



ECMWF Global Data Monitoring Report

September 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 co-ordinate all the results, inform the WMO Secretariat immediately of obvious problems, and produce every six months a consolidated list of observations of that particular type believed to be of low quality. The presently nominated centres are: RSMC Exeter for marine surface observations; RSMC ECMWF for radiosonde and pilot observations; WMC Washington for aircraft and satellite observations.

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

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

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

2 Data summary - History of events

2.1 Radiosondes

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

Ident	Time	Aug	Sep	Ident	Time	Aug	Sep
03743	(12)	22	2	24908	(00)	14	30
03882	(00)	35	16	24908	(12)	15	30
04417	(00)	16	0	29839	(00)	0	29
23921	(00)	11	0	29839	(12)	1	29
29263	(00)	30	12	40706	(12)	11	29
29263	(12)	30	13	42056	(12)	3	18
41316	(00)	30	17	42123	(12)	9	22
42516	(00)	20	0	42339	(12)	8	30
43049	(00)	23	0	42348	(12)	6	17
43295	(00)	28	2	42361	(12)	10	29
47600	(00)	28	0	42369	(12)	1	12
47778	(00)	26	0	42379	(12)	7	30
60096	(12)	32	8	42647	(12)	10	28
68842	(00)	30	11	42867	(12)	0	22
68842	(12)	31	18	43014	(00)	16	29
68994	(00)	29	14	43063	(12)	10	28
68994	(12)	25	13	43128	(12)	0	29
72249	(00)	29	1	43346	(12)	10	28
72249	(12)	31	0	43353	(12)	10	28
72250	(00)	31	2	43369	(00)	6	23
72250	(12)	31	2	54340	(00)	10	30
72317	(00)	23	5	54340	(12)	11	30
72317	(12)	25	5	71823	(00)	4	30
72520	(00)	31	2	71823	(12)	4	30
72520	(12)	31	2	74646	(00)	24	60
78397	(00)	31	0	74646	(12)	24	54
80398	(12)	29	12	76225	(00)	2	30
82026	(12)	31	18	76256	(12)	5	26
82400	(00)	24	1	76405	(00)	6	28
83612	(00)	14	0	76405	(12)	5	29
83612	(12)	13	0	76458	(00)	2	29
83928	(12)	27	12	76458	(12)	1	30
91348	(00)	30	13	76595	(00)	1	29
91348	(12)	31	15	76654	(00)	3	27
96011	(00)	29	1	76654	(12)	2	27
96011	(12)	29	0	76692	(00)	5	30
96147	(00)	30	2	76692	(12)	3	29
96147	(12)	30	1	76805	(12)	1	25
96509	(00)	29	1	78970	(12)	15	30
96509	(12)	29	0	80028	(12)	14	30
96645	(00)	30	3	80094	(12)	12	29
96645	(12)	29	3	80259	(12)	14	30
96805	(00)	29	2	82705	(00)	12	25
96805	(12)	30	2	82705	(12)	12	27
97502	(00)	26	2	91165	(00)	8	30
-	-	-	-	91165	(12)	8	30
-	-	-	-	91680	(00)	0	30
-	-	-	-	91680	(12)	0	26

2.2 Drifting Buoys

Surface pressure observations from **1458** 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.

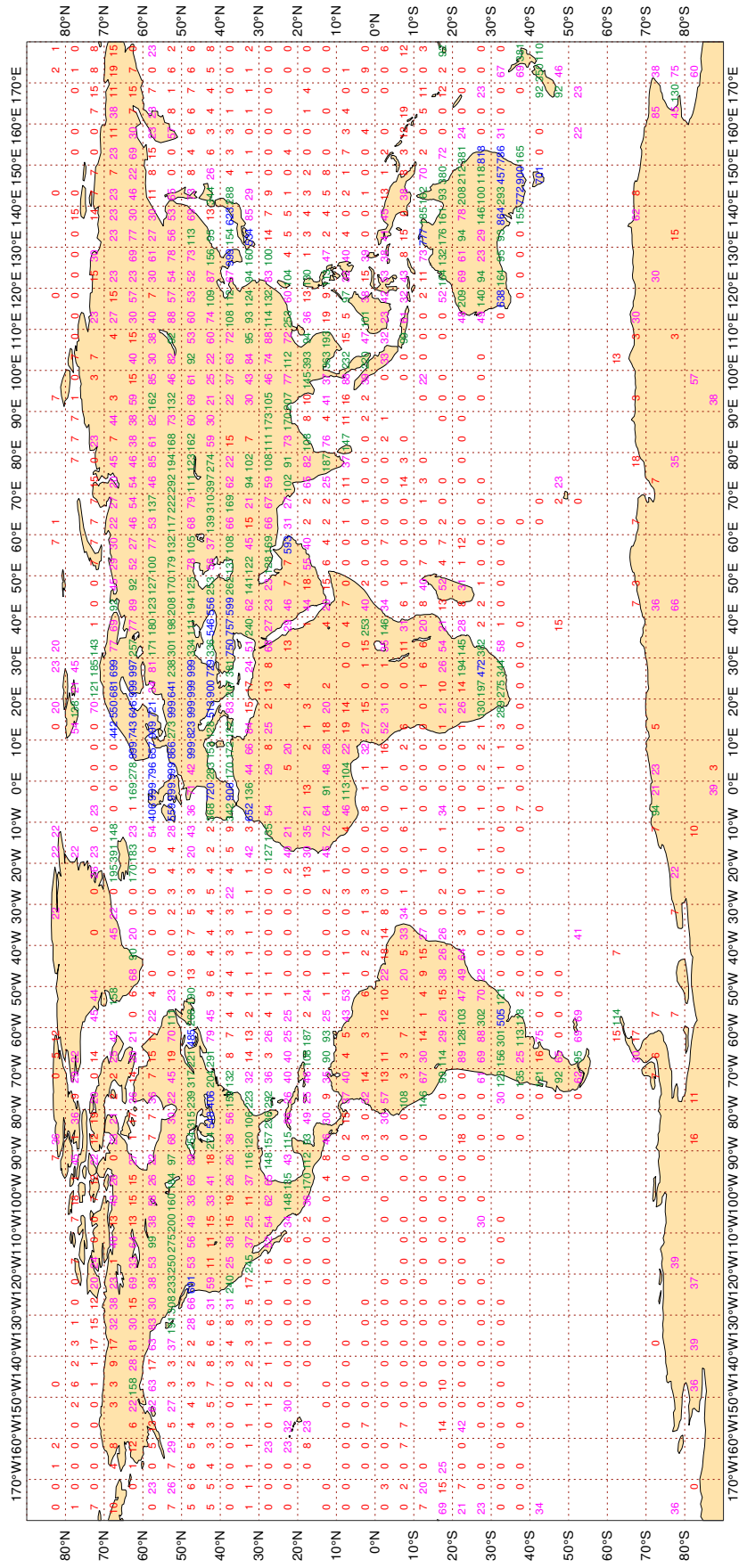
Fig	Parameter	Level/Layer
14	SATOB - Mean observed wind	1000-700 hPa
15	SATOB - Mean observed wind	400-150 hPa
16	SATOB - Mean observed minus first-guess wind	1000-700 hPa
17	SATOB - Mean observed minus first-guess wind	400-150 hPa
18	AIRCRAFT WIND - Mean observed minus first-guess	300-150 hPa

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

3.2.1 Figure 1 - Availability - SYNOP PRESSURE

ECMWF Monitoring Statistics - SEP 2023
 Availability - SYNOP/SHIP (manual, auto) pressure
 Average number of observations in 24 hours - 109366
 LAND - WMO Region I: 6762 II:20318 III: 4816 IV: 7874
 Region V:14891 VI:40644 Antarctic: 1539
 Oceans - N. Atlantic 6117 S. Atlantic 138 Indian 531 Pacific 5736

Figure 1



3.2.2 Figure 2 - Availability - DRIFTER PRESSURE

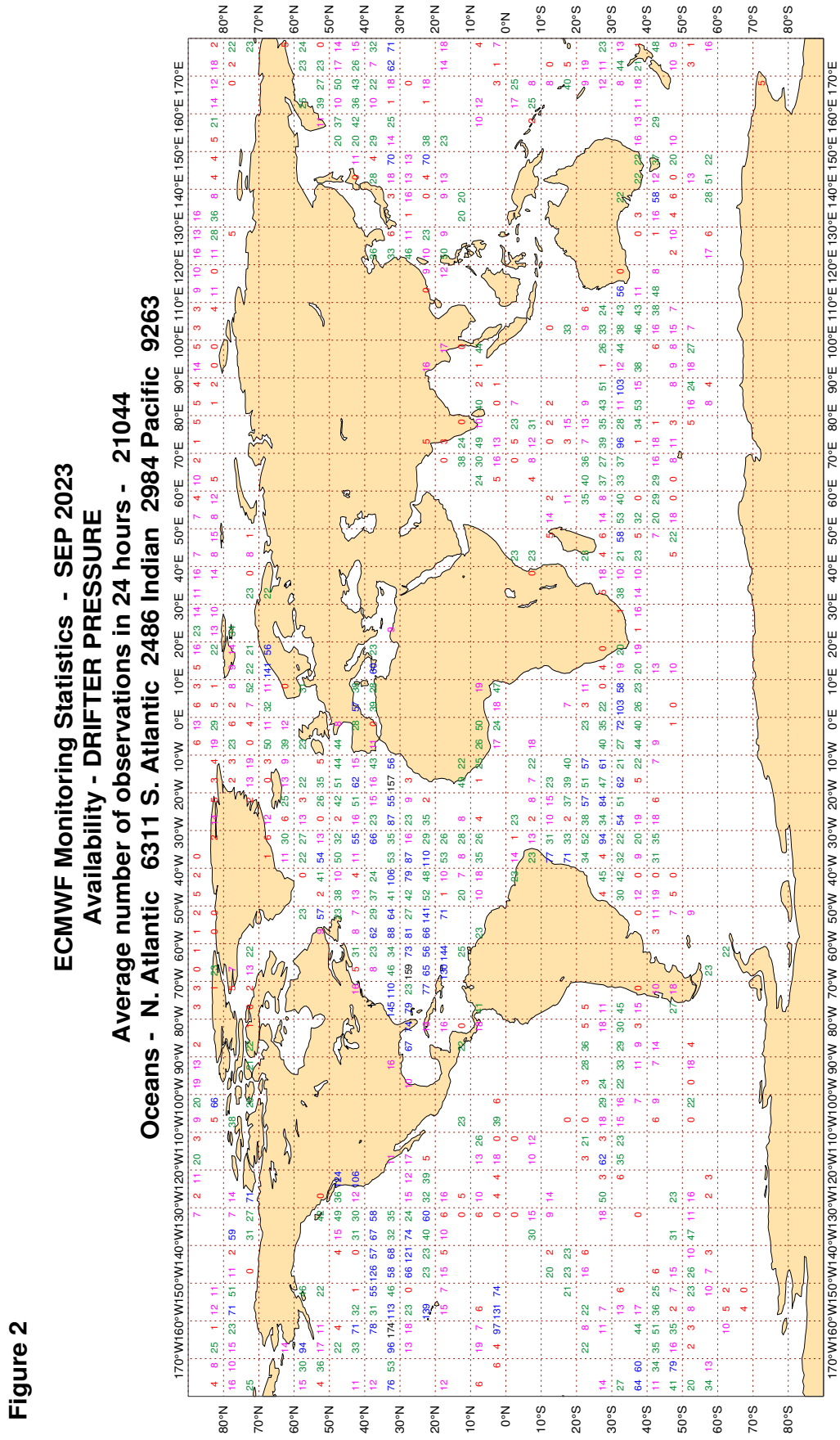
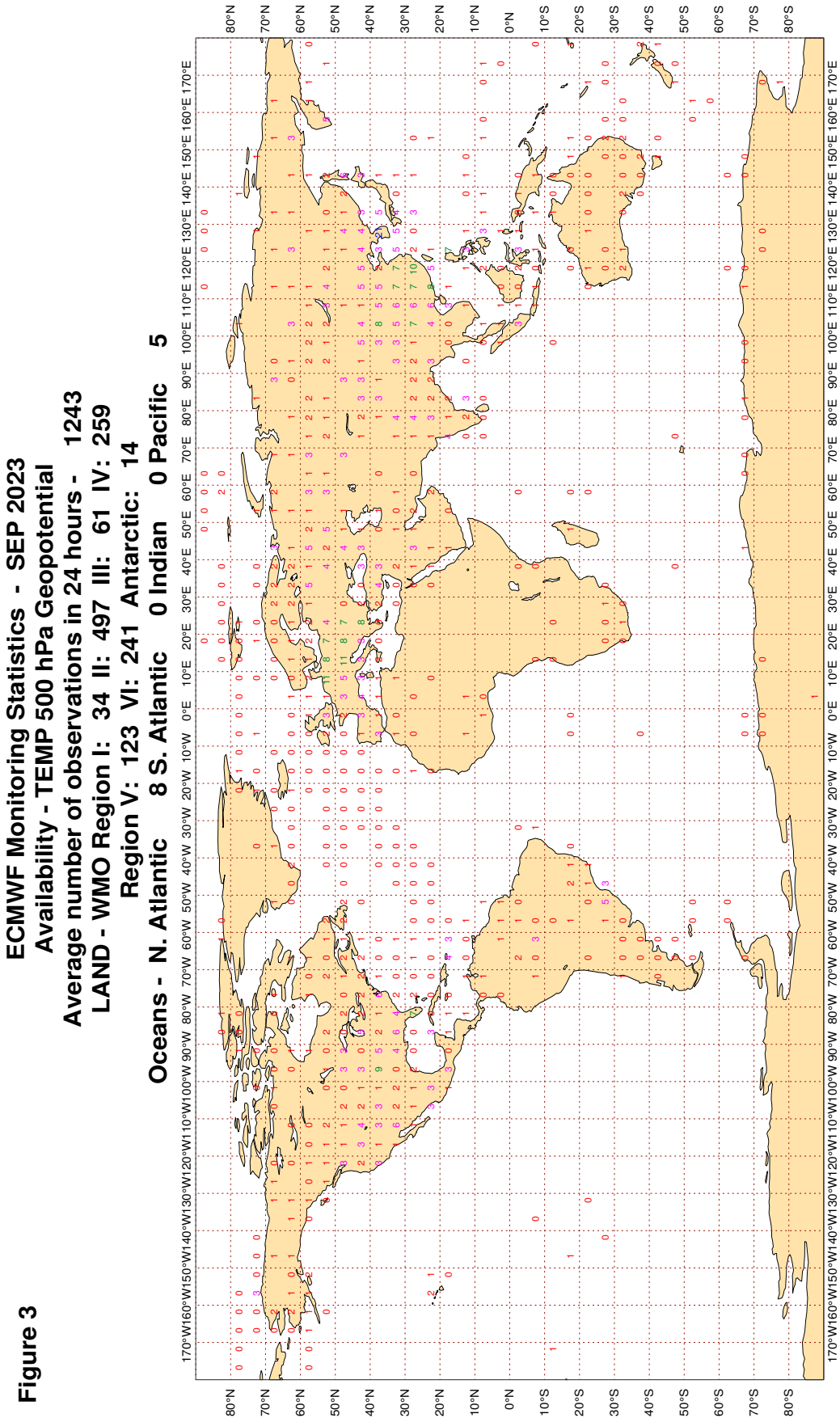


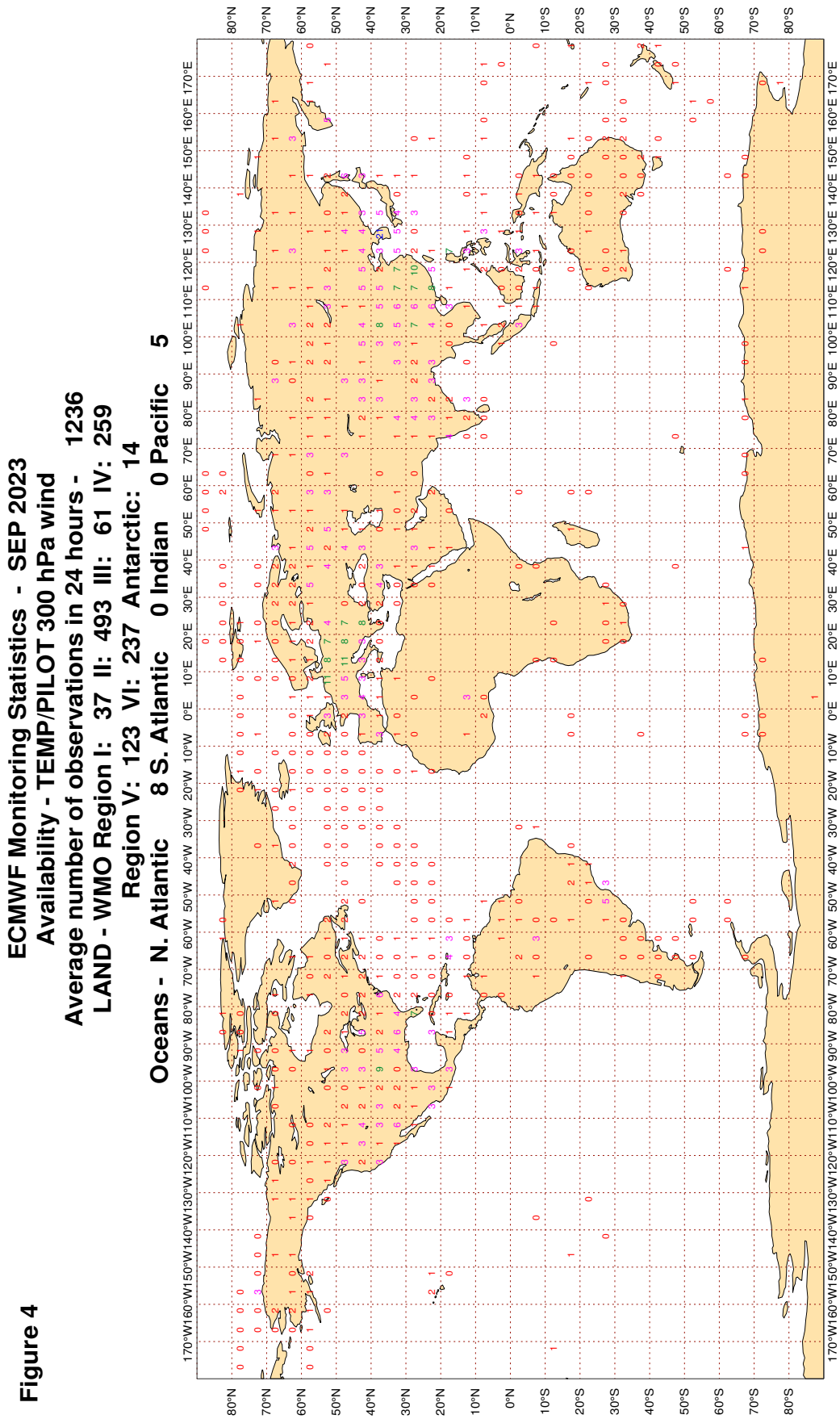
Figure 2



3.2.3 Figure 3 - Availability - TEMP 500 hPa geopotential



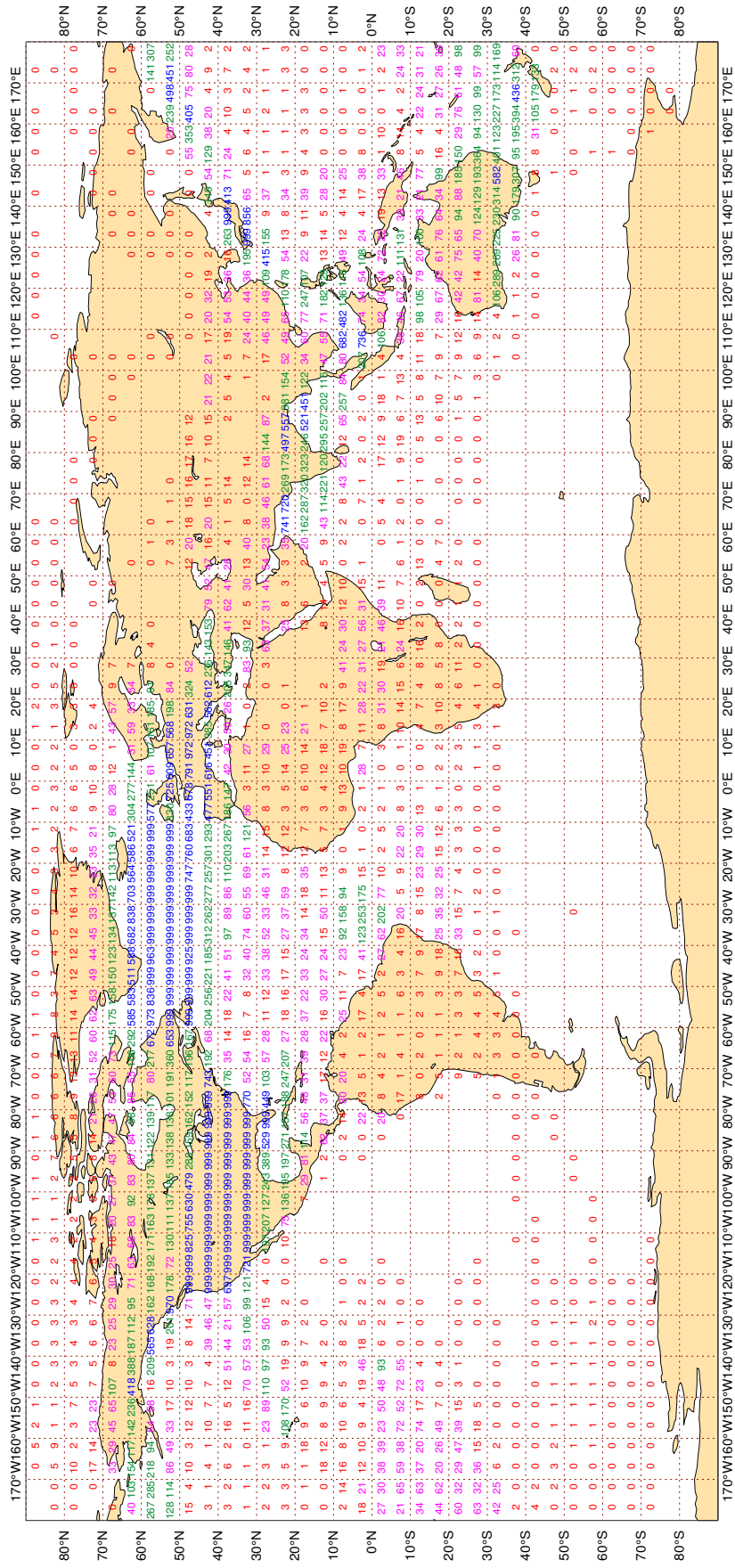
3.2.4 Figure 4 - Availability - TEMP/PILOT 300 hPa wind



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

Figure 5

ECMWF Monitoring Statistics - SEP 2023
Availability - Aircraft winds 300-150 hPa
Average number of observations in 24 hours - 207471



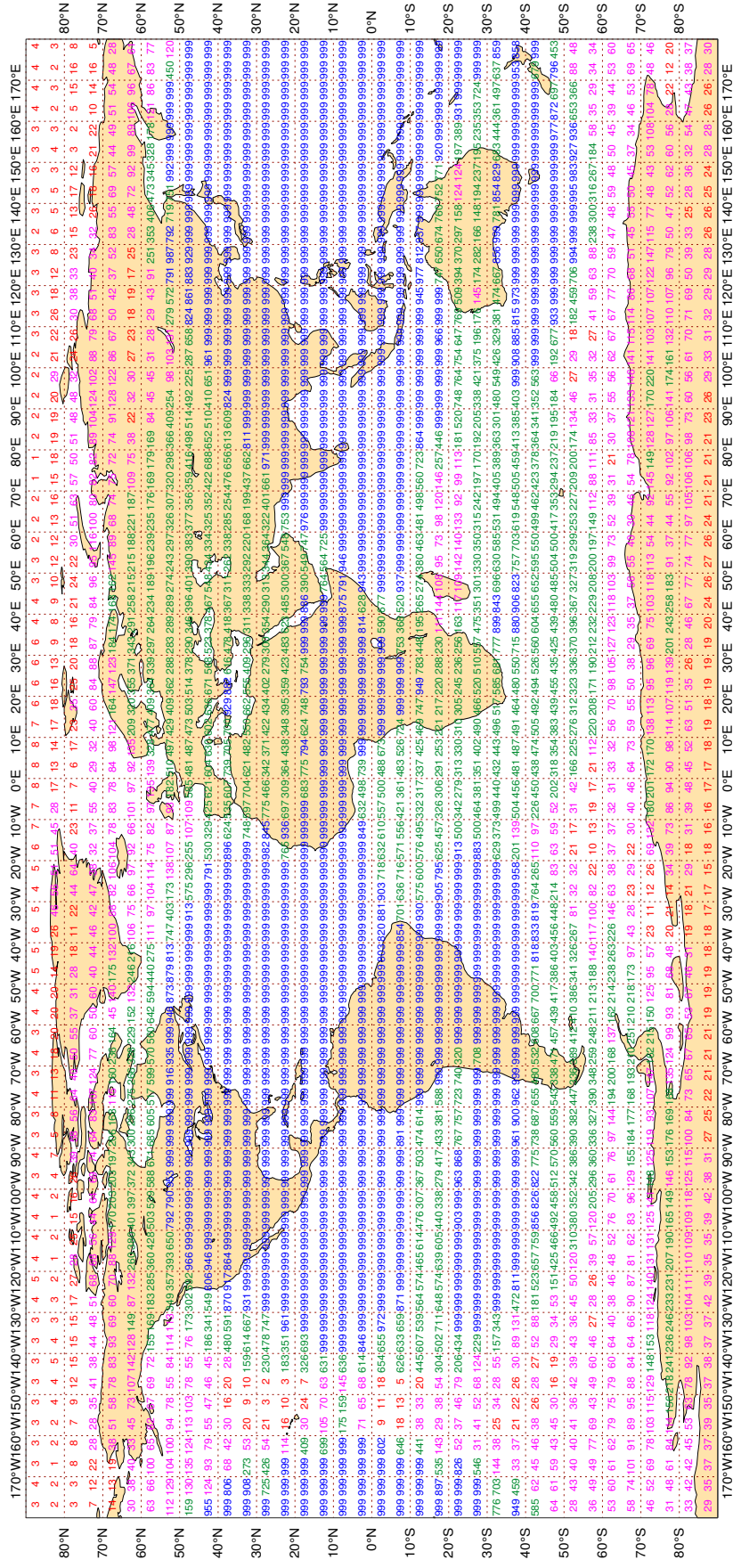
Magics 4.9.4



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

Figure 6

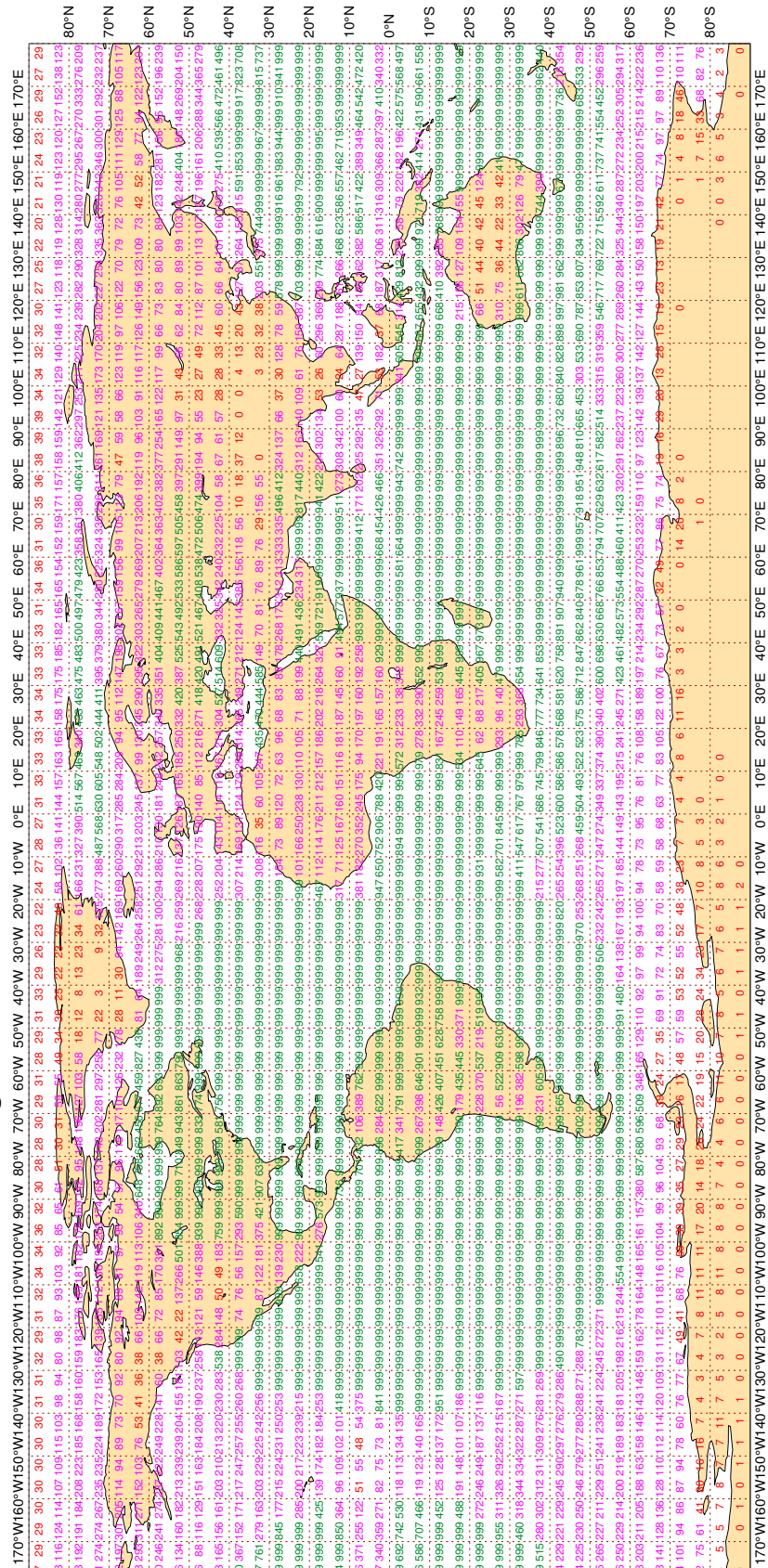
ECMWF Monitoring Statistics - SEP 2023
Availability - AMV winds 400-150 hPa
Average number of observations in 24 hours - 2335263



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

Figure 7

ECMWF Monitoring Statistics - SEP 2023
Availability - AMV winds 1000-700 hPa
Average number of observations in 24 hours - 4106334



Magics 4.9.4

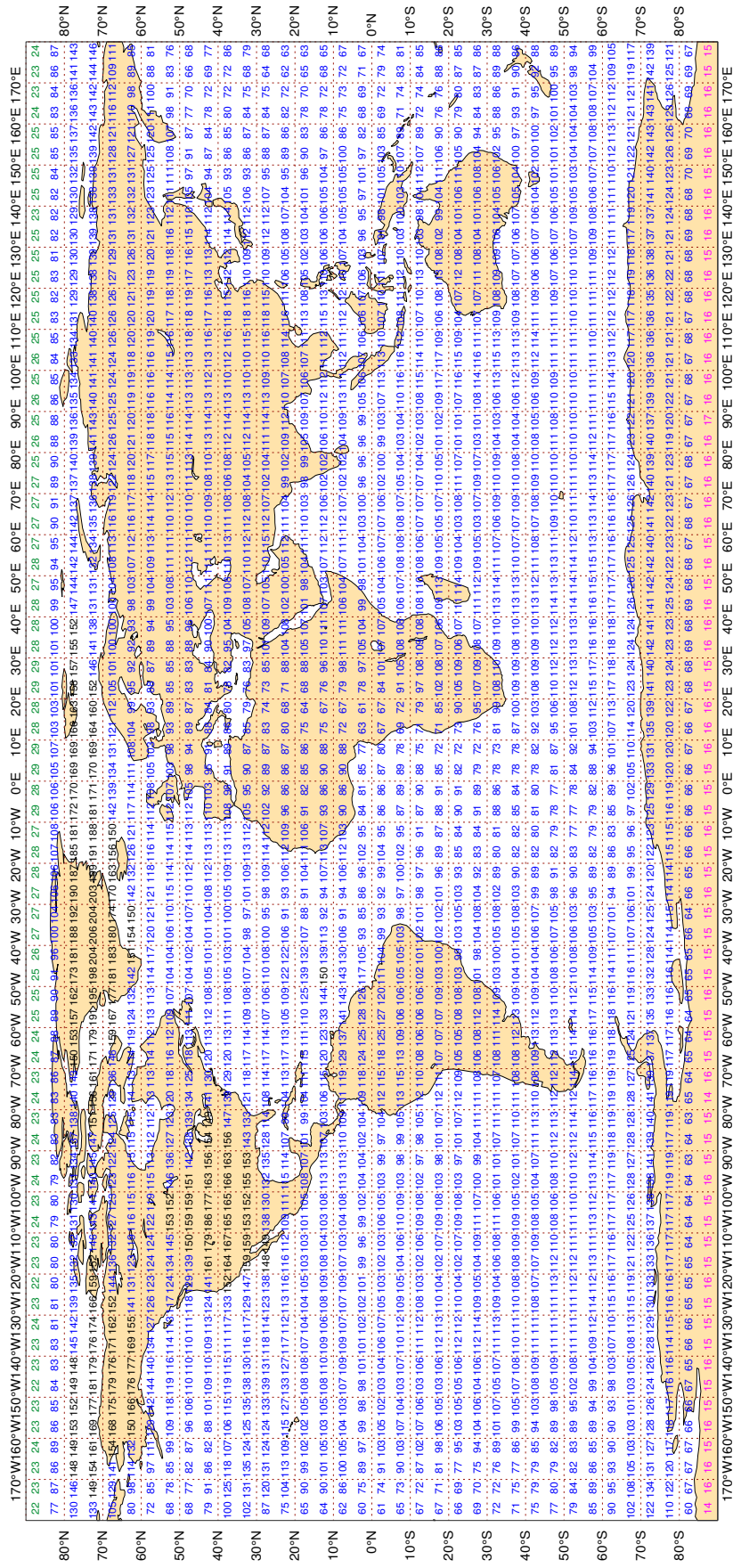


3.2.8 Figure 8 - Availability - NOAA15 ATOVS : AMSU-A

Figure 8

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

Average number of observations in 24 hours - 271210

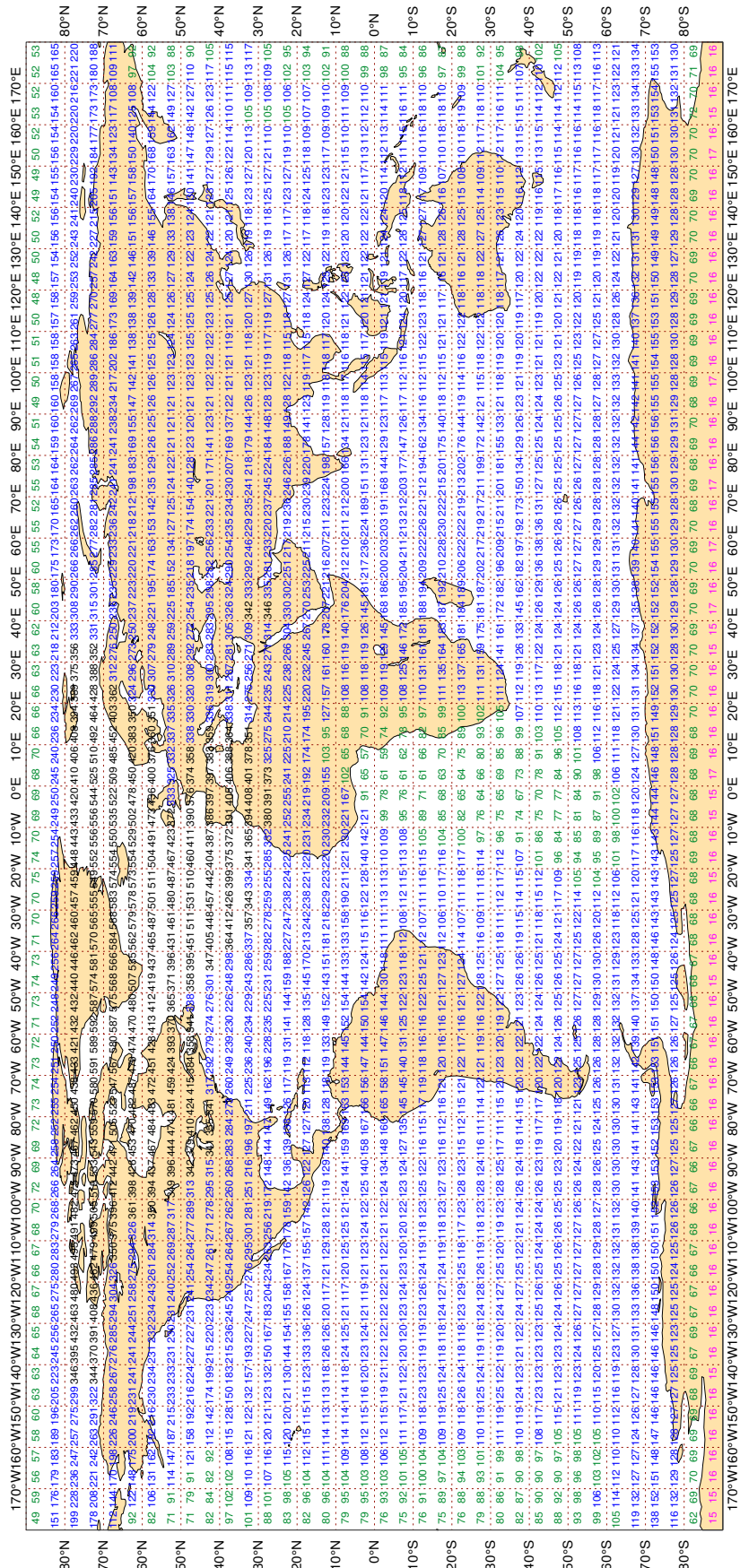


3.2.9 Figure 9.1 - Availability - NOAA18 ATOVS : AMSU-A

Figure 9.1

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

Average number of observations in 24 hours - 439215



Magics 4.9.4

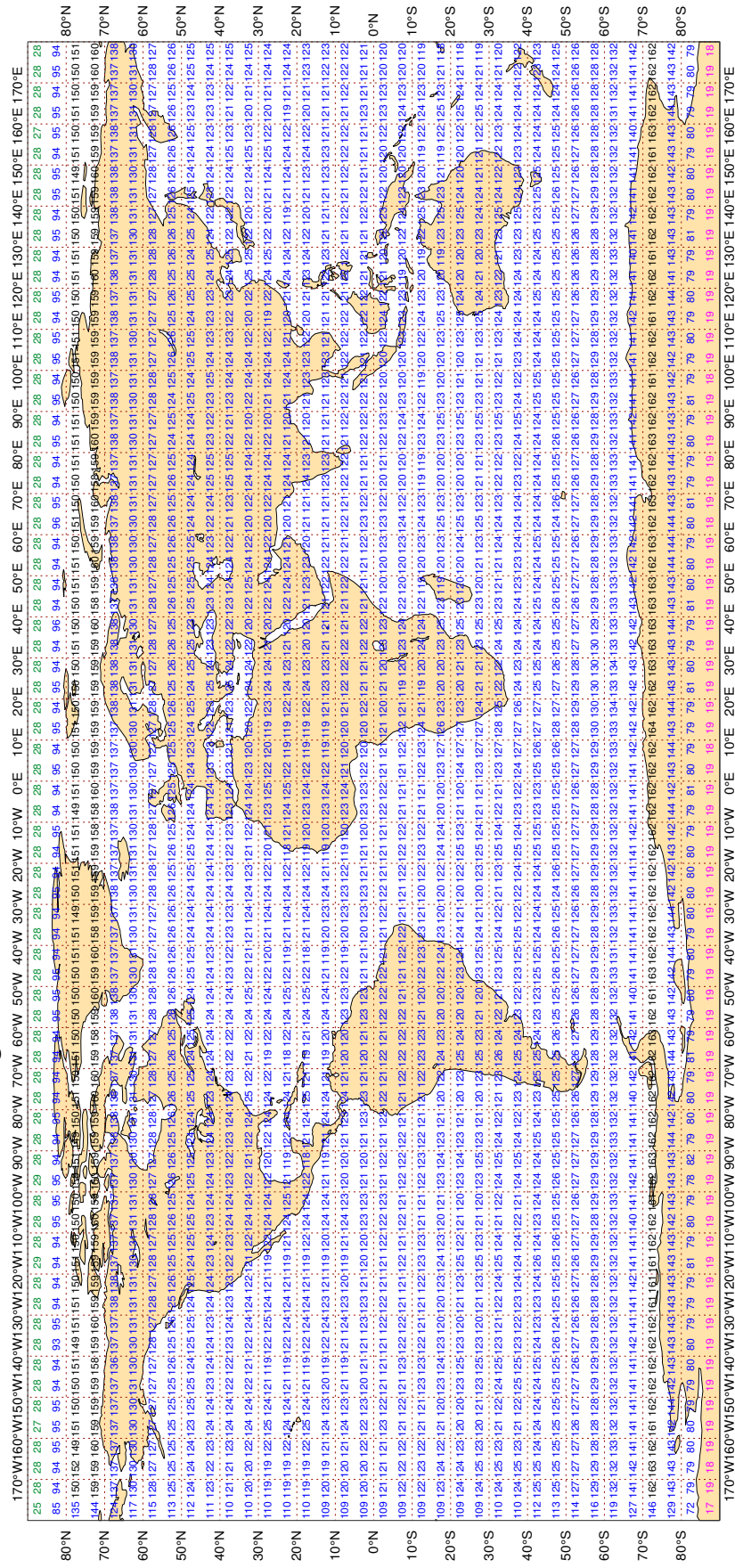


3.2.10 Figure 9.2 - Availability - AQUA ATOVS : AMSU-A

Figure 9.2

ECMWF Monitoring Statistics - SEP 2023
Availability - METOP-C ATOVS : AMSU-A

Average number of observations in 24 hours - 313519

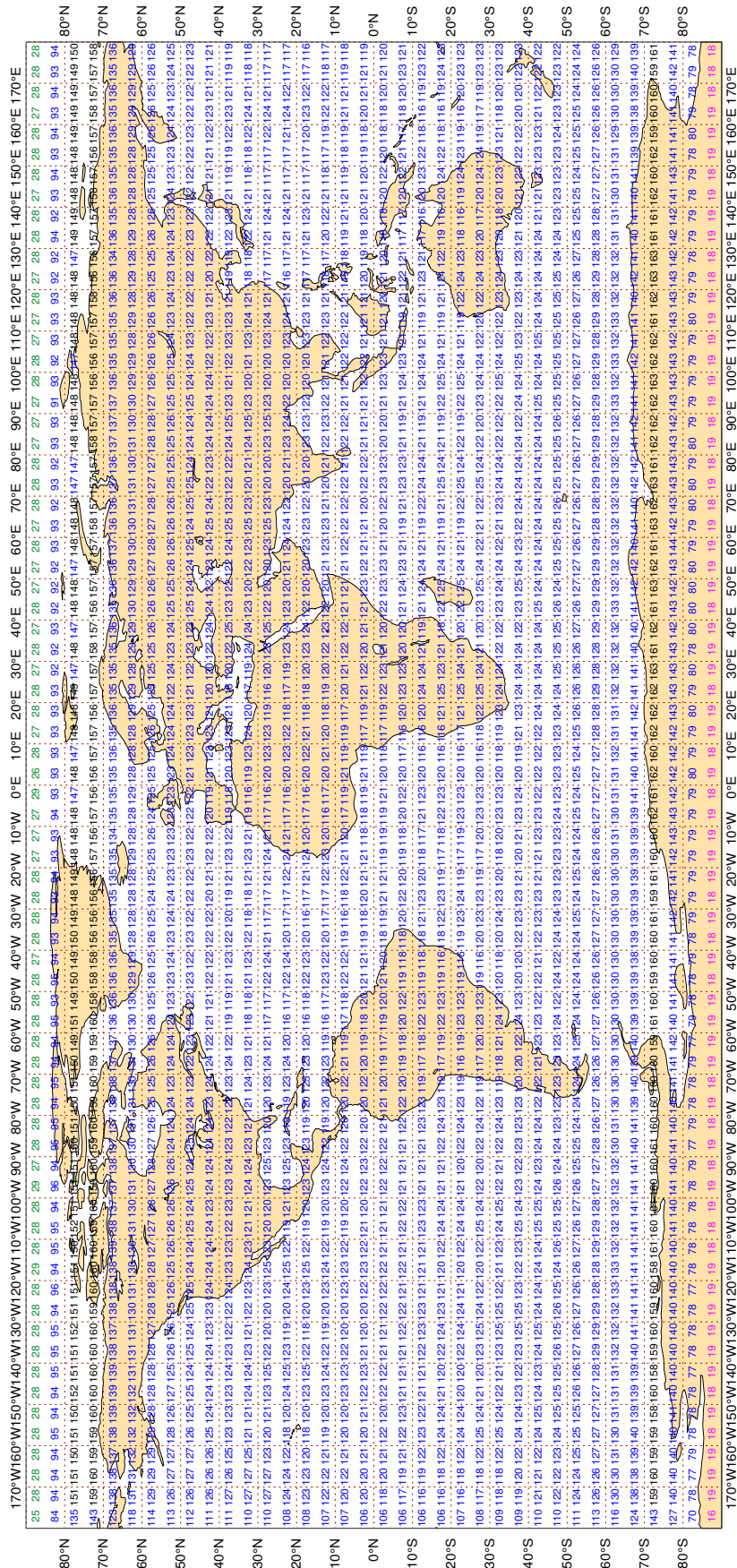


3.2.11 Figure 9.3 - Availability - METOP ATOVS : AMSU-A

Figure 9.3

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

Average number of observations in 24 hours - 310872



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 : SEP 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
3EPL4	99	P	SUR	30	0	2.0	6.7	7.0
3FJL6	99	P	SUR	16	0	1.4	4.0	4.2
3FZI8	99	P	SUR	103	0	2.1	4.3	4.8
45201	99	P	SUR	120	22	4.8	7.8	9.2
46097	99	P	SUR	39	1	4.0	7.0	8.0
5LDS2	99	P	SUR	16	0	1.1	3.4	3.6
7JUN	99	P	SUR	18	0	0.6	-3.1	3.1
7KOA	99	P	SUR	21	0	1.3	5.5	5.7
9HA3777	99	P	SUR	15	0	1.4	9.6	9.7
9HA4638	99	P	SUR	49	0	1.6	5.8	6.1
9HA4960	99	P	SUR	22	0	2.7	5.4	6.0
9HA5063	99	P	SUR	114	0	2.3	6.4	6.8
9HA5209	99	P	SUR	99	0	4.6	7.6	8.9
9HJB9	99	P	SUR	23	0	0.6	3.9	3.9
9V2728	99	P	SUR	18	0	1.8	4.6	4.9
9V3913	99	P	SUR	70	0	1.3	5.9	6.0
9V9404	99	P	SUR	44	0	1.9	6.5	6.7
9V9450	99	P	SUR	95	0	1.6	5.2	5.4
AUCE	99	P	SUR	103	0	0.7	3.0	3.1
BHJH	99	P	SUR	15	0	1.2	6.2	6.4
C6DX2	99	P	SUR	116	0	0.6	5.0	5.0
C6TX6	99	P	SUR	31	0	1.7	5.0	5.2
JMJRCES	99	P	SUR	100	0	0.6	-6.1	6.1
KIAB	99	P	SUR	25	0	1.1	3.4	3.6
LAHR7	99	P	SUR	88	0	2.2	3.7	4.3
LAQL7	99	P	SUR	47	0	0.8	3.6	3.7
OBAA	99	P	SUR	35	0	0.8	-6.4	6.5
OWLD2	99	P	SUR	30	0	1.2	-3.9	4.1
PHET	99	P	SUR	29	0	3.1	3.6	4.8
S6AN5	99	P	SUR	16	0	0.6	5.2	5.2
UGYU	99	P	SUR	15	12	1.5	-2.7	3.0
V7A6085	99	P	SUR	18	0	0.5	3.4	3.5

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

WMO IDENT	OBS TIME	ELM	LEVEL	NUM OBS	NUM GROSS	SD	BIAS	RMS
V7DJ7	99	P	SUR	19	6	4.0	11.8	12.5
V7QT7	99	P	SUR	50	0	0.9	4.7	4.8
V7Y03	99	P	SUR	30	0	1.6	3.1	3.5
VRCI9	99	P	SUR	17	0	1.9	6.1	6.4
VRDJ3	99	P	SUR	68	0	0.9	-3.1	3.2
VRGO2	99	P	SUR	15	0	1.2	4.9	5.0
VRGO3	99	P	SUR	19	0	1.0	7.4	7.5
VRGO6	99	P	SUR	20	0	2.5	-3.9	4.6
VRJU8	99	P	SUR	17	0	2.0	3.6	4.2
VRKZ9	99	P	SUR	32	0	0.6	-4.2	4.2
VRLJ4	99	P	SUR	26	0	1.9	4.3	4.7
VRMX7	99	P	SUR	18	0	1.3	10.3	10.4
VROB9	99	P	SUR	16	0	2.1	3.0	3.7
VRQX5	99	P	SUR	15	1	0.7	11.3	11.3
VRRB5	99	P	SUR	67	0	1.6	3.8	4.1
VRRU4	99	P	SUR	15	0	1.7	5.2	5.5
VRTG6	99	P	SUR	86	6	4.2	6.7	7.9
VRZK9	99	P	SUR	15	0	1.7	4.0	4.3
VTSJ	99	P	SUR	30	0	1.4	-6.3	6.5
WDF2493	99	P	SUR	82	0	0.4	4.0	4.1
WGEB	99	P	SUR	101	0	0.6	6.5	6.6

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

LIST OF SUSPECT STATIONS : SHIPS + FIXED MARINE PLATFORMS
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND SPEED (M/S)
 AREA : GLOBAL
 PERIOD : SEP 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	120	0	0	2.8	-4.6	5.4

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

LIST OF SUSPECT STATIONS : SHIPS + FIXED MARINE PLATFORMS
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND DIRECTION (DEGREES)
 AREA : GLOBAL
 PERIOD : SEP 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	81	0	0	18.9	-31.6	36.8
44489	99	DIRN	SUR	78	0	0	15.5	-33.7	37.1
45145	99	DIRN	SUR	58	0	0	142.0	81.6	163.7
45150	99	DIRN	SUR	78	0	0	29.5	60.9	67.7
45168	99	DIRN	SUR	64	0	0	18.3	34.4	39.0
45205	99	DIRN	SUR	70	0	0	84.1	-40.0	93.2
46204	99	DIRN	SUR	84	0	0	22.9	37.9	44.3

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

LIST OF SUSPECT STATIONS : DRIFTER
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : SURFACE PRESSURE (HPA)
 AREA : GLOBAL
 PERIOD : SEP 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	561	141	5.9	-6.6	8.9
1301763	99	P	SUR	9	-42	28	28	0.0	0.0	0.0
1501696	99	P	SUR	-29	-6	719	0	0.3	-5.7	5.7
1501727	99	P	SUR	-16	-39	716	0	0.4	-7.3	7.3
1501729	99	P	SUR	-19	-34	719	0	0.5	-12.0	12.0
1701710	99	P	SUR	-42	-27	491	123	8.5	-3.2	9.1
1801711	99	P	SUR	33	-117	28	0	3.3	-5.8	6.7
1801716	99	P	SUR	33	-117	50	0	0.4	-6.6	6.6
1801733	99	P	SUR	6	80	82	55	4.5	-8.6	9.7
2802007	99	P	SUR	33	-117	28	0	0.4	-6.7	6.7
2802008	99	P	SUR	33	-117	27	0	0.5	-7.2	7.2
2802010	99	P	SUR	33	-117	49	0	0.4	-6.6	6.6
2802021	99	P	SUR	33	-117	26	0	0.0	-6.8	6.8
3301702	99	P	SUR	-42	-36	711	91	8.1	0.6	8.2
3301704	99	P	SUR	-39	-9	398	51	9.0	1.3	9.1
3401637	99	P	SUR	-30	9	246	69	0.9	13.7	13.7
3801612	99	P	SUR	33	-117	22	0	0.4	-6.6	6.6
3801616	99	P	SUR	33	-117	26	0	0.5	-7.0	7.0
3801620	99	P	SUR	33	-117	26	0	3.4	-5.9	6.8
3801625	99	P	SUR	33	-117	27	0	0.6	-6.8	6.9
4500201	99	P	SUR	42	83	4118	797	4.7	7.8	9.1
45201	99	P	SUR	42	83	720	134	4.8	7.7	9.0
4600097	99	P	SUR	45	-124	1361	17	4.0	7.0	8.0
4601776	99	P	SUR	29	-135	720	13	5.7	6.6	8.7
4602563	99	P	SUR	29	-169	686	143	1.6	12.6	12.7
4602604	99	P	SUR	38	-136	163	149	0.9	12.3	12.3
4602608	99	P	SUR	42	-133	207	66	2.9	9.4	9.8
46097	99	P	SUR	45	-124	231	4	4.0	6.9	8.0
4701542	99	P	SUR	75	-159	74	74	0.0	0.0	0.0
4701544	99	P	SUR	74	-148	79	18	2.4	10.7	11.0
4701744	99	P	SUR	78	-107	717	717	0.0	0.0	0.0
4801658	99	P	SUR	73	-82	65	65	0.0	0.0	0.0

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

WMO IDENT	OBS TIME	ELM	ME LAT	N LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS	
4803990	99	P	SUR	80	-169	513	513	0.0	0.0	0.0
4804044	99	P	SUR	33	-117	25	0	3.4	-5.7	6.7
4804078	99	P	SUR	-37	102	713	0	1.8	5.9	6.2
5102637	99	P	SUR	6	-77	574	260	3.0	-2.6	4.0
5102809	99	P	SUR	10	-109	716	684	2.9	-12.6	12.9
5103563	99	P	SUR	31	-158	715	51	3.7	-4.9	6.2
5501735	99	P	SUR	-48	-177	717	717	0.0	0.0	0.0
5802011	99	P	SUR	33	-117	26	0	0.5	-7.0	7.0
5802033	99	P	SUR	33	-117	43	0	0.0	-6.6	6.6
6102732	99	P	SUR	32	21	286	286	0.0	0.0	0.0
6203642	99	P	SUR	21	-84	110	18	3.8	7.0	7.9
6204605	99	P	SUR	41	3	700	88	1.3	12.5	12.5
6801811	99	P	SUR	33	-117	26	0	0.5	-7.1	7.1
6801824	99	P	SUR	33	-117	38	0	0.4	-6.8	6.8
7801627	99	P	SUR	33	-117	40	0	0.4	-6.5	6.5
7801647	99	P	SUR	33	-117	28	0	0.4	-6.8	6.8

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

LIST OF SUSPECT STATIONS : DRIFTER
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND SPEED (M/S)
 AREA : GLOBAL
 PERIOD : SEP 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
23459	99	SPEED	SUR	14	87	21	0	0	1.2	-7.1	7.2

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

LIST OF SUSPECT STATIONS : DRIFTER
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND DIRECTION (DEGREES)
 PERIOD : SEP 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	291	0	0	20.2	103.8	105.7
2300092	99	DIRN	SUR	17	89	65	0	0	49.5	-105.2	116.3
2300093	99	DIRN	SUR	16	88	115	0	0	72.2	-101.9	124.9
2300094	99	DIRN	SUR	13	84	110	0	0	14.9	-77.3	78.8
2300095	99	DIRN	SUR	10	94	103	0	0	20.4	21.9	30.0
2300452	99	DIRN	SUR	12	69	110	0	0	42.9	-90.3	99.9
2300453	99	DIRN	SUR	8	73	101	0	0	24.5	-36.2	43.7
2300454	99	DIRN	SUR	10	73	134	0	0	108.4	-64.4	126.1
2300460	99	DIRN	SUR	7	88	40	0	0	84.8	-29.8	89.9
23092	99	DIRN	SUR	17	89	106	0	0	62.4	-97.2	115.5
23093	99	DIRN	SUR	16	88	168	0	0	75.7	-105.0	129.4
23094	99	DIRN	SUR	13	84	152	0	0	14.9	-78.8	80.2
23095	99	DIRN	SUR	10	94	162	0	0	18.9	21.9	29.0
23099	99	DIRN	SUR	13	80	381	0	0	62.0	29.5	68.7
23452	99	DIRN	SUR	12	69	159	0	0	32.4	-90.7	96.3
23453	99	DIRN	SUR	8	73	127	0	0	24.2	-39.2	46.1
23454	99	DIRN	SUR	10	73	153	0	0	108.7	-62.0	125.2
23460	99	DIRN	SUR	7	88	41	0	0	85.6	-31.2	91.1
23491	99	DIRN	SUR	12	93	234	0	0	41.1	-96.8	105.2
23497	99	DIRN	SUR	11	72	156	0	0	38.8	-80.0	88.9
4100033	99	DIRN	SUR	32	-80	587	0	0	24.3	-21.4	32.4
4200085	99	DIRN	SUR	18	-67	2542	0	0	27.3	20.6	34.2
4300301	99	DIRN	SUR	8	-95	47	0	0	106.6	-23.5	109.2
43301	99	DIRN	SUR	8	-95	43	0	0	105.1	-28.1	108.8
4400033	99	DIRN	SUR	44	-69	281	2	0	26.8	22.8	35.2
4400488	99	DIRN	SUR	45	-61	490	0	0	17.1	-28.0	32.8
4400489	99	DIRN	SUR	45	-61	426	0	0	15.2	-32.5	35.9
44033	99	DIRN	SUR	44	-69	261	1	0	26.6	21.8	34.4
44078	99	DIRN	SUR	60	-40	588	0	0	10.9	-22.2	24.7
44488	99	DIRN	SUR	45	-61	491	0	0	17.4	-28.8	33.7
44489	99	DIRN	SUR	46	-61	445	0	0	14.2	-33.0	35.9

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
4500168	99	DIRN	SUR	42	-86	2351	0	0	20.4	33.6	39.3
4500186	99	DIRN	SUR	42	-88	2083	0	0	40.0	-20.5	45.0
4500197	99	DIRN	SUR	42	-82	2086	0	0	24.8	-27.5	37.0
4500199	99	DIRN	SUR	43	-88	1133	0	0	17.7	-20.6	27.2
4500203	99	DIRN	SUR	41	-83	1577	0	0	55.7	-33.8	65.2
4500205	99	DIRN	SUR	42	-82	2288	0	0	85.7	-39.1	94.2
45145	99	DIRN	SUR	52	-97	350	0	0	150.6	65.0	164.0
45150	99	DIRN	SUR	62	-114	462	0	0	28.0	62.8	68.7
45168	99	DIRN	SUR	42	-86	394	0	0	18.9	34.5	39.3
45186	99	DIRN	SUR	42	-88	415	0	0	39.1	-22.1	44.9
45197	99	DIRN	SUR	42	-82	390	0	0	25.3	-27.4	37.3
45199	99	DIRN	SUR	43	-88	578	0	0	19.6	-21.5	29.1
45203	99	DIRN	SUR	41	-83	271	0	0	51.9	-31.5	60.7
45205	99	DIRN	SUR	42	-82	371	0	0	85.5	-40.0	94.4
4600060	99	DIRN	SUR	61	-147	451	0	0	24.1	22.0	32.6
4600204	99	DIRN	SUR	51	-129	531	0	0	19.8	39.0	43.8
46131	99	DIRN	SUR	50	-125	338	0	0	59.5	-22.4	63.5
46204	99	DIRN	SUR	51	-129	514	0	0	20.1	38.0	43.0
6100280	99	DIRN	SUR	41	1	76	3	0	89.4	72.3	115.0
6200086	99	DIRN	SUR	55	6	316	0	0	12.9	26.2	29.2
6301004	99	DIRN	SUR	72	20	144	0	0	38.7	134.1	139.6
6600022	99	DIRN	SUR	54	14	61	0	0	16.6	23.9	29.1
6600024	99	DIRN	SUR	55	13	58	0	0	17.0	28.0	32.8

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

LIST OF SUSPECT STATIONS : RADIOSONDES
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : GEOPOTENTIAL HEIGHT (METRES)
 AREA : GLOBAL
 PERIOD : SEP 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	00	Z	1000	57	3	20	0	3.9	77.3	77.4
01400	12	Z	1000	57	3	19	0	3.9	77.5	77.6
24266	12	Z	250	68	133	28	1	71.7	21.4	74.8
28445	12	Z	250	57	61	15	0	51.1	77.0	92.4
28445	00	Z	200	57	61	14	0	59.1	104.8	120.3
38341	12	Z	200	43	71	27	1	37.2	76.2	84.8
38341	00	Z	200	43	71	21	1	45.2	86.6	97.7
40811	12	Z	250	31	49	24	8	65.6	53.3	84.5
42123	12	Z	925	30	74	22	0	27.0	52.0	58.6
42123	00	Z	925	30	74	21	0	28.0	47.7	55.3
42339	12	Z	850	26	73	30	4	20.2	42.9	47.4
42339	00	Z	850	26	73	27	1	29.2	23.2	37.3
42348	00	Z	850	27	76	20	0	8.8	48.1	48.9
42348	12	Z	850	27	76	17	0	7.4	54.4	54.9
42399	00	Z	50	27	89	18	1	91.7	133.4	161.9
42410	12	Z	850	26	92	30	1	22.0	36.7	42.8
42410	00	Z	850	26	92	30	1	20.3	31.4	37.4
42874	00	Z	850	21	82	25	0	23.1	32.4	39.8
43041	00	Z	850	19	82	28	0	19.6	40.6	45.1
43128	12	Z	850	17	78	29	1	25.9	39.0	46.8
43185	00	Z	850	16	81	26	0	19.1	34.9	39.8
43346	12	Z	850	11	80	28	0	20.0	49.4	53.3
43369	00	Z	150	8	73	14	4	70.7	135.0	152.4
48698	12	Z	200	1	104	14	0	6.8	77.9	78.2
62378	00	Z	1000	30	31	21	0	3.4	28.3	28.5
62403	12	Z	850	26	33	13	4	29.0	88.8	93.4
68842	12	Z	1000	-34	26	18	0	26.7	16.4	31.3
76526	00	Z	1000	23	-103	25	15	8.6	-91.4	91.8
76644	12	Z	70	21	-90	25	0	153.1	135.4	204.4
78486	00	Z	1000	18	-70	29	0	2.5	30.5	30.6

LIST OF SUSPECT STATIONS (CONTINUED)

WMO IDENT	OBS TIME	ELM	LEV	LAT	LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
91680	00	Z	1000	-18	177	30	0	2.5	31.4	31.5
91680	12	Z	1000	-18	177	27	0	2.5	31.8	31.9
96315	12	Z	1000	5	115	30	0	7.2	51.6	52.1
96315	00	Z	1000	5	115	29	0	5.7	53.6	53.9
97690	00	Z	925	-3	141	29	0	36.8	26.7	45.5
98558	00	Z	850	11	126	27	0	29.7	33.7	44.9
JNKN7J	12	Z	1000	46	-55	11	0	5.6	38.7	39.1
KMPLHP	12	Z	1000	51	-21	13	1	9.8	60.2	61.0

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

LIST OF SUSPECT STATIONS : RADIOSONDES
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND (M/S)
 AREA : GLOBAL
 PERIOD : SEP 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
07110	12	V	250	48	-4	28	2	-4.3	-0.3	17.8
42667	00	V	100	23	77	17	0	7.6	-12.5	15.6

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

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

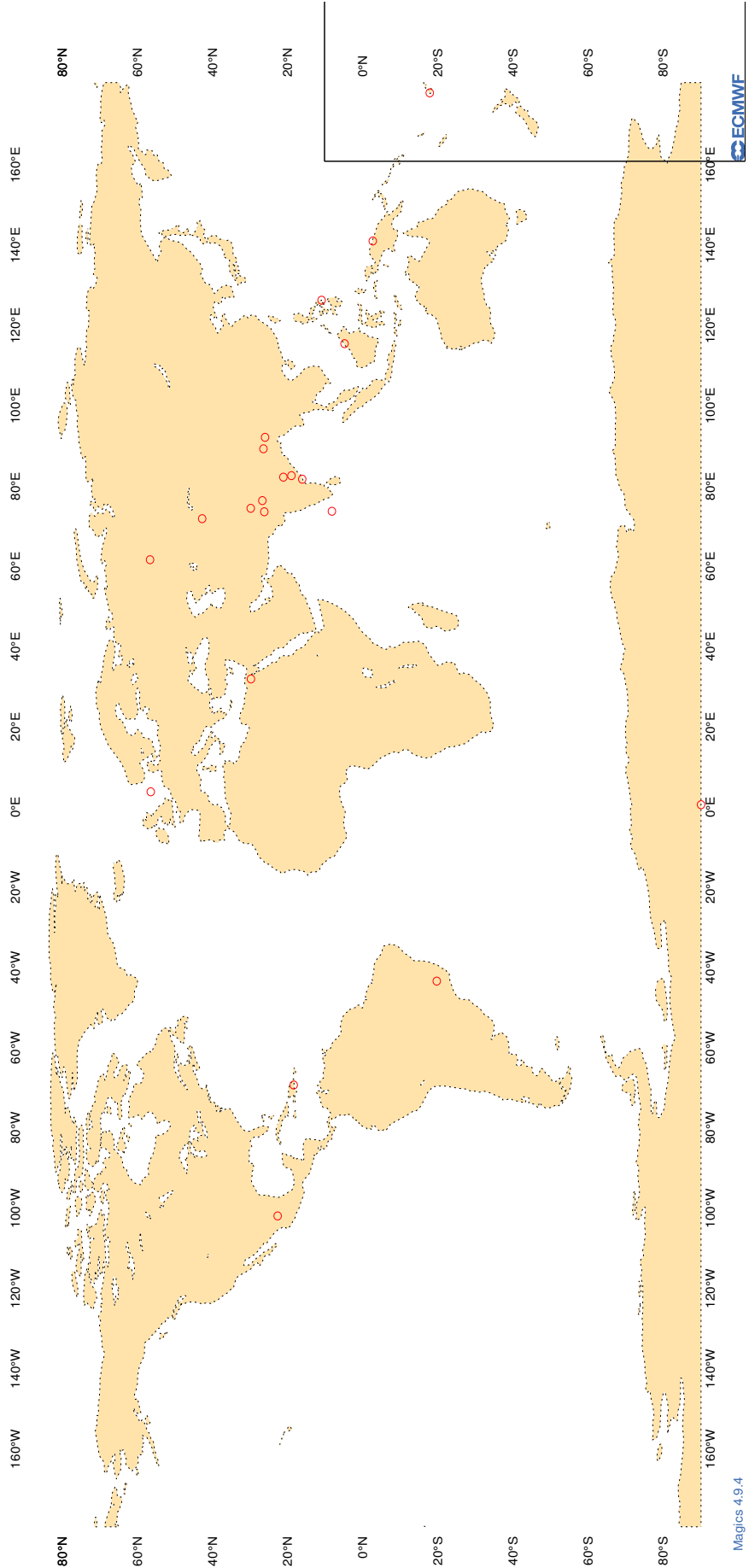
SELECTION CRITERIA: OBSERVED/FORECAST WIND SPEEDS \geq 5 M/S
 NO. OF OBSERVATIONS \geq 5, AND,
 ABSOLUTE BIAS \geq 10 DEGREES, WITH
 STANDARD DEVIATION $<$ 30 DEGREES, AND,
 VERTICAL SPREAD $<$ 10 DEGREES
 (AVERAGE BETWEEN 500 AND 150 HPA)

WMO IDENT	OBS TIME	ELM	LAT	LONG	NUM OBS	BIAS	MAX SPREAD	SD
28445	12	DD	57	61	13	16.6	3.1	7.8
28445	00	DD	57	61	13	17.7	2.1	8.3
54340	12	DD	42	124	28	-12.7	2.7	6.0
54340	00	DD	42	124	29	-12.8	1.2	5.3

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

Figure 10

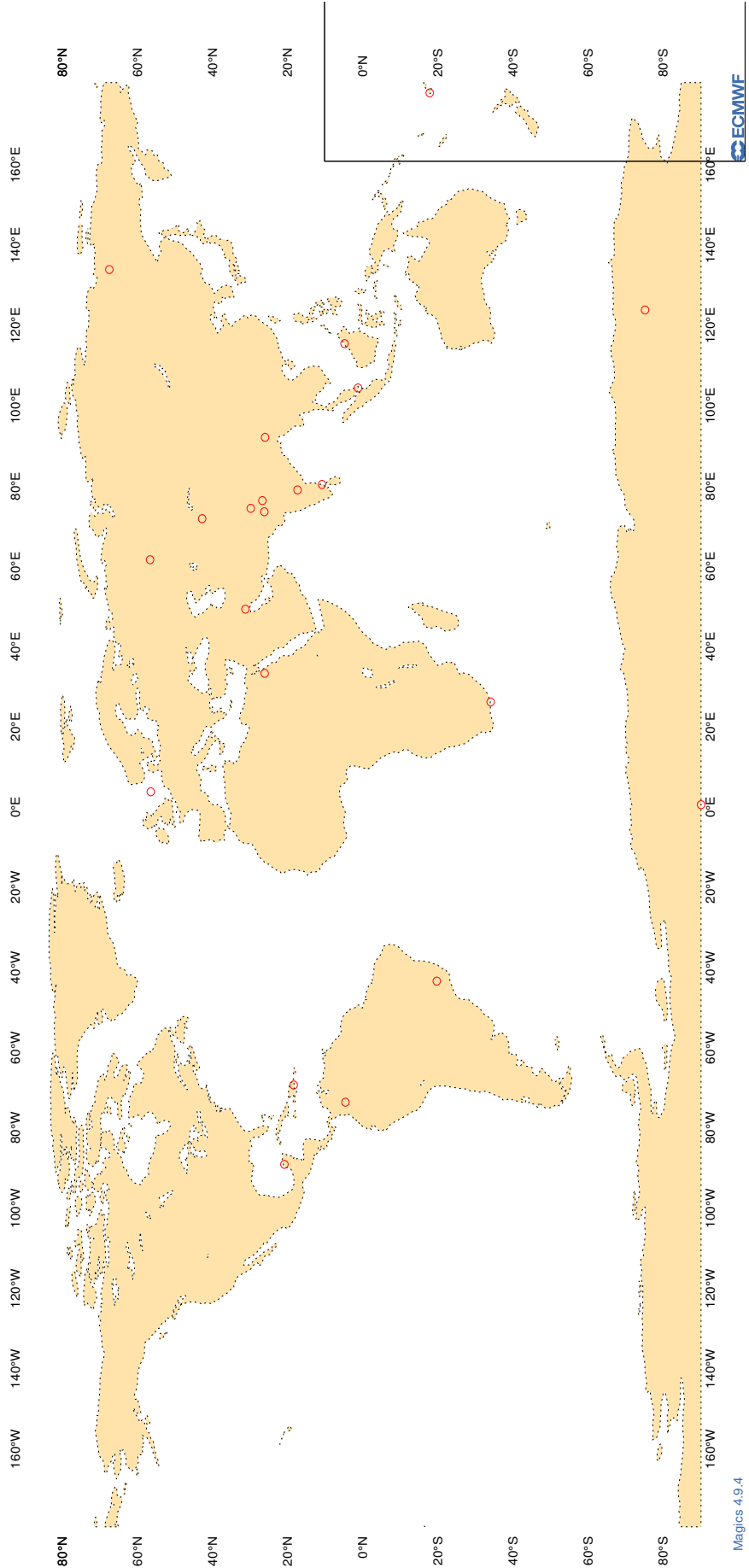
ECMWF Monitoring Statistics - SEP 2023 00 UTC
Suspect TEMP observations - GEOPOTENTIAL



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

Figure 11

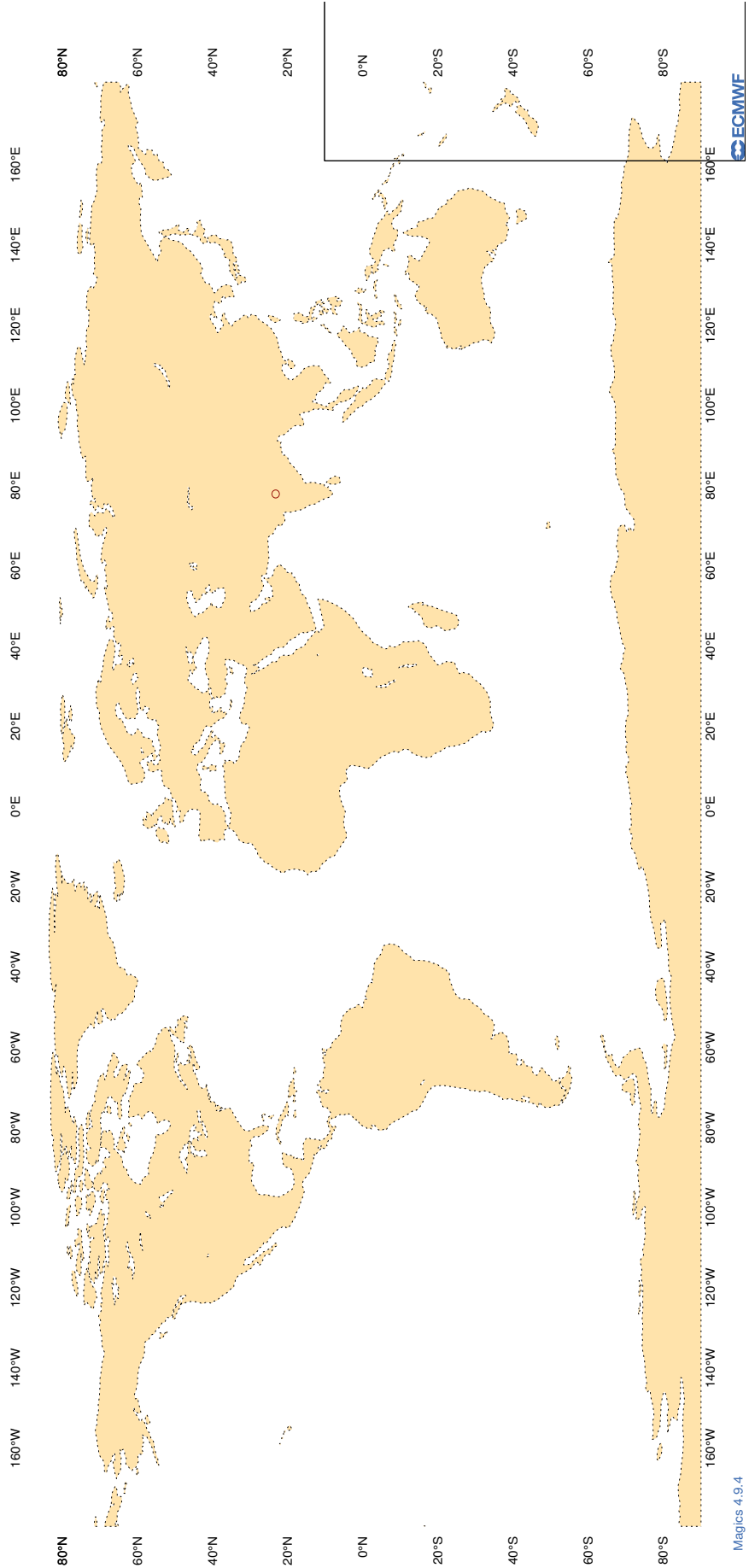
ECMWF Monitoring Statistics - SEP 2023 12 UTC
Suspect TEMP observations - GEOPOTENTIAL



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

Figure 12

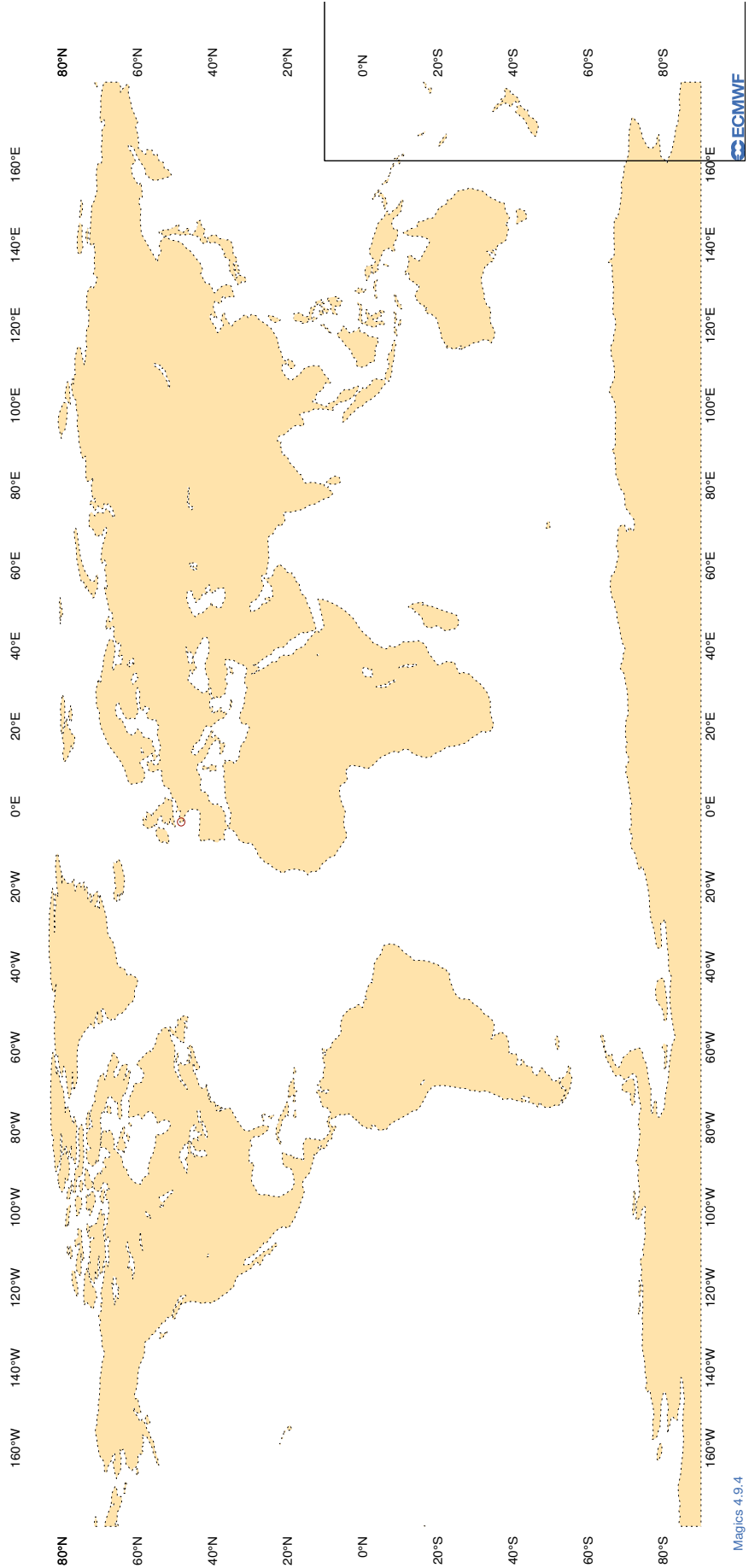
ECMWF Monitoring Statistics - SEP 2023 00 UTC
Suspect TEMP/PILOT observations - WIND



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

Figure 13

ECMWF Monitoring Statistics - SEP 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 : SEP 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
2EERTV	12	Z	100	6	10.8	-1.3
2EERTV	00	Z	100	7	14.7	-7.1
7JUNA4	12	Z	100	7	21.4	3.6
7JUNA4	00	Z	100	4	6.1	4.0
9ZT9MR	12	Z	100	3	19.4	-18.3
9ZT9MR	00	Z	100	3	25.0	-22.6
AH2ML	00	Z	100	20	5.8	0.0
ATGU3F	12	Z	100	10	34.6	-31.3
ATGU3F	00	Z	100	6	33.3	-31.4
BPMWB2	12	Z	100	8	9.5	-5.1
BPMWB2	00	Z	100	6	15.5	-10.4
DBLK	12	Z	100	26	10.6	7.5
FPUW5G	12	Z	100	4	9.0	6.9
GQBZLZ	12	Z	100	3	25.5	-23.4
JGQH	12	Z	100	13	3.5	0.5
JGQH	00	Z	100	4	3.9	0.9
JNKN7J	12	Z	100	9	57.8	49.7
JNKN7J	00	Z	100	8	25.3	24.1
JNSR	12	Z	100	16	4.6	-3.9
JNSR	00	Z	100	20	9.5	-7.8
JPBN	12	Z	100	2	1.8	1.6
KJJF9X	12	Z	100	8	29.5	4.0
KJJF9X	00	Z	100	6	51.7	-22.3
KMPLHP	12	Z	100	12	37.7	35.3
KMPLHP	00	Z	100	8	106.8	4.1
LAGY8	00	Z	100	3	103.0	-90.1
LAGZ8	12	Z	100	1	40.7	40.7
UBQW2	00	Z	100	31	25.0	-18.5
UXK5JT	12	Z	100	13	13.4	-1.5
UXK5JT	00	Z	100	12	28.0	-9.1
WDK38H	12	Z	100	20	24.7	-17.5
XKQLWQ	12	Z	100	17	38.5	36.4
YL96W	12	Z	100	7	45.0	33.2
YL96W	00	Z	100	5	55.3	27.5
ZVQEQC	12	Z	100	1	0.9	0.9

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

RADIOSONDE MONITORING STATISTICS (SHIPS)

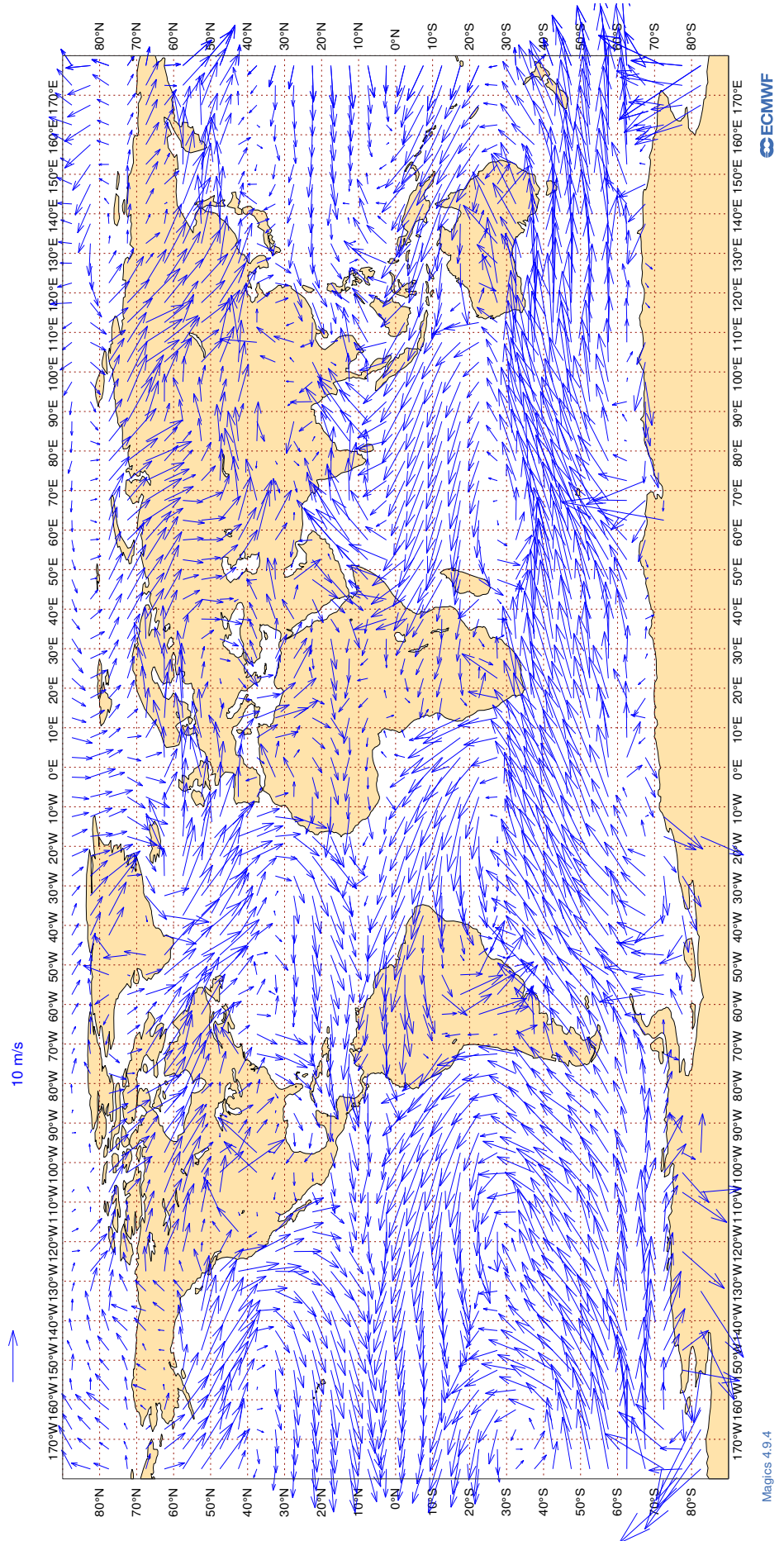
MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND (M/S)
 LEVEL : 100 HPA
 AREA : GLOBAL
 PERIOD : SEP 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
2EERVT	12	V	100	6	3.3	-0.7	0.6
2EERVT	00	V	100	7	2.8	0.0	1.3
7JUNA4	12	V	100	7	3.4	0.8	-0.5
7JUNA4	00	V	100	4	2.2	0.8	0.5
9ZT9MR	12	V	100	3	2.4	-1.1	1.0
9ZT9MR	00	V	100	3	2.3	-0.4	1.6
AH2ML	00	V	100	20	3.5	-0.6	-0.5
ATGU3F	12	V	100	10	3.4	0.8	0.6
ATGU3F	00	V	100	6	2.0	1.1	-0.5
BPMWB2	12	V	100	8	3.3	-0.9	-0.6
BPMWB2	00	V	100	6	3.8	-0.9	-0.2
DBLK	12	V	100	26	3.7	0.4	-0.9
FPUW5G	12	V	100	4	4.4	1.5	-0.3
GQBZLZ	12	V	100	3	2.6	-1.5	1.0
JGQH	12	V	100	13	3.0	0.0	-0.4
JGQH	00	V	100	4	3.1	-0.4	1.5
JNKN7J	12	V	100	9	3.4	1.2	0.9
JNKN7J	00	V	100	8	3.7	0.3	-0.5
JNSR	12	V	100	16	2.0	-0.6	-0.4
JNSR	00	V	100	20	3.8	-0.1	1.4
JPBN	12	V	100	2	2.8	0.9	2.0
KJJF9X	12	V	100	8	4.7	0.3	-2.1
KJJF9X	00	V	100	6	3.7	0.5	-0.5
KMPLHP	12	V	100	12	2.4	0.1	0.2
KMPLHP	00	V	100	8	2.5	0.1	0.1
LAGY8	00	V	100	3	4.6	3.9	0.9
LAGZ8	12	V	100	1	3.0	2.9	-0.8
UBQW2	00	V	100	30	2.3	-0.2	0.7
UXK5JT	12	V	100	13	3.5	0.4	1.1
UXK5JT	00	V	100	12	4.4	-0.3	1.0
WDK38H	12	V	100	19	2.6	-0.1	-0.5
XKQLWQ	12	V	100	16	3.0	0.1	-0.1
YL96W	12	V	100	7	2.8	-1.4	0.8
YL96W	00	V	100	5	3.2	-0.7	-0.5
ZVQEQC	12	V	100	1	7.7	2.8	-7.2

3.2.27 Figure 14 - SATOB Winds: 700-1000hPa

Figure 14

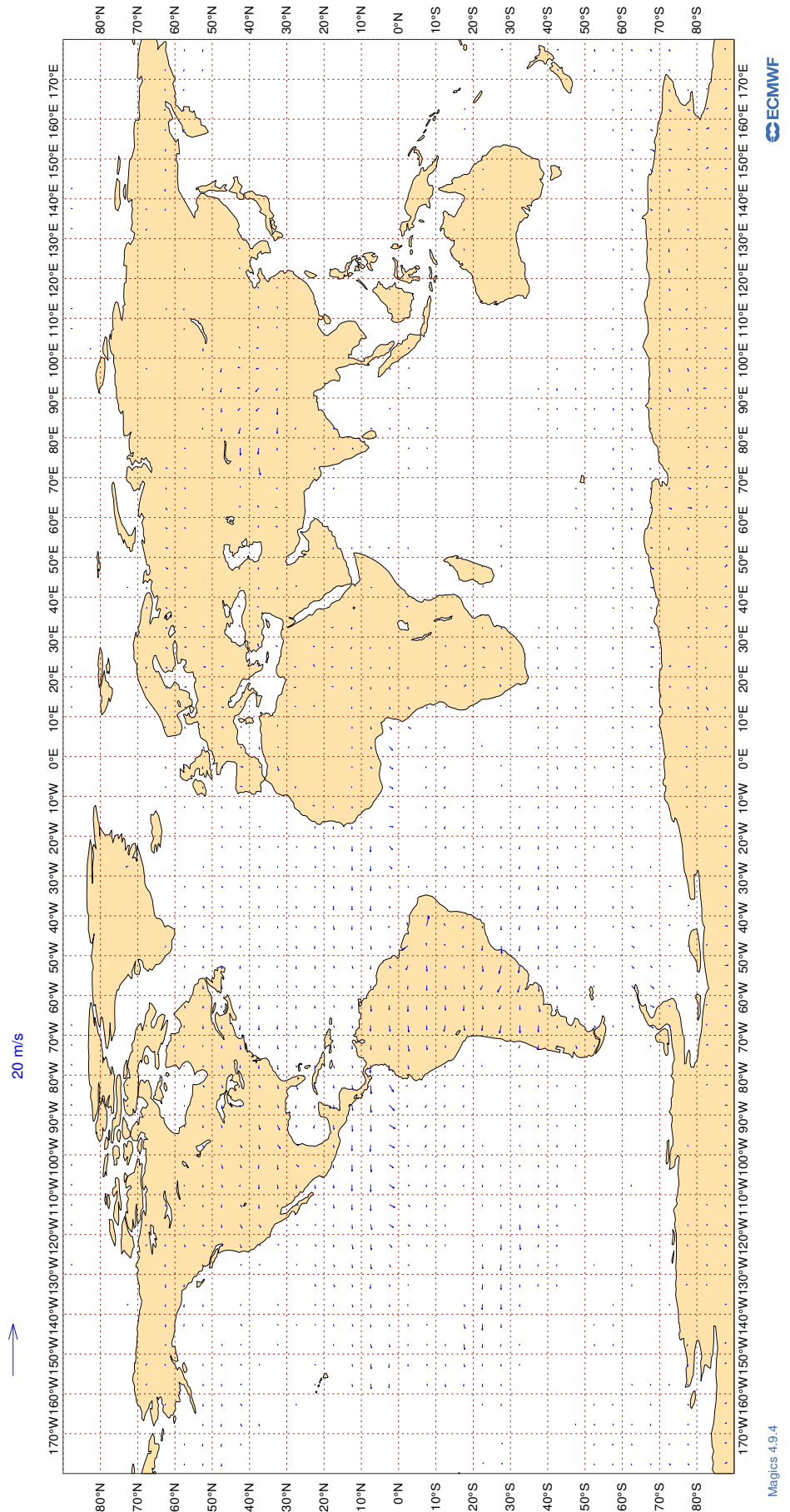
ECMWF Monitoring Statistics: Sep 2023
AMV Winds: 700-1000hPa
Mean Observed Wind



3.2.28 Figure 15 - SATOB Winds: 150- 400hPa

Figure 15

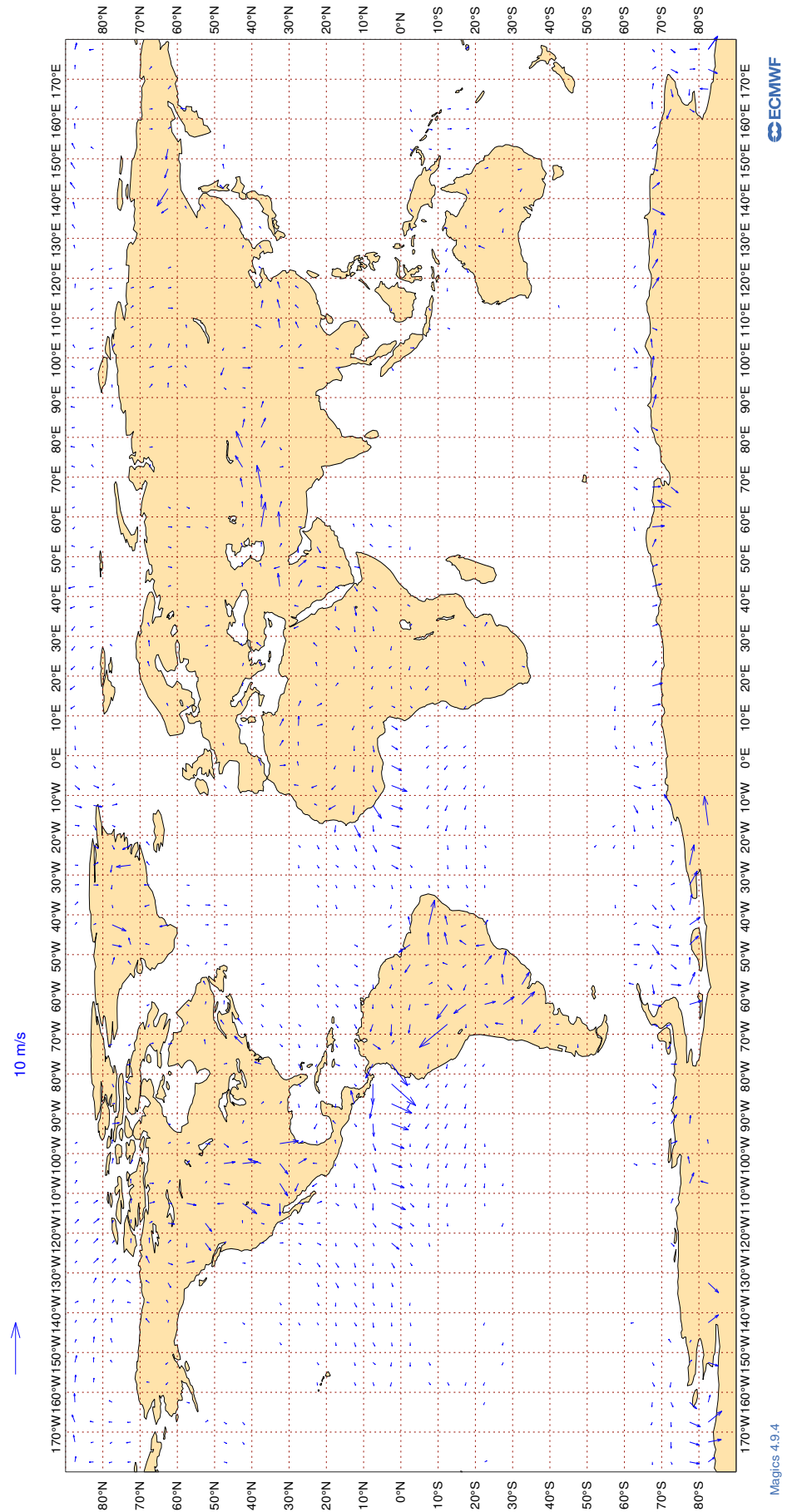
ECMWF Monitoring Statistics: Sep 2023
AMV Winds: 150- 400hPa
Wind bias: Observation - FG



3.2.29 Figure 16 - SATOB Winds: 700-1000hPa

Figure 16

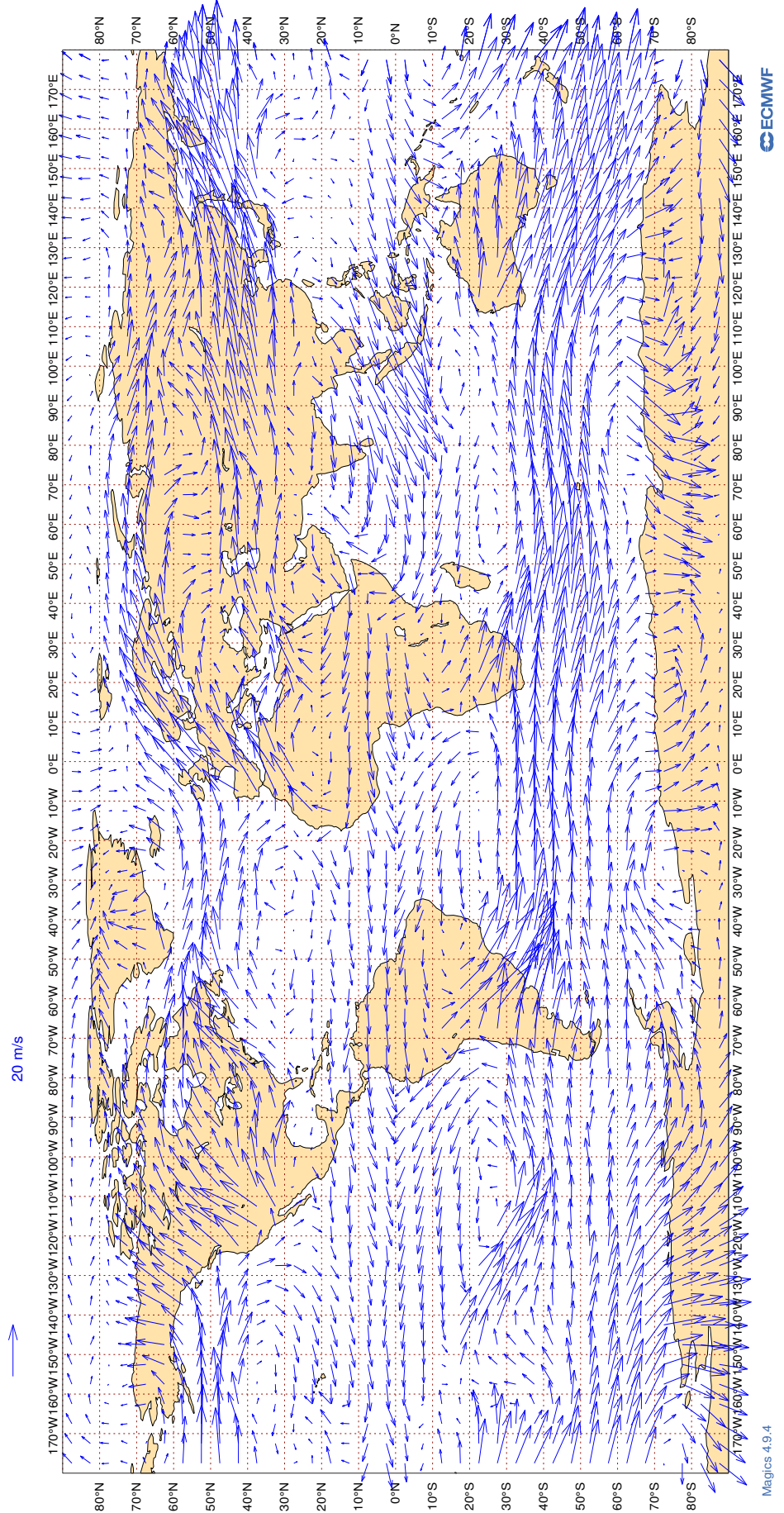
ECMWF Monitoring Statistics: Sep 2023
AMV Winds: 700-1000hPa
Wind bias: Observation - FG



3.2.30 Figure 17 - SATOB Winds: 150- 400hPa

Figure 17

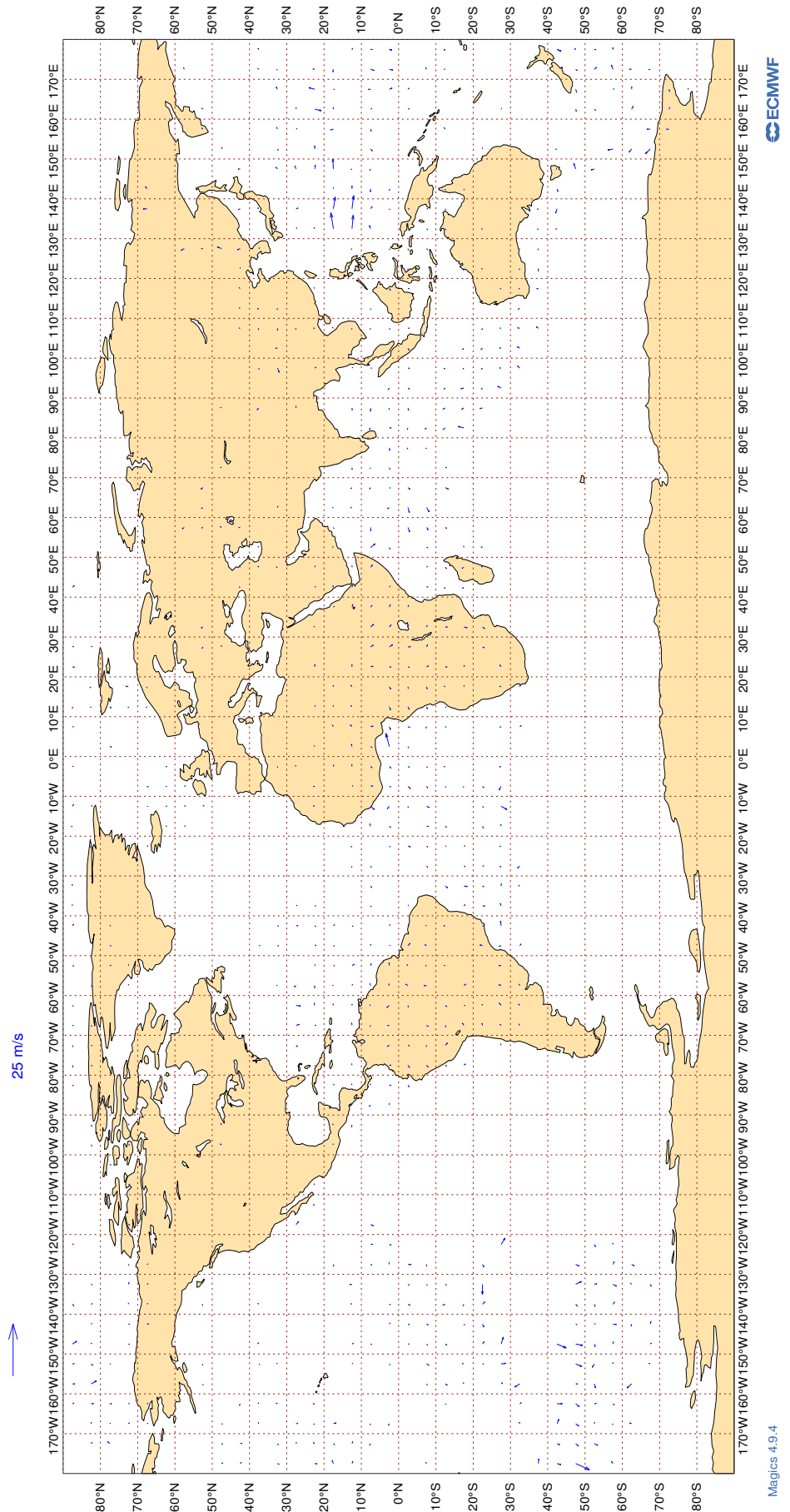
ECMWF Monitoring Statistics: Sep 2023
AMV Winds: 150- 400hPa
Mean Observed Wind



3.2.31 Figure 18 - AIRCRAFT Winds: 150- 300hPa

Figure 18

ECMWF Monitoring Statistics: Sep 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 : SEP 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	156	0	0	3.3	-0.1
AAL	99	V	300-150	53544	3	0	4.7	0.1
AAR	99	V	300-150	210	0	2	3.7	-1.1
ABD	99	V	300-150	1324	0	0	3.6	-0.3
ABP	99	V	300-150	64	0	0	3.0	-0.2
ABX	99	V	300-150	24	0	0	4.2	1.3
ACA	99	V	300-150	40769	2	0	4.5	0.1
ACI	99	V	300-150	395	0	0	3.4	0.7
ADS	99	V	300-150	21	0	0	6.6	-0.3
ADY	99	V	300-150	25	0	0	4.2	0.9
AEA	99	V	300-150	601	7	1	5.5	-0.8
AFR	99	V	300-150	35720	0	0	3.6	0.1
AHO	99	V	300-150	587	0	0	3.3	-0.1
AIB	99	V	300-150	38	0	0	3.3	0.0
AIC	99	V	300-150	4581	0	1	4.6	0.3
AJO	99	V	300-150	33	0	0	3.2	0.3
AJT	99	V	300-150	141	0	1	3.7	0.9
ALK	99	V	300-150	1987	0	0	4.0	0.7
AME	99	V	300-150	32	0	0	4.2	0.3
AMX	99	V	300-150	4783	6	0	5.7	0.0
ANA	99	V	300-150	253	0	4	5.4	0.2
ANZ	99	V	300-150	17578	0	0	3.5	0.4
AOJ	99	V	300-150	341	0	0	3.2	0.3

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
ARL	99	V	300-150	37	0	0	3.7	-0.7
ASA	99	V	300-150	39	0	10	5.8	-0.6
ASL	99	V	300-150	1059	0	0	3.4	0.3
ASP	99	V	300-150	73	0	0	3.7	0.2
ASY	99	V	300-150	169	0	0	4.3	0.3
ATC	99	V	300-150	219	0	2	3.9	0.5
ATG	99	V	300-150	107	0	3	3.7	0.6
ATN	99	V	300-150	155	0	1	5.5	0.3
AUA	99	V	300-150	4864	0	0	3.6	0.0
AUH	99	V	300-150	54	0	0	8.5	0.1
AVA	99	V	300-150	454	6	1	5.0	0.1
AWC	99	V	300-150	20	0	0	3.0	0.3
AXM	99	V	300-150	81	0	2	5.8	0.4
AXY	99	V	300-150	136	0	0	4.1	0.5
AZG	99	V	300-150	981	0	0	3.9	-0.1
BAF	99	V	300-150	39	0	0	2.9	0.6
BAH	99	V	300-150	57	0	0	4.2	-0.5
BAV	99	V	300-150	74	0	1	6.4	0.5
BAW	99	V	300-150	49816	1	0	4.1	0.0
BBB	99	V	300-150	32	0	0	3.7	0.5
BBC	99	V	300-150	629	2	0	5.8	0.0
BCS	99	V	300-150	1958	0	0	3.4	0.0
BEC	99	V	300-150	22	0	0	3.5	0.4
BEL	99	V	300-150	1377	0	0	2.9	0.2
BFF	99	V	300-150	95	0	0	11.7	3.0
BFY	99	V	300-150	55	0	0	3.2	0.5
BLU	99	V	300-150	64	0	0	3.4	0.2
BOX	99	V	300-150	4884	0	0	3.5	0.0
BRJ	99	V	300-150	37	0	0	2.6	0.3
BTX	99	V	300-150	98	0	0	3.6	0.1
CAL	99	V	300-150	1437	0	2	4.1	0.3
CBJ	99	V	300-150	248	0	2	4.9	-0.1
CCA	99	V	300-150	256	0	3	4.6	0.4
CEB	99	V	300-150	852	0	1	5.0	0.5
CES	99	V	300-150	1128	0	1	4.2	0.4
CFC	99	V	300-150	346	0	0	3.9	0.6
CFG	99	V	300-150	5643	0	0	3.4	0.1
CHG	99	V	300-150	157	0	0	3.1	-0.1
CHH	99	V	300-150	144	1	0	4.1	0.6
CJT	99	V	300-150	215	0	0	4.2	0.0
CKS	99	V	300-150	1363	0	0	3.4	-0.2
CLF	99	V	300-150	28	0	0	3.9	0.5
CLX	99	V	300-150	4318	0	0	3.6	-0.3

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
CLY	99	V	300-150	34	0	0	3.1	-0.9
CMA	99	V	300-150	179	0	0	4.2	0.7
CMB	99	V	300-150	1442	0	0	3.6	-0.2
CNV	99	V	300-150	133	0	0	2.8	0.4
COL	99	V	300-150	21	0	10	4.0	0.0
CPA	99	V	300-150	2506	0	1	4.2	0.4
CPI	99	V	300-150	34	0	0	3.6	-0.3
CRL	99	V	300-150	1649	0	0	3.3	0.3
CRV	99	V	300-150	52	0	0	3.5	0.2
CSC	99	V	300-150	989	0	1	3.7	0.3
CSN	99	V	300-150	602	0	3	4.5	0.1
CSS	99	V	300-150	174	0	3	4.1	0.6
CTM	99	V	300-150	32	0	3	2.9	0.0
CWG	99	V	300-150	74	0	0	3.9	-0.4
CXA	99	V	300-150	37	0	8	4.1	0.3
DAH	99	V	300-150	1028	0	0	3.6	0.1
DAL	99	V	300-150	76051	0	0	3.2	0.1
DCM	99	V	300-150	48	0	0	4.0	-0.4
DCS	99	V	300-150	21	0	0	8.4	0.1
DGX	99	V	300-150	44	0	0	3.0	-0.2
DHK	99	V	300-150	2801	0	0	3.5	-0.1
DHX	99	V	300-150	254	0	0	4.3	0.1
DJT	99	V	300-150	1931	0	0	3.3	0.3
DLH	99	V	300-150	30342	1	0	3.7	0.0
DSO	99	V	300-150	50	0	0	2.8	0.3
DUB	99	V	300-150	50	0	0	2.5	-0.1
EAL	99	V	300-150	114	0	0	4.0	-0.1
EAU	99	V	300-150	70	0	0	3.9	0.1
EDC	99	V	300-150	37	0	0	3.2	-0.3
EDG	99	V	300-150	246	0	0	3.9	0.8
EDW	99	V	300-150	1664	0	0	3.4	0.3
EIN	99	V	300-150	16896	0	0	3.1	0.3
EJM	99	V	300-150	1162	0	0	3.5	0.1
ELY	99	V	300-150	4559	5	0	5.6	0.1
ESW	99	V	300-150	31	0	0	3.2	-0.7
ETD	99	V	300-150	13789	1	1	4.7	0.2
ETH	99	V	300-150	7833	1	0	4.5	0.4
EUK	99	V	300-150	1858	0	0	3.1	0.2
EUW	99	V	300-150	21	0	0	2.5	-0.9
EVA	99	V	300-150	1136	0	3	4.1	0.3
EVE	99	V	300-150	185	0	0	3.5	-0.4
EXS	99	V	300-150	1465	0	0	3.5	0.0
EXV	99	V	300-150	128	0	0	3.3	0.5

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
FBU	99	V	300-150	2758	0	0	3.4	-0.1
FDX	99	V	300-150	7430	0	0	3.3	0.1
FFM	99	V	300-150	39	0	0	6.7	1.8
FIN	99	V	300-150	2275	0	0	4.3	0.3
FJI	99	V	300-150	2454	0	0	3.4	0.5
FJO	99	V	300-150	107	0	0	3.4	0.4
FPY	99	V	300-150	3602	0	0	2.9	0.1
FWI	99	V	300-150	869	0	1	3.6	-0.1
FYG	99	V	300-150	176	0	0	3.6	0.3
GAF	99	V	300-150	215	0	0	3.1	-0.1
GBG	99	V	300-150	29	0	0	4.6	0.5
GCK	99	V	300-150	220	0	0	3.0	0.5
GEC	99	V	300-150	1390	0	0	3.4	0.0
GES	99	V	300-150	154	0	0	4.0	0.0
GFA	99	V	300-150	1817	0	2	4.7	0.1
GIA	99	V	300-150	1010	0	0	4.1	0.5
GJE	99	V	300-150	263	0	0	3.4	0.4
GJI	99	V	300-150	32	0	0	3.0	0.4
GKY	99	V	300-150	25	0	0	2.4	0.2
GLH	99	V	300-150	24	0	0	5.1	-0.2
GOL	99	V	300-150	35	0	0	10.7	-2.9
GRP	99	V	300-150	34	0	0	3.6	0.0
GSM	99	V	300-150	92	0	0	5.4	1.4
GTI	99	V	300-150	2020	0	0	3.9	-0.1
GTR	99	V	300-150	223	0	0	3.1	0.4
HAF	99	V	300-150	24	0	0	3.0	-1.3
HAL	99	V	300-150	771	0	1	4.0	0.6
HFM	99	V	300-150	29	0	3	2.9	0.6
HKC	99	V	300-150	144	0	5	5.3	1.5
HLF	99	V	300-150	28	0	0	4.2	0.8
HPJ	99	V	300-150	29	0	0	3.6	-0.2
HRT	99	V	300-150	86	0	0	3.7	0.5
HUA	99	V	300-150	20	0	0	2.6	0.9
HUE	99	V	300-150	71	0	0	6.5	0.2
HVN	99	V	300-150	892	0	3	4.3	0.2
HYP	99	V	300-150	53	0	0	3.5	0.6
HZS	99	V	300-150	35	0	0	3.3	0.4
IAM	99	V	300-150	87	0	0	4.1	0.1
IBE	99	V	300-150	6646	0	0	3.4	0.1
ICE	99	V	300-150	8231	0	0	3.3	0.1
ICL	99	V	300-150	233	0	1	4.0	-1.1
ICV	99	V	300-150	295	0	1	3.6	-0.4
IFA	99	V	300-150	524	0	0	3.7	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	44	0	0	3.3	0.3
IGO	99	V	300-150	39	0	0	2.7	0.1
IJM	99	V	300-150	111	0	0	4.0	-0.6
IND	99	V	300-150	24	0	0	4.5	0.9
ITY	99	V	300-150	7325	0	0	3.2	0.1
JAF	99	V	300-150	702	6	0	6.1	0.0
JAL	99	V	300-150	116	1	2	4.6	-0.2
JAS	99	V	300-150	168	0	0	3.6	0.1
JBU	99	V	300-150	7217	0	0	3.2	0.3
JCY	99	V	300-150	56	0	0	3.1	-0.5
JEF	99	V	300-150	51	0	2	4.5	-0.1
JET	99	V	300-150	33	0	0	3.8	1.1
JME	99	V	300-150	108	0	0	3.2	0.7
JNY	99	V	300-150	26	0	0	2.2	-0.5
JST	99	V	300-150	388	0	0	3.4	0.5
KAC	99	V	300-150	3074	0	1	3.6	0.5
KAF	99	V	300-150	53	0	0	4.7	0.3
KAI	99	V	300-150	143	0	0	5.8	0.3
KAL	99	V	300-150	682	0	2	4.3	0.7
KAY	99	V	300-150	161	0	0	3.3	0.5
KFE	99	V	300-150	22	0	0	3.7	-1.6
KIW	99	V	300-150	47	0	0	4.2	1.5
KLM	99	V	300-150	18193	3	0	5.0	0.1
KOC	99	V	300-150	34	0	0	3.9	0.7
KQA	99	V	300-150	467	1	1	5.8	0.1
KRF	99	V	300-150	36	0	0	3.5	-0.5
KUG	99	V	300-150	61	0	0	3.5	0.0
LAE	99	V	300-150	40	0	0	4.0	-0.6
LAN	99	V	300-150	58	28	0	10.8	1.0
LCO	99	V	300-150	877	0	0	3.5	-0.7
LDX	99	V	300-150	68	0	0	3.3	-0.3
LEA	99	V	300-150	24	0	0	3.2	0.6
LNI	99	V	300-150	2044	0	0	3.7	0.5
LNK	99	V	300-150	63	0	0	3.2	0.4
LOT	99	V	300-150	4350	5	0	5.8	0.0
LUC	99	V	300-150	43	0	0	2.5	0.7
LXJ	99	V	300-150	676	0	0	3.3	0.4
MAS	99	V	300-150	6448	0	0	5.1	0.8
MAU	99	V	300-150	508	0	0	5.8	1.2
MAV	99	V	300-150	26	0	0	2.7	0.1
MHV	99	V	300-150	47	0	0	3.8	1.2
MJF	99	V	300-150	34	0	0	2.5	0.1
MLM	99	V	300-150	124	0	0	3.9	0.3

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
MMD	99	V	300-150	316	0	0	3.0	-0.1
MMF	99	V	300-150	65	0	0	2.8	0.4
MNB	99	V	300-150	506	0	0	3.0	0.3
MPH	99	V	300-150	661	0	0	3.8	-0.7
MSR	99	V	300-150	2422	2	0	4.5	-0.1
MVJ	99	V	300-150	29	0	0	3.0	0.3
MYM	99	V	300-150	21	0	5	5.3	0.4
NAM	99	V	300-150	20	0	0	3.0	-0.1
NAS	99	V	300-150	33	0	0	3.0	0.0
NBT	99	V	300-150	2945	5	0	6.1	-0.2
NCR	99	V	300-150	272	0	0	3.7	-0.3
NEW	99	V	300-150	31	0	0	4.3	-0.7
NGR	99	V	300-150	22	0	0	3.3	-0.8
NJE	99	V	300-150	618	0	0	4.1	0.5
NOS	99	V	300-150	1131	6	0	5.8	-0.1
NUM	99	V	300-150	45	0	4	6.3	2.3
OAE	99	V	300-150	653	0	0	4.0	0.3
OCN	99	V	300-150	4332	0	0	3.1	0.1
OMA	99	V	300-150	3358	0	2	5.3	0.6
ORF	99	V	300-150	30	0	0	2.8	-0.7
PAC	99	V	300-150	379	0	0	2.9	-0.2
PAL	99	V	300-150	2169	0	1	4.4	0.3
PEG	99	V	300-150	54	0	0	4.2	-0.1
PEX	99	V	300-150	113	0	0	3.7	0.3
PIA	99	V	300-150	312	0	0	4.5	0.4
PJZ	99	V	300-150	41	0	0	3.6	-0.1
PLF	99	V	300-150	122	0	0	3.2	0.1
PUE	99	V	300-150	20	0	5	2.6	0.7
PVA	99	V	300-150	213	0	0	3.0	0.0
QAF	99	V	300-150	139	0	0	2.9	0.4
QFA	99	V	300-150	6396	1	0	4.8	0.3
QFX	99	V	300-150	65	0	0	3.3	0.3
QNT	99	V	300-150	32	0	3	3.5	0.6
QQE	99	V	300-150	289	0	0	3.3	0.2
QTR	99	V	300-150	39456	0	0	4.1	0.3
RAM	99	V	300-150	824	6	0	7.0	-0.2
RBA	99	V	300-150	337	0	1	5.5	0.8
RCH	99	V	300-150	2921	0	0	4.4	0.3
RCR	99	V	300-150	57	0	0	4.7	0.7
RDN	99	V	300-150	40	0	0	3.6	-0.4
RHH	99	V	300-150	80	0	0	8.4	3.4
RJA	99	V	300-150	2601	5	0	6.2	-0.1
ROJ	99	V	300-150	35	0	0	3.1	0.2

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
RRR	99	V	300-150	141	0	0	4.5	0.6
RYR	99	V	300-150	893	0	0	3.6	0.2
RZO	99	V	300-150	467	0	1	4.1	0.4
SAM	99	V	300-150	418	0	0	3.4	0.3
SAM	99	V	300-150	39	0	0	2.9	0.3
SAS	99	V	300-150	6158	0	0	3.0	0.1
SAZ	99	V	300-150	38	0	0	4.8	-0.1
SCX	99	V	300-150	70	0	0	4.3	-0.2
SEY	99	V	300-150	98	0	0	5.3	1.6
SIA	99	V	300-150	15123	0	0	5.0	0.4
SIO	99	V	300-150	74	0	0	3.5	0.9
SIS	99	V	300-150	56	0	0	3.4	-0.8
SJE	99	V	300-150	50	0	0	3.0	0.3
SKV	99	V	300-150	58	0	0	3.6	0.6
SLM	99	V	300-150	157	0	0	3.1	0.0
SMR	99	V	300-150	34	0	0	2.4	0.4
SON	99	V	300-150	84	0	0	4.7	0.7
SPA	99	V	300-150	53	0	0	5.0	0.0
SRR	99	V	300-150	34	0	0	2.8	0.1
SSG	99	V	300-150	41	0	0	2.8	0.7
SVA	99	V	300-150	11380	0	1	4.3	0.3
SVW	99	V	300-150	340	0	0	3.1	0.2
SWR	99	V	300-150	11189	0	1	3.3	0.2
SWW	99	V	300-150	24	0	0	3.0	0.9
SYB	99	V	300-150	239	0	0	3.0	-0.1
TAM	99	V	300-150	61	0	0	4.8	-0.4
TAP	99	V	300-150	2934	0	0	3.7	0.4
TAR	99	V	300-150	508	0	0	2.8	0.2
TAY	99	V	300-150	483	0	0	3.7	-0.3
TBJ	99	V	300-150	49	0	0	5.0	-0.7
TEU	99	V	300-150	74	0	0	3.6	-0.3
TFF	99	V	300-150	85	0	0	3.6	0.0
TFL	99	V	300-150	1684	9	0	5.8	0.0
TGW	99	V	300-150	1306	0	1	5.4	0.7
THA	99	V	300-150	6071	0	1	4.5	0.3
THT	99	V	300-150	3219	2	0	5.2	0.2
THY	99	V	300-150	21032	1	0	4.3	0.2
TLJ	99	V	300-150	25	0	0	3.9	1.4
TMN	99	V	300-150	406	0	0	3.6	0.5
TOM	99	V	300-150	7078	7	0	6.1	-0.1
TRK	99	V	300-150	62	0	0	3.2	1.0
TSC	99	V	300-150	21648	0	0	3.3	0.3
TUG	99	V	300-150	27	0	0	3.7	1.3

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
TWY	99	V	300-150	724	0	0	3.4	0.0
UAE	99	V	300-150	36288	0	0	3.9	0.3
UAF	99	V	300-150	109	0	0	5.0	1.3
UAL	99	V	300-150	87062	1	1	4.4	0.1
UBT	99	V	300-150	4373	6	0	6.3	-0.1
UKN	99	V	300-150	39	0	0	2.8	0.7
ULA	99	V	300-150	21	0	0	3.9	0.4
ULC	99	V	300-150	105	0	0	2.8	-0.1
UNI	99	V	300-150	21	0	0	4.0	1.3
UPS	99	V	300-150	5977	0	0	3.6	-0.2
UZB	99	V	300-150	539	0	2	3.9	0.2
VCG	99	V	300-150	57	0	0	4.2	0.3
VCJ	99	V	300-150	55	0	0	3.5	-0.3
VIR	99	V	300-150	22514	2	0	4.3	0.0
VJC	99	V	300-150	223	0	1	4.4	0.3
VJT	99	V	300-150	2083	0	0	3.7	0.4
VLZ	99	V	300-150	27	0	0	2.9	1.1
VSV	99	V	300-150	44	0	0	2.8	0.7
VTI	99	V	300-150	2438	0	1	4.5	0.6
VXS	99	V	300-150	62	0	2	4.5	0.7
WFL	99	V	300-150	70	0	3	4.0	-0.4
WGN	99	V	300-150	198	0	0	3.0	0.1
WJA	99	V	300-150	2237	7	0	7.6	-0.3
WMN	99	V	300-150	32	0	0	4.3	1.4
WWI	99	V	300-150	44	0	0	4.2	1.1
XAX	99	V	300-150	1095	0	0	4.6	0.6
XEN	99	V	300-150	43	0	0	2.7	0.0
XFL	99	V	300-150	44	0	0	6.8	-1.7
XLS	99	V	300-150	35	0	0	3.1	0.3
XRO	99	V	300-150	117	0	0	3.8	0.2

4 EUCOS Area Monitoring Statistics

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

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

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

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

RADIOSONDE MONITORING STATISTICS (EUCOS)

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

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	12	Z	50	30	9.5	-7.6
01001	00	Z	50	27	44.5	-13.9
01028	00	Z	50	29	5.7	-2.4
01028	12	Z	50	29	8.4	-6.8
01400	00	Z	50	18	77.5	77.3
01400	12	Z	50	17	70.7	70.3
01415	00	Z	50	29	8.3	-0.6
01415	12	Z	50	29	10.5	-5.1
02365	12	Z	50	28	10.7	-6.5
02365	00	Z	50	27	6.5	0.0
02591	00	Z	50	23	8.2	6.5
02591	12	Z	50	27	7.9	0.6
02836	12	Z	50	29	11.5	-7.6
02836	00	Z	50	30	10.4	-3.4
02963	00	Z	50	29	5.4	0.5
02963	12	Z	50	28	16.0	-4.2
03005	12	Z	50	29	12.2	-9.5
03005	00	Z	50	27	8.4	-4.2
03238	00	Z	50	30	7.8	-1.9
03238	12	Z	50	1	4.0	-4.0
03808	00	Z	50	27	6.8	0.2
03808	12	Z	50	28	8.4	-1.9
03918	12	Z	50	5	9.5	-4.2
03918	00	Z	50	29	8.6	2.3
03953	00	Z	50	30	9.6	-6.8
03953	12	Z	50	30	12.2	-9.2
04018	12	Z	50	25	10.9	-9.9
04018	00	Z	50	29	11.5	-4.3
04220	00	Z	50	29	33.0	-28.6
04220	12	Z	50	29	26.4	-24.8
04270	12	Z	50	29	28.4	-24.8
04270	00	Z	50	29	24.8	-22.0
04320	12	Z	50	30	17.0	-7.8
04320	00	Z	50	30	18.0	-7.6
04339	12	Z	50	29	29.6	-15.1
04339	00	Z	50	26	24.8	-18.0
04360	12	Z	50	27	21.2	-16.2
04360	00	Z	50	25	18.2	-16.4
06011	12	Z	50	19	14.3	-5.1

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06011	00	Z	50	2	0.5	-0.5
06260	12	Z	50	4	10.2	-8.8
06260	00	Z	50	29	8.4	0.3
06610	12	Z	50	30	6.2	-1.6
06610	00	Z	50	30	4.3	2.0
07110	00	Z	50	28	47.7	-46.8
07110	12	Z	50	30	35.4	-32.3
07510	00	Z	50	29	29.8	-28.5
07510	12	Z	50	30	33.1	-31.9
07645	12	Z	50	29	19.7	-7.1
07645	00	Z	50	29	15.1	-9.0
07761	00	Z	50	30	7.3	-0.4
07761	12	Z	50	30	20.1	-3.3
08001	00	Z	50	30	8.2	5.8
08001	12	Z	50	30	7.6	-2.7
08221	00	Z	50	30	10.1	6.5
08221	12	Z	50	30	9.2	-1.2
08302	12	Z	50	29	11.4	-7.8
08302	00	Z	50	29	9.1	-4.4
08508	12	Z	50	22	23.5	6.6
08522	12	Z	50	30	6.1	-2.7
10035	12	Z	50	27	8.4	4.1
10035	00	Z	50	26	14.3	12.9
10393	00	Z	50	30	3.7	1.5
10393	12	Z	50	30	9.1	-5.8
10410	00	Z	50	30	6.4	-2.6
10410	12	Z	50	30	10.5	-8.8
10739	12	Z	50	30	6.3	-2.5
10739	00	Z	50	30	7.8	5.3
11035	00	Z	50	29	33.0	11.6
11035	12	Z	50	30	18.0	12.2
12982	00	Z	50	29	7.3	5.9
12982	12	Z	50	28	5.0	-1.3
16245	00	Z	50	30	7.7	4.4
16245	12	Z	50	30	7.3	-4.3
16429	12	Z	50	30	5.0	-1.0
16429	00	Z	50	29	8.1	7.2
16622	00	Z	50	25	12.4	11.4
16754	00	Z	50	23	12.0	8.2
17607	12	Z	50	21	6.6	-2.0
26435	12	Z	50	15	7.0	-5.5
2EERV	12	Z	50	6	12.1	-4.9
2EERV	00	Z	50	7	15.8	-6.0

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
60018	00	Z	50	30	8.6	5.0
60018	12	Z	50	29	8.2	-4.0
7JUNA4	12	Z	50	6	48.2	13.3
7JUNA4	00	Z	50	3	7.9	3.1
9ZT9MR	12	Z	50	3	20.2	-17.7
9ZT9MR	00	Z	50	3	26.8	-22.4
ATGU3F	12	Z	50	10	37.8	-33.6
ATGU3F	00	Z	50	6	36.7	-33.1
BPMWB2	12	Z	50	7	11.3	-3.7
BPMWB2	00	Z	50	4	7.1	-4.6
FPUW5G	12	Z	50	4	10.7	6.5
GQBZLZ	12	Z	50	3	27.5	-25.3
JNKN7J	12	Z	50	7	91.0	70.1
JNKN7J	00	Z	50	8	27.0	24.6
KJJF9X	12	Z	50	7	118.6	-51.9
KJJF9X	00	Z	50	6	49.3	-19.8
KMPLHP	12	Z	50	12	34.5	30.2
KMPLHP	00	Z	50	7	46.2	45.9
LAGY8	00	Z	50	3	115.2	-102.9
LAGZ8	12	Z	50	1	36.6	36.6
UXK5JT	12	Z	50	13	16.7	-0.5
UXK5JT	00	Z	50	12	35.0	-2.0
WDK38H	12	Z	50	19	24.3	-16.9
XKQLWQ	12	Z	50	17	48.5	46.2
YLV96W	12	Z	50	6	94.6	70.9
YLV96W	00	Z	50	6	86.4	53.4
ZVQEQC	12	Z	50	0	0.0	0.0

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

RADIOSONDE MONITORING STATISTICS (EUCOS)

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

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	12	V	50	30	2.8	-0.4	0.7
01001	00	V	50	27	2.6	0.2	0.5
01028	00	V	50	29	2.8	-0.2	0.3
01028	12	V	50	29	2.6	0.6	0.3
01400	00	V	50	15	3.0	-1.0	-0.4
01400	12	V	50	17	2.9	0.8	-0.7
01415	00	V	50	28	2.6	0.4	-0.1
01415	12	V	50	29	3.1	0.3	-0.6
02365	12	V	50	28	3.4	-0.2	0.4
02365	00	V	50	26	3.5	0.0	0.4
02591	00	V	50	21	2.5	-0.4	-0.6
02591	12	V	50	23	2.9	-0.3	-0.5
02836	12	V	50	28	3.2	0.0	0.6
02836	00	V	50	30	3.2	-0.6	-0.3
02963	00	V	50	27	3.2	0.0	0.8
02963	12	V	50	28	3.4	-0.1	0.2
03005	12	V	50	29	3.1	0.0	-0.1
03005	00	V	50	27	3.4	0.3	0.6
03238	00	V	50	29	3.6	0.0	-0.5
03238	12	V	50	1	5.1	4.7	2.1
03808	00	V	50	27	3.1	0.2	0.4
03808	12	V	50	28	3.0	-0.3	0.1
03918	12	V	50	5	4.3	-0.1	-0.8
03918	00	V	50	29	3.6	-0.9	-0.2
03953	00	V	50	29	3.6	0.6	0.0
03953	12	V	50	30	3.1	0.1	0.0
04018	12	V	50	25	3.9	0.4	0.4
04018	00	V	50	27	3.6	-0.5	0.7
04220	00	V	50	29	2.8	0.7	-0.6
04220	12	V	50	29	3.3	0.8	-0.2
04270	12	V	50	29	4.4	0.8	-0.9
04270	00	V	50	29	3.9	0.7	0.4
04320	12	V	50	30	2.7	0.5	0.8
04320	00	V	50	30	2.5	0.4	-0.2
04339	12	V	50	29	2.8	-0.4	0.0
04339	00	V	50	26	2.9	0.5	0.3
04360	12	V	50	27	3.4	1.0	0.1
04360	00	V	50	25	3.3	0.3	0.1
06011	12	V	50	19	3.0	0.2	0.4

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06011	00	V	50	2	1.4	0.6	0.2
06260	12	V	50	4	2.8	-0.6	0.6
06260	00	V	50	29	3.6	0.4	0.1
06610	12	V	50	30	3.3	-0.1	-0.6
06610	00	V	50	29	3.0	-0.3	0.1
07110	00	V	50	28	2.8	0.2	0.2
07110	12	V	50	30	3.2	1.1	-0.5
07510	00	V	50	28	2.8	0.7	-0.7
07510	12	V	50	30	3.0	0.1	-0.4
07645	12	V	50	29	3.4	-0.1	-0.9
07645	00	V	50	29	2.8	-0.3	-0.5
07761	00	V	50	30	3.4	-0.2	0.1
07761	12	V	50	30	2.8	-0.4	-0.3
08001	00	V	50	30	3.4	-0.7	0.0
08001	12	V	50	30	3.6	0.1	0.4
08221	00	V	50	30	3.1	-0.3	-0.3
08221	12	V	50	30	3.0	-0.5	-0.3
08302	12	V	50	29	3.2	0.2	-0.3
08302	00	V	50	29	2.9	-0.3	-0.1
08508	12	V	50	22	3.3	-0.2	0.1
08522	12	V	50	30	3.3	0.2	0.5
10035	12	V	50	26	3.1	0.0	0.2
10035	00	V	50	26	2.8	0.1	0.2
10393	00	V	50	30	2.8	0.5	-0.1
10393	12	V	50	30	3.1	0.0	-0.5
10410	00	V	50	29	3.1	0.0	0.6
10410	12	V	50	30	3.2	0.1	-0.1
10739	12	V	50	30	3.1	0.7	-0.1
10739	00	V	50	30	3.1	0.7	-0.3
11035	00	V	50	27	2.4	0.0	-0.4
11035	12	V	50	30	3.0	0.6	-0.2
12982	00	V	50	29	2.6	0.3	0.2
12982	12	V	50	28	2.4	0.0	0.2
16245	00	V	50	30	3.3	1.1	0.4
16245	12	V	50	30	2.8	-0.2	0.2
16429	12	V	50	30	2.9	-0.1	0.0
16429	00	V	50	29	3.2	0.9	-0.3
16622	00	V	50	22	2.9	0.0	-0.3
16754	00	V	50	23	3.5	1.1	-0.6
17607	12	V	50	5	4.0	0.5	-1.5
26435	12	V	50	15	3.0	-0.2	-0.7
2EERVT	12	V	50	6	3.5	0.0	1.9
2EERVT	00	V	50	7	2.8	-0.4	-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	-0.4	0.8
60018	12	V	50	29	3.2	-0.8	-0.6
7JUNA4	12	V	50	6	3.7	-0.6	0.6
7JUNA4	00	V	50	3	3.1	1.3	-1.3
9ZT9MR	12	V	50	3	2.5	1.4	1.1
9ZT9MR	00	V	50	3	1.8	0.0	-0.1
ATGU3F	12	V	50	10	3.5	0.4	1.0
ATGU3F	00	V	50	6	2.9	0.7	0.8
BPMWB2	12	V	50	7	4.8	1.4	2.4
BPMWB2	00	V	50	4	3.3	-0.7	-0.8
FPUW5G	12	V	50	4	3.0	-0.1	1.1
GQBZLZ	12	V	50	3	4.1	0.0	1.5
JNKN7J	12	V	50	7	2.7	1.0	1.1
JNKN7J	00	V	50	8	3.3	-0.9	-0.2
KJFF9X	12	V	50	7	3.7	-0.6	2.0
KJFF9X	00	V	50	6	3.6	0.0	0.0
KMPLHP	12	V	50	12	2.6	-0.4	0.1
KMPLHP	00	V	50	7	3.6	-1.0	-1.7
LAGY8	00	V	50	3	2.7	0.1	-0.2
LAGZ8	12	V	50	1	3.6	-2.0	3.0
UXK5JT	12	V	50	13	2.6	-0.9	0.7
UXK5JT	00	V	50	12	3.2	-0.5	0.9
WDK38H	12	V	50	19	2.2	0.4	0.7
XKQLWQ	12	V	50	15	3.1	0.1	-0.3
YLV96W	12	V	50	6	3.3	1.5	1.4
YLV96W	00	V	50	6	2.5	0.5	-0.1
ZVQEQC	12	V	50	0	0.0	0.0	0.0

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

RADIOSONDE MONITORING STATISTICS (EUCOS)

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

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	12	Z	100	30	9.3	-7.6
01001	00	Z	100	28	38.3	-12.8
01028	00	Z	100	29	5.8	-4.5
01028	12	Z	100	29	9.0	-7.5
01400	00	Z	100	18	77.5	77.3
01400	12	Z	100	18	71.6	71.3
01415	00	Z	100	30	7.2	-2.1
01415	12	Z	100	29	7.6	-3.2
02365	12	Z	100	29	9.5	-5.6
02365	00	Z	100	29	6.8	-1.8
02591	00	Z	100	25	7.3	4.6
02591	12	Z	100	27	6.8	1.6
02836	12	Z	100	31	10.3	-8.1
02836	00	Z	100	30	8.5	-4.7
02963	00	Z	100	29	5.2	-0.3
02963	12	Z	100	30	15.6	-2.4
03005	12	Z	100	30	10.6	-9.0
03005	00	Z	100	29	10.8	-8.1
03238	00	Z	100	30	6.6	-2.8
03238	12	Z	100	1	7.4	-7.4
03808	00	Z	100	27	6.3	-1.4
03808	12	Z	100	30	6.3	-3.2
03918	12	Z	100	5	7.4	-2.7
03918	00	Z	100	29	8.6	-0.5
03953	00	Z	100	30	10.5	-9.3
03953	12	Z	100	30	12.5	-10.4
04018	12	Z	100	26	9.4	-8.6
04018	00	Z	100	29	10.2	-6.1
04220	00	Z	100	29	24.8	-22.4
04220	12	Z	100	29	21.0	-19.8
04270	12	Z	100	29	23.5	-19.3
04270	00	Z	100	30	22.0	-19.9
04320	12	Z	100	30	13.1	-5.3
04320	00	Z	100	30	16.2	-6.5
04339	12	Z	100	30	19.4	-16.2
04339	00	Z	100	27	20.7	-16.2
04360	12	Z	100	27	18.4	-15.4
04360	00	Z	100	26	19.3	-17.4
06011	12	Z	100	26	12.8	-5.8

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06011	00	Z	100	2	1.5	-1.5
06260	12	Z	100	4	9.0	-7.2
06260	00	Z	100	29	7.3	-0.5
06610	12	Z	100	31	5.2	-0.9
06610	00	Z	100	30	5.5	0.1
07110	00	Z	100	30	38.2	-37.5
07110	12	Z	100	30	30.0	-28.3
07510	00	Z	100	28	23.7	-22.6
07510	12	Z	100	30	26.4	-25.7
07645	12	Z	100	29	13.8	-7.5
07645	00	Z	100	30	13.3	-9.5
07761	00	Z	100	30	6.1	-2.3
07761	12	Z	100	30	17.2	-1.4
08001	00	Z	100	30	7.0	2.8
08001	12	Z	100	30	7.7	-2.1
08221	00	Z	100	30	7.2	3.2
08221	12	Z	100	30	9.0	-1.6
08302	12	Z	100	30	10.0	-7.8
08302	00	Z	100	30	9.4	-6.6
08508	12	Z	100	22	23.7	8.4
08522	12	Z	100	30	6.6	1.8
10035	12	Z	100	27	8.8	5.5
10035	00	Z	100	27	12.3	11.2
10393	00	Z	100	30	4.0	-0.6
10393	12	Z	100	30	7.9	-5.8
10410	00	Z	100	30	5.9	-2.6
10410	12	Z	100	30	8.5	-7.2
10739	12	Z	100	30	4.6	-0.9
10739	00	Z	100	30	7.2	3.9
11035	00	Z	100	29	33.4	9.1
11035	12	Z	100	31	11.3	6.3
12982	00	Z	100	29	5.5	3.7
12982	12	Z	100	28	2.7	-0.4
16245	00	Z	100	30	4.8	1.8
16245	12	Z	100	30	6.7	-3.8
16429	12	Z	100	30	4.6	-0.9
16429	00	Z	100	29	5.3	4.3
16622	00	Z	100	27	10.7	9.6
16754	00	Z	100	26	9.1	6.3
17607	12	Z	100	25	5.1	0.1
26435	12	Z	100	15	5.9	-4.5
2EERV	12	Z	100	6	10.8	-1.3
2EERV	00	Z	100	7	14.7	-7.1

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
60018	00	Z	100	30	6.4	3.7
60018	12	Z	100	30	4.9	-0.1
7JUNA4	12	Z	100	7	21.4	3.6
7JUNA4	00	Z	100	4	6.1	4.0
9ZT9MR	12	Z	100	3	19.4	-18.3
9ZT9MR	00	Z	100	3	25.0	-22.6
ATGU3F	12	Z	100	10	34.6	-31.3
ATGU3F	00	Z	100	6	33.3	-31.4
BPMWB2	12	Z	100	8	9.5	-5.1
BPMWB2	00	Z	100	6	15.5	-10.4
FPUW5G	12	Z	100	4	9.0	6.9
GQBZLZ	12	Z	100	3	25.5	-23.4
JNKN7J	12	Z	100	9	57.8	49.7
JNKN7J	00	Z	100	8	25.3	24.1
KJJF9X	12	Z	100	8	29.5	4.0
KJJF9X	00	Z	100	6	51.7	-22.3
KMPLHP	12	Z	100	12	37.7	35.3
KMPLHP	00	Z	100	8	106.8	4.1
LAGY8	00	Z	100	3	103.0	-90.1
LAGZ8	12	Z	100	1	40.7	40.7
UXK5JT	12	Z	100	13	13.4	-1.5
UXK5JT	00	Z	100	12	28.0	-9.1
WDK38H	12	Z	100	20	24.7	-17.5
XKQLWQ	12	Z	100	17	38.5	36.4
YLV96W	12	Z	100	7	45.0	33.2
YLV96W	00	Z	100	5	55.3	27.5
ZVQEQC	12	Z	100	1	0.9	0.9

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

RADIOSONDE MONITORING STATISTICS (EUCOS)

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

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	12	V	100	30	2.9	0.1	-0.5
01001	00	V	100	28	2.5	0.3	0.2
01028	00	V	100	29	2.0	-0.2	0.2
01028	12	V	100	29	2.2	0.4	0.2
01400	00	V	100	16	2.4	-0.4	0.3
01400	12	V	100	18	2.9	0.3	0.1
01415	00	V	100	28	3.2	-0.2	-0.4
01415	12	V	100	29	3.1	0.4	-0.4
02365	12	V	100	29	3.6	-0.3	-0.1
02365	00	V	100	28	3.2	-0.1	-0.5
02591	00	V	100	25	3.3	-0.1	-0.5
02591	12	V	100	27	3.3	-0.3	-0.2
02836	12	V	100	29	2.7	0.3	0.2
02836	00	V	100	30	2.6	0.5	-0.1
02963	00	V	100	29	3.2	0.2	-1.2
02963	12	V	100	30	3.8	-0.1	0.1
03005	12	V	100	30	3.1	-0.3	0.4
03005	00	V	100	29	2.9	-0.4	0.0
03238	00	V	100	29	3.5	0.2	-0.3
03238	12	V	100	1	2.3	-2.2	-0.6
03808	00	V	100	27	3.3	0.3	-0.2
03808	12	V	100	30	3.0	0.8	0.5
03918	12	V	100	5	3.1	0.7	0.6
03918	00	V	100	29	3.1	0.2	0.3
03953	00	V	100	29	3.4	-0.1	-0.8
03953	12	V	100	30	3.2	0.0	0.2
04018	12	V	100	26	2.6	0.2	0.4
04018	00	V	100	29	2.6	-0.1	-0.4
04220	00	V	100	29	2.2	0.2	0.2
04220	12	V	100	29	2.1	0.4	-0.3
04270	12	V	100	29	4.6	-1.0	0.1
04270	00	V	100	30	3.3	0.0	0.6
04320	12	V	100	30	2.2	0.1	-0.2
04320	00	V	100	30	2.3	-0.1	-0.2
04339	12	V	100	30	2.3	0.5	-0.3
04339	00	V	100	27	1.9	0.5	0.1
04360	12	V	100	27	2.5	0.0	-0.3
04360	00	V	100	26	2.7	0.5	0.6
06011	12	V	100	26	3.3	0.6	0.1

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06011	00	V	100	2	2.1	2.1	-0.1
06260	12	V	100	4	3.9	2.5	1.0
06260	00	V	100	29	3.7	0.6	-0.6
06610	12	V	100	30	3.2	0.2	0.0
06610	00	V	100	29	3.4	0.1	-0.1
07110	00	V	100	30	2.8	0.5	0.1
07110	12	V	100	30	2.8	0.3	0.0
07510	00	V	100	27	3.0	1.4	-0.6
07510	12	V	100	30	3.7	0.5	-0.3
07645	12	V	100	29	3.6	0.1	0.6
07645	00	V	100	30	3.4	0.7	0.6
07761	00	V	100	30	3.8	1.3	0.7
07761	12	V	100	30	3.6	0.0	-0.5
08001	00	V	100	30	3.0	-0.1	-0.7
08001	12	V	100	30	3.4	0.8	0.3
08221	00	V	100	30	4.9	-0.3	-0.3
08221	12	V	100	30	3.5	0.6	0.2
08302	12	V	100	30	4.0	1.4	-0.1
08302	00	V	100	29	3.7	-0.3	0.3
08508	12	V	100	22	3.7	0.4	0.4
08522	12	V	100	30	3.2	0.6	0.0
10035	12	V	100	27	2.9	0.5	-0.4
10035	00	V	100	27	3.2	-0.2	-0.4
10393	00	V	100	30	2.8	-0.1	0.1
10393	12	V	100	30	3.2	-0.5	0.8
10410	00	V	100	30	3.5	0.8	-0.4
10410	12	V	100	30	3.8	0.0	-0.1
10739	12	V	100	30	2.8	-0.3	0.2
10739	00	V	100	30	3.1	0.1	0.0
11035	00	V	100	27	2.0	-0.2	-0.2
11035	12	V	100	30	2.2	-0.1	-0.4
12982	00	V	100	29	3.5	0.6	0.6
12982	12	V	100	28	3.3	0.0	-1.2
16245	00	V	100	30	3.7	0.5	0.2
16245	12	V	100	30	3.9	0.1	0.2
16429	12	V	100	30	3.0	0.4	0.3
16429	00	V	100	29	3.3	0.5	0.0
16622	00	V	100	24	3.6	0.1	0.4
16754	00	V	100	26	3.6	0.5	0.4
17607	12	V	100	12	6.0	-1.4	-2.7
26435	12	V	100	15	2.6	0.0	-0.2
2EERV	12	V	100	6	3.3	-0.7	0.6
2EERV	00	V	100	7	2.8	0.0	1.3

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
60018	00	V	100	30	4.1	0.3	0.5
60018	12	V	100	30	3.6	0.0	-0.1
7JUNA4	12	V	100	7	3.4	0.8	-0.5
7JUNA4	00	V	100	4	2.2	0.8	0.5
9ZT9MR	12	V	100	3	2.4	-1.1	1.0
9ZT9MR	00	V	100	3	2.3	-0.4	1.6
ATGU3F	12	V	100	10	3.4	0.8	0.6
ATGU3F	00	V	100	6	2.0	1.1	-0.5
BPMWB2	12	V	100	8	3.3	-0.9	-0.6
BPMWB2	00	V	100	6	3.8	-0.9	-0.2
FPUW5G	12	V	100	4	4.4	1.5	-0.3
GQBZLZ	12	V	100	3	2.6	-1.5	1.0
JNKN7J	12	V	100	9	3.4	1.2	0.9
JNKN7J	00	V	100	8	3.7	0.3	-0.5
KJJF9X	12	V	100	8	4.7	0.3	-2.1
KJJF9X	00	V	100	6	3.7	0.5	-0.5
KMPLHP	12	V	100	12	2.4	0.1	0.2
KMPLHP	00	V	100	8	2.5	0.1	0.1
LAGY8	00	V	100	3	4.6	3.9	0.9
LAGZ8	12	V	100	1	3.0	2.9	-0.8
UXK5JT	12	V	100	13	3.5	0.4	1.1
UXK5JT	00	V	100	12	4.4	-0.3	1.0
WDK38H	12	V	100	19	2.6	-0.1	-0.5
XKQLWQ	12	V	100	16	3.0	0.1	-0.1
YLV96W	12	V	100	7	2.8	-1.4	0.8
YLV96W	00	V	100	5	3.2	-0.7	-0.5
ZVQEQC	12	V	100	1	7.7	2.8	-7.2

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

RADIOSONDE MONITORING STATISTICS (EUCOS)

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

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	12	Z	500	30	5.6	-4.0
01001	00	Z	500	31	12.7	-11.6
01028	00	Z	500	30	3.5	-2.5
01028	12	Z	500	29	4.1	-1.7
01400	00	Z	500	20	78.7	78.6
01400	12	Z	500	19	78.9	78.7
01415	00	Z	500	30	5.9	1.8
01415	12	Z	500	29	5.0	2.3
02365	12	Z	500	29	3.5	0.9
02365	00	Z	500	29	3.9	0.9
02591	00	Z	500	26	7.9	7.5
02591	12	Z	500	27	8.5	8.0
02836	12	Z	500	31	4.2	0.6
02836	00	Z	500	30	4.5	1.0
02963	00	Z	500	30	4.2	3.4
02963	12	Z	500	30	17.8	6.8
03005	12	Z	500	31	6.1	-4.3
03005	00	Z	500	29	8.0	-4.7
03238	00	Z	500	30	3.3	1.3
03238	12	Z	500	1	0.7	0.7
03808	00	Z	500	27	3.4	1.4
03808	12	Z	500	30	2.9	0.8
03918	12	Z	500	5	5.9	5.5
03918	00	Z	500	29	6.0	5.5
03953	00	Z	500	30	3.9	-2.6
03953	12	Z	500	31	5.1	-3.3
04018	12	Z	500	28	4.3	-2.0
04018	00	Z	500	29	4.1	-1.1
04220	00	Z	500	30	8.5	-6.9
04220	12	Z	500	30	7.7	-6.2
04270	12	Z	500	30	11.4	-10.1
04270	00	Z	500	30	11.9	-10.1
04320	12	Z	500	30	11.7	2.0
04320	00	Z	500	30	12.7	1.0
04339	12	Z	500	30	9.4	-7.5
04339	00	Z	500	29	9.7	-8.8
04360	12	Z	500	27	9.9	-7.6
04360	00	Z	500	27	10.3	-9.4
06011	12	Z	500	29	6.5	-1.6

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06011	00	Z	500	2	5.9	3.8
06260	12	Z	500	4	2.7	1.8
06260	00	Z	500	29	2.8	0.1
06610	12	Z	500	32	3.1	2.0
06610	00	Z	500	31	3.6	2.4
07110	00	Z	500	30	18.4	-17.6
07110	12	Z	500	30	15.5	-14.4
07510	00	Z	500	31	7.4	-5.8
07510	12	Z	500	30	5.8	-4.9
07645	12	Z	500	32	6.2	-4.4
07645	00	Z	500	31	6.4	-5.0
07761	00	Z	500	30	4.2	1.7
07761	12	Z	500	30	14.7	3.8
08001	00	Z	500	30	3.4	2.3
08001	12	Z	500	30	3.7	1.9
08221	00	Z	500	30	5.3	3.1
08221	12	Z	500	30	3.6	2.3
08302	12	Z	500	31	6.7	-6.0
08302	00	Z	500	30	6.5	-5.8
08508	12	Z	500	22	24.3	11.3
08522	12	Z	500	30	7.2	5.8
10035	12	Z	500	27	12.5	12.1
10035	00	Z	500	27	14.0	13.9
10393	00	Z	500	30	3.0	1.5
10393	12	Z	500	30	2.6	0.3
10410	00	Z	500	30	2.7	0.7
10410	12	Z	500	31	2.1	-0.3
10739	12	Z	500	30	5.3	4.8
10739	00	Z	500	30	5.8	5.2
11035	00	Z	500	31	12.8	2.9
11035	12	Z	500	31	5.8	3.7
12982	00	Z	500	29	4.8	3.7
12982	12	Z	500	28	3.4	2.8
16245	00	Z	500	30	3.9	2.8
16245	12	Z	500	30	3.1	2.0
16429	12	Z	500	30	3.6	2.8
16429	00	Z	500	29	4.9	4.4
16622	00	Z	500	28	9.2	8.7
16754	00	Z	500	27	4.3	2.7
17607	12	Z	500	25	2.9	1.6
26435	12	Z	500	15	3.5	1.5
2EERV	12	Z	500	6	8.1	-0.3
2EERV	00	Z	500	7	10.1	0.8

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
60018	00	Z	500	30	3.6	1.4
60018	12	Z	500	30	3.7	2.9
7JUNA4	12	Z	500	8	4.9	2.3
7JUNA4	00	Z	500	4	7.5	2.4
9ZT9MR	12	Z	500	3	14.2	-13.6
9ZT9MR	00	Z	500	3	16.0	-15.6
ATGU3F	12	Z	500	11	23.6	-20.8
ATGU3F	00	Z	500	7	21.4	-19.4
BPMWB2	12	Z	500	8	8.7	-6.7
BPMWB2	00	Z	500	6	12.8	-9.1
FPUW5G	12	Z	500	5	11.1	10.6
GQBZLZ	12	Z	500	4	20.9	-20.6
JNKN7J	12	Z	500	11	34.0	33.7
JNKN7J	00	Z	500	9	32.9	32.2
KJJF9X	12	Z	500	8	22.4	-9.8
KJJF9X	00	Z	500	6	57.9	-28.3
KMPLHP	12	Z	500	12	56.0	53.9
KMPLHP	00	Z	500	9	56.4	55.7
LAGY8	00	Z	500	3	110.4	-93.3
LAGZ8	12	Z	500	1	71.7	71.7
UXK5JT	12	Z	500	13	25.7	5.3
UXK5JT	00	Z	500	12	5.2	-2.6
WDK38H	12	Z	500	22	20.1	-13.5
XKQLWQ	12	Z	500	18	20.2	19.4
YLV96W	12	Z	500	10	5.8	1.8
YLV96W	00	Z	500	9	65.5	38.0
ZVQEQC	12	Z	500	1	3.6	3.6

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

RADIOSONDE MONITORING STATISTICS (EUCOS)

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

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	12	V	500	30	1.8	0.3	0.1
01001	00	V	500	29	2.6	0.5	0.2
01028	00	V	500	30	2.7	-0.1	-0.6
01028	12	V	500	29	2.5	0.0	-0.1
01400	00	V	500	19	2.3	0.7	-0.1
01400	12	V	500	19	2.3	-0.2	-0.1
01415	00	V	500	29	3.2	1.1	0.4
01415	12	V	500	29	3.0	0.5	0.7
02365	12	V	500	29	3.2	0.7	0.2
02365	00	V	500	29	2.5	0.8	0.0
02591	00	V	500	26	2.1	-0.4	-0.4
02591	12	V	500	27	2.9	-0.4	0.0
02836	12	V	500	30	3.3	0.3	0.2
02836	00	V	500	30	3.3	0.7	0.0
02963	00	V	500	30	2.3	0.4	0.2
02963	12	V	500	30	2.5	0.1	1.1
03005	12	V	500	30	2.8	0.3	0.6
03005	00	V	500	29	3.1	0.3	0.1
03238	00	V	500	30	3.0	-0.1	-0.6
03238	12	V	500	1	1.4	0.6	1.3
03808	00	V	500	27	3.1	0.6	-0.4
03808	12	V	500	30	3.2	0.9	-0.4
03918	12	V	500	5	3.6	0.6	1.1
03918	00	V	500	29	2.3	0.5	-0.2
03953	00	V	500	30	2.8	-0.9	-0.1
03953	12	V	500	30	3.1	1.2	0.3
04018	12	V	500	28	2.8	0.2	0.3
04018	00	V	500	29	2.4	0.0	0.1
04220	00	V	500	30	1.7	0.1	0.2
04220	12	V	500	30	2.8	0.0	0.1
04270	12	V	500	30	2.4	0.2	-0.4
04270	00	V	500	30	3.1	0.3	-0.4
04320	12	V	500	30	2.8	-0.2	0.5
04320	00	V	500	30	2.7	-0.2	0.4
04339	12	V	500	30	2.3	0.2	0.2
04339	00	V	500	29	2.3	0.2	0.3
04360	12	V	500	27	2.9	0.2	0.2
04360	00	V	500	27	2.5	-0.5	0.4
06011	12	V	500	27	2.1	0.3	-0.1

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06011	00	V	500	2	1.3	0.3	-0.5
06260	12	V	500	4	2.1	-0.3	-1.0
06260	00	V	500	29	2.0	0.0	0.2
06610	12	V	500	30	2.8	0.2	-0.1
06610	00	V	500	30	2.4	-0.1	-0.2
07110	00	V	500	30	3.5	0.2	0.5
07110	12	V	500	30	2.8	0.2	0.1
07510	00	V	500	30	3.4	0.3	0.0
07510	12	V	500	30	2.5	0.5	0.0
07645	12	V	500	30	2.2	-0.1	-0.2
07645	00	V	500	30	2.6	-0.5	0.0
07761	00	V	500	30	2.5	0.8	-0.5
07761	12	V	500	30	3.6	0.6	-0.1
08001	00	V	500	30	2.8	0.1	0.5
08001	12	V	500	30	2.2	0.2	0.3
08221	00	V	500	30	2.8	0.3	0.0
08221	12	V	500	30	2.7	0.3	0.1
08302	12	V	500	30	2.3	0.0	0.3
08302	00	V	500	30	2.9	0.5	0.1
08508	12	V	500	22	2.6	0.7	0.3
08522	12	V	500	30	1.9	0.2	-0.7
10035	12	V	500	27	2.0	0.2	0.1
10035	00	V	500	27	2.1	0.1	-0.2
10393	00	V	500	30	2.1	-0.2	0.1
10393	12	V	500	30	2.1	0.1	-0.3
10410	00	V	500	30	2.5	0.2	-0.1
10410	12	V	500	30	2.9	0.9	0.2
10739	12	V	500	30	1.9	0.2	0.4
10739	00	V	500	30	1.8	0.1	-0.2
11035	00	V	500	29	2.8	-0.6	0.3
11035	12	V	500	30	2.7	0.4	0.0
12982	00	V	500	29	2.2	0.3	-0.7
12982	12	V	500	28	2.3	0.3	-0.5
16245	00	V	500	30	4.0	-1.2	-0.3
16245	12	V	500	30	2.5	0.3	0.2
16429	12	V	500	30	2.2	0.5	-0.6
16429	00	V	500	29	3.1	0.6	0.1
16622	00	V	500	28	3.0	0.0	-0.1
16754	00	V	500	27	2.8	0.4	-0.4
17607	12	V	500	25	2.7	0.6	-0.4
26435	12	V	500	15	1.7	-0.2	-0.6
2EERV	12	V	500	6	4.9	2.5	1.4
2EERV	00	V	500	7	1.6	0.1	-0.2

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
60018	00	V	500	30	1.9	0.2	0.4
60018	12	V	500	30	2.3	0.6	-0.2
7JUNA4	12	V	500	8	3.0	0.2	0.1
7JUNA4	00	V	500	4	1.1	0.1	0.0
9ZT9MR	12	V	500	3	1.3	-1.1	0.4
9ZT9MR	00	V	500	3	2.8	-0.6	-1.7
ATGU3F	12	V	500	11	2.4	-0.9	0.8
ATGU3F	00	V	500	7	2.1	-0.4	0.1
BPMWB2	12	V	500	8	1.5	-0.1	-0.3
BPMWB2	00	V	500	6	1.9	0.0	0.6
FPUW5G	12	V	500	5	2.0	-0.1	0.3
GQBZLZ	12	V	500	4	2.4	0.3	0.8
JNKN7J	12	V	500	11	4.6	-0.3	1.7
JNKN7J	00	V	500	9	4.2	2.1	0.2
KJFF9X	12	V	500	8	2.9	-1.2	-0.8
KJFF9X	00	V	500	6	2.2	0.0	-0.1
KMPLHP	12	V	500	12	2.5	-0.1	1.0
KMPLHP	00	V	500	9	2.2	0.9	0.2
LAGY8	00	V	500	3	5.4	3.3	-2.1
LAGZ8	12	V	500	1	2.5	2.5	-0.4
UXK5JT	12	V	500	13	2.8	-0.6	0.1
UXK5JT	00	V	500	12	2.1	-0.1	0.2
WDK38H	12	V	500	22	2.1	-0.4	0.2
XKQLWQ	12	V	500	18	3.2	0.3	-0.7
YLV96W	12	V	500	10	2.2	0.2	0.6
YLV96W	00	V	500	9	2.1	0.8	0.6
ZVQEQC	12	V	500	1	2.3	0.8	-2.2

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

RADIOSONDE MONITORING STATISTICS (EUCOS)

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

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	12	Z	850	30	5.7	-3.9
01001	00	Z	850	31	9.7	-9.1
01028	00	Z	850	30	2.9	-1.7
01028	12	Z	850	29	3.3	-1.6
01400	00	Z	850	20	78.4	78.3
01400	12	Z	850	19	78.3	78.2
01415	00	Z	850	30	5.3	1.9
01415	12	Z	850	29	3.3	2.7
02365	12	Z	850	29	3.0	1.4
02365	00	Z	850	29	3.6	2.3
02591	00	Z	850	26	7.7	7.4
02591	12	Z	850	27	9.0	8.9
02836	12	Z	850	30	2.6	0.6
02836	00	Z	850	30	2.4	1.4
02963	00	Z	850	30	3.9	3.5
02963	12	Z	850	30	3.2	2.9
03005	12	Z	850	31	3.3	-2.5
03005	00	Z	850	29	5.7	-4.0
03238	00	Z	850	30	2.9	1.9
03238	12	Z	850	1	2.1	-2.1
03808	00	Z	850	27	2.3	1.0
03808	12	Z	850	30	2.6	1.0
03918	12	Z	850	5	7.3	7.0
03918	00	Z	850	29	6.7	5.9
03953	00	Z	850	30	2.9	-1.6
03953	12	Z	850	31	4.1	-2.6
04018	12	Z	850	28	2.3	-0.6
04018	00	Z	850	29	2.4	-0.2
04220	00	Z	850	30	5.7	-4.9
04220	12	Z	850	30	5.8	-5.2
04270	12	Z	850	30	8.0	-7.4
04270	00	Z	850	30	8.3	-7.7
04320	12	Z	850	30	13.2	0.4
04320	00	Z	850	30	13.6	1.3
04339	12	Z	850	30	9.4	-8.0
04339	00	Z	850	29	9.6	-8.9
04360	12	Z	850	27	8.2	-7.6
04360	00	Z	850	27	9.2	-8.7
06011	12	Z	850	29	3.6	-1.2

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06011	00	Z	850	2	5.6	-4.1
06260	12	Z	850	4	1.9	0.1
06260	00	Z	850	29	2.6	-0.9
06610	12	Z	850	32	2.3	1.3
06610	00	Z	850	31	2.5	1.5
07110	00	Z	850	30	10.5	-10.1
07110	12	Z	850	31	9.8	-9.3
07510	00	Z	850	31	3.2	-1.5
07510	12	Z	850	30	2.3	-0.6
07645	12	Z	850	32	7.9	-7.4
07645	00	Z	850	31	7.9	-7.5
07761	00	Z	850	30	2.3	0.6
07761	12	Z	850	30	2.1	0.8
08001	00	Z	850	30	2.2	0.5
08001	12	Z	850	30	1.9	0.5
08221	00	Z	850	31	3.8	-0.1
08221	12	Z	850	30	2.8	1.5
08302	12	Z	850	31	8.3	-8.0
08302	00	Z	850	30	8.2	-7.9
08508	12	Z	850	22	21.7	9.7
08522	12	Z	850	30	4.1	3.6
10035	12	Z	850	27	12.4	12.2
10035	00	Z	850	27	12.2	12.0
10393	00	Z	850	30	1.9	0.3
10393	12	Z	850	30	1.7	0.1
10410	00	Z	850	30	1.4	-0.5
10410	12	Z	850	31	1.5	-0.4
10739	12	Z	850	30	4.9	4.6
10739	00	Z	850	30	4.7	4.3
11035	00	Z	850	31	2.8	0.7
11035	12	Z	850	31	3.6	2.8
12982	00	Z	850	29	5.1	4.8
12982	12	Z	850	28	5.0	4.3
16245	00	Z	850	30	4.4	3.4
16245	12	Z	850	30	2.9	2.4
16429	12	Z	850	30	3.2	2.7
16429	00	Z	850	29	3.6	2.9
16622	00	Z	850	28	10.4	9.9
16754	00	Z	850	29	3.7	2.2
17607	12	Z	850	25	1.9	0.7
26435	12	Z	850	15	1.8	1.0
2EERVT	12	Z	850	7	12.5	4.2
2EERVT	00	Z	850	7	12.4	4.4

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
60018	00	Z	850	30	2.8	-2.1
60018	12	Z	850	30	2.5	-0.7
7JUNA4	12	Z	850	8	6.3	5.2
7JUNA4	00	Z	850	4	9.8	1.2
9ZT9MR	12	Z	850	3	9.8	-9.7
9ZT9MR	00	Z	850	3	12.7	-12.5
ATGU3F	12	Z	850	11	26.1	-23.3
ATGU3F	00	Z	850	7	24.7	-23.1
BPMWB2	12	Z	850	8	7.2	-6.7
BPMWB2	00	Z	850	6	11.3	-6.4
FPUW5G	12	Z	850	5	9.6	9.5
GQBZLZ	12	Z	850	4	20.3	-20.1
JNKN7J	12	Z	850	11	37.3	36.8
JNKN7J	00	Z	850	9	37.4	37.0
KJFF9X	12	Z	850	8	2.6	-0.8
KJFF9X	00	Z	850	6	5.4	-3.0
KMPLHP	12	Z	850	13	59.4	58.6
KMPLHP	00	Z	850	9	64.9	64.4
LAGY8	00	Z	850	3	10.5	-10.5
LAGZ8	12	Z	850	1	80.8	80.8
UXK5JT	12	Z	850	13	6.9	-1.8
UXK5JT	00	Z	850	13	5.1	-1.1
WDK38H	12	Z	850	22	21.2	-14.9
XKQLWQ	12	Z	850	18	12.8	12.4
YLV96W	12	Z	850	11	4.6	1.1
YLV96W	00	Z	850	9	6.5	-2.3
ZVQEQC	12	Z	850	1	2.2	-2.2

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

RADIOSONDE MONITORING STATISTICS (EUCOS)

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

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	12	V	850	30	5.2	0.7	0.8
01001	00	V	850	29	3.8	0.2	0.2
01028	00	V	850	30	2.4	0.3	-0.5
01028	12	V	850	29	2.6	-0.5	-0.5
01400	00	V	850	19	2.1	0.3	0.0
01400	12	V	850	19	2.1	0.3	-0.1
01415	00	V	850	29	2.4	0.5	1.0
01415	12	V	850	29	2.2	0.2	0.7
02365	12	V	850	29	3.1	-0.2	0.8
02365	00	V	850	29	2.8	0.2	0.4
02591	00	V	850	26	3.3	-0.1	-1.4
02591	12	V	850	27	3.0	0.0	-1.0
02836	12	V	850	30	2.5	0.3	-0.1
02836	00	V	850	30	2.7	-0.1	-0.2
02963	00	V	850	30	2.0	0.0	-0.3
02963	12	V	850	30	2.5	0.2	-0.3
03005	12	V	850	30	2.7	0.3	0.3
03005	00	V	850	29	2.8	0.4	0.0
03238	00	V	850	30	2.5	-0.1	-0.1
03238	12	V	850	1	0.6	0.6	-0.2
03808	00	V	850	27	2.9	0.6	-0.2
03808	12	V	850	30	2.9	-0.4	-0.2
03918	12	V	850	5	2.7	-0.2	-1.6
03918	00	V	850	29	2.3	0.1	-0.4
03953	00	V	850	30	2.2	0.3	-0.4
03953	12	V	850	30	4.0	0.0	-0.5
04018	12	V	850	28	2.8	-0.5	0.5
04018	00	V	850	29	3.2	-0.7	0.4
04220	00	V	850	30	2.6	0.2	-0.3
04220	12	V	850	30	3.1	0.1	0.5
04270	12	V	850	30	3.6	0.8	0.8
04270	00	V	850	30	2.7	0.0	-0.4
04320	12	V	850	30	3.0	-0.3	-0.2
04320	00	V	850	30	3.2	0.1	0.1
04339	12	V	850	30	3.2	0.5	0.8
04339	00	V	850	29	3.5	-0.1	0.8
04360	12	V	850	27	4.8	1.0	0.9
04360	00	V	850	27	4.8	0.9	0.2
06011	12	V	850	27	2.9	0.2	0.2

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06011	00	V	850	2	4.2	-0.8	-3.7
06260	12	V	850	4	2.3	0.0	1.7
06260	00	V	850	29	2.3	0.4	0.1
06610	12	V	850	30	2.2	0.9	-0.1
06610	00	V	850	30	2.5	0.5	0.0
07110	00	V	850	30	2.8	0.2	-1.1
07110	12	V	850	30	3.0	-0.2	-0.5
07510	00	V	850	30	3.4	0.5	0.4
07510	12	V	850	30	3.0	0.3	0.0
07645	12	V	850	30	2.8	0.7	0.2
07645	00	V	850	30	2.9	1.1	0.6
07761	00	V	850	30	2.9	0.8	-0.5
07761	12	V	850	30	3.1	0.9	0.3
08001	00	V	850	30	2.7	0.5	0.2
08001	12	V	850	30	2.3	0.5	0.0
08221	00	V	850	30	2.7	0.2	0.3
08221	12	V	850	30	3.0	-0.2	0.1
08302	12	V	850	30	2.6	-0.3	-0.2
08302	00	V	850	30	3.1	-0.5	0.2
08508	12	V	850	22	2.8	0.0	-0.7
08522	12	V	850	30	3.0	-0.4	0.1
10035	12	V	850	27	1.9	0.6	-0.1
10035	00	V	850	27	1.9	-0.5	0.0
10393	00	V	850	30	2.4	0.3	0.0
10393	12	V	850	30	2.6	0.0	0.6
10410	00	V	850	30	1.8	0.0	-0.1
10410	12	V	850	30	2.5	0.2	-0.2
10739	12	V	850	30	2.2	0.1	0.2
10739	00	V	850	30	2.8	0.7	-0.5
11035	00	V	850	29	3.4	-0.2	-0.2
11035	12	V	850	30	2.7	0.4	0.1
12982	00	V	850	29	2.8	0.7	-0.4
12982	12	V	850	28	4.0	1.3	0.2
16245	00	V	850	30	3.7	-0.2	-0.5
16245	12	V	850	30	2.5	0.3	-0.1
16429	12	V	850	30	2.7	0.2	-0.2
16429	00	V	850	29	2.6	-0.3	0.7
16622	00	V	850	28	2.7	-0.1	0.7
16754	00	V	850	29	2.8	-0.2	-0.7
17607	12	V	850	25	2.5	-0.1	0.1
26435	12	V	850	15	1.8	-0.1	-0.3
2EERVT	12	V	850	7	4.1	-0.4	-1.9
2EERVT	00	V	850	7	2.0	0.7	0.6

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
60018	00	V	850	30	3.6	-0.9	-0.5
60018	12	V	850	30	3.5	-0.6	-0.3
7JUNA4	12	V	850	8	2.6	0.2	-0.8
7JUNA4	00	V	850	4	1.3	0.1	0.8
9ZT9MR	12	V	850	3	1.7	-0.8	1.1
9ZT9MR	00	V	850	3	2.1	-0.2	0.0
ATGU3F	12	V	850	11	2.9	0.1	-0.6
ATGU3F	00	V	850	7	3.3	-1.0	-0.1
BPMWB2	12	V	850	8	2.1	-0.7	0.3
BPMWB2	00	V	850	6	2.1	0.1	0.5
FPUW5G	12	V	850	5	1.9	0.6	-0.4
GQBZLZ	12	V	850	4	3.2	-0.1	-0.9
JNKN7J	12	V	850	11	4.3	1.0	-0.7
JNKN7J	00	V	850	9	3.3	-1.3	-0.7
KJFF9X	12	V	850	8	5.5	1.4	-1.1
KJFF9X	00	V	850	6	2.3	0.1	0.5
KMPLHP	12	V	850	13	1.9	-0.1	-0.2
KMPLHP	00	V	850	9	3.3	0.2	-0.3
LAGY8	00	V	850	3	2.1	-0.8	0.6
LAGZ8	12	V	850	1	1.6	1.6	0.2
UXK5JT	12	V	850	13	3.8	-1.2	-0.4
UXK5JT	00	V	850	13	3.8	1.2	0.2
WDK38H	12	V	850	22	2.8	0.3	0.4
XKQLWQ	12	V	850	18	2.3	0.3	0.3
YLV96W	12	V	850	11	2.5	0.3	0.0
YLV96W	00	V	850	9	1.5	0.0	0.3
ZVQEQC	12	V	850	1	0.9	-0.9	-0.2

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

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : SURFACE PRESSURE (HPA)
 AREA : 10N - 90N, 70W - 40E
 PERIOD : SEP 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	1406	0	0.3	-0.2	0.4
1300001	99	P	SUR	11	-23	584	0	0.4	0.0	0.5
1300008	99	P	SUR	15	-38	582	0	0.4	-0.1	0.4
1300130	99	P	SUR	28	-16	717	0	0.3	0.3	0.5
1300131	99	P	SUR	28	-17	717	0	0.4	0.2	0.4
1301608	99	P	SUR	34	-58	718	0	0.7	-0.1	0.8
1301619	99	P	SUR	38	-27	717	0	0.3	-0.3	0.4
1301629	99	P	SUR	21	-42	717	0	0.4	-0.1	0.4
1301700	99	P	SUR	20	-57	720	1	0.6	-0.2	0.7
1301706	99	P	SUR	20	-66	720	0	0.3	-0.1	0.3
1301712	99	P	SUR	19	-63	720	0	0.3	0.0	0.3
1301713	99	P	SUR	20	-66	720	0	0.3	0.0	0.3
1301714	99	P	SUR	24	-56	720	0	0.3	0.1	0.3
1301718	99	P	SUR	26	-49	720	0	0.3	0.1	0.3
1301719	99	P	SUR	26	-60	719	0	0.3	0.6	0.7
1301720	99	P	SUR	22	-39	550	0	0.4	0.0	0.4
1301722	99	P	SUR	28	-54	213	0	0.9	0.2	0.9
1301723	99	P	SUR	17	-33	720	0	0.4	0.6	0.7
1301725	99	P	SUR	25	-32	718	0	0.3	0.1	0.4
1301726	99	P	SUR	21	-36	718	0	0.4	0.0	0.4
1301731	99	P	SUR	23	-36	719	0	0.4	0.2	0.4
1301735	99	P	SUR	31	-41	720	0	0.3	-0.8	0.9
1301736	99	P	SUR	26	-41	717	0	0.3	0.3	0.4
1301737	99	P	SUR	27	-63	720	0	0.3	-0.1	0.3
1301767	99	P	SUR	33	-18	718	0	0.2	-0.5	0.5
1301769	99	P	SUR	32	-17	719	0	0.3	1.2	1.3
1301770	99	P	SUR	31	-16	719	0	0.2	0.1	0.3
1301771	99	P	SUR	32	-15	718	0	0.2	0.0	0.2
1301773	99	P	SUR	41	-14	686	0	0.3	0.1	0.3
1301774	99	P	SUR	39	-52	718	0	0.5	0.1	0.5
1301776	99	P	SUR	43	-27	294	0	0.2	0.1	0.2
1301777	99	P	SUR	42	-37	719	0	0.5	0.2	0.5
1301778	99	P	SUR	31	-21	718	0	0.2	0.0	0.2
1301779	99	P	SUR	20	-51	718	0	0.4	0.1	0.4
1301780	99	P	SUR	43	-33	53	0	0.4	0.1	0.4
1301783	99	P	SUR	20	-55	717	0	0.5	0.3	0.6

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
1301792	99	P	SUR	17	-40	695	0	0.4	-0.7	0.8
1301793	99	P	SUR	56	-19	700	0	0.3	0.0	0.3
1301794	99	P	SUR	42	-19	699	0	0.4	0.2	0.5
1301795	99	P	SUR	13	-31	701	0	0.4	-0.2	0.5
1301796	99	P	SUR	15	-35	697	0	0.4	0.0	0.4
1301797	99	P	SUR	16	-36	695	0	0.4	0.1	0.4
1301798	99	P	SUR	34	-23	712	0	0.3	0.3	0.4
1301799	99	P	SUR	31	-29	711	0	0.3	0.2	0.3
1501638	99	P	SUR	12	-19	717	0	0.5	-0.1	0.6
1701715	99	P	SUR	15	-46	687	0	0.5	-0.4	0.6
1801556	99	P	SUR	17	-67	3374	0	0.3	0.1	0.4
1801584	99	P	SUR	24	-66	926	0	0.5	0.2	0.5
1801585	99	P	SUR	29	-67	1541	25	0.8	0.2	0.8
1801681	99	P	SUR	36	14	703	0	0.3	0.0	0.3
1801735	99	P	SUR	48	-6	720	0	0.4	0.2	0.4
1801768	99	P	SUR	89	-7	123	0	0.3	0.1	0.3
2801966	99	P	SUR	35	15	715	0	0.3	0.2	0.3
2801981	99	P	SUR	64	-20	482	0	2.3	-2.3	3.3
2802061	99	P	SUR	84	38	718	0	0.4	-0.2	0.4
2802074	99	P	SUR	55	-57	685	0	0.4	-0.2	0.4
2802075	99	P	SUR	51	-54	717	0	0.3	-0.1	0.3
3801550	99	P	SUR	80	-6	718	0	0.4	-0.4	0.6
3801576	99	P	SUR	35	14	712	0	0.3	-0.3	0.4
3801586	99	P	SUR	76	18	719	0	0.4	-0.5	0.6
3801588	99	P	SUR	81	4	74	0	0.4	0.4	0.6
3801596	99	P	SUR	36	-43	717	0	0.3	0.0	0.3
4100040	99	P	SUR	15	-53	4303	0	0.4	-0.6	0.8
4100043	99	P	SUR	21	-65	4304	0	0.3	-0.5	0.6
4100044	99	P	SUR	22	-59	4307	0	0.4	-0.6	0.7
4100046	99	P	SUR	24	-68	4304	0	0.4	0.0	0.4
4100048	99	P	SUR	32	-70	2021	0	0.5	-0.2	0.6
4100049	99	P	SUR	28	-63	4307	0	0.3	-0.5	0.6
4100052	99	P	SUR	18	-65	4173	0	0.3	-1.1	1.1
4100053	99	P	SUR	18	-66	4228	0	0.3	-0.7	0.8
4100056	99	P	SUR	18	-65	554	0	0.3	-1.0	1.0
4100139	99	P	SUR	20	-38	712	0	0.4	0.1	0.4
4100300	99	P	SUR	16	-57	685	0	0.4	-0.1	0.4
4101618	99	P	SUR	30	-53	594	0	0.5	0.2	0.5
4101663	99	P	SUR	29	-39	656	0	0.6	-0.1	0.6
4101665	99	P	SUR	68	2	426	0	1.4	0.9	1.7
4101696	99	P	SUR	28	-38	718	0	0.4	-0.1	0.4
4101717	99	P	SUR	16	-62	643	0	0.4	-1.4	1.4
4101719	99	P	SUR	21	-29	718	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
4101723	99	P	SUR	24	-69	718	0	0.4	0.2	0.4
4101724	99	P	SUR	36	-63	239	2	5.4	3.4	6.4
4101725	99	P	SUR	18	-63	718	0	0.3	-0.2	0.4
4101727	99	P	SUR	23	-38	718	0	0.6	0.0	0.6
4101728	99	P	SUR	32	-39	719	0	0.4	0.3	0.5
4101729	99	P	SUR	29	-54	719	0	0.4	0.0	0.4
4101730	99	P	SUR	11	-19	718	0	0.6	0.2	0.6
4101743	99	P	SUR	41	-22	718	0	1.1	0.0	1.1
4101753	99	P	SUR	32	-50	718	0	0.3	0.2	0.4
4101755	99	P	SUR	39	-49	718	0	0.9	0.0	0.9
4101756	99	P	SUR	12	-62	623	0	0.4	-0.9	1.0
4101842	99	P	SUR	69	16	324	0	1.0	-0.8	1.2
4101843	99	P	SUR	74	12	720	0	0.4	-0.2	0.4
4101845	99	P	SUR	71	3	720	0	0.4	-0.1	0.4
4101851	99	P	SUR	30	-53	720	0	0.5	-0.5	0.7
4102547	99	P	SUR	25	-61	711	0	0.4	0.2	0.4
4102552	99	P	SUR	14	-62	716	0	0.4	-0.1	0.4
4102557	99	P	SUR	15	-63	719	0	0.4	0.0	0.4
4102559	99	P	SUR	44	-60	440	0	0.4	-0.2	0.5
4102561	99	P	SUR	15	-63	719	0	0.4	0.0	0.4
4102636	99	P	SUR	31	-66	117	0	0.4	0.4	0.6
41040	99	P	SUR	15	-53	719	0	0.4	-0.6	0.8
41043	99	P	SUR	21	-65	717	0	0.4	-0.5	0.7
41044	99	P	SUR	22	-59	719	0	0.4	-0.6	0.7
41046	99	P	SUR	24	-68	720	0	0.4	0.0	0.4
41048	99	P	SUR	32	-70	337	0	0.5	-0.2	0.6
41049	99	P	SUR	28	-63	719	0	0.3	-0.5	0.6
41052	99	P	SUR	18	-65	712	0	0.3	-1.0	1.1
41053	99	P	SUR	19	-66	720	0	0.3	-0.7	0.8
41056	99	P	SUR	18	-66	555	0	0.3	-1.0	1.1
4200059	99	P	SUR	15	-67	4308	0	0.3	-0.5	0.6
4200060	99	P	SUR	16	-63	4308	0	0.3	-0.5	0.6
4200085	99	P	SUR	18	-67	3515	0	0.3	-0.8	0.9
42059	99	P	SUR	15	-68	719	0	0.4	-0.5	0.6
42060	99	P	SUR	16	-63	719	0	0.4	-0.5	0.6
42085	99	P	SUR	18	-67	707	0	0.3	-0.8	0.9
4400005	99	P	SUR	43	-69	4308	0	0.4	-0.3	0.5
4400008	99	P	SUR	40	-69	4252	0	0.5	-0.5	0.7
4400011	99	P	SUR	41	-67	4302	0	0.6	-0.4	0.7
4400032	99	P	SUR	44	-69	310	0	0.4	-0.9	1.0
4400033	99	P	SUR	44	-69	707	0	0.4	-0.9	1.0
4400034	99	P	SUR	44	-68	691	0	0.5	-0.3	0.6
4400037	99	P	SUR	43	-68	357	0	0.7	-0.1	0.7

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
4400150	99	P	SUR	43	-64	708	0	0.6	0.0	0.6
4400488	99	P	SUR	45	-61	659	0	0.3	0.1	0.4
4400489	99	P	SUR	45	-61	662	0	0.4	0.1	0.4
44005	99	P	SUR	43	-69	720	0	0.4	-0.3	0.5
44008	99	P	SUR	41	-69	712	0	0.5	-0.5	0.7
44011	99	P	SUR	41	-67	719	0	0.6	-0.4	0.7
4401581	99	P	SUR	34	-64	718	0	0.8	0.1	0.8
4401582	99	P	SUR	25	-42	718	0	0.3	0.3	0.5
4401584	99	P	SUR	29	-46	719	0	0.3	0.0	0.3
4401585	99	P	SUR	25	-59	718	0	0.3	-0.1	0.3
4401587	99	P	SUR	80	18	718	0	0.4	0.1	0.4
4401588	99	P	SUR	69	15	719	0	0.5	-0.2	0.5
4401864	99	P	SUR	28	-63	504	0	1.1	-0.2	1.1
4402603	99	P	SUR	68	12	714	0	0.4	-0.8	0.9
4402606	99	P	SUR	66	7	720	0	0.3	0.1	0.3
4402613	99	P	SUR	38	-16	720	0	0.3	-0.4	0.5
4402618	99	P	SUR	31	-61	720	0	0.4	0.2	0.4
4402656	99	P	SUR	35	-34	720	0	0.3	0.0	0.3
4402660	99	P	SUR	24	-47	719	0	0.4	0.3	0.5
4402663	99	P	SUR	36	-12	715	0	0.3	-0.1	0.3
4402670	99	P	SUR	22	-53	720	0	0.4	-0.2	0.4
4402672	99	P	SUR	21	-54	719	0	0.4	-0.2	0.4
4402674	99	P	SUR	26	-67	720	0	0.5	0.2	0.5
4402675	99	P	SUR	22	-41	720	0	0.3	0.0	0.3
4402676	99	P	SUR	31	-36	720	0	0.3	0.1	0.3
4402721	99	P	SUR	39	-11	720	0	0.3	0.2	0.3
4402726	99	P	SUR	53	-36	716	0	0.4	0.0	0.4
4402727	99	P	SUR	65	9	521	0	0.4	-0.2	0.4
4402729	99	P	SUR	49	-48	718	0	0.3	0.1	0.3
4402730	99	P	SUR	42	-51	716	0	0.6	0.0	0.6
4402731	99	P	SUR	53	-50	719	0	0.4	0.0	0.4
4402732	99	P	SUR	47	-23	717	0	0.4	0.1	0.4
4402733	99	P	SUR	45	-52	715	0	0.3	0.1	0.3
4402735	99	P	SUR	47	-35	717	0	0.4	-0.2	0.4
4402736	99	P	SUR	46	-19	719	0	0.5	0.0	0.5
4402737	99	P	SUR	54	-44	718	0	0.4	-0.2	0.5
4402738	99	P	SUR	53	-53	716	0	0.4	-0.9	1.0
4402739	99	P	SUR	49	-48	719	0	0.3	0.0	0.3
4402740	99	P	SUR	54	-55	719	0	0.4	0.2	0.5
4402741	99	P	SUR	52	-45	719	0	0.5	0.0	0.5
4402742	99	P	SUR	49	-22	720	0	0.5	-0.2	0.6
4402743	99	P	SUR	46	-38	717	0	0.5	-0.6	0.8
4402744	99	P	SUR	42	-61	719	0	0.5	0.2	0.5

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
4402746	99	P	SUR	45	-12	719	0	0.3	-0.1	0.4
4402747	99	P	SUR	49	-40	719	0	0.5	0.0	0.5
4402749	99	P	SUR	54	-39	717	0	0.4	-0.1	0.4
4402750	99	P	SUR	55	-41	719	0	0.4	-0.5	0.6
4402878	99	P	SUR	38	-60	658	0	0.7	0.5	0.8
4402879	99	P	SUR	37	-65	698	0	0.4	0.4	0.5
4402880	99	P	SUR	38	-35	644	0	0.4	0.3	0.5
4402881	99	P	SUR	48	-27	92	0	0.5	0.1	0.5
4402882	99	P	SUR	27	-60	702	0	0.3	0.5	0.6
4402884	99	P	SUR	29	-70	704	0	1.0	0.5	1.2
4402885	99	P	SUR	38	-66	700	0	0.7	0.2	0.7
44032	99	P	SUR	44	-69	311	0	0.4	-0.9	1.0
44033	99	P	SUR	44	-69	709	0	0.5	-0.9	1.0
44034	99	P	SUR	44	-68	693	0	0.5	-0.4	0.6
4403557	99	P	SUR	59	6	285	0	0.6	-0.6	0.9
4403558	99	P	SUR	46	-7	717	0	0.3	-0.1	0.3
4403568	99	P	SUR	37	-32	716	0	0.3	0.1	0.3
4403569	99	P	SUR	45	-22	716	0	0.4	-0.2	0.5
44037	99	P	SUR	44	-68	358	0	0.7	-0.1	0.7
44078	99	P	SUR	60	-40	617	0	0.5	-0.8	1.0
44150	99	P	SUR	43	-64	709	0	0.6	0.0	0.6
44258	99	P	SUR	45	-63	716	0	0.5	0.0	0.5
44488	99	P	SUR	45	-61	716	0	0.3	0.1	0.3
44489	99	P	SUR	46	-61	720	0	0.4	0.1	0.4
4601782	99	P	SUR	32	-21	720	0	0.3	0.4	0.5
4601812	99	P	SUR	75	-7	16	0	0.2	0.4	0.4
4601818	99	P	SUR	85	-4	719	0	0.5	0.1	0.5
4701518	99	P	SUR	76	-18	63	0	0.3	0.2	0.3
4701554	99	P	SUR	89	-4	173	0	0.4	-0.3	0.5
4701555	99	P	SUR	89	36	173	0	0.4	-0.3	0.5
4701558	99	P	SUR	79	-18	9	0	0.4	-4.6	4.6
4701560	99	P	SUR	89	7	173	0	0.4	-0.2	0.4
4701561	99	P	SUR	89	32	173	0	0.4	0.0	0.4
4801663	99	P	SUR	83	-55	686	133	0.8	0.0	0.8
4801723	99	P	SUR	77	22	719	0	0.3	-0.2	0.4
4801763	99	P	SUR	84	-27	716	0	0.5	-1.0	1.1
4801764	99	P	SUR	83	-70	718	0	0.5	-0.1	0.5
4801771	99	P	SUR	73	-61	718	44	1.5	-0.1	1.5
4802506	99	P	SUR	53	-26	718	0	0.4	-0.1	0.5
4802602	99	P	SUR	58	-36	688	0	0.4	-0.2	0.4
4802603	99	P	SUR	86	33	688	0	0.4	-0.2	0.5
4803914	99	P	SUR	26	-67	1552	0	1.3	0.3	1.4
4803978	99	P	SUR	83	-16	708	0	0.7	-0.4	0.8

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
4804002	99	P	SUR	36	14	710	0	0.3	-0.3	0.4
5801958	99	P	SUR	19	-67	1349	0	0.3	0.2	0.3
5801959	99	P	SUR	20	-52	3742	0	0.4	0.2	0.4
5801987	99	P	SUR	78	-3	720	0	0.3	0.1	0.3
5802034	99	P	SUR	48	-8	719	0	0.3	-0.1	0.3
5802068	99	P	SUR	51	-55	716	0	0.3	0.3	0.5
5802071	99	P	SUR	71	-10	108	0	0.3	0.2	0.4
5802077	99	P	SUR	39	-59	793	0	0.7	-0.2	0.7
6100001	99	P	SUR	43	8	233	0	0.4	0.0	0.4
6100002	99	P	SUR	42	5	699	0	0.4	0.0	0.4
6100196	99	P	SUR	42	4	717	0	0.4	0.2	0.5
6100197	99	P	SUR	40	4	717	0	0.4	0.5	0.7
6100198	99	P	SUR	37	-2	717	0	0.4	0.6	0.7
6100280	99	P	SUR	41	1	715	0	0.5	0.3	0.5
6100281	99	P	SUR	40	0	717	0	0.5	0.3	0.6
6100430	99	P	SUR	40	2	716	0	0.5	0.3	0.6
6101007	99	P	SUR	36	25	68	0	0.4	-0.4	0.5
6101009	99	P	SUR	35	25	124	0	0.4	-0.5	0.7
6101031	99	P	SUR	42	8	716	0	0.3	0.1	0.3
6102732	99	P	SUR	32	21	286	286	0.0	0.0	0.0
6102810	99	P	SUR	41	3	717	0	0.4	0.0	0.4
6102812	99	P	SUR	38	4	719	0	0.4	-0.2	0.5
6200001	99	P	SUR	45	-5	714	0	0.4	0.0	0.4
6200024	99	P	SUR	44	-3	717	0	0.5	0.4	0.6
6200025	99	P	SUR	44	-6	717	0	0.4	0.3	0.5
6200029	99	P	SUR	49	-12	703	0	0.4	-0.3	0.5
6200050	99	P	SUR	50	-4	710	0	0.4	0.0	0.4
6200081	99	P	SUR	51	-13	708	0	0.4	-0.1	0.4
6200082	99	P	SUR	44	-8	172	0	0.4	0.3	0.5
6200083	99	P	SUR	43	-9	717	0	0.4	0.3	0.5
6200084	99	P	SUR	42	-9	717	0	0.4	0.5	0.6
6200085	99	P	SUR	36	-7	717	0	0.3	0.3	0.5
6200086	99	P	SUR	55	6	363	0	0.3	-0.3	0.4
6200087	99	P	SUR	55	7	361	0	0.4	-0.4	0.5
6200091	99	P	SUR	53	-5	718	0	0.4	-0.2	0.4
6200092	99	P	SUR	51	-11	718	0	0.3	-0.1	0.4
6200093	99	P	SUR	55	-10	718	0	0.4	-0.2	0.4
6200094	99	P	SUR	52	-7	718	0	0.4	-0.1	0.4
6200095	99	P	SUR	53	-16	718	0	0.4	-0.4	0.6
6200103	99	P	SUR	50	-3	710	0	0.4	-0.3	0.5
6200163	99	P	SUR	47	-8	708	0	0.3	-0.2	0.3
6200191	99	P	SUR	41	-10	558	0	0.5	-0.4	0.6
6200192	99	P	SUR	40	-10	557	0	0.4	0.0	0.4

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
6200199	99	P	SUR	40	-9	557	0	0.4	-0.3	0.4
6200200	99	P	SUR	36	-8	292	0	2.3	-1.3	2.7
6201065	99	P	SUR	54	7	711	0	0.3	1.2	1.2
6201066	99	P	SUR	55	7	693	0	0.3	0.2	0.3
6201081	99	P	SUR	38	-9	560	0	0.3	-0.4	0.5
6202597	99	P	SUR	46	-32	718	0	0.5	0.0	0.5
6202598	99	P	SUR	43	-35	719	0	0.4	0.0	0.4
6202623	99	P	SUR	71	39	718	0	0.3	-0.3	0.4
6202627	99	P	SUR	67	13	618	0	0.6	-0.2	0.6
6202637	99	P	SUR	66	-10	718	0	0.3	0.0	0.3
6202639	99	P	SUR	30	-38	673	0	0.3	-0.1	0.3
6202640	99	P	SUR	31	-26	190	0	0.3	-0.1	0.3
6202644	99	P	SUR	42	-36	220	0	2.4	-0.6	2.4
62029	99	P	SUR	49	-12	1438	0	0.4	-0.3	0.5
6203516	99	P	SUR	43	-17	676	0	0.5	-0.1	0.5
6203607	99	P	SUR	34	-28	718	0	0.2	0.1	0.3
6203612	99	P	SUR	32	-58	718	0	0.3	0.3	0.4
6203613	99	P	SUR	47	-12	718	0	0.4	0.0	0.4
6203621	99	P	SUR	26	-36	716	0	0.5	0.0	0.5
6203624	99	P	SUR	36	-54	717	0	2.1	-0.8	2.3
6203625	99	P	SUR	31	-31	718	0	0.3	-0.2	0.3
6203632	99	P	SUR	26	-51	718	0	1.1	0.0	1.1
6203634	99	P	SUR	30	-40	718	0	0.3	0.3	0.4
6203639	99	P	SUR	31	-28	717	0	0.3	-0.2	0.3
6203640	99	P	SUR	28	-65	716	0	1.2	-0.2	1.2
6203651	99	P	SUR	45	-19	717	0	0.4	0.2	0.5
6203659	99	P	SUR	88	34	601	0	0.4	-0.2	0.4
6203660	99	P	SUR	88	34	718	0	0.4	-0.2	0.5
6203669	99	P	SUR	83	18	715	0	0.4	-0.2	0.4
6203730	99	P	SUR	25	-68	720	0	0.4	0.2	0.4
6203737	99	P	SUR	21	-55	720	0	0.4	0.3	0.5
6203741	99	P	SUR	61	-6	717	0	0.4	0.0	0.4
6203744	99	P	SUR	71	14	702	0	0.4	0.2	0.4
6203753	99	P	SUR	57	-52	720	0	0.3	-0.4	0.5
6203755	99	P	SUR	30	-18	720	0	0.3	-0.5	0.5
6203768	99	P	SUR	29	-26	720	0	0.3	0.3	0.4
6203771	99	P	SUR	26	-40	720	0	0.4	0.0	0.4
6203772	99	P	SUR	26	-69	720	0	0.3	0.1	0.3
6203773	99	P	SUR	34	-59	720	0	0.6	-0.5	0.8
6203825	99	P	SUR	65	-11	719	0	0.3	0.1	0.3
6203827	99	P	SUR	66	12	717	0	0.3	-0.2	0.4
6203839	99	P	SUR	30	-55	719	0	0.3	-0.1	0.3
6203840	99	P	SUR	24	-46	720	0	0.3	0.1	0.3

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
6203842	99	P	SUR	31	-28	719	0	0.2	0.1	0.3
6203844	99	P	SUR	42	-24	719	0	0.5	0.2	0.5
6203845	99	P	SUR	56	-6	720	0	0.4	-0.2	0.4
6203846	99	P	SUR	31	-29	719	0	0.3	-0.1	0.3
6203848	99	P	SUR	53	-23	718	0	0.4	-0.1	0.4
6203849	99	P	SUR	24	-38	715	0	0.5	0.1	0.5
6203853	99	P	SUR	72	4	719	0	0.3	-0.1	0.4
6203854	99	P	SUR	65	-29	714	1	0.5	0.4	0.6
6203855	99	P	SUR	68	12	720	0	0.4	-0.4	0.5
6203861	99	P	SUR	22	-37	719	0	0.4	0.1	0.4
6203864	99	P	SUR	67	0	715	0	0.3	0.0	0.3
6203865	99	P	SUR	61	-36	718	0	0.5	-0.1	0.5
6203866	99	P	SUR	69	15	719	0	0.4	-0.1	0.4
6204603	99	P	SUR	42	7	704	0	0.3	0.5	0.6
6204604	99	P	SUR	39	2	695	0	0.4	-0.8	0.9
6204605	99	P	SUR	41	3	700	88	1.3	12.5	12.5
6204607	99	P	SUR	40	7	711	0	0.4	0.1	0.4
6204609	99	P	SUR	39	0	197	1	3.8	-2.6	4.6
62050	99	P	SUR	50	-4	1439	0	0.4	-0.1	0.4
62081	99	P	SUR	51	-13	1432	0	0.4	-0.1	0.4
62091	99	P	SUR	53	-5	718	0	0.4	-0.2	0.4
62092	99	P	SUR	51	-11	718	0	0.3	-0.1	0.4
62093	99	P	SUR	55	-10	718	0	0.4	-0.2	0.4
62094	99	P	SUR	52	-7	718	0	0.4	-0.1	0.4
62095	99	P	SUR	53	-16	718	0	0.4	-0.4	0.6
62102	99	P	SUR	58	2	1434	0	0.4	0.2	0.4
62103	99	P	SUR	50	-3	1439	0	0.4	-0.3	0.5
62104	99	P	SUR	57	1	1434	0	0.3	0.0	0.3
62105	99	P	SUR	55	-13	1439	0	0.4	-0.3	0.5
62107	99	P	SUR	50	-6	998	0	0.3	-0.2	0.4
62112	99	P	SUR	58	0	1434	0	0.3	0.4	0.5
62113	99	P	SUR	58	0	1430	0	0.5	0.2	0.6
62114	99	P	SUR	58	0	1224	0	0.3	0.3	0.5
62115	99	P	SUR	58	-3	1418	0	0.4	0.1	0.4
62116	99	P	SUR	58	1	1434	0	0.4	0.1	0.5
62118	99	P	SUR	58	1	1434	0	0.3	0.5	0.5
62119	99	P	SUR	57	2	1434	0	0.3	0.2	0.4
62120	99	P	SUR	56	2	1420	0	0.4	0.0	0.4
62121	99	P	SUR	54	3	1434	0	0.5	0.5	0.7
62122	99	P	SUR	57	2	1432	0	0.3	0.3	0.4
62124	99	P	SUR	54	-4	1402	0	0.4	0.1	0.4
62127	99	P	SUR	54	1	1434	0	0.3	0.7	0.8
62129	99	P	SUR	58	0	1192	0	0.5	0.4	0.6

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
62130	99	P	SUR	59	1	1434	0	0.3	0.1	0.3
62131	99	P	SUR	54	1	1426	0	0.3	0.6	0.7
62132	99	P	SUR	56	2	1422	0	0.3	0.4	0.5
62133	99	P	SUR	57	1	1434	0	0.5	0.2	0.5
62134	99	P	SUR	58	1	1432	0	0.3	0.6	0.7
62135	99	P	SUR	54	2	120	0	0.4	0.4	0.5
62140	99	P	SUR	57	1	1406	0	0.3	0.2	0.4
62141	99	P	SUR	56	-3	1366	0	0.5	0.3	0.6
62143	99	P	SUR	58	2	1434	0	0.3	0.6	0.7
62144	99	P	SUR	53	2	1434	0	0.3	0.3	0.5
62145	99	P	SUR	53	3	1334	0	0.3	0.4	0.5
62146	99	P	SUR	57	2	1434	0	0.4	0.0	0.4
62148	99	P	SUR	54	2	1434	0	0.5	0.9	1.0
62149	99	P	SUR	54	1	1434	0	0.3	0.8	0.8
62151	99	P	SUR	57	2	782	0	0.3	0.3	0.4
62152	99	P	SUR	57	2	1430	0	0.3	0.5	0.6
62153	99	P	SUR	57	2	1432	0	0.3	0.3	0.5
62154	99	P	SUR	56	2	1430	0	0.3	0.2	0.4
62155	99	P	SUR	58	1	1434	0	0.3	0.5	0.6
62157	99	P	SUR	58	0	1434	0	0.3	0.2	0.4
62160	99	P	SUR	57	2	1426	0	0.3	0.2	0.4
62161	99	P	SUR	58	1	1434	0	0.5	-0.1	0.5
62162	99	P	SUR	57	1	1410	0	0.3	0.2	0.4
62163	99	P	SUR	48	-9	1438	0	0.3	-0.1	0.3
62164	99	P	SUR	57	1	1432	0	0.3	0.4	0.5
62165	99	P	SUR	54	1	1390	0	0.3	0.2	0.4
62168	99	P	SUR	58	1	1434	0	0.3	0.2	0.4
62170	99	P	SUR	51	2	1440	0	0.3	-0.1	0.3
62297	99	P	SUR	59	2	1434	0	0.3	0.2	0.4
62302	99	P	SUR	61	-2	1432	0	0.6	0.2	0.6
62304	99	P	SUR	51	2	1440	0	0.4	-0.2	0.4
62305	99	P	SUR	50	0	1440	0	0.4	-0.3	0.5
62442	99	P	SUR	49	-16	996	0	0.4	-0.2	0.5
6301001	99	P	SUR	64	5	712	0	0.3	-0.1	0.3
6301004	99	P	SUR	72	20	158	0	0.3	-0.5	0.6
6301008	99	P	SUR	68	15	371	0	0.5	-0.6	0.8
6301572	99	P	SUR	51	-19	717	2	2.2	0.2	2.2
6301575	99	P	SUR	52	-37	718	0	0.4	0.2	0.4
6301577	99	P	SUR	65	-7	719	0	0.3	-0.1	0.3
63055	99	P	SUR	61	2	1380	0	0.4	0.1	0.4
63056	99	P	SUR	60	2	1418	0	0.6	0.6	0.8
63057	99	P	SUR	59	2	1434	0	0.3	0.0	0.3
63058	99	P	SUR	53	2	788	0	0.3	0.1	0.3

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
63059	99	P	SUR	58	-1	1422	0	0.3	0.5	0.6
63101	99	P	SUR	61	1	1424	0	0.5	0.4	0.6
63102	99	P	SUR	61	1	1434	0	0.4	0.1	0.4
63103	99	P	SUR	61	1	1430	0	0.6	0.6	0.8
63108	99	P	SUR	61	2	1426	0	0.4	0.1	0.5
63109	99	P	SUR	60	2	1434	0	0.3	-0.2	0.4
63110	99	P	SUR	60	2	1434	0	0.5	0.0	0.5
63111	99	P	SUR	61	2	1430	0	0.3	-0.2	0.4
63112	99	P	SUR	61	1	1432	0	0.3	-0.2	0.4
63115	99	P	SUR	62	1	1430	0	0.3	0.0	0.3
63117	99	P	SUR	61	1	1434	0	0.5	0.6	0.8
63118	99	P	SUR	58	1	1434	0	0.3	-0.1	0.4
6400045	99	P	SUR	59	-12	710	0	0.3	-0.4	0.5
6400046	99	P	SUR	61	-4	710	0	0.3	-0.3	0.4
6401583	99	P	SUR	63	-37	717	0	0.5	0.1	0.5
6401584	99	P	SUR	64	-8	718	0	1.3	0.2	1.3
6401590	99	P	SUR	70	32	718	0	0.4	-0.5	0.6
6401592	99	P	SUR	72	6	718	0	0.4	0.0	0.4
6401759	99	P	SUR	57	-34	718	0	0.4	-0.4	0.6
6401762	99	P	SUR	67	1	719	0	0.3	0.2	0.4
6401763	99	P	SUR	66	12	717	0	0.4	-0.1	0.4
6402539	99	P	SUR	69	34	708	0	0.4	-0.3	0.5
6402551	99	P	SUR	49	-16	711	0	0.5	0.1	0.6
6402597	99	P	SUR	60	-22	717	0	0.4	-0.1	0.4
6402615	99	P	SUR	23	-65	720	0	0.4	0.2	0.4
6402616	99	P	SUR	32	-42	720	0	0.4	-0.2	0.4
6402617	99	P	SUR	29	-44	720	0	0.3	0.3	0.5
6402618	99	P	SUR	24	-49	720	0	0.8	0.0	0.8
6402619	99	P	SUR	34	-13	720	0	0.2	0.0	0.2
6402620	99	P	SUR	43	-5	183	0	0.4	0.5	0.6
6402621	99	P	SUR	32	-14	720	0	0.3	0.4	0.5
6402622	99	P	SUR	33	-17	720	0	0.2	0.1	0.3
64041	99	P	SUR	61	-3	1432	0	0.4	0.1	0.4
64045	99	P	SUR	59	-12	1439	0	0.3	-0.5	0.6
64046	99	P	SUR	61	-4	1439	0	0.3	-0.3	0.4
6600021	99	P	SUR	55	14	205	0	0.3	-1.0	1.1
6600022	99	P	SUR	54	14	101	0	0.4	-0.2	0.4
6600023	99	P	SUR	55	11	335	0	0.3	-0.2	0.3
6600024	99	P	SUR	55	13	114	0	0.3	-1.3	1.3
6801791	99	P	SUR	36	-43	719	0	0.5	0.4	0.6
6801876	99	P	SUR	72	-10	108	0	0.4	0.2	0.4
6801906	99	P	SUR	80	-69	287	0	0.7	-0.8	1.1
7801552	99	P	SUR	83	-6	718	0	0.4	-0.4	0.6

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

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND SPEED (M/S)
 AREA : 10N - 90N, 70W - 40E
 PERIOD : SEP 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	584	0	0	1.6	0.5	1.6
1300002	99	SPEED	SUR	20	-23	582	0	0	0.9	0.1	0.9
1300008	99	SPEED	SUR	15	-38	582	0	0	1.2	0.0	1.2
1300131	99	SPEED	SUR	28	-17	698	0	0	1.7	0.9	1.9
1801556	99	SPEED	SUR	17	-67	3374	0	0	0.9	-0.1	0.9
1801584	99	SPEED	SUR	24	-66	926	0	0	2.2	-0.2	2.2
1801585	99	SPEED	SUR	29	-67	1552	0	0	1.5	-0.8	1.7
4100026	99	SPEED	SUR	12	-38	303	0	0	1.6	0.4	1.6
4100040	99	SPEED	SUR	15	-53	4306	0	0	1.1	0.2	1.1
4100043	99	SPEED	SUR	21	-65	4301	0	0	0.9	0.2	0.9
4100044	99	SPEED	SUR	22	-59	4306	0	0	1.0	-0.3	1.1
4100046	99	SPEED	SUR	24	-68	4302	0	0	1.2	0.0	1.2
4100048	99	SPEED	SUR	32	-70	2021	0	0	1.4	-0.5	1.5
4100049	99	SPEED	SUR	28	-63	4307	0	0	1.0	-0.2	1.0
4100052	99	SPEED	SUR	18	-65	4182	0	0	0.9	0.0	0.9
4100053	99	SPEED	SUR	18	-66	4228	0	0	1.4	0.3	1.5
4100056	99	SPEED	SUR	18	-65	554	0	0	1.1	0.0	1.1
4100139	99	SPEED	SUR	20	-38	712	0	0	0.9	-0.1	0.9
4100300	99	SPEED	SUR	16	-57	681	0	0	1.0	-0.1	1.0
41040	99	SPEED	SUR	15	-53	719	0	0	1.2	0.2	1.2
41043	99	SPEED	SUR	21	-65	717	0	0	0.9	0.2	0.9
41044	99	SPEED	SUR	22	-59	719	0	0	1.0	-0.3	1.1
41046	99	SPEED	SUR	24	-68	720	0	0	1.2	0.1	1.2
41048	99	SPEED	SUR	32	-70	337	0	0	1.4	-0.5	1.5
41049	99	SPEED	SUR	28	-63	719	0	0	1.1	-0.1	1.1
41052	99	SPEED	SUR	18	-65	713	0	0	1.0	0.1	1.0
41053	99	SPEED	SUR	19	-66	720	0	0	1.5	0.0	1.5
41056	99	SPEED	SUR	18	-66	555	0	0	1.1	0.1	1.1
4200059	99	SPEED	SUR	15	-67	4305	0	0	0.7	0.2	0.8
4200060	99	SPEED	SUR	16	-63	4306	0	0	0.9	0.2	0.9
4200085	99	SPEED	SUR	18	-67	3533	0	0	1.2	0.2	1.2
42059	99	SPEED	SUR	15	-68	719	0	0	0.8	0.2	0.9
42060	99	SPEED	SUR	16	-63	719	0	0	1.0	0.3	1.0
42085	99	SPEED	SUR	18	-67	710	0	0	1.3	0.5	1.4

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF

ELEMENT MONITORED : WIND SPEED (M/S)

(CONTINU

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
4400005	99	SPEED	SUR	43	-69	4306	0	0	1.1	-0.3	1.2
4400008	99	SPEED	SUR	40	-69	4251	0	0	1.3	-0.2	1.3
4400011	99	SPEED	SUR	41	-67	4307	0	0	1.2	-0.4	1.3
4400027	99	SPEED	SUR	44	-67	4299	0	0	1.2	-0.7	1.3
4400032	99	SPEED	SUR	44	-69	704	0	0	1.3	-0.4	1.3
4400033	99	SPEED	SUR	44	-69	707	2	0	1.2	-0.2	1.2
4400034	99	SPEED	SUR	44	-68	691	0	0	1.1	-0.7	1.3
4400037	99	SPEED	SUR	43	-68	142	0	0	0.9	-0.2	0.9
4400150	99	SPEED	SUR	43	-64	706	0	0	1.1	0.1	1.1
4400488	99	SPEED	SUR	45	-61	659	0	0	1.3	0.3	1.3
4400489	99	SPEED	SUR	45	-61	662	0	0	1.3	1.1	1.7
44005	99	SPEED	SUR	43	-69	720	0	0	1.2	-0.4	1.3
44008	99	SPEED	SUR	41	-69	711	0	0	1.4	-0.2	1.4
44011	99	SPEED	SUR	41	-67	719	0	0	1.2	-0.3	1.3
44027	99	SPEED	SUR	44	-67	720	0	0	1.2	-0.6	1.3
44032	99	SPEED	SUR	44	-69	706	0	0	1.3	-0.3	1.3
44033	99	SPEED	SUR	44	-69	709	1	0	1.2	0.0	1.2
44034	99	SPEED	SUR	44	-68	693	0	0	1.2	-0.7	1.4
44037	99	SPEED	SUR	44	-68	143	0	0	0.9	-0.1	1.0
44078	99	SPEED	SUR	60	-40	618	0	0	2.0	-2.1	2.9
44150	99	SPEED	SUR	43	-64	707	0	0	1.2	0.1	1.2
44258	99	SPEED	SUR	45	-63	716	0	0	1.1	0.2	1.2
44488	99	SPEED	SUR	45	-61	716	0	0	1.4	0.7	1.5
44489	99	SPEED	SUR	46	-61	720	0	0	1.4	1.2	1.8
4803914	99	SPEED	SUR	26	-67	2500	3	0	2.0	-0.7	2.2
5801958	99	SPEED	SUR	19	-67	1349	0	0	1.0	-0.2	1.0
5801959	99	SPEED	SUR	20	-52	3742	0	0	1.2	-0.6	1.4
6100001	99	SPEED	SUR	43	8	712	0	0	1.5	-0.4	1.6
6100002	99	SPEED	SUR	42	5	699	0	0	1.4	-0.2	1.4
6100196	99	SPEED	SUR	42	4	706	0	0	1.4	-0.4	1.5
6100197	99	SPEED	SUR	40	4	679	0	0	1.3	-0.7	1.5
6100198	99	SPEED	SUR	37	-2	715	0	0	1.5	-0.7	1.7
6100280	99	SPEED	SUR	41	1	102	3	0	2.2	-1.4	2.6
6100281	99	SPEED	SUR	40	0	703	0	0	1.8	0.2	1.8
6100430	99	SPEED	SUR	40	2	704	0	0	1.6	0.1	1.6
6101007	99	SPEED	SUR	36	25	70	0	0	1.5	-0.2	1.5
6101008	99	SPEED	SUR	37	22	125	0	0	2.4	-4.4	5.0
6101009	99	SPEED	SUR	35	25	124	0	0	1.3	1.2	1.8
6101031	99	SPEED	SUR	42	8	716	0	0	1.3	-0.5	1.4
6200001	99	SPEED	SUR	45	-5	709	0	0	1.5	-0.7	1.7
6200024	99	SPEED	SUR	44	-3	708	0	0	1.5	-0.8	1.8

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF

ELEMENT MONITORED : WIND SPEED (M/S)

(CONTINU

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
6200025	99	SPEED	SUR	44	-6	713	0	0	1.6	-0.3	1.6
6200029	99	SPEED	SUR	49	-12	703	0	0	1.2	0.5	1.3
6200050	99	SPEED	SUR	50	-4	710	0	0	1.2	0.2	1.3
6200081	99	SPEED	SUR	51	-13	707	0	0	1.1	0.0	1.1
6200082	99	SPEED	SUR	44	-8	168	0	0	1.2	-1.1	1.6
6200083	99	SPEED	SUR	43	-9	707	0	0	1.5	-1.0	1.8
6200084	99	SPEED	SUR	42	-9	690	0	0	1.2	-0.9	1.5
6200085	99	SPEED	SUR	36	-7	697	0	0	1.4	-0.6	1.5
6200086	99	SPEED	SUR	55	6	362	0	0	1.6	1.4	2.1
6200087	99	SPEED	SUR	55	7	362	0	0	1.4	1.1	1.8
6200091	99	SPEED	SUR	53	-5	718	0	0	1.2	0.2	1.2
6200092	99	SPEED	SUR	51	-11	718	0	0	1.0	0.0	1.0
6200093	99	SPEED	SUR	55	-10	718	0	0	1.2	-0.6	1.3
6200094	99	SPEED	SUR	52	-7	718	0	0	1.3	-0.1	1.3
6200095	99	SPEED	SUR	53	-16	718	0	0	1.3	-0.7	1.5
6200103	99	SPEED	SUR	50	-3	627	0	0	1.3	-0.2	1.3
6200163	99	SPEED	SUR	47	-8	708	0	0	1.1	-0.1	1.1
6200200	99	SPEED	SUR	36	-8	404	0	0	1.1	0.3	1.2
6201065	99	SPEED	SUR	54	7	711	0	0	1.3	-0.6	1.5
6201066	99	SPEED	SUR	55	7	675	0	0	1.3	0.2	1.3
62029	99	SPEED	SUR	49	-12	1436	0	0	1.2	0.5	1.3
62050	99	SPEED	SUR	50	-4	1437	0	0	1.3	0.7	1.5
62081	99	SPEED	SUR	51	-13	1430	0	0	1.1	0.7	1.3
62091	99	SPEED	SUR	53	-5	718	0	0	1.2	0.5	1.3
62092	99	SPEED	SUR	51	-11	718	0	0	1.0	0.1	1.0
62093	99	SPEED	SUR	55	-10	718	0	0	1.2	-0.6	1.3
62094	99	SPEED	SUR	52	-7	718	0	0	1.3	-0.1	1.3
62095	99	SPEED	SUR	53	-16	718	0	0	1.3	-0.6	1.5
62102	99	SPEED	SUR	58	2	1434	0	0	1.3	-0.3	1.3
62103	99	SPEED	SUR	50	-3	1271	0	0	1.3	-0.4	1.4
62104	99	SPEED	SUR	57	1	1434	0	0	1.2	-0.3	1.3
62105	99	SPEED	SUR	55	-13	1439	0	0	1.2	0.4	1.2
62107	99	SPEED	SUR	50	-6	428	0	0	1.3	0.2	1.3
62112	99	SPEED	SUR	58	0	1434	0	0	1.1	-0.1	1.1
62113	99	SPEED	SUR	58	0	1430	0	0	1.4	0.5	1.4
62114	99	SPEED	SUR	58	0	1222	0	0	1.4	0.8	1.6
62118	99	SPEED	SUR	58	1	1434	0	0	1.3	0.5	1.4
62119	99	SPEED	SUR	57	2	1434	0	0	1.6	-0.6	1.7
62120	99	SPEED	SUR	56	2	630	0	0	1.6	-1.6	2.3
62121	99	SPEED	SUR	54	3	1434	0	0	1.3	-0.4	1.3
62122	99	SPEED	SUR	57	2	1432	0	0	1.2	-0.4	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
62129	99	SPEED	SUR	58	0	1192	0	0	1.2	0.3	1.3
62131	99	SPEED	SUR	54	1	1426	0	0	1.9	-0.6	2.0
62132	99	SPEED	SUR	56	2	1422	0	0	1.8	-1.0	2.0
62133	99	SPEED	SUR	57	1	1434	0	0	1.5	0.0	1.5
62134	99	SPEED	SUR	58	1	1432	0	0	1.3	0.1	1.3
62140	99	SPEED	SUR	57	1	1406	0	0	1.1	-0.1	1.1
62143	99	SPEED	SUR	58	2	1434	0	0	1.8	-1.0	2.0
62144	99	SPEED	SUR	53	2	1434	0	0	1.9	-0.7	2.0
62145	99	SPEED	SUR	53	3	1334	0	0	1.5	0.6	1.7
62146	99	SPEED	SUR	57	2	1432	0	0	1.1	-0.2	1.1
62148	99	SPEED	SUR	54	2	1434	0	0	1.5	-0.2	1.5
62149	99	SPEED	SUR	54	1	1434	0	0	1.4	0.1	1.4
62152	99	SPEED	SUR	57	2	1430	0	0	1.3	-0.8	1.6
62153	99	SPEED	SUR	57	2	1432	0	0	2.1	-1.2	2.5
62154	99	SPEED	SUR	56	2	1430	0	0	1.5	0.1	1.5
62155	99	SPEED	SUR	58	1	1434	0	0	1.2	0.0	1.2
62163	99	SPEED	SUR	48	-9	1436	0	0	1.0	0.3	1.1
62164	99	SPEED	SUR	57	1	1432	0	0	1.4	-1.2	1.8
62165	99	SPEED	SUR	54	1	1390	0	0	1.3	-0.5	1.4
62170	99	SPEED	SUR	51	2	1438	0	0	1.5	0.4	1.5
62304	99	SPEED	SUR	51	2	1430	0	0	1.6	0.5	1.7
62305	99	SPEED	SUR	50	0	1440	0	0	1.4	0.3	1.4
62442	99	SPEED	SUR	49	-16	994	0	0	1.0	-0.1	1.0
6301001	99	SPEED	SUR	64	5	712	0	0	1.4	-0.4	1.5
6301004	99	SPEED	SUR	72	20	158	0	0	1.0	-1.0	1.4
6301008	99	SPEED	SUR	68	15	371	0	0	1.7	-0.4	1.8
63055	99	SPEED	SUR	61	2	1382	0	0	1.1	-1.2	1.6
63056	99	SPEED	SUR	60	2	1418	0	0	1.1	0.3	1.1
63057	99	SPEED	SUR	59	2	1434	0	0	1.7	-0.9	1.9
63058	99	SPEED	SUR	53	2	773	0	0	1.3	0.0	1.3
63101	99	SPEED	SUR	61	1	1424	0	0	1.3	-0.4	1.3
63103	99	SPEED	SUR	61	1	1430	0	0	1.6	0.0	1.6
63106	99	SPEED	SUR	61	2	1432	0	0	1.5	-0.6	1.6
63108	99	SPEED	SUR	61	2	1428	0	0	1.2	0.0	1.2
63109	99	SPEED	SUR	60	2	1418	0	0	1.2	0.1	1.2
63110	99	SPEED	SUR	60	2	1434	0	0	1.2	-0.4	1.2
63112	99	SPEED	SUR	61	1	1418	0	0	1.1	-0.3	1.2
63115	99	SPEED	SUR	62	1	1430	0	0	1.1	-0.3	1.1
63117	99	SPEED	SUR	61	1	1434	0	0	1.3	-0.2	1.3
6400045	99	SPEED	SUR	59	-12	709	0	0	1.1	0.1	1.1
6400046	99	SPEED	SUR	61	-4	710	0	0	1.2	-0.1	1.2

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF

ELEMENT MONITORED : WIND SPEED (M/S)

(CONTINU

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
64041	99	SPEED	SUR	61	-3	1422	0	0	1.6	0.1	1.6
64045	99	SPEED	SUR	59	-12	1437	0	0	1.1	0.5	1.2
64046	99	SPEED	SUR	61	-4	1439	0	0	1.3	0.4	1.3
6600021	99	SPEED	SUR	55	14	205	0	0	1.0	0.1	1.0
6600022	99	SPEED	SUR	54	14	101	0	0	1.5	0.1	1.5
6600023	99	SPEED	SUR	55	11	113	0	0	1.6	1.2	2.0
6600024	99	SPEED	SUR	55	13	77	0	0	1.1	0.0	1.1

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

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND DIRECTION (DEGREES)
 AREA : 10N - 90N, 70W - 40E
 PERIOD : SEP 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	310	0	0	31.2	0.7	31.2
1300002	99	DIRN	SUR	20	-23	581	0	0	10.0	-1.5	10.1
1300008	99	DIRN	SUR	15	-38	481	0	0	14.9	3.3	15.2
1300131	99	DIRN	SUR	28	-17	354	0	0	17.1	0.2	17.1
1801556	99	DIRN	SUR	17	-67	3166	0	0	11.4	5.8	12.8
1801565	99	DIRN	SUR	32	-79	2832	0	0	20.0	0.0	20.0
1801577	99	DIRN	SUR	32	-74	2602	0	0	15.9	1.3	16.0
1801584	99	DIRN	SUR	24	-66	505	0	0	23.3	2.8	23.4
1801585	99	DIRN	SUR	29	-67	1393	0	0	15.0	-2.6	15.2
1801599	99	DIRN	SUR	27	-84	1952	0	0	27.2	2.3	27.3
4100001	99	DIRN	SUR	35	-72	3471	0	0	17.9	12.0	21.5
4100002	99	DIRN	SUR	32	-75	3161	0	0	21.4	3.7	21.7
4100004	99	DIRN	SUR	33	-79	3227	0	0	17.6	4.2	18.1
4100008	99	DIRN	SUR	31	-81	3282	0	0	23.8	7.8	25.0
4100009	99	DIRN	SUR	29	-80	2547	0	0	29.0	-0.9	29.0
4100013	99	DIRN	SUR	33	-78	3375	0	0	17.0	5.8	18.0
4100024	99	DIRN	SUR	34	-78	558	0	0	20.2	5.3	20.9
4100025	99	DIRN	SUR	35	-75	3506	0	0	21.4	8.3	22.9
4100026	99	DIRN	SUR	12	-38	212	0	0	25.1	2.1	25.2
4100029	99	DIRN	SUR	33	-80	519	0	0	20.1	-6.7	21.2
4100033	99	DIRN	SUR	32	-80	587	0	0	24.3	-21.4	32.4
4100037	99	DIRN	SUR	34	-77	574	0	0	16.5	2.1	16.6
4100038	99	DIRN	SUR	34	-78	585	0	0	16.3	3.9	16.7
4100040	99	DIRN	SUR	15	-53	3106	0	0	13.4	6.9	15.1
4100043	99	DIRN	SUR	21	-65	3843	0	0	12.7	8.8	15.5
4100044	99	DIRN	SUR	22	-59	3168	0	0	11.5	8.3	14.2
4100046	99	DIRN	SUR	24	-68	3412	0	0	13.1	7.0	14.9
4100047	99	DIRN	SUR	27	-71	3363	0	0	14.2	2.5	14.4
4100048	99	DIRN	SUR	32	-70	1637	0	0	13.3	10.8	17.2
4100049	99	DIRN	SUR	28	-63	2877	0	0	14.2	4.2	14.8
4100052	99	DIRN	SUR	18	-65	3862	0	0	14.2	3.8	14.7
4100053	99	DIRN	SUR	18	-66	2312	0	0	24.8	10.2	26.8

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
4100056	99	DIRN	SUR	18	-65	483	0	0	18.5	7.7	20.0
4100064	99	DIRN	SUR	34	-77	569	0	0	18.5	2.1	18.7
4100066	99	DIRN	SUR	33	-80	251	0	0	19.4	-1.9	19.5
41001	99	DIRN	SUR	35	-72	558	0	0	18.1	11.2	21.3
4100139	99	DIRN	SUR	20	-38	638	0	0	13.4	5.6	14.5
41002	99	DIRN	SUR	32	-75	510	0	0	20.8	3.5	21.1
4100300	99	DIRN	SUR	16	-57	514	0	0	16.1	-11.7	19.9
41004	99	DIRN	SUR	33	-79	532	0	0	17.8	3.8	18.2
41008	99	DIRN	SUR	31	-81	548	0	0	22.8	7.5	24.0
41009	99	DIRN	SUR	29	-80	415	0	0	30.9	-1.1	30.9
41013	99	DIRN	SUR	33	-78	551	0	0	16.9	5.7	17.8
41024	99	DIRN	SUR	34	-79	538	0	0	21.3	7.0	22.5
41025	99	DIRN	SUR	35	-76	580	0	0	20.9	8.1	22.5
41029	99	DIRN	SUR	33	-80	505	0	0	21.0	-6.2	22.0
41033	99	DIRN	SUR	32	-80	539	0	0	22.1	-18.3	28.6
41037	99	DIRN	SUR	34	-77	576	0	0	17.8	1.8	17.8
41038	99	DIRN	SUR	34	-78	531	0	0	17.6	4.3	18.1
41040	99	DIRN	SUR	15	-53	508	0	0	14.0	6.9	15.6
41043	99	DIRN	SUR	21	-65	633	0	0	12.5	8.7	15.2
41044	99	DIRN	SUR	22	-59	512	0	0	11.2	8.0	13.7
41046	99	DIRN	SUR	24	-68	550	0	0	13.9	6.4	15.3
41047	99	DIRN	SUR	28	-72	545	0	0	14.4	2.6	14.6
41048	99	DIRN	SUR	32	-70	254	0	0	12.7	10.4	16.4
41049	99	DIRN	SUR	28	-63	462	0	0	14.5	3.8	15.0
41052	99	DIRN	SUR	18	-65	649	0	0	13.5	2.9	13.8
41053	99	DIRN	SUR	19	-66	418	0	0	25.1	9.9	27.0
41056	99	DIRN	SUR	18	-66	475	0	0	19.6	7.6	21.0
41064	99	DIRN	SUR	34	-77	560	0	0	17.6	1.9	17.7
41066	99	DIRN	SUR	33	-80	243	0	0	20.0	-1.7	20.1
4200013	99	DIRN	SUR	27	-83	824	0	0	22.2	-1.7	22.3
4200022	99	DIRN	SUR	28	-84	627	0	0	21.3	-4.5	21.7
4200023	99	DIRN	SUR	26	-83	726	0	0	25.4	0.3	25.4
4200026	99	DIRN	SUR	25	-83	647	0	0	27.5	-2.1	27.6
4200036	99	DIRN	SUR	29	-85	2630	0	0	24.2	5.6	24.8
4200056	99	DIRN	SUR	20	-85	3078	0	0	21.1	-1.0	21.1
4200057	99	DIRN	SUR	17	-82	3538	0	0	17.5	4.8	18.2
4200058	99	DIRN	SUR	15	-75	4056	0	0	10.3	3.6	10.9
4200059	99	DIRN	SUR	15	-67	4058	0	0	10.9	5.7	12.3
4200060	99	DIRN	SUR	16	-63	3846	0	0	11.7	9.8	15.3
4200085	99	DIRN	SUR	18	-67	2542	0	0	27.3	20.6	34.2
42013	99	DIRN	SUR	27	-83	390	0	0	23.8	0.3	23.8

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
42022	99	DIRN	SUR	28	-84	305	0	0	22.1	-3.3	22.4
42023	99	DIRN	SUR	26	-83	337	0	0	25.8	0.2	25.8
42026	99	DIRN	SUR	25	-84	295	0	0	28.9	-1.7	29.0
42036	99	DIRN	SUR	29	-85	423	0	0	24.6	5.5	25.2
42056	99	DIRN	SUR	20	-85	481	0	0	20.9	-0.4	20.9
42057	99	DIRN	SUR	17	-82	570	0	0	17.8	3.8	18.2
42058	99	DIRN	SUR	15	-75	670	0	0	10.7	3.5	11.3
42059	99	DIRN	SUR	15	-68	675	0	0	11.7	5.2	12.9
42060	99	DIRN	SUR	16	-63	619	0	0	12.0	8.8	14.9
42085	99	DIRN	SUR	18	-67	460	0	0	25.2	16.9	30.4
4400005	99	DIRN	SUR	43	-69	2723	0	0	15.0	7.9	17.0
4400007	99	DIRN	SUR	44	-70	2212	0	0	15.8	6.1	17.0
4400008	99	DIRN	SUR	40	-69	3012	0	0	14.2	18.4	23.3
4400009	99	DIRN	SUR	38	-75	3224	0	0	17.5	4.7	18.1
4400011	99	DIRN	SUR	41	-67	2990	0	0	14.4	10.7	17.9
4400013	99	DIRN	SUR	42	-71	2800	0	0	15.3	6.1	16.5
4400014	99	DIRN	SUR	37	-75	3104	0	0	16.3	7.4	17.9
4400018	99	DIRN	SUR	42	-70	2997	0	0	13.5	5.9	14.8
4400020	99	DIRN	SUR	41	-70	3547	0	0	14.5	3.6	14.9
4400022	99	DIRN	SUR	41	-74	302	0	0	14.4	3.9	14.9
4400027	99	DIRN	SUR	44	-67	2026	0	0	16.4	16.9	23.6
4400029	99	DIRN	SUR	43	-71	326	0	0	17.1	5.4	17.9
4400030	99	DIRN	SUR	43	-70	385	0	0	17.9	2.1	18.0
4400032	99	DIRN	SUR	44	-69	369	0	0	17.6	0.7	17.6
4400033	99	DIRN	SUR	44	-69	281	2	0	26.8	22.8	35.2
4400034	99	DIRN	SUR	44	-68	297	0	0	20.9	6.8	22.0
4400037	99	DIRN	SUR	43	-68	55	0	0	17.0	10.3	19.9
4400039	99	DIRN	SUR	41	-73	319	0	0	37.5	4.7	37.8
4400041	99	DIRN	SUR	37	-77	23	0	0	19.7	-6.6	20.8
4400042	99	DIRN	SUR	38	-76	4090	0	0	19.0	-1.8	19.1
4400043	99	DIRN	SUR	39	-76	3834	0	0	28.3	-0.9	28.3
4400058	99	DIRN	SUR	38	-76	4650	0	0	25.9	-1.2	25.9
4400062	99	DIRN	SUR	39	-76	4438	0	0	26.3	0.2	26.3
4400063	99	DIRN	SUR	39	-76	3654	0	0	23.7	-1.0	23.7
4400064	99	DIRN	SUR	37	-76	4285	0	0	19.1	4.1	19.5
4400072	99	DIRN	SUR	37	-76	4271	0	0	25.6	-0.8	25.6
4400150	99	DIRN	SUR	43	-64	534	0	0	15.0	15.3	21.5
4400488	99	DIRN	SUR	45	-61	490	0	0	17.1	-28.0	32.8
4400489	99	DIRN	SUR	45	-61	426	0	0	15.2	-32.5	35.9
44005	99	DIRN	SUR	43	-69	430	0	0	15.6	7.2	17.2
44007	99	DIRN	SUR	44	-70	370	0	0	15.8	7.0	17.3

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
44008	99	DIRN	SUR	41	-69	481	0	0	13.3	17.6	22.0
44009	99	DIRN	SUR	39	-75	530	0	0	17.7	4.2	18.2
44011	99	DIRN	SUR	41	-67	473	0	0	13.6	9.5	16.6
44013	99	DIRN	SUR	42	-71	440	0	0	16.0	5.5	16.9
44014	99	DIRN	SUR	37	-75	510	0	0	16.7	8.0	18.5
44018	99	DIRN	SUR	42	-70	488	0	0	13.7	5.2	14.6
44020	99	DIRN	SUR	42	-70	581	0	0	14.7	3.8	15.2
44022	99	DIRN	SUR	41	-74	81	0	0	17.5	4.7	18.1
44027	99	DIRN	SUR	44	-67	322	0	0	16.7	17.3	24.1
44029	99	DIRN	SUR	43	-71	315	0	0	21.1	3.9	21.4
44030	99	DIRN	SUR	43	-70	379	0	0	17.6	2.5	17.8
44032	99	DIRN	SUR	44	-69	347	0	0	17.5	0.5	17.5
44033	99	DIRN	SUR	44	-69	261	1	0	26.6	21.8	34.4
44034	99	DIRN	SUR	44	-68	273	0	0	21.2	5.6	21.9
44037	99	DIRN	SUR	44	-68	55	0	0	17.9	10.3	20.7
44039	99	DIRN	SUR	41	-73	309	0	0	39.3	5.3	39.6
44041	99	DIRN	SUR	37	-77	3	0	0	19.1	1.1	19.1
44042	99	DIRN	SUR	38	-76	462	0	0	20.7	0.3	20.7
44043	99	DIRN	SUR	39	-76	409	0	0	27.4	-1.1	27.4
44058	99	DIRN	SUR	38	-76	448	0	0	21.8	0.3	21.8
44062	99	DIRN	SUR	39	-76	469	0	0	24.7	1.3	24.8
44063	99	DIRN	SUR	39	-76	369	0	0	22.5	-0.4	22.5
44064	99	DIRN	SUR	37	-76	486	0	0	19.7	4.3	20.2
44069	99	DIRN	SUR	41	-73	19	0	0	9.6	-17.8	20.2
44072	99	DIRN	SUR	37	-76	446	0	0	23.9	0.6	23.9
44078	99	DIRN	SUR	60	-40	588	0	0	10.9	-22.2	24.7
44150	99	DIRN	SUR	43	-64	519	0	0	14.6	14.7	20.7
44258	99	DIRN	SUR	45	-63	491	0	0	13.6	-9.4	16.6
44488	99	DIRN	SUR	45	-61	491	0	0	17.4	-28.8	33.7
44489	99	DIRN	SUR	46	-61	445	0	0	14.2	-33.0	35.9
4500003	99	DIRN	SUR	45	-83	3076	0	0	15.6	1.7	15.6
4500005	99	DIRN	SUR	42	-82	2994	0	0	17.0	5.9	18.0
4500008	99	DIRN	SUR	44	-82	2980	0	0	15.9	9.4	18.5
4500012	99	DIRN	SUR	44	-77	2901	0	0	18.9	7.0	20.2
4500132	99	DIRN	SUR	42	-81	550	0	0	17.7	-3.0	18.0
4500135	99	DIRN	SUR	44	-77	502	0	0	19.5	-2.5	19.7
4500137	99	DIRN	SUR	46	-81	527	0	0	20.5	7.8	21.9
4500139	99	DIRN	SUR	43	-80	395	0	0	19.7	0.4	19.7
4500142	99	DIRN	SUR	43	-79	503	0	0	21.0	-4.7	21.5
4500143	99	DIRN	SUR	45	-81	498	0	0	16.8	-0.8	16.8
4500159	99	DIRN	SUR	44	-79	445	0	0	19.6	-4.1	20.0

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
4500162	99	DIRN	SUR	45	-83	1411	0	0	18.5	-0.1	18.5
4500163	99	DIRN	SUR	44	-84	1328	0	0	21.7	2.0	21.8
4500164	99	DIRN	SUR	42	-82	437	0	0	22.6	-16.3	27.9
4500165	99	DIRN	SUR	42	-83	2406	0	0	24.3	-5.3	24.8
4500175	99	DIRN	SUR	46	-85	4507	0	0	30.0	0.0	30.0
4500176	99	DIRN	SUR	42	-82	2565	0	0	17.4	-13.9	22.3
4500178	99	DIRN	SUR	45	-73	911	0	0	25.1	3.8	25.4
4500196	99	DIRN	SUR	42	-82	1791	0	0	16.7	-7.0	18.1
4500197	99	DIRN	SUR	42	-82	2086	0	0	24.8	-27.5	37.0
4500200	99	DIRN	SUR	42	-83	1360	0	0	27.2	13.5	30.3
4500203	99	DIRN	SUR	41	-83	1577	0	0	55.7	-33.8	65.2
4500205	99	DIRN	SUR	42	-82	2288	0	0	85.7	-39.1	94.2
4500209	99	DIRN	SUR	43	-82	1673	0	0	26.8	3.4	27.0
45003	99	DIRN	SUR	45	-83	503	0	0	15.7	1.1	15.7
45005	99	DIRN	SUR	42	-82	469	0	0	18.0	5.9	18.9
45008	99	DIRN	SUR	44	-82	487	0	0	15.7	9.0	18.1
45012	99	DIRN	SUR	44	-77	472	0	0	18.5	6.4	19.6
45132	99	DIRN	SUR	43	-81	533	0	0	18.5	-4.1	19.0
45135	99	DIRN	SUR	44	-77	490	0	0	17.7	-3.5	18.1
45137	99	DIRN	SUR	46	-81	504	0	0	20.6	7.3	21.8
45139	99	DIRN	SUR	43	-80	420	0	0	20.3	1.1	20.3
45142	99	DIRN	SUR	43	-79	493	0	0	21.2	-5.4	21.9
45143	99	DIRN	SUR	45	-81	479	0	0	16.9	-1.6	17.0
45147	99	DIRN	SUR	42	-83	443	0	0	22.2	1.9	22.3
45149	99	DIRN	SUR	44	-82	512	0	0	17.3	-9.4	19.7
45151	99	DIRN	SUR	45	-79	312	0	0	15.7	-2.5	15.9
45152	99	DIRN	SUR	46	-80	290	0	0	18.9	-5.4	19.7
45154	99	DIRN	SUR	46	-83	478	0	0	20.1	6.8	21.2
45159	99	DIRN	SUR	44	-79	394	0	0	18.9	-6.4	19.9
45162	99	DIRN	SUR	45	-83	443	0	0	18.2	-1.1	18.2
45163	99	DIRN	SUR	44	-84	425	0	0	21.9	2.2	22.0
45164	99	DIRN	SUR	42	-82	423	0	0	23.3	-17.3	29.1
45165	99	DIRN	SUR	42	-83	382	0	0	24.4	-4.4	24.8
45175	99	DIRN	SUR	46	-85	363	0	0	32.7	-0.9	32.7
45176	99	DIRN	SUR	42	-82	449	0	0	19.8	-13.4	23.9
45178	99	DIRN	SUR	45	-73	203	0	0	25.0	4.0	25.3
45196	99	DIRN	SUR	42	-82	376	0	0	18.7	-6.2	19.7
45197	99	DIRN	SUR	42	-82	390	0	0	25.3	-27.4	37.3
45200	99	DIRN	SUR	42	-83	343	0	0	26.2	9.6	27.9
45203	99	DIRN	SUR	41	-83	271	0	0	51.9	-31.5	60.7
45205	99	DIRN	SUR	42	-82	371	0	0	85.5	-40.0	94.4

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF

ELEMENT MONITORED : WIND DIRECTION (DEGREES)

(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
45209	99	DIRN	SUR	43	-82	278	0	0	23.6	2.5	23.8
4803914	99	DIRN	SUR	26	-67	1803	3	0	16.7	-0.2	16.7
5801958	99	DIRN	SUR	19	-67	1204	0	0	12.6	-0.1	12.6
5801959	99	DIRN	SUR	20	-52	2389	0	0	15.6	1.5	15.7
6100198	99	DIRN	SUR	37	-2	578	0	0	16.3	8.1	18.2
6100281	99	DIRN	SUR	40	0	285	0	0	37.5	-7.0	38.1
6200001	99	DIRN	SUR	45	-5	443	0	0	19.4	2.0	19.5
6200024	99	DIRN	SUR	44	-3	392	0	0	28.3	8.2	29.5
6200025	99	DIRN	SUR	44	-6	324	0	0	29.0	-0.1	29.0
6200029	99	DIRN	SUR	49	-12	663	0	0	15.5	-3.6	15.9
6200050	99	DIRN	SUR	50	-4	572	0	0	13.6	1.1	13.7
6200081	99	DIRN	SUR	51	-13	619	0	0	11.1	-6.1	12.7
6200082	99	DIRN	SUR	44	-8	110	0	0	13.7	-4.9	14.6
6200083	99	DIRN	SUR	43	-9	492	0	0	21.5	5.0	22.0
6200084	99	DIRN	SUR	42	-9	437	0	0	15.5	6.1	16.6
6200085	99	DIRN	SUR	36	-7	393	0	0	17.7	11.3	21.0
6200091	99	DIRN	SUR	53	-5	536	0	0	15.2	6.0	16.3
6200092	99	DIRN	SUR	51	-11	614	0	0	12.6	8.5	15.2
6200093	99	DIRN	SUR	55	-10	630	0	0	13.9	2.8	14.2
6200094	99	DIRN	SUR	52	-7	552	0	0	16.0	11.3	19.6
6200095	99	DIRN	SUR	53	-16	610	0	0	15.9	2.5	16.1
6200103	99	DIRN	SUR	50	-3	474	0	0	20.5	5.4	21.2
6200163	99	DIRN	SUR	47	-8	561	0	0	20.5	6.3	21.5
6200200	99	DIRN	SUR	36	-8	235	0	0	16.8	6.9	18.2
62029	99	DIRN	SUR	49	-12	1355	0	0	14.9	-3.7	15.3
62050	99	DIRN	SUR	50	-4	1148	0	0	14.8	0.6	14.8
62081	99	DIRN	SUR	51	-13	1243	0	0	11.6	-5.8	13.0
62091	99	DIRN	SUR	53	-5	522	0	0	14.0	5.8	15.2
62092	99	DIRN	SUR	51	-11	604	0	0	12.6	7.8	14.9
62093	99	DIRN	SUR	55	-10	608	0	0	14.1	2.1	14.2
62094	99	DIRN	SUR	52	-7	542	0	0	16.1	10.9	19.4
62095	99	DIRN	SUR	53	-16	608	0	0	16.4	2.3	16.6
62103	99	DIRN	SUR	50	-3	971	0	0	20.9	5.8	21.7
62105	99	DIRN	SUR	55	-13	1265	0	0	13.1	-6.8	14.8
62107	99	DIRN	SUR	50	-6	361	0	0	12.9	5.6	14.0
62112	99	DIRN	SUR	58	0	1261	0	0	12.3	-2.2	12.5
62114	99	DIRN	SUR	58	0	1098	0	0	12.8	-0.3	12.8
62163	99	DIRN	SUR	48	-9	1126	0	0	20.2	6.8	21.3
62305	99	DIRN	SUR	50	0	1166	0	0	22.1	10.0	24.2
62442	99	DIRN	SUR	49	-16	864	0	0	15.0	0.8	15.0
6400045	99	DIRN	SUR	59	-12	635	0	0	12.9	-8.3	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
6400046	99	DIRN	SUR	61	-4	663	0	0	11.5	-0.5	11.5
64041	99	DIRN	SUR	61	-3	1315	0	0	12.4	8.7	15.1
64045	99	DIRN	SUR	59	-12	1278	0	0	12.7	-8.3	15.2
64046	99	DIRN	SUR	61	-4	1338	0	0	12.0	-0.3	12.0

4.12 Table 24 - List of Assimilated BUFR Encoded Radiosonde Stations

ATGU3FT	BPMWB2N	DBLK	DSQL7	FPUW5GN	GQBZLZL	JGQH	JNKN7JF	JNSR
JPBN	KJJF9XN	KMPLHPW	LAGY8	LAGZ8	M2HATS_I		USSIO	UXK5JTU
WDK38HS	XKQLWQB	YLV96WM	ZVQEQCM	2EERVTP	7JUNA4N	9ZT9MRK	01001	01004
01010	01028	01241	01400	01415	02185	02365	02591	02836
02963	03005	03023	03238	03354	03502	03743	03808	03882
03918	03953	04018	04089	04220	04270	04320	04339	04360
04417	06011	06260	06458	06610	07110	07145	07510	07645
07761	08001	08023	08190	08221	08302	08383	08430	08508
08522	08536	10035	10113	10184	10238	10304	10393	10410
10548	10618	10739	10771	10868	10954	10962	11010	11035
11120	11240	11520	11747	11952	12120	12374	12425	12575
12843	12982	13275	13388	14015	14240	14430	15420	15614
16045	16064	16113	16144	16224	16245	16332	16429	16546
16622	16716	16754	17030	17064	17095	17196	17220	17240
17351	17516	17607	20674	22008	22820	22845	23205	23472
23884	23955	24641	24908	26038	26435	26477	26629	26708
27459	27707	27713	27962	28225	28445	28661	28695	29612
29698	30557	30673	30935	31770	31873	31977	34122	34172
34731	35121	35671	40179	42369	42971	43333	43371	45004
47102	47104	47138	47155	47169	47183	47186	47193	47194
47195	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	59023	59134
59211	59265	59280	59293	59316	59431	59758	59981	60018
60096	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	72249	72250	72251	72261	72265
72274	72293	72305	72317	72318	72327	72340	72357	72363
72364	72365	72376	72388	72402	72403	72413	72426	72440
72451	72456	72476	72489	72493	72501	72518	72520	72528
72558	72562	72572	72582	72597	72632	72634	72645	72649
72659	72662	72672	72681	72694	72712	72747	72764	72768
72776	72786	72797	73033	73110	74389	74455	74560	76679
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	89062	89564
89571	89592	89611	89625	89642	89859	91165	91212	91285
91334	91348	91376	91408	91413	91592	91925	91938	91948
91958	93112	93417	93817	93844	94001	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	DSQL7	FPUW5GN	GQBZLZL	JNKN7JF	KJJF9XN	KMPLHPW
LAGY8	LAGZ8	M2HATS_I		USSIO	UXK5JTU	WDK38HS	XKQLWQB	YLV96WM
ZVQEQCM	2EERVTP	7JUNA4N	9ZT9MRK	01004	01010	01028	01415	02836
02963	06610	07110	07145	07510	07645	07761	08001	08023
08190	08221	08302	08383	08430	08508	08522	08536	11010
11035	11120	11240	12575	17607	47183	47193	47194	47195
48698	50527	50557	50774	50953	51076	51243	51431	51463
51644	51656	51709	51777	51828	51839	52203	52267	52323
52418	52533	52652	52681	52818	52836	52866	52983	53068
53463	53513	53543	53614	53772	53845	53915	54102	54135
54161	54218	54292	54340	54374	54511	54662	54727	54857
55299	55591	56029	56046	56080	56137	56146	56187	56492
56571	56651	56691	56739	56778	56964	56985	57083	57127
57131	57178	57245	57461	57494	57516	57541	57687	57749
57816	57957	57972	57993	58027	58150	58203	58238	58362
58424	58457	58606	58633	58665	58725	58847	59023	59134
59211	59265	59280	59293	59316	59431	59758	59981	60253
72413	76903	89002	89642	89859	91925	91938	91948	91958
93817	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.