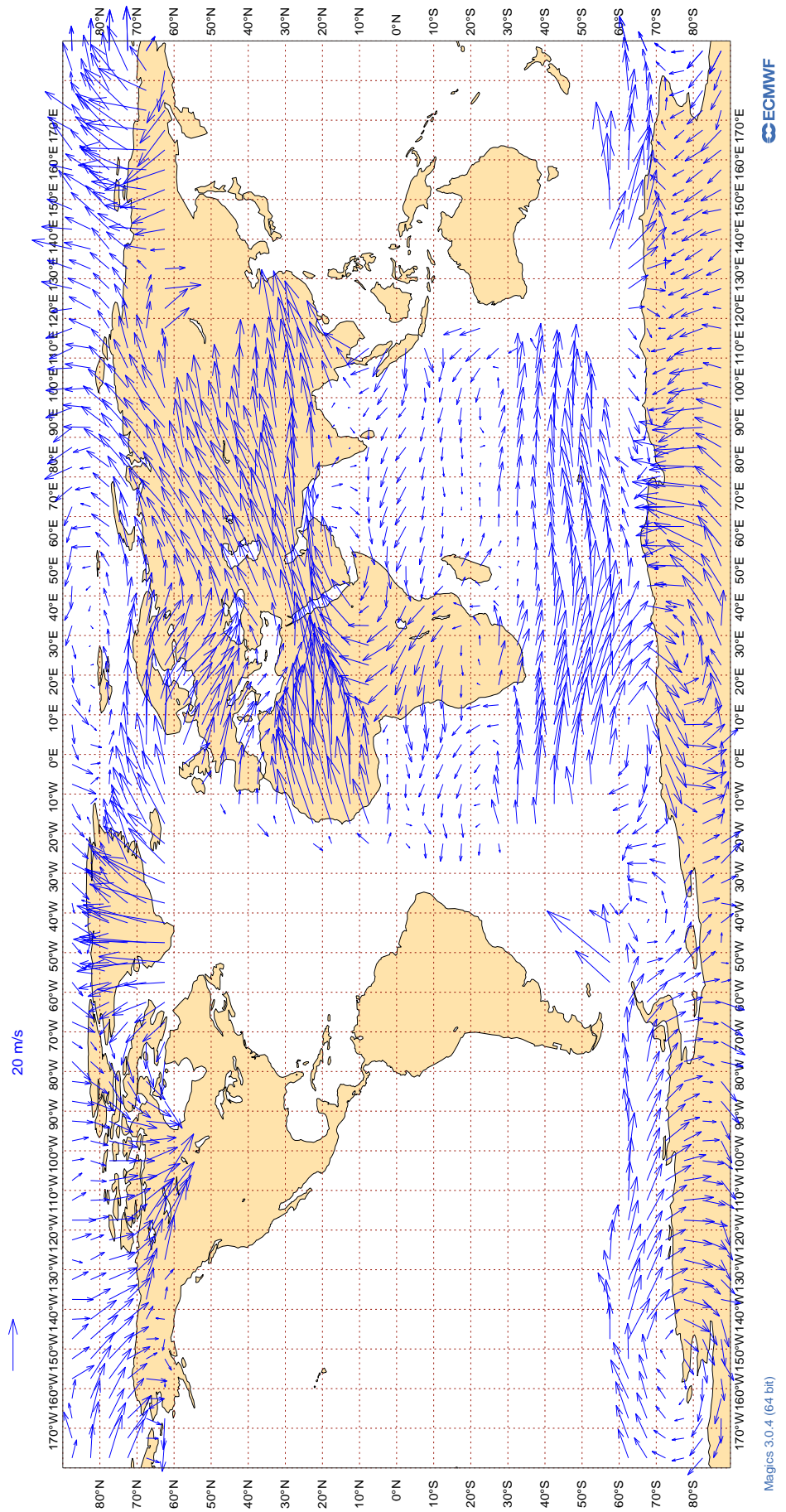
3.2.29 Figure 16 - SATOB Winds: 700-1000hPa

Figure 16
ECMWF Monitoring Statistics: Jan 2022
AMV Winds: 700-1000hPa
Wind bias: Observation - FG



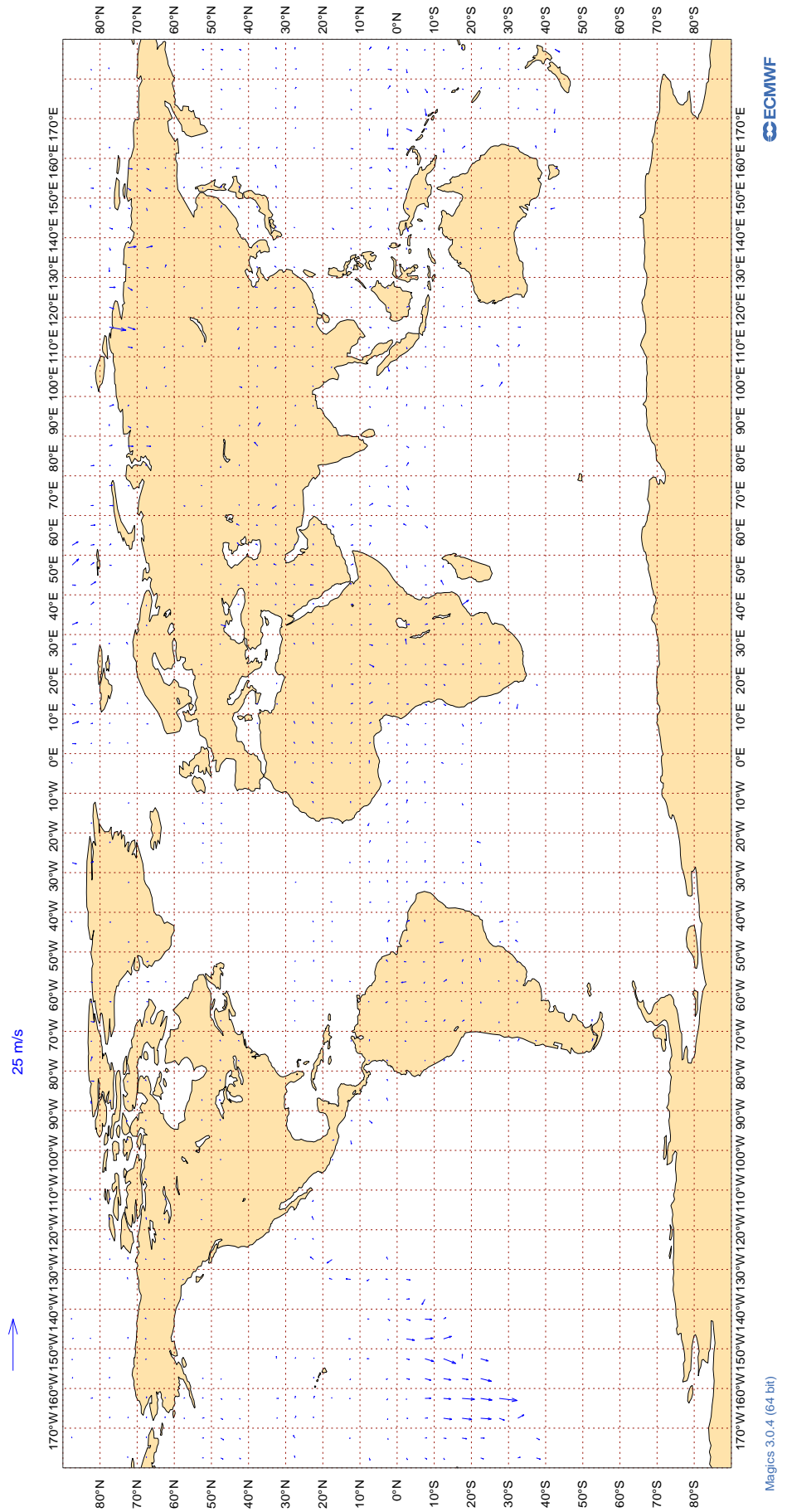
3.2.30 Figure 17 - SATOB Winds: 150- 400hPa

Figure 17
ECMWF Monitoring Statistics: Jan 2022
AMV Winds: 150- 400hPa
Mean Observed Wind



3.2.31 Figure 18 - AIRCRAFT Winds: 150- 300hPa

Figure 18
ECMWF Monitoring Statistics: Jan 2022
Aircraft Winds: 150- 300hPa
Wind bias: Observation - FG



3.2.32 Table 12 - Airep Monitoring Statistics For Airline Carriers (Global)

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : VECTOR WIND (M/S)
 AREA : GLOBAL
 PERIOD : JAN 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	89	0	0	4.2	0.3
AAL	99	V	300-150	23521	3	0	4.8	0.2
AAR	99	V	300-150	184	0	0	4.3	-0.9
ABB	99	V	300-150	1032	0	0	3.6	0.3
ABD	99	V	300-150	1489	0	0	4.1	-0.1
ABG	99	V	300-150	553	0	0	4.0	0.4
ABP	99	V	300-150	27	0	0	3.4	-0.2
ABW	99	V	300-150	521	0	0	4.2	-0.2
ABX	99	V	300-150	166	0	0	4.1	-0.0
ACA	99	V	300-150	13986	12	0	5.8	0.0
ACI	99	V	300-150	245	0	0	4.8	0.7
AEA	99	V	300-150	442	14	1	4.8	0.6
AFL	99	V	300-150	2627	0	0	3.5	-0.0
AFR	99	V	300-150	27044	1	0	4.2	0.1
AHO	99	V	300-150	505	0	0	4.1	0.2
AIC	99	V	300-150	2239	2	0	4.4	0.2
AJT	99	V	300-150	688	0	0	3.8	-0.2
ALE	99	V	300-150	24	0	0	3.5	1.4
ALK	99	V	300-150	2429	0	0	3.0	0.4
AMX	99	V	300-150	1599	17	0	7.8	0.1
ANZ	99	V	300-150	8886	4	0	9.5	0.3
AOJ	99	V	300-150	287	0	0	4.1	-0.2
ASA	99	V	300-150	109	2	5	8.8	0.1
ASL	99	V	300-150	314	0	0	4.0	0.5
ASP	99	V	300-150	32	0	0	3.6	-0.6

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
ASY	99	V	300-150	60	0	0	4.1	0.1
ATC	99	V	300-150	125	0	0	5.1	0.4
ATN	99	V	300-150	132	0	1	5.2	0.4
AUA	99	V	300-150	2717	0	0	4.1	0.0
AUI	99	V	300-150	169	0	0	3.7	0.0
AWC	99	V	300-150	344	0	0	3.4	0.1
AXB	99	V	300-150	42	0	0	3.0	0.7
AXM	99	V	300-150	285	0	1	5.0	0.3
AXY	99	V	300-150	46	0	0	3.3	-0.3
AYY	99	V	300-150	74	0	0	3.6	-0.3
AZG	99	V	300-150	495	0	0	3.6	-0.2
AZV	99	V	300-150	1303	0	0	3.6	0.1
BAF	99	V	300-150	70	0	0	3.7	0.1
BAH	99	V	300-150	23	0	0	3.3	1.6
BAN	99	V	300-150	47	0	0	5.3	-0.5
BAO	99	V	300-150	26	0	0	2.9	0.8
BAV	99	V	300-150	58	0	0	5.4	0.5
BAW	99	V	300-150	36751	9	0	5.4	0.0
BBC	99	V	300-150	492	0	0	3.6	1.3
BCS	99	V	300-150	2359	0	0	3.9	0.3
BEL	99	V	300-150	580	0	0	3.9	0.4
BFF	99	V	300-150	26	0	0	12.8	2.9
BLX	99	V	300-150	194	23	0	5.5	-0.1
BOX	99	V	300-150	3885	0	0	3.6	-0.0
BOX	99	V	300-150	36	0	0	4.2	0.0
BTX	99	V	300-150	61	0	0	3.8	0.2
BVR	99	V	300-150	60	0	0	4.2	-0.0
CAL	99	V	300-150	357	0	0	3.6	0.3
CAZ	99	V	300-150	177	0	0	4.2	0.2
CEB	99	V	300-150	51	0	0	2.9	1.2
CES	99	V	300-150	93	0	0	3.7	1.0
CFC	99	V	300-150	234	0	0	4.8	0.2
CFG	99	V	300-150	3473	0	0	4.1	-0.3
CHG	99	V	300-150	213	0	0	4.1	0.7
CJT	99	V	300-150	2231	0	0	4.2	-0.2
CKS	99	V	300-150	848	0	0	4.1	0.2
CLF	99	V	300-150	70	0	0	4.2	0.7
CLU	99	V	300-150	493	0	0	4.1	-0.8
CLX	99	V	300-150	5210	0	0	3.9	-0.2
CMB	99	V	300-150	862	0	0	4.2	-0.0
CNV	99	V	300-150	99	0	0	3.7	0.2
CPA	99	V	300-150	356	0	0	3.6	0.7
CRL	99	V	300-150	1142	0	1	3.6	0.2

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
CSC	99	V	300-150	48	0	0	3.4	-0.3
CSN	99	V	300-150	193	5	1	5.9	-0.0
CTM	99	V	300-150	51	0	0	4.0	0.3
CWG	99	V	300-150	47	0	0	4.2	-1.1
CXA	99	V	300-150	23	0	0	3.0	0.7
DAH	99	V	300-150	426	0	0	3.9	0.1
DAL	99	V	300-150	24536	0	0	3.8	0.2
DCS	99	V	300-150	58	0	0	3.8	0.7
DCW	99	V	300-150	60	0	0	3.7	1.0
DGX	99	V	300-150	51	0	0	3.6	-0.1
DHK	99	V	300-150	2364	5	0	5.2	-0.4
DJT	99	V	300-150	825	0	0	3.7	-0.0
DLH	99	V	300-150	19931	0	0	3.8	0.0
DSO	99	V	300-150	32	0	0	4.0	-0.6
EAL	99	V	300-150	21	0	0	3.2	1.5
EAU	99	V	300-150	82	0	0	4.4	0.1
EAV	99	V	300-150	47	0	0	3.9	0.3
ECC	99	V	300-150	30	0	0	3.4	1.3
EDC	99	V	300-150	51	0	0	3.2	-0.2
EDW	99	V	300-150	1082	0	0	3.6	0.2
EIN	99	V	300-150	7231	0	0	3.8	0.4
EJM	99	V	300-150	344	0	0	3.6	-0.2
ELY	99	V	300-150	2153	15	0	7.3	-0.1
EMM	99	V	300-150	95	0	0	4.3	0.2
ETD	99	V	300-150	7727	8	0	5.6	0.2
ETH	99	V	300-150	6106	5	0	4.6	0.2
EUK	99	V	300-150	1721	0	0	3.8	0.4
EUW	99	V	300-150	24	0	0	3.4	0.4
EVE	99	V	300-150	40	0	3	4.6	-0.2
EXS	99	V	300-150	200	0	0	3.2	-0.0
EXV	99	V	300-150	68	0	0	3.4	0.3
FBU	99	V	300-150	1434	0	0	3.9	0.2
FDX	99	V	300-150	5955	0	0	3.7	0.2
FEX	99	V	300-150	21	0	0	3.8	0.0
FIL	99	V	300-150	35	0	0	5.4	-0.5
FIN	99	V	300-150	1877	0	0	3.8	-0.3
FJI	99	V	300-150	1076	0	0	4.5	0.5
FRV	99	V	300-150	25	0	0	5.1	0.9
FWI	99	V	300-150	1823	0	1	3.7	0.3
FYG	99	V	300-150	135	0	0	3.7	0.8
GAF	99	V	300-150	72	0	0	4.7	0.7
GBG	99	V	300-150	74	0	0	3.4	-0.3
GCK	99	V	300-150	50	0	0	4.0	0.0

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
GEC	99	V	300-150	1288	0	0	3.7	0.1
GES	99	V	300-150	42	2	2	7.1	-0.3
GFA	99	V	300-150	626	0	0	4.8	0.5
GIA	99	V	300-150	171	0	0	3.0	0.5
GJE	99	V	300-150	33	0	0	3.4	-0.7
GMA	99	V	300-150	193	0	0	3.8	-0.4
GTI	99	V	300-150	2260	0	0	4.0	-0.1
HAL	99	V	300-150	514	0	1	5.3	0.7
HFM	99	V	300-150	458	0	0	3.6	0.1
HKC	99	V	300-150	85	0	0	2.6	-0.0
HRN	99	V	300-150	26	0	4	4.8	0.2
HRT	99	V	300-150	32	3	0	5.3	-0.1
HUA	99	V	300-150	32	0	0	5.4	1.9
HVN	99	V	300-150	63	0	0	3.1	1.2
HYP	99	V	300-150	28	0	0	3.4	0.8
IBE	99	V	300-150	2376	0	0	3.9	0.4
ICE	99	V	300-150	2921	0	0	3.8	0.1
ICL	99	V	300-150	317	0	0	4.3	-0.1
ICV	99	V	300-150	613	0	0	3.9	-0.3
IFA	99	V	300-150	214	0	0	4.1	-0.1
IJM	99	V	300-150	200	0	0	5.4	0.7
ITY	99	V	300-150	666	0	0	3.9	0.3
JAF	99	V	300-150	886	10	0	7.2	0.3
JAL	99	V	300-150	31	0	0	6.0	1.8
JAS	99	V	300-150	87	0	0	4.5	0.2
JBU	99	V	300-150	1730	0	0	4.0	0.3
JCL	99	V	300-150	27	0	0	3.2	-0.0
JCO	99	V	300-150	153	0	1	4.4	0.5
JET	99	V	300-150	122	0	0	5.5	0.7
JME	99	V	300-150	61	0	0	4.3	-0.0
JML	99	V	300-150	22	0	5	3.0	1.0
JSI	99	V	300-150	30	0	0	3.4	0.9
JST	99	V	300-150	118	3	0	7.8	-0.6
KAC	99	V	300-150	1640	0	0	3.4	0.4
KAF	99	V	300-150	22	0	0	3.9	-0.1
KAI	99	V	300-150	82	0	0	4.2	0.7
KAL	99	V	300-150	77	0	0	5.3	1.3
KAR	99	V	300-150	694	0	0	3.8	0.4
KAY	99	V	300-150	83	0	0	3.4	0.7
KIW	99	V	300-150	45	0	0	6.0	0.3
KLM	99	V	300-150	16106	10	0	5.7	0.1
KQA	99	V	300-150	112	4	2	3.8	0.3
LCO	99	V	300-150	363	0	0	4.5	-1.7

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
LDX	99	V	300-150	65	0	0	4.4	0.7
LGT	99	V	300-150	69	0	0	4.6	-1.0
LMJ	99	V	300-150	43	0	0	3.9	-0.6
LNI	99	V	300-150	119	0	0	2.6	0.2
LNX	99	V	300-150	20	0	0	3.0	-1.2
LOT	99	V	300-150	4192	21	0	8.4	-0.1
LSI	99	V	300-150	779	0	0	3.7	0.1
LUC	99	V	300-150	65	0	0	4.0	-0.3
LXJ	99	V	300-150	226	0	0	5.2	0.6
LYX	99	V	300-150	24	0	0	3.0	1.3
MAA	99	V	300-150	45	0	0	3.3	-0.7
MAS	99	V	300-150	1810	0	0	3.6	0.5
MAU	99	V	300-150	215	0	0	4.1	0.9
MDT	99	V	300-150	36	81	0	2.1	-0.5
MED	99	V	300-150	46	0	0	5.5	0.4
MGE	99	V	300-150	41	0	0	5.2	0.7
MHV	99	V	300-150	149	0	0	4.1	0.1
MJE	99	V	300-150	51	0	0	3.5	0.6
MJF	99	V	300-150	118	0	0	3.7	0.1
MLM	99	V	300-150	99	0	0	3.7	1.1
MMD	99	V	300-150	312	0	0	4.1	0.7
MNB	99	V	300-150	109	0	0	3.5	0.4
MPH	99	V	300-150	635	0	0	4.3	-0.7
MSR	99	V	300-150	1732	12	0	6.0	-0.1
NCR	99	V	300-150	27	0	0	4.0	0.3
NJE	99	V	300-150	446	0	0	4.2	0.2
NOS	99	V	300-150	761	11	0	7.0	-0.1
NWS	99	V	300-150	1086	0	0	3.5	0.2
OAE	99	V	300-150	540	0	0	4.5	-0.1
OCN	99	V	300-150	2468	0	0	3.8	0.2
OKI	99	V	300-150	33	0	0	5.2	1.2
OMA	99	V	300-150	729	0	0	3.7	0.6
ORT	99	V	300-150	20	0	0	4.0	-1.2
PAC	99	V	300-150	410	0	0	4.0	0.1
PAL	99	V	300-150	426	0	0	3.2	-0.3
PEG	99	V	300-150	25	0	0	4.7	-1.0
PIA	99	V	300-150	185	0	0	4.2	0.6
PLF	99	V	300-150	208	0	0	4.1	0.3
PLM	99	V	300-150	604	0	0	3.7	0.3
PVA	99	V	300-150	69	0	0	3.8	-0.3
PVG	99	V	300-150	30	0	0	4.7	0.5
QFA	99	V	300-150	2159	1	0	6.6	0.5
QID	99	V	300-150	34	0	0	3.8	0.0

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
QQE	99	V	300-150	272	0	0	3.7	0.6
QTR	99	V	300-150	23381	0	0	3.8	0.2
RAM	99	V	300-150	41	20	0	8.6	-1.0
RCH	99	V	300-150	1940	0	0	5.0	0.4
RHH	99	V	300-150	41	0	0	8.8	1.5
RJA	99	V	300-150	1386	23	0	8.4	0.0
RRR	99	V	300-150	240	0	0	4.0	0.2
RSF	99	V	300-150	39	0	3	3.2	0.5
RUN	99	V	300-150	212	0	0	4.6	-0.1
RYR	99	V	300-150	387	0	0	3.5	0.3
RZO	99	V	300-150	59	0	3	6.0	0.6
SAM	99	V	300-150	90	0	0	4.2	-0.0
SAS	99	V	300-150	3165	0	0	3.8	-0.0
SAZ	99	V	300-150	73	0	0	3.5	0.5
SBI	99	V	300-150	21	0	0	5.0	1.3
SCX	99	V	300-150	76	0	0	5.1	1.0
SEY	99	V	300-150	110	0	0	3.2	0.3
SIA	99	V	300-150	7403	0	0	4.1	0.2
SIO	99	V	300-150	44	0	0	3.9	-0.8
SLM	99	V	300-150	148	0	1	3.5	0.3
SON	99	V	300-150	41	0	0	3.2	-0.5
SPA	99	V	300-150	52	0	0	5.7	2.1
SVA	99	V	300-150	4710	0	0	4.1	0.3
SVW	99	V	300-150	443	0	0	4.0	0.0
SWR	99	V	300-150	7512	0	1	3.8	0.3
SYB	99	V	300-150	102	0	0	4.5	0.0
TAG	99	V	300-150	27	0	0	4.8	2.1
TAM	99	V	300-150	53	0	0	2.5	-0.3
TAP	99	V	300-150	1433	0	1	3.8	0.2
TAR	99	V	300-150	234	0	0	3.7	0.2
TAX	99	V	300-150	69	0	0	3.0	0.2
TAY	99	V	300-150	424	0	0	4.4	-0.3
TEU	99	V	300-150	67	0	0	3.7	-0.3
TFF	99	V	300-150	26	0	0	3.7	0.2
TFL	99	V	300-150	1557	8	0	6.8	-0.2
TGW	99	V	300-150	831	0	0	7.0	0.4
THA	99	V	300-150	167	0	0	3.5	1.1
THT	99	V	300-150	2259	8	0	10.2	0.1
THY	99	V	300-150	13216	5	0	4.8	0.2
TMN	99	V	300-150	268	0	0	5.0	0.6
TOM	99	V	300-150	4162	12	0	7.9	0.0
TOW	99	V	300-150	65	0	0	3.4	0.7
TPA	99	V	300-150	93	0	0	4.8	-0.0

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
TSC	99	V	300-150	1771	0	0	3.9	0.4
TVP	99	V	300-150	34	0	0	3.5	0.4
TWY	99	V	300-150	413	0	0	3.7	-0.2
UAE	99	V	300-150	20428	0	0	3.5	0.2
UAF	99	V	300-150	20	0	0	4.7	-0.0
UAL	99	V	300-150	40658	9	2	6.2	0.1
ULC	99	V	300-150	63	0	0	4.0	1.0
UPS	99	V	300-150	4232	0	0	4.0	-0.4
URO	99	V	300-150	167	0	0	3.8	0.0
UTN	99	V	300-150	333	0	0	4.5	0.1
UZB	99	V	300-150	75	16	0	6.8	-0.5
VAJ	99	V	300-150	33	0	0	3.2	0.6
VAL	99	V	300-150	82	0	0	6.2	-1.1
VCG	99	V	300-150	46	0	0	3.9	-0.3
VCJ	99	V	300-150	84	0	0	4.1	0.9
VIR	99	V	300-150	14797	8	0	5.2	0.0
VJT	99	V	300-150	1210	0	0	3.7	0.3
VMP	99	V	300-150	112	0	0	6.8	0.5
VTI	99	V	300-150	123	0	0	3.1	0.5
VXS	99	V	300-150	49	0	0	5.8	1.1
WDY	99	V	300-150	24	0	0	4.9	-1.0
WFL	99	V	300-150	50	0	0	3.3	-0.3
WJA	99	V	300-150	974	10	1	6.6	0.2
WRC	99	V	300-150	85	0	1	3.6	-0.3
WWI	99	V	300-150	85	0	0	4.2	0.3
XAX	99	V	300-150	56	0	0	2.9	0.5
XOJ	99	V	300-150	43	0	0	3.9	0.1
XRO	99	V	300-150	104	0	0	4.7	-0.7
o	99	V	300-150	2725	1	0	5.0	0.3

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 : JAN 2022
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	12	Z	50	27	15.9	5.7
01001	00	Z	50	24	66.8	16.9
01028	00	Z	50	24	7.9	-3.9
01028	12	Z	50	27	11.5	-3.8
01400	00	Z	50	4	85.1	84.1
01400	12	Z	50	5	78.0	77.5
01415	00	Z	50	17	29.2	-8.4
01415	12	Z	50	7	18.1	8.2
02365	12	Z	50	19	19.0	0.6
02365	00	Z	50	15	9.6	4.1
02836	00	Z	50	27	10.8	-4.4
02836	12	Z	50	32	14.5	-9.0
02963	00	Z	50	30	9.1	-3.0
02963	12	Z	50	33	13.8	-2.8
03005	00	Z	50	26	9.6	-3.5
03005	12	Z	50	29	12.8	-3.0
03238	00	Z	50	31	12.0	-1.8
03238	12	Z	50	10	16.3	1.7
03808	00	Z	50	30	7.4	1.8
03808	12	Z	50	28	9.5	2.9
03918	12	Z	50	7	20.7	5.4
03918	00	Z	50	11	18.3	6.8
03953	12	Z	50	31	14.2	-7.4
03953	00	Z	50	30	11.2	-6.0
04018	00	Z	50	19	10.4	0.6
04018	12	Z	50	21	15.5	-3.6
04220	00	Z	50	30	9.7	-0.1
04220	12	Z	50	31	11.1	-0.6
04270	12	Z	50	17	21.8	3.1
04270	00	Z	50	20	18.3	1.1
04320	00	Z	50	25	13.4	11.2
04320	12	Z	50	26	19.8	12.7
04339	12	Z	50	10	11.9	4.5
04339	00	Z	50	18	17.8	14.0
04360	00	Z	50	6	9.7	-7.3
04360	12	Z	50	4	20.4	-17.3
06011	12	Z	50	29	14.8	6.1
06011	00	Z	50	23	12.9	-4.0
06260	12	Z	50	4	10.3	2.9

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06260	00	Z	50	28	10.7	0.5
06610	12	Z	50	9	9.6	-0.3
06610	00	Z	50	21	7.1	3.6
07110	12	Z	50	29	21.8	8.4
07110	00	Z	50	30	9.1	-4.3
07510	00	Z	50	31	12.3	-6.1
07510	12	Z	50	29	12.5	2.5
07645	00	Z	50	31	29.2	-0.7
07645	12	Z	50	30	14.4	-8.5
07761	12	Z	50	30	18.4	-9.7
07761	00	Z	50	30	15.7	-8.7
08001	00	Z	50	25	10.2	5.9
08001	12	Z	50	26	6.9	3.9
08221	00	Z	50	31	6.8	5.5
08221	12	Z	50	29	7.4	4.2
08302	00	Z	50	31	6.2	-0.6
08302	12	Z	50	31	8.3	-5.1
08508	12	Z	50	29	6.5	-0.8
08522	12	Z	50	30	6.7	2.7
10035	00	Z	50	31	13.2	11.2
10035	12	Z	50	31	12.1	8.6
10393	00	Z	50	21	7.2	-0.2
10393	12	Z	50	8	9.9	5.4
10410	00	Z	50	31	8.2	-1.3
10410	12	Z	50	31	18.0	-0.6
10739	00	Z	50	30	9.5	1.6
10739	12	Z	50	31	10.2	2.4
11035	00	Z	50	28	14.1	-0.8
11035	12	Z	50	28	22.1	8.6
12982	00	Z	50	31	7.2	4.3
12982	12	Z	50	30	8.5	1.8
16245	12	Z	50	5	14.6	12.2
16245	00	Z	50	24	6.7	2.4
16429	00	Z	50	20	7.3	5.6
16429	12	Z	50	9	8.0	5.3
16622	00	Z	50	26	18.3	16.2
16754	00	Z	50	29	12.9	6.5
17607	12	Z	50	27	10.2	4.2
26435	12	Z	50	15	14.2	-7.4
2EERV	12	Z	50	5	10.2	-5.5
2EERV	00	Z	50	4	9.7	3.9
60018	00	Z	50	26	8.2	6.4
60018	12	Z	50	23	8.4	2.8

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
7JUNA4	12	Z	50	1	0.5	0.5
7JUNA4	00	Z	50	0	0.0	0.0
ASDE09	12	Z	50	9	17.8	8.5
ATGU3F	00	Z	50	1	0.2	0.2
BPMWB2	12	Z	50	6	12.2	5.9
BPMWB2	00	Z	50	5	20.9	15.5
CHQUR4	12	Z	50	1	51.5	51.5
DBBE	00	Z	50	2	6.5	-5.8
HTXUH4	12	Z	50	2	95.4	-60.0
HTXUH4	00	Z	50	3	21.1	7.4
JNKN7J	12	Z	50	12	23.3	15.6
JNKN7J	00	Z	50	9	28.7	25.3
KJFF9X	12	Z	50	8	12.5	11.8
KJFF9X	00	Z	50	6	16.1	12.2
KMPLHP	12	Z	50	5	33.6	30.7
KMPLHP	00	Z	50	8	27.5	25.3
LRYQE3	12	Z	50	9	55.1	2.9
LRYQE3	00	Z	50	7	11.3	-1.2
UXK5JT	12	Z	50	9	12.7	6.0
UXK5JT	00	Z	50	9	12.8	5.5
XKQLWQ	12	Z	50	18	87.6	80.8
XQFJRG	12	Z	50	5	21.3	-18.1
XQFJRG	00	Z	50	8	19.9	-7.1
YLV96W	12	Z	50	4	27.8	3.9
YLV96W	00	Z	50	4	10.4	-9.3

4.2 Table 14 - Radiosonde Monitoring Statistics (EUCOS):50 hPa Wind (m/s)

RADIOSONDE MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND (M/S)
 LEVEL : 50 HPA
 AREA : 0 - 90N, 100W - 40E
 PERIOD : JAN 2022
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	12	V	50	27	3.7	0.8	0.4
01001	00	V	50	17	3.6	0.0	-0.4
01028	00	V	50	16	2.8	0.8	-0.6
01028	12	V	50	21	3.0	0.2	0.3
01400	00	V	50	3	6.9	-5.1	3.5
01400	12	V	50	3	4.4	-0.1	0.5
01415	00	V	50	17	5.7	0.5	0.9
01415	12	V	50	6	4.5	-0.9	1.2
02365	12	V	50	16	3.6	0.3	0.0
02365	00	V	50	11	4.3	0.7	0.5
02836	00	V	50	19	3.7	0.4	-1.0
02836	12	V	50	27	4.0	0.1	0.3
02963	00	V	50	22	4.3	0.3	0.0
02963	12	V	50	31	3.9	0.5	-0.3
03005	00	V	50	17	4.0	1.0	-1.2
03005	12	V	50	29	4.3	-0.1	-0.7
03238	00	V	50	24	4.9	0.5	-0.2
03238	12	V	50	10	5.9	-0.5	0.7
03808	00	V	50	24	5.1	-0.1	-0.6
03808	12	V	50	27	3.7	0.2	-0.9
03918	12	V	50	7	4.8	-0.6	-0.2
03918	00	V	50	10	4.3	0.7	0.2
03953	12	V	50	31	3.3	0.3	-0.3
03953	00	V	50	25	3.3	0.1	0.4
04018	00	V	50	16	3.1	-0.1	-0.3
04018	12	V	50	20	3.8	0.9	-1.0
04220	00	V	50	24	3.3	0.5	-0.8
04220	12	V	50	31	4.0	0.3	-0.9
04270	12	V	50	17	5.9	0.5	-1.9
04270	00	V	50	16	5.4	2.0	-0.4
04320	00	V	50	20	3.7	0.6	0.5
04320	12	V	50	26	3.5	0.5	-0.7
04339	12	V	50	10	3.3	0.6	-0.4
04339	00	V	50	13	4.7	0.3	-1.9
04360	00	V	50	6	4.6	0.7	-0.6
04360	12	V	50	4	4.8	0.2	3.4
06011	12	V	50	29	3.5	0.2	-0.9
06011	00	V	50	20	3.9	-0.5	-0.4
06260	12	V	50	4	2.3	0.5	1.2

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06260	00	V	50	21	3.9	-0.2	0.1
06610	12	V	50	9	9.3	-1.5	4.3
06610	00	V	50	21	4.8	-0.5	-0.1
07110	12	V	50	29	4.3	0.4	-0.1
07110	00	V	50	26	3.5	0.1	-0.2
07510	00	V	50	26	3.3	-0.6	-0.1
07510	12	V	50	29	3.8	0.1	-0.8
07645	00	V	50	25	3.6	0.0	-0.7
07645	12	V	50	30	4.3	-0.8	-0.1
07761	12	V	50	30	4.4	-0.7	-0.2
07761	00	V	50	26	3.7	0.0	0.5
08001	00	V	50	24	2.7	-0.4	-0.3
08001	12	V	50	26	3.3	0.8	-0.1
08221	00	V	50	22	3.7	-0.5	-0.7
08221	12	V	50	29	3.3	0.2	-0.1
08302	00	V	50	23	4.4	0.7	0.4
08302	12	V	50	31	3.8	0.1	-0.2
08508	12	V	50	29	3.9	0.4	-0.3
08522	12	V	50	30	3.7	0.5	0.3
10035	00	V	50	30	4.3	-0.5	-0.2
10035	12	V	50	31	4.5	0.4	0.1
10393	00	V	50	18	4.0	-0.2	-0.4
10393	12	V	50	8	3.3	0.7	-0.8
10410	00	V	50	31	3.1	-0.2	0.0
10410	12	V	50	31	3.5	-0.2	0.3
10739	00	V	50	29	4.0	-0.1	-1.0
10739	12	V	50	31	3.5	0.3	0.0
11035	00	V	50	23	4.4	0.4	-0.9
11035	12	V	50	28	5.0	-0.5	0.6
12982	00	V	50	24	4.5	0.8	1.2
12982	12	V	50	30	3.7	0.3	-0.1
16245	12	V	50	5	4.3	-0.9	-1.0
16245	00	V	50	24	3.3	0.6	0.1
16429	00	V	50	19	3.2	-0.1	-0.7
16429	12	V	50	9	3.3	0.6	0.7
16622	00	V	50	19	3.4	0.3	-0.2
16754	00	V	50	21	3.8	0.7	-0.2
17607	12	V	50	3	2.8	-0.1	-1.6
26435	12	V	50	15	3.7	0.9	-0.6
2EERVT	12	V	50	5	3.3	-0.3	-0.5
2EERVT	00	V	50	4	3.6	-0.2	-0.4
60018	00	V	50	19	2.7	0.2	0.2
60018	12	V	50	23	2.9	0.3	-0.5

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
7JUNA4	12	V	50	1	3.9	-3.6	1.6
7JUNA4	00	V	50	0	0.0	0.0	0.0
ASDE09	12	V	50	9	3.1	0.1	0.0
ATGU3F	00	V	50	1	5.3	1.9	4.9
BPMWB2	12	V	50	6	4.0	-0.3	-0.1
BPMWB2	00	V	50	5	3.1	2.0	1.7
CHQUR4	12	V	50	1	4.8	0.7	4.7
DBBE	00	V	50	2	3.3	0.7	-3.0
HTXUH4	12	V	50	2	1.0	-0.8	-0.4
HTXUH4	00	V	50	3	4.8	-3.5	-1.2
JNKN7J	12	V	50	12	2.8	-0.3	-0.5
JNKN7J	00	V	50	9	3.1	-0.3	0.5
KJJF9X	12	V	50	8	4.4	0.0	-2.5
KJJF9X	00	V	50	6	1.9	0.1	0.6
KMPLHP	12	V	50	5	2.7	0.4	2.0
KMPLHP	00	V	50	8	3.5	-0.7	-1.1
LRYQE3	12	V	50	9	3.4	0.1	0.0
LRYQE3	00	V	50	7	3.3	1.0	0.7
UXK5JT	12	V	50	9	3.4	1.2	0.4
UXK5JT	00	V	50	9	4.7	-1.7	-0.1
XKQLWQ	12	V	50	16	6.3	-3.5	0.6
XQFJRG	12	V	50	5	3.2	-0.2	1.3
XQFJRG	00	V	50	8	3.7	0.5	-0.2
YLV96W	12	V	50	4	2.7	0.5	-0.4
YLV96W	00	V	50	4	3.6	-1.3	1.3

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

RADIOSONDE MONITORING STATISTICS (EUCOS)

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

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	12	Z	100	30	11.0	-4.0
01001	00	Z	100	28	36.2	2.1
01028	00	Z	100	29	7.8	-3.9
01028	12	Z	100	30	9.1	-4.5
01400	00	Z	100	14	77.1	76.5
01400	12	Z	100	11	72.5	71.8
01415	00	Z	100	17	24.5	-5.3
01415	12	Z	100	9	17.8	6.1
02365	12	Z	100	20	8.1	-0.1
02365	00	Z	100	17	6.8	0.0
02836	00	Z	100	30	8.2	-6.1
02836	12	Z	100	34	7.9	-5.6
02963	00	Z	100	30	9.2	-3.8
02963	12	Z	100	34	9.7	-1.1
03005	00	Z	100	31	9.1	-4.9
03005	12	Z	100	34	9.6	-4.2
03238	00	Z	100	31	7.4	-3.0
03238	12	Z	100	11	15.5	1.1
03808	00	Z	100	30	5.2	0.6
03808	12	Z	100	31	8.1	0.3
03918	12	Z	100	7	13.7	11.3
03918	00	Z	100	11	11.9	3.8
03953	12	Z	100	31	11.3	-6.8
03953	00	Z	100	30	8.9	-5.5
04018	00	Z	100	21	7.0	1.7
04018	12	Z	100	22	7.1	-3.8
04220	00	Z	100	31	9.2	2.4
04220	12	Z	100	31	9.4	0.3
04270	12	Z	100	24	16.9	-8.2
04270	00	Z	100	25	12.8	-0.3
04320	00	Z	100	29	8.9	5.7
04320	12	Z	100	28	9.7	3.0
04339	12	Z	100	13	5.9	-2.4
04339	00	Z	100	24	8.8	5.0
04360	00	Z	100	10	10.6	-7.3
04360	12	Z	100	10	14.4	-12.2
06011	12	Z	100	31	10.6	3.8
06011	00	Z	100	28	9.4	-1.7
06260	12	Z	100	5	6.5	0.2

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06260	00	Z	100	29	8.6	-1.9
06610	12	Z	100	9	9.7	-4.5
06610	00	Z	100	21	5.0	-3.0
07110	12	Z	100	31	12.8	2.9
07110	00	Z	100	30	10.4	-7.9
07510	00	Z	100	31	13.0	-9.3
07510	12	Z	100	30	9.8	-1.6
07645	00	Z	100	31	11.6	-9.8
07645	12	Z	100	30	11.4	-9.2
07761	12	Z	100	30	18.6	-14.4
07761	00	Z	100	30	17.3	-13.8
08001	00	Z	100	25	8.1	2.6
08001	12	Z	100	27	5.0	1.7
08221	00	Z	100	31	5.9	4.5
08221	12	Z	100	30	7.7	4.9
08302	00	Z	100	31	6.5	-3.3
08302	12	Z	100	31	6.8	-4.8
08508	12	Z	100	29	5.3	0.8
08522	12	Z	100	31	5.4	2.5
10035	00	Z	100	31	10.8	8.7
10035	12	Z	100	32	11.3	7.6
10393	00	Z	100	27	9.0	-5.0
10393	12	Z	100	8	11.2	-2.1
10410	00	Z	100	32	8.9	-4.9
10410	12	Z	100	31	13.9	-4.1
10739	00	Z	100	31	9.2	-0.9
10739	12	Z	100	31	8.1	0.1
11035	00	Z	100	31	11.0	-2.8
11035	12	Z	100	32	12.3	2.9
12982	00	Z	100	31	4.5	-1.5
12982	12	Z	100	31	6.2	0.2
16245	12	Z	100	5	6.3	5.4
16245	00	Z	100	24	4.8	-1.0
16429	00	Z	100	20	4.9	3.1
16429	12	Z	100	9	6.2	3.6
16622	00	Z	100	30	12.0	9.7
16754	00	Z	100	30	10.8	1.9
17607	12	Z	100	26	7.8	2.1
26435	12	Z	100	15	10.0	-5.5
2EERVT	12	Z	100	5	8.3	-6.1
2EERVT	00	Z	100	5	8.3	1.3
60018	00	Z	100	26	5.1	3.2
60018	12	Z	100	23	7.4	-1.4

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
7JUNA4	12	Z	100	7	119.0	-39.1
7JUNA4	00	Z	100	6	7.4	5.3
ASDE09	12	Z	100	10	15.4	8.8
ATGU3F	00	Z	100	1	6.6	-6.6
BPMWB2	12	Z	100	6	11.5	3.0
BPMWB2	00	Z	100	6	11.1	7.2
CHQR4	12	Z	100	1	37.1	37.1
DBBE	00	Z	100	3	9.4	-8.1
HTXUH4	12	Z	100	3	83.4	-46.3
HTXUH4	00	Z	100	4	24.4	12.9
JNKN7J	12	Z	100	13	23.6	18.6
JNKN7J	00	Z	100	11	27.5	23.7
KJJF9X	12	Z	100	9	10.2	9.8
KJJF9X	00	Z	100	8	13.0	8.9
KMPLHP	12	Z	100	7	28.7	25.2
KMPLHP	00	Z	100	11	29.2	27.2
LRYQE3	12	Z	100	11	24.4	-10.5
LRYQE3	00	Z	100	9	10.8	-2.7
UXK5JT	12	Z	100	10	10.1	3.2
UXK5JT	00	Z	100	9	11.1	-1.9
XKQLWQ	12	Z	100	20	66.2	58.2
XQFJRG	12	Z	100	7	18.1	-6.2
XQFJRG	00	Z	100	8	17.1	-6.6
YLV96W	12	Z	100	4	12.0	-1.5
YLV96W	00	Z	100	5	13.0	-11.3

4.4 Table 16 - Radiosonde Monitoring Statistics (EUCOS): 100 hPa Wind (m/s)

RADIOSONDE MONITORING STATISTICS (EUCOS)

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

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	12	V	100	30	2.8	-0.2	-0.1
01001	00	V	100	21	2.8	0.6	-0.5
01028	00	V	100	20	3.2	1.2	-0.1
01028	12	V	100	28	3.1	0.4	-0.6
01400	00	V	100	9	3.9	-0.9	-1.1
01400	12	V	100	10	3.5	-1.0	-0.7
01415	00	V	100	16	4.3	-0.1	0.9
01415	12	V	100	9	4.3	1.6	0.5
02365	12	V	100	20	3.2	0.0	0.4
02365	00	V	100	12	3.7	0.2	-0.4
02836	00	V	100	24	3.3	0.3	-0.4
02836	12	V	100	30	2.8	0.4	0.1
02963	00	V	100	22	3.7	-0.3	-1.1
02963	12	V	100	31	3.8	-0.1	0.4
03005	00	V	100	22	3.0	-0.7	0.2
03005	12	V	100	31	3.5	-0.1	0.3
03238	00	V	100	23	3.6	0.3	-0.4
03238	12	V	100	11	4.0	-0.3	2.3
03808	00	V	100	24	3.4	0.8	0.1
03808	12	V	100	30	3.2	0.1	-0.2
03918	12	V	100	7	3.0	-0.8	0.8
03918	00	V	100	10	2.8	-0.1	-1.2
03953	12	V	100	31	2.7	0.0	0.0
03953	00	V	100	25	3.3	0.6	0.2
04018	00	V	100	19	3.5	0.0	-1.1
04018	12	V	100	21	2.9	-0.7	1.0
04220	00	V	100	30	3.7	0.3	-0.7
04220	12	V	100	31	3.1	-0.2	0.7
04270	12	V	100	24	3.9	0.3	0.5
04270	00	V	100	24	3.9	-0.1	0.6
04320	00	V	100	28	2.5	0.1	0.0
04320	12	V	100	28	3.4	0.4	-0.4
04339	12	V	100	13	3.0	0.6	0.9
04339	00	V	100	24	2.9	0.2	-0.2
04360	00	V	100	10	2.1	0.5	-0.3
04360	12	V	100	10	3.2	0.8	-0.6
06011	12	V	100	31	3.4	-0.7	-0.9
06011	00	V	100	26	3.9	0.3	-0.5
06260	12	V	100	5	3.6	0.3	0.8

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06260	00	V	100	21	4.7	-0.2	0.4
06610	12	V	100	9	3.7	0.8	0.1
06610	00	V	100	21	3.4	0.0	-0.4
07110	12	V	100	31	3.3	0.3	0.0
07110	00	V	100	26	3.2	-0.5	-0.1
07510	00	V	100	26	2.9	0.7	-0.1
07510	12	V	100	30	3.2	0.8	-0.6
07645	00	V	100	25	3.4	0.1	0.1
07645	12	V	100	30	3.7	-0.6	0.3
07761	12	V	100	30	4.2	0.2	0.4
07761	00	V	100	26	3.8	-0.1	1.7
08001	00	V	100	23	3.6	0.0	0.9
08001	12	V	100	27	3.3	0.7	0.7
08221	00	V	100	22	2.7	0.5	0.5
08221	12	V	100	30	3.2	-0.6	0.5
08302	00	V	100	23	3.7	0.1	-0.9
08302	12	V	100	31	3.7	-0.5	0.2
08508	12	V	100	29	4.0	-0.2	-0.1
08522	12	V	100	31	3.0	-0.1	-0.6
10035	00	V	100	31	3.7	0.0	0.4
10035	12	V	100	31	3.3	0.8	-0.1
10393	00	V	100	21	3.4	-0.3	0.1
10393	12	V	100	8	5.1	-0.1	0.8
10410	00	V	100	31	3.4	0.5	-0.5
10410	12	V	100	31	3.1	0.7	0.4
10739	00	V	100	31	3.8	0.3	0.1
10739	12	V	100	31	3.8	0.8	-1.4
11035	00	V	100	24	4.8	0.1	0.6
11035	12	V	100	31	4.3	-0.6	0.9
12982	00	V	100	26	3.5	-0.1	-0.1
12982	12	V	100	31	3.6	0.3	0.0
16245	12	V	100	5	2.0	0.6	-0.2
16245	00	V	100	21	2.8	-0.4	0.8
16429	00	V	100	20	3.2	-0.1	0.1
16429	12	V	100	9	3.1	-0.2	-0.3
16622	00	V	100	23	3.9	0.8	0.6
16754	00	V	100	24	4.0	0.2	0.6
17607	12	V	100	9	2.9	-0.1	1.8
26435	12	V	100	15	3.3	0.3	0.7
2EERV	12	V	100	5	3.3	-0.7	-0.5
2EERV	00	V	100	5	4.1	-0.9	0.4
60018	00	V	100	19	3.6	0.7	-0.9
60018	12	V	100	23	4.1	-0.7	0.0

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
7JUNA4	12	V	100	7	5.7	0.8	1.8
7JUNA4	00	V	100	6	2.0	-0.1	0.6
ASDE09	12	V	100	9	2.5	0.4	1.3
ATGU3F	00	V	100	1	2.2	2.2	-0.2
BPMWB2	12	V	100	6	2.2	-1.5	0.0
BPMWB2	00	V	100	6	5.7	-1.8	1.7
CHQR4	12	V	100	1	2.5	1.5	-2.0
DBBE	00	V	100	3	5.5	4.3	-1.3
HTXUH4	12	V	100	3	2.5	0.3	1.1
HTXUH4	00	V	100	4	4.0	-0.2	1.9
JNKN7J	12	V	100	13	3.4	0.0	-0.5
JNKN7J	00	V	100	11	3.3	-0.7	1.1
KJJF9X	12	V	100	9	3.6	-0.7	-0.4
KJJF9X	00	V	100	8	2.1	0.3	0.9
KMPLHP	12	V	100	7	3.5	-0.6	-0.2
KMPLHP	00	V	100	11	2.8	0.0	0.3
LRYQE3	12	V	100	11	4.5	-0.2	1.3
LRYQE3	00	V	100	9	4.1	-1.4	0.4
UXK5JT	12	V	100	10	4.0	-0.9	0.8
UXK5JT	00	V	100	9	3.8	0.6	1.3
XKQLWQ	12	V	100	19	6.2	-2.3	1.5
XQFJRG	12	V	100	7	2.7	-0.7	-0.5
XQFJRG	00	V	100	8	2.7	0.7	-0.6
YLV96W	12	V	100	4	3.6	0.0	0.7
YLV96W	00	V	100	5	2.3	0.2	0.3

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

RADIOSONDE MONITORING STATISTICS (EUCOS)

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

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	12	Z	500	32	12.7	-9.6
01001	00	Z	500	31	12.8	-9.7
01028	00	Z	500	31	4.6	-0.9
01028	12	Z	500	31	4.1	0.0
01400	00	Z	500	23	79.5	79.3
01400	12	Z	500	26	77.1	76.9
01415	00	Z	500	17	8.8	4.8
01415	12	Z	500	9	7.0	4.4
02365	12	Z	500	22	6.6	5.2
02365	00	Z	500	19	7.9	6.8
02836	00	Z	500	31	3.0	-0.9
02836	12	Z	500	35	3.0	1.6
02963	00	Z	500	31	3.6	2.1
02963	12	Z	500	34	4.6	2.4
03005	00	Z	500	32	4.7	-2.2
03005	12	Z	500	34	4.0	-2.0
03238	00	Z	500	31	3.8	1.2
03238	12	Z	500	11	5.9	3.1
03808	00	Z	500	30	3.9	2.4
03808	12	Z	500	32	5.1	3.2
03918	12	Z	500	7	8.9	8.7
03918	00	Z	500	11	6.9	6.6
03953	12	Z	500	31	5.8	0.2
03953	00	Z	500	30	2.8	-1.0
04018	00	Z	500	23	5.1	-2.0
04018	12	Z	500	22	4.5	-0.4
04220	00	Z	500	31	10.0	3.1
04220	12	Z	500	31	10.0	3.3
04270	12	Z	500	27	11.3	-8.7
04270	00	Z	500	28	8.9	-7.1
04320	00	Z	500	30	4.5	1.2
04320	12	Z	500	30	4.7	-0.7
04339	12	Z	500	22	9.8	-8.3
04339	00	Z	500	27	6.9	-4.6
04360	00	Z	500	11	10.7	-9.5
04360	12	Z	500	10	12.4	-11.9
06011	12	Z	500	31	6.9	2.5
06011	00	Z	500	30	7.8	1.8
06260	12	Z	500	5	1.7	0.7

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06260	00	Z	500	31	6.9	-1.3
06610	12	Z	500	8	3.2	1.2
06610	00	Z	500	21	2.9	1.3
07110	12	Z	500	31	4.7	-1.9
07110	00	Z	500	32	6.3	-5.6
07510	00	Z	500	31	6.0	-4.1
07510	12	Z	500	30	4.5	-0.2
07645	00	Z	500	31	7.7	-6.8
07645	12	Z	500	32	6.1	-4.8
07761	12	Z	500	31	9.9	-8.4
07761	00	Z	500	32	11.7	-10.4
08001	00	Z	500	25	3.7	2.6
08001	12	Z	500	27	4.3	3.1
08221	00	Z	500	31	5.1	4.5
08221	12	Z	500	30	5.4	4.9
08302	00	Z	500	32	5.6	-4.9
08302	12	Z	500	31	5.8	-4.7
08508	12	Z	500	29	5.4	4.3
08522	12	Z	500	31	5.5	4.9
10035	00	Z	500	31	13.9	13.7
10035	12	Z	500	32	13.1	12.9
10393	00	Z	500	32	2.7	-0.2
10393	12	Z	500	8	3.5	0.0
10410	00	Z	500	32	3.3	-0.6
10410	12	Z	500	32	4.8	0.3
10739	00	Z	500	31	5.5	4.8
10739	12	Z	500	31	4.8	4.2
11035	00	Z	500	31	5.6	-0.4
11035	12	Z	500	34	5.7	-2.6
12982	00	Z	500	31	3.8	0.3
12982	12	Z	500	31	4.2	1.1
16245	12	Z	500	5	1.9	0.5
16245	00	Z	500	24	2.5	1.0
16429	00	Z	500	20	4.2	3.4
16429	12	Z	500	9	2.4	2.0
16622	00	Z	500	31	11.0	9.7
16754	00	Z	500	31	6.7	-1.7
17607	12	Z	500	30	5.4	4.0
26435	12	Z	500	15	3.9	-0.1
2EERV	12	Z	500	5	6.1	-1.8
2EERV	00	Z	500	6	6.7	-1.4
60018	00	Z	500	26	3.7	2.8
60018	12	Z	500	23	4.7	2.2

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
7JUNA4	12	Z	500	8	39.7	-10.7
7JUNA4	00	Z	500	9	7.5	2.7
ASDE09	12	Z	500	10	27.2	26.7
ATGU3F	00	Z	500	1	3.9	-3.9
BPMWB2	12	Z	500	7	7.8	4.8
BPMWB2	00	Z	500	8	7.7	3.4
CHQUR4	12	Z	500	1	3.2	3.2
DBBE	00	Z	500	3	3.2	2.8
HTXUH4	12	Z	500	3	29.9	11.7
HTXUH4	00	Z	500	4	26.5	15.1
JNKN7J	12	Z	500	14	32.1	31.7
JNKN7J	00	Z	500	11	32.9	32.2
KJJF9X	12	Z	500	12	11.5	3.3
KJJF9X	00	Z	500	12	6.3	3.2
KMPLHP	12	Z	500	9	36.2	34.0
KMPLHP	00	Z	500	12	34.0	32.1
LRYQE3	12	Z	500	11	9.4	-7.1
LRYQE3	00	Z	500	10	7.1	-2.6
UXK5JT	12	Z	500	10	10.2	-1.6
UXK5JT	00	Z	500	9	9.3	-6.3
XKQLWQ	12	Z	500	20	43.8	17.2
XQFJRG	12	Z	500	8	10.8	-7.8
XQFJRG	00	Z	500	8	8.5	-4.9
YLV96W	12	Z	500	8	5.3	-3.2
YLV96W	00	Z	500	10	8.4	-3.8

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 : JAN 2022
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	12	V	500	31	3.1	-0.2	-0.1
01001	00	V	500	31	3.0	-0.3	-0.6
01028	00	V	500	31	2.9	-0.2	-0.3
01028	12	V	500	31	2.5	0.1	0.7
01400	00	V	500	23	2.1	-0.6	-0.2
01400	12	V	500	24	2.8	0.0	-0.3
01415	00	V	500	17	3.1	-0.1	0.7
01415	12	V	500	9	2.1	0.7	0.0
02365	12	V	500	22	3.0	0.9	-0.5
02365	00	V	500	19	2.9	0.0	-0.3
02836	00	V	500	31	2.7	0.7	-0.6
02836	12	V	500	31	2.4	-0.1	0.1
02963	00	V	500	31	2.7	0.2	0.4
02963	12	V	500	31	2.2	0.5	0.2
03005	00	V	500	30	3.0	0.1	0.5
03005	12	V	500	31	3.4	0.1	0.6
03238	00	V	500	31	2.6	0.1	0.2
03238	12	V	500	11	2.3	0.6	-0.2
03808	00	V	500	30	2.4	0.2	-0.6
03808	12	V	500	30	4.1	-0.1	0.1
03918	12	V	500	7	2.2	0.6	-0.4
03918	00	V	500	11	2.7	1.2	-0.4
03953	12	V	500	31	3.3	0.0	0.2
03953	00	V	500	30	2.7	-0.5	0.0
04018	00	V	500	22	3.6	1.1	0.1
04018	12	V	500	22	3.6	0.2	0.0
04220	00	V	500	31	3.0	-0.6	-0.4
04220	12	V	500	31	3.5	0.4	0.6
04270	12	V	500	27	4.1	1.5	0.4
04270	00	V	500	28	3.7	0.9	-0.6
04320	00	V	500	30	3.0	0.5	0.3
04320	12	V	500	30	2.5	0.5	0.4
04339	12	V	500	22	3.0	0.2	1.1
04339	00	V	500	27	3.0	-0.2	-0.4
04360	00	V	500	11	3.1	0.6	0.3
04360	12	V	500	10	5.3	-0.4	0.2
06011	12	V	500	31	3.8	0.4	-0.4
06011	00	V	500	30	3.0	0.2	-0.3
06260	12	V	500	5	1.9	0.1	0.4

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06260	00	V	500	29	2.3	0.2	0.1
06610	12	V	500	8	3.3	0.0	-0.5
06610	00	V	500	21	2.5	0.3	-0.3
07110	12	V	500	31	2.1	0.6	0.1
07110	00	V	500	30	2.5	-0.1	0.0
07510	00	V	500	31	1.8	0.0	0.1
07510	12	V	500	30	2.0	0.0	0.3
07645	00	V	500	31	2.1	0.0	-0.7
07645	12	V	500	31	2.3	0.5	-0.1
07761	12	V	500	30	3.1	0.2	0.0
07761	00	V	500	31	2.5	0.0	-0.1
08001	00	V	500	25	2.5	-0.4	0.0
08001	12	V	500	27	2.1	0.2	0.1
08221	00	V	500	31	1.8	-0.3	-0.4
08221	12	V	500	30	1.8	0.2	0.2
08302	00	V	500	31	1.8	-0.4	-0.2
08302	12	V	500	31	1.9	-0.1	-0.2
08508	12	V	500	29	3.1	0.1	0.1
08522	12	V	500	31	3.0	0.0	-0.1
10035	00	V	500	31	3.1	-0.4	-0.5
10035	12	V	500	31	3.3	-0.2	-0.5
10393	00	V	500	23	2.4	0.4	-0.6
10393	12	V	500	8	2.1	0.5	0.3
10410	00	V	500	31	2.3	0.1	-0.4
10410	12	V	500	31	2.4	0.3	-0.3
10739	00	V	500	31	3.0	0.0	-0.7
10739	12	V	500	31	2.0	0.4	-0.6
11035	00	V	500	31	2.5	0.3	-0.7
11035	12	V	500	31	2.8	-0.7	-0.5
12982	00	V	500	31	2.4	0.4	-0.1
12982	12	V	500	31	2.1	0.0	0.1
16245	12	V	500	5	2.4	0.5	0.1
16245	00	V	500	24	2.6	0.6	0.1
16429	00	V	500	20	2.3	-0.4	0.1
16429	12	V	500	9	2.3	0.2	-0.5
16622	00	V	500	30	2.4	-0.3	-0.4
16754	00	V	500	29	3.6	0.0	0.2
17607	12	V	500	17	3.5	0.6	-0.2
26435	12	V	500	15	2.3	0.8	0.1
2EERVT	12	V	500	5	4.2	0.1	2.3
2EERVT	00	V	500	6	1.8	-0.4	0.7
60018	00	V	500	26	2.3	0.4	0.0
60018	12	V	500	23	2.4	0.5	-0.3

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
7JUNA4	12	V	500	8	3.2	0.3	0.7
7JUNA4	00	V	500	9	4.0	1.7	0.1
ASDE09	12	V	500	9	1.9	-0.6	-0.2
ATGU3F	00	V	500	1	4.6	1.1	4.5
BPMWB2	12	V	500	7	3.0	-0.4	0.7
BPMWB2	00	V	500	8	2.8	0.0	0.3
CHQR4	12	V	500	1	2.2	2.1	0.7
DBBE	00	V	500	3	2.0	-0.5	1.5
HTXUH4	12	V	500	3	2.8	0.3	-0.5
HTXUH4	00	V	500	4	2.9	1.1	-0.5
JNKN7J	12	V	500	14	2.9	0.2	0.6
JNKN7J	00	V	500	11	3.9	-1.5	1.0
KJJF9X	12	V	500	12	2.6	0.8	0.0
KJJF9X	00	V	500	12	2.2	0.7	0.1
KMPLHP	12	V	500	8	2.4	0.9	1.3
KMPLHP	00	V	500	12	3.0	-0.2	1.1
LRYQE3	12	V	500	11	2.8	0.1	-0.8
LRYQE3	00	V	500	10	3.6	0.1	-1.1
UXK5JT	12	V	500	10	2.9	0.3	0.6
UXK5JT	00	V	500	9	2.1	0.4	0.0
XKQLWQ	12	V	500	20	9.6	-4.6	0.1
XQFJRG	12	V	500	8	2.9	0.1	-0.4
XQFJRG	00	V	500	8	2.3	1.1	-0.2
YLV96W	12	V	500	8	1.9	1.0	0.2
YLV96W	00	V	500	10	2.0	0.1	0.3

4.7 Table 19 - Radiosonde Monitoring Statistics (EUCOS): 850 hPa Geopotential height (metres)

RADIOSONDE MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : GEOPOTENTIAL HEIGHT (METRES)
 LEVEL : 850 HPA
 AREA : 0 - 90N, 100W - 40E
 PERIOD : JAN 2022
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	12	Z	850	33	9.7	-8.9
01001	00	Z	850	31	10.3	-9.3
01028	00	Z	850	31	3.3	-1.4
01028	12	Z	850	31	3.2	-0.8
01400	00	Z	850	23	79.1	79.0
01400	12	Z	850	26	77.9	77.7
01415	00	Z	850	17	5.3	4.2
01415	12	Z	850	9	6.7	5.8
02365	12	Z	850	22	8.5	7.4
02365	00	Z	850	19	6.8	6.2
02836	00	Z	850	31	2.1	0.6
02836	12	Z	850	35	2.6	0.7
02963	00	Z	850	31	3.9	2.9
02963	12	Z	850	34	4.1	3.2
03005	00	Z	850	32	4.9	-3.2
03005	12	Z	850	34	4.8	-1.1
03238	00	Z	850	31	3.2	2.3
03238	12	Z	850	11	5.6	4.3
03808	00	Z	850	30	3.1	2.2
03808	12	Z	850	32	4.1	3.1
03918	12	Z	850	7	9.4	9.1
03918	00	Z	850	11	6.8	6.2
03953	12	Z	850	32	4.5	1.2
03953	00	Z	850	30	2.8	-0.6
04018	00	Z	850	23	5.5	-2.7
04018	12	Z	850	22	4.0	-0.8
04220	00	Z	850	31	11.0	2.4
04220	12	Z	850	31	9.5	2.6
04270	12	Z	850	27	7.1	-5.6
04270	00	Z	850	28	9.2	-6.8
04320	00	Z	850	30	4.8	-2.4
04320	12	Z	850	31	7.5	-4.4
04339	12	Z	850	22	9.2	-8.3
04339	00	Z	850	27	9.8	-8.9
04360	00	Z	850	11	10.2	-9.3
04360	12	Z	850	10	10.7	-7.9
06011	12	Z	850	31	4.7	2.3
06011	00	Z	850	30	4.9	1.9
06260	12	Z	850	5	1.2	0.2

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06260	00	Z	850	31	6.0	-1.3
06610	12	Z	850	8	3.0	2.1
06610	00	Z	850	21	2.8	1.4
07110	12	Z	850	31	3.4	-2.1
07110	00	Z	850	32	3.8	-3.2
07510	00	Z	850	31	3.4	1.9
07510	12	Z	850	30	3.3	2.5
07645	00	Z	850	31	6.4	-5.2
07645	12	Z	850	32	6.9	-5.8
07761	12	Z	850	32	6.2	-5.7
07761	00	Z	850	32	6.1	-5.5
08001	00	Z	850	25	2.3	0.5
08001	12	Z	850	27	2.3	1.3
08221	00	Z	850	31	3.0	2.2
08221	12	Z	850	30	2.8	1.8
08302	00	Z	850	32	7.8	-7.6
08302	12	Z	850	31	9.1	-8.9
08508	12	Z	850	29	4.0	3.2
08522	12	Z	850	31	3.4	2.9
10035	00	Z	850	31	13.6	13.3
10035	12	Z	850	32	13.9	13.8
10393	00	Z	850	21	2.5	1.2
10393	12	Z	850	8	2.2	0.7
10410	00	Z	850	32	2.7	-0.6
10410	12	Z	850	32	2.5	0.4
10739	00	Z	850	31	4.6	4.0
10739	12	Z	850	31	5.1	4.1
11035	00	Z	850	31	3.9	1.7
11035	12	Z	850	34	3.6	0.5
12982	00	Z	850	31	3.2	0.4
12982	12	Z	850	31	2.6	0.9
16245	12	Z	850	5	1.0	0.6
16245	00	Z	850	25	2.4	0.6
16429	00	Z	850	20	2.3	1.4
16429	12	Z	850	10	2.5	1.5
16622	00	Z	850	30	8.4	7.8
16754	00	Z	850	31	3.6	-1.3
17607	12	Z	850	31	2.8	2.0
26435	12	Z	850	15	2.7	0.9
2EERVT	12	Z	850	5	4.0	0.6
2EERVT	00	Z	850	6	6.2	0.0
60018	00	Z	850	26	4.2	3.0
60018	12	Z	850	23	2.6	1.2

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
7JUNA4	12	Z	850	7	6.3	2.1
7JUNA4	00	Z	850	9	6.8	3.8
ASDE09	12	Z	850	10	33.2	33.0
ATGU3F	00	Z	850	1	0.0	0.0
BPMWB2	12	Z	850	7	5.5	5.0
BPMWB2	00	Z	850	7	4.0	3.7
CHQUR4	12	Z	850	1	12.0	-12.0
DBBE	00	Z	850	3	15.9	4.6
HTXUH4	12	Z	850	3	34.2	14.7
HTXUH4	00	Z	850	4	27.0	14.0
JNKN7J	12	Z	850	14	37.4	37.1
JNKN7J	00	Z	850	11	38.2	38.0
KJFF9X	12	Z	850	13	6.5	2.1
KJFF9X	00	Z	850	12	5.5	4.0
KMPLHP	12	Z	850	9	38.3	36.1
KMPLHP	00	Z	850	12	36.9	34.6
LRYQE3	12	Z	850	11	6.3	-4.3
LRYQE3	00	Z	850	11	5.2	-2.0
UXK5JT	12	Z	850	11	6.7	-3.6
UXK5JT	00	Z	850	9	6.6	-5.7
XKQLWQ	12	Z	850	20	21.9	9.9
XQFJRG	12	Z	850	8	9.3	-7.8
XQFJRG	00	Z	850	8	6.3	-3.4
YLV96W	12	Z	850	9	4.7	-2.3
YLV96W	00	Z	850	10	4.2	-2.8

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 : JAN 2022
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	12	V	850	31	3.8	-0.2	1.0
01001	00	V	850	31	3.6	-0.5	-0.1
01028	00	V	850	31	3.8	1.9	0.2
01028	12	V	850	31	4.3	0.8	-0.2
01400	00	V	850	23	2.1	-0.3	0.1
01400	12	V	850	26	2.5	0.1	0.6
01415	00	V	850	17	3.0	0.4	1.2
01415	12	V	850	9	2.8	-0.6	-0.2
02365	12	V	850	22	2.9	0.2	0.8
02365	00	V	850	19	3.0	0.0	0.2
02836	00	V	850	31	2.3	-0.3	-0.4
02836	12	V	850	31	2.9	-0.3	-0.3
02963	00	V	850	31	3.1	0.2	0.1
02963	12	V	850	31	2.2	-0.3	-0.2
03005	00	V	850	30	3.8	-0.3	-0.3
03005	12	V	850	31	3.0	0.7	0.8
03238	00	V	850	31	2.6	0.0	-0.2
03238	12	V	850	11	3.0	0.0	0.0
03808	00	V	850	30	2.3	-0.7	-0.6
03808	12	V	850	30	2.8	-0.3	-0.6
03918	12	V	850	7	2.7	0.2	-0.5
03918	00	V	850	11	2.2	-0.5	-0.8
03953	12	V	850	31	2.5	0.2	0.4
03953	00	V	850	30	2.8	0.0	0.4
04018	00	V	850	22	3.7	0.4	1.1
04018	12	V	850	22	4.0	1.1	0.6
04220	00	V	850	31	3.9	0.2	0.1
04220	12	V	850	31	4.5	-0.4	-0.7
04270	12	V	850	27	4.4	0.3	-0.9
04270	00	V	850	28	4.7	0.5	-0.1
04320	00	V	850	30	3.6	-0.1	-0.1
04320	12	V	850	30	4.0	0.0	0.4
04339	12	V	850	22	4.8	0.7	1.5
04339	00	V	850	27	4.8	1.6	0.7
04360	00	V	850	11	10.5	6.4	3.1
04360	12	V	850	10	11.9	7.6	3.1
06011	12	V	850	31	3.2	-0.5	-0.1
06011	00	V	850	30	2.9	-0.5	-0.6
06260	12	V	850	5	2.1	0.3	0.2

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06260	00	V	850	30	1.8	0.1	-0.5
06610	12	V	850	8	3.2	-0.5	0.9
06610	00	V	850	21	3.1	0.0	-0.6
07110	12	V	850	31	3.0	0.0	-0.6
07110	00	V	850	30	2.6	-0.4	0.6
07510	00	V	850	31	2.6	-0.5	-0.2
07510	12	V	850	30	2.6	-0.1	0.4
07645	00	V	850	31	2.9	-0.3	-0.6
07645	12	V	850	31	3.3	-0.5	-0.3
07761	12	V	850	31	3.3	1.1	0.1
07761	00	V	850	31	3.1	0.5	0.0
08001	00	V	850	25	2.5	0.0	0.1
08001	12	V	850	27	2.6	0.1	0.5
08221	00	V	850	31	2.3	-0.2	0.2
08221	12	V	850	30	2.7	0.5	0.6
08302	00	V	850	31	2.5	-0.2	-0.2
08302	12	V	850	31	2.7	0.0	0.0
08508	12	V	850	29	2.3	-0.3	0.0
08522	12	V	850	31	3.1	0.3	0.2
10035	00	V	850	31	2.4	0.0	0.5
10035	12	V	850	31	3.3	-0.3	0.1
10393	00	V	850	21	2.3	-0.2	0.0
10393	12	V	850	8	1.8	-0.3	0.1
10410	00	V	850	31	2.5	0.2	-0.1
10410	12	V	850	31	2.0	0.1	0.2
10739	00	V	850	31	2.4	-0.3	-0.5
10739	12	V	850	31	2.8	-0.2	-0.2
11035	00	V	850	31	3.1	0.5	-0.3
11035	12	V	850	31	2.5	0.6	0.3
12982	00	V	850	31	3.0	0.1	-0.1
12982	12	V	850	31	3.1	0.7	-0.2
16245	12	V	850	5	3.3	1.0	0.4
16245	00	V	850	25	2.5	-0.4	-0.2
16429	00	V	850	20	2.6	0.8	0.2
16429	12	V	850	10	3.6	0.0	-0.6
16622	00	V	850	30	3.3	0.9	0.5
16754	00	V	850	31	4.0	1.1	-1.0
17607	12	V	850	31	3.2	0.4	-0.2
26435	12	V	850	15	2.1	-0.4	0.2
2EERV	12	V	850	5	3.4	-0.2	-0.2
2EERV	00	V	850	6	2.3	-0.8	1.1
60018	00	V	850	26	3.2	0.1	0.1
60018	12	V	850	23	3.4	1.1	-0.8

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
7JUNA4	12	V	850	7	2.3	-0.6	-0.5
7JUNA4	00	V	850	9	3.0	0.1	0.3
ASDE09	12	V	850	9	2.7	0.4	-0.2
ATGU3F	00	V	850	1	4.3	-4.1	-1.3
BPMWB2	12	V	850	7	2.4	0.1	0.4
BPMWB2	00	V	850	7	2.6	0.8	0.4
CHQR4	12	V	850	1	4.7	4.7	0.3
DBBE	00	V	850	3	3.5	-0.1	-2.2
HTXUH4	12	V	850	3	3.4	-0.2	-0.8
HTXUH4	00	V	850	4	2.6	-0.2	-0.5
JNKN7J	12	V	850	14	2.9	0.4	-0.7
JNKN7J	00	V	850	11	3.5	-0.2	0.3
KJJF9X	12	V	850	12	3.4	-0.1	-0.2
KJJF9X	00	V	850	12	2.3	0.3	-0.1
KMPLHP	12	V	850	8	2.7	0.1	-1.0
KMPLHP	00	V	850	12	3.1	0.0	0.5
LRYQE3	12	V	850	11	3.5	-1.7	1.2
LRYQE3	00	V	850	11	2.8	-0.5	-0.9
UXK5JT	12	V	850	11	2.6	-0.1	0.3
UXK5JT	00	V	850	9	1.9	0.2	0.5
XKQLWQ	12	V	850	20	6.8	-3.2	0.1
XQFJRG	12	V	850	8	2.1	0.9	0.0
XQFJRG	00	V	850	8	2.1	-0.4	-0.4
YLV96W	12	V	850	9	2.7	1.0	0.4
YLV96W	00	V	850	10	2.3	-0.2	0.3

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

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : SURFACE PRESSURE (HPA)
 AREA : 10N - 90N, 70W - 40E
 PERIOD : JAN 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	1582	0	0.4	-0.5	0.6
1300001	99	P	SUR	11	-23	606	0	0.3	0.2	0.4
1300008	99	P	SUR	15	-38	620	0	0.3	0.1	0.3
1300130	99	P	SUR	28	-16	744	0	0.4	0.3	0.5
1300131	99	P	SUR	28	-17	743	0	0.4	0.1	0.4
1301603	99	P	SUR	35	-52	744	0	0.8	0.2	0.8
1301608	99	P	SUR	29	-54	744	0	0.5	0.0	0.5
1301610	99	P	SUR	53	-10	590	0	1.0	0.2	1.1
1301612	99	P	SUR	31	-27	744	0	1.1	0.1	1.2
1301699	99	P	SUR	25	-28	733	0	0.3	-0.5	0.5
1301700	99	P	SUR	13	-30	737	0	0.4	0.1	0.4
1301701	99	P	SUR	11	-22	743	0	0.4	0.3	0.5
1301706	99	P	SUR	13	-31	734	0	0.4	0.0	0.4
1301711	99	P	SUR	12	-19	743	0	0.4	0.1	0.4
1301712	99	P	SUR	13	-27	743	0	0.4	-0.0	0.4
1301713	99	P	SUR	20	-25	743	0	0.3	0.0	0.3
1301714	99	P	SUR	22	-29	743	0	0.3	0.0	0.3
1301715	99	P	SUR	15	-24	743	0	0.3	0.1	0.4
1301717	99	P	SUR	33	-9	743	0	0.3	0.1	0.3
1301718	99	P	SUR	24	-21	743	0	0.3	0.2	0.3
1301719	99	P	SUR	24	-25	743	0	0.3	0.4	0.5
1301720	99	P	SUR	27	-22	743	0	0.3	0.1	0.3
1301721	99	P	SUR	38	-12	743	0	0.3	-0.2	0.3
1301722	99	P	SUR	21	-27	743	0	0.3	-0.0	0.3
1301763	99	P	SUR	11	-22	743	0	0.4	0.3	0.5
1701632	99	P	SUR	30	-56	742	0	0.3	0.1	0.3
1801607	99	P	SUR	38	-49	474	0	1.4	0.4	1.5
1801608	99	P	SUR	38	-64	998	0	0.9	0.5	1.0
21064	99	P	SUR	16	0	1	0	0.0	-0.6	0.6
22004	99	P	SUR	18	0	1	0	0.0	-0.1	0.1
4100040	99	P	SUR	15	-53	4458	0	0.2	0.5	0.5
4100043	99	P	SUR	21	-65	4396	0	0.2	-1.2	1.3
4100044	99	P	SUR	22	-59	4457	0	0.2	0.3	0.4
4100046	99	P	SUR	24	-68	4461	0	0.3	0.2	0.4
4100048	99	P	SUR	32	-70	4449	0	0.5	0.1	0.5
4100049	99	P	SUR	27	-63	4459	0	0.4	-1.1	1.1

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
4100052	99	P	SUR	18	-65	4301	0	0.2	-1.0	1.0
4100053	99	P	SUR	18	-66	4352	0	0.3	-0.3	0.4
4100056	99	P	SUR	18	-65	4286	0	0.3	-1.8	1.8
4100139	99	P	SUR	20	-38	734	0	0.3	0.0	0.3
4100300	99	P	SUR	16	-57	741	0	0.2	0.2	0.3
4101557	99	P	SUR	44	-32	743	0	0.3	0.1	0.3
4101567	99	P	SUR	24	-56	744	0	0.3	0.3	0.5
4101609	99	P	SUR	23	-28	744	0	0.3	-0.0	0.3
4101613	99	P	SUR	29	-38	742	0	0.4	0.5	0.7
4101614	99	P	SUR	26	-28	407	0	0.3	-0.1	0.3
4101616	99	P	SUR	31	-33	744	0	0.3	0.0	0.3
4101618	99	P	SUR	27	-32	744	0	0.4	0.1	0.4
4101621	99	P	SUR	29	-28	744	0	0.3	0.2	0.4
4101627	99	P	SUR	53	-22	728	0	0.9	-0.2	0.9
4101652	99	P	SUR	66	-25	191	0	0.5	0.0	0.5
4101654	99	P	SUR	71	4	737	0	0.5	-0.0	0.5
4101656	99	P	SUR	64	-26	744	0	0.6	-0.1	0.6
4101657	99	P	SUR	74	1	692	0	0.8	-0.0	0.8
4101658	99	P	SUR	64	3	744	0	0.4	0.0	0.4
4101663	99	P	SUR	33	-35	744	0	0.3	0.0	0.3
4101664	99	P	SUR	48	-46	743	0	0.6	-0.0	0.6
4101665	99	P	SUR	61	-12	736	0	0.4	-0.4	0.6
4101696	99	P	SUR	33	-37	744	0	0.3	0.0	0.3
4101702	99	P	SUR	41	-32	576	0	1.2	0.3	1.3
4101714	99	P	SUR	30	-54	744	0	0.5	-0.1	0.5
4101717	99	P	SUR	42	-11	744	0	0.3	-0.0	0.3
4101718	99	P	SUR	35	-59	744	0	0.7	0.2	0.7
4101719	99	P	SUR	38	-32	742	0	0.5	0.5	0.7
4101720	99	P	SUR	36	-24	744	0	0.6	0.3	0.7
4101722	99	P	SUR	11	-28	744	0	0.4	0.4	0.6
4101723	99	P	SUR	19	-61	744	0	0.2	-0.1	0.2
4101724	99	P	SUR	14	-59	744	0	0.4	0.0	0.4
4101725	99	P	SUR	18	-56	744	0	0.2	-0.1	0.2
4101726	99	P	SUR	10	-41	474	48	0.3	0.0	0.3
4101743	99	P	SUR	33	-55	744	1	1.0	0.1	1.0
4101752	99	P	SUR	47	-7	744	0	0.6	0.5	0.8
4101753	99	P	SUR	29	-53	742	0	0.3	0.3	0.5
4101755	99	P	SUR	30	-45	743	0	0.3	0.3	0.4
4101756	99	P	SUR	12	-62	682	0	0.3	-0.7	0.7
4101842	99	P	SUR	60	-8	735	0	0.4	-0.2	0.5
4101843	99	P	SUR	64	-12	734	0	0.5	0.1	0.5
4101844	99	P	SUR	15	-42	736	0	0.3	0.2	0.3
4101845	99	P	SUR	62	-13	735	0	0.4	0.0	0.4

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
4101848	99	P	SUR	14	-56	730	0	0.2	0.2	0.3
4101850	99	P	SUR	45	-10	736	0	0.4	-0.0	0.4
4101851	99	P	SUR	17	-42	582	0	0.3	0.0	0.3
4102547	99	P	SUR	13	-52	637	0	0.3	0.2	0.3
4102548	99	P	SUR	18	-55	717	0	0.2	-0.1	0.3
4102549	99	P	SUR	16	-44	716	0	0.3	0.3	0.4
4102551	99	P	SUR	14	-38	652	0	0.3	-0.0	0.3
4102629	99	P	SUR	34	-29	2	0	0.0	-0.4	0.4
4102632	99	P	SUR	21	-66	739	0	0.3	-1.0	1.0
41040	99	P	SUR	15	-53	5124	0	0.3	0.5	0.6
41043	99	P	SUR	21	-65	4399	0	0.3	-1.2	1.3
41044	99	P	SUR	22	-59	3519	0	0.3	0.3	0.4
41046	99	P	SUR	24	-68	6275	0	0.4	0.2	0.4
41048	99	P	SUR	32	-70	6948	0	0.5	0.1	0.5
41049	99	P	SUR	28	-63	6244	0	0.4	-1.1	1.2
41052	99	P	SUR	18	-65	2999	0	0.2	-1.0	1.0
41053	99	P	SUR	19	-66	3087	0	0.3	-0.3	0.4
41056	99	P	SUR	18	-66	2991	0	0.3	-1.8	1.8
4200059	99	P	SUR	15	-67	4460	0	0.3	-1.3	1.3
4200060	99	P	SUR	16	-63	4447	0	0.2	0.1	0.2
4200085	99	P	SUR	18	-67	4008	0	0.2	0.2	0.3
4201703	99	P	SUR	39	-59	545	0	0.7	0.0	0.7
42059	99	P	SUR	15	-68	4398	0	0.3	-1.3	1.3
42060	99	P	SUR	16	-63	3957	0	0.3	0.1	0.3
42085	99	P	SUR	18	-67	3532	0	0.3	0.1	0.3
4400005	99	P	SUR	43	-69	743	0	0.8	-0.3	0.9
4400008	99	P	SUR	40	-69	4460	0	0.6	-1.0	1.2
4400011	99	P	SUR	41	-67	4412	0	0.6	0.2	0.7
4400027	99	P	SUR	44	-67	726	0	0.8	-0.0	0.8
4400032	99	P	SUR	44	-69	601	0	0.7	-0.2	0.7
4400033	99	P	SUR	44	-69	603	0	0.8	0.3	0.9
4400034	99	P	SUR	44	-68	615	0	0.7	-0.3	0.8
4400037	99	P	SUR	43	-68	545	0	0.9	-0.8	1.2
44005	99	P	SUR	43	-69	2081	0	0.8	-0.3	0.9
4400777	99	P	SUR	41	-28	744	0	0.6	0.6	0.9
44008	99	P	SUR	41	-69	6310	0	0.6	-1.0	1.2
4400857	99	P	SUR	30	-56	744	0	1.0	0.3	1.0
44011	99	P	SUR	41	-67	5910	0	0.7	0.2	0.7
4401557	99	P	SUR	28	-46	744	0	0.3	-0.3	0.4
4401563	99	P	SUR	35	-20	744	0	0.3	-0.2	0.3
4401572	99	P	SUR	25	-62	744	0	0.3	-0.0	0.3
4401576	99	P	SUR	25	-45	744	0	0.3	0.3	0.4
4401577	99	P	SUR	21	-61	744	0	0.2	-0.2	0.3

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
4401581	99	P	SUR	27	-49	743	0	0.3	0.4	0.5
4401582	99	P	SUR	39	-21	744	0	0.3	0.4	0.5
4401584	99	P	SUR	31	-32	744	0	0.3	0.4	0.5
4401585	99	P	SUR	38	-49	247	0	0.4	0.1	0.5
4401828	99	P	SUR	61	-25	643	0	0.6	0.3	0.7
4401837	99	P	SUR	40	-20	743	0	0.4	0.1	0.4
4401848	99	P	SUR	51	-24	724	0	0.5	0.2	0.5
4401850	99	P	SUR	63	-1	725	0	0.5	-0.3	0.6
4401851	99	P	SUR	48	-7	724	0	0.9	1.0	1.3
4401854	99	P	SUR	27	-66	744	0	0.3	-0.5	0.6
4401859	99	P	SUR	11	-32	744	0	0.4	0.3	0.5
4401867	99	P	SUR	38	-58	744	0	0.7	-0.2	0.7
4401870	99	P	SUR	27	-49	744	0	0.3	0.0	0.3
4401872	99	P	SUR	28	-59	744	0	0.3	-0.2	0.4
4401874	99	P	SUR	21	-53	744	0	0.2	0.2	0.3
4402603	99	P	SUR	51	-28	737	0	0.4	0.2	0.5
4402604	99	P	SUR	48	-36	735	0	0.5	-0.1	0.5
4402605	99	P	SUR	56	-17	736	0	0.4	0.1	0.5
4402606	99	P	SUR	53	-40	736	0	0.6	0.1	0.6
4402607	99	P	SUR	47	-29	732	0	0.4	0.0	0.4
4402608	99	P	SUR	56	-38	735	0	0.5	-0.1	0.5
4402609	99	P	SUR	54	-26	736	0	0.4	-0.0	0.4
4402610	99	P	SUR	45	-28	733	0	0.3	0.1	0.3
4402611	99	P	SUR	49	-26	728	0	0.4	-0.1	0.4
4402612	99	P	SUR	46	-40	728	0	0.5	0.3	0.6
4402613	99	P	SUR	49	-22	729	0	0.4	-0.0	0.4
4402614	99	P	SUR	50	-23	727	0	0.4	-0.0	0.4
4402615	99	P	SUR	45	-16	734	0	0.4	0.3	0.5
4402616	99	P	SUR	54	-12	736	0	0.4	0.2	0.5
4402618	99	P	SUR	28	-38	736	0	0.3	0.3	0.4
4402656	99	P	SUR	42	-59	731	0	0.7	0.3	0.8
4402660	99	P	SUR	35	-16	743	0	0.2	0.3	0.4
4402663	99	P	SUR	48	-15	742	0	0.3	-0.1	0.4
4402665	99	P	SUR	30	-20	743	0	0.3	0.3	0.4
4402670	99	P	SUR	22	-25	728	0	0.3	0.0	0.3
4402671	99	P	SUR	14	-28	734	0	0.4	0.1	0.4
4402672	99	P	SUR	15	-27	731	0	0.4	0.0	0.4
4402673	99	P	SUR	17	-26	736	0	0.4	0.2	0.4
4402674	99	P	SUR	12	-28	732	0	0.4	0.3	0.5
4402675	99	P	SUR	39	-44	734	0	0.4	0.1	0.4
4402676	99	P	SUR	16	-26	733	0	0.4	0.3	0.5
4402687	99	P	SUR	38	-22	702	0	0.3	0.2	0.4
44027	99	P	SUR	44	-67	2033	0	0.8	-0.1	0.8

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
4402708	99	P	SUR	15	-26	733	0	0.4	0.2	0.5
4402712	99	P	SUR	68	-66	743	0	0.5	0.0	0.5
4402715	99	P	SUR	65	-63	176	17	4.6	-1.6	4.9
4402717	99	P	SUR	70	-68	648	0	0.7	0.3	0.8
4402718	99	P	SUR	61	-63	160	81	2.4	0.1	2.4
4402720	99	P	SUR	56	-58	460	25	4.0	1.2	4.2
4402721	99	P	SUR	47	-46	743	0	0.6	0.2	0.6
4402723	99	P	SUR	46	-51	743	0	0.6	0.0	0.6
4402726	99	P	SUR	60	-62	233	57	4.9	-1.0	5.1
4402727	99	P	SUR	43	-45	743	0	0.5	0.2	0.5
44032	99	P	SUR	44	-69	1102	0	0.7	-0.2	0.8
44033	99	P	SUR	44	-69	1104	0	0.8	0.3	0.9
44034	99	P	SUR	44	-68	1130	0	0.7	-0.3	0.8
4403556	99	P	SUR	44	-46	701	9	2.7	0.1	2.7
4403557	99	P	SUR	43	-50	700	0	0.6	0.6	0.9
4403558	99	P	SUR	44	-50	699	0	0.7	0.2	0.7
4403559	99	P	SUR	46	-50	697	0	0.6	0.7	1.0
44037	99	P	SUR	44	-68	998	0	0.9	-0.8	1.2
44137	99	P	SUR	42	-62	688	0	0.6	-0.3	0.7
44139	99	P	SUR	44	-57	710	0	0.6	-0.2	0.6
44150	99	P	SUR	43	-64	806	0	0.8	-0.4	0.9
44258	99	P	SUR	45	-63	807	0	0.7	-0.4	0.8
44488	99	P	SUR	45	-61	807	0	0.6	-0.0	0.6
44489	99	P	SUR	46	-61	736	0	0.6	-0.1	0.6
44490	99	P	SUR	45	-66	396	0	0.7	-0.2	0.8
4601782	99	P	SUR	42	-42	739	0	0.5	0.5	0.7
4701738	99	P	SUR	70	-67	684	664	7.2	3.5	8.0
4801723	99	P	SUR	71	-1	743	0	0.9	0.0	0.9
4801727	99	P	SUR	83	17	743	0	0.6	0.3	0.6
6100001	99	P	SUR	43	8	723	0	0.6	-0.2	0.7
6100002	99	P	SUR	42	5	719	0	0.5	-0.3	0.6
6100196	99	P	SUR	42	4	743	0	0.8	0.1	0.8
6100197	99	P	SUR	40	4	742	0	0.4	0.1	0.4
6100198	99	P	SUR	37	-2	744	0	0.5	0.2	0.5
6100280	99	P	SUR	41	1	741	0	0.4	0.2	0.5
6100281	99	P	SUR	40	0	743	0	0.5	-0.0	0.5
6100417	99	P	SUR	38	0	743	0	0.4	0.2	0.4
6100430	99	P	SUR	40	2	742	0	0.4	0.1	0.4
6101003	99	P	SUR	40	25	191	0	0.5	-0.1	0.5
6101005	99	P	SUR	38	26	148	0	0.5	-0.2	0.5
6101007	99	P	SUR	36	25	183	0	0.5	-0.6	0.8
6101008	99	P	SUR	37	22	183	0	0.6	-0.4	0.7
6101009	99	P	SUR	35	25	32	18	0.4	0.1	0.4

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
6102784	99	P	SUR	32	29	733	0	0.6	0.2	0.6
6102786	99	P	SUR	34	16	736	0	0.3	0.1	0.3
6102787	99	P	SUR	36	20	741	0	0.4	0.4	0.6
6102788	99	P	SUR	33	26	731	0	0.3	0.1	0.3
6102789	99	P	SUR	31	20	730	0	0.4	0.2	0.5
6102791	99	P	SUR	37	10	742	0	0.3	-0.2	0.3
6102792	99	P	SUR	39	8	131	0	0.3	-0.2	0.4
6102793	99	P	SUR	38	2	743	0	0.3	0.4	0.5
6102795	99	P	SUR	40	3	726	0	0.4	0.2	0.4
6102796	99	P	SUR	39	3	738	0	0.4	-0.0	0.4
6102797	99	P	SUR	38	1	743	0	0.4	0.3	0.5
6102798	99	P	SUR	38	0	723	0	0.3	0.2	0.4
6200024	99	P	SUR	44	-3	743	0	0.4	0.6	0.7
6200025	99	P	SUR	44	-6	743	0	0.4	0.2	0.5
6200083	99	P	SUR	43	-9	744	1	1.9	-0.3	1.9
6200084	99	P	SUR	42	-9	743	0	0.4	0.2	0.5
6200085	99	P	SUR	36	-7	744	0	0.4	-0.1	0.4
6200086	99	P	SUR	55	6	370	0	0.4	-0.2	0.5
6200087	99	P	SUR	55	7	383	0	0.4	-0.3	0.5
6200092	99	P	SUR	51	-11	743	0	0.5	-0.2	0.5
6200093	99	P	SUR	55	-10	742	0	0.5	-0.4	0.6
6200094	99	P	SUR	52	-7	743	0	0.4	0.0	0.4
6200095	99	P	SUR	53	-16	328	0	0.5	-0.7	0.9
62001	99	P	SUR	45	-5	1578	0	0.3	0.0	0.3
6201065	99	P	SUR	54	7	736	0	0.4	0.9	1.0
6201066	99	P	SUR	55	7	777	0	0.4	0.5	0.6
6202614	99	P	SUR	26	-55	744	0	0.3	-0.2	0.3
6202623	99	P	SUR	66	-4	744	0	0.5	-0.1	0.5
6202624	99	P	SUR	61	-16	744	0	0.5	0.1	0.5
6202626	99	P	SUR	54	-10	744	0	1.1	-0.6	1.3
6202627	99	P	SUR	62	-26	730	0	0.6	-0.1	0.6
6202629	99	P	SUR	36	-40	368	0	0.3	-0.1	0.3
6202630	99	P	SUR	46	-4	744	0	0.3	-0.1	0.3
6202631	99	P	SUR	61	0	744	0	0.4	0.2	0.5
6202632	99	P	SUR	60	-29	742	0	0.6	-0.1	0.6
6202633	99	P	SUR	61	-6	744	0	0.4	-0.1	0.4
6202635	99	P	SUR	71	21	744	0	0.5	0.0	0.5
6202636	99	P	SUR	72	22	272	0	2.3	0.7	2.4
6202637	99	P	SUR	67	2	744	0	0.6	0.1	0.6
6202639	99	P	SUR	32	-30	744	0	0.3	-0.0	0.3
6202640	99	P	SUR	32	-37	744	0	0.3	-0.3	0.5
6202643	99	P	SUR	27	-66	744	0	0.3	-0.2	0.4
6202644	99	P	SUR	30	-37	744	0	0.3	-0.2	0.3

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
6202645	99	P	SUR	27	-64	744	0	0.3	-0.5	0.6
62029	99	P	SUR	49	-12	1577	0	0.4	-0.0	0.4
6203507	99	P	SUR	41	-67	451	0	1.7	1.7	2.5
6203508	99	P	SUR	42	-67	387	0	2.0	2.7	3.3
6203516	99	P	SUR	43	-62	701	0	0.6	-0.2	0.6
6203574	99	P	SUR	64	10	370	0	0.5	0.3	0.6
6203588	99	P	SUR	62	-38	731	0	0.7	0.4	0.9
6203601	99	P	SUR	36	-49	743	4	1.5	-0.3	1.5
6203607	99	P	SUR	36	-54	744	21	1.7	0.1	1.7
6203612	99	P	SUR	29	-42	744	0	0.3	0.3	0.5
6203613	99	P	SUR	24	-45	743	0	0.2	0.3	0.4
6203614	99	P	SUR	26	-58	743	0	0.3	0.2	0.4
6203615	99	P	SUR	24	-60	744	0	0.3	0.0	0.3
6203616	99	P	SUR	23	-43	743	0	0.3	0.4	0.4
6203617	99	P	SUR	15	-40	744	0	0.3	0.5	0.6
6203621	99	P	SUR	38	-19	744	0	0.5	-0.1	0.5
6203622	99	P	SUR	42	-31	744	0	0.6	0.6	0.9
6203624	99	P	SUR	24	-68	744	0	0.4	0.0	0.4
6203625	99	P	SUR	41	-31	743	0	0.5	0.8	0.9
6203626	99	P	SUR	60	-1	743	0	0.5	-0.4	0.6
6203627	99	P	SUR	25	-58	744	0	0.3	0.0	0.3
6203632	99	P	SUR	28	-29	744	0	0.3	0.2	0.3
6203633	99	P	SUR	57	-22	673	14	2.0	0.1	2.0
6203634	99	P	SUR	33	-22	742	0	0.4	0.3	0.5
6203635	99	P	SUR	19	-54	743	0	0.2	0.4	0.4
6203637	99	P	SUR	67	10	351	0	0.5	0.2	0.5
6203639	99	P	SUR	42	-21	743	0	0.6	0.0	0.7
6203640	99	P	SUR	38	-18	743	0	0.4	-0.1	0.4
6203642	99	P	SUR	12	-32	744	0	0.4	0.3	0.5
6203643	99	P	SUR	27	-56	743	0	0.3	0.4	0.5
6203644	99	P	SUR	10	-48	743	6	2.8	0.3	2.8
6203649	99	P	SUR	49	-25	30	0	2.2	-10.2	10.4
6203650	99	P	SUR	60	4	408	15	2.3	1.3	2.6
6203730	99	P	SUR	23	-44	730	0	0.2	0.1	0.3
6203732	99	P	SUR	16	-57	732	0	0.3	-1.1	1.1
6203734	99	P	SUR	14	-26	736	0	0.4	0.4	0.6
6203735	99	P	SUR	18	-61	734	0	0.2	0.1	0.2
6203737	99	P	SUR	26	-39	730	0	0.8	1.5	1.7
6203747	99	P	SUR	63	-9	736	0	0.5	0.2	0.5
6203748	99	P	SUR	67	13	727	0	0.5	0.2	0.5
6203749	99	P	SUR	66	5	733	0	0.4	0.0	0.4
6203750	99	P	SUR	62	-13	736	0	0.4	0.1	0.5
6203751	99	P	SUR	63	2	423	0	0.9	2.1	2.2

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
6203752	99	P	SUR	63	-24	74	0	0.4	-0.0	0.4
6203753	99	P	SUR	58	-31	736	0	0.6	-0.2	0.6
6203755	99	P	SUR	47	-6	732	0	0.3	-0.7	0.8
6203760	99	P	SUR	60	4	739	0	0.4	0.2	0.5
6203765	99	P	SUR	24	-37	731	0	0.3	0.4	0.5
6203767	99	P	SUR	19	-38	733	0	0.3	-0.4	0.5
6203768	99	P	SUR	33	-12	734	0	0.3	0.3	0.4
6203771	99	P	SUR	25	-26	734	0	0.3	0.1	0.3
6203772	99	P	SUR	23	-42	735	0	0.5	0.2	0.5
6203773	99	P	SUR	30	-39	734	0	0.3	-0.1	0.3
6203774	99	P	SUR	28	-16	63	0	0.3	-0.2	0.3
6203776	99	P	SUR	33	-24	733	0	0.4	0.0	0.4
6203777	99	P	SUR	22	-49	735	0	0.2	0.1	0.3
6203825	99	P	SUR	62	-12	193	0	0.5	0.1	0.5
6203827	99	P	SUR	63	-14	45	0	0.6	0.3	0.7
6203838	99	P	SUR	15	-39	743	0	0.3	0.2	0.3
6203839	99	P	SUR	17	-32	743	0	0.3	-0.1	0.3
6203840	99	P	SUR	20	-29	743	0	0.3	0.2	0.3
6203841	99	P	SUR	29	-16	1	0	0.0	-0.4	0.4
6203843	99	P	SUR	28	-14	743	0	0.3	-0.1	0.3
6203846	99	P	SUR	26	-17	1	0	0.0	-0.6	0.6
62050	99	P	SUR	50	-4	1543	0	0.3	-0.2	0.4
62081	99	P	SUR	51	-13	1577	0	0.5	-0.3	0.5
62102	99	P	SUR	58	2	1574	0	0.6	-0.2	0.6
62103	99	P	SUR	50	-3	1285	0	0.6	-0.3	0.6
62104	99	P	SUR	57	1	1581	0	0.5	-0.5	0.7
62107	99	P	SUR	50	-6	801	0	0.3	-0.2	0.3
62112	99	P	SUR	58	0	1578	0	0.5	-0.2	0.5
62113	99	P	SUR	58	0	1577	0	0.8	-0.2	0.8
62114	99	P	SUR	58	0	2960	0	0.7	-0.3	0.8
62115	99	P	SUR	58	-3	1540	0	0.5	-0.3	0.6
62116	99	P	SUR	58	1	1580	0	0.7	-0.4	0.8
62118	99	P	SUR	58	1	1577	0	0.5	0.2	0.5
62119	99	P	SUR	57	2	1579	0	0.5	0.2	0.5
62120	99	P	SUR	56	2	1581	0	0.7	-0.3	0.7
62121	99	P	SUR	54	3	1182	0	0.5	0.0	0.5
62122	99	P	SUR	57	2	2018	0	0.7	-0.1	0.7
62124	99	P	SUR	54	-4	1576	0	0.4	-0.1	0.4
62127	99	P	SUR	54	1	1581	0	0.4	0.4	0.6
62129	99	P	SUR	58	0	1447	0	0.7	-0.1	0.7
62130	99	P	SUR	59	1	1577	0	0.6	-0.6	0.8
62131	99	P	SUR	54	1	1573	0	0.4	0.3	0.5
62132	99	P	SUR	56	2	1581	0	0.9	0.6	1.1

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
62133	99	P	SUR	57	1	1581	0	0.6	-0.4	0.7
62134	99	P	SUR	58	1	862	0	0.4	0.5	0.6
62135	99	P	SUR	54	2	1581	0	0.4	0.2	0.5
62138	99	P	SUR	54	0	12	0	0.1	0.7	0.7
62140	99	P	SUR	57	1	2304	0	0.6	-0.3	0.7
62141	99	P	SUR	58	-4	1743	0	0.7	-0.7	1.0
62143	99	P	SUR	58	2	1577	0	0.6	0.8	1.0
62144	99	P	SUR	53	2	1581	0	0.5	0.2	0.5
62145	99	P	SUR	53	3	2304	0	0.4	0.3	0.5
62146	99	P	SUR	57	2	1579	0	0.5	0.1	0.5
62149	99	P	SUR	54	1	1581	0	0.3	0.6	0.7
62151	99	P	SUR	57	2	1866	0	0.5	-0.1	0.6
62152	99	P	SUR	57	2	1569	0	0.5	0.4	0.6
62153	99	P	SUR	57	2	2023	22	2.5	-0.0	2.5
62154	99	P	SUR	56	2	1581	0	0.5	-0.2	0.6
62155	99	P	SUR	58	1	1578	0	0.5	0.4	0.6
62157	99	P	SUR	58	0	1577	0	0.6	-0.5	0.7
62160	99	P	SUR	57	2	2304	0	0.5	0.2	0.5
62161	99	P	SUR	58	1	1577	0	0.8	-0.1	0.8
62162	99	P	SUR	57	1	1540	0	0.5	-0.4	0.7
62163	99	P	SUR	48	-8	1577	0	0.4	0.3	0.5
62164	99	P	SUR	57	1	1581	0	0.5	0.0	0.5
62165	99	P	SUR	54	1	1571	0	0.7	0.7	1.0
62168	99	P	SUR	58	1	1577	0	0.5	-0.2	0.5
62170	99	P	SUR	51	2	1576	0	0.3	-0.0	0.3
62296	99	P	SUR	53	2	1556	0	0.4	-0.2	0.5
62297	99	P	SUR	59	2	2299	0	0.5	-0.2	0.6
62302	99	P	SUR	61	-2	1394	0	1.0	-0.5	1.1
62304	99	P	SUR	51	2	1578	0	0.4	-0.3	0.5
62305	99	P	SUR	50	0	1379	0	0.4	0.0	0.4
62442	99	P	SUR	49	-16	1577	0	0.7	-0.2	0.7
6301001	99	P	SUR	64	5	739	0	0.6	-0.3	0.6
6301003	99	P	SUR	74	24	741	0	0.5	-0.4	0.6
6301004	99	P	SUR	72	20	244	0	0.5	-0.5	0.7
6301511	99	P	SUR	53	-25	713	0	1.3	7.3	7.5
6301564	99	P	SUR	59	-19	156	38	6.8	-3.2	7.5
6301570	99	P	SUR	56	-36	743	2	1.1	0.0	1.1
6301571	99	P	SUR	56	-13	720	6	0.4	0.2	0.5
6301572	99	P	SUR	83	6	744	0	0.7	0.2	0.7
6301573	99	P	SUR	87	-19	744	0	0.5	0.2	0.5
6301574	99	P	SUR	80	1	208	0	0.5	-0.2	0.5
6301575	99	P	SUR	87	-16	742	0	0.7	0.3	0.7
6301576	99	P	SUR	85	2	744	0	0.7	-0.2	0.7

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
6301577	99	P	SUR	66	-13	743	0	0.5	0.5	0.8
6301578	99	P	SUR	69	-12	743	0	0.6	0.1	0.6
6301579	99	P	SUR	70	-10	742	0	0.6	0.2	0.6
6301580	99	P	SUR	68	-12	178	0	0.4	0.2	0.5
63055	99	P	SUR	61	2	1573	0	0.7	-0.0	0.7
63056	99	P	SUR	60	2	1581	0	0.8	0.0	0.8
63057	99	P	SUR	59	2	1578	0	0.5	-0.5	0.7
63058	99	P	SUR	53	2	2716	0	0.4	-0.1	0.4
63059	99	P	SUR	58	-1	1579	0	0.5	0.0	0.5
63101	99	P	SUR	61	1	1553	0	0.8	-0.2	0.8
63102	99	P	SUR	61	1	1581	0	0.7	0.2	0.7
63103	99	P	SUR	61	1	1581	0	0.6	0.2	0.7
63108	99	P	SUR	61	2	1573	0	0.8	0.0	0.8
63109	99	P	SUR	60	2	1581	0	0.7	-0.7	1.0
63110	99	P	SUR	60	2	1579	0	0.7	-0.6	0.9
63111	99	P	SUR	61	2	2296	0	0.7	-0.8	1.1
63112	99	P	SUR	61	1	1581	0	0.7	-0.8	1.0
63115	99	P	SUR	62	1	1576	0	0.9	0.1	0.9
63117	99	P	SUR	61	1	2302	0	0.8	0.3	0.8
63118	99	P	SUR	58	2	1348	0	1.0	-1.0	1.4
6401531	99	P	SUR	52	-22	727	0	0.4	0.0	0.4
6401573	99	P	SUR	59	-10	421	0	0.6	0.0	0.6
6401574	99	P	SUR	55	-43	744	0	0.6	-0.2	0.7
6401575	99	P	SUR	65	-3	744	0	1.1	0.2	1.1
6401576	99	P	SUR	72	-22	743	0	0.8	-0.6	1.0
6401578	99	P	SUR	78	-19	744	0	0.8	0.3	0.9
6401592	99	P	SUR	62	-21	744	0	0.6	0.1	0.6
6401759	99	P	SUR	57	-47	744	0	0.6	0.0	0.6
6401760	99	P	SUR	59	-55	744	0	0.7	-0.4	0.8
6401761	99	P	SUR	59	-58	744	0	0.8	-0.1	0.8
6401762	99	P	SUR	68	-3	744	0	0.5	0.4	0.7
6401763	99	P	SUR	65	7	743	0	1.7	-0.3	1.7
6401839	99	P	SUR	64	-9	618	0	0.4	0.3	0.5
6401840	99	P	SUR	65	7	695	0	0.4	0.2	0.5
6401842	99	P	SUR	66	-25	707	8	1.9	-0.1	1.9
6401843	99	P	SUR	63	-13	687	0	0.4	0.2	0.5
6402539	99	P	SUR	55	-19	735	0	0.5	-0.1	0.5
6402541	99	P	SUR	69	-16	565	0	0.5	0.2	0.6
6402543	99	P	SUR	57	-41	711	0	0.5	-0.1	0.5
6402544	99	P	SUR	73	1	725	0	1.4	-0.1	1.4
6402545	99	P	SUR	76	10	327	0	0.6	-0.1	0.6
6402547	99	P	SUR	51	-48	720	0	0.6	0.0	0.6
6402548	99	P	SUR	75	13	627	0	0.5	0.2	0.6

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
6402549	99	P	SUR	79	1	8	0	2.1	-6.5	6.8
6402550	99	P	SUR	74	33	274	0	0.4	0.1	0.4
6402551	99	P	SUR	57	-55	713	0	0.6	-0.3	0.7
6402552	99	P	SUR	65	-3	495	0	0.5	0.4	0.6
6402554	99	P	SUR	65	9	609	0	0.4	0.4	0.6
6402557	99	P	SUR	69	-4	721	0	0.6	0.2	0.6
6402559	99	P	SUR	60	-58	635	0	0.7	-0.2	0.7
6402560	99	P	SUR	70	-7	533	0	0.5	0.0	0.5
6402562	99	P	SUR	61	-48	724	0	0.8	-0.3	0.9
6402563	99	P	SUR	66	3	575	0	0.5	0.5	0.7
6402587	99	P	SUR	57	-60	666	227	5.2	-0.7	5.2
6402589	99	P	SUR	56	-59	705	186	3.8	-1.1	3.9
6402590	99	P	SUR	61	-63	151	2	3.7	1.2	3.9
6402591	99	P	SUR	56	-60	691	43	4.7	-0.7	4.7
6402592	99	P	SUR	59	-56	597	0	0.7	-1.3	1.5
6402593	99	P	SUR	64	-59	282	0	0.6	0.1	0.6
6402594	99	P	SUR	60	-59	693	0	0.8	-0.6	1.0
6402596	99	P	SUR	57	-46	575	0	0.6	-0.3	0.7
6402597	99	P	SUR	60	-59	682	0	0.7	-0.7	1.0
6402598	99	P	SUR	63	-56	629	0	0.6	-0.2	0.7
6402599	99	P	SUR	58	-58	694	0	0.7	-0.2	0.8
6402600	99	P	SUR	84	-34	701	0	0.5	1.4	1.5
6402610	99	P	SUR	60	-45	95	0	0.9	-0.4	1.0
6402611	99	P	SUR	53	-52	627	0	0.6	0.3	0.7
6402615	99	P	SUR	17	-38	620	0	0.3	0.2	0.4
6402616	99	P	SUR	17	-34	665	0	0.4	0.5	0.6
6402617	99	P	SUR	16	-30	708	0	0.4	0.3	0.5
6402618	99	P	SUR	23	-19	737	0	0.3	0.2	0.4
6402619	99	P	SUR	44	-11	734	0	0.3	0.2	0.3
6402620	99	P	SUR	48	-15	734	0	0.4	0.5	0.6
6402621	99	P	SUR	43	-15	732	0	0.3	0.5	0.5
6402622	99	P	SUR	41	-16	736	0	0.2	0.2	0.3
6402654	99	P	SUR	59	-8	508	0	0.4	-0.0	0.4
6402655	99	P	SUR	63	0	688	0	0.4	0.3	0.6
6402656	99	P	SUR	58	-43	657	0	3.3	5.8	6.6
6402657	99	P	SUR	65	-25	401	0	0.5	0.3	0.6
6402659	99	P	SUR	62	-17	728	0	0.5	0.0	0.5
6402660	99	P	SUR	66	-23	619	0	0.6	-0.5	0.8
6402661	99	P	SUR	61	-17	590	0	0.5	0.1	0.5
6402663	99	P	SUR	60	-30	684	0	0.6	-0.3	0.7
6402665	99	P	SUR	64	3	681	0	0.4	0.4	0.6
6402666	99	P	SUR	64	-21	728	0	0.7	-0.4	0.8
6402667	99	P	SUR	61	-25	707	0	0.6	-0.3	0.7

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
6402668	99	P	SUR	57	-32	728	0	0.6	0.2	0.6
6402680	99	P	SUR	57	-38	246	0	0.6	-0.5	0.8
6402681	99	P	SUR	66	-8	247	0	0.5	0.3	0.6
6402722	99	P	SUR	69	-11	248	0	1.1	0.1	1.1
64041	99	P	SUR	61	-3	1362	0	0.7	-0.5	0.8
64045	99	P	SUR	59	-12	1576	0	0.5	-0.3	0.5
6501545	99	P	SUR	79	10	95	0	2.5	6.8	7.3
6501548	99	P	SUR	80	11	93	0	0.5	-0.3	0.6
6501670	99	P	SUR	76	14	720	0	0.9	-0.0	1.0
6501671	99	P	SUR	81	18	672	14	1.5	-0.2	1.5
6501674	99	P	SUR	79	7	724	0	0.7	0.0	0.7
6501675	99	P	SUR	75	-4	692	0	0.7	0.1	0.7
6501676	99	P	SUR	77	-3	677	44	4.0	8.8	9.7
6501679	99	P	SUR	76	-4	723	0	0.8	-0.0	0.8
6501685	99	P	SUR	79	29	244	0	3.3	0.8	3.4
6501687	99	P	SUR	81	22	723	0	1.1	0.1	1.1
6501689	99	P	SUR	81	18	2927	0	1.1	0.2	1.1
6600021	99	P	SUR	55	14	247	0	0.4	0.6	0.8

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

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND SPEED (M/S)
 AREA : 10N - 90N, 70W - 40E
 PERIOD : JAN 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	606	0	0	1.0	0.5	1.1
1300002	99	SPEED	SUR	20	-23	585	0	0	0.9	0.3	0.9
1300008	99	SPEED	SUR	15	-38	620	0	0	1.0	0.0	1.0
1300130	99	SPEED	SUR	28	-16	734	0	0	1.4	0.1	1.4
1300131	99	SPEED	SUR	28	-17	735	0	0	1.7	0.8	1.9
1801607	99	SPEED	SUR	38	-49	498	0	0	1.2	-0.8	1.5
1801608	99	SPEED	SUR	38	-64	998	1	0	1.8	-0.5	1.9
21064	99	SPEED	SUR	16	0	1	1	100	0.0	0.0	0.0
22004	99	SPEED	SUR	18	0	1	1	100	0.0	0.0	0.0
4100040	99	SPEED	SUR	15	-53	4455	0	0	0.9	0.3	0.9
4100043	99	SPEED	SUR	21	-65	4448	0	0	0.9	-0.2	0.9
4100046	99	SPEED	SUR	24	-68	4460	0	0	1.2	0.0	1.2
4100048	99	SPEED	SUR	32	-70	2543	0	0	1.2	0.4	1.3
4100049	99	SPEED	SUR	27	-63	4458	0	0	1.2	-0.0	1.2
4100052	99	SPEED	SUR	18	-65	4301	0	0	0.9	-0.1	0.9
4100053	99	SPEED	SUR	18	-66	4352	0	0	1.4	0.9	1.6
4100056	99	SPEED	SUR	18	-65	4289	0	0	1.1	-0.6	1.2
4100139	99	SPEED	SUR	20	-38	734	0	0	1.2	0.2	1.2
4100300	99	SPEED	SUR	16	-57	741	0	0	0.8	-1.0	1.3
41040	99	SPEED	SUR	15	-53	5121	0	0	0.9	-0.0	0.9
41043	99	SPEED	SUR	21	-65	4528	0	0	1.0	-0.2	1.0
41046	99	SPEED	SUR	24	-68	6273	0	0	1.4	-0.0	1.4
41048	99	SPEED	SUR	32	-70	3980	0	0	1.3	0.2	1.3
41049	99	SPEED	SUR	28	-63	6243	0	0	1.3	-0.2	1.3
41052	99	SPEED	SUR	18	-65	2999	0	0	1.0	-0.0	1.0
41053	99	SPEED	SUR	19	-66	3087	0	0	1.3	0.3	1.4
41056	99	SPEED	SUR	18	-66	2993	0	0	1.1	-0.3	1.1
4200059	99	SPEED	SUR	15	-67	4460	0	0	0.8	0.3	0.8
4200085	99	SPEED	SUR	18	-67	4035	0	0	1.1	-0.5	1.2
42059	99	SPEED	SUR	15	-68	4398	0	0	0.8	-0.1	0.8
42085	99	SPEED	SUR	18	-67	3549	0	0	1.1	-0.2	1.2
4400005	99	SPEED	SUR	43	-69	743	6	0	1.3	0.2	1.3
4400008	99	SPEED	SUR	40	-69	4459	0	0	1.5	0.5	1.6
4400011	99	SPEED	SUR	41	-67	2277	9	0	2.6	-0.4	2.6

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF

ELEMENT MONITORED : WIND SPEED (M/S)

(CONTINU

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
440027	99	SPEED	SUR	44	-67	730	0	0	1.3	0.5	1.4
440032	99	SPEED	SUR	44	-69	683	0	0	1.4	0.5	1.5
440033	99	SPEED	SUR	44	-69	645	0	0	1.6	0.4	1.6
440034	99	SPEED	SUR	44	-68	682	0	0	1.3	0.2	1.3
440037	99	SPEED	SUR	43	-68	578	0	0	1.2	-0.0	1.2
44005	99	SPEED	SUR	43	-69	2081	20	0	1.4	0.2	1.4
44008	99	SPEED	SUR	41	-69	6309	0	0	1.5	-0.3	1.5
44011	99	SPEED	SUR	41	-67	3263	9	0	2.5	-0.8	2.6
44027	99	SPEED	SUR	44	-67	2043	0	0	1.4	0.6	1.5
44032	99	SPEED	SUR	44	-69	1253	0	0	1.5	0.5	1.5
44033	99	SPEED	SUR	44	-69	1182	0	0	1.5	0.7	1.7
44034	99	SPEED	SUR	44	-68	1253	0	0	1.3	0.2	1.4
44037	99	SPEED	SUR	44	-68	1059	0	0	1.2	0.0	1.2
44137	99	SPEED	SUR	42	-62	687	0	0	4.3	-5.7	7.1
44139	99	SPEED	SUR	44	-57	710	0	0	3.5	-0.9	3.6
44150	99	SPEED	SUR	43	-64	801	0	0	1.7	-0.2	1.7
44258	99	SPEED	SUR	45	-63	804	0	0	1.5	0.6	1.6
44489	99	SPEED	SUR	46	-61	714	0	0	1.9	1.2	2.2
44490	99	SPEED	SUR	45	-66	380	0	0	1.6	-0.2	1.6
6100001	99	SPEED	SUR	43	8	722	0	0	2.0	-0.8	2.1
6100002	99	SPEED	SUR	42	5	719	0	0	1.3	-0.7	1.5
6100196	99	SPEED	SUR	42	4	728	0	0	1.8	-0.4	1.9
6100197	99	SPEED	SUR	40	4	739	0	0	1.3	-0.4	1.4
6100198	99	SPEED	SUR	37	-2	733	0	0	1.3	-0.3	1.3
6100280	99	SPEED	SUR	41	1	733	0	0	1.5	-0.5	1.6
6100281	99	SPEED	SUR	40	0	722	0	0	1.9	0.2	1.9
6100417	99	SPEED	SUR	38	0	720	0	0	1.1	-0.4	1.2
6100430	99	SPEED	SUR	40	2	719	0	0	1.5	-0.7	1.7
6101003	99	SPEED	SUR	40	25	191	0	0	2.0	-0.3	2.0
6101005	99	SPEED	SUR	38	26	151	0	0	2.1	-0.5	2.2
6101007	99	SPEED	SUR	36	25	183	0	0	2.3	-0.9	2.4
6101008	99	SPEED	SUR	37	22	183	0	0	2.5	-0.5	2.6
6101009	99	SPEED	SUR	35	25	32	0	0	1.5	1.1	1.9
6200024	99	SPEED	SUR	44	-3	737	0	0	1.4	-0.3	1.4
6200025	99	SPEED	SUR	44	-6	733	0	0	1.3	-0.8	1.6
6200082	99	SPEED	SUR	44	-8	464	0	0	1.7	-0.6	1.8
6200083	99	SPEED	SUR	43	-9	739	0	0	1.2	-1.2	1.7
6200084	99	SPEED	SUR	42	-9	728	0	0	1.1	-0.8	1.4
6200085	99	SPEED	SUR	36	-7	742	0	0	1.3	-0.5	1.4
6200086	99	SPEED	SUR	55	6	370	0	0	1.7	1.7	2.4
6200087	99	SPEED	SUR	55	7	383	0	0	1.6	1.8	2.4

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF

ELEMENT MONITORED : WIND SPEED (M/S)

(CONTINU

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
6200092	99	SPEED	SUR	51	-11	743	0	0	1.2	0.2	1.2
6200093	99	SPEED	SUR	55	-10	742	0	0	1.3	-0.5	1.4
6200094	99	SPEED	SUR	52	-7	743	0	0	1.3	-0.7	1.5
6200095	99	SPEED	SUR	53	-16	328	0	0	1.4	0.2	1.4
62001	99	SPEED	SUR	45	-5	1578	0	0	1.2	0.7	1.4
6201066	99	SPEED	SUR	55	7	777	0	0	1.5	0.4	1.6
62029	99	SPEED	SUR	49	-12	1577	0	0	1.3	0.7	1.5
62081	99	SPEED	SUR	51	-13	1575	0	0	1.1	0.7	1.3
62102	99	SPEED	SUR	58	2	1577	0	0	1.7	-0.0	1.7
62103	99	SPEED	SUR	50	-3	1285	0	0	1.6	-0.2	1.6
62104	99	SPEED	SUR	57	1	1581	0	0	1.6	-0.1	1.6
62112	99	SPEED	SUR	58	0	1578	0	0	1.6	-0.1	1.6
62113	99	SPEED	SUR	58	0	1577	0	0	2.0	0.2	2.0
62114	99	SPEED	SUR	58	0	2960	0	0	1.9	1.1	2.2
62118	99	SPEED	SUR	58	1	1577	0	0	1.8	0.8	2.0
62119	99	SPEED	SUR	57	2	1579	0	0	1.9	-0.2	1.9
62120	99	SPEED	SUR	56	2	1581	0	0	1.6	0.3	1.7
62121	99	SPEED	SUR	54	3	1182	0	0	1.1	-0.5	1.2
62122	99	SPEED	SUR	57	2	2018	0	0	1.4	-0.3	1.4
62129	99	SPEED	SUR	58	0	291	121	0	2.3	0.2	2.3
62131	99	SPEED	SUR	54	1	1573	0	0	1.2	-0.0	1.2
62132	99	SPEED	SUR	56	2	1574	0	0	4.1	-2.9	5.0
62133	99	SPEED	SUR	57	1	1581	0	0	1.7	-0.3	1.7
62134	99	SPEED	SUR	58	1	862	0	0	1.6	-0.1	1.7
62140	99	SPEED	SUR	57	1	2304	0	0	1.6	0.3	1.7
62143	99	SPEED	SUR	58	2	1577	0	0	2.4	-0.9	2.5
62144	99	SPEED	SUR	53	2	1581	0	0	1.5	-0.6	1.6
62145	99	SPEED	SUR	53	3	2304	0	0	1.5	0.5	1.6
62146	99	SPEED	SUR	57	2	422	0	0	2.3	0.5	2.3
62148	99	SPEED	SUR	54	2	1467	0	0	1.8	-0.5	1.9
62149	99	SPEED	SUR	54	1	1581	0	0	1.3	-0.1	1.3
62152	99	SPEED	SUR	57	2	1569	0	0	1.5	-1.9	2.4
62153	99	SPEED	SUR	57	2	2023	0	0	3.0	-2.1	3.7
62154	99	SPEED	SUR	56	2	1581	0	0	1.5	-0.0	1.5
62155	99	SPEED	SUR	58	1	1434	0	0	1.8	-0.1	1.8
62164	99	SPEED	SUR	57	1	1581	0	0	1.9	-1.5	2.4
62165	99	SPEED	SUR	54	1	1571	0	0	1.5	-0.7	1.7
62170	99	SPEED	SUR	51	2	1576	0	0	1.3	0.7	1.5
62304	99	SPEED	SUR	51	2	1576	0	0	1.6	0.8	1.7
62305	99	SPEED	SUR	50	0	1379	0	0	1.5	0.6	1.6
6301001	99	SPEED	SUR	64	5	739	0	0	1.2	-0.5	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
6301003	99	SPEED	SUR	74	24	741	0	0	1.7	-0.9	1.9
6301004	99	SPEED	SUR	72	20	244	0	0	1.8	-1.2	2.1
63055	99	SPEED	SUR	61	2	1573	0	0	1.4	-1.2	1.8
63056	99	SPEED	SUR	60	2	1581	0	0	1.7	0.6	1.8
63057	99	SPEED	SUR	59	2	1578	0	0	2.9	-0.9	3.0
63058	99	SPEED	SUR	53	2	1927	0	0	1.3	0.1	1.3
63101	99	SPEED	SUR	61	1	1553	0	0	1.7	-0.7	1.8
63103	99	SPEED	SUR	61	1	1581	0	0	1.9	0.1	1.9
63106	99	SPEED	SUR	61	2	1559	0	0	2.3	-1.2	2.6
63108	99	SPEED	SUR	61	2	1573	0	0	1.8	0.2	1.8
63109	99	SPEED	SUR	60	2	1581	0	0	1.7	0.5	1.8
63110	99	SPEED	SUR	60	2	1581	0	0	1.5	-0.5	1.6
63112	99	SPEED	SUR	61	1	1581	0	0	1.5	-0.5	1.6
63115	99	SPEED	SUR	62	1	1576	0	0	1.6	-0.4	1.7
63117	99	SPEED	SUR	61	1	2302	0	0	1.6	-0.8	1.7
64041	99	SPEED	SUR	61	-3	1013	0	0	1.6	0.0	1.6
6600021	99	SPEED	SUR	55	14	247	0	0	1.4	0.8	1.7
66021	99	SPEED	SUR	55	14	111	0	0	1.1	0.8	1.3

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

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND DIRECTION (DEGREES)
 AREA : 10N - 90N, 70W - 40E
 PERIOD : JAN 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
1300001	99	DIRN	SUR	11	-23	588	0	0	13.1	-2.2	13.3
1300002	99	DIRN	SUR	20	-23	424	0	0	9.7	-2.6	10.1
1300008	99	DIRN	SUR	15	-38	579	0	0	100.6	14.6	101.6
1300130	99	DIRN	SUR	28	-16	433	0	0	16.9	7.2	18.4
1300131	99	DIRN	SUR	28	-17	464	0	0	66.9	-117.1	134.9
1801606	99	DIRN	SUR	36	-73	355	0	0	31.2	2.8	31.3
1801607	99	DIRN	SUR	38	-49	484	0	0	13.5	1.1	13.6
1801608	99	DIRN	SUR	38	-64	899	1	0	15.4	4.1	15.9
4100002	99	DIRN	SUR	32	-75	4046	0	0	16.4	4.7	17.1
4100004	99	DIRN	SUR	33	-79	4041	0	0	16.7	9.2	19.1
4100008	99	DIRN	SUR	31	-81	618	0	0	14.5	1.5	14.6
4100009	99	DIRN	SUR	29	-80	3755	0	0	18.1	5.3	18.9
4100010	99	DIRN	SUR	29	-78	3724	0	0	17.9	8.9	20.0
4100013	99	DIRN	SUR	33	-78	3963	0	0	21.7	6.5	22.6
4100024	99	DIRN	SUR	34	-78	542	0	0	18.8	-11.4	22.0
4100025	99	DIRN	SUR	35	-75	4111	0	0	18.0	4.8	18.6
4100029	99	DIRN	SUR	33	-80	547	0	0	17.4	3.4	17.8
4100033	99	DIRN	SUR	32	-80	591	0	0	23.2	5.9	23.9
4100037	99	DIRN	SUR	34	-77	564	0	0	23.6	1.9	23.7
4100038	99	DIRN	SUR	34	-78	586	0	0	21.5	-17.1	27.5
4100040	99	DIRN	SUR	15	-53	4446	0	0	8.9	4.5	10.0
4100043	99	DIRN	SUR	21	-65	4133	0	0	13.5	3.3	13.9
4100046	99	DIRN	SUR	24	-68	3536	0	0	17.4	3.2	17.7
4100047	99	DIRN	SUR	27	-71	3651	0	0	21.0	5.1	21.6
4100048	99	DIRN	SUR	32	-70	2261	0	0	13.3	-3.0	13.6
4100049	99	DIRN	SUR	27	-63	3788	0	0	23.1	5.3	23.7
4100052	99	DIRN	SUR	18	-65	4130	0	0	11.4	6.1	12.9
4100053	99	DIRN	SUR	18	-66	2535	0	0	13.8	2.8	14.1
4100056	99	DIRN	SUR	18	-65	4001	0	0	13.9	3.4	14.3
4100064	99	DIRN	SUR	34	-77	138	0	0	14.4	-17.4	22.6
4100139	99	DIRN	SUR	20	-38	635	0	0	14.3	2.9	14.6
41002	99	DIRN	SUR	32	-75	5616	0	0	16.8	3.4	17.1

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
4100300	99	DIRN	SUR	16	-57	739	0	0	9.9	6.0	11.6
41004	99	DIRN	SUR	33	-79	6229	0	0	17.1	5.5	18.0
41008	99	DIRN	SUR	31	-81	1710	0	0	14.2	0.9	14.3
41009	99	DIRN	SUR	29	-80	5130	0	0	18.5	2.7	18.7
41010	99	DIRN	SUR	29	-79	5189	0	0	18.2	7.2	19.6
41013	99	DIRN	SUR	33	-78	5447	0	0	19.7	5.9	20.6
41024	99	DIRN	SUR	34	-79	972	0	0	19.5	-11.2	22.5
41025	99	DIRN	SUR	35	-76	5718	0	0	17.4	2.6	17.6
41029	99	DIRN	SUR	33	-80	1444	0	0	18.0	3.4	18.3
41033	99	DIRN	SUR	32	-80	1057	0	0	23.3	4.8	23.8
41037	99	DIRN	SUR	34	-77	1028	0	0	23.8	0.9	23.8
41038	99	DIRN	SUR	34	-78	1060	0	0	24.4	-14.7	28.4
41040	99	DIRN	SUR	15	-53	5107	0	0	9.4	3.8	10.1
41043	99	DIRN	SUR	21	-65	4112	0	0	14.5	1.5	14.6
41046	99	DIRN	SUR	24	-68	4818	0	0	18.1	6.5	19.3
41047	99	DIRN	SUR	28	-72	5094	0	0	19.9	3.3	20.2
41048	99	DIRN	SUR	32	-70	3508	0	0	13.4	-3.6	13.9
41049	99	DIRN	SUR	28	-63	5167	0	0	22.8	6.1	23.6
41052	99	DIRN	SUR	18	-65	2853	0	0	11.7	5.5	12.9
41053	99	DIRN	SUR	19	-66	1976	0	0	15.8	2.2	16.0
41056	99	DIRN	SUR	18	-66	2769	0	0	14.2	3.7	14.7
41064	99	DIRN	SUR	34	-77	253	0	0	13.8	-17.7	22.4
4200013	99	DIRN	SUR	27	-83	1062	0	0	15.1	-6.3	16.3
4200022	99	DIRN	SUR	28	-84	986	0	0	14.6	-7.2	16.3
4200036	99	DIRN	SUR	29	-85	3785	0	0	15.3	3.5	15.6
4200056	99	DIRN	SUR	20	-85	3310	0	0	16.5	5.6	17.4
4200059	99	DIRN	SUR	15	-67	4293	0	0	10.3	0.8	10.3
4200085	99	DIRN	SUR	18	-67	3552	0	0	20.9	13.5	24.9
42013	99	DIRN	SUR	27	-83	1452	0	0	15.8	-7.0	17.3
42022	99	DIRN	SUR	28	-84	1347	0	0	14.6	-8.2	16.8
42036	99	DIRN	SUR	29	-85	5204	0	0	15.2	0.7	15.2
42056	99	DIRN	SUR	20	-85	3216	0	0	16.5	5.1	17.3
42059	99	DIRN	SUR	15	-68	4198	0	0	10.7	1.3	10.8
42085	99	DIRN	SUR	18	-67	3032	0	0	19.9	12.5	23.5
4400005	99	DIRN	SUR	43	-69	677	6	0	18.3	-5.3	19.1
4400007	99	DIRN	SUR	44	-70	3693	0	0	22.3	1.2	22.3
4400008	99	DIRN	SUR	40	-69	4004	0	0	16.0	8.1	18.0
4400009	99	DIRN	SUR	38	-75	3907	0	0	14.6	5.2	15.5
4400011	99	DIRN	SUR	41	-67	1948	9	0	27.5	5.7	28.1
4400013	99	DIRN	SUR	42	-71	4009	0	0	12.9	4.9	13.8
4400014	99	DIRN	SUR	37	-75	3892	0	0	14.8	5.3	15.7

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

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
4400017	99	DIRN	SUR	41	-72	3970	0	0	13.5	5.5	14.6
4400020	99	DIRN	SUR	41	-70	3815	0	0	14.0	6.5	15.4
4400022	99	DIRN	SUR	41	-74	584	0	0	13.3	3.6	13.8
4400027	99	DIRN	SUR	44	-67	669	0	0	12.7	-5.4	13.8
4400029	99	DIRN	SUR	43	-71	436	0	0	13.4	-0.3	13.4
4400030	99	DIRN	SUR	43	-70	384	0	0	17.7	10.9	20.8
4400032	99	DIRN	SUR	44	-69	604	0	0	18.6	-3.3	18.9
4400033	99	DIRN	SUR	44	-69	538	0	0	26.9	-1.6	26.9
4400034	99	DIRN	SUR	44	-68	623	0	0	19.2	3.7	19.6
4400037	99	DIRN	SUR	43	-68	508	0	0	16.9	1.4	17.0
4400039	99	DIRN	SUR	41	-73	406	0	0	14.1	12.8	19.1
4400040	99	DIRN	SUR	41	-74	715	0	0	14.9	1.4	15.0
4400042	99	DIRN	SUR	38	-76	5668	1	0	22.4	2.9	22.6
4400058	99	DIRN	SUR	38	-76	5711	0	0	20.8	3.3	21.1
4400062	99	DIRN	SUR	39	-76	3661	0	0	23.1	-3.0	23.3
4400063	99	DIRN	SUR	39	-76	5245	0	0	19.0	3.6	19.4
4400065	99	DIRN	SUR	40	-74	3895	0	0	15.0	6.5	16.4
4400066	99	DIRN	SUR	40	-73	4003	0	0	12.4	6.4	14.0
4400072	99	DIRN	SUR	37	-76	5497	0	0	25.0	-4.4	25.4
4400073	99	DIRN	SUR	43	-71	227	0	0	12.1	1.8	12.2
4400075	99	DIRN	SUR	40	-71	3566	0	0	13.0	-15.0	19.9
4400076	99	DIRN	SUR	40	-71	3534	0	0	13.7	-16.1	21.2
4400077	99	DIRN	SUR	40	-71	3584	0	0	12.1	-16.6	20.5
44005	99	DIRN	SUR	43	-69	1894	20	0	18.4	-5.8	19.3
44007	99	DIRN	SUR	44	-70	5870	0	0	24.9	3.3	25.1
44008	99	DIRN	SUR	41	-69	5569	0	0	15.3	7.7	17.2
44009	99	DIRN	SUR	39	-75	5428	0	0	14.6	3.9	15.1
44011	99	DIRN	SUR	41	-67	2735	9	0	26.6	-2.5	26.7
44013	99	DIRN	SUR	42	-71	5913	0	0	13.4	3.0	13.7
44014	99	DIRN	SUR	37	-75	5480	0	0	15.0	5.0	15.8
44017	99	DIRN	SUR	41	-72	5494	0	0	13.8	5.2	14.7
44020	99	DIRN	SUR	42	-70	5322	0	0	14.4	5.6	15.4
44022	99	DIRN	SUR	41	-74	839	0	0	13.0	3.5	13.5
44027	99	DIRN	SUR	44	-67	1873	0	0	12.8	-6.1	14.1
44029	99	DIRN	SUR	43	-71	1094	0	0	14.1	-0.5	14.1
44030	99	DIRN	SUR	43	-70	694	0	0	16.2	10.5	19.3
44032	99	DIRN	SUR	44	-69	1086	0	0	17.0	-3.0	17.2
44033	99	DIRN	SUR	44	-69	979	0	0	27.2	-1.6	27.3
44034	99	DIRN	SUR	44	-68	1143	0	0	20.0	3.2	20.3
44037	99	DIRN	SUR	44	-68	927	0	0	16.9	1.0	16.9
44039	99	DIRN	SUR	41	-73	731	0	0	13.6	12.0	18.2

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
44040	99	DIRN	SUR	41	-74	1164	0	0	13.5	1.6	13.6
44042	99	DIRN	SUR	38	-76	6886	2	0	23.5	3.0	23.7
44058	99	DIRN	SUR	38	-76	6867	0	0	20.9	2.6	21.1
44062	99	DIRN	SUR	39	-76	4754	0	0	22.3	-3.5	22.6
44063	99	DIRN	SUR	39	-76	6914	0	0	19.9	3.5	20.2
44065	99	DIRN	SUR	40	-74	5179	0	0	14.8	6.0	15.9
44066	99	DIRN	SUR	40	-73	6203	0	0	12.9	5.0	13.8
44069	99	DIRN	SUR	41	-73	663	0	0	16.7	2.8	17.0
44072	99	DIRN	SUR	37	-76	6688	0	0	26.0	-4.3	26.3
44073	99	DIRN	SUR	43	-71	411	0	0	13.0	2.4	13.2
44075	99	DIRN	SUR	40	-71	4478	0	0	13.4	-15.1	20.2
44076	99	DIRN	SUR	40	-71	4517	0	0	14.6	-16.0	21.6
44077	99	DIRN	SUR	40	-71	4543	0	0	12.4	-16.4	20.6
44137	99	DIRN	SUR	42	-62	206	0	0	20.6	5.8	21.4
44139	99	DIRN	SUR	44	-57	609	0	0	14.2	5.6	15.3
44150	99	DIRN	SUR	43	-64	686	0	0	23.1	11.3	25.7
44258	99	DIRN	SUR	45	-63	698	0	0	14.9	-0.8	14.9
44489	99	DIRN	SUR	46	-61	634	0	0	18.0	0.8	18.0
44490	99	DIRN	SUR	45	-66	351	0	0	14.7	-2.5	14.9
6100198	99	DIRN	SUR	37	-2	539	0	0	18.6	-3.6	18.9
6100281	99	DIRN	SUR	40	0	278	0	0	31.4	-3.2	31.6
6100417	99	DIRN	SUR	38	0	492	0	0	13.7	8.0	15.9
6200024	99	DIRN	SUR	44	-3	520	0	0	17.5	5.0	18.2
6200025	99	DIRN	SUR	44	-6	503	0	0	14.9	-0.9	14.9
6200082	99	DIRN	SUR	44	-8	379	0	0	19.9	0.5	19.9
6200083	99	DIRN	SUR	43	-9	598	0	0	10.5	2.2	10.7
6200084	99	DIRN	SUR	42	-9	510	0	0	14.2	15.2	20.9
6200085	99	DIRN	SUR	36	-7	665	0	0	11.6	1.7	11.7
6200092	99	DIRN	SUR	51	-11	618	0	0	13.5	3.6	14.0
6200093	99	DIRN	SUR	55	-10	729	0	0	11.4	4.4	12.2
6200094	99	DIRN	SUR	52	-7	578	0	0	15.0	6.2	16.2
6200095	99	DIRN	SUR	53	-16	322	0	0	10.6	-3.1	11.0
62001	99	DIRN	SUR	45	-5	1360	0	0	14.5	4.9	15.3
62029	99	DIRN	SUR	49	-12	1446	0	0	22.5	10.0	24.6
62081	99	DIRN	SUR	51	-13	1463	0	0	14.3	-6.2	15.5
62103	99	DIRN	SUR	50	-3	1084	0	0	16.8	5.6	17.7
62112	99	DIRN	SUR	58	0	1509	0	0	12.3	-0.8	12.3
62114	99	DIRN	SUR	58	0	2835	0	0	11.2	0.8	11.2
62305	99	DIRN	SUR	50	0	1169	0	0	18.0	4.0	18.5
64041	99	DIRN	SUR	61	-3	996	0	0	10.7	8.0	13.4

4.12 Table 24 - List of Assimilated BUFR Encoded Radiosonde Stations

ASDE09	ATGU3FT	BPMWB2N	CHQUR4G	DBLK	HTXUH4H	JNKN7JF	KJJF9XN	KMPLHPW
LRYQE3U	UXK5JTU	WDK38HS	XKQLWQB	XQFJRGX	YLV96WM	ZVQEQCM	2EERVTP	7JUNA4N
01001	01004	01010	01028	01241	01400	01415	01492	02365
02527	02836	02963	03005	03238	03354	03502	03743	03808
03882	03918	03953	04018	04089	04220	04270	04320	04339
04360	06011	06260	06458	06610	07110	07145	07510	07645
07761	08001	08023	08190	08221	08302	08383	08430	08508
08522	08536	10035	10113	10184	10238	10304	10393	10410
10548	10618	10739	10771	10868	10954	10962	11010	11035
11120	11240	11520	11747	11952	12120	12374	12425	12843
12982	13275	13388	14015	14240	14430	15420	15614	16045
16064	16113	16144	16245	16332	16429	16546	16622	16716
16754	17030	17095	17130	17196	17220	17240	17351	17607
20674	22008	23205	23472	23884	24908	26038	26435	26708
26850	27459	27707	27713	28225	28661	29612	29698	30673
33008	33041	37789	40186	45004	47102	47104	47138	47155
47169	47186	47401	47412	47418	47582	47600	47646	47678
47741	47778	47807	47827	47909	47918	47945	47971	47991
48698	50527	50557	50774	50953	51076	51243	51431	51463
51644	51656	51709	51777	51828	51839	52203	52267	52323
52418	52533	52652	52681	52818	52836	52866	52983	53068
53463	53513	53543	53614	53772	53845	53915	54102	54135
54161	54218	54292	54374	54511	54662	54727	54857	55299
55591	56029	56046	56080	56137	56146	56187	56492	56571
56651	56691	56739	56778	56964	56985	57083	57127	57131
57178	57245	57447	57461	57494	57516	57687	57749	57816
57957	57972	57993	58027	58150	58203	58238	58362	58424
58457	58606	58633	58665	58725	58847	59023	59134	59211
59265	59280	59293	59316	59431	59758	59981	60018	60096
60155	60390	60571	60630	60656	60680	61660	61901	61980
61998	63894	63985	68263	68424	68442	68512	68816	70026
70133	70200	70219	70231	70261	70308	70316	70326	70350
70361	70398	71043	71081	71082	71109	71119	71603	71722
71802	71811	71815	71816	71823	71836	71845	71867	71906
71907	71908	71909	71913	71917	71924	71925	71926	71934
71945	71957	71964	72201	72206	72208	72210	72214	72215
72230	72233	72235	72240	72248	72249	72250	72251	72261
72265	72274	72293	72305	72317	72318	72327	72340	72363
72364	72365	72376	72388	72413	72426	72440	72451	72476
72489	72493	72501	72518	72520	72528	72558	72562	72572
72582	72597	72632	72634	72659	72662	72672	72681	72694
72712	72764	72768	72776	72786	72797	73033	73110	74389
74560	76225	76256	76394	76405	76458	76526	76595	76612
76644	76654	76679	76692	76743	76805	76903	78897	78954
81405	83768	85442	85586	85799	85934	87155	87344	87576
87623	87715	87860	88889	89002	89062	89564	89571	89592
89611	89625	89642	89662	89859	91165	91212	91285	91592
91610	91765	91925	91938	91948	91958	93112	93417	93817
93844	94120	94150	94170	94203	94299	94302	94312	94326
94332	94374	94403	94430	94461	94510	94578	94610	94637
94638	94653	94659	94672	94711	94767	94776	94802	94821
94866	94910	94975	94995	94996	94998	95282	95527	96996

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

ASDE09	ATGU3FT	BPMWB2N	CHQUR4G	DBBE	HTXUH4H	JNKN7JF	KJJF9XN	KMPLHPW
LRVQE3U	UXK5JTU	WDK38HS	XKQLWQB	XQFJRGX	YLV96WM	ZVQEQCM	2EERVTP	7JUNA4N
01010	01028	01415	01492	02365	02527	02836	02963	03953
06610	07110	07145	07510	07645	07761	08001	08023	08190
08221	08302	08383	08430	08536	11010	11035	11120	11240
17607	40186	47155	50527	50557	50774	50953	51076	51243
51431	51463	51644	51656	51709	51777	51828	51839	52203
52267	52323	52418	52533	52652	52681	52818	52836	52866
52983	53068	53463	53513	53543	53614	53772	53845	53915
54102	54135	54161	54218	54292	54374	54511	54662	54727
54857	55299	55591	56029	56046	56080	56137	56146	56187
56492	56571	56651	56691	56739	56778	56964	56985	57083
57127	57131	57178	57245	57447	57461	57494	57516	57687
57749	57816	57957	57972	57993	58027	58150	58203	58238
58362	58424	58457	58606	58633	58665	58725	58847	59023
59134	59211	59265	59280	59293	59316	59431	59758	59981
63894	72413	76743	76903	89642	89859	91925	91938	93817
94653	94767							

5 Annex - Explanations of figures and tables

5.1 General

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

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

5.2 Data Availability

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

5.3 Data Quality

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

It should be noted that:

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

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

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

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

The corresponding limits for wind (table 8) are:

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

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

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

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

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

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

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

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

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