



ECMWF Global Data Monitoring Report

October 2023

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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 29 (Dec 22) - Coverage charts for ATOVS AMSU-A updated:
METOP-C replaces Aqua-ATOVS (Figure 9.2)
METOP-B replaces METOP-ATOVS (Figure 9.3)
SATOBS figures updated with METEOSAT-9, Dual-Metop,
METEOSAT-11, GOES-16, HIMAWARI-9, GOES-17 satellites
- Revision 28 (Jun 15) - Monitoring of SYNOP and SYNOP-SHIPs now includes BUFR encoded observations for those which were assimilated as well as for those without TAC counterpart.
- Revision 27 (Feb 15) - Selection criteria for SHIPs are modified as per SOT-7/Doc.9.1.1.
Different criteria applied to Manual and Automatic SHIPs.
- Revision 26 (Dec 14) - Coverage chart for ATOVS AMSU-A for NOAA_16 removed
- Revision 25 (Mar 13) - Monitoring of Radiosondes and ASAPS now includes BUFR encoded observations for those which were assimilated as well as for those without TAC counterpart.
Tables 24 and 25 are also added to show the identifiers of these BUFR observations separately.
- Revision 24 (Aug 06) - North Atlantic Monitoring statistics replaced by EUCOS Area Monitoring Statistics (tables 13 to 23).
Airep tables removed from this section.
- Revision 23 (Dec 00) - Coverage charts for NOAA_14 MSU replaced by ATOVS AMSU-A for NOAA_16.
- Revision 22 (Aug 99) - Coverage charts for TOVS thickness 300-100 hPa replaced by (A) TOVS AMSU-A and MSU (NOAA_15 and NOAA_14).
- Revision 21 (May 99) - Monitoring statistics ceased for NOAA_11 as satellite is no more available.
- Revision 20 (Sep 98) - Changes to tables and annex to remove all mention about data usage. Two more levels (50 and 850 hPa) added to the COSNA statistics for Sondes.
- Revision 19 (Jul 98) - From June 29th, 1998 ECMWF model assimilates temperature data instead of geopotential from radiosondes. As a consequence the number of used geopotential data drops to zero in tables 7, 10, 13 and 15.
- Revision 18 (Apr 98) - Changes to tables and annex to introduce the usage of accepted numbers and observations instead of percentage of rejection.

1 Introduction

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

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

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

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

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

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

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

2 Data summary - History of events

2.1 Radiosondes

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

Ident	Time	Sep	Oct	Ident	Time	Sep	Oct
16113	(12)	16	2	01004	(00)	0	26
21824	(12)	29	9	04089	(12)	5	24
34858	(00)	30	12	16113	(00)	0	30
38341	(00)	21	2	23472	(00)	17	30
38341	(12)	27	8	23921	(00)	0	27
42101	(00)	22	1	23921	(12)	0	28
42123	(00)	21	0	25123	(12)	18	32
43003	(00)	29	6	30230	(00)	17	30
43003	(12)	28	0	30230	(12)	18	30
60390	(00)	30	3	41640	(00)	0	12
61052	(00)	29	13	41640	(12)	0	12
71907	(00)	30	18	42027	(12)	0	31
71926	(00)	28	17	42623	(00)	1	14
74626	(12)	16	0	42667	(12)	0	20
74794	(12)	61	32	42874	(12)	0	21
76225	(00)	30	7	42886	(12)	0	23
76225	(12)	29	9	42971	(00)	5	29
76256	(00)	29	9	43110	(12)	0	24
76458	(00)	29	4	43185	(12)	0	17
76458	(12)	30	7	48453	(00)	0	24
76526	(00)	25	4	48480	(00)	0	19
76595	(00)	29	7	58968	(00)	0	13
76595	(12)	30	10	58968	(12)	0	14
76612	(00)	26	5	65257	(12)	0	17
76612	(12)	26	9	68906	(00)	2	26
76644	(00)	26	6	68906	(12)	3	24
76654	(00)	27	4	72520	(00)	2	31
76654	(12)	27	6	72520	(12)	2	32
76692	(00)	30	7	78988	(00)	0	13
76805	(00)	24	4	78988	(12)	0	16
82026	(00)	16	0	82244	(00)	6	29
82026	(12)	18	0	82244	(12)	7	30
83525	(12)	27	13	82917	(00)	10	29
91376	(00)	24	9	82917	(12)	11	27
91643	(00)	27	3	83208	(00)	0	15
91765	(00)	29	12	83928	(00)	0	12
91765	(12)	30	12	89009	(12)	16	28
96315	(12)	30	4	89062	(12)	11	28
-	-	-	-	89664	(12)	10	28
-	-	-	-	94995	(00)	12	29

2.2 Drifting Buoys

Surface pressure observations from **1460** drifting buoys were received during the month.

3 Global monitoring statistics

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

3.1 Data Availability

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

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

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

3.2 Data Quality

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

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

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

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

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

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

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

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

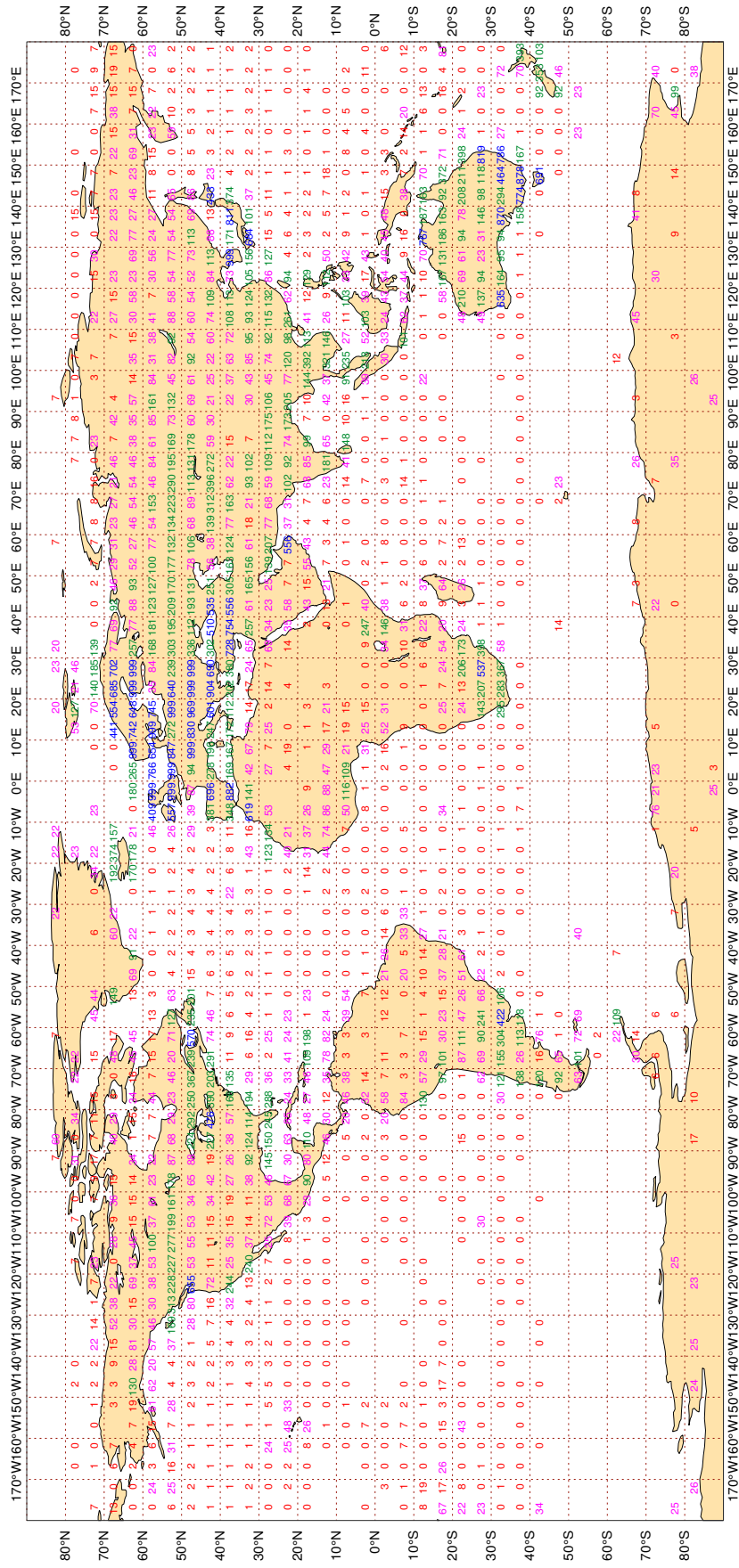
Fig	Parameter	Level/Layer
14	SATOB - Mean observed wind	1000-700 hPa
15	SATOB - Mean observed wind	400-150 hPa
16	SATOB - Mean observed minus first-guess wind	1000-700 hPa
17	SATOB - Mean observed minus first-guess wind	400-150 hPa
18	AIRCRAFT WIND - Mean observed minus first-guess	300-150 hPa

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

3.2.1 Figure 1 - Availability - SYNOP PRESSURE

ECMWF Monitoring Statistics - OCT 2023
 Availability - SYNOP/SHIP (manual, auto) pressure
 Average number of observations in 24 hours - 109237
 LAND - WMO Region I: 6905 II:21144 III: 4430 IV: 7681
 Region V:14905 VI:40569 Antarctic: 1193
 Oceans - N. Atlantic 6115 S. Atlantic 153 Indian 566 Pacific 5579

Figure 1



3.2.2 Figure 2 - Availability - DRIFTER PRESSURE

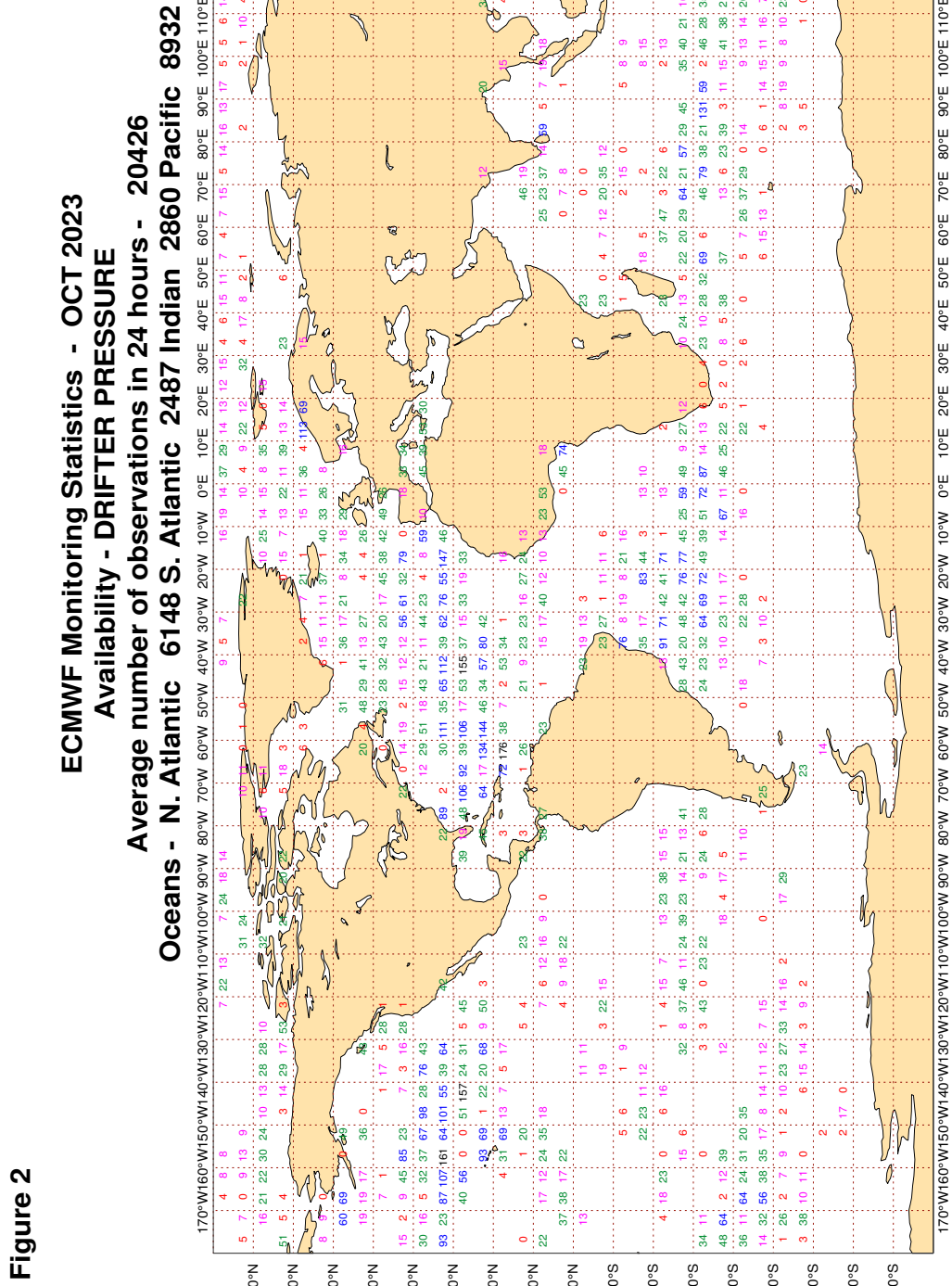
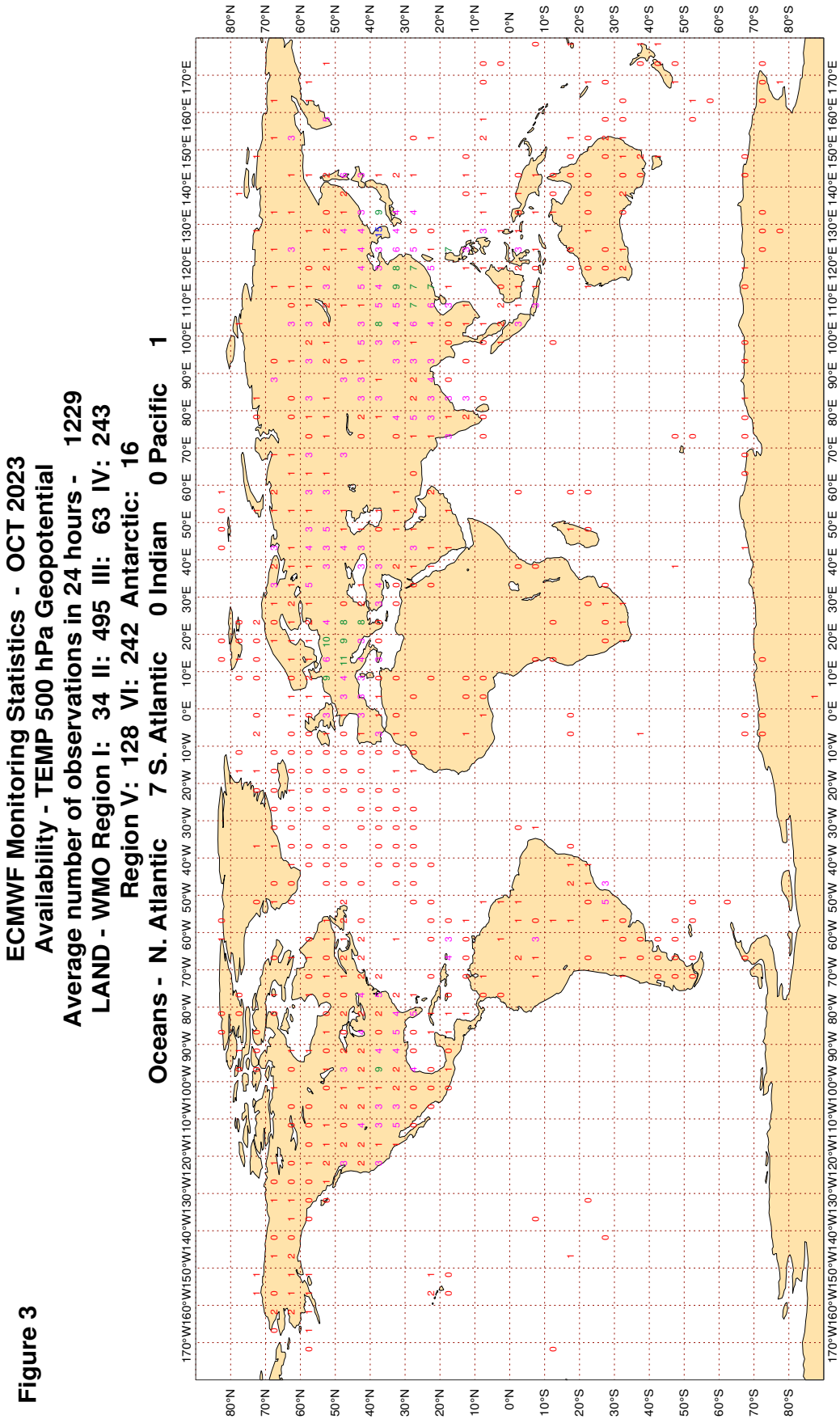


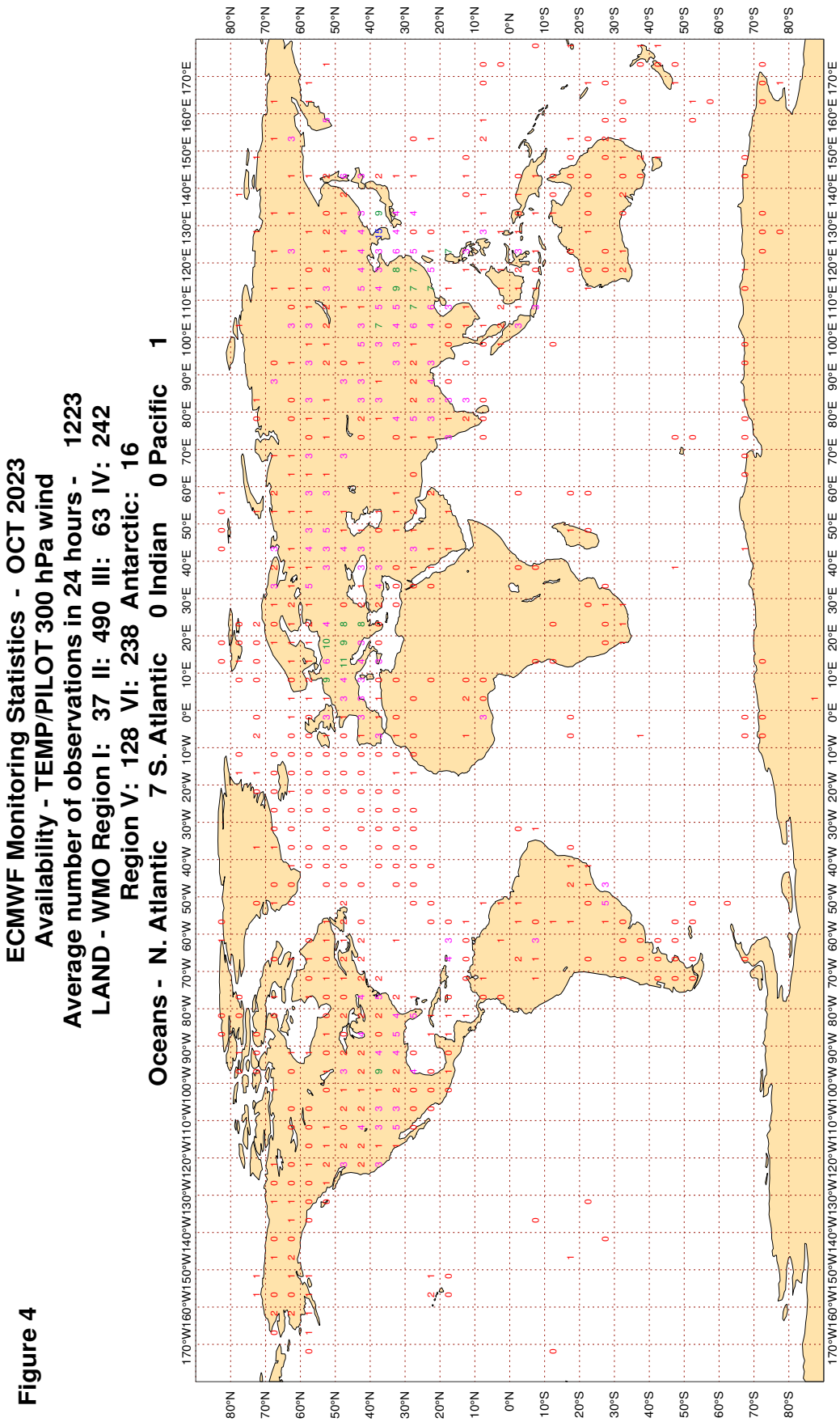
Figure 2



3.2.3 Figure 3 - Availability - TEMP 500 hPa geopotential



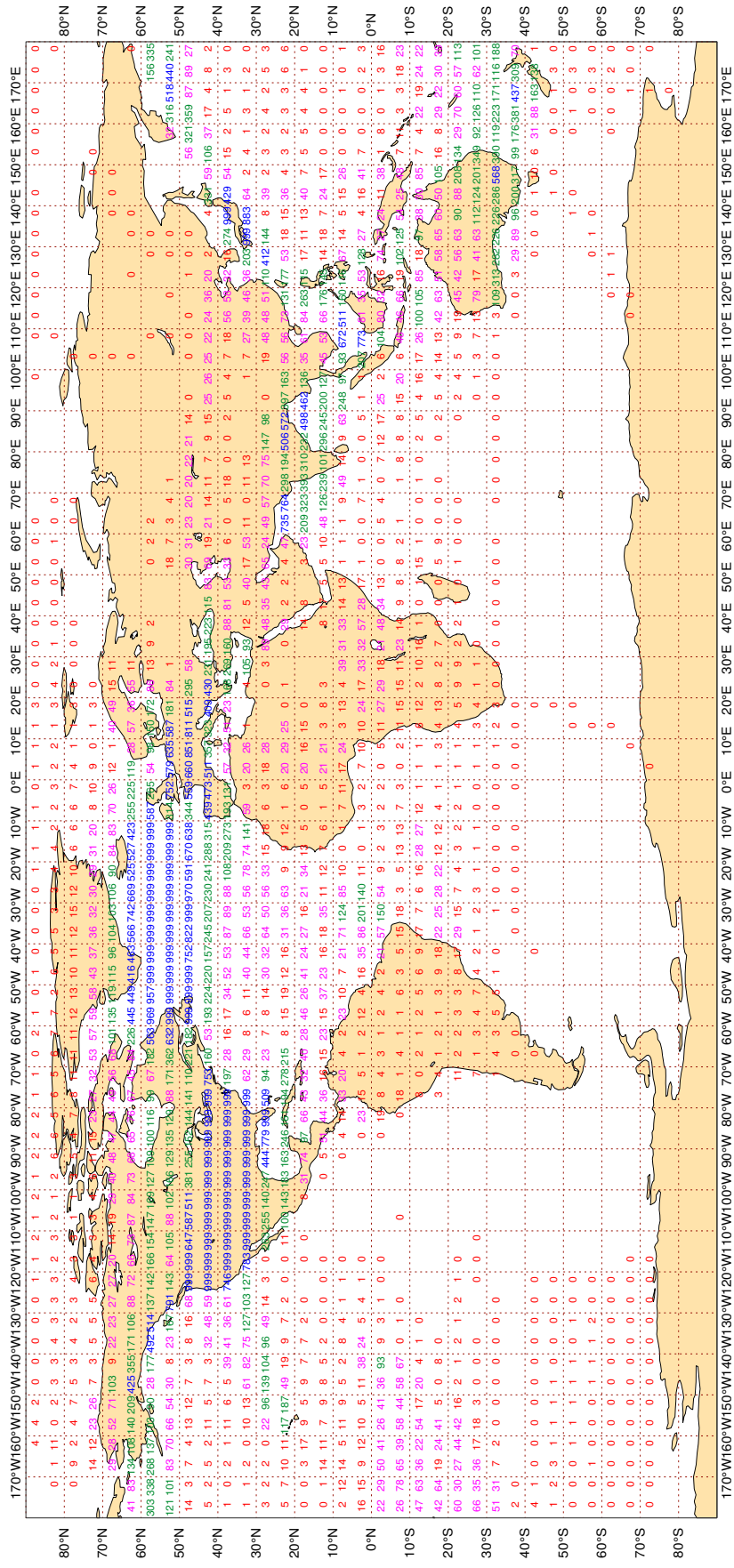
3.2.4 Figure 4 - Availability - TEMP/PILOT 300 hPa wind



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

Figure 5

ECMWF Monitoring Statistics - OCT 2023
Availability - Aircraft winds 300-150 hPa
Average number of observations in 24 hours - 204468

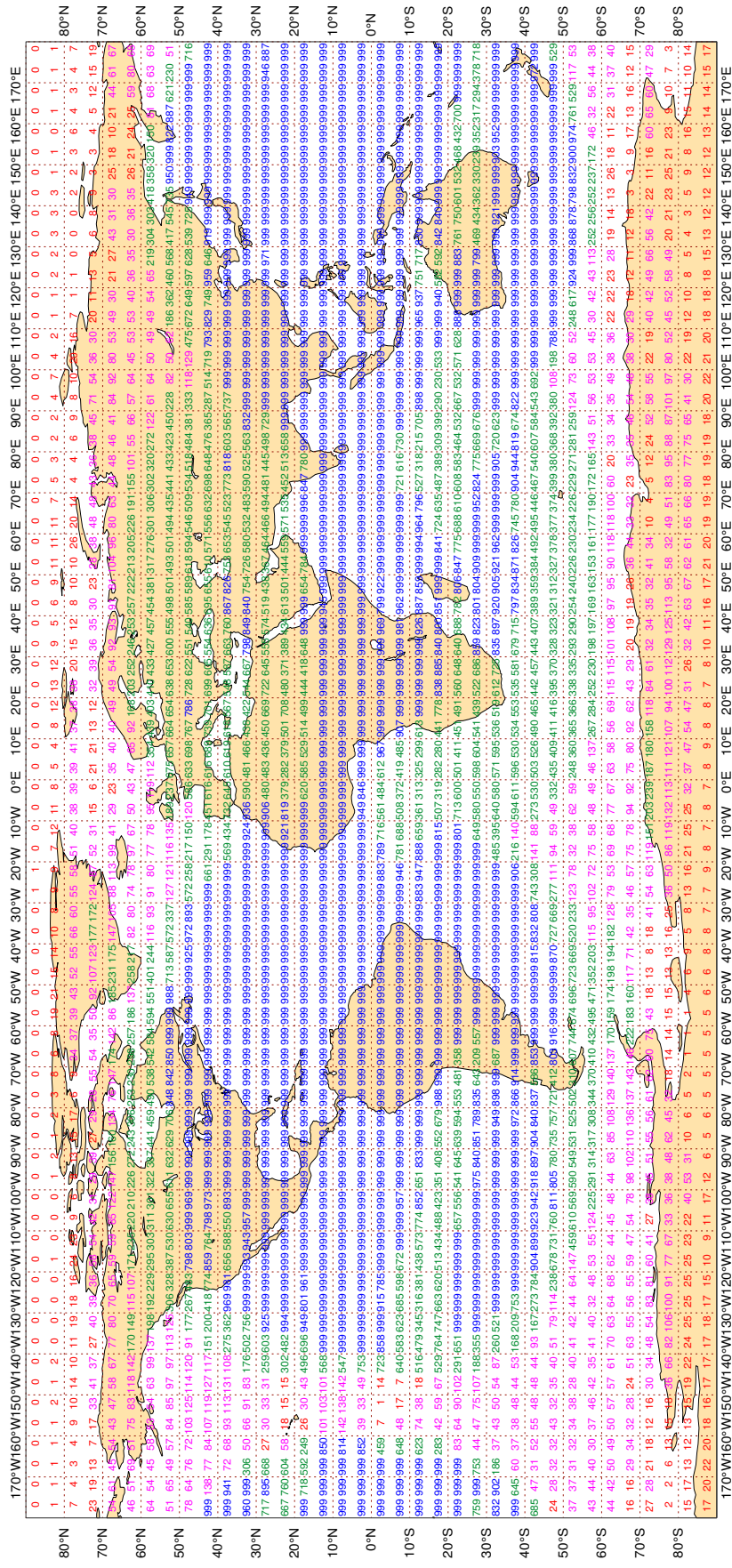


Magics 4.9.4

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

Figure 6

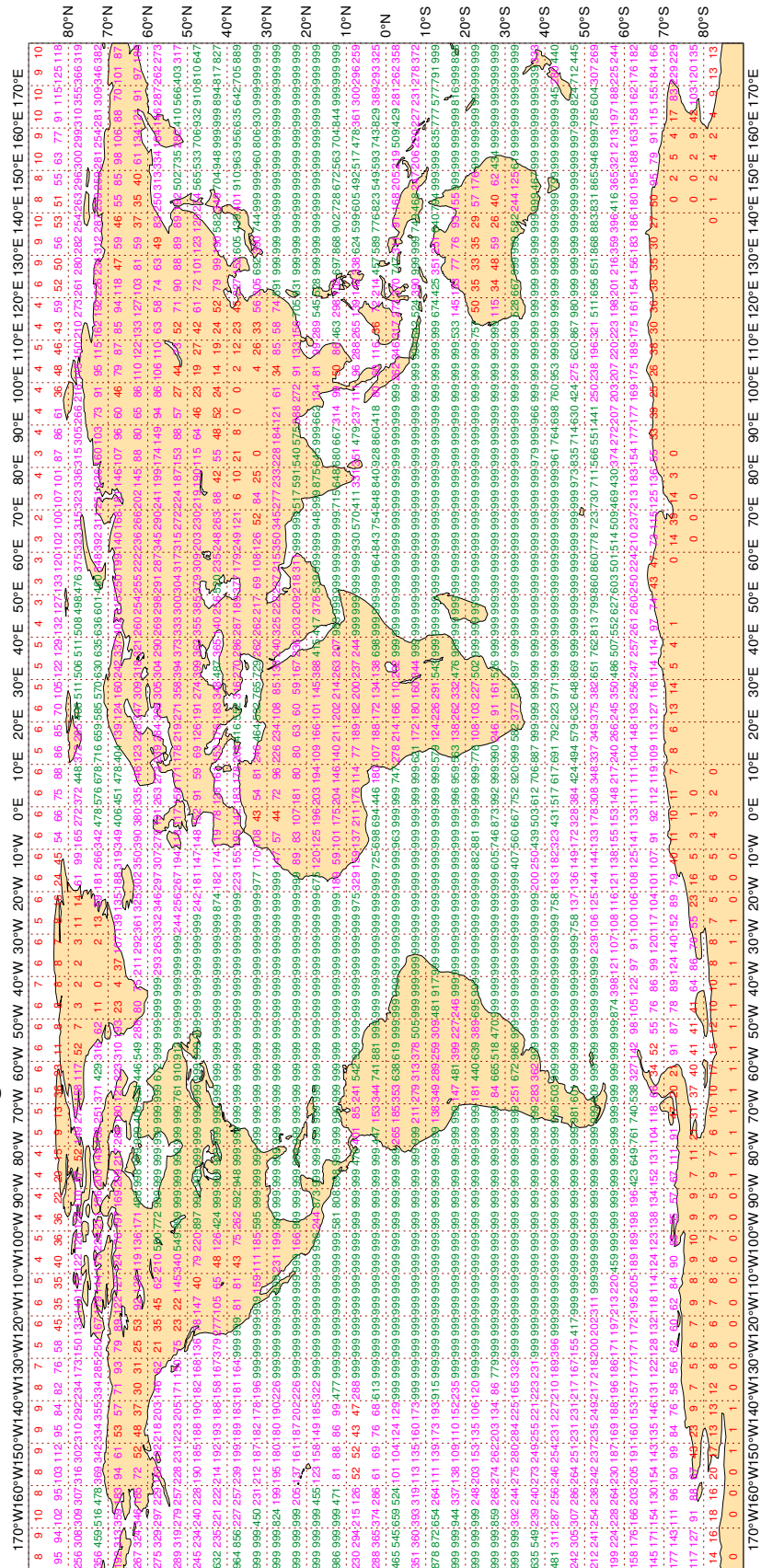
ECMWF Monitoring Statistics - OCT 2023
Availability - AMV winds 400-150 hPa
Average number of observations in 24 hours - 2432532



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

Figure 7

ECMWF Monitoring Statistics - OCT 2023
Availability - AMV winds 1000-700 hPa
Average number of observations in 24 hours - 4014338

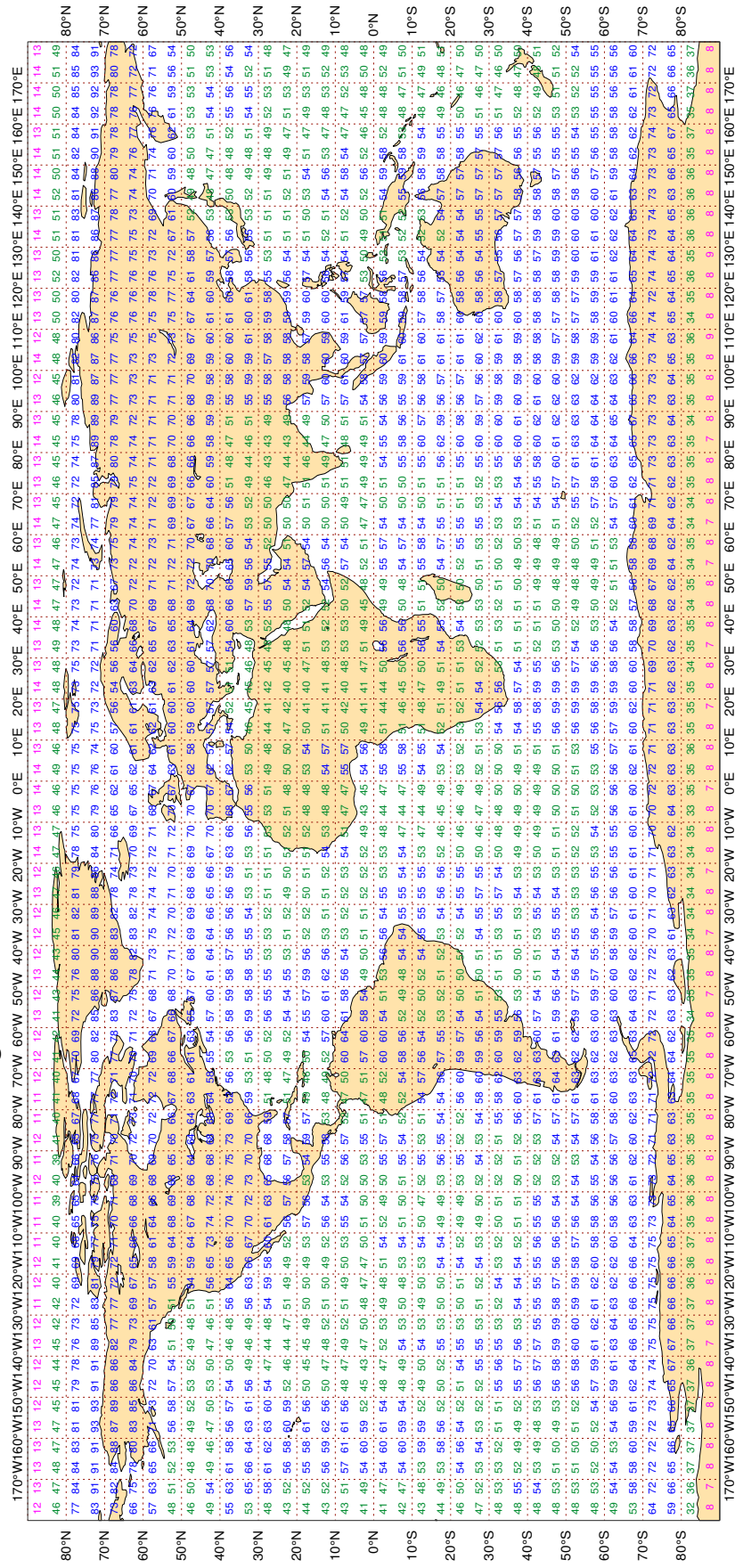


3.2.8 Figure 8 - Availability - NOAA15 ATOVS : AMSU-A

Figure 8

ECMWF Monitoring Statistics - OCT 2023
Availability - NOAA15 ATOVS : AMSU-A

Average number of observations in 24 hours - 145008

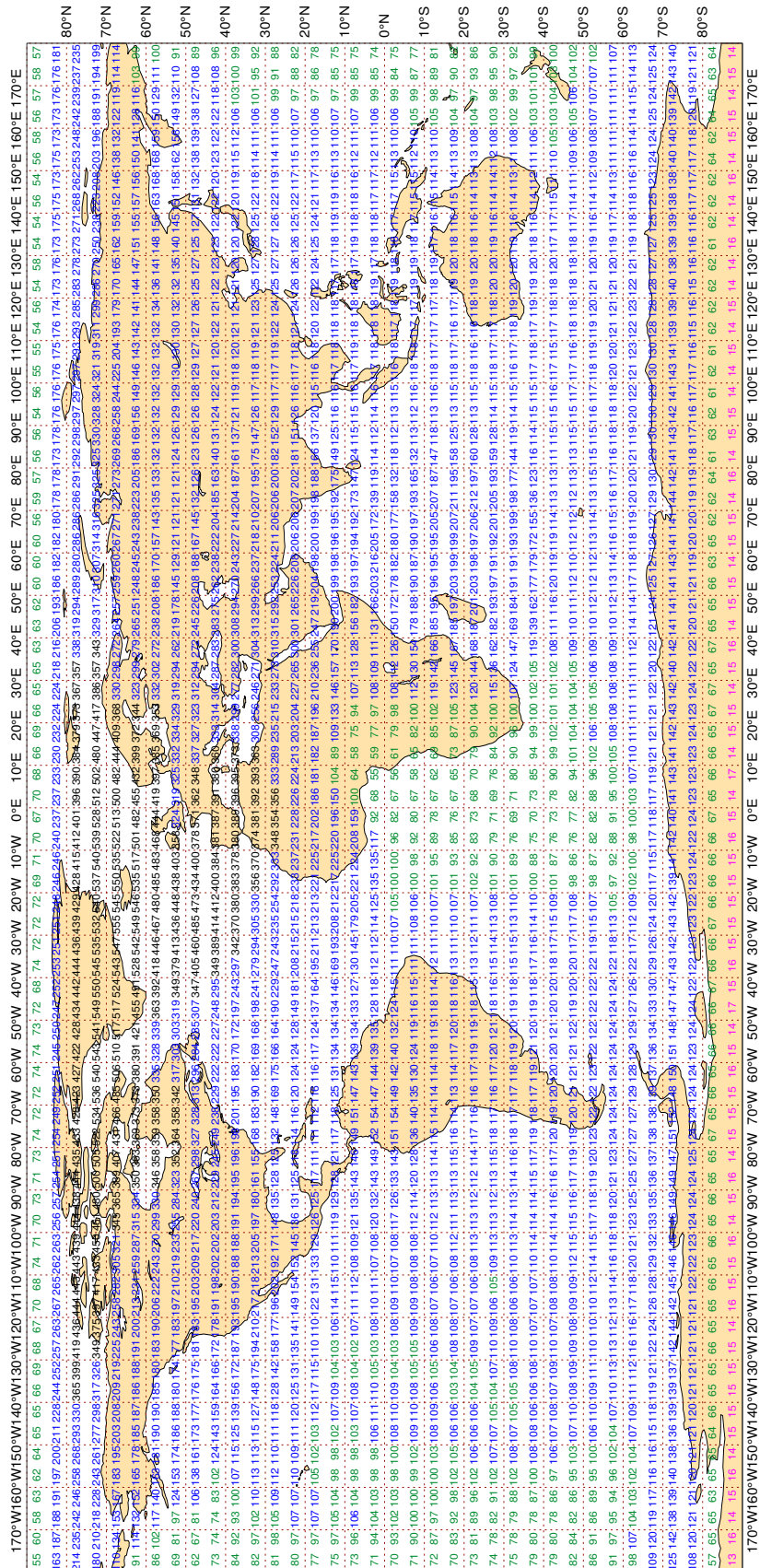


3.2.9 Figure 9.1 - Availability - NOAA18 ATOVS : AMSU-A

Figure 9.1

ECMWF Monitoring Statistics - OCT 2023
Availability - NOAA18 ATOVS : AMSU-A

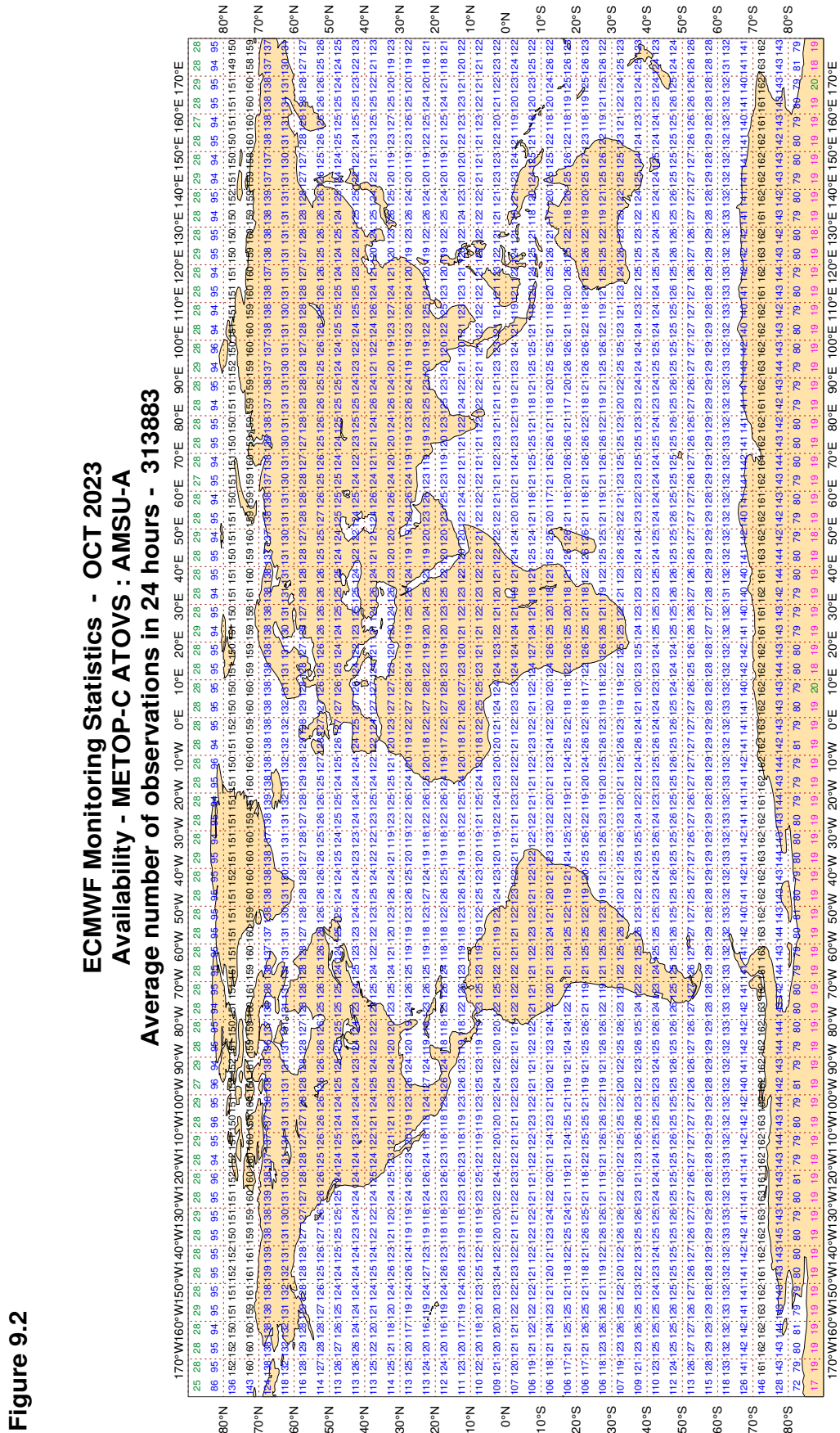
Average number of observations in 24 hours - 411360



Magics 4.9.4



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

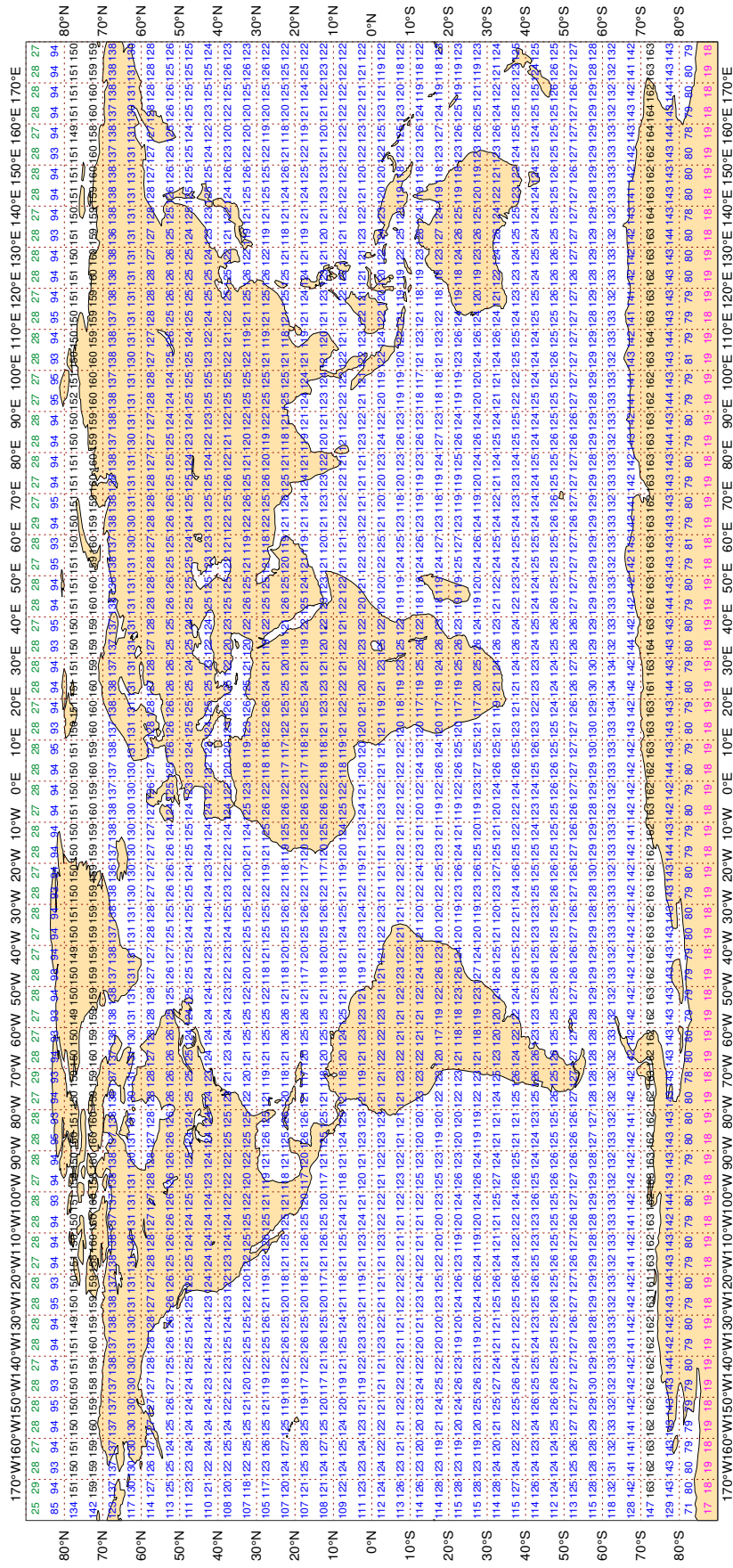


3.2.11 Figure 9.3 - Availability - METOP ATOVS : AMSU-A

Figure 9.3

ECMWF Monitoring Statistics - OCT 2023
Availability - METOP-B ATOVS : AMSU-A

Average number of observations in 24 hours - 313729



Magics 4.9.4



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

LIST OF SUSPECT STATIONS : SHIPS + FIXED MARINE PLATFORMS
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : SURFACE PRESSURE (HPA)
 AREA : GLOBAL
 PERIOD : OCT 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

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

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

WMO IDENT	OBS TIME	ELM	LEVEL	NUM OBS	NUM GROSS	SD	BIAS	RMS
3E3566	99	P	SUR	32	0	2.9	3.7	4.7
3EPL4	99	P	SUR	31	0	1.7	7.5	7.7
3FFG7	99	P	SUR	44	0	1.0	3.1	3.3
3FU Y2	99	P	SUR	43	0	2.2	-3.4	4.1
3FZ18	99	P	SUR	96	0	1.3	4.9	5.0
45201	99	P	SUR	124	11	6.7	-0.6	6.7
7JXX	99	P	SUR	21	0	0.6	-4.8	4.9
7KKG	99	P	SUR	16	0	0.8	4.1	4.2
7KOA	99	P	SUR	29	0	0.6	5.4	5.5
9HA4638	99	P	SUR	18	0	1.8	6.4	6.6
9HA4777	99	P	SUR	33	0	3.3	3.7	5.0
9HA5063	99	P	SUR	108	7	4.5	5.5	7.1
9HA5209	99	P	SUR	70	2	5.0	7.8	9.2
9V2792	99	P	SUR	18	0	0.8	-6.0	6.1
9V3913	99	P	SUR	39	0	1.4	6.1	6.2
9V5246	99	P	SUR	19	0	1.4	4.2	4.4
9V9404	99	P	SUR	32	0	1.6	8.4	8.5
BHJH	99	P	SUR	50	0	1.1	4.6	4.7
BNPC	99	P	SUR	78	0	3.7	5.6	6.7
C6DP9	99	P	SUR	20	0	1.9	3.5	4.0
C6DX2	99	P	SUR	114	0	0.7	4.8	4.9
C6PZ8	99	P	SUR	24	0	2.3	-3.1	3.8
C6TQ6	99	P	SUR	25	0	3.6	-4.3	5.6
C6TX6	99	P	SUR	46	0	2.1	4.3	4.8
D5DS3	99	P	SUR	30	0	0.5	3.2	3.2
JMJRCES	99	P	SUR	122	0	0.8	-6.0	6.1
LAHR7	99	P	SUR	80	0	2.7	4.0	4.9
LAOW5	99	P	SUR	36	0	0.7	3.6	3.7
LAVD4	99	P	SUR	24	0	1.4	3.1	3.4
LAZV5	99	P	SUR	16	0	0.7	-3.5	3.6
NWS0003	99	P	SUR	110	33	7.6	4.5	8.8
OBAA	99	P	SUR	82	0	1.2	-6.6	6.7

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
ONGI	99	P	SUR	37	0	1.1	3.4	3.5
OWLD2	99	P	SUR	27	0	1.8	-5.2	5.5
S6NQ	99	P	SUR	17	0	2.9	8.2	8.7
UBSH	99	P	SUR	34	0	2.0	-3.2	3.8
UHXO	99	P	SUR	55	0	3.1	5.7	6.5
V7DI9	99	P	SUR	17	0	1.3	4.3	4.5
V7DJ7	99	P	SUR	16	3	2.7	13.3	13.6
VRCB4	99	P	SUR	23	0	0.7	-4.3	4.3
VRCI9	99	P	SUR	21	0	1.0	5.2	5.3
VRDJ3	99	P	SUR	91	0	1.0	-3.1	3.2
VRGO2	99	P	SUR	53	1	2.3	5.0	5.5
VRGO3	99	P	SUR	34	0	0.4	7.3	7.3
VRGO6	99	P	SUR	34	0	2.7	-4.5	5.2
VRIB2	99	P	SUR	34	0	1.7	4.8	5.1
VRJU8	99	P	SUR	19	0	1.6	4.3	4.6
VRLJ4	99	P	SUR	37	0	2.5	6.7	7.2
VRME7	99	P	SUR	16	0	0.8	9.7	9.7
VRMX7	99	P	SUR	33	0	1.2	9.4	9.5
VRNR6	99	P	SUR	16	0	0.6	-5.2	5.3
VROB9	99	P	SUR	15	0	3.0	5.1	6.0
VRRB5	99	P	SUR	71	0	1.4	4.9	5.1
VRTF2	99	P	SUR	23	0	2.8	3.7	4.6
VRTG6	99	P	SUR	100	3	3.2	7.3	8.0
VRUZ9	99	P	SUR	22	0	1.2	5.0	5.1
VTSJ	99	P	SUR	20	0	1.0	-8.7	8.8
VYA2010	99	P	SUR	28	26	0.0	-2.9	2.9
WDE3894	99	P	SUR	22	0	0.5	3.1	3.1
WDK5676	99	P	SUR	41	0	0.5	-3.5	3.5
WGEB	99	P	SUR	114	0	0.5	6.5	6.5
XPPQEVQ	99	P	SUR	17	0	2.7	4.0	4.8

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

LIST OF SUSPECT STATIONS : SHIPS + FIXED MARINE PLATFORMS
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND SPEED (M/S)
 AREA : GLOBAL
 PERIOD : OCT 2023
 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
44069	99	SPEED	SUR	117	0	0	1.9	-4.2	4.6

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

LIST OF SUSPECT STATIONS : SHIPS + FIXED MARINE PLATFORMS
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND DIRECTION (DEGREES)
 AREA : GLOBAL
 PERIOD : OCT 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

SELECTION CRITERIA: NO. OF OBS. >= 15 (50) (WIND SPEEDS > 3M/S), AND ,
 Manual (Automatic) ABSOLUTE BIAS >= 30 (25) DEGREES, OR,
 STANDARD DEVIATION >= 70 (50) DEGREES
 (GROSS ERROR LIMIT FOR VECTOR WIND = 25 M/S)

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

WMO IDENT	OBS TIME	ELM	LEVEL	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
44488	99	DIRN	SUR	92	0	0	18.1	-30.2	35.2
44489	99	DIRN	SUR	85	0	0	19.6	-35.7	40.7
45145	99	DIRN	SUR	21	0	0	73.9	134.3	153.3
45165	99	DIRN	SUR	64	0	0	20.3	52.6	56.4
45168	99	DIRN	SUR	92	0	0	25.2	34.1	42.4
45203	99	DIRN	SUR	81	0	0	64.0	-67.0	92.7
45205	99	DIRN	SUR	44	0	0	37.3	-60.4	71.0
46145	99	DIRN	SUR	64	0	0	27.4	-38.4	47.2
46204	99	DIRN	SUR	87	0	0	13.5	38.5	40.8

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

LIST OF SUSPECT STATIONS : DRIFTER
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : SURFACE PRESSURE (HPA)
 AREA : GLOBAL
 PERIOD : OCT 2023
 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
0022943	99	P	SUR	32	124	82	78	0.5	-14.5	14.5
0022947	99	P	SUR	26	122	390	233	4.4	-6.5	7.8
0022948	99	P	SUR	28	127	711	47	6.0	-5.0	7.9
0022951	99	P	SUR	22	129	601	0	3.4	-4.9	5.9
1501696	99	P	SUR	-29	-6	742	0	1.2	-5.9	6.1
1501727	99	P	SUR	-16	-39	736	0	0.4	-7.3	7.3
1501729	99	P	SUR	-21	-36	742	8	0.5	-13.2	13.2
1501732	99	P	SUR	-28	-29	21	20	0.0	14.3	14.3
1701710	99	P	SUR	-41	-22	563	170	7.4	-3.4	8.1
1701718	99	P	SUR	10	-41	697	301	1.4	-0.1	1.4
1801702	99	P	SUR	33	-117	20	0	0.0	-6.7	6.7
1801716	99	P	SUR	33	-117	39	0	0.0	-6.9	6.9
1801729	99	P	SUR	33	-117	21	0	0.0	-6.5	6.5
1801731	99	P	SUR	33	-117	35	0	0.4	-7.0	7.0
2101820	99	P	SUR	34	-178	742	46	5.0	-6.1	7.9
2101858	99	P	SUR	44	163	420	0	2.2	4.5	5.0
2801981	99	P	SUR	64	-22	449	0	0.6	-6.0	6.0
2801993	99	P	SUR	33	-117	22	0	0.4	-7.3	7.3
2801995	99	P	SUR	33	-117	20	0	0.4	-6.7	6.7
2802006	99	P	SUR	33	-117	22	0	0.0	-6.9	6.9
2802010	99	P	SUR	33	-117	39	0	0.0	-6.9	6.9
2802017	99	P	SUR	33	-117	29	0	3.6	-5.9	6.9
3202507	99	P	SUR	14	-90	721	444	5.1	-3.8	6.4
3301702	99	P	SUR	-42	-35	730	138	6.4	1.0	6.5
3301704	99	P	SUR	-39	-6	145	30	6.5	-6.1	9.0
3401637	99	P	SUR	-30	10	139	108	0.5	14.4	14.4
3801600	99	P	SUR	33	-117	21	0	0.4	-6.7	6.7
3801604	99	P	SUR	33	-117	22	0	0.4	-7.2	7.2
3801605	99	P	SUR	33	-117	34	14	0.4	-6.9	6.9
3801610	99	P	SUR	33	-117	24	0	0.0	-6.8	6.8
3801622	99	P	SUR	33	-117	20	0	0.4	-6.7	6.7
3801624	99	P	SUR	33	-117	20	0	0.0	-7.4	7.4

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

WMO IDENT	OBS TIME	ELM	ME LAT	N LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS	
3801628	99	P	SUR	33	-117	21	0	0.0	-7.2	7.2
3801629	99	P	SUR	33	-117	20	0	2.9	-6.6	7.2
3801635	99	P	SUR	33	-117	39	0	0.4	-6.8	6.8
4402609	99	P	SUR	58	-55	130	0	0.9	10.9	10.9
4500201	99	P	SUR	42	83	4387	335	6.9	-0.7	7.0
45201	99	P	SUR	42	83	745	56	6.9	-0.7	6.9
4601855	99	P	SUR	55	164	742	189	4.3	-2.0	4.8
4602563	99	P	SUR	30	-169	740	141	1.2	13.2	13.3
4602604	99	P	SUR	38	-136	115	18	2.8	9.7	10.1
4602607	99	P	SUR	46	-141	596	0	1.3	-5.3	5.5
4701542	99	P	SUR	75	-158	130	130	0.0	0.0	0.0
4701544	99	P	SUR	75	-147	252	106	8.8	5.8	10.5
4701545	99	P	SUR	80	168	509	178	6.7	-2.7	7.2
4701558	99	P	SUR	79	-18	37	0	0.5	-4.6	4.6
4701744	99	P	SUR	77	-107	345	345	0.0	0.0	0.0
4804025	99	P	SUR	33	-117	23	0	0.0	-6.9	6.9
4804029	99	P	SUR	33	-117	22	0	0.4	-6.8	6.8
4804030	99	P	SUR	33	-117	22	0	0.0	-7.3	7.3
4804031	99	P	SUR	33	-117	21	0	0.0	-6.7	6.7
4804038	99	P	SUR	33	-117	21	0	0.0	-7.3	7.3
4804040	99	P	SUR	33	-117	24	0	0.0	-6.8	6.8
4804043	99	P	SUR	33	-117	23	0	0.0	-6.8	6.8
4804046	99	P	SUR	33	-117	21	0	0.4	-7.2	7.3
4804053	99	P	SUR	33	-117	25	0	0.0	-6.8	6.8
4804058	99	P	SUR	33	-117	60	18	0.4	-7.0	7.0
4804059	99	P	SUR	33	-117	24	0	0.0	-6.9	6.9
4804062	99	P	SUR	33	-117	20	0	0.4	-7.0	7.0
4804064	99	P	SUR	33	-117	97	33	0.4	-6.9	6.9
4804065	99	P	SUR	33	-117	40	0	0.4	-6.7	6.7
5102637	99	P	SUR	6	-77	667	159	4.2	-4.4	6.1
5102809	99	P	SUR	10	-109	738	734	0.8	-14.0	14.1
5401775	99	P	SUR	-52	-91	743	0	2.1	4.0	4.5
5501735	99	P	SUR	-49	-171	743	743	0.0	0.0	0.0
5801999	99	P	SUR	33	-117	21	0	0.4	-7.2	7.2
5802002	99	P	SUR	33	-117	41	0	0.0	-6.8	6.8
5802007	99	P	SUR	33	-117	21	0	0.0	-6.8	6.8
5802012	99	P	SUR	33	-117	20	0	0.4	-7.1	7.2
5802014	99	P	SUR	33	-117	24	0	0.0	-7.0	7.0
5802015	99	P	SUR	33	-117	23	0	0.0	-6.8	6.8
5802017	99	P	SUR	33	-117	24	0	0.4	-7.0	7.0
5802029	99	P	SUR	33	-117	37	0	0.0	-6.8	6.8
5802033	99	P	SUR	33	-117	35	0	0.4	-6.9	7.0

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

WMO IDENT	OBS TIME	ELM	ME LAT	N LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS	
6204605	99	P	SUR	41	3	715	84	1.5	12.5	12.5
6402620	99	P	SUR	43	-5	84	0	3.8	4.1	5.6
6801793	99	P	SUR	33	-117	23	0	0.0	-6.9	6.9
6801794	99	P	SUR	33	-117	53	20	0.0	-6.8	6.8
6801795	99	P	SUR	33	-117	22	0	0.4	-7.3	7.3
6801797	99	P	SUR	33	-117	22	0	0.4	-7.3	7.3
6801819	99	P	SUR	33	-117	21	0	0.0	-6.8	6.8
6801821	99	P	SUR	33	-117	39	0	0.4	-6.5	6.5
6801824	99	P	SUR	33	-117	39	0	0.4	-7.1	7.1
6801825	99	P	SUR	33	-117	31	0	0.0	-6.9	6.9
6801826	99	P	SUR	33	-117	33	12	0.0	-6.6	6.6
6801827	99	P	SUR	33	-117	22	0	0.0	-6.8	6.8
6801830	99	P	SUR	33	-117	36	0	0.4	-6.8	6.8
7801597	99	P	SUR	33	-117	20	0	0.0	-7.3	7.3
7801621	99	P	SUR	33	-117	24	0	0.0	-6.7	6.7
7801627	99	P	SUR	33	-117	29	0	0.4	-6.7	6.7
7801634	99	P	SUR	33	-117	23	0	0.0	-6.7	6.7
7801637	99	P	SUR	33	-117	29	0	0.4	-6.9	6.9
7801640	99	P	SUR	33	-117	27	0	0.4	-6.6	6.6
7801643	99	P	SUR	33	-117	23	0	0.0	-6.8	6.8
7801644	99	P	SUR	33	-117	39	16	0.0	-6.8	6.8
7801646	99	P	SUR	33	-117	28	0	0.4	-6.9	6.9
7801648	99	P	SUR	33	-117	22	0	0.4	-7.3	7.3
7801649	99	P	SUR	33	-117	39	3	0.4	-6.9	6.9

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

LIST OF SUSPECT STATIONS : DRIFTER
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND SPEED (M/S)
 AREA : GLOBAL
 PERIOD : OCT 2023
 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
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3.2.17 Table 6 - Suspect drifters: Wind direction (degrees)

LIST OF SUSPECT STATIONS : DRIFTER
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND DIRECTION (DEGREES)
 PERIOD : OCT 2023
 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
2200101	99	DIRN	SUR	37	126	270	0	0	34.7	29.9	45.8
2300092	99	DIRN	SUR	17	89	35	0	0	22.8	-116.9	119.1
2300093	99	DIRN	SUR	16	88	142	1	0	101.8	-21.1	103.9
2300094	99	DIRN	SUR	13	84	137	0	0	61.5	-59.1	85.3
2300452	99	DIRN	SUR	12	69	62	0	0	68.4	38.7	78.6
2300453	99	DIRN	SUR	8	73	39	0	0	19.6	-40.0	44.6
2300460	99	DIRN	SUR	7	88	145	0	0	82.9	-33.9	89.6
23092	99	DIRN	SUR	17	89	22	0	0	19.1	-115.8	117.3
23093	99	DIRN	SUR	16	88	112	2	0	95.4	-21.7	97.8
23094	99	DIRN	SUR	13	84	104	0	0	65.8	-52.1	83.9
23452	99	DIRN	SUR	12	69	59	0	0	71.3	29.4	77.1
23453	99	DIRN	SUR	8	73	37	0	0	20.8	-41.3	46.2
23460	99	DIRN	SUR	7	88	110	0	0	84.3	-36.3	91.7
23491	99	DIRN	SUR	12	93	49	0	0	72.0	-93.2	117.8
3200323	99	DIRN	SUR	0	-110	78	0	0	12.1	-58.6	59.8
32323	99	DIRN	SUR	0	-110	59	0	0	11.5	-57.7	58.8
4400008	99	DIRN	SUR	40	-69	3437	0	0	14.9	20.2	25.1
4400033	99	DIRN	SUR	44	-69	509	0	0	21.5	22.2	30.9
4400488	99	DIRN	SUR	45	-61	438	0	0	19.6	-28.2	34.4
4400489	99	DIRN	SUR	45	-61	391	0	0	19.1	-33.4	38.5
44033	99	DIRN	SUR	44	-69	492	0	0	22.2	22.1	31.3
44078	99	DIRN	SUR	60	-40	573	0	0	17.6	-21.9	28.0
44488	99	DIRN	SUR	45	-61	559	0	0	18.0	-29.7	34.8
44489	99	DIRN	SUR	46	-61	511	0	0	18.6	-34.8	39.4
4500165	99	DIRN	SUR	42	-83	2305	0	0	20.6	51.5	55.4
4500168	99	DIRN	SUR	42	-86	3390	0	0	24.2	30.3	38.8
4500197	99	DIRN	SUR	42	-82	3077	0	0	20.2	-20.2	28.6
4500203	99	DIRN	SUR	41	-83	2964	0	0	68.1	-63.9	93.4
4500205	99	DIRN	SUR	42	-82	1663	0	0	39.9	-62.0	73.7
45140	99	DIRN	SUR	51	-97	208	0	0	17.9	-26.0	31.6
45145	99	DIRN	SUR	52	-97	121	0	0	111.3	105.6	153.4

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

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
45165	99	DIRN	SUR	42	-83	404	0	0	20.5	51.4	55.4
45168	99	DIRN	SUR	42	-86	564	0	0	24.1	30.8	39.1
45197	99	DIRN	SUR	42	-82	589	0	0	20.6	-20.8	29.3
45203	99	DIRN	SUR	41	-83	499	0	0	68.4	-63.1	93.1
45205	99	DIRN	SUR	42	-82	270	0	0	42.6	-62.0	75.2
4600145	99	DIRN	SUR	54	-132	415	0	0	25.8	-34.8	43.4
4600204	99	DIRN	SUR	51	-129	546	0	0	14.9	37.9	40.7
46145	99	DIRN	SUR	54	-132	407	0	0	24.2	-36.1	43.5
46204	99	DIRN	SUR	51	-129	535	0	0	16.3	37.3	40.7
5200004	99	DIRN	SUR	-5	165	143	0	0	67.4	-2.0	67.4
52004	99	DIRN	SUR	-5	165	134	0	0	70.8	0.0	70.8
6200086	99	DIRN	SUR	55	7	181	0	0	13.5	24.3	27.8
6201030	99	DIRN	SUR	44	-4	245	0	0	42.2	36.4	55.7
6600022	99	DIRN	SUR	54	14	212	2	0	60.5	47.6	77.0
6600024	99	DIRN	SUR	55	13	123	0	0	9.4	22.6	24.5

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

LIST OF SUSPECT STATIONS : RADIOSONDES
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : GEOPOTENTIAL HEIGHT (METRES)
 AREA : GLOBAL
 PERIOD : OCT 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

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

ONLY THE WORST LEVEL IS SHOWN (WITH UNWEIGHTED RMS)

WMO IDENT	OBS TIME	ELM	LEV	LAT	LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
01400	12	Z	1000	57	3	29	0	5.5	76.1	76.3
01400	00	Z	1000	57	3	26	0	5.5	75.2	75.4
24266	12	Z	250	68	133	29	1	92.1	36.6	99.1
24266	00	Z	250	68	133	28	1	79.6	41.7	89.9
28445	12	Z	200	57	61	27	0	73.3	125.8	145.6
28445	00	Z	250	57	61	23	0	45.2	100.4	110.1
30715	00	Z	200	52	104	23	0	53.9	74.2	91.7
30715	12	Z	200	52	104	22	0	72.1	80.3	107.9
35700	12	Z	200	47	52	29	0	15.6	75.4	77.0
36003	12	Z	200	52	77	30	1	82.3	49.4	96.0
36003	00	Z	150	52	77	29	0	67.3	59.5	89.8
40811	12	Z	250	31	49	11	9	25.2	197.9	199.5
42339	12	Z	925	26	73	29	2	28.3	40.7	49.6
42348	00	Z	925	27	76	24	0	7.3	44.4	45.0
42348	12	Z	850	27	76	27	0	8.8	48.5	49.3
42410	00	Z	925	26	92	31	0	23.0	35.0	41.9
42410	12	Z	850	26	92	31	0	16.1	35.2	38.7
42874	12	Z	850	21	82	22	2	22.3	30.9	38.1
42971	00	Z	1000	20	86	29	0	16.5	27.9	32.4
42971	12	Z	1000	20	86	14	0	20.2	34.2	39.7
43041	00	Z	850	19	82	28	2	20.3	29.5	35.8
43049	00	Z	850	19	85	15	0	20.4	38.3	43.4
43128	00	Z	925	17	78	31	2	32.1	32.0	45.3
43185	12	Z	850	16	81	18	1	24.4	45.0	51.2
43185	00	Z	850	16	81	31	0	17.6	27.8	32.9
43346	12	Z	850	11	80	29	1	19.1	34.9	39.8
62403	12	Z	850	26	33	15	4	35.0	82.5	89.6
65344	12	Z	850	6	2	29	0	3.4	29.6	29.8
68842	12	Z	1000	-34	26	27	0	25.1	20.5	32.4
68994	12	Z	1000	-47	38	17	0	9.8	31.0	32.5
68994	00	Z	850	-47	38	17	0	26.8	27.1	38.1
78486	12	Z	1000	18	-70	31	0	3.5	29.9	30.1
78486	00	Z	1000	18	-70	31	0	3.5	29.7	29.9

LIST OF SUSPECT STATIONS (CONTINUED)

WMO IDENT	OBS TIME	ELM	LEV	LAT	LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
82824	00	Z	1000	-9	-64	31	0	31.5	10.1	33.1
82824	12	Z	1000	-9	-64	31	0	40.1	19.7	44.7
91680	00	Z	1000	-18	177	31	0	2.5	32.4	32.5
91680	12	Z	1000	-18	177	30	0	3.7	33.6	33.8
96315	00	Z	1000	5	115	21	0	5.7	54.2	54.5
JNKN7J	12	Z	1000	47	-51	11	0	7.1	41.5	42.1
KMPLHP	12	Z	1000	52	-18	10	0	6.9	58.9	59.3
KMPLHP	00	Z	1000	52	-13	11	0	5.9	58.2	58.5

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

LIST OF SUSPECT STATIONS : RADIOSONDES
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND (M/S)
 AREA : GLOBAL
 PERIOD : OCT 2023
 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
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3.2.20 Table 9 - Suspect radiosondes: Wind direction (degrees)

LIST OF SUSPECT STATIONS : RADIOSONDES
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND DIRECTION (DEGREES)
 AREA : GLOBAL
 PERIOD : OCT 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

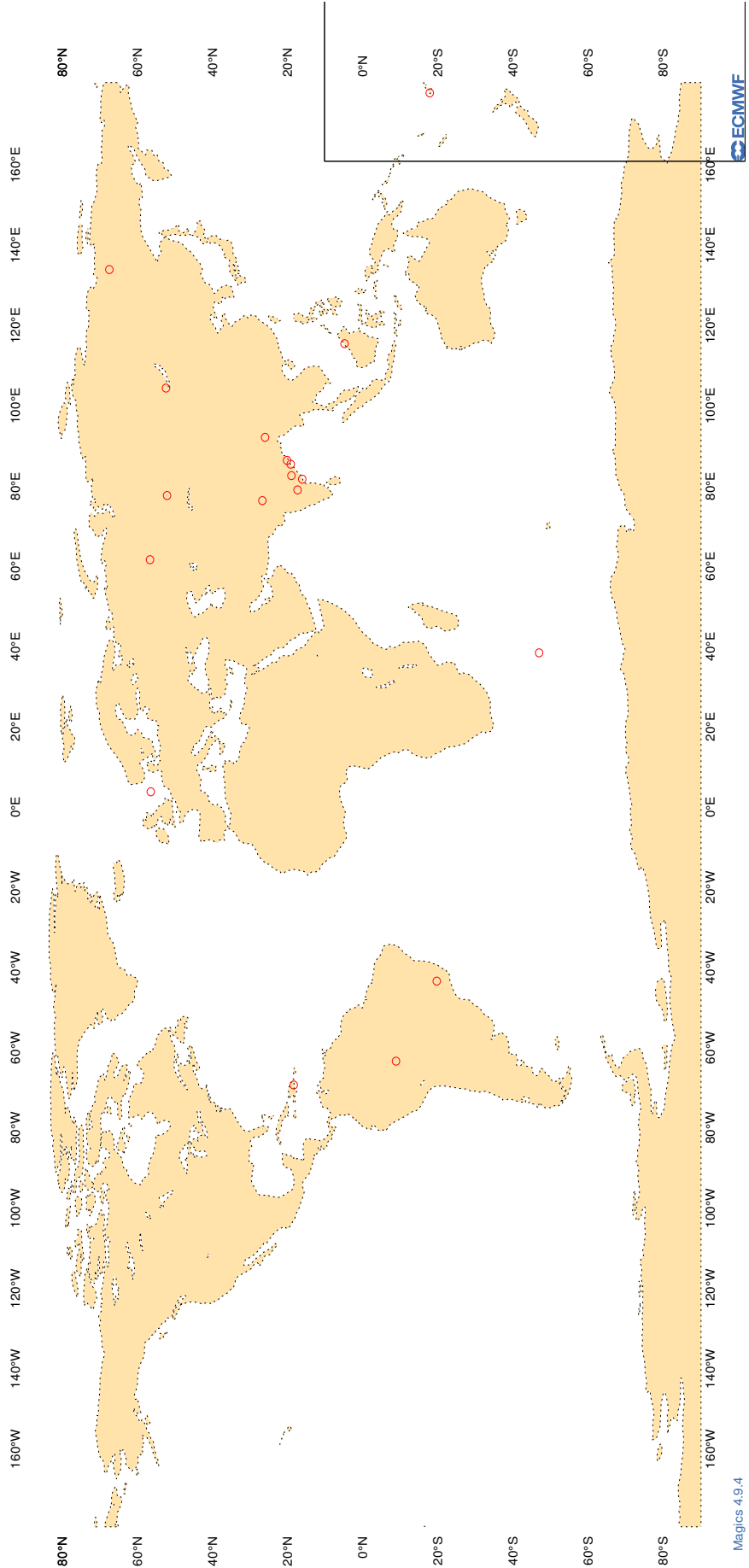
SELECTION CRITERIA: OBSERVED/FORECAST WIND SPEEDS \geq 5 M/S
 NO. OF OBSERVATIONS \geq 5, AND,
 ABSOLUTE BIAS \geq 10 DEGREES, WITH
 STANDARD DEVIATION $<$ 30 DEGREES, AND,
 VERTICAL SPREAD $<$ 10 DEGREES
 (AVERAGE BETWEEN 500 AND 150 HPA)

WMO IDENT	OBS TIME	ELM	LAT	LONG	NUM OBS	BIAS	MAX SPREAD	SD
28445	12	DD	57	61	27	17.7	2.4	7.3
28445	00	DD	57	61	23	18.6	2.1	7.1
54340	00	DD	42	124	30	-12.5	0.9	5.3
54340	12	DD	42	124	30	-12.8	0.8	4.8

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

Figure 10

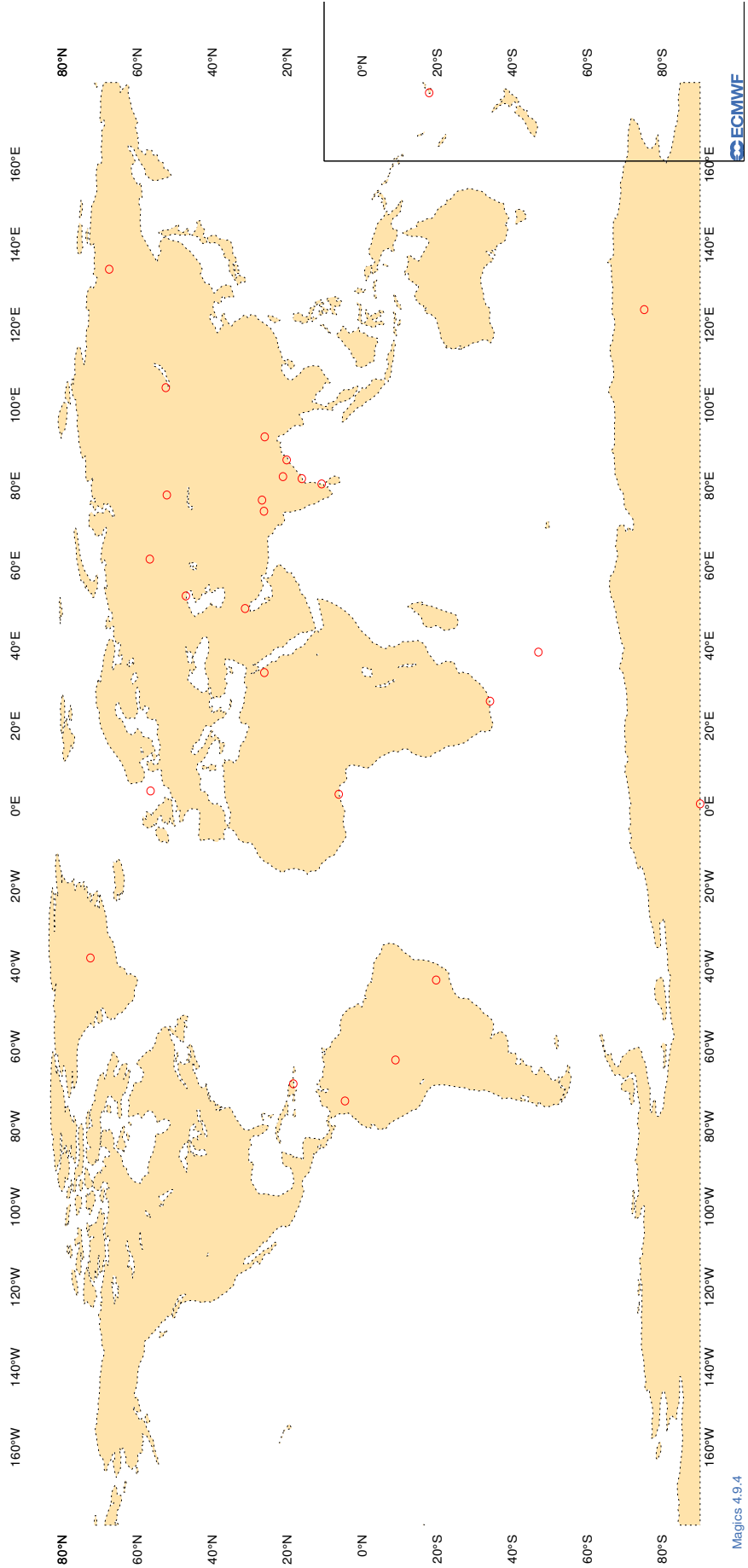
ECMWF Monitoring Statistics - OCT 2023 00 UTC
Suspect TEMP observations - GEOPOTENTIAL



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

Figure 11

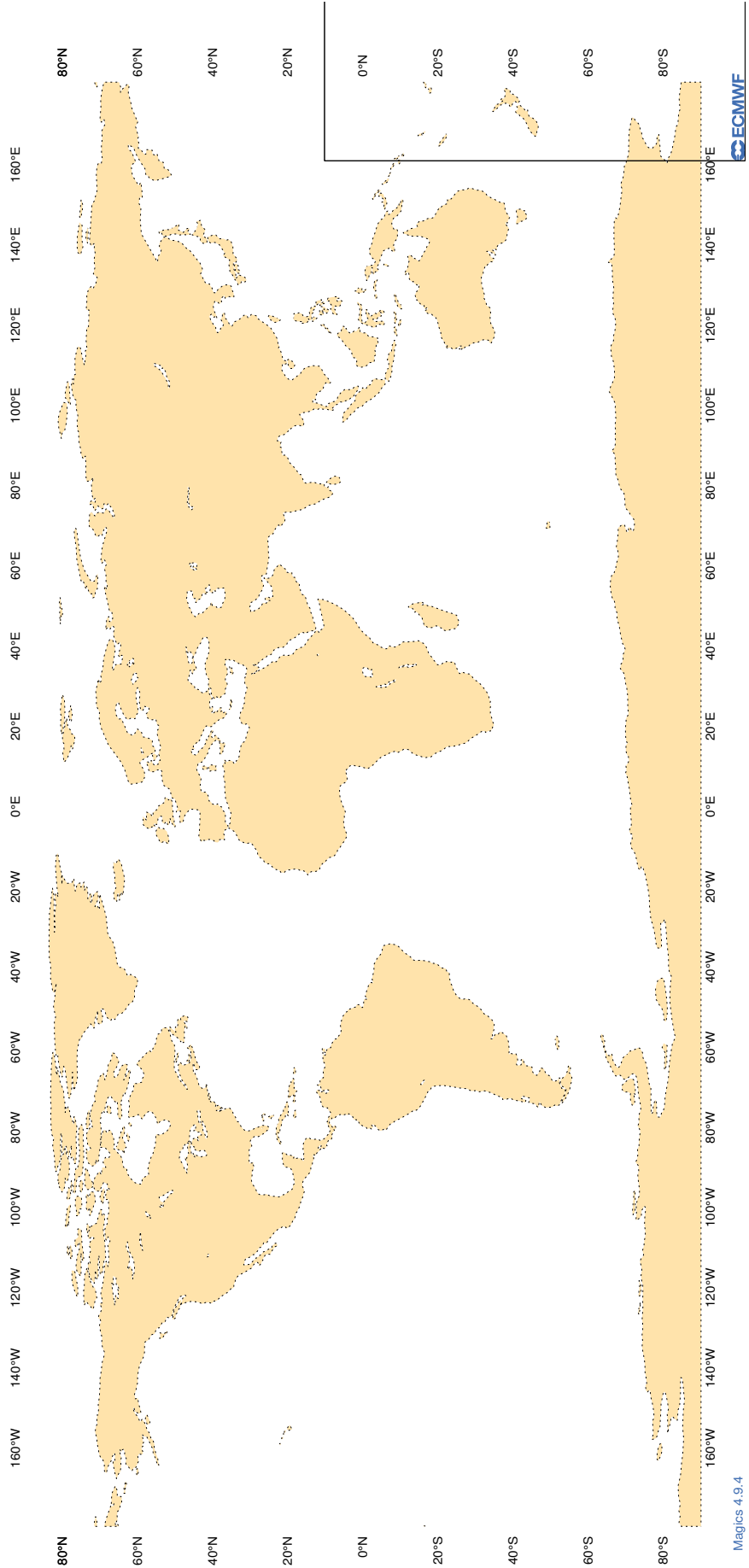
ECMWF Monitoring Statistics - OCT 2023 12 UTC
Suspect TEMP observations - GEOPOTENTIAL



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

Figure 12

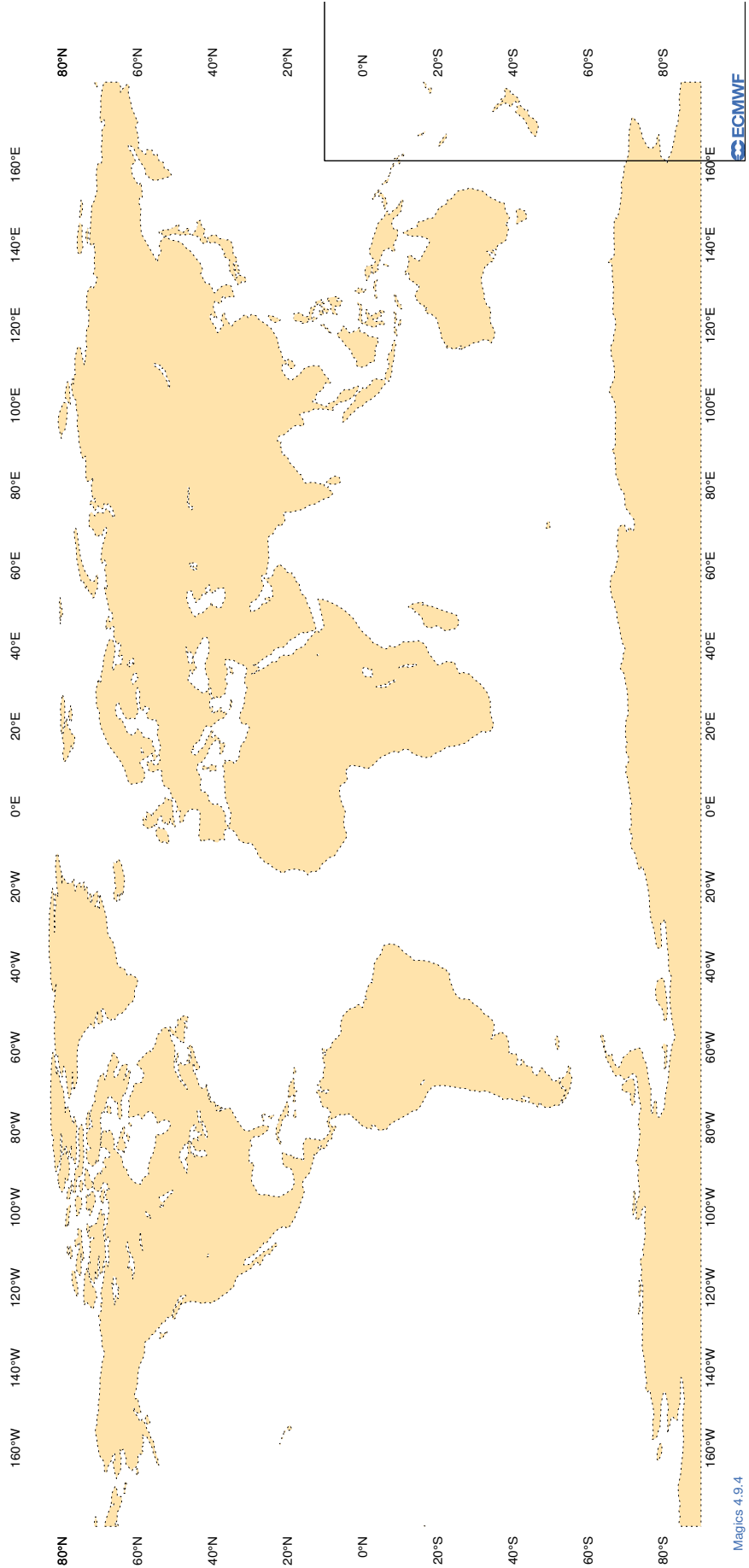
ECMWF Monitoring Statistics - OCT 2023 00 UTC
Suspect TEMP/PILOT observations - WIND



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

Figure 13

ECMWF Monitoring Statistics - OCT 2023 12 UTC
Suspect TEMP/PILOT observations - WIND



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

RADIOSONDE MONITORING STATISTICS (SHIPS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : GEOPOTENTIAL HEIGHT (METRES)
 LEVEL : 100 HPA
 AREA : GLOBAL
 PERIOD : OCT 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
2EERVT	12	Z	100	6	11.5	-8.7
2EERVT	00	Z	100	8	13.1	-12.2
7JUNA4	12	Z	100	6	27.1	16.1
7JUNA4	00	Z	100	4	10.3	-4.8
9ZT9MR	12	Z	100	8	21.7	-13.2
9ZT9MR	00	Z	100	7	17.5	-16.4
ATGU3F	12	Z	100	10	21.9	-17.9
ATGU3F	00	Z	100	8	23.5	-22.4
BPMWB2	12	Z	100	6	12.4	-11.2
BPMWB2	00	Z	100	8	12.7	-0.4
DBLK	12	Z	100	6	13.3	9.2
FPUW5G	12	Z	100	14	10.1	8.2
GQBZLZ	12	Z	100	3	127.9	-79.7
GQBZLZ	00	Z	100	3	26.7	-24.7
JNKN7J	12	Z	100	8	56.8	53.2
JNKN7J	00	Z	100	8	29.9	27.8
JPBN	12	Z	100	3	6.0	0.6
JPBN	00	Z	100	2	8.8	7.8
KJFF9X	12	Z	100	4	13.6	6.1
KJFF9X	00	Z	100	3	8.6	5.4
KMPLHP	12	Z	100	10	38.6	37.8
KMPLHP	00	Z	100	11	43.5	43.2
LAGY8	12	Z	100	2	27.7	27.7
LAGZ8	12	Z	100	1	48.0	48.0
LRQE3	12	Z	100	9	18.3	-11.6
LRQE3	00	Z	100	9	8.3	-5.4
UBQW2	00	Z	100	29	31.4	-28.6
UXK5JT	12	Z	100	6	7.4	2.3
UXK5JT	00	Z	100	6	8.3	-0.9
WDK38H	12	Z	100	10	14.7	-12.9
XKQLWQ	12	Z	100	12	43.6	40.6
YL96W	12	Z	100	6	41.9	39.0
YL96W	00	Z	100	7	5.3	-1.2

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

RADIOSONDE MONITORING STATISTICS (SHIPS)

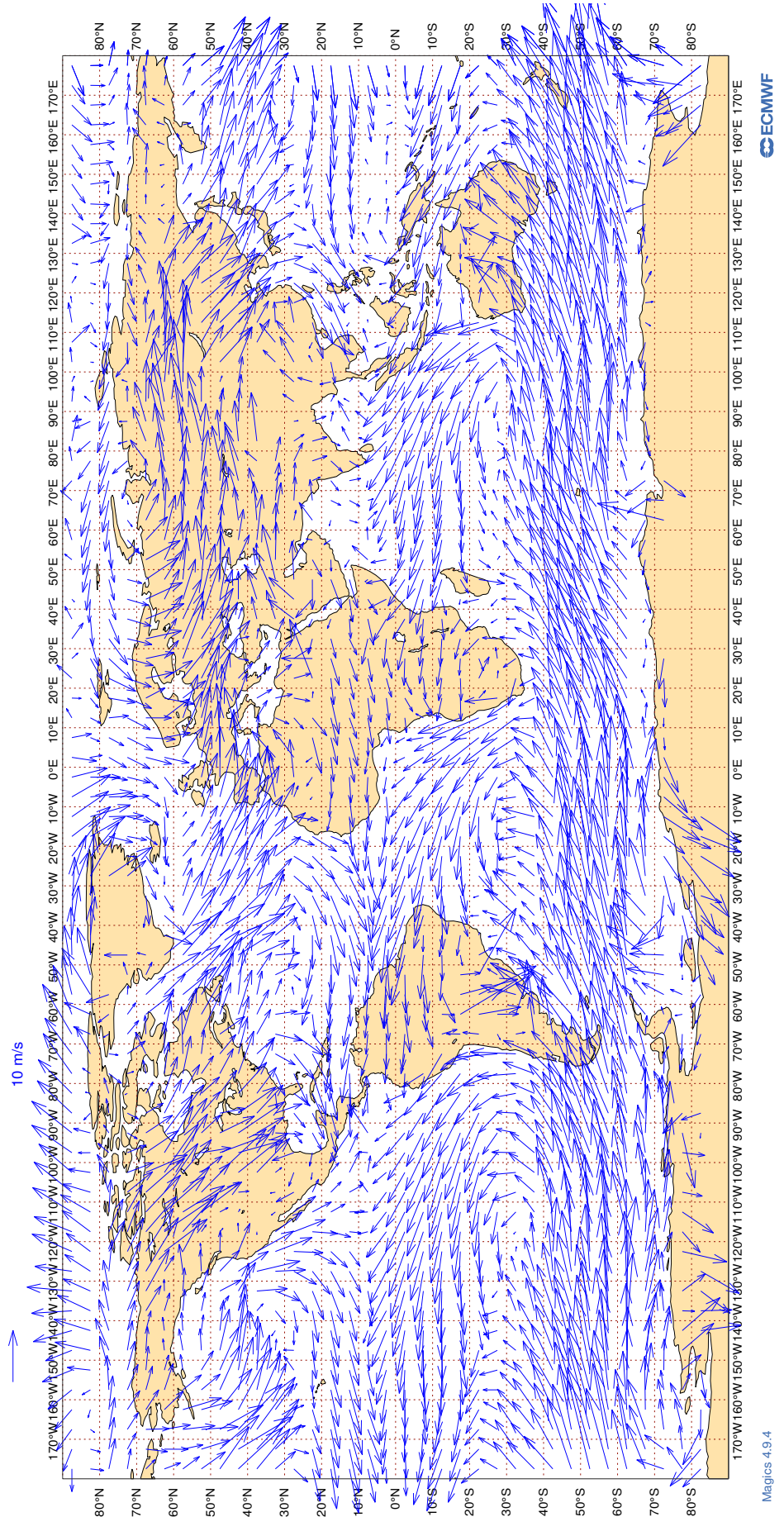
MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND (M/S)
 LEVEL : 100 HPA
 AREA : GLOBAL
 PERIOD : OCT 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
2EERTV	12	V	100	6	3.0	0.0	1.7
2EERTV	00	V	100	7	3.5	-0.7	2.2
7JUNA4	12	V	100	6	2.1	1.0	0.4
7JUNA4	00	V	100	4	2.0	-0.4	1.3
9ZT9MR	12	V	100	8	3.6	0.6	0.3
9ZT9MR	00	V	100	7	2.0	0.4	-1.3
ATGU3F	12	V	100	10	3.1	1.7	0.2
ATGU3F	00	V	100	8	2.3	-0.4	-0.9
BPMWB2	12	V	100	6	5.6	-2.0	1.3
BPMWB2	00	V	100	8	5.9	-1.2	0.7
DBLK	12	V	100	6	4.5	0.0	2.6
FPUW5G	12	V	100	14	3.5	-0.3	0.3
GQBZLZ	12	V	100	3	2.8	-0.9	1.0
GQBZLZ	00	V	100	3	2.0	0.4	0.0
JNKN7J	12	V	100	8	2.9	0.1	-0.1
JNKN7J	00	V	100	8	3.3	0.5	-0.4
JPBN	12	V	100	3	2.0	-0.9	0.2
JPBN	00	V	100	2	2.6	0.6	-0.1
KJF9X	12	V	100	4	2.6	-0.9	0.0
KJF9X	00	V	100	3	4.2	-1.2	-2.9
KMPLHP	12	V	100	10	4.1	-0.5	0.4
KMPLHP	00	V	100	11	4.0	0.6	-0.6
LAGY8	12	V	100	2	1.7	0.8	0.6
LAGZ8	12	V	100	1	3.8	1.1	-3.6
LRYQE3	12	V	100	9	2.3	0.1	-0.2
LRYQE3	00	V	100	9	3.3	1.1	0.3
UBQW2	00	V	100	29	1.9	0.2	-0.1
UXK5JT	12	V	100	6	4.4	-1.6	-0.8
UXK5JT	00	V	100	6	3.4	0.7	1.5
WDK38H	12	V	100	8	1.9	-0.1	-0.4
XKQLWQ	12	V	100	12	3.5	0.4	1.3
YL96W	12	V	100	6	4.1	2.5	-0.6
YL96W	00	V	100	7	3.0	-1.2	-0.1

3.2.27 Figure 14 - SATOB Winds: 700-1000hPa

Figure 14

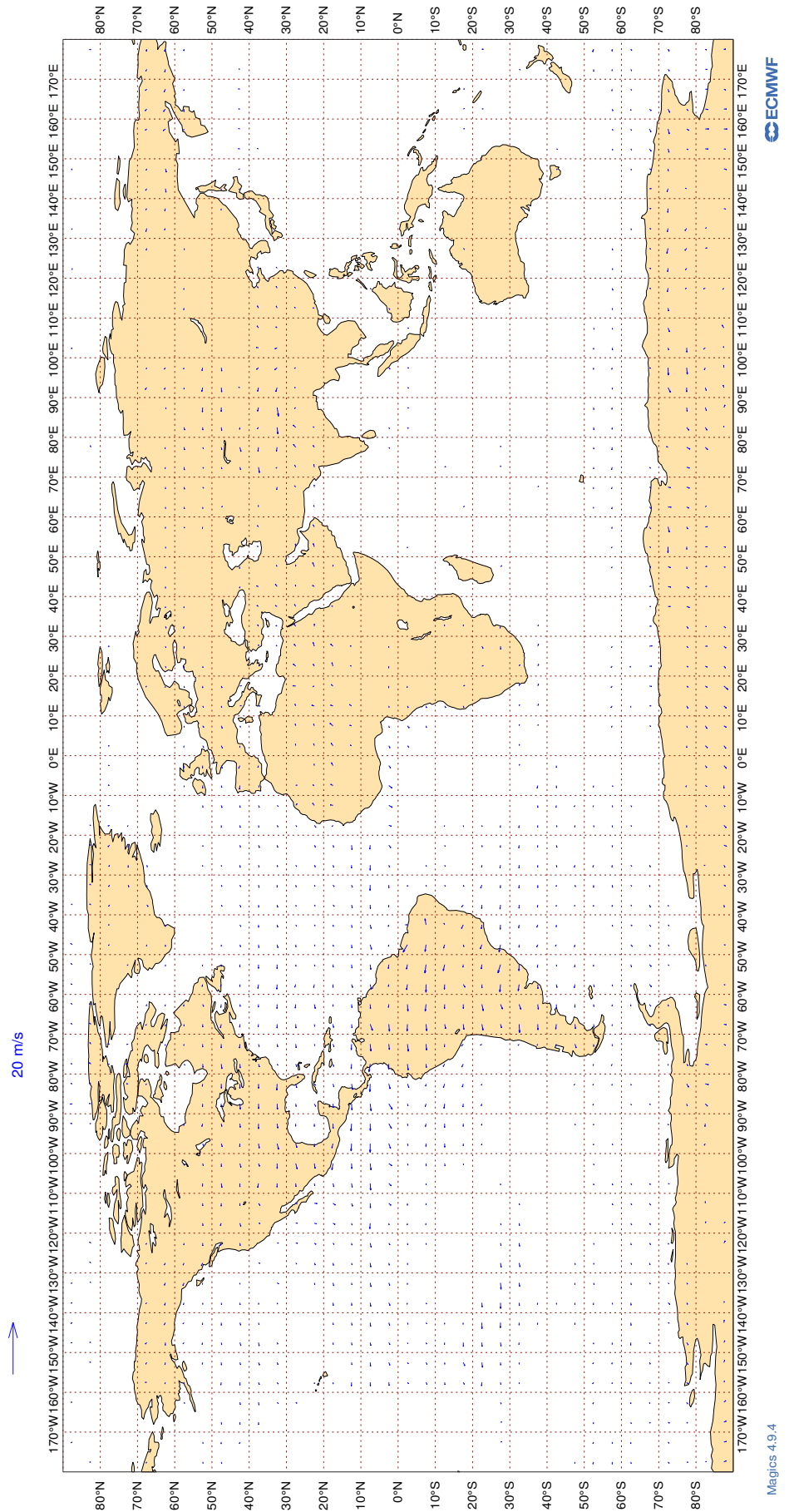
ECMWF Monitoring Statistics: Oct 2023
AMV Winds: 700-1000hPa
Mean Observed Wind



3.2.28 Figure 15 - SATOB Winds: 150- 400hPa

Figure 15

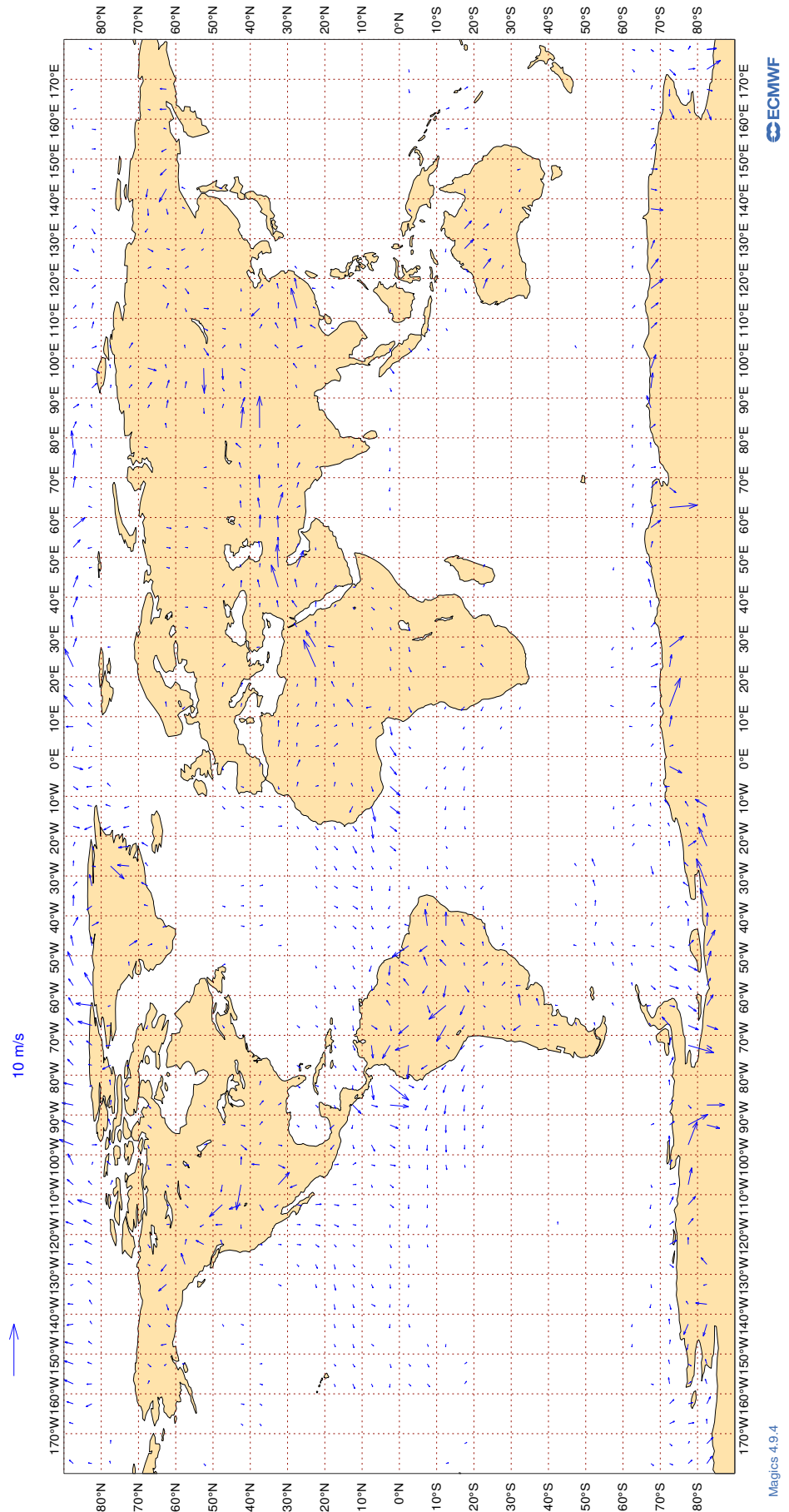
ECMWF Monitoring Statistics: Oct 2023
AMV Winds: 150- 400hPa
Wind bias: Observation - FG



3.2.29 Figure 16 - SATOB Winds: 700-1000hPa

Figure 16

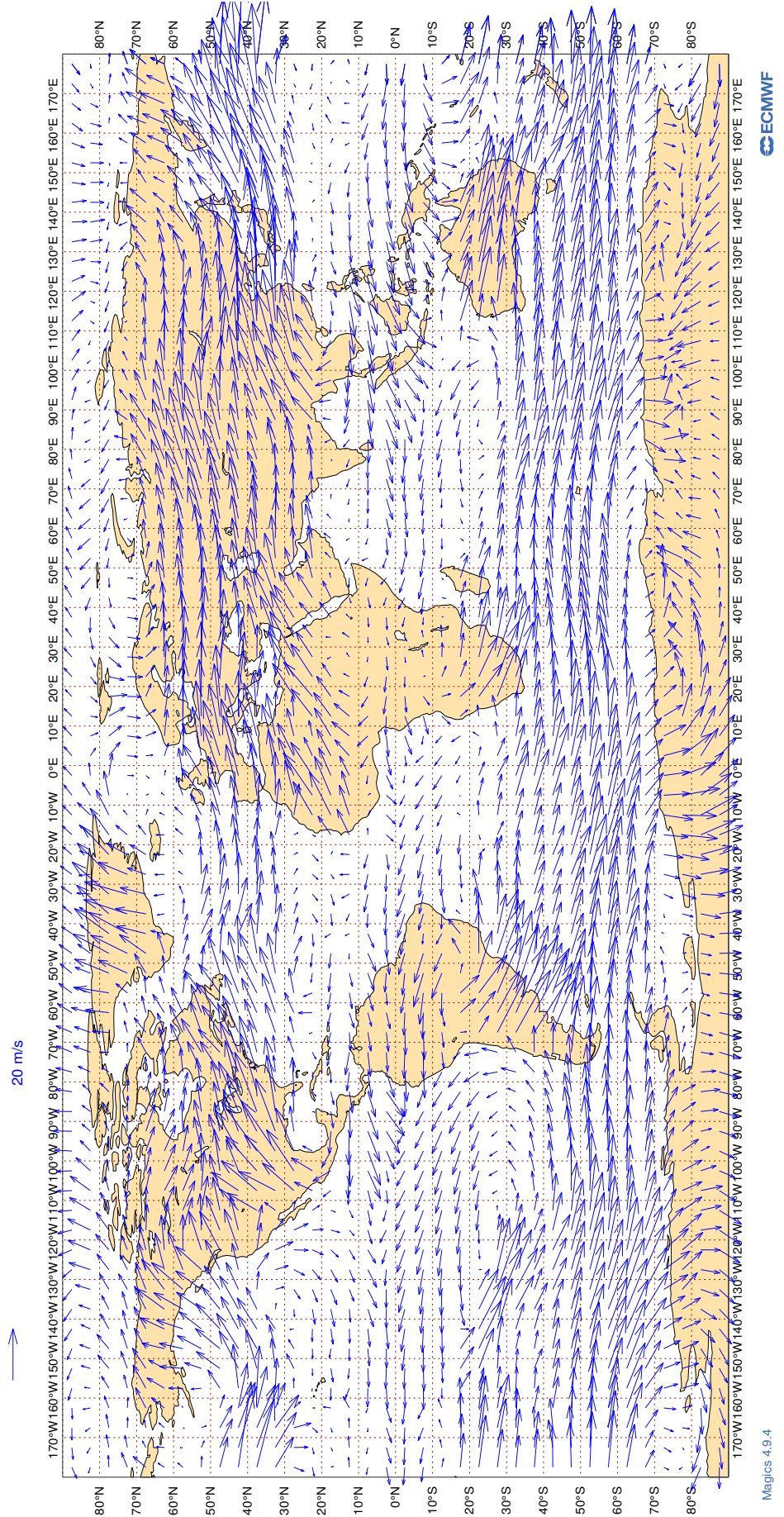
ECMWF Monitoring Statistics: Oct 2023
AMV Winds: 700-1000hPa
Wind bias: Observation - FG



3.2.30 Figure 17 - SATOB Winds: 150- 400hPa

Figure 17

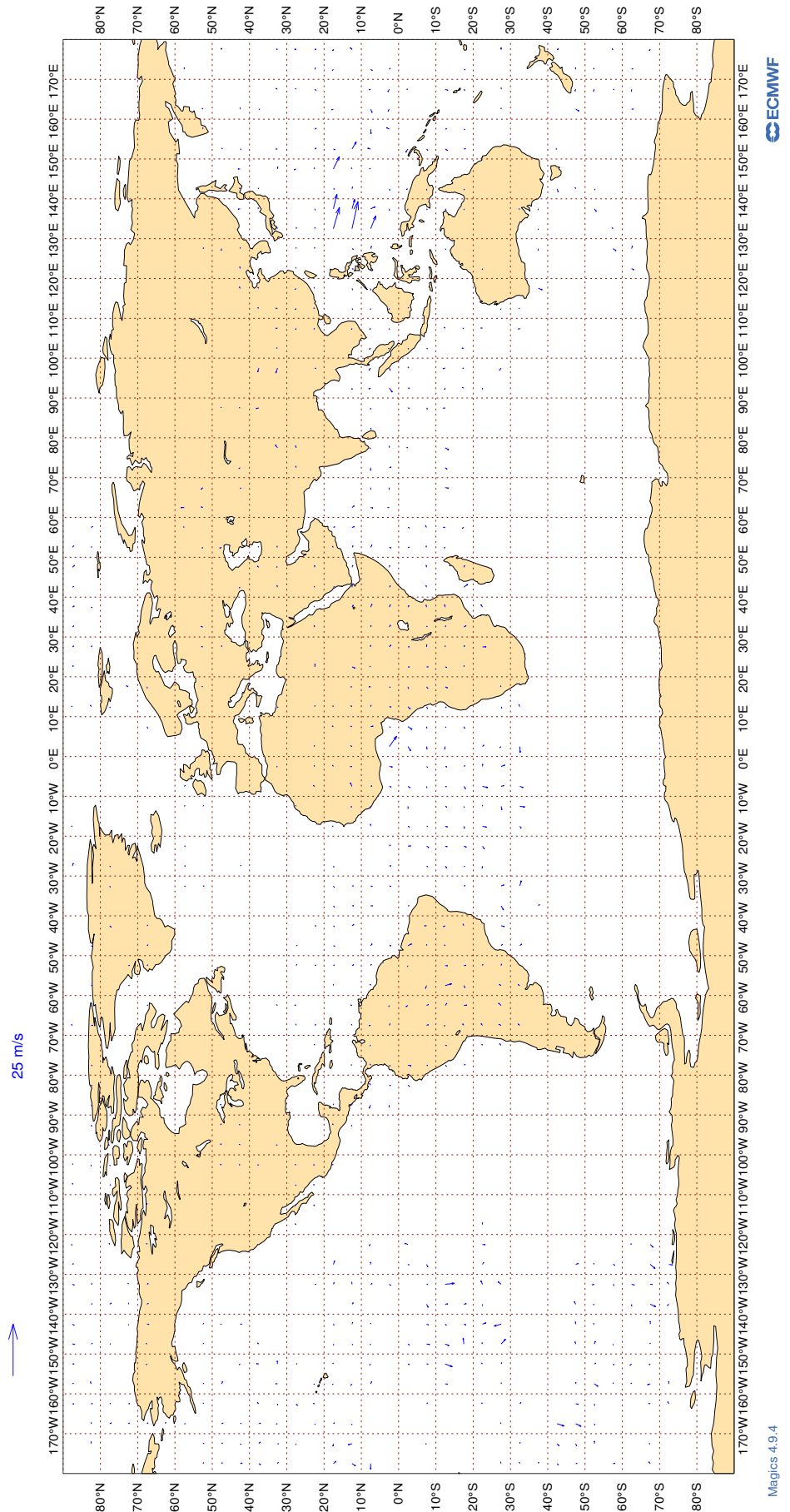
ECMWF Monitoring Statistics: Oct 2023
AMV Winds: 150- 400hPa
Mean Observed Wind



3.2.31 Figure 18 - AIRCRAFT Winds: 150- 300hPa

Figure 18

ECMWF Monitoring Statistics: Oct 2023
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 : OCT 2023
 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	58	0	0	2.8	-0.1
AAL	99	V	300-150	52096	3	0	5.2	0.2
AAR	99	V	300-150	203	0	0	4.1	-0.4
ABB	99	V	300-150	28	0	0	2.6	0.5
ABD	99	V	300-150	1114	0	0	4.0	-0.2
ABP	99	V	300-150	104	0	0	3.3	0.7
ACA	99	V	300-150	38244	2	0	5.1	0.1
ACI	99	V	300-150	378	0	0	3.3	0.3
ADS	99	V	300-150	54	0	0	2.8	0.0
AEA	99	V	300-150	732	9	1	6.2	0.4
AFR	99	V	300-150	37827	0	0	3.8	0.2
AHO	99	V	300-150	845	0	0	3.6	0.1
AIC	99	V	300-150	4903	1	1	5.4	0.3
AIZ	99	V	300-150	38	0	0	4.5	0.3
AJT	99	V	300-150	187	0	0	3.2	0.1
ALK	99	V	300-150	2073	0	0	3.2	0.6
AMX	99	V	300-150	5746	9	0	7.0	0.0
ANA	99	V	300-150	323	2	1	5.3	0.3
ANZ	99	V	300-150	17101	0	0	3.7	0.4
AOJ	99	V	300-150	258	0	0	3.4	0.2
ARG	99	V	300-150	22	0	0	2.7	0.5
ARL	99	V	300-150	30	0	0	4.0	1.0
ASA	99	V	300-150	59	0	5	5.1	0.7

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
ASL	99	V	300-150	721	0	0	4.1	0.6
ASP	99	V	300-150	64	0	0	3.6	-0.5
ASY	99	V	300-150	123	0	0	4.1	1.2
ATG	99	V	300-150	72	0	0	3.3	0.5
ATN	99	V	300-150	120	0	1	6.4	0.8
AUA	99	V	300-150	4636	0	0	3.7	0.0
AVA	99	V	300-150	458	17	1	7.6	0.1
AWC	99	V	300-150	126	0	1	4.8	-0.6
AXB	99	V	300-150	41	0	0	2.7	0.0
AXM	99	V	300-150	105	1	1	4.7	1.4
AXY	99	V	300-150	209	0	0	3.9	0.4
AZG	99	V	300-150	1138	0	0	3.7	-0.1
BAF	99	V	300-150	63	0	0	3.1	-0.7
BAH	99	V	300-150	34	0	0	2.7	1.6
BAV	99	V	300-150	49	4	0	3.2	0.2
BAW	99	V	300-150	52443	2	0	4.5	0.1
BBC	99	V	300-150	832	2	0	5.6	0.4
BCS	99	V	300-150	1855	0	0	3.6	0.3
BEL	99	V	300-150	923	0	0	3.0	0.3
BFF	99	V	300-150	100	0	0	11.9	1.6
BMW	99	V	300-150	22	0	0	2.4	0.7
BOX	99	V	300-150	4879	0	0	3.2	0.2
BOX	99	V	300-150	52	0	0	3.8	-0.1
BQA	99	V	300-150	38	0	0	3.3	-0.2
BTX	99	V	300-150	114	0	0	3.3	0.3
CAL	99	V	300-150	1571	0	0	3.3	0.5
CAZ	99	V	300-150	76	0	5	3.7	-0.3
CBJ	99	V	300-150	236	0	0	3.6	0.7
CCA	99	V	300-150	269	1	0	3.8	0.3
CEB	99	V	300-150	731	0	0	3.3	0.4
CES	99	V	300-150	1140	0	0	3.6	0.5
CFC	99	V	300-150	254	0	0	3.8	0.5
CFG	99	V	300-150	4825	0	0	3.4	0.2
CHG	99	V	300-150	407	0	0	3.3	-0.1
CHH	99	V	300-150	141	0	0	3.9	0.5
CJT	99	V	300-150	188	0	0	3.7	-0.5
CKS	99	V	300-150	1146	0	1	3.4	-0.3
CLE	99	V	300-150	191	0	0	4.7	-0.3
CLF	99	V	300-150	36	0	0	3.4	0.5
CLX	99	V	300-150	5012	0	0	3.6	-0.4
CMA	99	V	300-150	211	0	1	3.0	0.4
CMB	99	V	300-150	2103	0	0	3.7	0.0
CNK	99	V	300-150	39	0	0	3.4	0.1

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
CNV	99	V	300-150	139	0	0	4.2	-0.2
COO	99	V	300-150	63	0	0	3.2	0.2
CPA	99	V	300-150	2589	0	1	3.8	0.5
CRL	99	V	300-150	812	0	0	3.4	0.2
CRV	99	V	300-150	32	0	0	4.7	1.0
CSC	99	V	300-150	1024	0	1	3.0	0.4
CSN	99	V	300-150	522	0	1	4.8	0.4
CSS	99	V	300-150	22	0	0	2.4	-0.1
CTM	99	V	300-150	115	0	0	3.4	0.3
CTV	99	V	300-150	37	0	0	3.2	0.1
CWG	99	V	300-150	46	0	0	4.4	0.0
DAH	99	V	300-150	770	0	0	3.3	0.2
DAL	99	V	300-150	74509	0	0	3.3	0.1
DCM	99	V	300-150	65	0	0	3.0	0.2
DCW	99	V	300-150	33	0	0	3.3	0.9
DGX	99	V	300-150	29	0	0	3.4	0.2
DHK	99	V	300-150	3927	0	0	3.5	-0.2
DHX	99	V	300-150	288	0	0	3.7	0.9
DJT	99	V	300-150	1895	0	0	3.5	0.6
DLH	99	V	300-150	32186	1	0	3.8	0.1
DSO	99	V	300-150	83	0	0	3.0	0.2
EAL	99	V	300-150	396	0	0	3.9	0.3
EAU	99	V	300-150	79	0	0	5.0	-0.2
EDC	99	V	300-150	69	0	0	2.8	0.7
EDG	99	V	300-150	261	0	1	3.3	0.4
EDW	99	V	300-150	1468	0	0	3.3	0.4
EFF	99	V	300-150	25	0	0	3.1	-0.7
EIN	99	V	300-150	17673	0	0	3.1	0.2
EJM	99	V	300-150	1129	0	0	3.3	0.2
ELY	99	V	300-150	6138	7	0	6.8	0.2
EMO	99	V	300-150	47	0	0	3.3	0.3
ETD	99	V	300-150	15608	2	0	4.8	0.3
ETH	99	V	300-150	8379	2	0	4.9	0.2
EUK	99	V	300-150	2000	0	0	3.1	0.2
EUW	99	V	300-150	25	0	0	3.0	-0.7
EVA	99	V	300-150	1526	1	2	5.3	0.6
EVE	99	V	300-150	189	0	0	3.8	0.0
EXS	99	V	300-150	2579	0	0	3.1	0.1
EXV	99	V	300-150	216	0	0	2.7	0.3
FBU	99	V	300-150	2452	0	0	3.6	0.1
FDX	99	V	300-150	7566	0	0	3.2	0.1
FFM	99	V	300-150	45	0	0	7.1	2.4
FIN	99	V	300-150	1955	0	0	3.6	0.5

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
FJI	99	V	300-150	2606	0	0	3.4	0.6
FJO	99	V	300-150	28	0	0	2.3	-0.1
FLA	99	V	300-150	35	0	0	3.8	-0.8
FLC	99	V	300-150	38	0	0	2.4	-0.1
FPY	99	V	300-150	3838	0	0	3.0	0.2
FWI	99	V	300-150	1357	0	1	3.3	0.3
FXT	99	V	300-150	100	0	0	2.8	0.4
FYG	99	V	300-150	149	0	0	3.2	0.3
FYL	99	V	300-150	35	0	0	4.9	0.2
GAF	99	V	300-150	102	0	0	3.3	0.4
GBG	99	V	300-150	66	0	0	3.1	0.4
GCK	99	V	300-150	70	0	0	3.2	-0.3
GEC	99	V	300-150	1835	0	0	3.3	0.2
GES	99	V	300-150	111	0	0	3.9	0.2
GFA	99	V	300-150	1693	0	2	5.5	0.4
GIA	99	V	300-150	1038	0	0	3.2	0.6
GJE	99	V	300-150	96	0	0	4.1	0.1
GJI	99	V	300-150	62	0	0	3.5	0.5
GKY	99	V	300-150	40	0	0	3.7	-0.9
GLH	99	V	300-150	44	0	0	2.6	0.5
GLJ	99	V	300-150	77	0	0	2.6	0.2
GOL	99	V	300-150	51	0	0	3.9	0.2
GRP	99	V	300-150	34	0	0	2.8	0.3
GSM	99	V	300-150	35	0	0	4.2	1.2
GTI	99	V	300-150	2091	0	0	4.0	-0.1
GTR	99	V	300-150	100	0	0	3.2	0.0
HAL	99	V	300-150	1002	0	0	4.0	0.4
HFM	99	V	300-150	80	0	0	3.5	0.2
HGO	99	V	300-150	47	0	0	3.7	2.0
HKC	99	V	300-150	138	0	0	3.6	0.7
HLF	99	V	300-150	24	0	0	2.1	0.5
HRN	99	V	300-150	35	0	0	4.0	-0.3
HRT	99	V	300-150	73	0	0	3.5	0.5
HUA	99	V	300-150	36	0	0	3.8	-0.5
HVN	99	V	300-150	957	1	1	6.6	0.5
HZA	99	V	300-150	28	0	0	2.9	0.3
HZX	99	V	300-150	30	0	0	1.9	-0.4
IAM	99	V	300-150	69	0	0	3.7	-0.1
IBE	99	V	300-150	6012	0	0	3.6	0.3
ICE	99	V	300-150	8113	0	0	3.1	0.2
ICL	99	V	300-150	50	0	4	2.9	0.2
ICV	99	V	300-150	400	0	0	3.7	-0.4
IFA	99	V	300-150	321	0	0	3.0	0.0

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
IFC	99	V	300-150	30	0	0	4.9	-0.5
IGO	99	V	300-150	56	0	0	2.3	0.7
IHN	99	V	300-150	35	0	0	3.5	1.0
IJM	99	V	300-150	108	0	0	3.3	0.3
ITY	99	V	300-150	7176	0	0	3.4	0.2
JAF	99	V	300-150	639	10	0	7.1	0.1
JAL	99	V	300-150	265	2	0	5.7	0.1
JAS	99	V	300-150	130	0	0	3.5	0.7
JBU	99	V	300-150	7605	0	0	3.4	0.3
JCO	99	V	300-150	45	0	0	3.1	-0.1
JCY	99	V	300-150	36	0	0	3.0	-0.2
JEF	99	V	300-150	38	0	0	2.6	0.6
JET	99	V	300-150	72	0	0	5.2	2.0
JME	99	V	300-150	65	0	0	3.2	0.0
JNY	99	V	300-150	43	0	0	3.7	-0.1
JRE	99	V	300-150	28	0	0	6.5	1.8
JST	99	V	300-150	431	0	0	3.5	0.5
KAC	99	V	300-150	3384	0	0	3.2	0.4
KAF	99	V	300-150	52	0	0	3.8	-0.5
KAI	99	V	300-150	90	3	0	5.3	1.0
KAL	99	V	300-150	699	1	0	3.5	0.7
KAY	99	V	300-150	85	0	0	3.7	-0.1
KFE	99	V	300-150	22	0	0	3.4	1.3
KIW	99	V	300-150	153	0	0	3.4	0.6
KLM	99	V	300-150	19234	2	0	5.0	0.1
KOC	99	V	300-150	73	0	0	3.8	-0.3
KQA	99	V	300-150	417	5	0	6.7	-0.1
KRF	99	V	300-150	29	0	0	4.2	-0.2
KUG	99	V	300-150	67	0	0	2.5	0.6
LAE	99	V	300-150	126	0	0	3.3	0.4
LAN	99	V	300-150	100	7	0	5.8	-0.1
LCO	99	V	300-150	659	0	0	3.9	-0.6
LDX	99	V	300-150	119	0	0	2.8	0.3
LEA	99	V	300-150	51	0	0	3.1	0.9
LHO	99	V	300-150	39	0	0	5.1	-0.8
LMJ	99	V	300-150	25	0	0	4.1	-0.5
LNI	99	V	300-150	1654	0	0	2.8	0.5
LNK	99	V	300-150	83	0	0	3.7	1.4
LOT	99	V	300-150	4004	4	0	6.9	0.0
LOY	99	V	300-150	38	0	0	3.1	-0.7
LRQ	99	V	300-150	32	0	0	2.4	0.5
LVA	99	V	300-150	20	0	0	3.4	0.2
LWG	99	V	300-150	38	0	0	2.7	-0.4

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
LXJ	99	V	300-150	736	0	0	3.2	0.2
MAS	99	V	300-150	6824	0	0	3.9	0.8
MAU	99	V	300-150	443	0	0	4.4	1.2
MBD	99	V	300-150	38	0	0	4.4	0.0
MJF	99	V	300-150	23	0	0	2.6	0.4
MLM	99	V	300-150	39	0	0	4.3	0.2
MLT	99	V	300-150	74	0	0	2.8	-0.2
MMD	99	V	300-150	306	0	1	3.4	0.2
MMF	99	V	300-150	46	0	0	2.6	-0.4
MNB	99	V	300-150	640	0	0	3.4	0.1
MPH	99	V	300-150	726	0	0	3.7	-0.5
MSR	99	V	300-150	2641	5	0	5.8	0.1
NBT	99	V	300-150	2861	6	0	6.6	-0.1
NCR	99	V	300-150	357	0	0	3.9	0.0
NEK	99	V	300-150	35	0	0	4.5	1.0
NEW	99	V	300-150	52	0	0	2.8	0.1
NJE	99	V	300-150	667	0	0	3.4	0.6
NOS	99	V	300-150	1391	8	0	5.9	0.2
NSH	99	V	300-150	37	0	0	2.4	0.0
NUM	99	V	300-150	61	0	0	3.3	0.2
OAE	99	V	300-150	467	0	0	4.3	0.0
OBS	99	V	300-150	21	0	0	3.3	0.2
OCN	99	V	300-150	3742	0	0	3.2	0.3
OLI	99	V	300-150	37	0	0	2.6	-0.4
OMA	99	V	300-150	3327	0	1	5.3	0.5
PAC	99	V	300-150	412	0	0	3.4	0.1
PAL	99	V	300-150	1877	0	0	3.1	0.4
PEG	99	V	300-150	22	0	0	4.1	-2.4
PEX	99	V	300-150	89	0	0	3.1	0.3
PIA	99	V	300-150	472	0	0	3.6	0.4
PJZ	99	V	300-150	50	0	0	2.8	-0.2
PLF	99	V	300-150	59	0	0	3.2	-0.1
PRD	99	V	300-150	33	0	0	2.2	0.0
PVA	99	V	300-150	262	0	0	3.4	0.1
PVG	99	V	300-150	22	0	5	4.3	1.9
QAF	99	V	300-150	29	0	0	4.0	0.5
QFA	99	V	300-150	5464	1	0	5.5	0.3
QFX	99	V	300-150	78	0	0	3.2	0.1
QID	99	V	300-150	24	0	0	4.7	0.5
QQE	99	V	300-150	260	0	1	3.7	0.4
QTR	99	V	300-150	41996	0	0	3.8	0.3
RAM	99	V	300-150	632	8	0	7.1	0.5
RBA	99	V	300-150	406	0	1	6.4	1.0

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
RCH	99	V	300-150	5301	0	0	4.9	0.4
RCR	99	V	300-150	47	0	0	3.5	-0.5
RDN	99	V	300-150	65	0	0	3.2	-0.7
RHH	99	V	300-150	56	0	0	5.9	0.2
RJA	99	V	300-150	2090	6	0	7.4	0.4
RKK	99	V	300-150	29	0	0	3.7	-0.5
ROJ	99	V	300-150	23	0	0	3.2	0.8
RRR	99	V	300-150	213	0	0	5.2	0.0
RSF	99	V	300-150	37	0	0	4.1	0.7
RTA	99	V	300-150	45	0	0	3.5	-0.2
RYR	99	V	300-150	1105	0	0	3.6	0.3
RZO	99	V	300-150	232	0	3	4.2	0.4
SAM	99	V	300-150	395	0	0	3.2	-0.1
SAS	99	V	300-150	6805	0	0	3.0	0.2
SAZ	99	V	300-150	136	0	0	3.4	0.3
SCX	99	V	300-150	57	2	0	4.8	0.5
SEJ	99	V	300-150	47	0	0	6.4	1.7
SEY	99	V	300-150	96	0	0	3.8	0.5
SIA	99	V	300-150	15293	0	0	4.1	0.6
SIO	99	V	300-150	92	0	0	3.0	0.3
SJJ	99	V	300-150	29	0	0	3.8	0.5
SKV	99	V	300-150	140	0	0	3.0	0.4
SLM	99	V	300-150	147	0	1	3.4	0.3
SON	99	V	300-150	121	0	0	2.9	0.1
SPA	99	V	300-150	99	0	0	3.2	0.3
SRR	99	V	300-150	95	0	0	2.9	0.1
SUS	99	V	300-150	33	0	0	3.4	-1.5
SVA	99	V	300-150	12132	0	0	4.2	0.4
SVW	99	V	300-150	292	0	0	3.5	0.2
SWR	99	V	300-150	11944	0	1	3.7	0.3
SYB	99	V	300-150	110	0	0	3.3	-0.3
TAM	99	V	300-150	83	0	0	4.4	0.0
TAP	99	V	300-150	3194	0	1	3.8	0.2
TAR	99	V	300-150	413	0	1	3.0	0.3
TAY	99	V	300-150	664	0	0	3.8	-0.9
TBJ	99	V	300-150	20	0	0	3.8	1.8
TFF	99	V	300-150	71	0	0	3.7	0.5
TFL	99	V	300-150	1627	12	0	6.1	0.2
TGW	99	V	300-150	1379	0	1	6.1	0.4
THA	99	V	300-150	6046	0	1	4.6	0.4
THT	99	V	300-150	3456	1	0	5.3	0.3
THY	99	V	300-150	23223	2	0	4.7	0.2
TLJ	99	V	300-150	26	0	0	3.2	0.6

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
TMN	99	V	300-150	463	0	0	3.9	0.4
TOM	99	V	300-150	7408	8	0	6.8	0.2
TSC	99	V	300-150	15459	0	0	3.5	0.3
TVR	99	V	300-150	29	0	0	2.9	-1.0
TVS	99	V	300-150	24	0	0	3.5	0.3
TWY	99	V	300-150	825	0	0	3.3	0.2
UAE	99	V	300-150	39717	0	0	3.3	0.3
UAF	99	V	300-150	154	0	0	3.7	0.1
UAL	99	V	300-150	87476	2	1	4.8	0.1
UBT	99	V	300-150	3301	6	0	6.6	0.1
UGD	99	V	300-150	35	0	0	2.2	0.5
ULC	99	V	300-150	167	0	0	3.5	0.5
UNI	99	V	300-150	77	0	1	4.2	1.0
UPS	99	V	300-150	6252	0	0	3.6	-0.2
UZB	99	V	300-150	447	1	0	5.5	0.7
VCG	99	V	300-150	66	0	0	3.3	0.8
VCJ	99	V	300-150	54	0	0	3.7	0.3
VIR	99	V	300-150	23380	2	0	4.6	0.1
VJC	99	V	300-150	266	0	0	3.3	0.3
VJT	99	V	300-150	2065	0	0	3.6	0.4
VKG	99	V	300-150	89	0	1	3.5	0.4
VLZ	99	V	300-150	75	0	0	3.0	1.0
VTI	99	V	300-150	2441	0	1	3.4	0.6
VXS	99	V	300-150	74	0	0	3.0	0.1
WDY	99	V	300-150	28	0	0	2.9	-0.2
WFL	99	V	300-150	225	0	1	3.6	0.6
WGN	99	V	300-150	87	0	0	3.0	0.1
WJA	99	V	300-150	1975	3	0	6.5	0.0
WPT	99	V	300-150	22	0	5	2.4	0.1
WWI	99	V	300-150	46	0	0	4.7	1.4
XAX	99	V	300-150	1114	0	0	3.6	0.3
XEN	99	V	300-150	30	0	0	2.7	-0.3
XRO	99	V	300-150	88	0	1	4.3	0.4
YDN	99	V	300-150	58	0	0	3.1	0.0

4 EUCOS Area Monitoring Statistics

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

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

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

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

RADIOSONDE MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : GEOPOTENTIAL HEIGHT (METRES)
 LEVEL : 50 HPA
 AREA : 0 - 90N, 100W - 40E
 PERIOD : OCT 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	00	Z	50	31	20.3	-17.4
01001	12	Z	50	31	7.9	-0.3
01028	12	Z	50	31	7.8	-4.3
01028	00	Z	50	31	6.6	-3.4
01400	12	Z	50	20	73.5	73.1
01400	00	Z	50	16	77.9	76.7
01415	00	Z	50	27	15.0	-0.2
01415	12	Z	50	28	11.8	-0.4
014158	12	Z	50	0	0.0	0.0
02365	12	Z	50	22	10.4	-4.8
02365	00	Z	50	22	8.3	-0.4
02591	00	Z	50	20	11.3	5.5
02591	12	Z	50	21	7.5	-0.6
02836	00	Z	50	30	6.3	-2.4
02836	12	Z	50	33	9.9	-5.5
02963	12	Z	50	31	10.5	-8.3
02963	00	Z	50	28	7.4	-3.8
03005	12	Z	50	32	9.1	-5.3
03005	00	Z	50	30	7.8	-2.9
03238	00	Z	50	30	10.7	-0.7
03808	00	Z	50	26	6.9	3.5
03808	12	Z	50	30	7.3	-2.1
03918	12	Z	50	5	10.3	6.7
03918	00	Z	50	26	13.3	5.6
03953	00	Z	50	30	11.1	-8.0
03953	12	Z	50	31	9.7	-5.9
04018	12	Z	50	24	12.3	-6.5
04018	00	Z	50	20	6.3	-2.8
04220	12	Z	50	29	22.8	-17.7
04220	00	Z	50	30	21.9	-18.2
04270	00	Z	50	30	18.9	-11.8
04270	12	Z	50	30	19.2	-12.0
04320	00	Z	50	31	14.1	-8.0
04320	12	Z	50	30	16.8	-11.2
04339	00	Z	50	30	20.3	-15.8
04339	12	Z	50	27	16.4	-10.8
04360	12	Z	50	25	16.6	-1.0
04360	00	Z	50	25	21.4	-17.4
06011	00	Z	50	2	21.5	-18.5

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06011	12	Z	50	19	22.2	-20.3
06260	00	Z	50	31	7.6	-0.6
06260	12	Z	50	5	13.1	-0.9
06610	00	Z	50	31	7.5	3.4
06610	12	Z	50	31	8.9	2.2
07110	12	Z	50	28	33.9	-32.1
07110	00	Z	50	26	34.5	-33.3
07510	00	Z	50	28	32.4	-30.7
07510	12	Z	50	30	27.3	-25.6
07645	12	Z	50	22	18.1	-11.6
07645	00	Z	50	28	18.5	-12.6
07761	12	Z	50	30	12.9	-1.0
07761	00	Z	50	31	13.5	-0.3
08001	00	Z	50	29	10.6	1.9
08001	12	Z	50	28	7.5	2.5
08221	12	Z	50	31	8.4	4.1
08221	00	Z	50	31	9.3	5.2
08302	00	Z	50	31	7.2	-2.7
08302	12	Z	50	31	9.9	-7.7
08508	12	Z	50	30	20.9	3.7
08522	12	Z	50	31	8.4	-0.7
10035	12	Z	50	31	12.8	6.6
10035	00	Z	50	30	15.7	13.4
10393	00	Z	50	30	8.0	-0.3
10393	12	Z	50	31	10.0	-3.0
10410	00	Z	50	31	9.1	-3.2
10410	12	Z	50	31	9.2	-5.2
10739	12	Z	50	31	8.5	2.0
10739	00	Z	50	31	6.7	2.4
11035	12	Z	50	31	12.5	7.1
11035	00	Z	50	29	11.1	3.2
12982	00	Z	50	28	5.8	0.9
12982	12	Z	50	29	7.4	-2.7
16245	00	Z	50	26	8.8	5.5
16245	12	Z	50	31	6.7	1.5
16429	00	Z	50	31	6.8	4.8
16429	12	Z	50	31	4.7	0.0
16622	00	Z	50	29	12.0	9.9
16754	00	Z	50	25	8.5	6.2
17607	12	Z	50	24	8.0	-1.9
26435	12	Z	50	10	7.5	-3.6
2EERV	12	Z	50	6	12.3	-8.3
2EERV	00	Z	50	7	17.5	-16.7

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
60018	00	Z	50	31	8.4	6.1
60018	12	Z	50	29	6.4	0.6
7JUNA4	12	Z	50	5	64.7	40.9
7JUNA4	00	Z	50	4	13.2	-2.3
9ZT9MR	12	Z	50	8	22.7	-8.6
9ZT9MR	00	Z	50	6	18.7	-17.0
ATGU3F	12	Z	50	9	23.9	-21.5
ATGU3F	00	Z	50	6	23.3	-20.6
BPMWB2	12	Z	50	5	16.2	-15.8
BPMWB2	00	Z	50	5	14.8	-3.5
DBLK	12	Z	50	6	16.0	6.7
FPUW5G	12	Z	50	10	9.7	4.8
GQBZLZ	12	Z	50	3	126.2	-78.4
GQBZLZ	00	Z	50	3	34.8	-28.8
JNKN7J	12	Z	50	7	94.2	84.6
JNKN7J	00	Z	50	8	32.8	30.0
KJFF9X	12	Z	50	3	14.6	14.5
KJFF9X	00	Z	50	3	10.1	9.1
KMPLHP	12	Z	50	9	35.4	34.6
KMPLHP	00	Z	50	11	44.8	44.5
LAGZ8	12	Z	50	1	36.1	36.1
LRYQE3	12	Z	50	9	25.3	-16.2
LRYQE3	00	Z	50	9	9.2	-3.9
UXK5JT	12	Z	50	6	31.0	16.3
UXK5JT	00	Z	50	6	13.5	3.5
WDK38H	12	Z	50	7	15.0	-12.9
XKQLWQ	12	Z	50	12	56.2	53.0
YLV96W	12	Z	50	7	90.2	80.9
YLV96W	00	Z	50	6	7.8	1.8

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

RADIOSONDE MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND (M/S)
 LEVEL : 50 HPA
 AREA : 0 - 90N, 100W - 40E
 PERIOD : OCT 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	00	V	50	29	2.4	0.1	0.0
01001	12	V	50	31	3.1	0.4	0.4
01028	12	V	50	31	2.7	0.3	-0.2
01028	00	V	50	29	2.9	-0.1	0.7
01400	12	V	50	18	3.3	0.1	0.9
01400	00	V	50	10	2.7	-0.4	0.2
01415	00	V	50	26	3.8	0.8	-0.7
01415	12	V	50	28	4.4	-0.1	-0.8
014158	12	V	50	0	0.0	0.0	0.0
02365	12	V	50	22	4.1	0.3	0.5
02365	00	V	50	22	3.9	0.5	-0.4
02591	00	V	50	17	3.6	0.2	-0.2
02591	12	V	50	18	3.8	1.0	0.7
02836	00	V	50	29	2.8	0.0	-0.4
02836	12	V	50	31	2.9	-0.4	0.9
02963	12	V	50	31	3.6	0.4	0.3
02963	00	V	50	27	2.8	0.1	-0.5
03005	12	V	50	30	3.9	0.2	-0.5
03005	00	V	50	27	3.5	0.5	-0.6
03238	00	V	50	28	3.6	-0.1	0.4
03808	00	V	50	23	3.0	-0.7	0.3
03808	12	V	50	29	3.0	-0.2	-0.7
03918	12	V	50	5	3.0	-0.5	0.6
03918	00	V	50	24	3.0	-0.2	-0.1
03953	00	V	50	29	3.2	0.6	0.0
03953	12	V	50	31	3.1	-0.5	-0.1
04018	12	V	50	24	3.3	0.0	-0.2
04018	00	V	50	15	2.6	0.1	0.8
04220	12	V	50	29	3.4	0.5	0.1
04220	00	V	50	28	3.5	-0.2	-0.8
04270	00	V	50	28	5.6	-1.2	0.5
04270	12	V	50	30	3.3	-0.3	-0.2
04320	00	V	50	30	3.2	0.0	-0.4
04320	12	V	50	30	3.0	0.3	0.4
04339	00	V	50	28	2.8	-0.3	-0.1
04339	12	V	50	27	2.9	-0.5	-0.3
04360	12	V	50	25	4.6	1.0	-0.7
04360	00	V	50	23	3.7	0.7	-1.1
06011	00	V	50	2	3.5	2.9	-0.7

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06011	12	V	50	19	3.6	-1.0	-0.2
06260	00	V	50	29	3.4	0.0	0.0
06260	12	V	50	5	4.5	1.4	-2.8
06610	00	V	50	29	3.8	-0.2	-0.4
06610	12	V	50	31	3.8	0.2	0.3
07110	12	V	50	28	3.3	-0.7	-0.9
07110	00	V	50	23	3.0	-0.3	0.9
07510	00	V	50	26	3.0	-0.3	-0.1
07510	12	V	50	30	3.6	0.1	0.0
07645	12	V	50	22	3.5	0.1	0.4
07645	00	V	50	27	3.5	-0.1	-0.8
07761	12	V	50	30	3.9	0.7	-0.8
07761	00	V	50	29	4.3	-0.8	-0.7
08001	00	V	50	28	3.1	-0.5	-0.2
08001	12	V	50	28	3.9	1.6	0.0
08221	12	V	50	31	3.6	-0.2	0.1
08221	00	V	50	30	4.1	-0.2	0.0
08302	00	V	50	30	3.5	-0.5	-0.4
08302	12	V	50	31	3.1	0.1	-0.1
08508	12	V	50	30	3.6	-0.2	-0.1
08522	12	V	50	31	3.8	-0.4	1.0
10035	12	V	50	31	3.2	1.2	-0.5
10035	00	V	50	29	3.4	0.1	0.9
10393	00	V	50	28	4.5	0.7	0.5
10393	12	V	50	31	3.7	0.0	-0.6
10410	00	V	50	31	3.7	0.4	0.9
10410	12	V	50	31	3.7	1.0	-1.0
10739	12	V	50	31	3.8	0.3	0.4
10739	00	V	50	30	4.0	0.0	-0.4
11035	12	V	50	31	3.7	0.6	0.1
11035	00	V	50	26	3.4	0.6	0.3
12982	00	V	50	26	3.0	-0.2	-1.0
12982	12	V	50	29	4.0	0.2	-0.6
16245	00	V	50	24	4.0	0.0	-0.4
16245	12	V	50	31	3.2	-0.5	-0.2
16429	00	V	50	28	3.1	0.5	0.3
16429	12	V	50	31	3.8	-1.0	-0.2
16622	00	V	50	24	3.3	-0.3	-1.0
16754	00	V	50	23	3.3	0.5	-0.8
17607	12	V	50	2	4.4	-2.2	-3.8
26435	12	V	50	9	3.6	1.5	0.5
2EERVT	12	V	50	6	4.2	-0.6	-0.6
2EERVT	00	V	50	7	4.4	-0.1	-1.1

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
60018	00	V	50	30	3.5	0.3	-0.3
60018	12	V	50	29	3.5	-1.4	-0.4
7JUNA4	12	V	50	5	2.8	1.8	1.1
7JUNA4	00	V	50	4	2.6	1.2	-1.0
9ZT9MR	12	V	50	8	4.4	0.1	-0.7
9ZT9MR	00	V	50	6	2.6	0.3	1.5
ATGU3F	12	V	50	9	2.8	0.1	0.1
ATGU3F	00	V	50	6	2.6	-0.7	-0.9
BPMWB2	12	V	50	5	2.5	1.0	1.3
BPMWB2	00	V	50	5	4.1	-0.3	2.5
DBLK	12	V	50	6	4.0	-0.8	1.1
FPUW5G	12	V	50	10	3.5	0.0	0.7
GQBZLZ	12	V	50	3	5.7	1.1	-2.6
GQBZLZ	00	V	50	3	3.8	-1.7	1.6
JNKN7J	12	V	50	7	3.0	0.6	-1.2
JNKN7J	00	V	50	8	3.0	1.0	0.6
KJJF9X	12	V	50	3	3.8	-1.5	2.5
KJJF9X	00	V	50	3	5.1	-0.7	-3.6
KMPLHP	12	V	50	9	4.2	0.3	0.1
KMPLHP	00	V	50	11	3.8	-0.6	0.3
LAGZ8	12	V	50	1	3.5	-2.0	2.9
LRYQE3	12	V	50	9	3.1	-0.3	-1.6
LRYQE3	00	V	50	9	3.3	-0.4	0.6
UXK5JT	12	V	50	6	4.6	-0.9	1.2
UXK5JT	00	V	50	6	2.8	-0.2	-1.3
WDK38H	12	V	50	6	1.6	0.2	0.4
XKQLWQ	12	V	50	11	2.9	0.2	1.2
YLV96W	12	V	50	7	2.9	0.4	-0.8
YLV96W	00	V	50	6	1.6	0.2	0.4

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

RADIOSONDE MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : GEOPOTENTIAL HEIGHT (METRES)
 LEVEL : 100 HPA
 AREA : 0 - 90N, 100W - 40E
 PERIOD : OCT 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	00	Z	100	31	20.2	-18.2
01001	12	Z	100	31	6.7	-0.9
01028	12	Z	100	31	9.0	-6.3
01028	00	Z	100	31	7.6	-5.9
01400	12	Z	100	26	73.9	73.5
01400	00	Z	100	19	74.9	74.2
01415	00	Z	100	28	10.4	-0.6
01415	12	Z	100	29	9.4	-2.8
014158	12	Z	100	0	0.0	0.0
02365	12	Z	100	22	9.7	-5.6
02365	00	Z	100	22	6.2	-2.6
02591	00	Z	100	20	9.9	4.4
02591	12	Z	100	21	6.7	-0.5
02836	00	Z	100	30	6.3	-4.6
02836	12	Z	100	33	8.4	-6.5
02963	12	Z	100	31	8.3	-5.9
02963	00	Z	100	29	7.2	-5.2
03005	12	Z	100	33	7.8	-5.9
03005	00	Z	100	30	7.6	-4.7
03238	00	Z	100	30	7.2	-2.1
03808	00	Z	100	32	4.9	1.2
03808	12	Z	100	30	6.4	-1.9
03918	12	Z	100	5	5.4	0.7
03918	00	Z	100	26	8.2	3.1
03953	00	Z	100	30	10.1	-9.0
03953	12	Z	100	31	9.9	-7.2
04018	12	Z	100	24	7.4	-5.1
04018	00	Z	100	22	5.8	-1.1
04220	12	Z	100	31	20.6	-15.9
04220	00	Z	100	31	18.6	-15.7
04270	00	Z	100	31	17.6	-14.9
04270	12	Z	100	31	16.3	-11.5
04320	00	Z	100	31	11.4	-6.8
04320	12	Z	100	30	12.8	-8.8
04339	00	Z	100	31	17.7	-14.9
04339	12	Z	100	29	15.0	-11.7
04360	12	Z	100	26	12.3	-8.9
04360	00	Z	100	27	18.3	-16.6
06011	00	Z	100	2	18.7	-17.9

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06011	12	Z	100	27	19.9	-16.6
06260	00	Z	100	31	5.7	-2.0
06260	12	Z	100	5	12.8	-1.5
06610	00	Z	100	33	6.2	0.6
06610	12	Z	100	31	7.2	-1.5
07110	12	Z	100	29	28.8	-27.4
07110	00	Z	100	26	31.6	-30.6
07510	00	Z	100	28	25.8	-24.5
07510	12	Z	100	30	22.7	-21.7
07645	12	Z	100	24	15.1	-9.6
07645	00	Z	100	29	16.6	-14.1
07761	12	Z	100	30	9.5	-0.7
07761	00	Z	100	31	15.5	-2.1
08001	00	Z	100	31	8.8	-1.9
08001	12	Z	100	29	5.9	1.2
08221	12	Z	100	31	6.8	0.6
08221	00	Z	100	31	6.7	2.5
08302	00	Z	100	31	6.6	-4.4
08302	12	Z	100	31	9.6	-7.8
08508	12	Z	100	30	20.2	5.8
08522	12	Z	100	31	7.9	3.3
10035	12	Z	100	31	11.1	6.8
10035	00	Z	100	30	14.5	12.3
10393	00	Z	100	31	7.5	-3.3
10393	12	Z	100	31	6.3	-2.8
10410	00	Z	100	31	7.4	-3.8
10410	12	Z	100	31	8.2	-6.3
10739	12	Z	100	31	6.2	0.3
10739	00	Z	100	31	6.6	0.7
11035	12	Z	100	31	7.6	0.5
11035	00	Z	100	30	9.1	0.1
12982	00	Z	100	30	5.3	-1.0
12982	12	Z	100	29	6.5	-2.5
16245	00	Z	100	31	6.2	1.6
16245	12	Z	100	31	6.4	0.0
16429	00	Z	100	31	6.3	4.5
16429	12	Z	100	31	5.1	0.5
16622	00	Z	100	31	10.4	9.3
16754	00	Z	100	26	9.2	7.8
17607	12	Z	100	29	15.6	-3.6
26435	12	Z	100	11	5.8	-3.6
2EERVT	12	Z	100	6	11.5	-8.7
2EERVT	00	Z	100	8	13.1	-12.2

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
60018	00	Z	100	31	6.0	5.0
60018	12	Z	100	31	5.8	2.4
7JUNA4	12	Z	100	6	27.1	16.1
7JUNA4	00	Z	100	4	10.3	-4.8
9ZT9MR	12	Z	100	8	21.7	-13.2
9ZT9MR	00	Z	100	7	17.5	-16.4
ATGU3F	12	Z	100	10	21.9	-17.9
ATGU3F	00	Z	100	8	23.5	-22.4
BPMWB2	12	Z	100	6	12.4	-11.2
BPMWB2	00	Z	100	8	12.7	-0.4
DBLK	12	Z	100	6	13.3	9.2
FPUW5G	12	Z	100	14	10.1	8.2
GQBZLZ	12	Z	100	3	127.9	-79.7
GQBZLZ	00	Z	100	3	26.7	-24.7
JNKN7J	12	Z	100	8	56.8	53.2
JNKN7J	00	Z	100	8	29.9	27.8
KJJF9X	12	Z	100	4	13.6	6.1
KJJF9X	00	Z	100	3	8.6	5.4
KMPLHP	12	Z	100	10	38.6	37.8
KMPLHP	00	Z	100	11	43.5	43.2
LAGZ8	12	Z	100	1	48.0	48.0
LRYQE3	12	Z	100	9	18.3	-11.6
LRYQE3	00	Z	100	9	8.3	-5.4
UXK5JT	12	Z	100	6	7.4	2.3
UXK5JT	00	Z	100	6	8.3	-0.9
WDK38H	12	Z	100	10	14.7	-12.9
XKQLWQ	12	Z	100	12	43.6	40.6
YLV96W	12	Z	100	6	41.9	39.0
YLV96W	00	Z	100	7	5.3	-1.2

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

RADIOSONDE MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND (M/S)
 LEVEL : 100 HPA
 AREA : 0 - 90N, 100W - 40E
 PERIOD : OCT 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	00	V	100	29	2.5	0.6	-0.3
01001	12	V	100	31	2.1	-0.1	-0.4
01028	12	V	100	31	2.1	0.0	-0.2
01028	00	V	100	29	2.5	0.1	-0.8
01400	12	V	100	26	3.3	0.4	-0.1
01400	00	V	100	17	3.2	0.3	0.0
01415	00	V	100	27	3.2	0.5	0.1
01415	12	V	100	29	2.9	0.1	0.6
014158	12	V	100	0	0.0	0.0	0.0
02365	12	V	100	22	3.9	0.5	-0.1
02365	00	V	100	22	3.3	-0.4	-0.3
02591	00	V	100	19	3.3	0.1	-0.6
02591	12	V	100	21	3.2	1.0	-0.1
02836	00	V	100	29	3.0	-0.7	-0.4
02836	12	V	100	31	2.5	-0.2	-0.2
02963	12	V	100	31	3.2	0.1	-0.6
02963	00	V	100	28	3.3	0.5	-0.1
03005	12	V	100	31	2.8	0.5	-0.3
03005	00	V	100	29	2.4	0.0	0.0
03238	00	V	100	29	3.0	0.1	-0.1
03808	00	V	100	25	3.3	0.6	-0.9
03808	12	V	100	30	3.4	0.3	0.4
03918	12	V	100	5	2.8	1.1	-0.7
03918	00	V	100	24	3.6	0.3	-1.1
03953	00	V	100	29	3.2	0.4	0.3
03953	12	V	100	31	3.1	0.9	0.3
04018	12	V	100	24	2.7	0.5	0.2
04018	00	V	100	20	2.5	0.1	-0.5
04220	12	V	100	31	3.4	0.9	0.8
04220	00	V	100	30	3.3	-0.3	0.6
04270	00	V	100	30	3.3	-0.6	0.7
04270	12	V	100	31	5.3	-1.1	0.2
04320	00	V	100	30	2.3	0.0	-0.7
04320	12	V	100	30	2.5	0.3	-0.1
04339	00	V	100	30	2.5	0.0	-0.3
04339	12	V	100	29	2.5	-0.2	0.0
04360	12	V	100	26	2.8	-0.5	0.6
04360	00	V	100	25	4.2	0.0	0.8
06011	00	V	100	2	1.6	0.1	0.3

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06011	12	V	100	27	2.2	-0.5	0.2
06260	00	V	100	30	3.3	0.1	-0.9
06260	12	V	100	5	3.3	0.0	-1.4
06610	00	V	100	29	3.1	0.4	-0.5
06610	12	V	100	31	3.9	-0.2	-0.3
07110	12	V	100	29	3.3	0.4	0.2
07110	00	V	100	23	3.1	0.7	-0.3
07510	00	V	100	26	2.9	-0.2	0.1
07510	12	V	100	30	3.8	0.0	0.2
07645	12	V	100	24	3.2	0.7	0.2
07645	00	V	100	28	3.4	-0.1	0.0
07761	12	V	100	30	6.4	0.9	-0.4
07761	00	V	100	29	4.6	0.2	-0.2
08001	00	V	100	30	3.7	1.3	-0.1
08001	12	V	100	29	3.0	0.1	0.3
08221	12	V	100	31	4.4	0.1	-0.4
08221	00	V	100	30	3.0	-0.3	0.3
08302	00	V	100	30	3.5	1.2	0.4
08302	12	V	100	31	3.2	-0.2	0.0
08508	12	V	100	30	3.6	1.0	0.2
08522	12	V	100	31	3.3	-0.4	-0.3
10035	12	V	100	31	3.0	0.8	0.0
10035	00	V	100	30	2.8	0.0	-0.9
10393	00	V	100	30	3.7	0.0	-0.7
10393	12	V	100	31	3.5	0.2	-0.2
10410	00	V	100	31	3.1	0.3	0.0
10410	12	V	100	31	3.3	0.1	-0.1
10739	12	V	100	31	3.6	-0.4	-0.4
10739	00	V	100	30	3.3	0.0	-0.3
11035	12	V	100	31	5.0	0.3	1.3
11035	00	V	100	27	4.0	-0.9	1.2
12982	00	V	100	26	3.5	0.4	0.5
12982	12	V	100	29	3.8	0.4	-0.3
16245	00	V	100	28	3.9	0.7	0.7
16245	12	V	100	31	3.7	0.4	-0.4
16429	00	V	100	30	3.1	0.5	0.5
16429	12	V	100	31	4.2	-0.9	-1.1
16622	00	V	100	29	3.5	0.3	-0.5
16754	00	V	100	25	3.4	0.6	-0.2
17607	12	V	100	6	5.8	-2.2	0.3
26435	12	V	100	10	3.8	-0.8	0.3
2EERV	12	V	100	6	3.0	0.0	1.7
2EERV	00	V	100	7	3.5	-0.7	2.2

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
60018	00	V	100	30	4.2	-0.6	0.3
60018	12	V	100	31	3.8	-0.2	-0.1
7JUNA4	12	V	100	6	2.1	1.0	0.4
7JUNA4	00	V	100	4	2.0	-0.4	1.3
9ZT9MR	12	V	100	8	3.6	0.6	0.3
9ZT9MR	00	V	100	7	2.0	0.4	-1.3
ATGU3F	12	V	100	10	3.1	1.7	0.2
ATGU3F	00	V	100	8	2.3	-0.4	-0.9
BPMWB2	12	V	100	6	5.6	-2.0	1.3
BPMWB2	00	V	100	8	5.9	-1.2	0.7
DBLK	12	V	100	6	4.5	0.0	2.6
FPUW5G	12	V	100	14	3.5	-0.3	0.3
GQBZLZ	12	V	100	3	2.8	-0.9	1.0
GQBZLZ	00	V	100	3	2.0	0.4	0.0
JNKN7J	12	V	100	8	2.9	0.1	-0.1
JNKN7J	00	V	100	8	3.3	0.5	-0.4
KJJF9X	12	V	100	4	2.6	-0.9	0.0
KJJF9X	00	V	100	3	4.2	-1.2	-2.9
KMPLHP	12	V	100	10	4.1	-0.5	0.4
KMPLHP	00	V	100	11	4.0	0.6	-0.6
LAGZ8	12	V	100	1	3.8	1.1	-3.6
LRYQE3	12	V	100	9	2.3	0.1	-0.2
LRYQE3	00	V	100	9	3.3	1.1	0.3
UXK5JT	12	V	100	6	4.4	-1.6	-0.8
UXK5JT	00	V	100	6	3.4	0.7	1.5
WDK38H	12	V	100	8	1.9	-0.1	-0.4
XKQLWQ	12	V	100	12	3.5	0.4	1.3
YLV96W	12	V	100	6	4.1	2.5	-0.6
YLV96W	00	V	100	7	3.0	-1.2	-0.1

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

RADIOSONDE MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : GEOPOTENTIAL HEIGHT (METRES)
 LEVEL : 500 HPA
 AREA : 0 - 90N, 100W - 40E
 PERIOD : OCT 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	00	Z	500	31	12.8	-10.8
01001	12	Z	500	31	7.3	1.7
01028	12	Z	500	31	4.5	-2.7
01028	00	Z	500	31	4.8	-3.5
01400	12	Z	500	29	76.1	75.8
01400	00	Z	500	26	76.5	76.0
01415	00	Z	500	28	7.2	2.4
01415	12	Z	500	29	5.3	1.5
014158	12	Z	500	0	0.0	0.0
02365	12	Z	500	22	5.2	-1.8
02365	00	Z	500	22	4.2	-0.1
02591	00	Z	500	20	8.1	7.2
02591	12	Z	500	23	6.0	5.1
02836	00	Z	500	30	2.6	-0.9
02836	12	Z	500	33	3.1	-1.5
02963	12	Z	500	31	3.1	0.4
02963	00	Z	500	30	3.6	0.3
03005	12	Z	500	33	6.2	-4.2
03005	00	Z	500	30	5.1	-2.4
03238	00	Z	500	30	3.1	0.5
03808	00	Z	500	32	3.2	1.5
03808	12	Z	500	30	3.5	2.6
03918	12	Z	500	5	5.2	4.5
03918	00	Z	500	26	6.0	5.3
03953	00	Z	500	30	4.6	-3.3
03953	12	Z	500	31	4.6	-3.2
04018	12	Z	500	24	3.5	0.9
04018	00	Z	500	22	3.4	0.3
04220	12	Z	500	31	8.4	-6.7
04220	00	Z	500	31	8.0	-6.7
04270	00	Z	500	31	10.2	-9.2
04270	12	Z	500	31	9.6	-8.1
04320	00	Z	500	31	5.2	-0.7
04320	12	Z	500	30	5.4	-1.1
04339	00	Z	500	31	11.9	-10.5
04339	12	Z	500	31	9.1	-7.3
04360	12	Z	500	27	11.2	-9.3
04360	00	Z	500	27	10.8	-9.9
06011	00	Z	500	2	15.0	-13.7

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06011	12	Z	500	28	9.8	-6.9
06260	00	Z	500	31	2.8	0.0
06260	12	Z	500	5	1.0	0.0
06610	00	Z	500	33	3.5	2.7
06610	12	Z	500	32	2.8	1.5
07110	12	Z	500	29	12.2	-11.1
07110	00	Z	500	29	15.8	-14.8
07510	00	Z	500	31	5.9	-4.9
07510	12	Z	500	30	6.4	-5.0
07645	12	Z	500	32	8.8	-4.4
07645	00	Z	500	33	12.1	-7.9
07761	12	Z	500	32	5.8	1.7
07761	00	Z	500	31	5.9	1.0
08001	00	Z	500	31	3.9	2.1
08001	12	Z	500	29	3.9	2.2
08221	12	Z	500	32	4.8	2.7
08221	00	Z	500	31	4.5	2.5
08302	00	Z	500	31	4.8	-4.1
08302	12	Z	500	31	5.6	-5.0
08508	12	Z	500	30	19.0	8.0
08522	12	Z	500	31	7.6	6.9
10035	12	Z	500	31	11.6	11.0
10035	00	Z	500	30	13.3	13.0
10393	00	Z	500	31	3.3	-0.2
10393	12	Z	500	31	3.4	-1.4
10410	00	Z	500	32	3.8	-0.5
10410	12	Z	500	31	3.4	-1.2
10739	12	Z	500	31	5.3	4.3
10739	00	Z	500	31	5.5	4.8
11035	12	Z	500	32	7.8	0.3
11035	00	Z	500	33	5.1	-0.7
12982	00	Z	500	33	3.3	0.8
12982	12	Z	500	31	2.8	1.7
16245	00	Z	500	31	4.0	2.8
16245	12	Z	500	31	2.6	1.5
16429	00	Z	500	31	5.1	4.8
16429	12	Z	500	31	4.2	3.6
16622	00	Z	500	31	9.5	9.0
16754	00	Z	500	28	4.0	3.3
17607	12	Z	500	29	9.4	0.4
26435	12	Z	500	14	3.3	1.0
2EERV	12	Z	500	6	12.0	-11.0
2EERV	00	Z	500	8	13.9	-13.1

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
60018	00	Z	500	31	4.6	2.7
60018	12	Z	500	31	4.9	4.3
7JUNA4	12	Z	500	8	9.7	0.0
7JUNA4	00	Z	500	6	6.3	0.1
9ZT9MR	12	Z	500	8	15.1	-13.9
9ZT9MR	00	Z	500	8	48.9	5.0
ATGU3F	12	Z	500	10	19.2	-17.9
ATGU3F	00	Z	500	9	19.9	-18.2
BPMWB2	12	Z	500	8	6.9	-4.4
BPMWB2	00	Z	500	9	9.7	-3.1
DBLK	12	Z	500	6	17.5	15.7
FPUW5G	12	Z	500	21	10.1	7.6
GQBZLZ	12	Z	500	3	25.4	-18.5
GQBZLZ	00	Z	500	3	22.2	-22.0
JNKN7J	12	Z	500	9	39.1	38.7
JNKN7J	00	Z	500	9	36.5	35.8
KJFF9X	12	Z	500	4	6.0	2.3
KJFF9X	00	Z	500	3	5.4	-3.7
KMPLHP	12	Z	500	11	53.0	52.6
KMPLHP	00	Z	500	11	54.5	54.0
LAGZ8	12	Z	500	1	72.2	72.2
LRYQE3	12	Z	500	9	3.5	-0.6
LRYQE3	00	Z	500	11	3.6	0.0
UXK5JT	12	Z	500	6	3.0	-0.4
UXK5JT	00	Z	500	6	5.9	-3.9
WDK38H	12	Z	500	12	12.5	-10.0
XKQLWQ	12	Z	500	14	20.5	19.5
YLV96W	12	Z	500	7	6.0	-1.1
YLV96W	00	Z	500	7	4.0	1.5

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

RADIOSONDE MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND (M/S)
 LEVEL : 500 HPA
 AREA : 0 - 90N, 100W - 40E
 PERIOD : OCT 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	00	V	500	30	2.5	0.1	-0.5
01001	12	V	500	31	2.1	-0.2	0.0
01028	12	V	500	31	2.1	-0.1	-0.3
01028	00	V	500	30	2.4	-0.1	0.4
01400	12	V	500	29	2.8	-0.4	0.9
01400	00	V	500	25	2.4	0.2	0.2
01415	00	V	500	27	2.8	0.1	0.0
01415	12	V	500	29	3.4	1.3	-0.1
014158	12	V	500	0	0.0	0.0	0.0
02365	12	V	500	22	3.2	0.5	0.5
02365	00	V	500	22	2.6	0.2	0.7
02591	00	V	500	19	3.4	0.9	-0.2
02591	12	V	500	23	3.4	-0.2	0.1
02836	00	V	500	29	2.8	-0.3	0.1
02836	12	V	500	31	2.1	-0.2	0.0
02963	12	V	500	31	2.3	0.8	0.0
02963	00	V	500	29	2.8	0.1	-0.1
03005	12	V	500	31	3.3	0.2	0.1
03005	00	V	500	29	3.2	0.6	0.2
03238	00	V	500	29	2.5	0.2	0.2
03808	00	V	500	29	2.8	-0.5	-0.4
03808	12	V	500	30	3.1	0.7	0.4
03918	12	V	500	5	1.7	0.9	-0.2
03918	00	V	500	24	2.9	0.2	-0.7
03953	00	V	500	29	3.4	0.0	-0.3
03953	12	V	500	31	3.2	0.0	0.0
04018	12	V	500	24	3.1	0.4	-0.5
04018	00	V	500	22	2.8	-0.6	0.0
04220	12	V	500	31	2.4	0.4	-0.1
04220	00	V	500	30	2.7	0.7	-0.1
04270	00	V	500	30	2.9	0.6	0.0
04270	12	V	500	31	3.0	-0.4	0.6
04320	00	V	500	30	2.3	0.0	0.0
04320	12	V	500	30	2.5	0.7	-0.4
04339	00	V	500	30	2.8	-0.1	0.1
04339	12	V	500	31	2.3	0.2	-0.1
04360	12	V	500	27	3.0	0.2	-0.4
04360	00	V	500	26	2.6	-0.6	-0.1
06011	00	V	500	2	2.6	-1.5	0.9

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06011	12	V	500	28	3.3	0.1	-0.7
06260	00	V	500	30	2.7	-0.1	0.4
06260	12	V	500	5	3.3	-1.5	0.8
06610	00	V	500	30	2.8	-0.1	0.0
06610	12	V	500	31	2.8	-0.2	0.2
07110	12	V	500	29	2.7	0.6	-0.1
07110	00	V	500	26	2.1	-0.3	0.0
07510	00	V	500	28	4.0	0.6	-0.3
07510	12	V	500	30	4.0	0.3	-0.8
07645	12	V	500	30	3.2	0.4	-0.5
07645	00	V	500	29	2.3	0.4	0.6
07761	12	V	500	31	3.7	0.4	-1.0
07761	00	V	500	30	2.5	0.1	-0.1
08001	00	V	500	30	2.7	0.9	-0.3
08001	12	V	500	29	4.0	0.8	0.4
08221	12	V	500	31	4.0	0.1	0.1
08221	00	V	500	30	2.6	0.1	0.4
08302	00	V	500	30	2.8	0.1	0.3
08302	12	V	500	31	2.4	0.1	-0.7
08508	12	V	500	30	3.6	1.3	1.0
08522	12	V	500	31	2.4	0.3	-0.3
10035	12	V	500	31	3.3	-0.1	-0.5
10035	00	V	500	30	3.2	0.6	0.2
10393	00	V	500	30	3.3	0.6	-0.6
10393	12	V	500	31	2.6	0.1	-0.3
10410	00	V	500	31	2.5	0.2	0.4
10410	12	V	500	31	3.0	0.0	-0.2
10739	12	V	500	31	3.3	0.9	0.0
10739	00	V	500	30	3.0	0.6	-0.3
11035	12	V	500	31	2.9	0.1	0.4
11035	00	V	500	29	3.2	0.4	-0.1
12982	00	V	500	30	2.6	-0.8	0.3
12982	12	V	500	30	3.1	-0.5	0.2
16245	00	V	500	30	2.2	-0.3	0.4
16245	12	V	500	31	2.4	0.5	-0.2
16429	00	V	500	30	2.1	0.1	-0.3
16429	12	V	500	31	2.6	0.7	-0.6
16622	00	V	500	30	2.3	-0.4	-0.2
16754	00	V	500	28	2.3	0.6	-0.4
17607	12	V	500	18	4.9	0.0	-0.7
26435	12	V	500	14	2.3	-0.3	0.0
2EERV	12	V	500	6	4.1	-1.5	-0.5
2EERV	00	V	500	7	2.7	-1.4	0.8

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
60018	00	V	500	30	2.0	0.2	-0.1
60018	12	V	500	31	2.3	0.5	0.4
7JUNA4	12	V	500	8	2.3	-0.7	-0.4
7JUNA4	00	V	500	6	2.6	1.0	0.2
9ZT9MR	12	V	500	8	2.2	0.4	0.4
9ZT9MR	00	V	500	8	1.9	-0.2	-0.3
ATGU3F	12	V	500	10	1.9	0.4	0.0
ATGU3F	00	V	500	9	1.5	0.1	0.0
BPMWB2	12	V	500	8	1.8	-0.2	0.9
BPMWB2	00	V	500	9	1.6	0.7	-0.1
DBLK	12	V	500	6	1.9	1.3	0.5
FPUW5G	12	V	500	21	2.8	0.0	0.4
GQBZLZ	12	V	500	3	2.6	-0.6	-1.3
GQBZLZ	00	V	500	3	1.7	0.4	0.3
JNKN7J	12	V	500	9	2.2	-0.5	0.5
JNKN7J	00	V	500	9	2.2	0.4	0.4
KJJF9X	12	V	500	4	2.1	1.1	0.4
KJJF9X	00	V	500	3	2.4	0.7	1.5
KMPLHP	12	V	500	11	1.8	0.2	-0.3
KMPLHP	00	V	500	11	2.6	0.0	-0.9
LAGZ8	12	V	500	1	0.9	0.7	0.6
LRYQE3	12	V	500	9	2.9	0.5	0.1
LRYQE3	00	V	500	11	2.3	0.4	0.5
UXK5JT	12	V	500	6	3.0	1.6	-0.5
UXK5JT	00	V	500	6	1.9	1.1	-1.2
WDK38H	12	V	500	12	2.2	0.3	-0.3
XKQLWQ	12	V	500	14	4.1	-0.3	0.3
YLV96W	12	V	500	7	2.8	-0.9	1.2
YLV96W	00	V	500	7	1.9	-0.7	0.5

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

RADIOSONDE MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : GEOPOTENTIAL HEIGHT (METRES)
 LEVEL : 850 HPA
 AREA : 0 - 90N, 100W - 40E
 PERIOD : OCT 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	00	Z	850	30	9.7	-8.9
01001	12	Z	850	31	5.9	1.4
01028	12	Z	850	31	3.1	-1.1
01028	00	Z	850	31	3.1	-1.9
01400	12	Z	850	29	76.1	75.9
01400	00	Z	850	26	75.7	75.4
01415	00	Z	850	28	4.1	1.5
01415	12	Z	850	29	4.0	2.8
014158	12	Z	850	1	74.7	-74.7
02365	12	Z	850	22	2.7	0.4
02365	00	Z	850	22	3.2	2.2
02591	00	Z	850	20	6.2	5.6
02591	12	Z	850	23	6.2	5.3
02836	00	Z	850	30	2.2	0.7
02836	12	Z	850	31	1.9	0.0
02963	12	Z	850	31	2.0	1.3
02963	00	Z	850	30	2.9	2.4
03005	12	Z	850	33	4.9	-2.8
03005	00	Z	850	30	4.4	-3.1
03238	00	Z	850	30	2.4	-0.4
03808	00	Z	850	32	2.6	1.2
03808	12	Z	850	30	3.4	2.0
03918	12	Z	850	5	7.2	7.1
03918	00	Z	850	26	5.6	4.8
03953	00	Z	850	30	2.5	-1.5
03953	12	Z	850	31	4.1	-1.5
04018	12	Z	850	25	2.8	0.0
04018	00	Z	850	23	2.9	-0.9
04220	12	Z	850	31	6.5	-5.4
04220	00	Z	850	31	5.6	-5.0
04270	00	Z	850	31	8.6	-8.0
04270	12	Z	850	31	7.2	-6.3
04320	00	Z	850	31	4.5	-1.3
04320	12	Z	850	30	3.1	-0.1
04339	00	Z	850	31	9.6	-9.0
04339	12	Z	850	31	9.9	-8.1
04360	12	Z	850	27	8.6	-7.1
04360	00	Z	850	27	9.6	-8.7
06011	00	Z	850	2	5.0	-4.7

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06011	12	Z	850	30	5.6	-4.0
06260	00	Z	850	31	2.6	-1.5
06260	12	Z	850	5	1.6	-1.0
06610	00	Z	850	33	2.6	1.8
06610	12	Z	850	33	3.0	0.8
07110	12	Z	850	29	5.9	-4.5
07110	00	Z	850	30	5.9	-4.7
07510	00	Z	850	31	3.6	-1.7
07510	12	Z	850	30	2.7	0.2
07645	12	Z	850	32	7.4	-6.3
07645	00	Z	850	33	8.1	-7.3
07761	12	Z	850	32	2.3	0.5
07761	00	Z	850	31	2.6	1.7
08001	00	Z	850	31	2.5	-0.3
08001	12	Z	850	29	2.8	0.7
08221	12	Z	850	34	17.7	-1.5
08221	00	Z	850	31	3.0	0.6
08302	00	Z	850	31	8.4	-8.2
08302	12	Z	850	31	9.0	-8.8
08508	12	Z	850	30	18.0	8.0
08522	12	Z	850	31	5.0	4.1
10035	12	Z	850	31	12.4	12.1
10035	00	Z	850	30	10.8	10.6
10393	00	Z	850	31	2.2	-1.2
10393	12	Z	850	31	2.7	-0.9
10410	00	Z	850	32	3.4	-2.1
10410	12	Z	850	31	4.1	-2.0
10739	12	Z	850	31	3.8	3.3
10739	00	Z	850	31	4.1	3.5
11035	12	Z	850	32	4.3	-0.7
11035	00	Z	850	33	2.8	0.2
12982	00	Z	850	33	2.4	1.0
12982	12	Z	850	31	1.9	0.8
16245	00	Z	850	31	3.4	2.8
16245	12	Z	850	31	2.5	1.7
16429	00	Z	850	31	3.2	2.8
16429	12	Z	850	32	3.5	2.5
16622	00	Z	850	31	10.0	9.7
16754	00	Z	850	28	2.8	1.7
17607	12	Z	850	29	2.0	1.1
26435	12	Z	850	15	2.6	-0.4
2EERVT	12	Z	850	6	11.8	-11.1
2EERVT	00	Z	850	8	10.9	-10.4

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
60018	00	Z	850	31	1.9	-1.1
60018	12	Z	850	31	2.4	1.4
7JUNA4	12	Z	850	8	6.4	0.7
7JUNA4	00	Z	850	6	4.4	2.5
9ZT9MR	12	Z	850	8	10.8	-10.2
9ZT9MR	00	Z	850	9	10.7	-9.8
ATGU3F	12	Z	850	11	21.7	-19.0
ATGU3F	00	Z	850	9	21.3	-19.4
BPMWB2	12	Z	850	8	7.8	-7.1
BPMWB2	00	Z	850	9	9.5	-4.0
DBLK	12	Z	850	6	14.5	12.4
FPUW5G	12	Z	850	21	8.6	5.0
GQBZLZ	12	Z	850	3	20.6	-15.9
GQBZLZ	00	Z	850	4	25.6	-25.6
JNKN7J	12	Z	850	11	40.9	40.4
JNKN7J	00	Z	850	9	40.1	39.6
KJJF9X	12	Z	850	4	8.7	-3.8
KJJF9X	00	Z	850	3	2.8	-1.1
KMPLHP	12	Z	850	11	59.3	59.0
KMPLHP	00	Z	850	11	58.7	58.3
LAGZ8	12	Z	850	1	79.8	79.8
LRYQE3	12	Z	850	10	3.5	1.0
LRYQE3	00	Z	850	11	3.9	-0.1
UXK5JT	12	Z	850	6	3.6	-2.7
UXK5JT	00	Z	850	6	4.1	-0.8
WDK38H	12	Z	850	12	13.4	-11.0
XKQLWQ	12	Z	850	14	12.6	11.8
YLV96W	12	Z	850	7	5.8	-2.0
YLV96W	00	Z	850	7	3.7	1.0

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

RADIOSONDE MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND (M/S)
 LEVEL : 850 HPA
 AREA : 0 - 90N, 100W - 40E
 PERIOD : OCT 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	00	V	850	29	3.2	0.1	0.1
01001	12	V	850	31	3.6	0.8	0.0
01028	12	V	850	31	2.1	0.2	0.2
01028	00	V	850	30	2.8	-0.1	-0.7
01400	12	V	850	29	2.8	0.0	0.3
01400	00	V	850	25	2.6	0.2	-0.4
01415	00	V	850	27	4.4	1.0	0.7
01415	12	V	850	29	3.8	0.7	0.0
014158	12	V	850	1	17.3	-15.9	-6.7
02365	12	V	850	22	2.9	-0.3	0.4
02365	00	V	850	22	2.9	0.0	0.2
02591	00	V	850	19	2.5	0.0	0.0
02591	12	V	850	23	3.3	0.6	0.4
02836	00	V	850	29	2.8	0.2	0.5
02836	12	V	850	31	2.3	0.0	0.0
02963	12	V	850	31	2.6	0.2	-0.3
02963	00	V	850	29	3.1	-0.4	-0.6
03005	12	V	850	31	3.2	0.7	0.0
03005	00	V	850	29	2.3	0.1	-0.2
03238	00	V	850	29	2.0	0.4	-0.4
03808	00	V	850	29	3.1	0.9	0.2
03808	12	V	850	30	3.0	-0.4	-0.7
03918	12	V	850	5	1.1	0.4	-0.1
03918	00	V	850	24	3.0	-0.7	-0.4
03953	00	V	850	29	2.5	0.3	0.3
03953	12	V	850	31	3.0	0.0	-0.2
04018	12	V	850	24	3.0	0.3	-0.3
04018	00	V	850	23	3.3	-0.2	0.8
04220	12	V	850	31	3.3	0.2	-0.3
04220	00	V	850	30	3.1	-0.2	-0.5
04270	00	V	850	30	2.7	0.0	-0.2
04270	12	V	850	31	3.2	0.7	0.2
04320	00	V	850	30	3.5	-0.7	0.1
04320	12	V	850	30	2.4	-0.4	0.1
04339	00	V	850	30	4.9	0.4	1.4
04339	12	V	850	31	3.4	0.2	0.0
04360	12	V	850	27	7.8	2.9	0.2
04360	00	V	850	26	4.9	2.2	-0.6
06011	00	V	850	2	2.3	-1.2	-1.0

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06011	12	V	850	29	2.7	-0.1	-0.6
06260	00	V	850	30	3.2	0.3	-0.9
06260	12	V	850	5	3.0	-1.0	-1.5
06610	00	V	850	30	3.3	0.9	0.3
06610	12	V	850	31	3.3	1.1	0.6
07110	12	V	850	29	3.3	0.0	-0.5
07110	00	V	850	27	2.9	-0.4	-0.5
07510	00	V	850	28	3.8	0.8	0.5
07510	12	V	850	30	3.6	-0.2	-0.1
07645	12	V	850	30	3.7	0.0	-0.2
07645	00	V	850	29	3.2	-1.2	0.9
07761	12	V	850	31	2.7	-0.5	0.3
07761	00	V	850	30	2.2	-0.5	-0.5
08001	00	V	850	30	2.7	0.9	-0.1
08001	12	V	850	29	2.8	-0.1	0.2
08221	12	V	850	31	4.7	0.4	-0.8
08221	00	V	850	30	3.3	-0.6	-0.1
08302	00	V	850	30	3.1	0.0	0.4
08302	12	V	850	31	2.5	0.3	-0.1
08508	12	V	850	30	2.8	0.2	-0.5
08522	12	V	850	31	3.1	0.3	0.5
10035	12	V	850	31	2.8	0.4	-0.5
10035	00	V	850	30	3.3	0.0	-0.8
10393	00	V	850	30	2.2	-0.5	-0.1
10393	12	V	850	31	2.7	0.1	-0.3
10410	00	V	850	31	2.8	0.1	0.0
10410	12	V	850	31	2.7	-0.1	-0.1
10739	12	V	850	31	3.8	0.8	-0.2
10739	00	V	850	30	4.4	0.6	0.2
11035	12	V	850	31	4.5	0.2	0.3
11035	00	V	850	29	3.0	0.5	-0.9
12982	00	V	850	30	3.0	-0.2	-0.1
12982	12	V	850	30	2.6	0.3	-0.2
16245	00	V	850	30	3.1	-0.2	-0.2
16245	12	V	850	31	2.7	0.0	0.0
16429	00	V	850	30	2.3	-0.2	0.2
16429	12	V	850	31	2.6	-0.3	0.2
16622	00	V	850	30	2.6	0.4	-0.5
16754	00	V	850	28	2.3	-0.4	0.0
17607	12	V	850	29	2.7	0.7	-0.2
26435	12	V	850	15	3.0	0.4	0.1
2EERV	12	V	850	6	2.1	0.4	-0.2
2EERV	00	V	850	7	1.3	0.0	0.0

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
60018	00	V	850	30	2.8	0.5	-0.1
60018	12	V	850	31	3.8	0.3	0.3
7JUNA4	12	V	850	8	2.4	0.4	0.5
7JUNA4	00	V	850	6	3.0	-0.4	0.4
9ZT9MR	12	V	850	8	3.5	-0.8	0.1
9ZT9MR	00	V	850	9	3.3	-1.1	-1.2
ATGU3F	12	V	850	11	2.4	0.0	-0.1
ATGU3F	00	V	850	9	3.5	-0.6	-0.4
BPMWB2	12	V	850	8	2.0	0.0	0.2
BPMWB2	00	V	850	9	2.4	-0.4	0.7
DBLK	12	V	850	6	3.5	1.1	-0.2
FPUW5G	12	V	850	21	3.4	0.6	-0.5
GQBZLZ	12	V	850	3	7.0	3.3	1.6
GQBZLZ	00	V	850	4	2.3	0.9	1.2
JNKN7J	12	V	850	11	2.2	0.0	0.4
JNKN7J	00	V	850	9	2.4	0.2	0.2
KJJF9X	12	V	850	4	3.4	1.7	1.3
KJJF9X	00	V	850	3	1.5	-0.2	0.4
KMPLHP	12	V	850	11	2.6	-0.8	0.7
KMPLHP	00	V	850	11	2.3	0.1	0.6
LAGZ8	12	V	850	1	1.9	0.5	1.8
LRYQE3	12	V	850	10	5.4	2.3	1.8
LRYQE3	00	V	850	11	2.6	-0.1	0.3
UXK5JT	12	V	850	6	1.9	0.3	0.5
UXK5JT	00	V	850	6	1.7	0.7	0.5
WDK38H	12	V	850	12	2.6	-0.1	0.4
XKQLWQ	12	V	850	14	2.8	0.0	0.8
YLV96W	12	V	850	7	2.1	0.7	0.8
YLV96W	00	V	850	7	2.3	-0.4	-1.1

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

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : SURFACE PRESSURE (HPA)
 AREA : 10N - 90N, 70W - 40E
 PERIOD : OCT 2023
 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	1474	0	0.4	-0.3	0.5
1300001	99	P	SUR	11	-23	620	0	0.4	0.2	0.4
1300008	99	P	SUR	15	-38	620	0	0.3	0.1	0.4
1300130	99	P	SUR	28	-16	743	0	0.3	0.4	0.5
1300131	99	P	SUR	28	-17	743	0	0.3	0.2	0.4
1301608	99	P	SUR	35	-58	740	23	2.0	-0.5	2.1
1301619	99	P	SUR	37	-29	739	0	0.3	-0.3	0.4
1301622	99	P	SUR	10	-38	740	0	0.4	-0.1	0.4
1301629	99	P	SUR	21	-45	740	0	0.3	0.0	0.3
1301700	99	P	SUR	22	-59	743	0	0.4	-0.2	0.5
1301706	99	P	SUR	19	-66	744	0	0.4	-0.2	0.4
1301712	99	P	SUR	20	-65	744	0	0.8	0.0	0.8
1301713	99	P	SUR	19	-68	742	0	0.4	-0.1	0.4
1301714	99	P	SUR	25	-58	744	0	0.4	0.0	0.4
1301718	99	P	SUR	29	-48	744	0	0.4	0.0	0.4
1301719	99	P	SUR	27	-61	743	0	0.5	0.6	0.8
1301723	99	P	SUR	18	-40	743	0	0.3	0.8	0.8
1301725	99	P	SUR	24	-32	743	0	0.3	0.1	0.3
1301726	99	P	SUR	22	-38	743	0	0.3	0.0	0.3
1301731	99	P	SUR	24	-39	740	0	0.3	0.2	0.3
1301735	99	P	SUR	31	-43	744	0	0.4	-1.0	1.1
1301736	99	P	SUR	26	-42	743	0	0.3	0.2	0.4
1301737	99	P	SUR	27	-64	743	0	0.5	-0.1	0.5
1301767	99	P	SUR	32	-18	743	0	0.3	-0.4	0.5
1301769	99	P	SUR	30	-17	742	0	0.3	1.3	1.3
1301770	99	P	SUR	31	-17	742	0	0.3	0.2	0.3
1301771	99	P	SUR	32	-16	734	0	0.3	0.1	0.3
1301773	99	P	SUR	39	-14	741	0	0.3	0.1	0.3
1301774	99	P	SUR	35	-54	740	0	0.4	0.0	0.5
1301777	99	P	SUR	42	-31	743	0	0.4	0.0	0.4
1301778	99	P	SUR	32	-22	742	0	0.4	0.0	0.4
1301779	99	P	SUR	23	-51	742	0	0.3	0.1	0.3
1301783	99	P	SUR	19	-55	743	0	0.4	0.4	0.5
1301792	99	P	SUR	17	-42	709	0	0.3	-0.5	0.6
1301793	99	P	SUR	57	-18	719	0	0.5	0.0	0.5
1301794	99	P	SUR	43	-17	711	0	0.4	0.1	0.5

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
1301795	99	P	SUR	13	-33	733	0	0.3	0.0	0.3
1301796	99	P	SUR	16	-37	712	0	0.3	0.2	0.4
1301797	99	P	SUR	18	-39	725	0	0.3	0.2	0.4
1301798	99	P	SUR	32	-23	738	0	0.4	0.2	0.4
1301799	99	P	SUR	30	-30	734	0	0.3	0.2	0.4
1501638	99	P	SUR	13	-20	741	0	0.4	0.0	0.4
1701715	99	P	SUR	13	-46	690	0	0.4	-0.3	0.5
1701718	99	P	SUR	10	-41	697	301	1.4	-0.1	1.4
1801556	99	P	SUR	17	-67	2021	0	0.4	0.0	0.4
1801560	99	P	SUR	17	-64	2215	0	0.8	0.1	0.8
1801671	99	P	SUR	50	-49	433	0	0.4	0.0	0.4
1801678	99	P	SUR	47	-45	291	0	0.5	0.3	0.6
1801681	99	P	SUR	35	14	729	0	0.2	-0.1	0.3
1801735	99	P	SUR	47	-5	742	0	0.4	0.2	0.4
1801768	99	P	SUR	88	-1	742	0	0.4	0.1	0.4
2801966	99	P	SUR	35	14	731	0	0.2	0.1	0.3
2801981	99	P	SUR	64	-22	449	0	0.6	-6.0	6.0
2801988	99	P	SUR	46	-1	101	0	0.2	-0.6	0.7
2802061	99	P	SUR	83	30	742	70	1.8	0.0	1.8
2802074	99	P	SUR	55	-57	716	0	0.4	-0.2	0.5
2802075	99	P	SUR	49	-52	743	0	0.4	-0.2	0.4
2802076	99	P	SUR	60	-37	153	0	0.3	-0.3	0.4
2802077	99	P	SUR	59	-36	154	0	0.3	0.3	0.5
3801550	99	P	SUR	78	-12	743	0	0.5	-0.4	0.6
3801569	99	P	SUR	55	-52	536	0	0.4	-0.1	0.4
3801576	99	P	SUR	36	13	736	0	0.3	-0.4	0.5
3801586	99	P	SUR	76	22	436	0	0.8	0.3	0.9
3801596	99	P	SUR	33	-48	739	0	0.5	-0.1	0.5
4100040	99	P	SUR	15	-53	4323	0	0.4	-0.6	0.7
4100043	99	P	SUR	21	-65	4328	0	0.4	-0.6	0.7
4100044	99	P	SUR	22	-59	4329	0	0.4	-0.6	0.7
4100046	99	P	SUR	24	-68	4337	0	0.4	-0.1	0.4
4100049	99	P	SUR	28	-63	4336	0	0.5	-0.6	0.7
4100052	99	P	SUR	18	-65	4230	0	0.4	-1.2	1.3
4100053	99	P	SUR	18	-66	4367	0	0.4	-0.8	0.9
4100056	99	P	SUR	18	-65	428	0	0.4	-1.1	1.2
4100139	99	P	SUR	20	-38	742	0	0.3	0.2	0.3
4100300	99	P	SUR	16	-57	697	0	0.4	0.0	0.4
4101618	99	P	SUR	32	-53	606	0	0.4	0.0	0.4
4101656	99	P	SUR	48	-28	490	0	0.9	0.4	1.0
4101663	99	P	SUR	33	-37	683	0	0.3	-0.2	0.4
4101665	99	P	SUR	69	-1	744	0	0.4	-0.4	0.6
4101696	99	P	SUR	28	-37	700	0	0.4	-0.1	0.4

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
4101717	99	P	SUR	16	-62	611	0	0.5	-1.3	1.4
4101719	99	P	SUR	20	-34	739	0	0.3	-0.1	0.3
4101725	99	P	SUR	18	-63	694	0	0.5	-0.1	0.5
4101727	99	P	SUR	25	-41	739	0	0.3	0.0	0.3
4101728	99	P	SUR	29	-43	740	0	0.3	0.2	0.4
4101729	99	P	SUR	30	-56	741	0	1.0	0.0	1.0
4101730	99	P	SUR	14	-19	740	0	0.4	0.4	0.6
4101743	99	P	SUR	39	-21	740	0	0.4	-0.1	0.4
4101753	99	P	SUR	34	-49	739	0	0.7	0.2	0.7
4101755	99	P	SUR	37	-49	740	0	0.5	0.0	0.5
4101756	99	P	SUR	12	-62	648	0	0.4	-0.9	1.0
4101842	99	P	SUR	69	16	743	1	1.3	-0.5	1.4
4101843	99	P	SUR	76	12	744	0	0.3	-0.2	0.4
4101845	99	P	SUR	71	6	743	0	0.3	0.0	0.3
4101851	99	P	SUR	29	-56	743	0	0.5	-0.6	0.8
4102547	99	P	SUR	27	-65	738	0	0.5	0.2	0.6
4102552	99	P	SUR	17	-66	741	0	0.4	-0.1	0.5
4102557	99	P	SUR	16	-63	741	0	0.5	-0.1	0.5
4102559	99	P	SUR	44	-63	156	0	0.3	-0.1	0.4
4102561	99	P	SUR	15	-65	741	0	0.4	-0.2	0.4
41040	99	P	SUR	15	-53	731	0	0.4	-0.6	0.7
41043	99	P	SUR	21	-65	731	0	0.4	-0.6	0.7
41044	99	P	SUR	22	-59	731	0	0.4	-0.6	0.8
41046	99	P	SUR	24	-68	731	0	0.4	-0.1	0.5
41049	99	P	SUR	28	-63	731	0	0.5	-0.6	0.8
41052	99	P	SUR	18	-65	711	0	0.4	-1.2	1.2
41053	99	P	SUR	19	-66	744	0	0.4	-0.8	0.9
41056	99	P	SUR	18	-66	429	0	0.5	-1.1	1.2
4200059	99	P	SUR	15	-67	4337	0	0.4	-0.6	0.7
4200060	99	P	SUR	16	-63	4335	0	0.5	-0.6	0.8
4200085	99	P	SUR	18	-67	3654	0	0.4	-0.9	1.0
42059	99	P	SUR	15	-68	731	0	0.4	-0.6	0.7
42060	99	P	SUR	16	-63	731	0	0.5	-0.6	0.8
42085	99	P	SUR	18	-67	732	0	0.4	-0.9	1.0
4400005	99	P	SUR	43	-69	4333	0	0.4	-0.3	0.5
4400008	99	P	SUR	40	-69	4336	0	0.5	-0.7	0.8
4400011	99	P	SUR	41	-67	4329	0	0.5	-0.6	0.7
4400027	99	P	SUR	44	-67	1893	0	0.4	-0.6	0.7
4400033	99	P	SUR	44	-69	727	0	0.4	-1.0	1.0
4400034	99	P	SUR	44	-68	714	0	0.4	-0.4	0.6
4400037	99	P	SUR	43	-68	723	0	0.5	0.3	0.6
4400150	99	P	SUR	43	-64	729	0	0.5	0.0	0.5
4400488	99	P	SUR	45	-61	578	0	0.5	0.1	0.5

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
4400489	99	P	SUR	45	-61	571	0	0.5	0.1	0.5
44005	99	P	SUR	43	-69	731	0	0.4	-0.3	0.5
44008	99	P	SUR	41	-69	731	0	0.5	-0.7	0.8
44011	99	P	SUR	41	-67	731	0	0.5	-0.6	0.7
4401581	99	P	SUR	35	-64	740	0	0.5	0.0	0.5
4401582	99	P	SUR	27	-44	740	1	2.1	0.0	2.1
4401584	99	P	SUR	31	-48	740	0	0.4	-0.1	0.4
4401585	99	P	SUR	27	-60	737	1	0.7	-0.1	0.7
4401587	99	P	SUR	80	26	739	0	0.8	0.2	0.9
4401588	99	P	SUR	69	15	740	0	0.3	-0.2	0.4
4401864	99	P	SUR	29	-59	720	0	0.7	-0.2	0.8
4402603	99	P	SUR	68	12	743	0	0.4	-0.8	0.9
4402606	99	P	SUR	67	11	316	0	0.4	0.0	0.4
4402609	99	P	SUR	58	-55	130	0	0.9	10.9	10.9
4402613	99	P	SUR	37	-14	742	0	0.4	-0.4	0.6
4402618	99	P	SUR	31	-63	743	0	0.6	0.3	0.7
4402656	99	P	SUR	36	-34	742	0	0.4	0.1	0.4
4402660	99	P	SUR	23	-52	743	0	0.3	0.3	0.5
4402663	99	P	SUR	34	-11	738	0	0.4	-0.1	0.5
4402670	99	P	SUR	22	-57	744	0	0.4	-0.2	0.5
4402672	99	P	SUR	21	-55	744	0	0.4	-0.1	0.4
4402674	99	P	SUR	28	-68	743	0	0.4	0.2	0.5
4402675	99	P	SUR	23	-43	744	0	0.3	0.0	0.3
4402676	99	P	SUR	33	-34	743	0	0.4	0.1	0.4
44027	99	P	SUR	44	-67	324	0	0.5	-0.6	0.7
4402721	99	P	SUR	36	-10	743	0	0.4	0.2	0.4
4402726	99	P	SUR	52	-36	744	0	0.5	-0.1	0.5
4402729	99	P	SUR	47	-47	742	0	0.4	0.1	0.4
4402730	99	P	SUR	43	-40	736	0	0.5	-0.2	0.5
4402731	99	P	SUR	53	-51	738	1	0.4	0.1	0.4
4402732	99	P	SUR	45	-20	744	0	0.5	0.0	0.5
4402733	99	P	SUR	45	-53	739	0	0.5	0.2	0.5
4402735	99	P	SUR	47	-36	742	0	0.5	-0.2	0.5
4402736	99	P	SUR	45	-19	742	0	0.4	-0.1	0.4
4402737	99	P	SUR	52	-42	743	0	0.5	-0.1	0.5
4402738	99	P	SUR	51	-54	740	0	0.4	-0.9	1.0
4402739	99	P	SUR	48	-45	743	0	0.4	0.0	0.4
4402740	99	P	SUR	50	-60	743	0	0.4	0.4	0.5
4402741	99	P	SUR	49	-38	743	0	0.6	-0.1	0.6
4402742	99	P	SUR	47	-20	739	0	0.4	-0.2	0.5
4402743	99	P	SUR	44	-32	739	0	0.4	-0.7	0.8
4402744	99	P	SUR	40	-61	742	0	0.4	0.2	0.5
4402746	99	P	SUR	46	-8	742	0	0.4	-0.1	0.4

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
4402747	99	P	SUR	45	-33	739	0	0.4	-0.1	0.4
4402749	99	P	SUR	53	-40	739	0	0.4	-0.1	0.4
4402750	99	P	SUR	55	-37	743	0	0.4	-0.4	0.6
4402878	99	P	SUR	37	-61	683	0	0.4	0.4	0.6
4402879	99	P	SUR	38	-57	710	0	0.4	0.4	0.6
4402880	99	P	SUR	37	-35	487	0	0.4	0.3	0.5
4402881	99	P	SUR	48	-24	323	0	0.5	0.0	0.5
4402882	99	P	SUR	29	-57	726	0	0.5	0.5	0.7
4402884	99	P	SUR	27	-70	729	0	0.4	0.3	0.5
4402885	99	P	SUR	37	-47	716	0	0.5	0.3	0.6
44033	99	P	SUR	44	-69	728	0	0.4	-0.9	1.0
44034	99	P	SUR	44	-68	715	0	0.4	-0.4	0.6
4403558	99	P	SUR	46	-7	743	0	0.4	-0.1	0.4
4403568	99	P	SUR	37	-33	741	0	0.5	0.1	0.5
4403569	99	P	SUR	44	-23	742	0	0.4	-0.3	0.5
44037	99	P	SUR	44	-68	724	0	0.5	0.3	0.6
44078	99	P	SUR	60	-40	706	0	0.5	-0.9	1.1
44150	99	P	SUR	43	-64	727	0	0.6	0.0	0.6
44258	99	P	SUR	45	-63	740	0	0.4	0.1	0.5
44488	99	P	SUR	45	-61	742	0	0.5	0.1	0.5
44489	99	P	SUR	46	-61	735	0	0.5	0.1	0.5
4601782	99	P	SUR	28	-22	741	0	0.3	0.4	0.5
4601818	99	P	SUR	82	0	743	0	0.4	0.1	0.5
4701554	99	P	SUR	88	-1	705	0	0.4	-0.3	0.5
4701555	99	P	SUR	88	22	704	0	0.4	-0.3	0.5
4701558	99	P	SUR	79	-18	37	0	0.5	-4.6	4.6
4701560	99	P	SUR	88	6	704	0	0.4	-0.2	0.4
4701561	99	P	SUR	88	22	704	0	0.3	0.0	0.3
4801663	99	P	SUR	83	-56	548	0	0.5	-0.2	0.5
4801723	99	P	SUR	77	22	81	20	4.4	-1.9	4.8
4801763	99	P	SUR	83	-27	722	0	0.6	-0.4	0.7
4801764	99	P	SUR	83	-69	743	0	0.4	-0.1	0.4
4801771	99	P	SUR	74	-65	743	165	5.1	-2.1	5.5
4802506	99	P	SUR	54	-15	743	0	0.4	0.0	0.4
4802592	99	P	SUR	87	-39	704	0	0.5	-0.2	0.5
4802602	99	P	SUR	59	-27	704	0	0.4	-0.1	0.4
4802603	99	P	SUR	85	17	703	0	0.4	-0.2	0.5
4802664	99	P	SUR	84	-55	23	0	0.3	-0.6	0.7
4803978	99	P	SUR	79	-8	743	0	0.5	-0.3	0.6
4804002	99	P	SUR	35	14	736	0	0.2	-0.4	0.5
5801958	99	P	SUR	21	-64	2360	0	0.7	0.3	0.7
5801959	99	P	SUR	22	-55	2946	0	0.5	0.2	0.5
5801972	99	P	SUR	55	-53	530	0	0.4	-0.3	0.5

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
5801976	99	P	SUR	50	-50	441	0	0.5	-0.1	0.5
5801987	99	P	SUR	70	-22	505	0	2.2	-0.8	2.3
5802034	99	P	SUR	47	-8	739	0	0.4	-0.1	0.4
5802061	99	P	SUR	88	7	697	0	0.4	0.1	0.4
5802068	99	P	SUR	49	-52	743	0	0.4	0.3	0.5
5802071	99	P	SUR	71	-13	739	0	0.3	0.2	0.4
5802077	99	P	SUR	34	-60	857	0	0.7	-0.2	0.8
6100001	99	P	SUR	43	8	668	0	0.4	-0.1	0.5
6100002	99	P	SUR	42	5	731	0	0.4	0.0	0.4
6100196	99	P	SUR	42	4	743	0	0.4	0.2	0.4
6100197	99	P	SUR	40	4	743	0	0.3	0.5	0.6
6100198	99	P	SUR	37	-2	740	0	0.4	0.5	0.7
6100280	99	P	SUR	41	1	743	0	0.4	0.3	0.5
6100281	99	P	SUR	40	0	743	0	0.5	0.3	0.6
6100417	99	P	SUR	38	0	391	0	0.4	0.6	0.7
6100430	99	P	SUR	40	2	740	0	0.3	0.3	0.5
6101007	99	P	SUR	36	25	78	0	0.5	-0.4	0.6
6101009	99	P	SUR	35	25	119	0	0.4	-0.5	0.7
6101031	99	P	SUR	42	8	744	0	0.3	0.0	0.3
6102810	99	P	SUR	41	3	743	0	0.3	-0.1	0.3
6102812	99	P	SUR	39	2	743	0	0.3	-0.2	0.4
6200001	99	P	SUR	45	-5	744	0	0.4	-0.1	0.4
6200024	99	P	SUR	44	-3	564	70	2.4	-0.3	2.5
6200025	99	P	SUR	44	-6	109	0	0.6	0.2	0.6
6200029	99	P	SUR	49	-12	736	0	0.5	-0.3	0.6
6200050	99	P	SUR	50	-4	744	0	0.4	-0.1	0.4
6200081	99	P	SUR	51	-13	744	0	0.4	-0.1	0.4
6200082	99	P	SUR	44	-8	742	0	0.6	0.2	0.6
6200083	99	P	SUR	43	-9	743	0	0.5	0.1	0.5
6200084	99	P	SUR	42	-9	743	0	0.5	0.5	0.6
6200085	99	P	SUR	36	-7	743	0	0.5	0.3	0.6
6200086	99	P	SUR	55	7	190	0	0.4	-0.5	0.6
6200087	99	P	SUR	55	7	344	0	0.6	-0.7	0.9
6200091	99	P	SUR	53	-5	743	0	0.4	-0.3	0.5
6200092	99	P	SUR	51	-11	743	0	0.4	-0.1	0.4
6200093	99	P	SUR	55	-10	743	0	0.3	-0.3	0.4
6200094	99	P	SUR	52	-7	743	0	0.3	-0.1	0.4
6200095	99	P	SUR	53	-16	743	0	0.4	-0.3	0.5
6200103	99	P	SUR	50	-3	743	0	0.4	-0.4	0.5
6200163	99	P	SUR	47	-8	741	0	0.4	-0.2	0.4
6200191	99	P	SUR	41	-10	410	0	0.6	-0.6	0.8
6200192	99	P	SUR	40	-10	411	0	0.7	-0.1	0.7
6200199	99	P	SUR	40	-9	410	0	0.5	-0.5	0.7

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
6200200	99	P	SUR	36	-8	220	0	1.0	-0.6	1.2
6201030	99	P	SUR	44	-4	283	0	0.8	0.1	0.8
6201065	99	P	SUR	54	7	730	0	0.4	0.9	1.0
6201066	99	P	SUR	55	7	698	0	0.4	0.1	0.5
6201081	99	P	SUR	38	-9	410	0	0.4	-0.5	0.6
6202597	99	P	SUR	46	-35	741	0	0.6	-0.1	0.6
6202598	99	P	SUR	42	-29	742	0	0.4	-0.1	0.4
6202627	99	P	SUR	67	13	355	0	2.2	-2.6	3.4
6202637	99	P	SUR	66	-10	740	0	0.3	0.0	0.3
6202639	99	P	SUR	29	-36	690	0	0.4	-0.2	0.4
6202644	99	P	SUR	41	-39	594	0	0.4	0.4	0.6
62029	99	P	SUR	49	-13	1487	0	0.5	-0.3	0.6
6203516	99	P	SUR	43	-17	734	0	0.4	-0.2	0.4
6203607	99	P	SUR	33	-26	740	0	0.5	0.1	0.5
6203612	99	P	SUR	32	-58	739	0	0.5	0.3	0.6
6203613	99	P	SUR	47	-12	739	0	0.5	0.1	0.5
6203621	99	P	SUR	28	-41	735	0	0.3	-0.1	0.3
6203624	99	P	SUR	37	-58	740	5	1.7	-0.5	1.8
6203625	99	P	SUR	31	-34	740	0	0.4	-0.3	0.5
6203632	99	P	SUR	28	-52	713	1	2.8	-0.2	2.8
6203634	99	P	SUR	30	-40	740	0	0.4	0.2	0.4
6203639	99	P	SUR	30	-28	740	0	0.4	-0.2	0.4
6203640	99	P	SUR	28	-68	738	0	0.6	-0.2	0.6
6203651	99	P	SUR	44	-20	740	0	0.4	0.1	0.4
6203656	99	P	SUR	88	6	740	0	0.4	0.1	0.4
6203660	99	P	SUR	87	14	740	0	0.4	-0.2	0.5
6203669	99	P	SUR	81	16	739	1	1.3	-0.5	1.4
6203730	99	P	SUR	27	-70	743	0	0.4	0.2	0.4
6203737	99	P	SUR	23	-59	555	0	0.4	0.4	0.5
6203741	99	P	SUR	60	-6	738	0	0.3	0.0	0.3
6203744	99	P	SUR	72	16	716	0	0.3	0.2	0.4
6203753	99	P	SUR	56	-51	743	0	0.4	-0.4	0.5
6203755	99	P	SUR	30	-19	744	0	0.3	-0.4	0.5
6203768	99	P	SUR	28	-28	744	0	0.3	0.2	0.3
6203771	99	P	SUR	26	-43	743	0	0.3	-0.1	0.3
6203773	99	P	SUR	34	-57	743	0	0.8	-0.6	1.0
6203824	99	P	SUR	62	-11	174	0	0.2	0.6	0.7
6203825	99	P	SUR	64	-11	739	0	0.4	0.1	0.4
6203826	99	P	SUR	63	-12	100	0	0.2	-0.3	0.3
6203827	99	P	SUR	66	12	743	0	0.4	-0.2	0.4
6203839	99	P	SUR	31	-57	744	0	0.6	-0.1	0.6
6203840	99	P	SUR	26	-49	743	0	0.3	0.2	0.4
6203842	99	P	SUR	30	-29	744	0	0.3	0.0	0.3

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
6203844	99	P	SUR	43	-25	743	0	0.4	0.0	0.4
6203845	99	P	SUR	57	-7	741	0	0.4	-0.5	0.6
6203846	99	P	SUR	31	-30	744	0	0.3	-0.2	0.4
6203848	99	P	SUR	54	-18	741	0	0.4	-0.1	0.4
6203849	99	P	SUR	25	-41	739	0	0.3	0.1	0.3
6203853	99	P	SUR	71	7	743	0	0.4	0.0	0.4
6203854	99	P	SUR	64	-38	739	0	0.5	0.2	0.6
6203855	99	P	SUR	68	12	741	0	0.4	-0.4	0.6
6203861	99	P	SUR	24	-40	742	0	0.3	0.1	0.3
6203864	99	P	SUR	68	2	739	0	0.3	0.0	0.3
6203865	99	P	SUR	61	-32	741	0	0.4	-0.2	0.4
6203866	99	P	SUR	69	15	739	0	0.3	0.0	0.3
6203888	99	P	SUR	12	-22	719	0	0.4	0.0	0.4
6204603	99	P	SUR	41	8	724	0	0.3	0.4	0.5
6204604	99	P	SUR	39	3	700	0	0.3	-0.8	0.8
6204605	99	P	SUR	41	3	715	84	1.5	12.5	12.5
6204607	99	P	SUR	38	8	562	0	1.5	-1.5	2.2
62050	99	P	SUR	50	-4	1487	0	0.4	-0.1	0.4
62081	99	P	SUR	51	-13	1487	0	0.4	-0.1	0.4
62091	99	P	SUR	53	-5	743	0	0.4	-0.3	0.5
62092	99	P	SUR	51	-11	743	0	0.4	-0.1	0.4
62093	99	P	SUR	55	-10	743	0	0.3	-0.3	0.4
62094	99	P	SUR	52	-7	743	0	0.3	-0.1	0.4
62095	99	P	SUR	53	-16	743	0	0.4	-0.3	0.5
62102	99	P	SUR	58	2	1475	0	0.8	0.3	0.8
62103	99	P	SUR	50	-3	1483	0	0.4	-0.4	0.6
62104	99	P	SUR	57	1	1469	0	0.6	0.1	0.6
62105	99	P	SUR	55	-13	1481	0	0.4	-0.3	0.5
62107	99	P	SUR	50	-6	599	0	0.4	-0.2	0.4
62112	99	P	SUR	58	0	1476	0	0.4	0.2	0.4
62113	99	P	SUR	58	0	1475	0	0.5	-0.1	0.5
62114	99	P	SUR	58	0	250	0	0.2	0.5	0.6
62115	99	P	SUR	58	-3	1470	0	0.4	-0.2	0.4
62116	99	P	SUR	58	1	1475	0	0.4	-0.1	0.5
62118	99	P	SUR	58	1	1475	0	0.5	0.5	0.7
62119	99	P	SUR	57	2	1476	0	0.5	-0.1	0.5
62120	99	P	SUR	56	2	1476	0	0.5	-0.2	0.5
62121	99	P	SUR	54	3	1476	0	0.5	0.2	0.5
62122	99	P	SUR	57	2	1458	0	0.5	-0.1	0.5
62124	99	P	SUR	54	-4	1466	0	0.4	0.0	0.4
62127	99	P	SUR	54	1	1476	0	0.4	0.6	0.7
62129	99	P	SUR	58	0	1093	0	0.5	0.0	0.5
62130	99	P	SUR	59	1	1476	0	0.4	-0.3	0.5

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
62131	99	P	SUR	54	1	1026	0	0.5	0.4	0.6
62132	99	P	SUR	56	2	1474	0	0.6	0.3	0.6
62133	99	P	SUR	57	1	1474	0	0.8	0.3	0.9
62134	99	P	SUR	58	1	1455	0	0.3	0.2	0.4
62135	99	P	SUR	54	2	1290	0	0.4	0.2	0.5
62140	99	P	SUR	57	1	1446	0	0.5	0.1	0.5
62141	99	P	SUR	56	-3	1473	0	0.6	-0.4	0.8
62143	99	P	SUR	58	2	1475	0	0.5	0.7	0.8
62144	99	P	SUR	53	2	1476	0	0.4	0.2	0.4
62145	99	P	SUR	53	3	1476	0	0.4	0.3	0.5
62146	99	P	SUR	57	2	1474	0	0.5	0.0	0.5
62148	99	P	SUR	54	2	1476	0	0.4	0.7	0.8
62149	99	P	SUR	54	1	1476	0	0.4	0.7	0.8
62151	99	P	SUR	57	2	824	0	0.4	0.1	0.4
62152	99	P	SUR	57	2	1468	0	0.5	0.3	0.6
62153	99	P	SUR	57	2	1102	0	1.2	0.8	1.4
62154	99	P	SUR	56	2	1476	0	0.5	-0.1	0.5
62155	99	P	SUR	58	1	1473	0	0.4	0.3	0.5
62157	99	P	SUR	58	0	1475	0	0.4	-0.1	0.4
62160	99	P	SUR	57	2	1476	0	0.8	0.4	0.9
62161	99	P	SUR	58	1	1475	0	0.5	-0.4	0.7
62162	99	P	SUR	57	1	1123	0	0.4	0.0	0.4
62163	99	P	SUR	48	-9	1483	0	0.4	-0.2	0.4
62164	99	P	SUR	57	1	1476	0	0.4	0.2	0.5
62165	99	P	SUR	54	1	1438	0	0.5	0.2	0.5
62168	99	P	SUR	58	1	1475	0	0.3	-0.1	0.3
62170	99	P	SUR	51	2	1483	0	0.4	-0.2	0.4
62297	99	P	SUR	59	2	1476	0	0.4	-0.1	0.4
62302	99	P	SUR	61	-2	1458	0	0.6	-0.2	0.6
62304	99	P	SUR	51	2	1483	0	0.4	-0.1	0.4
62305	99	P	SUR	50	0	1484	0	0.4	-0.3	0.5
6301001	99	P	SUR	64	5	743	0	0.4	-0.2	0.4
6301008	99	P	SUR	68	15	743	0	0.3	-0.6	0.7
6301572	99	P	SUR	51	-15	740	0	1.6	-0.3	1.6
6301575	99	P	SUR	50	-33	739	0	0.4	0.1	0.5
6301577	99	P	SUR	64	-5	742	0	0.4	-0.1	0.4
63055	99	P	SUR	61	2	1468	0	0.5	-0.1	0.5
63056	99	P	SUR	60	2	1458	0	0.5	0.2	0.6
63057	99	P	SUR	59	2	1474	0	0.4	-0.1	0.4
63058	99	P	SUR	53	2	777	0	0.4	0.0	0.4
63059	99	P	SUR	58	-1	1470	0	0.4	0.2	0.5
63101	99	P	SUR	61	1	1475	0	0.5	0.0	0.5
63102	99	P	SUR	61	1	1475	0	0.5	0.0	0.5

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
63103	99	P	SUR	61	1	799	0	0.8	0.3	0.9
63108	99	P	SUR	61	2	1468	0	0.5	-0.1	0.6
63109	99	P	SUR	60	2	1468	0	0.5	-0.5	0.7
63110	99	P	SUR	60	2	1422	0	0.6	-0.5	0.8
63111	99	P	SUR	61	2	1474	0	0.4	-0.4	0.6
63112	99	P	SUR	61	1	1453	0	0.4	-0.5	0.6
63115	99	P	SUR	62	1	1462	0	0.6	0.1	0.6
63117	99	P	SUR	61	1	1475	0	0.4	0.3	0.5
63118	99	P	SUR	58	1	1475	0	0.5	-0.4	0.7
6400045	99	P	SUR	59	-12	743	0	0.4	-0.5	0.6
6400046	99	P	SUR	61	-4	744	0	0.3	-0.4	0.5
6401583	99	P	SUR	60	-36	740	0	0.4	-0.1	0.4
6401584	99	P	SUR	63	-12	739	0	0.4	0.1	0.4
6401590	99	P	SUR	70	32	738	0	0.3	-0.3	0.5
6401592	99	P	SUR	71	7	740	0	0.3	0.1	0.3
6401759	99	P	SUR	56	-31	740	0	0.4	-0.3	0.5
6401762	99	P	SUR	70	-4	739	0	0.4	0.1	0.4
6401763	99	P	SUR	66	12	741	0	0.4	0.0	0.4
6402539	99	P	SUR	69	34	493	0	0.4	-0.3	0.5
6402551	99	P	SUR	48	-13	743	0	0.5	0.2	0.5
6402597	99	P	SUR	62	-21	741	0	0.4	-0.1	0.4
6402615	99	P	SUR	23	-63	744	0	0.5	0.2	0.5
6402616	99	P	SUR	32	-43	743	0	0.5	-0.3	0.5
6402617	99	P	SUR	31	-44	743	0	0.4	0.2	0.5
6402618	99	P	SUR	25	-49	744	0	0.3	0.2	0.4
6402619	99	P	SUR	33	-14	742	0	0.3	0.0	0.3
6402620	99	P	SUR	43	-5	84	0	3.8	4.1	5.6
6402621	99	P	SUR	32	-16	744	0	0.3	0.4	0.6
6402622	99	P	SUR	32	-17	744	0	0.3	0.1	0.3
64041	99	P	SUR	61	-3	1458	0	0.4	0.0	0.4
64045	99	P	SUR	59	-12	1480	0	0.4	-0.5	0.7
64046	99	P	SUR	61	-4	1475	0	0.3	-0.4	0.5
6600021	99	P	SUR	55	14	250	0	0.5	-1.2	1.3
6600022	99	P	SUR	54	14	233	0	0.5	-0.5	0.7
6600023	99	P	SUR	55	11	316	0	0.3	-0.4	0.5
6600024	99	P	SUR	55	13	168	0	0.5	-1.6	1.7
6801791	99	P	SUR	34	-42	743	0	0.4	0.2	0.5
6801876	99	P	SUR	71	-12	741	0	0.4	0.2	0.5
7801552	99	P	SUR	79	-2	742	0	0.5	-0.5	0.7

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

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND SPEED (M/S)
 AREA : 10N - 90N, 70W - 40E
 PERIOD : OCT 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

TIME = 99 => AVERAGE OF ALL OBSERVATIONS

GROSS ERROR LIMIT FOR VECTOR WIND = 25 M/S

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
1300001	99	SPEED	SUR	11	-23	620	0	0	1.4	0.5	1.5
1300002	99	SPEED	SUR	20	-23	617	0	0	1.0	0.2	1.0
1300008	99	SPEED	SUR	15	-38	620	0	0	0.9	-0.2	1.0
1300130	99	SPEED	SUR	28	-16	265	0	0	1.2	-0.2	1.2
1300131	99	SPEED	SUR	28	-17	714	0	0	2.1	0.8	2.2
1801556	99	SPEED	SUR	17	-67	2021	0	0	1.4	0.0	1.4
1801560	99	SPEED	SUR	17	-64	2214	0	0	1.9	0.5	2.0
4100026	99	SPEED	SUR	12	-38	299	0	0	1.3	0.1	1.3
4100040	99	SPEED	SUR	15	-53	4328	0	0	1.1	-0.1	1.1
4100043	99	SPEED	SUR	21	-65	4326	0	0	1.5	0.3	1.5
4100044	99	SPEED	SUR	22	-59	4329	0	0	1.1	-0.1	1.1
4100046	99	SPEED	SUR	24	-68	4334	0	0	1.4	0.4	1.5
4100049	99	SPEED	SUR	28	-63	4336	0	0	1.5	-0.1	1.5
4100052	99	SPEED	SUR	18	-65	4251	0	0	1.4	-0.1	1.4
4100053	99	SPEED	SUR	18	-66	4367	0	0	1.5	0.5	1.6
4100056	99	SPEED	SUR	18	-65	450	0	0	1.5	0.0	1.5
4100139	99	SPEED	SUR	20	-38	742	0	0	0.8	0.0	0.8
4100300	99	SPEED	SUR	16	-57	694	0	0	1.3	-0.5	1.4
41040	99	SPEED	SUR	15	-53	731	0	0	1.2	0.0	1.2
41043	99	SPEED	SUR	21	-65	731	0	0	1.5	0.4	1.6
41044	99	SPEED	SUR	22	-59	731	0	0	1.1	-0.1	1.1
41046	99	SPEED	SUR	24	-68	731	0	0	1.4	0.4	1.5
41049	99	SPEED	SUR	28	-63	731	0	0	1.5	0.0	1.5
41052	99	SPEED	SUR	18	-65	715	0	0	1.4	0.0	1.4
41053	99	SPEED	SUR	19	-66	744	0	0	1.6	0.2	1.6
41056	99	SPEED	SUR	18	-66	451	0	0	1.5	0.1	1.5
4200059	99	SPEED	SUR	15	-67	4334	0	0	1.2	0.1	1.2
4200060	99	SPEED	SUR	16	-63	4334	0	0	1.6	0.2	1.6
4200085	99	SPEED	SUR	18	-67	3704	0	0	1.5	0.3	1.6
42059	99	SPEED	SUR	15	-68	731	0	0	1.2	0.2	1.2
42060	99	SPEED	SUR	16	-63	731	0	0	1.7	0.3	1.7
42085	99	SPEED	SUR	18	-67	736	0	0	1.5	0.6	1.6
4400005	99	SPEED	SUR	43	-69	4332	0	0	1.2	-0.1	1.2
4400008	99	SPEED	SUR	40	-69	4335	0	0	1.3	0.0	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
4400011	99	SPEED	SUR	41	-67	4334	0	0	1.2	-0.3	1.2
4400027	99	SPEED	SUR	44	-67	4329	0	0	1.3	-0.2	1.3
4400032	99	SPEED	SUR	44	-69	716	0	0	1.4	-0.2	1.4
4400033	99	SPEED	SUR	44	-69	727	0	0	1.3	0.0	1.3
4400034	99	SPEED	SUR	44	-68	714	0	0	1.4	-0.4	1.4
4400037	99	SPEED	SUR	43	-68	724	0	0	1.2	-0.3	1.2
4400150	99	SPEED	SUR	43	-64	727	0	0	1.2	0.1	1.2
4400488	99	SPEED	SUR	45	-61	578	0	0	1.6	0.6	1.7
4400489	99	SPEED	SUR	45	-61	571	0	0	1.5	1.3	2.0
44005	99	SPEED	SUR	43	-69	731	0	0	1.3	-0.2	1.3
44008	99	SPEED	SUR	41	-69	731	0	0	1.3	0.0	1.3
44011	99	SPEED	SUR	41	-67	731	0	0	1.2	-0.2	1.2
44027	99	SPEED	SUR	44	-67	731	0	0	1.3	-0.1	1.3
44032	99	SPEED	SUR	44	-69	716	0	0	1.4	-0.1	1.4
44033	99	SPEED	SUR	44	-69	728	0	0	1.3	0.2	1.3
44034	99	SPEED	SUR	44	-68	715	0	0	1.4	-0.3	1.4
44037	99	SPEED	SUR	44	-68	725	0	0	1.2	-0.2	1.3
44078	99	SPEED	SUR	60	-40	706	0	0	1.9	-1.3	2.3
44150	99	SPEED	SUR	43	-64	725	0	0	1.2	0.1	1.2
44258	99	SPEED	SUR	45	-63	740	0	0	1.4	0.3	1.4
44488	99	SPEED	SUR	45	-61	742	0	0	1.5	1.0	1.9
44489	99	SPEED	SUR	46	-61	735	0	0	1.5	1.5	2.1
4803914	99	SPEED	SUR	23	-68	892	0	0	1.4	0.3	1.5
5801958	99	SPEED	SUR	21	-64	2360	3	0	1.7	-0.2	1.7
5801959	99	SPEED	SUR	22	-55	2946	0	0	1.4	0.0	1.4
6100001	99	SPEED	SUR	43	8	736	0	0	1.3	-0.1	1.3
6100002	99	SPEED	SUR	42	5	731	0	0	1.3	-0.2	1.4
6100196	99	SPEED	SUR	42	4	734	0	0	1.5	-0.4	1.5
6100197	99	SPEED	SUR	40	4	715	0	0	1.1	-0.4	1.2
6100198	99	SPEED	SUR	37	-2	731	0	0	1.5	-1.5	2.1
6100281	99	SPEED	SUR	40	0	716	0	0	1.9	0.5	2.0
6100417	99	SPEED	SUR	38	0	385	0	0	1.5	-0.5	1.6
6100430	99	SPEED	SUR	40	2	731	0	0	1.2	0.1	1.2
6101007	99	SPEED	SUR	36	25	78	0	0	1.3	-0.6	1.5
6101008	99	SPEED	SUR	37	22	124	0	0	2.2	-4.3	4.9
6101009	99	SPEED	SUR	35	25	119	0	0	1.4	1.0	1.7
6101031	99	SPEED	SUR	42	8	744	0	0	1.0	0.0	1.0
6200001	99	SPEED	SUR	45	-5	742	0	0	1.3	-0.6	1.4
6200024	99	SPEED	SUR	44	-3	712	0	0	1.7	-0.4	1.8
6200025	99	SPEED	SUR	44	-6	106	0	0	1.2	-0.7	1.4
6200029	99	SPEED	SUR	49	-12	735	0	0	1.4	0.8	1.6

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF

ELEMENT MONITORED : WIND SPEED (M/S)

(CONTINU

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
6200050	99	SPEED	SUR	50	-4	744	0	0	1.2	0.0	1.2
6200081	99	SPEED	SUR	51	-13	744	0	0	1.4	-0.2	1.4
6200082	99	SPEED	SUR	44	-8	732	0	0	1.4	-1.3	1.9
6200083	99	SPEED	SUR	43	-9	733	0	0	1.2	-1.1	1.7
6200084	99	SPEED	SUR	42	-9	726	0	0	1.5	-0.9	1.8
6200085	99	SPEED	SUR	36	-7	736	1	0	1.5	-0.8	1.7
6200086	99	SPEED	SUR	55	7	190	0	0	1.8	1.2	2.2
6200087	99	SPEED	SUR	55	7	344	0	0	1.6	1.6	2.3
6200091	99	SPEED	SUR	53	-5	743	0	0	1.3	0.5	1.4
6200092	99	SPEED	SUR	51	-11	743	0	0	1.4	0.1	1.4
6200093	99	SPEED	SUR	55	-10	743	0	0	1.1	-0.1	1.1
6200094	99	SPEED	SUR	52	-7	743	0	0	1.4	0.0	1.5
6200095	99	SPEED	SUR	53	-16	743	0	0	1.2	-0.3	1.2
6200103	99	SPEED	SUR	50	-3	673	0	0	1.6	-0.3	1.7
6200163	99	SPEED	SUR	47	-8	741	0	0	1.2	-0.1	1.2
6200200	99	SPEED	SUR	36	-8	262	0	0	1.1	0.0	1.1
6201030	99	SPEED	SUR	44	-4	283	0	0	2.4	-0.5	2.4
6201065	99	SPEED	SUR	54	7	730	0	0	1.7	-0.6	1.8
6201066	99	SPEED	SUR	55	7	698	0	0	1.7	0.5	1.8
62029	99	SPEED	SUR	49	-13	1485	0	0	1.5	0.8	1.7
62050	99	SPEED	SUR	50	-4	1487	0	0	1.3	0.5	1.4
62081	99	SPEED	SUR	51	-13	1487	0	0	1.3	0.5	1.4
62091	99	SPEED	SUR	53	-5	743	0	0	1.3	0.8	1.5
62092	99	SPEED	SUR	51	-11	743	0	0	1.4	0.2	1.4
62093	99	SPEED	SUR	55	-10	743	0	0	1.1	0.0	1.1
62094	99	SPEED	SUR	52	-7	743	0	0	1.5	0.1	1.5
62095	99	SPEED	SUR	53	-16	743	0	0	1.2	-0.2	1.2
62102	99	SPEED	SUR	58	2	1475	0	0	2.0	0.5	2.1
62103	99	SPEED	SUR	50	-3	1345	0	0	1.7	-0.5	1.7
62104	99	SPEED	SUR	57	1	1469	0	0	1.4	-0.5	1.5
62105	99	SPEED	SUR	55	-13	1481	0	0	1.2	0.4	1.3
62107	99	SPEED	SUR	50	-6	213	0	0	1.3	0.0	1.3
62112	99	SPEED	SUR	58	0	1310	0	0	3.0	-1.8	3.5
62113	99	SPEED	SUR	58	0	1475	0	0	1.7	0.0	1.7
62114	99	SPEED	SUR	58	0	250	0	0	1.0	0.0	1.0
62118	99	SPEED	SUR	58	1	1475	0	0	1.8	0.8	2.0
62119	99	SPEED	SUR	57	2	1460	0	0	3.3	-2.1	3.9
62120	99	SPEED	SUR	56	2	1476	0	0	1.4	-0.6	1.5
62121	99	SPEED	SUR	54	3	1476	0	0	1.6	-0.4	1.7
62122	99	SPEED	SUR	57	2	1458	0	0	2.1	0.0	2.1
62129	99	SPEED	SUR	58	0	1093	0	0	1.7	0.0	1.7

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
62131	99	SPEED	SUR	54	1	1026	0	0	2.2	-0.5	2.2
62132	99	SPEED	SUR	56	2	68	0	0	1.9	-0.6	2.0
62133	99	SPEED	SUR	57	1	1466	0	0	1.7	0.1	1.7
62134	99	SPEED	SUR	58	1	1457	0	0	1.3	-0.2	1.4
62140	99	SPEED	SUR	57	1	1446	0	0	1.5	0.0	1.5
62143	99	SPEED	SUR	58	2	1425	0	0	2.1	-1.0	2.3
62144	99	SPEED	SUR	53	2	1468	0	0	1.8	-0.2	1.8
62145	99	SPEED	SUR	53	3	1476	0	0	1.6	0.4	1.6
62146	99	SPEED	SUR	57	2	1474	0	0	1.8	-0.2	1.8
62148	99	SPEED	SUR	54	2	1476	0	0	1.8	-0.4	1.8
62149	99	SPEED	SUR	54	1	1476	0	0	1.5	-0.2	1.5
62152	99	SPEED	SUR	57	2	1468	0	0	1.8	-1.3	2.2
62153	99	SPEED	SUR	57	2	162	0	0	3.2	-2.4	4.0
62154	99	SPEED	SUR	56	2	1476	0	0	1.5	0.1	1.5
62155	99	SPEED	SUR	58	1	1453	0	0	1.6	0.4	1.6
62163	99	SPEED	SUR	48	-9	1483	0	0	1.2	0.4	1.2
62164	99	SPEED	SUR	57	1	1476	0	0	1.9	-1.5	2.4
62165	99	SPEED	SUR	54	1	1438	0	0	1.8	-0.6	1.9
62170	99	SPEED	SUR	51	2	1479	0	0	1.6	0.8	1.8
62304	99	SPEED	SUR	51	2	1463	0	0	1.8	0.9	2.0
62305	99	SPEED	SUR	50	0	1484	0	0	1.8	0.4	1.8
6301001	99	SPEED	SUR	64	5	743	0	0	1.2	0.0	1.2
6301008	99	SPEED	SUR	68	15	743	0	0	1.7	0.5	1.8
63055	99	SPEED	SUR	61	2	1468	0	0	1.6	-1.3	2.0
63056	99	SPEED	SUR	60	2	1458	0	0	1.4	-0.1	1.4
63057	99	SPEED	SUR	59	2	1474	0	0	2.3	-1.0	2.5
63058	99	SPEED	SUR	53	2	772	0	0	1.4	0.2	1.4
63101	99	SPEED	SUR	61	1	1475	0	0	1.6	-0.6	1.7
63103	99	SPEED	SUR	61	1	1475	0	0	1.6	-0.5	1.6
63106	99	SPEED	SUR	61	2	233	0	0	1.2	-0.9	1.5
63108	99	SPEED	SUR	61	2	1468	0	0	1.8	-0.7	1.9
63109	99	SPEED	SUR	60	2	1466	0	0	1.4	-0.3	1.4
63110	99	SPEED	SUR	60	2	1474	0	0	1.6	-1.1	2.0
63112	99	SPEED	SUR	61	1	1453	0	0	1.2	-0.7	1.4
63115	99	SPEED	SUR	62	1	1462	0	0	1.3	-0.7	1.5
63117	99	SPEED	SUR	61	1	1475	0	0	1.4	-0.7	1.5
6400045	99	SPEED	SUR	59	-12	742	0	0	1.1	-0.1	1.1
6400046	99	SPEED	SUR	61	-4	744	0	0	1.1	0.0	1.2
64041	99	SPEED	SUR	61	-3	1458	2	0	1.3	-0.7	1.5
64045	99	SPEED	SUR	59	-12	1478	0	0	1.1	0.5	1.2
64046	99	SPEED	SUR	61	-4	1475	0	0	1.2	0.6	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
6600021	99	SPEED	SUR	55	14	250	0	0	1.2	0.4	1.3
6600022	99	SPEED	SUR	54	14	233	2	0	1.3	0.2	1.3
6600023	99	SPEED	SUR	55	11	317	0	0	1.6	2.3	2.8
6600024	99	SPEED	SUR	55	13	134	0	0	1.4	1.1	1.8

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

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND DIRECTION (DEGREES)
 AREA : 10N - 90N, 70W - 40E
 PERIOD : OCT 2023
 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	364	0	0	23.0	8.2	24.4
1300002	99	DIRN	SUR	20	-23	539	0	0	10.7	-1.7	10.8
1300008	99	DIRN	SUR	15	-38	592	0	0	14.6	2.8	14.8
1300130	99	DIRN	SUR	28	-16	205	0	0	16.1	7.1	17.6
1300131	99	DIRN	SUR	28	-17	333	0	0	22.5	2.2	22.6
1801556	99	DIRN	SUR	17	-67	1743	0	0	15.0	6.1	16.2
1801560	99	DIRN	SUR	17	-64	2036	0	0	20.0	5.2	20.7
1801565	99	DIRN	SUR	32	-80	2168	0	0	15.8	3.0	16.0
4100001	99	DIRN	SUR	35	-72	3879	0	0	13.1	7.0	14.8
4100002	99	DIRN	SUR	32	-75	3790	2	0	17.6	3.5	18.0
4100004	99	DIRN	SUR	33	-79	3622	0	0	14.1	5.9	15.3
4100008	99	DIRN	SUR	31	-81	3392	0	0	16.0	11.4	19.6
4100009	99	DIRN	SUR	29	-80	3824	0	0	13.1	2.4	13.4
4100013	99	DIRN	SUR	33	-78	3866	0	0	20.7	6.4	21.7
4100024	99	DIRN	SUR	34	-78	527	0	0	16.8	2.2	16.9
4100025	99	DIRN	SUR	35	-75	3949	0	0	17.3	8.2	19.1
4100026	99	DIRN	SUR	12	-38	267	0	0	17.4	3.6	17.8
4100029	99	DIRN	SUR	33	-80	577	0	0	15.3	-8.6	17.6
4100033	99	DIRN	SUR	32	-80	557	0	0	16.0	-19.0	24.9
4100037	99	DIRN	SUR	34	-77	661	0	0	19.3	2.2	19.4
4100038	99	DIRN	SUR	34	-78	611	0	0	18.8	3.1	19.1
4100040	99	DIRN	SUR	15	-53	3898	0	0	15.5	9.4	18.1
4100043	99	DIRN	SUR	21	-65	3720	0	0	14.9	10.8	18.4
4100044	99	DIRN	SUR	22	-59	3358	0	0	14.1	7.2	15.9
4100046	99	DIRN	SUR	24	-68	3847	0	0	16.5	8.7	18.6
4100047	99	DIRN	SUR	27	-71	3653	0	0	20.4	3.8	20.8
4100049	99	DIRN	SUR	28	-63	3260	0	0	20.6	10.4	23.0
4100052	99	DIRN	SUR	18	-65	3580	0	0	22.4	5.3	23.0
4100053	99	DIRN	SUR	18	-66	2113	0	0	27.3	10.5	29.2
4100056	99	DIRN	SUR	18	-65	347	0	0	24.1	5.9	24.8
4100064	99	DIRN	SUR	34	-77	7	0	0	12.3	-6.2	13.8
4100068	99	DIRN	SUR	28	-80	588	0	0	15.2	1.8	15.3

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

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
410069	99	DIRN	SUR	29	-81	582	0	0	15.8	1.2	15.9
41001	99	DIRN	SUR	35	-72	642	0	0	12.8	6.6	14.4
4100139	99	DIRN	SUR	20	-38	590	0	0	10.4	2.2	10.7
41002	99	DIRN	SUR	32	-75	630	1	0	19.0	3.0	19.2
4100300	99	DIRN	SUR	16	-57	642	0	0	19.0	-8.0	20.6
41004	99	DIRN	SUR	33	-79	591	0	0	13.6	5.8	14.8
41008	99	DIRN	SUR	31	-81	569	0	0	15.7	11.1	19.2
41009	99	DIRN	SUR	29	-80	636	0	0	14.1	2.3	14.3
41013	99	DIRN	SUR	33	-78	644	0	0	20.6	6.5	21.6
41024	99	DIRN	SUR	34	-79	541	0	0	18.5	2.8	18.7
41025	99	DIRN	SUR	35	-76	659	0	0	17.2	8.1	19.0
41029	99	DIRN	SUR	33	-80	571	0	0	16.1	-8.1	18.0
41033	99	DIRN	SUR	32	-80	547	0	0	17.4	-18.9	25.7
41037	99	DIRN	SUR	34	-77	653	0	0	20.5	2.3	20.6
41038	99	DIRN	SUR	34	-78	601	0	0	19.1	3.8	19.4
41040	99	DIRN	SUR	15	-53	646	0	0	15.8	9.3	18.3
41043	99	DIRN	SUR	21	-65	622	0	0	15.9	10.0	18.8
41044	99	DIRN	SUR	22	-59	555	0	0	15.5	7.2	17.1
41046	99	DIRN	SUR	24	-68	648	0	0	16.5	8.4	18.5
41047	99	DIRN	SUR	28	-72	612	0	0	20.8	4.5	21.3
41049	99	DIRN	SUR	28	-63	541	0	0	23.1	10.1	25.2
41052	99	DIRN	SUR	18	-65	581	0	0	20.9	5.0	21.5
41053	99	DIRN	SUR	19	-66	373	0	0	28.8	10.3	30.6
41056	99	DIRN	SUR	18	-66	344	0	0	24.8	4.2	25.2
41064	99	DIRN	SUR	34	-77	6	0	0	12.2	-11.4	16.7
41068	99	DIRN	SUR	28	-80	580	0	0	16.9	1.7	17.0
41069	99	DIRN	SUR	29	-81	569	0	0	17.8	1.9	17.9
4200013	99	DIRN	SUR	27	-83	1305	0	0	12.9	-6.2	14.3
4200022	99	DIRN	SUR	28	-84	1311	0	0	12.9	-7.0	14.7
4200023	99	DIRN	SUR	26	-83	1264	0	0	13.6	-6.4	15.0
4200026	99	DIRN	SUR	25	-83	1211	0	0	13.6	-6.2	15.0
4200036	99	DIRN	SUR	29	-85	3691	0	0	11.8	2.0	12.0
4200056	99	DIRN	SUR	20	-85	2906	0	0	13.7	-2.5	13.9
4200057	99	DIRN	SUR	17	-82	2512	0	0	21.6	4.8	22.1
4200058	99	DIRN	SUR	15	-75	3227	0	0	18.7	11.6	22.0
4200059	99	DIRN	SUR	15	-67	2981	0	0	17.5	9.0	19.7
4200060	99	DIRN	SUR	16	-63	3482	0	0	20.9	9.1	22.8
4200085	99	DIRN	SUR	18	-67	1960	0	0	30.6	18.3	35.6
42013	99	DIRN	SUR	27	-83	637	0	0	13.0	-5.6	14.1
42022	99	DIRN	SUR	28	-84	643	0	0	13.7	-6.4	15.1
42023	99	DIRN	SUR	26	-83	615	0	0	13.8	-5.5	14.8

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF

ELEMENT MONITORED : WIND DIRECTION (DEGREES)

(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
42026	99	DIRN	SUR	25	-84	599	0	0	14.5	-5.9	15.7
42036	99	DIRN	SUR	29	-85	611	0	0	11.9	2.0	12.1
42056	99	DIRN	SUR	20	-85	478	0	0	15.4	-2.2	15.6
42057	99	DIRN	SUR	17	-82	413	0	0	21.2	3.0	21.4
42058	99	DIRN	SUR	15	-75	521	0	0	19.0	11.2	22.0
42059	99	DIRN	SUR	15	-68	481	0	0	20.1	8.6	21.8
42060	99	DIRN	SUR	16	-63	560	0	0	21.4	9.7	23.5
42085	99	DIRN	SUR	18	-67	360	0	0	29.9	15.2	33.5
4400005	99	DIRN	SUR	43	-69	3541	0	0	15.2	7.2	16.8
4400007	99	DIRN	SUR	44	-70	2998	0	0	18.6	6.5	19.8
4400008	99	DIRN	SUR	40	-69	3437	0	0	14.9	20.2	25.1
4400009	99	DIRN	SUR	38	-75	3145	0	0	14.4	5.7	15.5
4400011	99	DIRN	SUR	41	-67	3312	0	0	15.5	7.7	17.3
4400013	99	DIRN	SUR	42	-71	3248	0	0	16.0	5.8	17.0
4400014	99	DIRN	SUR	37	-75	3203	0	0	15.3	7.0	16.8
4400018	99	DIRN	SUR	42	-70	3628	0	0	17.0	8.2	18.8
4400020	99	DIRN	SUR	41	-70	3563	0	0	17.1	5.1	17.9
4400022	99	DIRN	SUR	41	-74	506	0	0	13.9	12.0	18.4
4400027	99	DIRN	SUR	44	-67	3259	0	0	14.9	11.4	18.8
4400029	99	DIRN	SUR	43	-71	589	0	0	15.8	-0.7	15.8
4400030	99	DIRN	SUR	43	-70	519	0	0	18.1	3.3	18.4
4400032	99	DIRN	SUR	44	-69	531	0	0	18.3	-0.2	18.3
4400033	99	DIRN	SUR	44	-69	509	0	0	21.5	22.2	30.9
4400034	99	DIRN	SUR	44	-68	514	0	0	17.7	3.9	18.2
4400037	99	DIRN	SUR	43	-68	596	0	0	15.8	7.0	17.2
4400039	99	DIRN	SUR	41	-73	404	0	0	43.5	3.0	43.7
4400040	99	DIRN	SUR	41	-74	4	0	0	10.3	56.2	57.1
4400041	99	DIRN	SUR	37	-77	216	0	0	13.6	0.2	13.6
4400042	99	DIRN	SUR	38	-76	3220	0	0	20.9	-0.7	21.0
4400043	99	DIRN	SUR	39	-76	3610	0	0	18.9	3.2	19.2
4400058	99	DIRN	SUR	38	-76	4443	0	0	19.4	1.4	19.4
4400062	99	DIRN	SUR	39	-76	3898	0	0	20.3	1.4	20.3
4400063	99	DIRN	SUR	39	-76	3172	0	0	17.5	1.6	17.5
4400064	99	DIRN	SUR	37	-76	4360	0	0	15.8	4.1	16.3
4400072	99	DIRN	SUR	37	-76	4364	0	0	16.8	2.1	17.0
4400150	99	DIRN	SUR	43	-64	608	0	0	16.5	9.9	19.2
4400488	99	DIRN	SUR	45	-61	438	0	0	19.6	-28.2	34.4
4400489	99	DIRN	SUR	45	-61	391	0	0	19.1	-33.4	38.5
44005	99	DIRN	SUR	43	-69	583	0	0	15.7	6.9	17.1
44007	99	DIRN	SUR	44	-70	498	0	0	19.5	6.7	20.6
44008	99	DIRN	SUR	41	-69	568	0	0	16.0	19.9	25.5

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

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
44009	99	DIRN	SUR	39	-75	510	0	0	15.2	5.8	16.3
44011	99	DIRN	SUR	41	-67	547	0	0	15.6	7.5	17.3
44013	99	DIRN	SUR	42	-71	510	0	0	17.1	4.7	17.7
44014	99	DIRN	SUR	37	-75	534	0	0	15.5	6.9	16.9
44018	99	DIRN	SUR	42	-70	592	0	0	16.4	7.4	17.9
44020	99	DIRN	SUR	42	-70	581	0	0	17.0	4.8	17.7
44022	99	DIRN	SUR	41	-74	137	0	0	13.8	11.8	18.2
44027	99	DIRN	SUR	44	-67	522	0	0	14.7	10.8	18.2
44029	99	DIRN	SUR	43	-71	572	0	0	16.3	-0.5	16.3
44030	99	DIRN	SUR	43	-70	504	0	0	17.6	2.9	17.8
44032	99	DIRN	SUR	44	-69	517	0	0	18.6	-0.7	18.7
44033	99	DIRN	SUR	44	-69	492	0	0	22.2	22.1	31.3
44034	99	DIRN	SUR	44	-68	503	0	0	18.4	3.5	18.8
44037	99	DIRN	SUR	44	-68	580	0	0	15.5	6.7	16.9
44039	99	DIRN	SUR	41	-73	379	0	0	42.2	2.0	42.2
44040	99	DIRN	SUR	41	-74	2	0	0	5.4	76.0	76.2
44041	99	DIRN	SUR	37	-77	21	0	0	10.4	1.8	10.6
44042	99	DIRN	SUR	38	-76	342	0	0	18.3	-0.2	18.3
44043	99	DIRN	SUR	39	-76	391	0	0	20.1	3.5	20.4
44058	99	DIRN	SUR	38	-76	420	0	0	20.3	1.7	20.4
44062	99	DIRN	SUR	39	-76	438	0	0	21.3	1.5	21.3
44063	99	DIRN	SUR	39	-76	353	0	0	18.8	1.9	18.9
44064	99	DIRN	SUR	37	-76	494	0	0	15.1	5.3	16.0
44072	99	DIRN	SUR	37	-76	485	0	0	17.4	2.4	17.6
44078	99	DIRN	SUR	60	-40	573	0	0	17.6	-21.9	28.0
44150	99	DIRN	SUR	43	-64	595	0	0	16.1	9.6	18.8
44258	99	DIRN	SUR	45	-63	572	0	0	18.8	-7.4	20.2
44488	99	DIRN	SUR	45	-61	559	0	0	18.0	-29.7	34.8
44489	99	DIRN	SUR	46	-61	511	0	0	18.6	-34.8	39.4
4500003	99	DIRN	SUR	45	-83	3705	0	0	15.4	2.9	15.7
4500005	99	DIRN	SUR	42	-82	3654	0	0	13.8	6.2	15.2
4500008	99	DIRN	SUR	44	-82	3825	0	0	15.0	9.6	17.8
4500012	99	DIRN	SUR	44	-77	3472	0	0	19.5	8.6	21.3
4500132	99	DIRN	SUR	42	-81	590	0	0	15.6	-6.3	16.8
4500135	99	DIRN	SUR	44	-77	657	0	0	17.7	-0.3	17.7
4500137	99	DIRN	SUR	46	-81	624	0	0	21.2	1.4	21.2
4500139	99	DIRN	SUR	43	-80	561	0	0	16.3	2.3	16.5
4500142	99	DIRN	SUR	43	-79	608	0	0	16.2	-4.7	16.9
4500143	99	DIRN	SUR	45	-81	615	0	0	21.7	1.3	21.7
4500159	99	DIRN	SUR	44	-79	528	0	0	20.0	1.2	20.1
4500162	99	DIRN	SUR	45	-83	689	0	0	16.9	0.1	16.9

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
4500163	99	DIRN	SUR	44	-84	658	0	0	13.7	3.5	14.1
4500164	99	DIRN	SUR	42	-82	599	0	0	16.6	-10.0	19.3
4500165	99	DIRN	SUR	42	-83	2305	0	0	20.6	51.5	55.4
4500175	99	DIRN	SUR	46	-85	4489	0	0	36.6	8.3	37.6
4500176	99	DIRN	SUR	42	-82	3566	0	0	17.6	-5.5	18.5
4500178	99	DIRN	SUR	45	-73	532	0	0	39.4	11.4	41.0
4500196	99	DIRN	SUR	42	-82	2594	0	0	15.7	-11.4	19.4
4500197	99	DIRN	SUR	42	-82	3077	0	0	20.2	-20.2	28.6
4500200	99	DIRN	SUR	42	-83	184	0	0	17.5	17.8	25.0
4500203	99	DIRN	SUR	41	-83	2964	0	0	68.1	-63.9	93.4
4500205	99	DIRN	SUR	42	-82	1663	0	0	39.9	-62.0	73.7
4500209	99	DIRN	SUR	43	-82	3192	0	0	22.8	5.9	23.5
45003	99	DIRN	SUR	45	-83	616	0	0	15.7	2.9	16.0
45005	99	DIRN	SUR	42	-82	616	0	0	14.1	6.2	15.4
45008	99	DIRN	SUR	44	-82	637	0	0	14.6	9.8	17.5
45012	99	DIRN	SUR	44	-77	575	0	0	19.4	8.0	21.0
45132	99	DIRN	SUR	43	-81	584	0	0	14.5	-7.3	16.3
45135	99	DIRN	SUR	44	-77	644	0	0	19.0	-0.9	19.0
45137	99	DIRN	SUR	46	-81	604	0	0	22.2	0.2	22.2
45139	99	DIRN	SUR	43	-80	559	0	0	16.5	2.7	16.8
45142	99	DIRN	SUR	43	-79	584	0	0	16.4	-5.1	17.2
45143	99	DIRN	SUR	45	-81	598	0	0	20.4	-0.8	20.4
45147	99	DIRN	SUR	42	-83	594	0	0	17.2	-0.7	17.2
45149	99	DIRN	SUR	44	-82	643	0	0	14.7	-9.1	17.3
45151	99	DIRN	SUR	45	-79	504	0	0	17.1	0.0	17.1
45152	99	DIRN	SUR	46	-80	427	0	0	21.0	3.2	21.2
45154	99	DIRN	SUR	46	-83	565	1	0	22.2	7.3	23.4
45159	99	DIRN	SUR	44	-79	499	0	0	18.8	-0.2	18.8
45162	99	DIRN	SUR	45	-83	223	0	0	18.2	-0.8	18.2
45163	99	DIRN	SUR	44	-84	211	0	0	14.4	3.7	14.9
45164	99	DIRN	SUR	42	-82	595	0	0	16.7	-10.7	19.8
45165	99	DIRN	SUR	42	-83	404	0	0	20.5	51.4	55.4
45175	99	DIRN	SUR	46	-85	474	0	0	39.7	10.7	41.1
45176	99	DIRN	SUR	42	-82	625	0	0	19.3	-4.5	19.8
45178	99	DIRN	SUR	45	-73	126	0	0	37.9	8.9	38.9
45196	99	DIRN	SUR	42	-82	580	0	0	16.0	-11.4	19.6
45197	99	DIRN	SUR	42	-82	589	0	0	20.6	-20.8	29.3
45200	99	DIRN	SUR	42	-83	152	0	0	16.1	17.6	23.9
45203	99	DIRN	SUR	41	-83	499	0	0	68.4	-63.1	93.1
45205	99	DIRN	SUR	42	-82	270	0	0	42.6	-62.0	75.2
45209	99	DIRN	SUR	43	-82	563	0	0	22.9	5.6	23.5

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

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
4803914	99	DIRN	SUR	23	-68	776	0	0	13.3	4.7	14.2
5801958	99	DIRN	SUR	21	-64	2060	3	0	19.3	3.5	19.6
5801959	99	DIRN	SUR	22	-55	2588	0	0	15.5	3.7	16.0
6100198	99	DIRN	SUR	37	-2	538	0	0	15.1	6.2	16.3
6100281	99	DIRN	SUR	40	0	351	0	0	24.3	-7.4	25.4
6100417	99	DIRN	SUR	38	0	287	0	0	13.5	2.3	13.7
6200001	99	DIRN	SUR	45	-5	633	0	0	11.5	1.3	11.6
6200024	99	DIRN	SUR	44	-3	474	0	0	28.6	2.0	28.7
6200025	99	DIRN	SUR	44	-6	70	0	0	11.7	-1.5	11.8
6200029	99	DIRN	SUR	49	-12	698	0	0	14.3	-6.3	15.7
6200050	99	DIRN	SUR	50	-4	669	0	0	13.8	1.3	13.8
6200081	99	DIRN	SUR	51	-13	706	0	0	14.8	-6.6	16.2
6200082	99	DIRN	SUR	44	-8	557	0	0	11.8	-3.3	12.3
6200083	99	DIRN	SUR	43	-9	545	0	0	13.4	1.5	13.5
6200084	99	DIRN	SUR	42	-9	489	0	0	15.2	4.4	15.8
6200085	99	DIRN	SUR	36	-7	547	1	0	15.8	10.5	19.0
6200091	99	DIRN	SUR	53	-5	689	0	0	15.4	6.5	16.7
6200092	99	DIRN	SUR	51	-11	675	0	0	15.7	10.3	18.8
6200093	99	DIRN	SUR	55	-10	683	0	0	11.6	3.6	12.1
6200094	99	DIRN	SUR	52	-7	675	0	0	15.3	4.9	16.0
6200095	99	DIRN	SUR	53	-16	667	0	0	12.3	2.0	12.4
6200103	99	DIRN	SUR	50	-3	613	0	0	28.6	10.7	30.5
6200163	99	DIRN	SUR	47	-8	659	0	0	20.7	7.0	21.8
6200200	99	DIRN	SUR	36	-8	215	0	0	13.9	4.2	14.5
6201030	99	DIRN	SUR	44	-4	245	0	0	42.2	36.4	55.7
62029	99	DIRN	SUR	49	-13	1408	0	0	14.8	-6.2	16.0
62050	99	DIRN	SUR	50	-4	1328	0	0	14.8	1.4	14.9
62081	99	DIRN	SUR	51	-13	1401	0	0	14.5	-6.9	16.0
62091	99	DIRN	SUR	53	-5	683	0	0	15.7	6.0	16.8
62092	99	DIRN	SUR	51	-11	667	0	0	15.7	10.1	18.7
62093	99	DIRN	SUR	55	-10	681	0	0	11.7	2.9	12.1
62094	99	DIRN	SUR	52	-7	670	0	0	15.2	4.4	15.8
62095	99	DIRN	SUR	53	-16	668	0	0	12.7	1.8	12.8
62103	99	DIRN	SUR	50	-3	1230	0	0	29.3	11.1	31.3
62105	99	DIRN	SUR	55	-13	1309	0	0	15.4	-3.3	15.8
62107	99	DIRN	SUR	50	-6	194	0	0	12.5	6.2	14.0
62112	99	DIRN	SUR	58	0	1259	0	0	11.1	-6.4	12.8
62114	99	DIRN	SUR	58	0	250	0	0	5.2	0.6	5.2
62163	99	DIRN	SUR	48	-9	1314	0	0	21.2	6.9	22.3
62305	99	DIRN	SUR	50	0	1388	0	0	18.1	3.5	18.4
6400045	99	DIRN	SUR	59	-12	729	0	0	9.3	-9.0	13.0

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF

ELEMENT MONITORED : WIND DIRECTION (DEGREES)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
6400046	99	DIRN	SUR	61	-4	714	0	0	18.6	-7.2	19.9
64041	99	DIRN	SUR	61	-3	1365	2	0	14.9	8.5	17.1
64045	99	DIRN	SUR	59	-12	1448	0	0	9.7	-9.0	13.2
64046	99	DIRN	SUR	61	-4	1418	0	0	19.0	-7.1	20.3

4.12 Table 24 - List of Assimilated BUFR Encoded Radiosonde Stations

ATGU3FT	BPMWB2N	DBLK	FPUW5GN	QQBZLZL	JNKN7JF	JPBN	KJJF9XN	KMPLHPW
LAGY8	LAGZ8	LRVQE3U	USSIO	UXK5JTU	WDK38HS	XKQLWQB	YLW96WM	2EERVTP
7JUNA4N	9ZT9MRK	01001	01004	01010	01028	01241	01400	01415
01492	02185	02365	02527	02591	02836	02963	03005	03023
03238	03354	03743	03808	03882	03918	03953	04018	04089
04220	04270	04320	04339	04360	04417	06011	06260	06458
06610	07110	07145	07510	07645	07761	08001	08023	08190
08221	08302	08383	08430	08508	08522	08536	10035	10113
10184	10238	10304	10393	10410	10548	10618	10739	10771
10868	10954	10962	11010	11035	11120	11240	11520	11747
11952	12120	12374	12425	12575	12843	12982	13275	13388
14015	14240	14430	15420	15614	16045	16064	16113	16144
16224	16245	16332	16429	16546	16622	16716	16754	17030
17064	17095	17196	17220	17240	17351	17516	17607	20674
22008	22820	22845	23205	23472	23884	23921	23955	24641
24908	26038	26435	26477	26629	26708	27459	27707	27713
27962	28225	28445	28661	28695	29612	29698	30557	30673
30935	31004	31770	31873	31977	34122	34172	34731	35121
35671	40179	40186	42101	42123	42369	43333	43371	45004
47102	47104	47138	47155	47169	47186	47230	47401	47412
47582	47646	47678	47807	47827	47909	47918	47945	47971
47991	48601	48615	48650	48657	48698	50527	50557	50774
50953	51076	51243	51431	51463	51644	51656	51709	51777
51828	51839	52203	52267	52323	52418	52533	52652	52681
52818	52836	52866	52983	53068	53463	53513	53543	53614
53772	53845	53915	54102	54135	54161	54218	54292	54340
54374	54511	54662	54727	54857	55299	55591	56029	56046
56080	56137	56146	56187	56492	56571	56651	56691	56739
56778	56964	56985	57083	57127	57131	57178	57245	57461
57494	57516	57541	57687	57749	57816	57957	57972	57993
58027	58150	58203	58238	58362	58424	58457	58606	58633
58665	58725	58847	58968	58974	59023	59134	59211	59265
59280	59293	59316	59362	59431	59758	59981	60018	60155
60253	60390	60571	60630	60656	60680	60715	60760	61901
61980	61998	63894	63985	65344	66160	67083	68263	68424
68442	68512	68816	68842	70026	70133	70200	70219	70231
70261	70273	70308	70316	70326	70350	70361	70398	71043
71081	71082	71109	71119	71603	71722	71802	71811	71815
71816	71823	71845	71867	71906	71907	71908	71909	71913
71917	71924	71925	71926	71934	71945	71957	71964	72201
72202	72206	72208	72210	72214	72215	72230	72233	72235
72240	72248	72250	72251	72261	72265	72274	72293	72305
72317	72318	72327	72340	72357	72363	72364	72365	72376
72388	72402	72403	72413	72426	72440	72451	72456	72476
72489	72493	72501	72518	72520	72528	72558	72562	72572
72582	72597	72632	72634	72645	72649	72659	72662	72672
72681	72694	72712	72747	72764	72768	72776	72786	72797
73033	73110	74389	74455	74560	76225	76256	76394	76405
76458	76526	76595	76612	76644	76654	76679	76692	76743
76805	76903	78384	78397	78486	78583	78866	78897	78954
78970	80001	81405	82965	85442	85799	85934	87155	87344
87418	87582	87623	87715	87860	88889	89002	89055	89564
89571	89592	89611	89625	89642	89859	91165	91212	91285
91334	91348	91376	91408	91413	91592	91610	91765	91925
91938	91948	91958	93112	93417	93817	93844	94001	94120
94150	94170	94203	94299	94302	94312	94326	94332	94403
94430	94461	94510	94578	94610	94637	94638	94653	94659
94672	94711	94767	94776	94802	94821	94866	94910	94975
94995	94996	94998	95282	95527	96413	96441	96471	96481

96996

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

ATGU3FT	BPMWB2N	DBLK	FPUW5GN	GQBZLZL	JNKN7JF	KJJF9XN	KMPLHPW	LAGY8
LAGZ8	LRYQE3U	UXK5JTU	WDK38HS	XKQLWQB	YLV96WM	2EERVTP	7JUNA4N	9ZT9MRK
01001	01004	01010	01028	01241	01400	01415	01492	02836
02963	06610	07110	07145	07510	07645	07761	08001	08023
08190	08221	08302	08383	08430	08508	08522	08536	11010
11035	11120	11240	12575	17607	40186	48698	50527	50557
50774	50953	51076	51243	51431	51463	51644	51656	51709
51777	51828	51839	52203	52267	52323	52418	52533	52652
52681	52818	52836	52866	52983	53068	53463	53513	53543
53614	53772	53845	53915	54102	54135	54161	54218	54292
54340	54374	54511	54662	54727	54857	55299	55591	56029
56046	56080	56137	56146	56187	56492	56571	56651	56691
56739	56778	56964	56985	57083	57127	57131	57178	57245
57461	57494	57516	57541	57687	57749	57816	57957	57972
57993	58027	58150	58203	58238	58362	58424	58457	58606
58633	58665	58725	58847	58968	58974	59023	59134	59211
59265	59280	59293	59316	59362	59431	59758	59981	60253
63894	72413	73111	76743	76903	89002	89642	89859	91925
91938	91948	91958	94001	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.