



ECMWF Global Data Monitoring Report

July 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	Jun	Jul	Ident	Time	Jun	Jul
06011	(00)	24	2	02185	(00)	0	22
20046	(00)	30	14	08536	(00)	1	31
20046	(12)	30	13	42123	(00)	0	13
24908	(00)	28	8	47600	(00)	3	29
24908	(12)	24	6	47778	(00)	4	31
29231	(12)	14	3	48327	(00)	0	12
31300	(00)	30	0	74626	(12)	12	29
31369	(00)	29	0	76256	(12)	1	22
31510	(12)	29	0	76654	(00)	13	28
31538	(00)	30	0	76654	(12)	17	28
31736	(00)	27	0	76692	(00)	16	27
31770	(12)	30	0	82026	(00)	4	30
32098	(00)	18	6	82332	(00)	8	31
32098	(12)	22	6	82532	(00)	0	29
40265	(00)	13	0	82824	(00)	0	27
42079	(00)	23	12	-	-	-	-
48381	(00)	26	13	-	-	-	-
48650	(00)	30	5	-	-	-	-
48650	(12)	30	1	-	-	-	-
48657	(00)	30	7	-	-	-	-
60760	(00)	28	13	-	-	-	-
65344	(12)	21	2	-	-	-	-
65548	(12)	22	0	-	-	-	-
68592	(00)	31	4	-	-	-	-
68592	(12)	30	4	-	-	-	-
71823	(00)	29	0	-	-	-	-
71823	(12)	29	0	-	-	-	-
72233	(00)	30	10	-	-	-	-
72233	(12)	30	9	-	-	-	-
72403	(00)	30	6	-	-	-	-
72403	(12)	29	6	-	-	-	-
72451	(00)	29	9	-	-	-	-
72451	(12)	30	8	-	-	-	-
72520	(00)	30	12	-	-	-	-
72520	(12)	30	12	-	-	-	-
78384	(00)	23	7	-	-	-	-
78384	(12)	21	6	-	-	-	-
80001	(00)	27	7	-	-	-	-
80001	(12)	27	8	-	-	-	-
82022	(12)	25	0	-	-	-	-
82099	(12)	28	10	-	-	-	-
82193	(00)	30	7	-	-	-	-
82244	(00)	13	0	-	-	-	-
82244	(12)	30	14	-	-	-	-
82705	(12)	15	0	-	-	-	-
83208	(00)	20	0	-	-	-	-
83827	(00)	29	10	-	-	-	-
91165	(00)	30	8	-	-	-	-
91165	(12)	30	8	-	-	-	-
91680	(12)	29	4	-	-	-	-
91765	(00)	30	8	-	-	-	-
91765	(12)	30	9	-	-	-	-

2.2 Drifting Buoys

Surface pressure observations from **1409** 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.

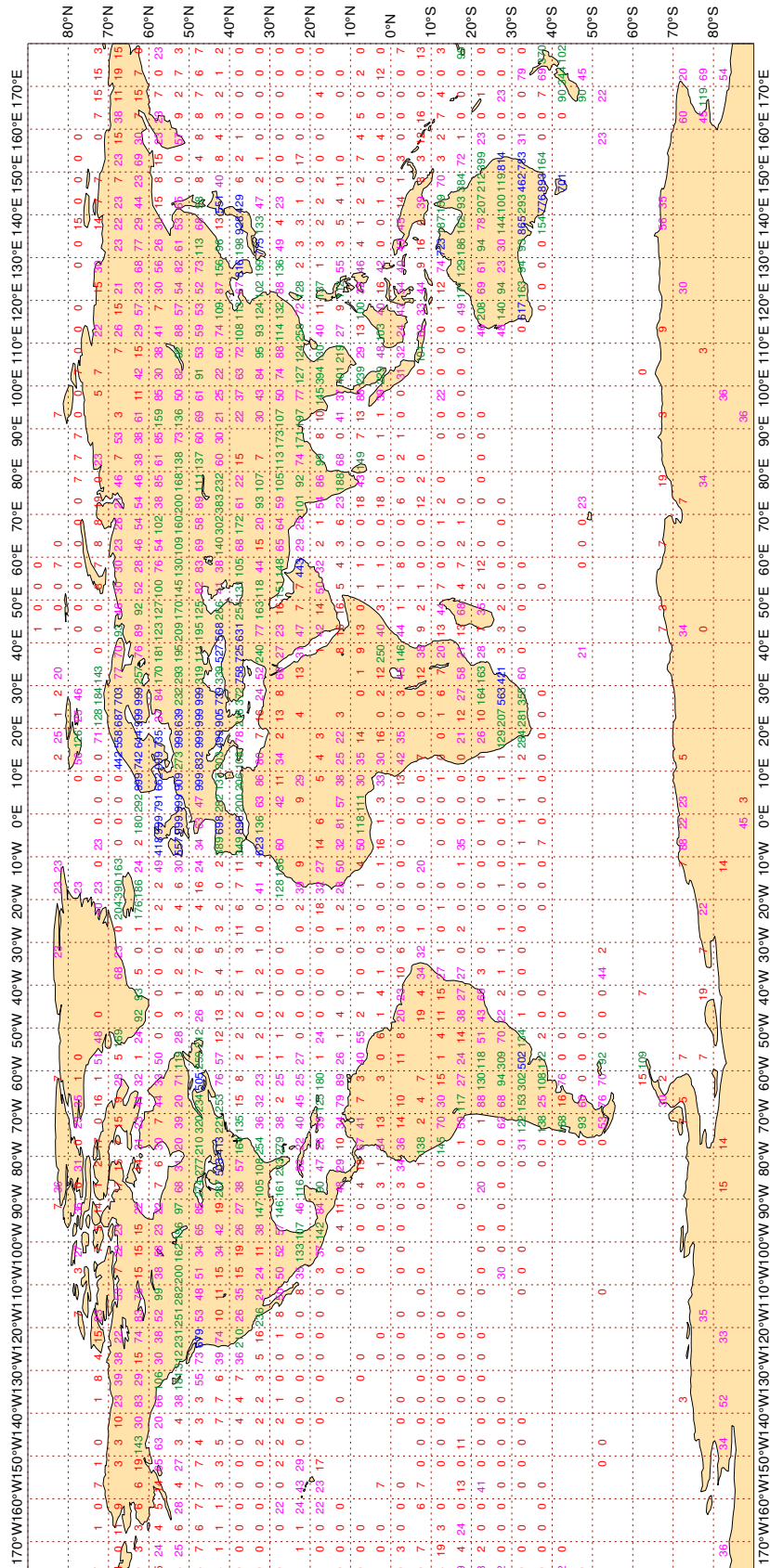
Fig	Parameter	Level/Layer
14	SATOB - Mean observed wind	1000-700 hPa
15	SATOB - Mean observed wind	400-150 hPa
16	SATOB - Mean observed minus first-guess wind	1000-700 hPa
17	SATOB - Mean observed minus first-guess wind	400-150 hPa
18	AIRCRAFT WIND - Mean observed minus first-guess	300-150 hPa

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

3.2.1 Figure 1 - Availability - SYNOP PRESSURE

ECMWF Monitoring Statistics - JUL 2023
 Availability - SYNOP/SHIP (manual, auto) pressure
 Average number of observations in 24 hours - 110676
 LAND - WMO Region I: 7069 II:20843 III: 4820 IV: 7801
 Region V:14855 VI:41081 Antarctic: 1362
 Oceans - N. Atlantic 6309 S. Atlantic 175 Indian 489 Pacific 5873

Figure 1



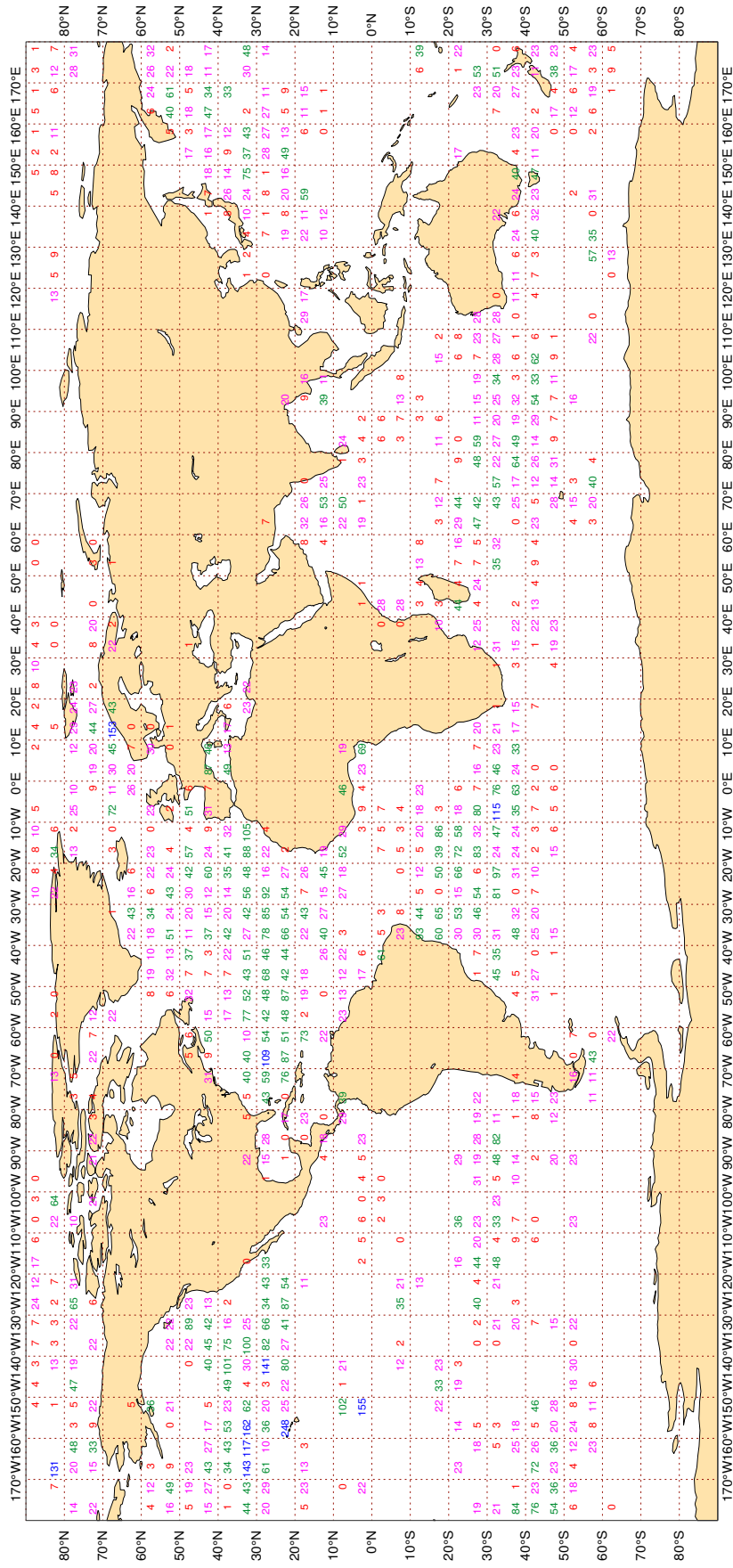
Magics 4.9.4



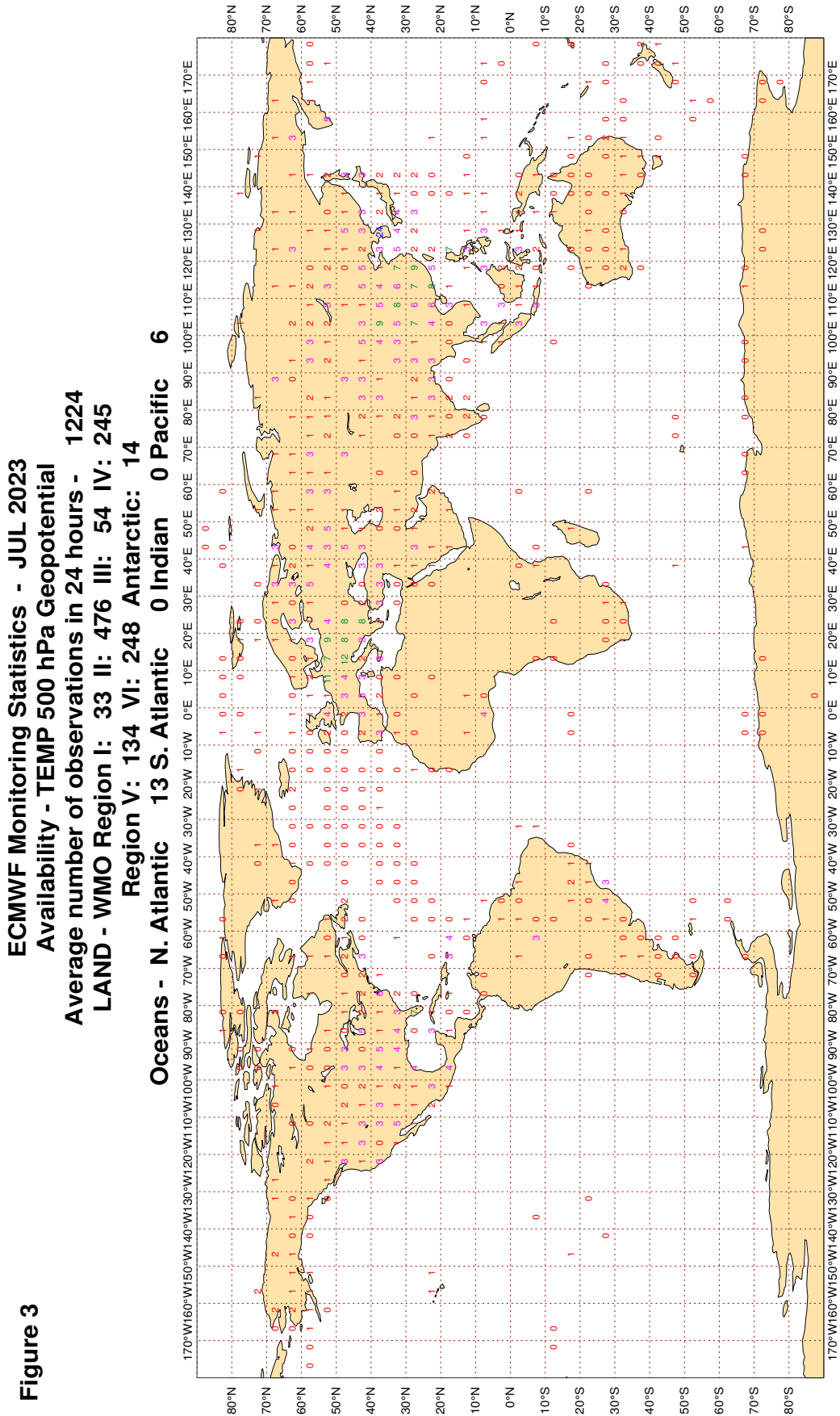
3.2.2 Figure 2 - Availability - DRIFTER PRESSURE

Figure 2

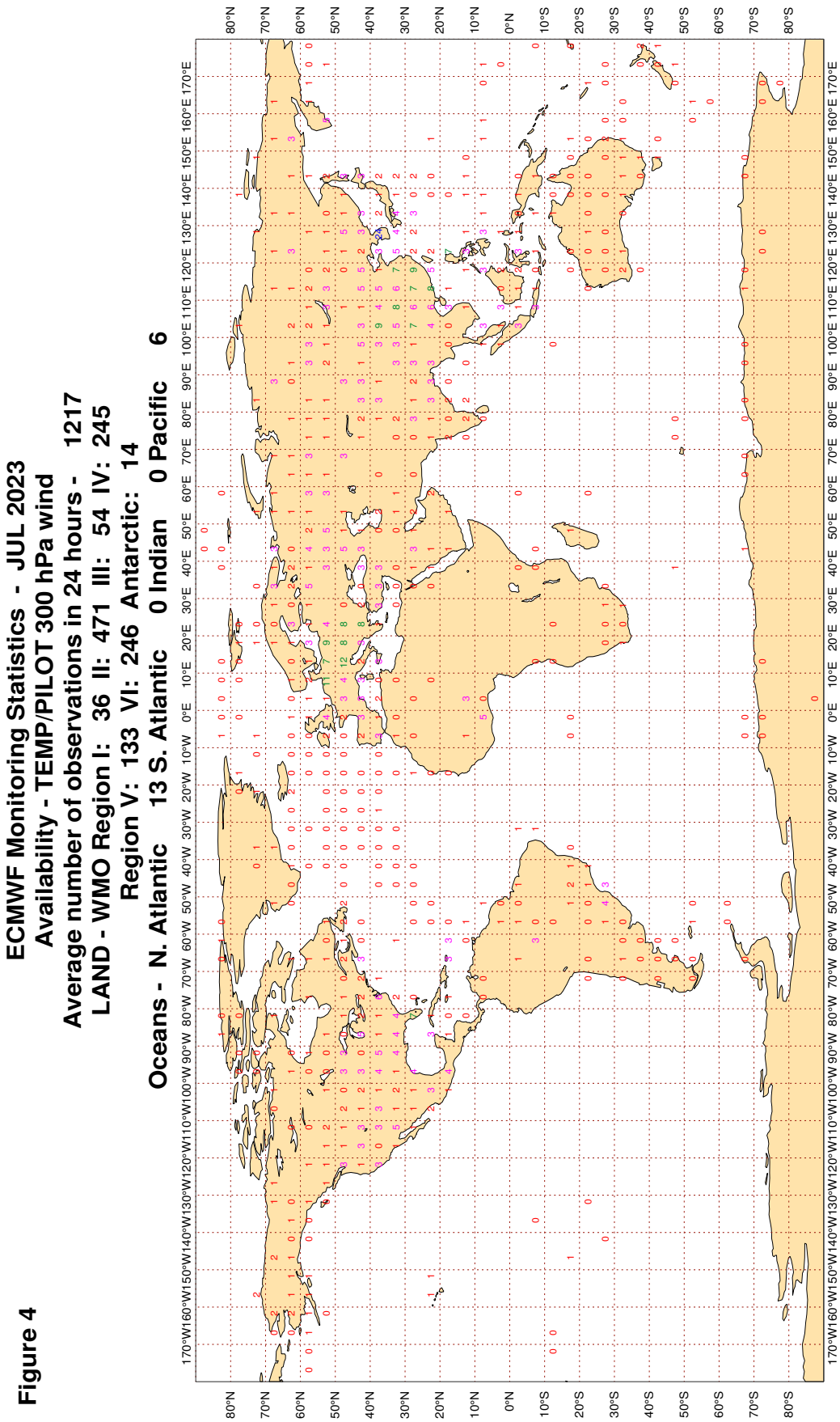
ECMWF Monitoring Statistics - JUL 2023
Availability - DRIFTER PRESSURE
Average number of observations in 24 hours - 19744
Oceans - N. Atlantic 5569 S. Atlantic 2670 Indian 2865 Pacific 8640



3.2.3 Figure 3 - Availability - TEMP 500 hPa geopotential



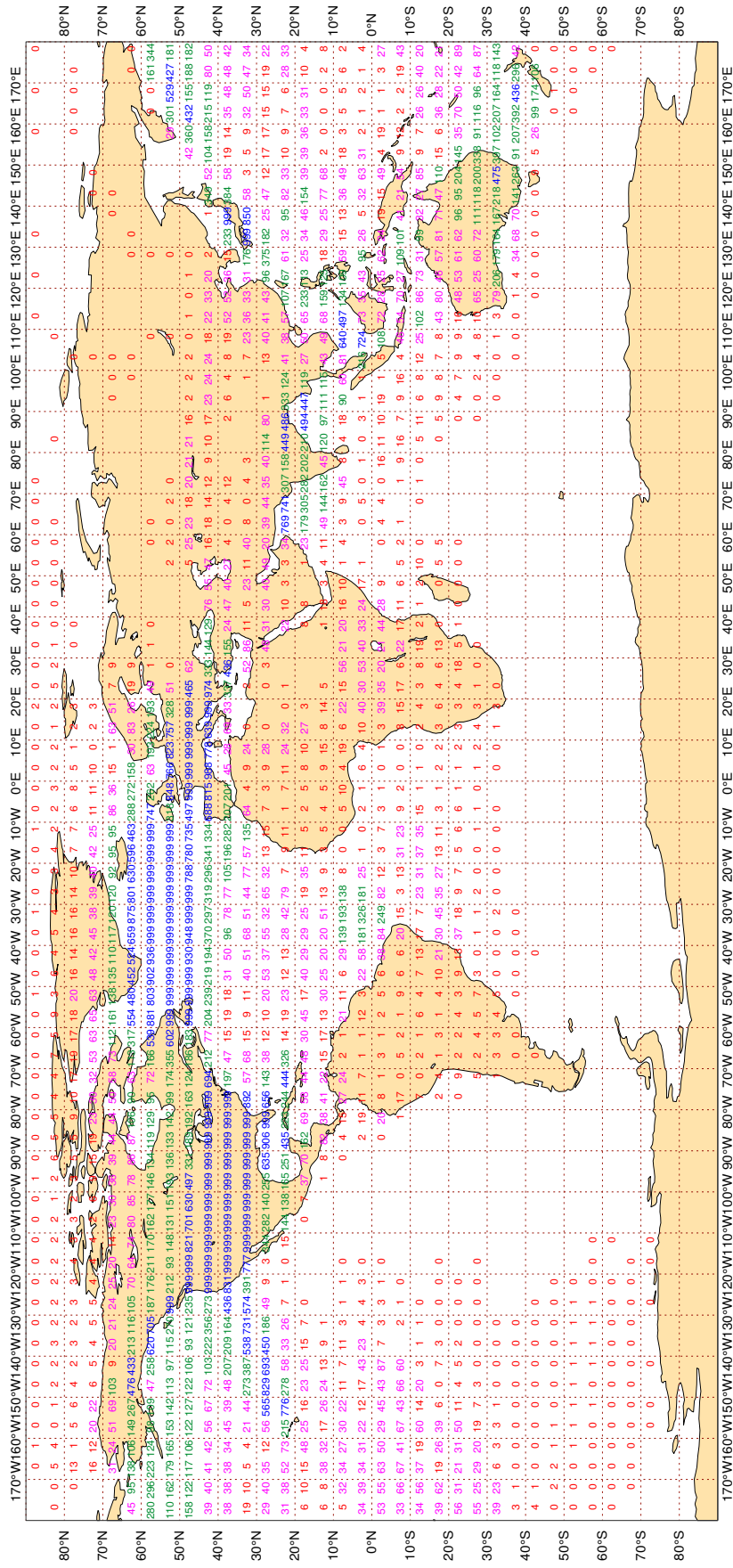
3.2.4 Figure 4 - Availability - TEMP/PILOT 300 hPa wind



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

Figure 5

ECMWF Monitoring Statistics - JUL 2023
Availability - Aircraft winds 300-150 hPa
Average number of observations in 24 hours - 226258



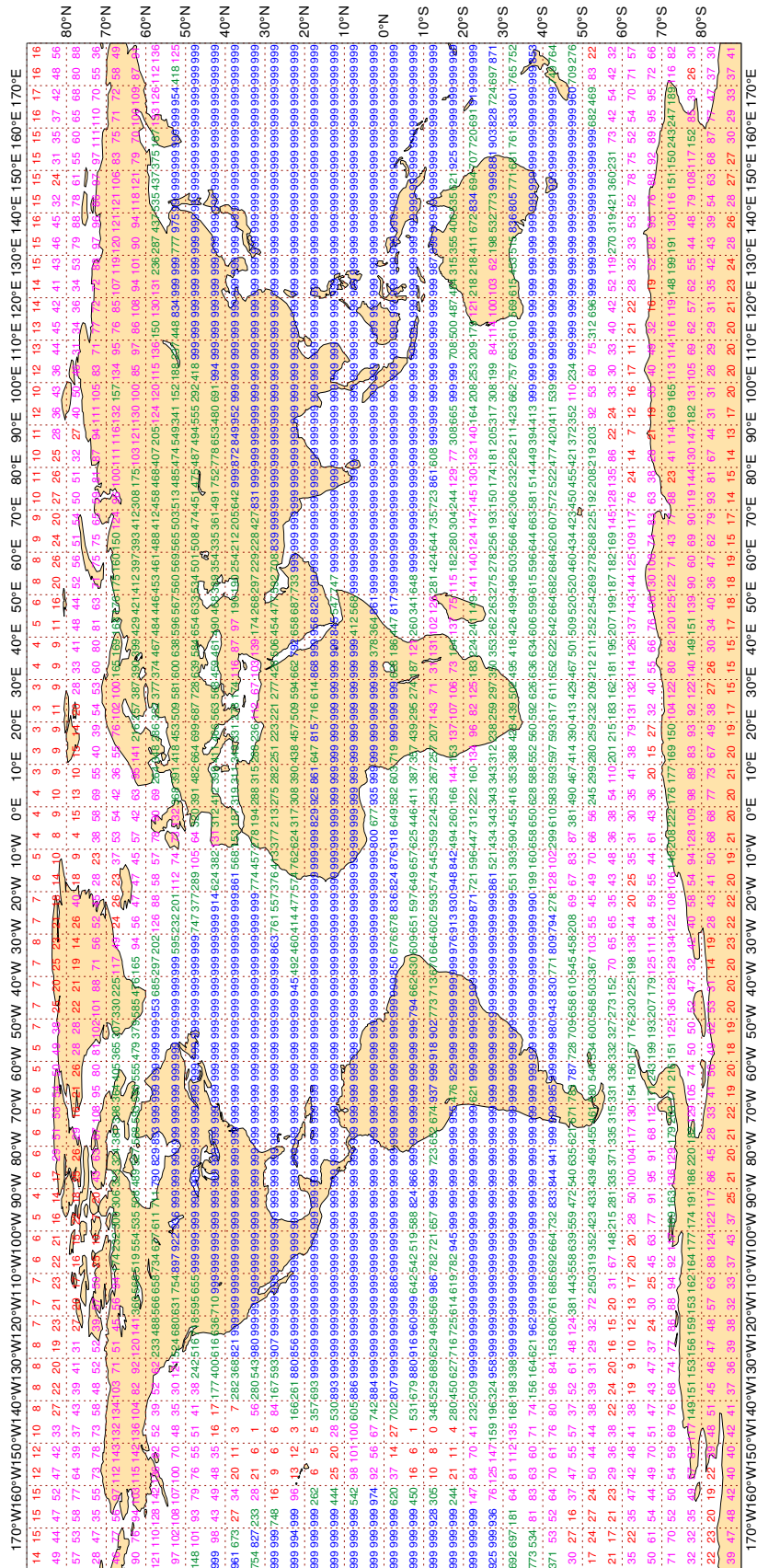
Magics 4.9.4



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

Figure 6

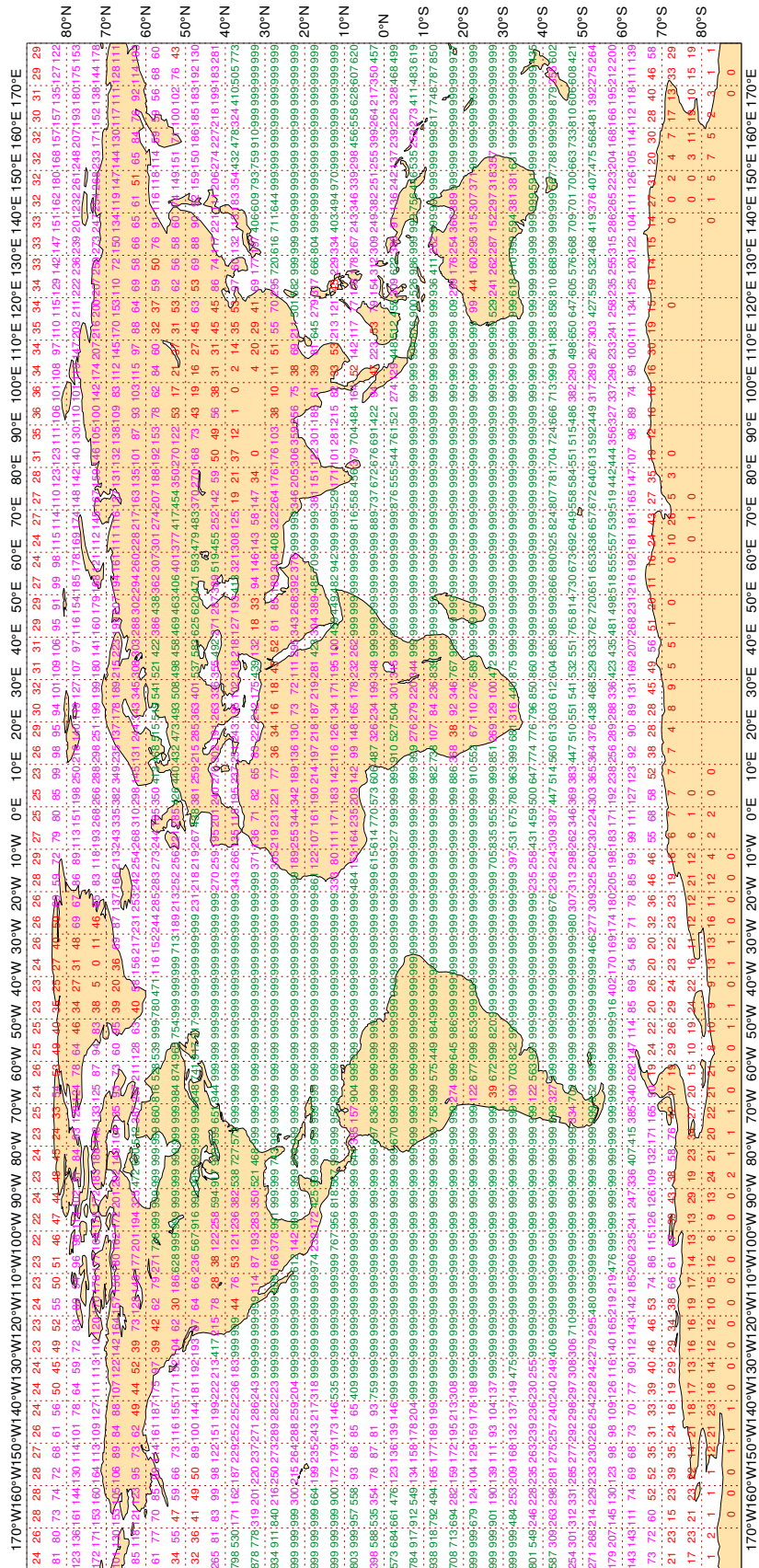
ECMWF Monitoring Statistics - JUL 2023
Availability - AMV winds 400-150 hPa
Average number of observations in 24 hours - 2432492



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

Figure 7

ECMWF Monitoring Statistics - JUL 2023
Availability - AMV winds 1000-700 hPa
Average number of observations in 24 hours - 3748433



Magics 4.9.4

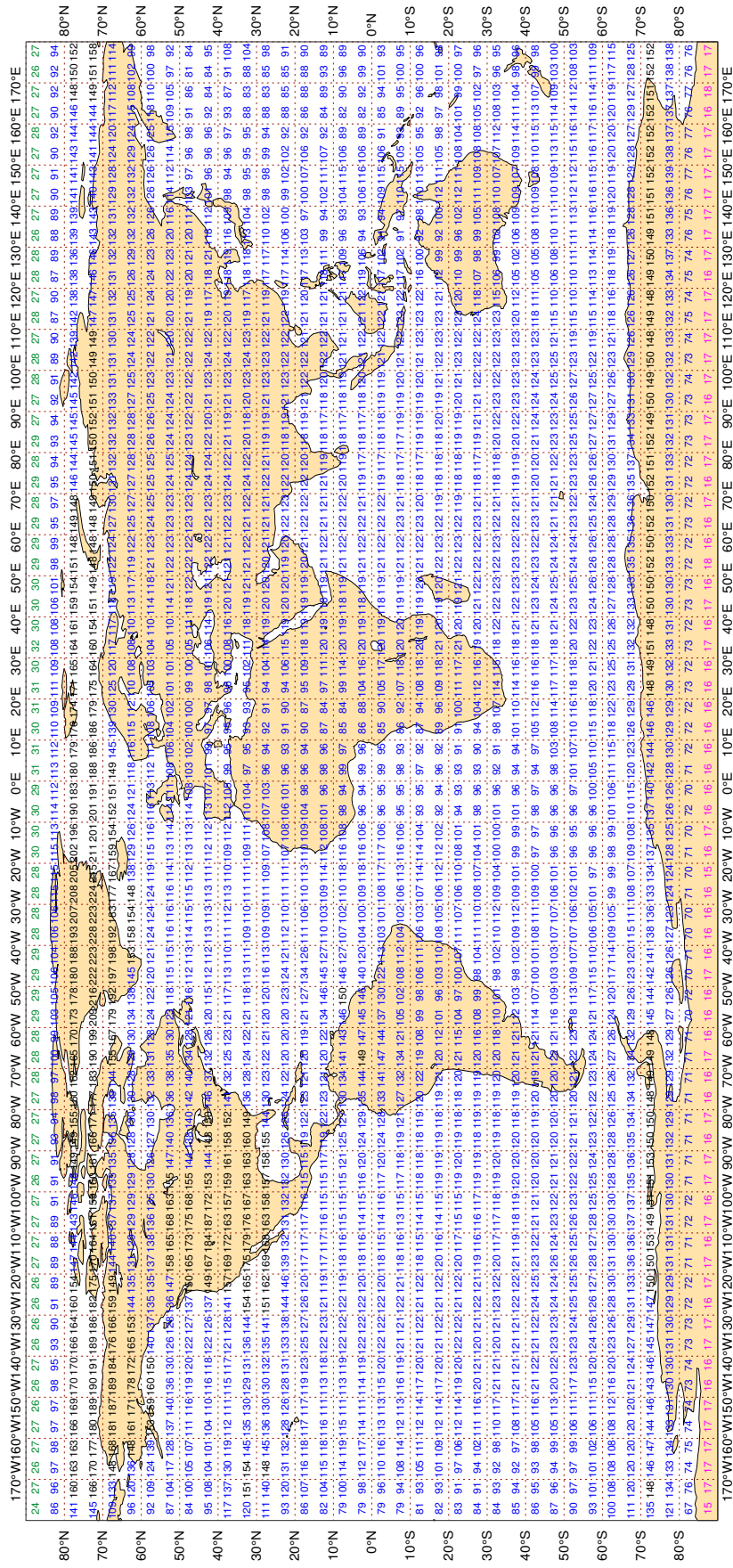


3.2.8 Figure 8 - Availability - NOAA15 ATOVS : AMSU-A

Figure 8

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

Average number of observations in 24 hours - 297458

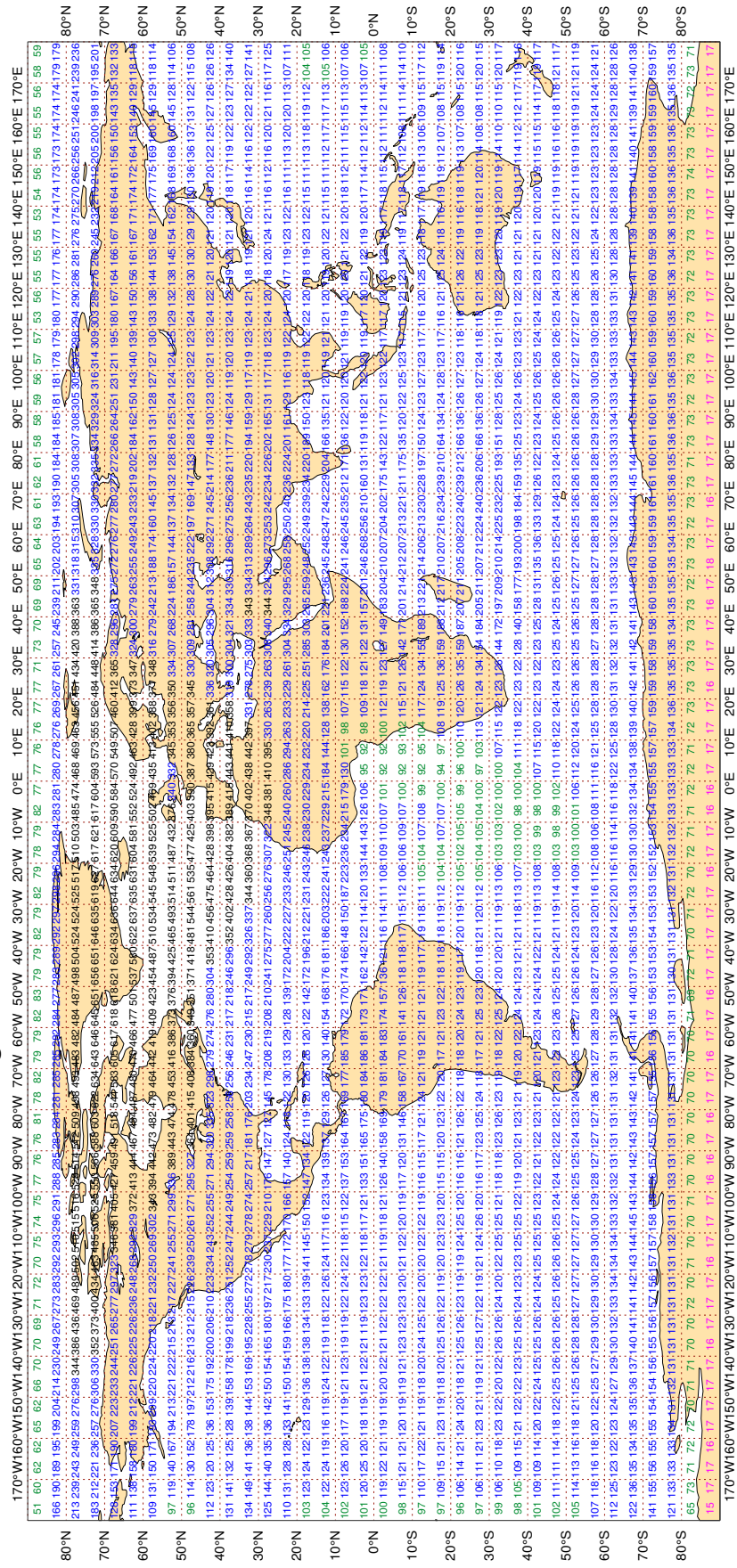


3.2.9 Figure 9.1 - Availability - NOAA18 ATOVS : AMSU-A

Figure 9.1

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

Average number of observations in 24 hours - 463624



Magics 4.9.4

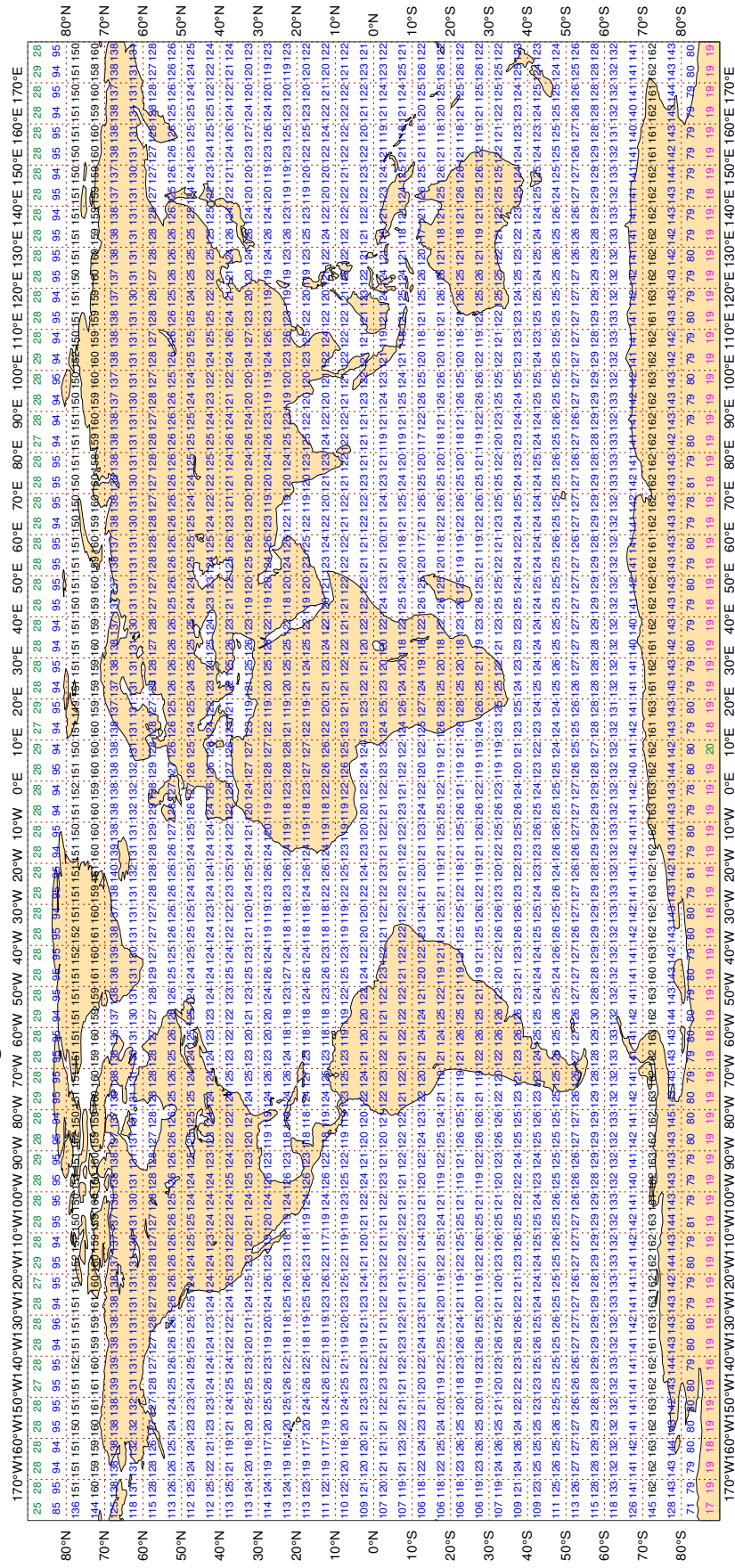


3.2.10 Figure 9.2 - Availability - AQUA ATOVS : AMSU-A

Figure 9.2

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

Average number of observations in 24 hours - 313861



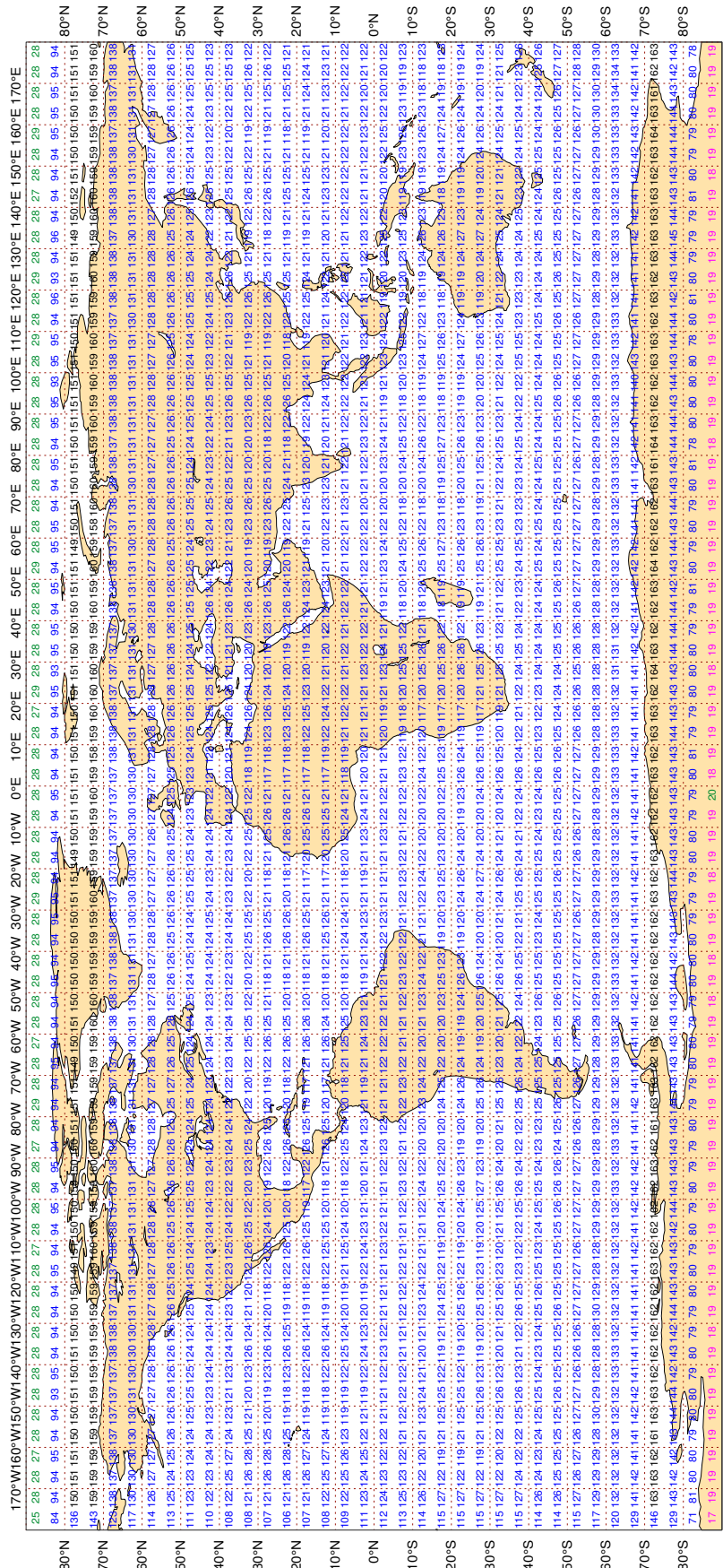
Magics 4.9.4

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

Figure 9.3

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

Average number of observations in 24 hours - 313875



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 : JUL 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
2CYD8	99	P	SUR	15	0	0.4	-4.2	4.2
2EIF7	99	P	SUR	15	0	0.6	5.1	5.1
3E3566	99	P	SUR	24	0	2.3	3.7	4.4
3EBY2	99	P	SUR	22	0	1.9	8.6	8.8
3FYP9	99	P	SUR	27	0	1.1	-3.8	4.0
3FZI8	99	P	SUR	15	0	1.8	5.3	5.6
45201	99	P	SUR	124	28	4.1	9.4	10.2
7JSY	99	P	SUR	19	0	1.0	4.0	4.1
7KKU	99	P	SUR	87	0	1.8	5.1	5.4
7KMH	99	P	SUR	21	0	1.1	-4.8	4.9
9HA4638	99	P	SUR	34	0	1.5	6.1	6.3
9HA5209	99	P	SUR	66	5	3.7	7.0	7.9
9HJB9	99	P	SUR	27	1	2.2	4.5	5.0
9V3736	99	P	SUR	16	0	4.5	3.6	5.8
9V3913	99	P	SUR	116	0	2.0	4.4	4.9
9V7979	99	P	SUR	42	0	1.6	-5.8	6.0
9V7980	99	P	SUR	28	0	1.0	3.7	3.8
9V8372	99	P	SUR	53	0	2.4	3.7	4.5
9V9404	99	P	SUR	40	0	1.5	8.5	8.6
9VPQ7	99	P	SUR	22	0	0.5	4.7	4.7
AUVM	99	P	SUR	24	0	0.4	3.2	3.2
BHJH	99	P	SUR	35	0	2.6	3.7	4.5
C6FR3	99	P	SUR	23	0	2.6	4.2	4.9
C6PZ8	99	P	SUR	22	0	0.9	-3.0	3.1
C6SE5	99	P	SUR	16	0	0.6	-3.5	3.6
C6UA2	99	P	SUR	77	0	0.5	-3.8	3.8
D5AD8	99	P	SUR	17	9	0.9	13.8	13.8
D5DS3	99	P	SUR	95	0	0.6	3.1	3.1
DIGY2	99	P	SUR	25	0	0.9	3.2	3.3
HZGG	99	P	SUR	20	0	2.1	4.1	4.6
JMJRCES	99	P	SUR	124	0	0.6	-5.9	5.9
KIAB	99	P	SUR	35	0	1.4	3.3	3.6

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
LAPE7	99	P	SUR	16	0	1.7	3.6	4.0
LAQL7	99	P	SUR	62	0	0.8	3.5	3.6
LAQO7	99	P	SUR	30	0	0.9	3.0	3.2
MKKZ7	99	P	SUR	17	0	0.8	4.7	4.7
OBAA	99	P	SUR	66	0	0.8	-6.3	6.3
ONGI	99	P	SUR	33	0	1.4	3.1	3.4
PHET	99	P	SUR	24	0	1.7	5.1	5.4
S6AN5	99	P	SUR	28	0	2.3	4.5	5.1
SKEC	99	P	SUR	20	20	0.0	0.0	0.0
UAST	99	P	SUR	17	4	3.4	-6.0	6.8
UBAW	99	P	SUR	39	2	1.8	-11.6	11.8
UBNJ7	99	P	SUR	32	0	0.7	-3.2	3.2
UDKG	99	P	SUR	23	0	2.1	7.5	7.8
UGYU	99	P	SUR	20	5	3.4	-7.3	8.1
V7A6070	99	P	SUR	20	0	1.0	4.7	4.8
V7QT7	99	P	SUR	79	0	0.7	4.6	4.7
VRCB4	99	P	SUR	18	0	0.6	-4.4	4.4
VRDB3	99	P	SUR	16	0	0.9	-4.4	4.5
VREX4	99	P	SUR	20	1	1.3	10.9	10.9
VRGO3	99	P	SUR	25	1	1.0	8.0	8.0
VRHE3	99	P	SUR	24	0	1.4	3.7	4.0
VRLJ4	99	P	SUR	36	0	2.2	7.3	7.7
VRMX7	99	P	SUR	15	0	2.7	8.1	8.6
VROD3	99	P	SUR	15	0	3.0	6.4	7.1
VRQS3	99	P	SUR	17	0	0.5	6.6	6.6
VRQX5	99	P	SUR	38	0	1.6	10.2	10.3
VRTF2	99	P	SUR	39	0	2.2	4.0	4.6
VRZK9	99	P	SUR	31	0	0.8	3.8	3.9
WDF2493	99	P	SUR	36	0	0.4	4.1	4.1
WGEB	99	P	SUR	113	0	0.5	6.7	6.8
ZCYA	99	P	SUR	55	0	0.5	3.9	3.9

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 : JUL 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
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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 : JUL 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
44039	99	DIRN	SUR	70	0	0	71.4	46.4	85.2
45168	99	DIRN	SUR	46	0	0	41.7	30.3	51.6
45176	99	DIRN	SUR	56	0	0	32.0	-78.2	84.5
45203	99	DIRN	SUR	36	0	0	70.2	-58.6	91.4
45205	99	DIRN	SUR	45	0	0	45.4	-72.5	85.6
46081	99	DIRN	SUR	22	0	0	39.2	38.1	54.6
46131	99	DIRN	SUR	57	0	0	77.4	-13.8	78.6
46204	99	DIRN	SUR	69	0	0	22.2	30.2	37.5

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 : JUL 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
1301763	99	P	SUR	7	-45	41	41	0.0	0.0	0.0
1501696	99	P	SUR	-29	-9	741	0	0.8	-6.0	6.1
1501727	99	P	SUR	-16	-39	739	0	0.0	-7.5	7.5
1501729	99	P	SUR	-18	-32	744	0	0.5	-10.4	10.4
3301702	99	P	SUR	-47	-41	711	151	6.8	-3.5	7.7
3401637	99	P	SUR	-36	13	715	1	0.5	13.4	13.4
3801561	99	P	SUR	41	-73	315	220	4.7	0.0	4.7
4500201	99	P	SUR	42	83	4359	949	4.1	9.3	10.2
45201	99	P	SUR	42	83	743	165	4.1	9.3	10.2
4602577	99	P	SUR	39	-133	194	193	0.0	14.1	14.1
4602604	99	P	SUR	41	-139	442	442	0.0	0.0	0.0
4602608	99	P	SUR	44	-134	617	0	1.7	4.4	4.7
4701738	99	P	SUR	70	-67	724	724	0.0	0.0	0.0
4701744	99	P	SUR	78	-106	346	346	0.0	0.0	0.0
4801658	99	P	SUR	75	-73	563	142	2.7	4.0	4.8
4802662	99	P	SUR	75	-125	382	382	0.0	0.0	0.0
4803990	99	P	SUR	80	-175	244	244	0.0	0.0	0.0
5102809	99	P	SUR	10	-109	744	715	2.6	-11.1	11.4
5103563	99	P	SUR	27	-159	742	43	5.1	-6.5	8.3
5501656	99	P	SUR	-44	-177	481	0	0.4	-9.7	9.8
5501712	99	P	SUR	34	-84	168	168	0.0	0.0	0.0
5501735	99	P	SUR	-47	180	741	739	5.1	0.4	5.2
5601601	99	P	SUR	-50	-76	435	310	3.4	-8.4	9.1
5601702	99	P	SUR	-63	128	458	259	2.8	-1.2	3.0
6203658	99	P	SUR	88	16	30	30	0.0	0.0	0.0
6204605	99	P	SUR	40	4	735	570	1.0	13.7	13.7

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

LIST OF SUSPECT STATIONS : DRIFTER
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND SPEED (M/S)
 AREA : GLOBAL
 PERIOD : JUL 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
2300459	99	SPEED	SUR	14	87	76	0	0	1.9	-7.5	7.8
23459	99	SPEED	SUR	14	87	76	0	0	1.9	-7.8	8.0
6101008	99	SPEED	SUR	37	22	127	0	0	2.4	-5.8	6.3

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

LIST OF SUSPECT STATIONS : DRIFTER
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND DIRECTION (DEGREES)
 PERIOD : JUL 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
1500008	99	DIRN	SUR	-20	-10	154	0	0	30.7	24.3	39.2
2200101	99	DIRN	SUR	37	126	300	0	0	19.2	101.8	103.5
2200102	99	DIRN	SUR	35	126	423	0	0	23.4	20.9	31.4
2200104	99	DIRN	SUR	35	129	335	0	0	67.0	29.1	73.1
2200186	99	DIRN	SUR	36	126	33	0	0	30.5	-45.0	54.3
2300092	99	DIRN	SUR	17	89	180	0	0	55.8	-77.0	95.1
2300093	99	DIRN	SUR	16	88	193	2	0	72.0	-78.6	106.6
2300095	99	DIRN	SUR	10	94	218	0	0	17.2	25.6	30.9
2300451	99	DIRN	SUR	15	69	221	0	0	11.2	-37.1	38.7
2300452	99	DIRN	SUR	12	69	208	0	0	23.0	-98.6	101.3
2300453	99	DIRN	SUR	8	73	205	0	0	14.6	-39.7	42.3
2300454	99	DIRN	SUR	10	73	221	0	0	78.0	-82.6	113.6
23092	99	DIRN	SUR	17	89	184	0	0	57.3	-76.1	95.3
23093	99	DIRN	SUR	16	88	197	2	0	71.1	-78.2	105.7
23095	99	DIRN	SUR	10	94	223	0	0	17.7	25.4	30.9
23451	99	DIRN	SUR	15	69	226	0	0	11.6	-37.4	39.2
23452	99	DIRN	SUR	12	69	214	0	0	23.1	-98.7	101.3
23453	99	DIRN	SUR	8	73	204	0	0	14.5	-40.4	42.9
23454	99	DIRN	SUR	10	73	227	0	0	75.2	-84.4	113.1
23491	99	DIRN	SUR	12	93	335	0	0	38.0	-102.3	109.1
23497	99	DIRN	SUR	11	72	180	0	0	32.1	-73.0	79.7
4400008	99	DIRN	SUR	40	-69	2061	0	0	18.3	24.8	30.9
4400033	99	DIRN	SUR	44	-69	251	0	0	27.8	27.7	39.2
4400039	99	DIRN	SUR	41	-73	332	0	0	70.8	44.5	83.6
44008	99	DIRN	SUR	41	-69	327	0	0	14.7	25.2	29.2
44033	99	DIRN	SUR	44	-69	232	0	0	31.7	25.3	40.6
44039	99	DIRN	SUR	41	-73	344	0	0	76.4	42.9	87.6
44078	99	DIRN	SUR	60	-40	35	0	0	14.2	-22.2	26.4
44489	99	DIRN	SUR	46	-61	383	0	0	21.2	-21.1	29.9
4500168	99	DIRN	SUR	42	-86	1585	0	0	39.0	32.9	51.0
4500176	99	DIRN	SUR	42	-82	1935	0	0	32.0	-86.3	92.0

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
4500186	99	DIRN	SUR	42	-88	981	0	0	43.7	-24.7	50.2
4500187	99	DIRN	SUR	42	-88	39	0	0	24.1	114.2	116.7
4500199	99	DIRN	SUR	43	-88	686	0	0	26.9	-26.1	37.5
4500201	99	DIRN	SUR	42	83	515	0	0	116.3	-12.8	117.0
4500203	99	DIRN	SUR	41	-83	1349	0	0	76.9	-56.4	95.4
4500205	99	DIRN	SUR	42	-82	1655	0	0	52.3	-75.5	91.8
45168	99	DIRN	SUR	42	-86	263	0	0	38.4	33.2	50.8
45176	99	DIRN	SUR	42	-82	326	0	0	32.1	-83.8	89.7
45186	99	DIRN	SUR	42	-88	167	0	0	44.8	-24.4	51.0
45199	99	DIRN	SUR	43	-88	342	0	0	27.7	-24.7	37.1
45201	99	DIRN	SUR	42	83	84	0	0	119.1	-5.3	119.2
45203	99	DIRN	SUR	41	-83	205	0	0	75.3	-56.5	94.1
45205	99	DIRN	SUR	42	-82	256	0	0	53.4	-76.1	92.9
4600081	99	DIRN	SUR	61	-148	134	0	0	43.7	33.8	55.3
4600087	99	DIRN	SUR	48	-125	1297	0	0	20.4	25.4	32.6
4600145	99	DIRN	SUR	54	-132	47	0	0	13.6	21.0	25.1
4600147	99	DIRN	SUR	52	-131	473	0	0	15.2	23.2	27.8
4600204	99	DIRN	SUR	51	-129	465	0	0	23.4	31.1	38.9
4600304	99	DIRN	SUR	49	-123	64	0	0	40.3	20.2	45.1
46081	99	DIRN	SUR	61	-148	130	0	0	42.3	33.9	54.2
46087	99	DIRN	SUR	49	-125	188	0	0	19.6	25.0	31.8
46131	99	DIRN	SUR	50	-125	332	0	0	85.9	-14.0	87.0
46147	99	DIRN	SUR	52	-131	453	0	0	15.6	22.5	27.4
46204	99	DIRN	SUR	51	-129	448	0	0	23.3	30.5	38.4
5202509	99	DIRN	SUR	13	137	143	0	0	158.6	64.9	171.4
6200086	99	DIRN	SUR	55	6	342	0	0	13.2	26.1	29.2
6301004	99	DIRN	SUR	72	20	496	0	0	9.9	131.3	131.6
6600022	99	DIRN	SUR	54	14	166	0	0	66.0	57.0	87.2

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 : JUL 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	30	0	4.0	78.2	78.3
01400	12	Z	1000	57	3	28	0	4.0	79.1	79.2
16716	12	Z	1000	38	24	27	0	24.9	16.3	29.8
35700	12	Z	250	47	52	30	0	15.6	70.5	72.2
36003	00	Z	200	52	77	30	0	38.6	65.6	76.1
36003	12	Z	200	52	77	30	0	67.3	56.5	87.9
38341	00	Z	100	43	71	26	1	58.8	126.6	139.6
38341	12	Z	100	43	71	28	0	53.4	138.8	148.7
42123	00	Z	850	30	74	13	2	7.2	63.8	64.2
42339	00	Z	850	26	73	18	0	19.1	26.7	32.8
42348	00	Z	850	27	76	15	0	5.5	49.8	50.1
42399	00	Z	50	27	89	13	0	85.1	148.1	170.8
42410	00	Z	850	26	92	28	0	21.6	43.2	48.3
42410	12	Z	850	26	92	30	2	19.3	48.5	52.2
42516	00	Z	700	26	92	22	1	21.1	43.0	47.9
42675	00	Z	850	23	80	29	1	20.4	32.2	38.1
42675	12	Z	850	23	80	11	0	23.3	40.8	47.0
42724	00	Z	50	24	91	13	0	88.0	132.2	158.8
43041	00	Z	850	19	82	29	0	17.0	36.2	40.0
43049	00	Z	850	19	85	23	2	23.8	33.5	41.1
43128	00	Z	100	17	78	14	1	76.3	97.2	123.6
43185	00	Z	850	16	81	28	1	20.4	29.9	36.2
52533	00	Z	30	40	98	30	1	79.8	284.1	295.1
52533	12	Z	50	40	98	31	0	55.3	203.0	210.4
55591	00	Z	50	30	91	27	0	44.4	153.2	159.5
55591	12	Z	50	30	91	26	0	53.1	174.4	182.3
57083	00	Z	50	35	114	28	3	162.0	198.7	256.4
60760	00	Z	925	34	8	13	0	34.8	2.5	34.9
61442	12	Z	925	18	-16	78	41	17.6	-32.1	36.6
61442	00	Z	700	18	-16	72	52	11.6	-83.6	84.4
62378	00	Z	400	30	31	18	0	57.6	70.7	91.2
68842	00	Z	850	-34	26	31	0	29.6	23.3	37.7
68842	12	Z	1000	-34	26	31	0	28.2	20.6	34.9

LIST OF SUSPECT STATIONS (CONTINUED)

WMO IDENT	OBS TIME	ELM	LEV	LAT	LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
71926	00	Z	925	64	-96	31	0	21.2	-31.8	38.2
76644	00	Z	1000	21	-90	28	0	6.5	29.6	30.3
76644	12	Z	70	21	-90	27	2	167.1	155.3	228.1
91680	00	Z	1000	-18	177	23	0	3.7	33.6	33.8
96315	12	Z	1000	5	115	30	0	10.1	55.9	56.8
96315	00	Z	1000	5	115	30	0	5.7	54.0	54.3
97690	00	Z	925	-3	141	26	1	30.0	76.3	82.0
98558	00	Z	850	11	126	28	0	28.4	29.7	41.1
ATGU3F	12	Z	850	62	-50	10	0	33.3	-12.3	35.5
JNKN7J	12	Z	1000	52	-14	11	0	4.0	40.8	41.0
KJFF9X	00	Z	200	19	-57	12	1	81.4	-65.5	104.5

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

LIST OF SUSPECT STATIONS : RADIOSONDES
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND (M/S)
 AREA : GLOBAL
 PERIOD : JUL 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
42667	00	V	100	23	77	15	0	15.4	-21.0	27.0
42701	00	V	100	23	85	28	0	15.5	-18.8	25.6
43371	00	V	150	9	77	10	0	3.3	14.3	15.2
61442	12	V	925	18	-16	25	0	-5.6	-5.4	15.4
61442	00	V	925	18	-16	18	8	-9.3	-5.6	19.9

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 : JUL 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

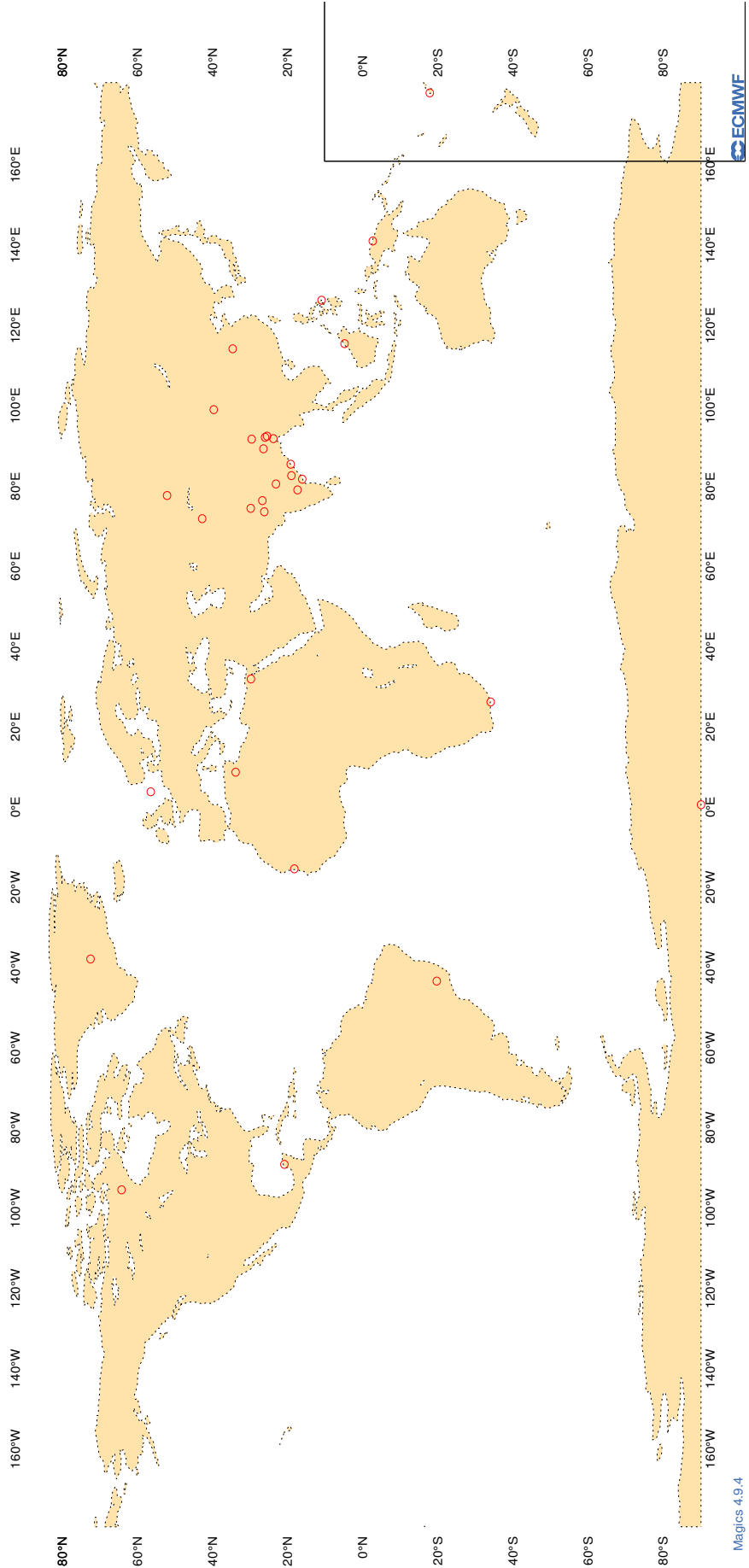
SELECTION CRITERIA: OBSERVED/FORECAST WIND SPEEDS \geq 5 M/S
 NO. OF OBSERVATIONS \geq 5, AND,
 ABSOLUTE BIAS \geq 10 DEGREES, WITH
 STANDARD DEVIATION $<$ 30 DEGREES, AND,
 VERTICAL SPREAD $<$ 10 DEGREES
 (AVERAGE BETWEEN 500 AND 150 HPA)

WMO IDENT	OBS TIME	ELM	LAT	LONG	NUM OBS	BIAS	MAX SPREAD	SD
42667	00	DD	23	77	17	75.2	9.9	16.8
48327	00	DD	19	99	10	-10.1	7.7	13.1
48407	00	DD	15	105	14	11.5	6.2	16.0

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

Figure 10

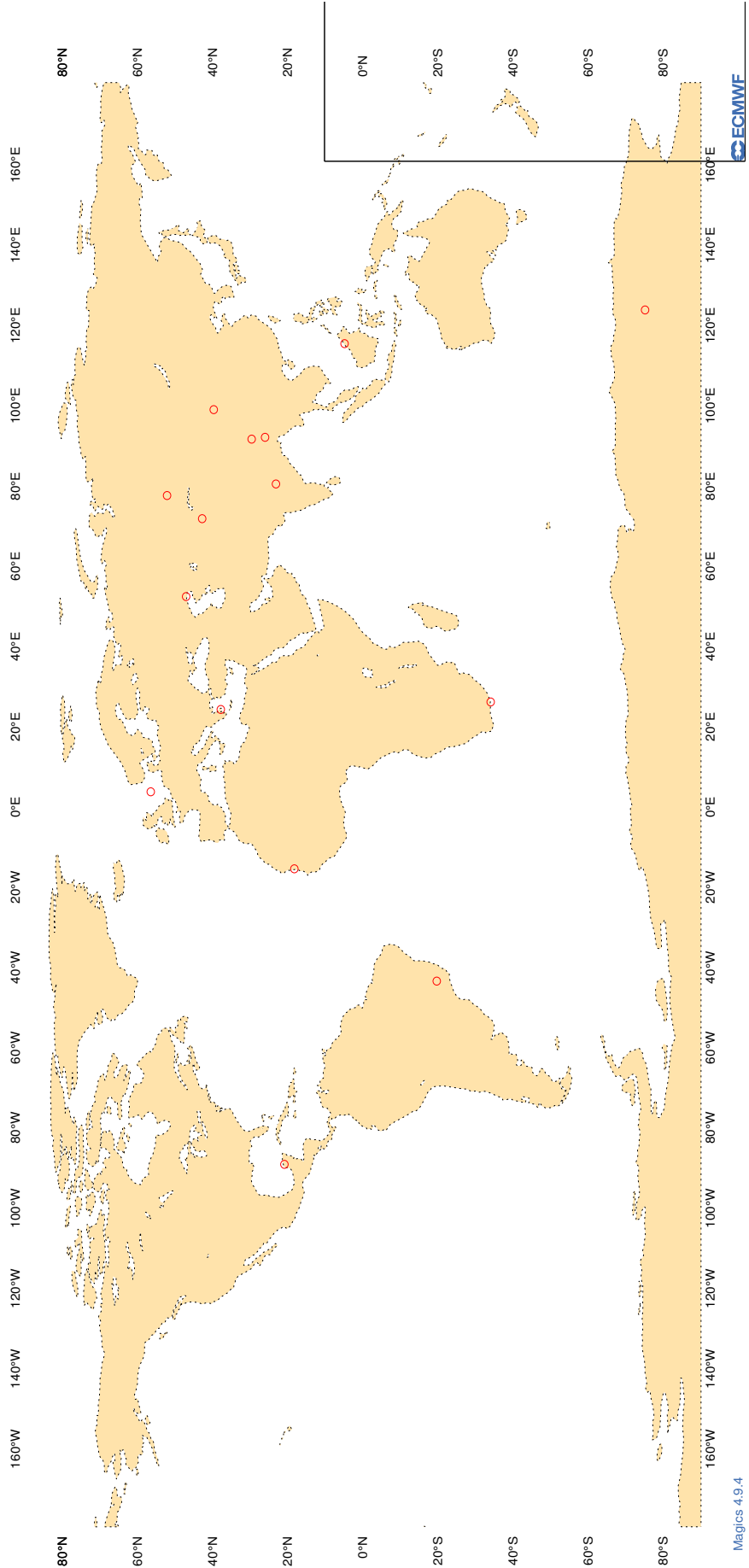
ECMWF Monitoring Statistics - JUL 2023 00 UTC
Suspect TEMP observations - GEOPOTENTIAL



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

Figure 11

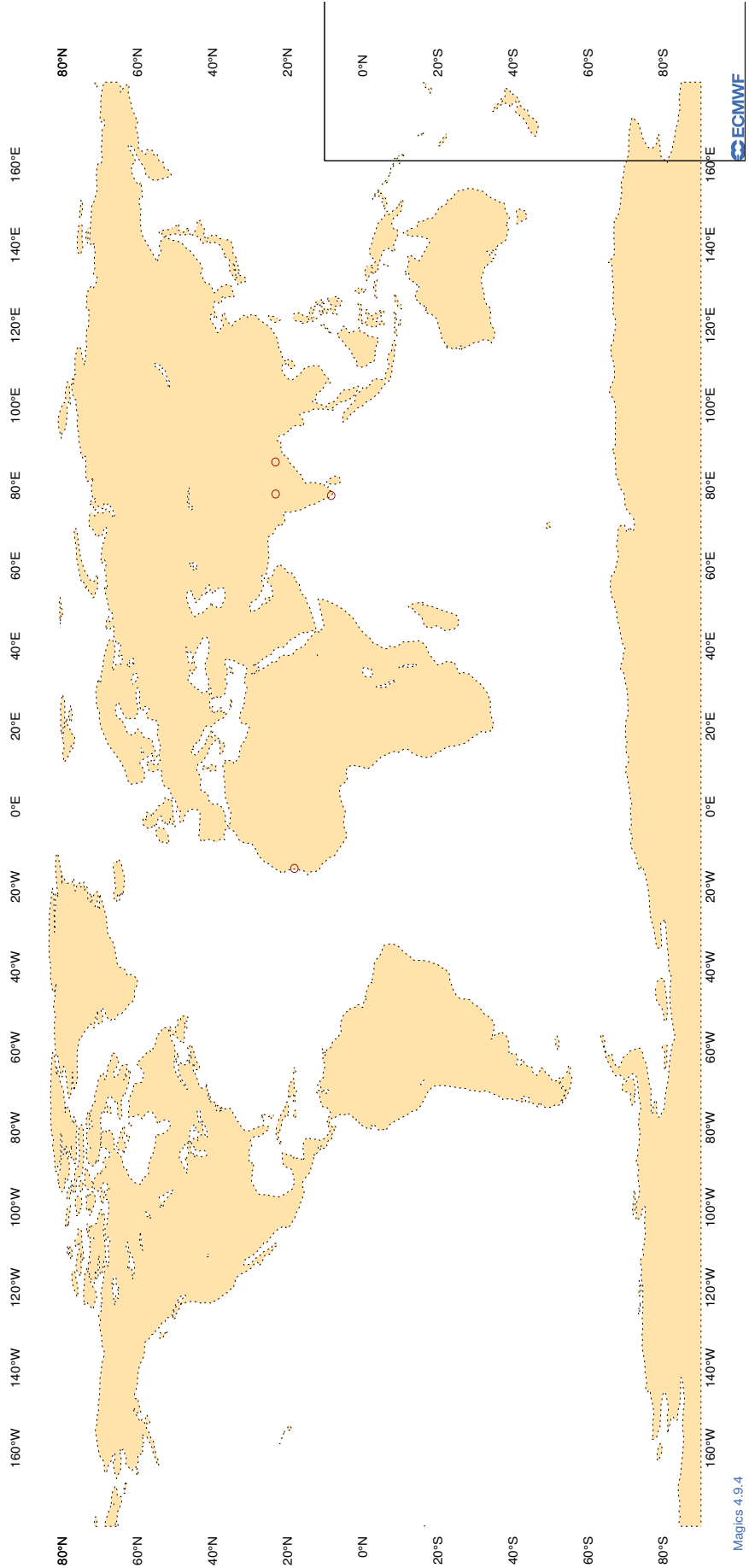
ECMWF Monitoring Statistics - JUL 2023 12 UTC
Suspect TEMP observations - GEOPOTENTIAL



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

Figure 12

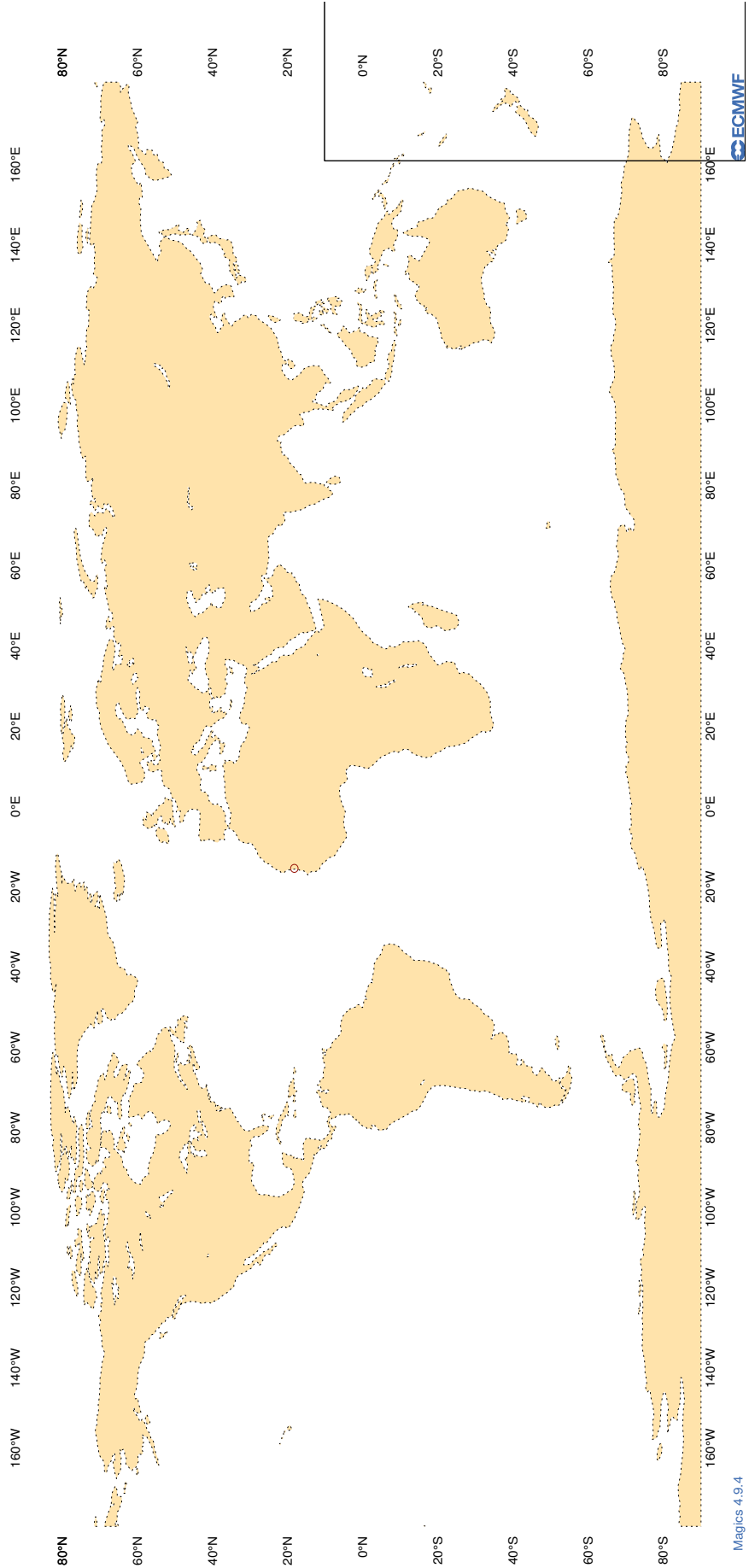
ECMWF Monitoring Statistics - JUL 2023 00 UTC
Suspect TEMP/PILOT observations - WIND



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

Figure 13

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

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
2EERVT	12	Z	100	5	6.2	-3.4
2EERVT	00	Z	100	7	15.5	-13.7
7JUNA4	00	Z	100	0	0.0	0.0
7JUNA4	12	Z	100	1	48.6	48.6
9ZT9MR	12	Z	100	12	25.3	-23.1
9ZT9MR	00	Z	100	19	40.2	-32.6
AH2MI	00	Z	100	7	3.9	1.1
ATGU3F	12	Z	100	9	37.7	-24.7
ATGU3F	00	Z	100	9	27.6	-25.5
BPMWB2	12	Z	100	8	11.8	-9.8
BPMWB2	00	Z	100	7	11.4	-9.2
DBLK	12	Z	100	30	12.0	11.7
DSQL7	00	Z	100	5	4.1	-3.6
DSQL7	12	Z	100	5	5.3	-2.3
FPUW5G	12	Z	100	16	9.9	8.1
GQBZLZ	00	Z	100	0	0.0	0.0
JGQH	00	Z	100	4	10.1	8.3
JGQH	12	Z	100	12	7.4	-2.6
JNKN7J	00	Z	100	7	22.1	21.1
JNKN7J	12	Z	100	8	55.7	46.6
JNSR	12	Z	100	16	6.9	5.6
JNSR	00	Z	100	11	12.3	8.2
JPBN	00	Z	100	3	7.0	-4.1
JPBN	12	Z	100	12	8.4	-5.1
JPNAK	00	Z	100	11	21.2	17.1
JPNAK	12	Z	100	12	13.7	11.5
KJJF9X	00	Z	100	11	88.9	-48.0
KJJF9X	12	Z	100	11	102.4	-46.9
KMPLHP	12	Z	100	8	68.9	53.5
KMPLHP	00	Z	100	8	25.2	24.4
LAGY8	00	Z	100	1	67.5	-67.5
LAGY8	12	Z	100	2	8.7	-5.4
LAGZ8	12	Z	100	2	64.3	-64.0
LRYQE3	00	Z	100	13	13.9	-11.5
LRYQE3	12	Z	100	11	16.3	-11.7
UBQW2	00	Z	100	31	16.1	2.4
UXK5JT	12	Z	100	9	5.8	-0.2
UXK5JT	00	Z	100	8	23.2	-12.5
WDK38H	12	Z	100	19	14.5	-13.8

RADIOSONDE MONITORING STATISTICS (SHIPS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
XKQLWQ	12	Z	100	22	31.2	11.5
YLV96W	12	Z	100	8	38.6	31.9
YLV96W	00	Z	100	8	9.4	-5.2
ZVQEQC	12	Z	100	8	4.9	1.6
ZVQEQC	00	Z	100	1	10.4	10.4

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 : JUL 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
2EERVT	12	V	100	5	2.6	-1.6	0.1
2EERVT	00	V	100	7	4.5	-0.9	-0.2
7JUNA4	00	V	100	0	0.0	0.0	0.0
7JUNA4	12	V	100	1	3.4	1.5	3.0
9ZT9MR	12	V	100	12	1.6	0.0	0.2
9ZT9MR	00	V	100	19	3.2	0.5	0.3
AH2MI	00	V	100	7	3.3	1.4	-0.4
ATGU3F	12	V	100	9	2.4	-0.1	0.7
ATGU3F	00	V	100	9	2.1	-0.3	0.1
BPMWB2	12	V	100	8	3.1	0.5	1.2
BPMWB2	00	V	100	7	3.5	1.3	-0.5
DBLK	12	V	100	30	2.1	0.0	0.0
DSQL7	00	V	100	5	2.3	0.4	-0.9
DSQL7	12	V	100	5	2.2	-0.8	0.3
FPUW5G	12	V	100	16	2.5	0.8	1.1
GQBZLZ	00	V	100	0	0.0	0.0	0.0
JGQH	00	V	100	3	4.4	-0.7	3.2
JGQH	12	V	100	12	3.8	-0.5	-0.4
JNKN7J	00	V	100	7	2.8	0.4	0.1
JNKN7J	12	V	100	8	2.4	1.2	0.2
JNSR	12	V	100	16	4.7	0.6	-0.3
JNSR	00	V	100	11	5.2	-0.2	2.3
JPBN	00	V	100	3	4.2	-0.3	0.2
JPBN	12	V	100	12	4.9	1.0	-0.4
JPNAK	00	V	100	9	5.1	0.5	-0.6
JPNAK	12	V	100	9	4.0	-0.9	1.3
KJJF9X	00	V	100	11	5.9	-2.2	-1.0
KJJF9X	12	V	100	11	3.6	-0.6	0.6
KMPLHP	12	V	100	8	2.3	-0.4	0.4
KMPLHP	00	V	100	8	2.3	-1.1	0.7
LAGY8	00	V	100	1	3.2	2.7	1.8
LAGY8	12	V	100	2	3.9	0.2	2.5
LAGZ8	12	V	100	2	3.5	0.0	0.2
LRYQE3	00	V	100	13	2.7	1.0	-0.4
LRYQE3	12	V	100	11	3.0	-0.1	-0.3
UBQW2	00	V	100	31	2.9	-0.5	0.0
UXK5JT	12	V	100	9	2.5	-0.4	0.7
UXK5JT	00	V	100	8	2.4	-0.6	-0.5
WDK38H	12	V	100	18	2.1	0.4	0.7

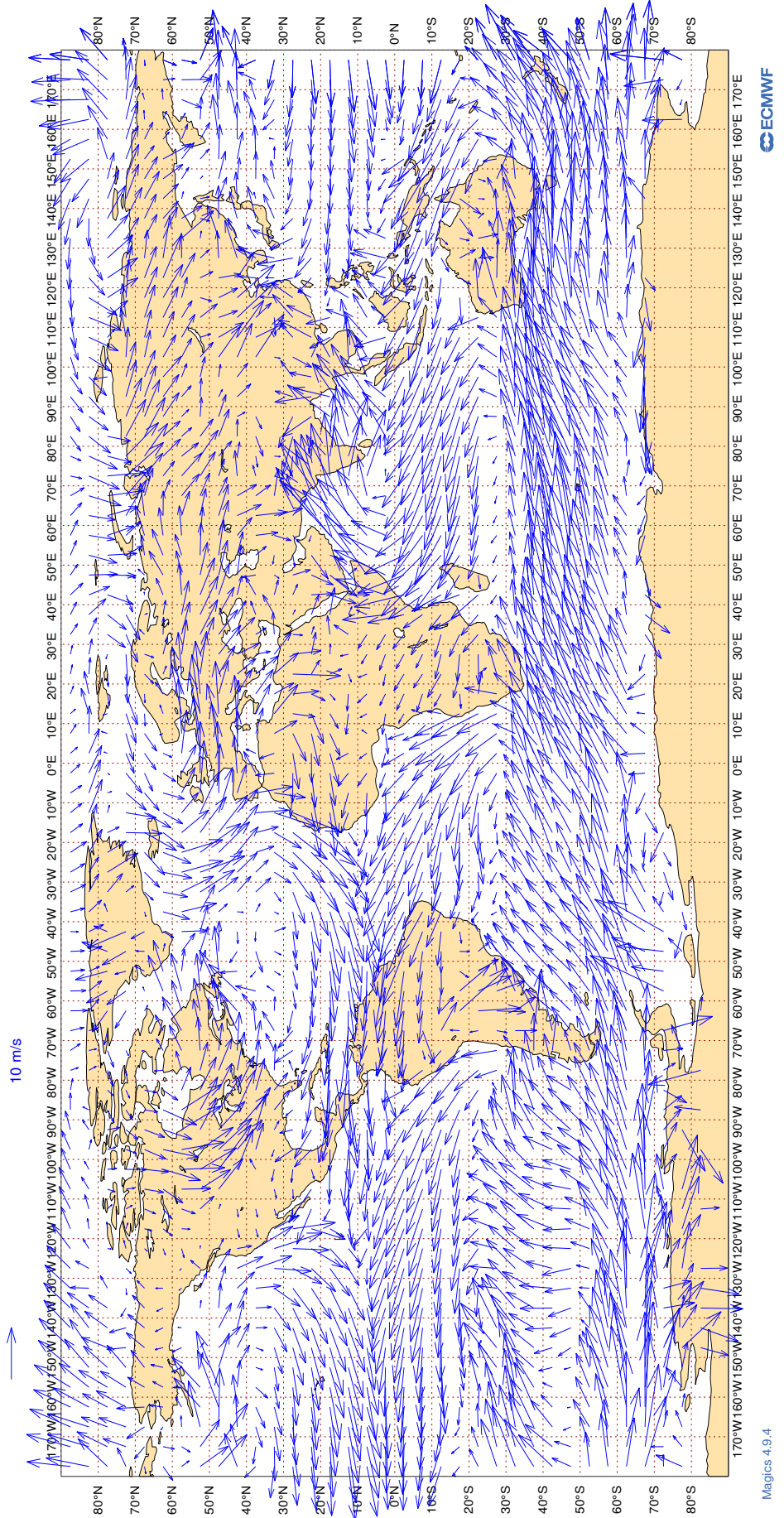
RADIOSONDE MONITORING STATISTICS (SHIPS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
XKQLWQ	12	V	100	22	3.9	0.7	-0.4
YLV96W	12	V	100	8	2.7	-0.3	0.6
YLV96W	00	V	100	8	2.3	-0.1	0.0
ZVQEQC	12	V	100	8	2.7	0.3	0.0
ZVQEQC	00	V	100	1	3.0	-2.1	2.1

3.2.27 Figure 14 - SATOB Winds: 700-1000hPa

Figure 14

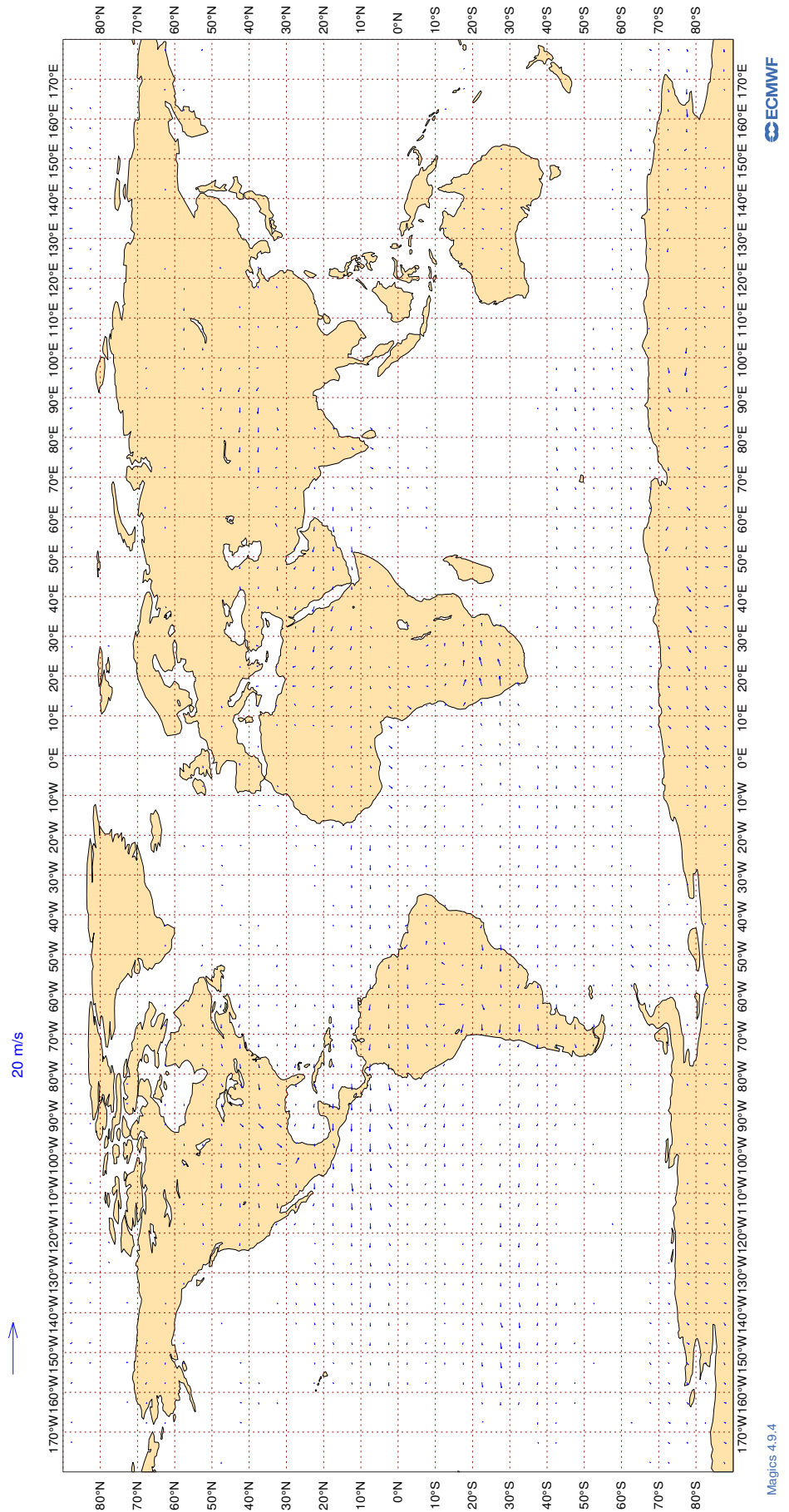
ECMWF Monitoring Statistics: Jul 2023
AMV Winds: 700-1000hPa
Mean Observed Wind



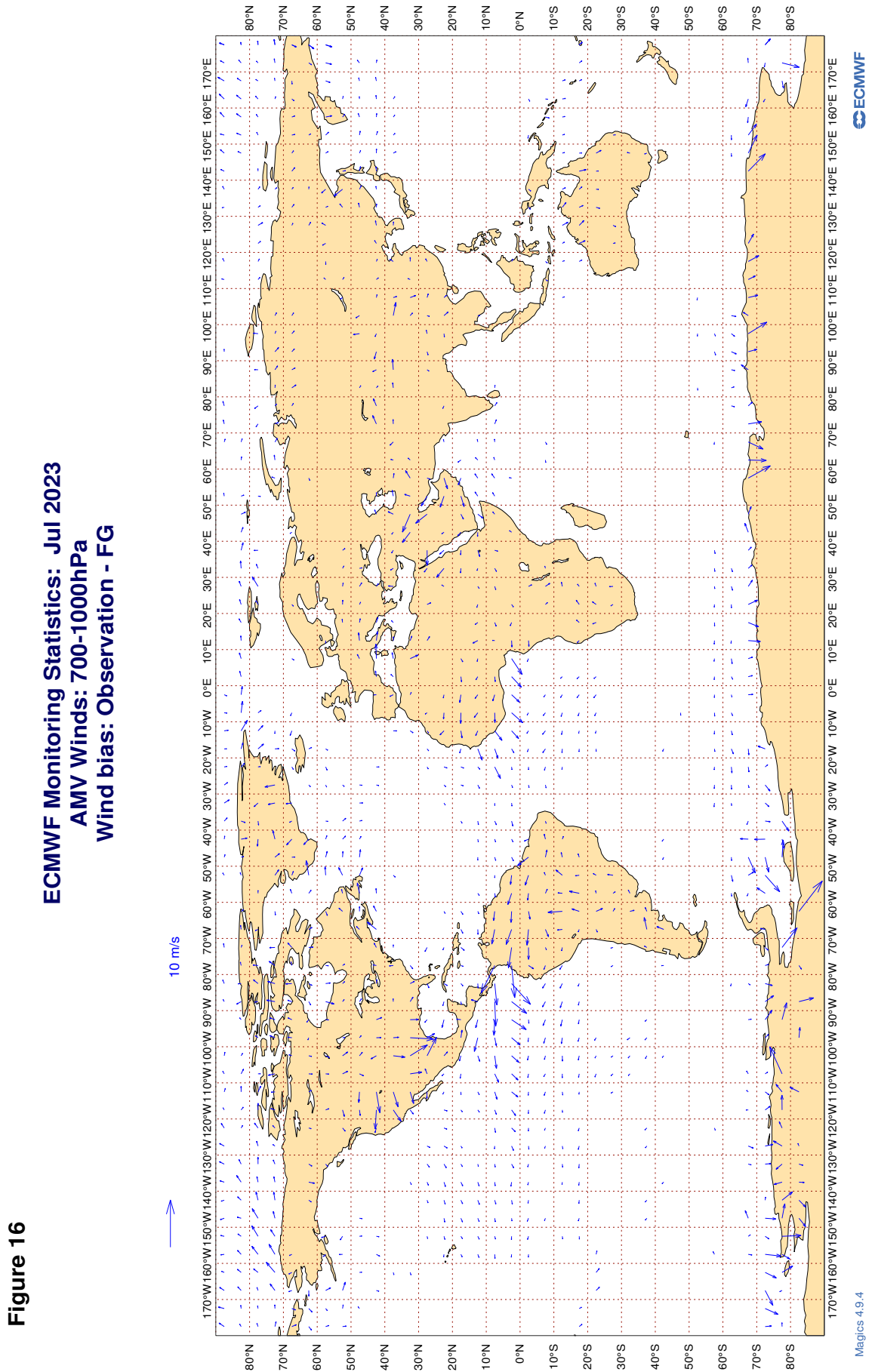
3.2.28 Figure 15 - SATOB Winds: 150- 400hPa

Figure 15

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



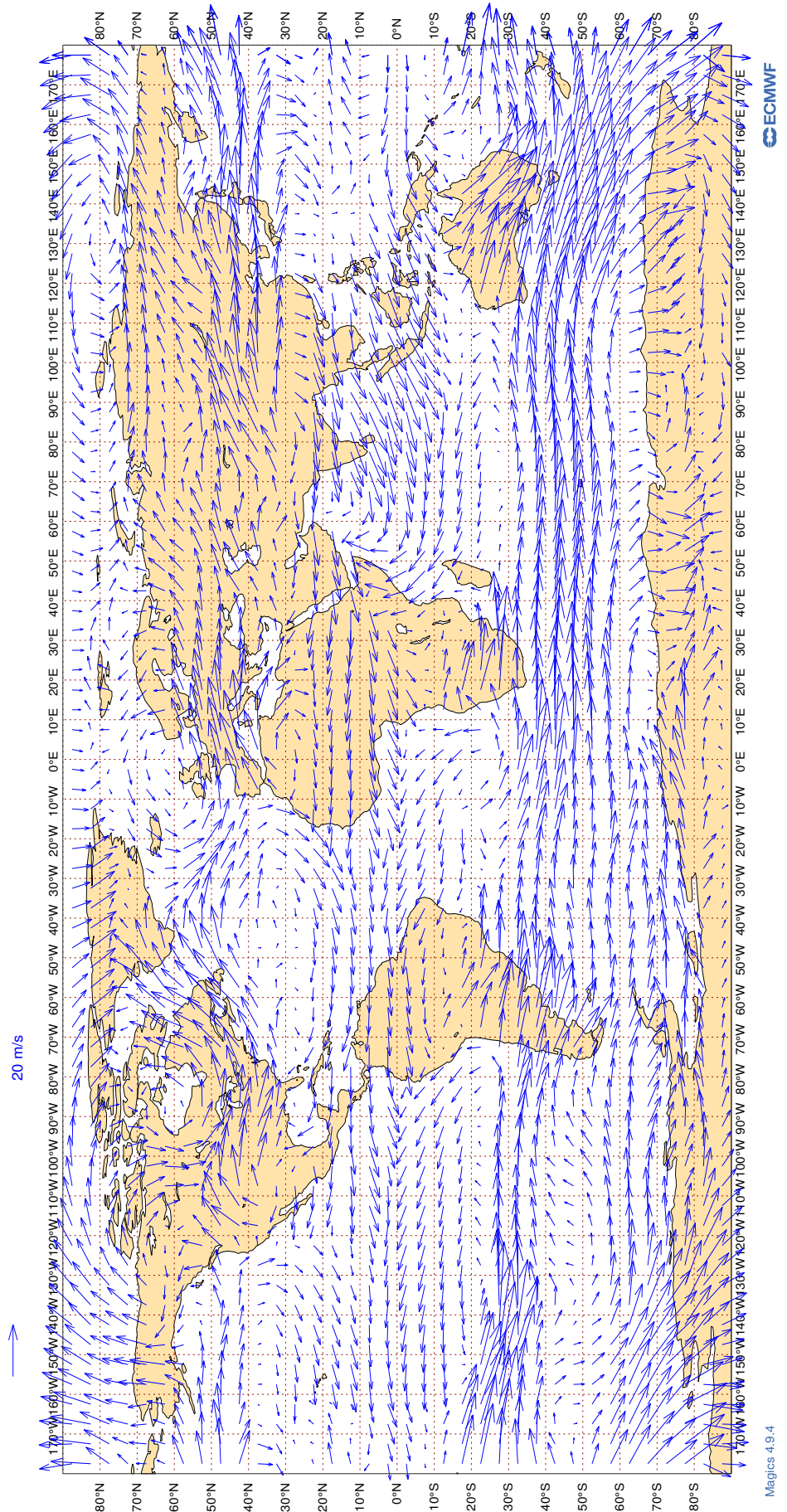
3.2.29 Figure 16 - SATOB Winds: 700-1000hPa



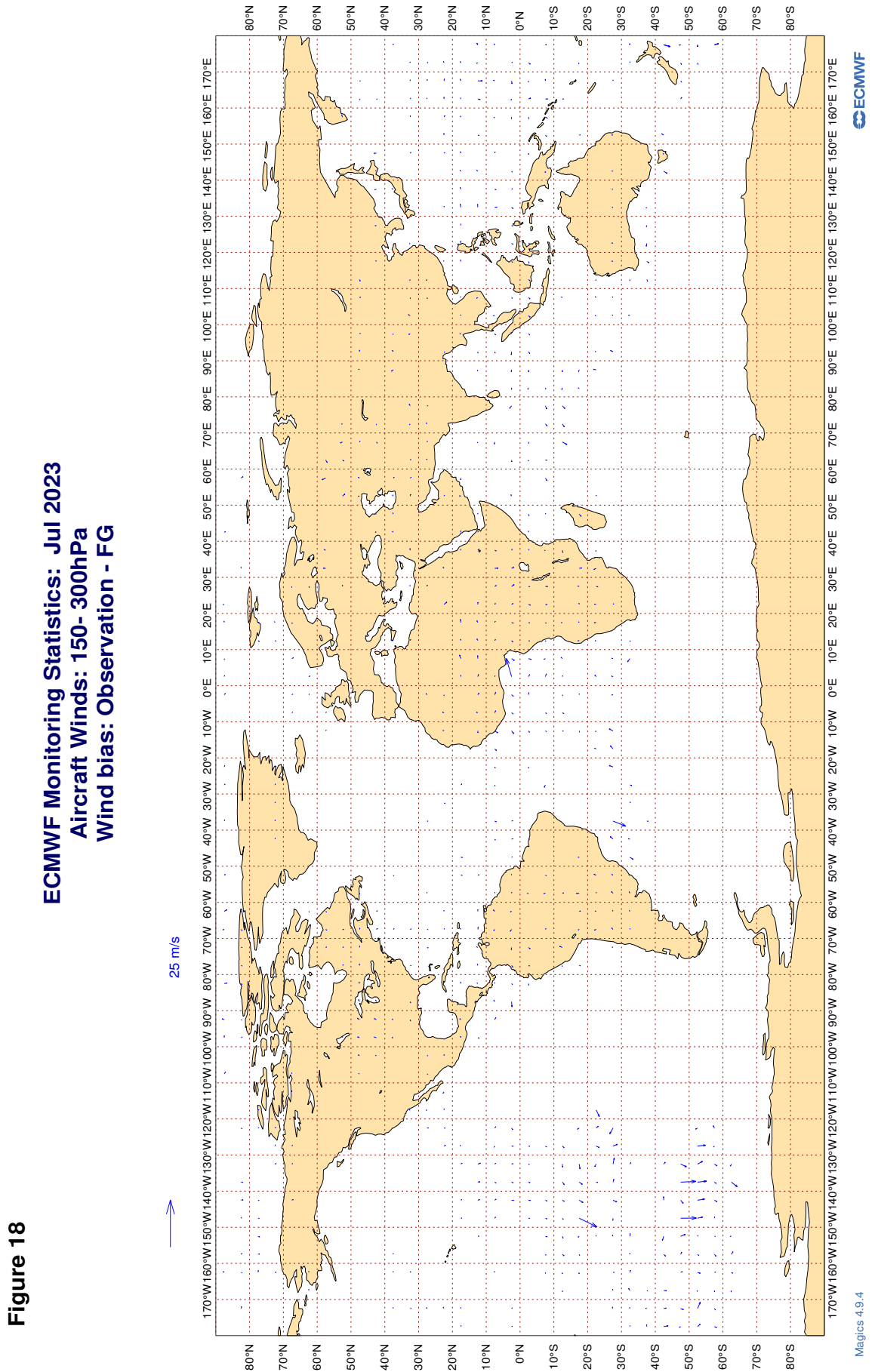
3.2.30 Figure 17 - SATOB Winds: 150- 400hPa

Figure 17

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



3.2.31 Figure 18 - AIRCRAFT Winds: 150- 300hPa



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

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : VECTOR WIND (M/S)
 AREA : GLOBAL
 PERIOD : JUL 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	35	0	0	4.9	-1.5
AAE	99	V	300-150	21	0	0	3.5	1.5
AAL	99	V	300-150	59539	1	0	3.7	0.2
AAR	99	V	300-150	261	0	1	3.7	-0.9
ABD	99	V	300-150	1034	0	0	3.4	-0.3
ACA	99	V	300-150	42924	0	0	3.5	0.2
ACI	99	V	300-150	582	0	0	3.4	0.2
AEA	99	V	300-150	627	1	0	4.8	-0.3
AFR	99	V	300-150	40728	0	0	3.2	0.2
AHO	99	V	300-150	560	0	0	3.4	0.2
AIC	99	V	300-150	4781	0	1	4.4	0.2
AJT	99	V	300-150	180	0	0	2.8	0.4
ALE	99	V	300-150	46	0	0	3.6	-0.1
ALK	99	V	300-150	1576	0	0	4.1	0.5
AME	99	V	300-150	57	0	0	2.3	-0.9
AMX	99	V	300-150	5001	2	0	4.0	-0.1
ANA	99	V	300-150	268	0	3	4.8	0.0
ANZ	99	V	300-150	18150	0	0	3.5	0.3
AOJ	99	V	300-150	238	0	0	3.0	0.1
ASA	99	V	300-150	64	0	0	4.2	0.2
ASL	99	V	300-150	1447	0	0	3.0	0.3
ASY	99	V	300-150	56	0	0	3.6	-0.2
ATC	99	V	300-150	432	0	0	4.2	0.4
ATG	99	V	300-150	134	0	0	5.2	0.5
ATN	99	V	300-150	88	0	2	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
AUA	99	V	300-150	4984	0	0	3.7	0.0
AVA	99	V	300-150	471	1	0	4.3	-0.2
AWC	99	V	300-150	173	0	0	3.2	0.1
AXM	99	V	300-150	89	0	1	5.6	1.4
AXY	99	V	300-150	204	0	0	3.3	0.9
AZG	99	V	300-150	1009	0	0	4.0	0.0
BAF	99	V	300-150	54	0	0	2.9	0.1
BAH	99	V	300-150	72	0	0	3.2	1.0
BAV	99	V	300-150	123	1	2	4.7	-0.4
BAW	99	V	300-150	51635	0	0	3.4	0.2
BBC	99	V	300-150	794	0	0	4.1	-0.2
BCS	99	V	300-150	2329	0	0	2.9	0.3
BEL	99	V	300-150	1690	0	0	2.8	0.3
BFY	99	V	300-150	116	0	0	2.7	0.7
BLU	99	V	300-150	51	0	0	2.7	0.9
BOX	99	V	300-150	4651	0	0	3.3	0.1
BOX	99	V	300-150	91	0	0	2.8	-0.1
BQB	99	V	300-150	36	0	0	3.5	0.5
BRJ	99	V	300-150	90	0	0	2.9	0.3
BTX	99	V	300-150	114	0	0	3.2	0.8
BVR	99	V	300-150	40	0	0	3.8	1.2
CAL	99	V	300-150	1499	0	0	4.1	0.2
CAZ	99	V	300-150	87	0	0	3.0	0.7
CBJ	99	V	300-150	193	0	0	4.4	0.5
CCA	99	V	300-150	132	0	2	4.0	-0.1
CEB	99	V	300-150	1162	0	0	5.4	0.5
CES	99	V	300-150	825	0	0	3.7	0.2
CFC	99	V	300-150	254	0	0	3.7	0.3
CFG	99	V	300-150	7285	0	0	3.2	0.1
CHG	99	V	300-150	665	0	0	3.8	-0.2
CHH	99	V	300-150	116	0	0	3.7	0.8
CJT	99	V	300-150	718	0	0	3.4	-0.2
CKS	99	V	300-150	1647	0	0	3.2	-0.1
CLF	99	V	300-150	44	0	0	3.6	1.4
CLX	99	V	300-150	4993	0	0	3.5	-0.2
CLY	99	V	300-150	22	0	0	3.4	-0.7
CMA	99	V	300-150	198	0	0	4.9	0.9
CMB	99	V	300-150	2212	0	0	3.5	-0.5
CNK	99	V	300-150	66	0	0	2.9	0.0
CNV	99	V	300-150	36	0	0	2.5	0.2
CPA	99	V	300-150	1800	0	0	4.2	0.5
CRL	99	V	300-150	2125	0	0	2.8	0.3
CRV	99	V	300-150	109	0	0	2.7	0.6

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
CSC	99	V	300-150	708	0	0	4.3	0.4
CSN	99	V	300-150	526	0	0	4.1	0.3
CSS	99	V	300-150	85	0	0	3.7	0.0
CTM	99	V	300-150	110	0	0	3.2	-0.4
CWG	99	V	300-150	114	0	0	3.1	0.6
CXB	99	V	300-150	27	0	0	17.1	0.5
DAH	99	V	300-150	1300	0	0	2.8	0.2
DAL	99	V	300-150	79981	0	0	3.0	0.1
DCM	99	V	300-150	28	0	0	3.6	-1.6
DCS	99	V	300-150	36	0	0	3.0	0.9
DHK	99	V	300-150	2514	0	0	3.3	0.0
DHX	99	V	300-150	270	0	0	4.7	0.0
DJT	99	V	300-150	1849	0	0	2.9	0.3
DLH	99	V	300-150	31832	0	0	3.2	0.1
DUB	99	V	300-150	25	0	0	4.0	0.8
EAL	99	V	300-150	69	0	0	3.9	0.1
EAU	99	V	300-150	97	0	0	3.3	0.2
EDC	99	V	300-150	37	0	0	3.2	-0.2
EDG	99	V	300-150	493	0	0	3.4	0.2
EDW	99	V	300-150	2042	0	0	3.0	0.3
EIN	99	V	300-150	17493	0	0	2.9	0.3
EJM	99	V	300-150	1275	0	0	3.1	0.0
ELY	99	V	300-150	5428	1	0	4.1	0.1
ETD	99	V	300-150	12593	0	0	4.2	0.2
ETH	99	V	300-150	7789	0	0	4.1	0.2
EUK	99	V	300-150	1838	0	0	2.7	0.3
EVA	99	V	300-150	1138	0	1	4.0	0.4
EVE	99	V	300-150	222	0	0	3.5	-0.3
EXS	99	V	300-150	1318	0	0	2.7	0.0
FAD	99	V	300-150	227	0	0	4.2	0.2
FAF	99	V	300-150	70	0	0	3.7	0.7
FBU	99	V	300-150	3003	0	0	3.3	-0.1
FDX	99	V	300-150	7239	0	0	3.0	0.2
FFM	99	V	300-150	50	0	4	4.5	0.3
FIN	99	V	300-150	2209	0	0	4.2	0.4
FJI	99	V	300-150	2731	0	0	3.4	0.4
FJO	99	V	300-150	119	0	0	2.6	0.2
FPY	99	V	300-150	3678	0	0	2.8	0.2
FRV	99	V	300-150	71	0	0	2.9	-0.4
FWI	99	V	300-150	2097	0	0	2.7	0.3
FWK	99	V	300-150	56	0	0	2.8	0.4
FXT	99	V	300-150	34	0	0	2.4	0.6
FYG	99	V	300-150	110	0	0	2.9	0.5

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
FYL	99	V	300-150	35	0	0	4.5	0.5
GAF	99	V	300-150	144	0	0	3.1	0.3
GAJ	99	V	300-150	51	0	0	3.5	0.7
GCK	99	V	300-150	130	0	0	2.9	0.5
GEC	99	V	300-150	1374	0	0	3.3	0.0
GES	99	V	300-150	122	2	0	5.8	0.6
GFA	99	V	300-150	1695	0	1	4.7	0.4
GIA	99	V	300-150	2810	0	0	4.1	0.4
GJE	99	V	300-150	144	0	0	3.4	0.7
GKY	99	V	300-150	47	0	0	2.6	0.3
GLJ	99	V	300-150	41	0	0	3.3	-0.4
GSM	99	V	300-150	90	0	0	2.9	0.3
GTI	99	V	300-150	2275	0	0	3.4	-0.1
GTR	99	V	300-150	295	0	0	2.8	0.2
HAL	99	V	300-150	978	0	0	3.7	0.4
HFM	99	V	300-150	84	0	0	3.2	-0.5
HKC	99	V	300-150	68	0	3	5.2	0.1
HLF	99	V	300-150	28	0	0	4.6	-1.0
HRT	99	V	300-150	62	0	3	3.4	0.1
HUE	99	V	300-150	55	0	0	6.5	2.7
HVN	99	V	300-150	952	0	1	4.2	0.2
IAM	99	V	300-150	35	0	0	2.1	0.1
IBE	99	V	300-150	7296	0	0	3.0	0.2
ICE	99	V	300-150	10363	0	0	3.1	0.2
ICL	99	V	300-150	240	0	0	4.2	-1.3
ICV	99	V	300-150	311	0	0	3.7	-0.4
IFA	99	V	300-150	331	0	0	3.4	0.0
IFC	99	V	300-150	20	0	0	3.5	-0.2
IGO	99	V	300-150	78	0	0	3.5	1.5
IJM	99	V	300-150	150	0	0	3.0	-0.1
IND	99	V	300-150	25	0	0	5.3	2.2
ITY	99	V	300-150	7063	0	0	3.0	0.2
JAF	99	V	300-150	662	1	0	4.4	0.0
JAL	99	V	300-150	247	0	2	4.7	0.4
JAS	99	V	300-150	197	0	0	3.5	0.0
JBU	99	V	300-150	6237	0	0	2.8	0.3
JCO	99	V	300-150	84	0	0	3.5	0.2
JET	99	V	300-150	33	0	0	3.3	0.9
JJA	99	V	300-150	28	4	0	3.8	0.5
JME	99	V	300-150	79	0	0	3.7	0.0
JST	99	V	300-150	102	0	0	3.1	0.4
KAC	99	V	300-150	2927	0	0	3.8	0.3
KAI	99	V	300-150	120	0	0	3.5	0.5

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
KAL	99	V	300-150	757	0	1	3.9	0.3
KAY	99	V	300-150	108	0	0	2.9	0.7
KFE	99	V	300-150	60	0	0	2.6	0.8
KIW	99	V	300-150	47	0	0	6.1	1.3
KLM	99	V	300-150	19128	1	0	3.8	0.1
KNE	99	V	300-150	179	0	0	4.3	1.0
KQA	99	V	300-150	484	0	0	4.5	0.1
KRH	99	V	300-150	41	0	0	2.9	0.8
LAN	99	V	300-150	30	7	0	4.3	-0.6
LCO	99	V	300-150	889	0	0	3.2	-0.2
LDX	99	V	300-150	223	0	0	2.9	0.2
LNK	99	V	300-150	36	0	0	2.3	0.4
LOT	99	V	300-150	5029	2	0	4.4	0.0
LRT	99	V	300-150	30	0	0	2.3	0.1
LUC	99	V	300-150	45	0	0	2.1	0.7
LXJ	99	V	300-150	873	0	0	2.9	0.1
MAS	99	V	300-150	3002	0	0	4.7	0.5
MAU	99	V	300-150	479	0	0	5.0	0.8
MLM	99	V	300-150	136	0	0	3.9	0.1
MLN	99	V	300-150	53	0	0	3.0	0.7
MMD	99	V	300-150	173	0	0	3.2	0.8
MNB	99	V	300-150	260	0	0	2.7	0.1
MPH	99	V	300-150	615	0	0	3.2	-0.5
MSR	99	V	300-150	2779	1	0	3.9	0.1
MVJ	99	V	300-150	106	0	0	3.1	0.0
MXD	99	V	300-150	22	0	0	7.3	0.4
MYM	99	V	300-150	33	0	0	5.8	0.9
NBT	99	V	300-150	3080	1	0	4.5	0.0
NCR	99	V	300-150	526	0	0	3.6	-0.4
NEW	99	V	300-150	64	0	0	3.2	-0.1
NJE	99	V	300-150	676	0	0	3.0	0.2
NOJ	99	V	300-150	50	0	0	4.4	1.9
NOS	99	V	300-150	1331	2	0	4.6	0.1
NUM	99	V	300-150	71	0	0	3.9	0.5
OAE	99	V	300-150	509	0	0	4.2	0.1
OCN	99	V	300-150	4460	0	0	2.8	0.2
OLI	99	V	300-150	31	0	0	3.4	0.0
OMA	99	V	300-150	3230	0	0	5.3	0.6
PAC	99	V	300-150	270	0	0	3.0	0.2
PAL	99	V	300-150	1898	0	1	4.9	0.5
PAT	99	V	300-150	44	0	0	3.2	0.1
PEG	99	V	300-150	148	0	0	3.3	1.1
PIA	99	V	300-150	427	0	0	4.6	0.7

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
PLF	99	V	300-150	88	0	0	2.8	0.0
PVA	99	V	300-150	258	0	0	2.8	0.5
QAF	99	V	300-150	121	0	0	3.2	-0.2
QFA	99	V	300-150	6524	0	0	4.7	0.2
QFX	99	V	300-150	60	0	0	3.5	1.1
QQE	99	V	300-150	247	0	0	3.1	0.2
QTR	99	V	300-150	35839	0	0	4.0	0.2
RAM	99	V	300-150	686	2	0	4.4	-0.1
RBA	99	V	300-150	239	0	0	6.1	1.0
RCH	99	V	300-150	3489	0	0	4.3	0.3
RCR	99	V	300-150	49	0	0	4.7	0.6
RDN	99	V	300-150	35	0	0	2.5	0.4
RHH	99	V	300-150	27	0	0	7.1	3.3
RJA	99	V	300-150	2970	1	0	4.5	-0.1
ROJ	99	V	300-150	110	0	0	4.3	-0.4
RRR	99	V	300-150	118	0	0	3.8	0.2
RTA	99	V	300-150	31	0	3	3.1	1.1
RYR	99	V	300-150	1267	0	0	2.8	0.2
RZO	99	V	300-150	445	0	0	3.0	0.1
SAM	99	V	300-150	317	0	0	3.2	0.3
SAS	99	V	300-150	6349	0	0	2.9	0.2
SAZ	99	V	300-150	58	0	0	2.7	0.2
SCX	99	V	300-150	55	0	2	3.6	0.3
SEY	99	V	300-150	127	0	0	4.6	0.4
SIA	99	V	300-150	9177	0	0	4.7	0.4
SIO	99	V	300-150	35	0	0	3.8	0.8
SJE	99	V	300-150	40	0	3	2.9	0.1
SLM	99	V	300-150	190	0	0	2.5	0.2
SNO	99	V	300-150	31	0	0	3.3	1.4
SON	99	V	300-150	130	0	0	4.3	0.2
SPA	99	V	300-150	137	0	0	3.0	0.2
SSG	99	V	300-150	34	0	0	2.5	0.2
SVA	99	V	300-150	11169	0	0	4.2	0.3
SVF	99	V	300-150	25	0	0	3.8	-0.7
SVW	99	V	300-150	210	0	0	2.9	0.1
SWR	99	V	300-150	11433	0	0	3.0	0.3
SWW	99	V	300-150	21	0	0	2.7	-0.5
SYB	99	V	300-150	173	0	0	2.8	0.6
TAI	99	V	300-150	54	0	0	3.5	0.5
TAM	99	V	300-150	102	0	0	2.5	0.0
TAP	99	V	300-150	2137	0	0	3.0	0.6
TAR	99	V	300-150	639	0	0	2.7	0.0
TAY	99	V	300-150	384	0	0	3.3	-0.2

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
TEU	99	V	300-150	21	0	0	2.9	0.7
TFF	99	V	300-150	74	0	0	4.2	0.1
TFL	99	V	300-150	1556	1	0	3.6	0.1
TGW	99	V	300-150	558	0	1	5.1	0.5
THA	99	V	300-150	5525	0	0	4.7	0.4
THT	99	V	300-150	2854	1	0	5.9	0.2
THY	99	V	300-150	20027	0	0	3.8	0.1
TMN	99	V	300-150	437	0	0	4.1	0.5
TOM	99	V	300-150	7356	1	0	3.9	0.1
TOW	99	V	300-150	70	0	0	2.8	0.6
TSC	99	V	300-150	22538	0	0	3.0	0.3
TVR	99	V	300-150	26	0	0	4.2	0.2
TWY	99	V	300-150	842	0	0	3.3	0.0
UAE	99	V	300-150	31783	0	0	4.0	0.2
UAF	99	V	300-150	158	0	0	3.0	0.2
UAL	99	V	300-150	89749	0	1	3.8	0.1
UBT	99	V	300-150	4579	1	0	4.6	0.0
ULC	99	V	300-150	123	0	0	3.2	-0.2
UNI	99	V	300-150	93	0	0	4.5	0.6
UPS	99	V	300-150	6399	0	0	3.5	-0.1
UZB	99	V	300-150	408	2	1	4.9	0.3
VCG	99	V	300-150	53	0	0	3.0	0.5
VIR	99	V	300-150	23329	1	0	3.5	0.1
VJC	99	V	300-150	361	0	1	4.8	0.6
VJT	99	V	300-150	2482	0	0	3.2	0.3
VKG	99	V	300-150	99	0	0	2.5	0.2
VLZ	99	V	300-150	68	0	0	2.8	0.0
VTI	99	V	300-150	2337	0	1	5.0	0.4
VXS	99	V	300-150	47	0	0	2.4	0.1
WDY	99	V	300-150	29	0	0	2.7	-0.8
WFL	99	V	300-150	39	0	8	3.8	-0.1
WGN	99	V	300-150	49	0	0	4.2	0.9
WJA	99	V	300-150	2377	2	0	5.0	-0.1
WWI	99	V	300-150	86	0	0	3.4	-0.5
XAX	99	V	300-150	580	0	0	4.3	0.4
XFL	99	V	300-150	24	0	0	3.3	-0.2
XLS	99	V	300-150	46	0	0	3.0	-0.3
XRO	99	V	300-150	34	0	0	3.1	0.5

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 : JUL 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	00	Z	50	26	27.5	-25.9
01001	12	Z	50	29	7.5	-5.5
01028	12	Z	50	30	10.0	-7.1
01028	00	Z	50	31	9.3	-7.9
01400	12	Z	50	21	71.1	70.8
01400	00	Z	50	27	78.5	78.3
01415	00	Z	50	29	7.5	-2.0
01415	12	Z	50	31	7.7	-4.5
02365	12	Z	50	30	12.3	-10.8
02365	00	Z	50	29	8.3	-5.8
02591	00	Z	50	22	6.2	5.2
02591	12	Z	50	28	7.7	-4.5
02836	00	Z	50	28	11.4	-5.8
02836	12	Z	50	28	12.8	-9.2
02963	00	Z	50	31	4.2	-0.7
02963	12	Z	50	31	8.1	-6.8
03005	00	Z	50	27	8.0	-6.0
03005	12	Z	50	31	12.1	-8.5
03238	00	Z	50	30	6.7	-2.2
03238	12	Z	50	4	4.0	-1.7
03808	00	Z	50	27	14.5	1.6
03808	12	Z	50	36	10.1	-3.4
03918	00	Z	50	31	6.6	3.9
03918	12	Z	50	8	4.0	1.9
03953	00	Z	50	19	11.8	-10.7
03953	12	Z	50	21	12.9	-9.0
04018	00	Z	50	30	8.9	-8.2
04018	12	Z	50	29	12.8	-12.0
04220	12	Z	50	30	21.3	-20.0
04220	00	Z	50	31	29.1	-25.3
04270	12	Z	50	29	22.2	-20.7
04270	00	Z	50	27	25.5	-22.9
04320	00	Z	50	31	13.7	-10.3
04320	12	Z	50	31	11.7	-4.2
04339	00	Z	50	30	24.6	-21.6
04339	12	Z	50	30	22.2	-17.0
04360	00	Z	50	25	22.9	-13.7
04360	12	Z	50	26	15.6	3.5
06011	12	Z	50	24	12.5	7.0

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06011	00	Z	50	1	6.8	-6.8
06260	12	Z	50	4	5.5	-3.6
06260	00	Z	50	30	16.8	2.7
06610	12	Z	50	32	9.9	-2.7
06610	00	Z	50	31	5.7	1.5
07110	12	Z	50	29	35.8	-34.7
07110	00	Z	50	29	59.1	-28.9
07510	00	Z	50	26	15.3	10.1
07510	12	Z	50	27	16.8	11.4
07645	00	Z	50	25	40.4	9.7
07645	12	Z	50	31	17.0	-15.9
07761	12	Z	50	31	15.6	-11.3
07761	00	Z	50	30	16.5	0.7
08001	00	Z	50	31	10.1	7.7
08001	12	Z	50	31	5.6	0.8
08221	12	Z	50	30	7.5	-1.5
08221	00	Z	50	30	8.4	6.1
08302	12	Z	50	26	12.0	-11.1
08302	00	Z	50	25	6.2	-1.5
08508	12	Z	50	31	6.3	-2.3
08522	12	Z	50	31	4.0	-1.5
10035	00	Z	50	31	13.3	11.0
10035	12	Z	50	31	8.2	5.9
10393	12	Z	50	31	9.6	-7.6
10393	00	Z	50	31	5.9	0.6
10410	00	Z	50	30	4.5	-0.7
10410	12	Z	50	29	8.0	-5.9
10739	00	Z	50	31	11.8	6.0
10739	12	Z	50	31	8.0	-2.8
11035	12	Z	50	31	15.7	9.5
11035	00	Z	50	31	11.5	8.6
12982	12	Z	50	31	6.4	-3.9
12982	00	Z	50	31	8.9	7.1
16245	12	Z	50	28	5.5	-4.4
16245	00	Z	50	28	8.4	5.0
16429	12	Z	50	31	5.2	-0.6
16429	00	Z	50	31	11.7	10.5
16622	00	Z	50	27	13.6	12.5
16622	12	Z	50	9	5.0	4.1
16754	00	Z	50	21	41.6	29.4
16754	12	Z	50	4	60.5	31.0
17607	12	Z	50	9	5.6	2.4
26435	12	Z	50	14	12.1	-8.8

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
2EERTV	12	Z	50	5	8.5	-1.8
2EERTV	00	Z	50	6	15.3	-13.7
60018	12	Z	50	31	7.2	-2.6
60018	00	Z	50	30	8.1	6.1
7JUNA4	00	Z	50	0	0.0	0.0
7JUNA4	12	Z	50	1	97.2	97.2
9ZT9MR	12	Z	50	11	105.3	-53.8
9ZT9MR	00	Z	50	19	42.1	-33.3
ATGU3F	12	Z	50	9	38.3	-23.4
ATGU3F	00	Z	50	6	30.8	-16.3
BPMWB2	12	Z	50	8	14.1	-6.6
BPMWB2	00	Z	50	7	13.9	-11.1
DBLK	12	Z	50	30	12.2	11.6
FPUW5G	12	Z	50	16	10.4	8.1
GQBZLZ	00	Z	50	0	0.0	0.0
JNKN7J	00	Z	50	7	19.9	18.5
JNKN7J	12	Z	50	7	96.8	71.4
KJJF9X	00	Z	50	11	124.9	-75.7
KJJF9X	12	Z	50	11	114.7	-50.9
KMPLHP	12	Z	50	8	107.3	69.7
KMPLHP	00	Z	50	8	27.2	26.2
LAGY8	00	Z	50	1	59.8	-59.8
LAGY8	12	Z	50	2	18.7	-10.1
LAGZ8	12	Z	50	1	58.3	-58.3
LRVQE3	00	Z	50	11	14.1	-10.1
LRVQE3	12	Z	50	10	21.8	-18.6
UXK5JT	12	Z	50	8	8.8	-0.4
UXK5JT	00	Z	50	8	30.5	-13.5
WDK38H	12	Z	50	17	14.7	-13.6
XKQLWQ	12	Z	50	22	38.8	36.5
YLV96W	12	Z	50	8	95.8	76.7
YLV96W	00	Z	50	8	12.6	-2.6
ZVQEQC	12	Z	50	8	5.6	-1.0
ZVQEQC	00	Z	50	1	18.9	18.9

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 : JUL 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	00	V	50	26	2.5	0.1	-0.2
01001	12	V	50	29	3.0	0.3	0.2
01028	12	V	50	30	2.5	-0.7	-0.6
01028	00	V	50	30	2.3	0.2	-0.5
01400	12	V	50	20	3.0	0.8	0.7
01400	00	V	50	19	2.9	0.0	0.5
01415	00	V	50	26	3.0	0.7	0.1
01415	12	V	50	30	3.3	0.6	0.1
02365	12	V	50	29	3.2	0.3	0.6
02365	00	V	50	26	2.8	-0.5	0.7
02591	00	V	50	19	2.9	0.5	0.5
02591	12	V	50	25	3.1	0.1	-0.6
02836	00	V	50	27	2.5	0.0	0.1
02836	12	V	50	28	2.7	-0.4	0.2
02963	00	V	50	30	3.3	0.1	0.1
02963	12	V	50	31	3.5	0.6	0.1
03005	00	V	50	25	3.1	0.2	0.4
03005	12	V	50	31	2.8	0.1	0.2
03238	00	V	50	26	3.0	-0.5	-0.4
03238	12	V	50	4	3.2	-1.1	-1.2
03808	00	V	50	26	2.7	-0.5	-0.3
03808	12	V	50	30	2.8	0.1	-0.8
03918	00	V	50	30	3.0	0.4	0.6
03918	12	V	50	8	2.7	0.1	1.7
03953	00	V	50	19	1.8	0.1	0.3
03953	12	V	50	21	2.2	-0.1	-0.2
04018	00	V	50	25	2.2	0.0	-0.3
04018	12	V	50	29	2.3	-0.1	-0.2
04220	12	V	50	30	2.1	0.5	0.0
04220	00	V	50	26	1.8	0.0	0.3
04270	12	V	50	29	2.2	-0.2	-0.5
04270	00	V	50	27	1.8	0.0	-0.3
04320	00	V	50	30	2.5	0.7	-1.1
04320	12	V	50	31	2.2	0.4	-0.6
04339	00	V	50	30	2.3	0.5	0.8
04339	12	V	50	30	2.6	0.6	0.3
04360	00	V	50	22	2.1	-0.3	-0.7
04360	12	V	50	26	1.9	0.0	-0.3
06011	12	V	50	24	2.4	0.2	-0.2

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06011	00	V	50	1	2.0	1.9	-0.7
06260	12	V	50	4	3.0	-0.5	-1.9
06260	00	V	50	28	2.9	0.4	0.1
06610	12	V	50	31	2.9	-0.4	0.3
06610	00	V	50	30	3.6	-0.7	0.2
07110	12	V	50	29	2.9	0.5	-0.3
07110	00	V	50	24	2.8	0.0	-0.1
07510	00	V	50	26	3.1	-0.6	0.2
07510	12	V	50	27	3.3	-0.5	0.1
07645	00	V	50	23	3.1	-0.9	0.9
07645	12	V	50	31	2.9	0.0	0.3
07761	12	V	50	31	3.3	0.2	-0.8
07761	00	V	50	27	3.1	0.1	-0.2
08001	00	V	50	30	2.8	0.3	0.0
08001	12	V	50	31	3.2	0.3	0.0
08221	12	V	50	30	3.0	0.0	0.4
08221	00	V	50	29	2.8	-0.4	-0.1
08302	12	V	50	26	3.7	-0.4	-0.6
08302	00	V	50	23	3.5	-0.2	0.4
08508	12	V	50	31	2.6	0.5	0.5
08522	12	V	50	31	3.6	-0.6	-0.2
10035	00	V	50	29	2.9	0.3	0.2
10035	12	V	50	31	3.7	-0.2	0.0
10393	12	V	50	31	3.1	0.6	-0.4
10393	00	V	50	27	3.5	0.1	0.6
10410	00	V	50	29	3.3	-0.2	0.0
10410	12	V	50	29	3.1	0.2	0.2
10739	00	V	50	30	3.8	-0.2	-0.2
10739	12	V	50	31	3.4	0.2	-0.3
11035	12	V	50	31	3.1	0.9	-0.6
11035	00	V	50	29	2.8	-0.1	-0.3
12982	12	V	50	31	3.1	0.3	-0.5
12982	00	V	50	30	3.5	0.0	-0.2
16245	12	V	50	28	3.5	0.4	0.2
16245	00	V	50	27	3.4	-0.6	-0.3
16429	12	V	50	31	3.3	0.3	-0.3
16429	00	V	50	28	2.8	0.0	0.0
16622	00	V	50	22	3.6	-0.1	0.3
16622	12	V	50	9	2.7	-0.3	0.0
16754	00	V	50	19	3.8	-0.6	0.8
16754	12	V	50	3	2.6	-0.4	0.0
17607	12	V	50	1	0.6	0.6	0.0
26435	12	V	50	14	2.8	0.0	-0.4

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
2EERV	12	V	50	5	1.8	0.2	-0.4
2EERV	00	V	50	6	6.5	0.5	0.1
60018	12	V	50	31	2.8	0.1	0.3
60018	00	V	50	29	3.6	-1.3	0.0
7JUNA4	00	V	50	0	0.0	0.0	0.0
7JUNA4	12	V	50	1	0.4	-0.2	-0.4
9ZT9MR	12	V	50	11	2.4	0.3	0.0
9ZT9MR	00	V	50	19	2.0	0.6	-0.3
ATGU3F	12	V	50	9	2.6	-0.3	0.6
ATGU3F	00	V	50	6	2.9	0.4	1.4
BPMWB2	12	V	50	8	2.3	-0.4	0.2
BPMWB2	00	V	50	7	2.6	0.1	1.2
DBLK	12	V	50	30	2.1	-0.6	0.0
FPUW5G	12	V	50	16	2.1	0.5	-0.1
GQBZLZ	00	V	50	0	0.0	0.0	0.0
JNKN7J	00	V	50	7	2.2	0.7	-0.6
JNKN7J	12	V	50	7	2.3	0.0	-0.2
KJFF9X	00	V	50	11	2.4	0.7	0.1
KJFF9X	12	V	50	11	2.6	-0.6	0.8
KMPLHP	12	V	50	8	2.1	-0.2	-0.2
KMPLHP	00	V	50	8	2.5	-1.3	-1.0
LAGY8	00	V	50	1	2.7	2.2	-1.6
LAGY8	12	V	50	2	2.8	0.4	-0.6
LAGZ8	12	V	50	1	1.1	-1.0	-0.4
LRYQE3	00	V	50	11	1.7	0.7	-0.4
LRYQE3	12	V	50	10	3.1	0.1	0.2
UXK5JT	12	V	50	8	2.7	0.4	-1.0
UXK5JT	00	V	50	8	2.2	-0.2	0.3
WDK38H	12	V	50	17	2.0	-0.1	0.6
XKQLWQ	12	V	50	22	3.0	1.1	-0.2
YLV96W	12	V	50	8	2.5	0.4	0.1
YLV96W	00	V	50	8	2.0	0.1	0.8
ZVQEQC	12	V	50	8	3.6	0.9	0.6
ZVQEQC	00	V	50	1	3.8	-3.4	1.7

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

RADIOSONDE MONITORING STATISTICS (EUCOS)

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

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	00	Z	100	27	25.2	-24.0
01001	12	Z	100	29	8.1	-6.5
01028	12	Z	100	31	9.3	-6.8
01028	00	Z	100	31	8.2	-7.4
01400	12	Z	100	21	71.6	71.4
01400	00	Z	100	27	75.5	75.3
01415	00	Z	100	29	5.1	-2.6
01415	12	Z	100	31	6.7	-4.8
02365	12	Z	100	30	9.8	-9.2
02365	00	Z	100	29	8.8	-6.8
02591	00	Z	100	27	6.0	3.4
02591	12	Z	100	28	7.0	-4.4
02836	00	Z	100	29	10.0	-7.1
02836	12	Z	100	28	10.2	-7.9
02963	00	Z	100	31	4.6	-2.7
02963	12	Z	100	31	6.7	-5.7
03005	00	Z	100	29	8.8	-7.2
03005	12	Z	100	31	9.3	-8.1
03238	00	Z	100	30	6.7	-3.5
03238	12	Z	100	4	4.6	-3.9
03808	00	Z	100	27	14.1	-1.5
03808	12	Z	100	36	8.5	-4.3
03918	00	Z	100	31	4.6	0.7
03918	12	Z	100	8	2.7	0.8
03953	00	Z	100	31	11.7	-10.8
03953	12	Z	100	31	12.6	-10.6
04018	00	Z	100	30	8.6	-8.2
04018	12	Z	100	30	9.4	-8.9
04220	12	Z	100	31	17.6	-17.0
04220	00	Z	100	31	21.8	-19.8
04270	12	Z	100	29	19.1	-18.1
04270	00	Z	100	28	20.6	-19.1
04320	00	Z	100	31	10.5	-7.9
04320	12	Z	100	31	9.4	-2.7
04339	00	Z	100	31	22.2	-20.9
04339	12	Z	100	30	19.3	-15.9
04360	00	Z	100	26	19.0	-12.7
04360	12	Z	100	27	11.2	-0.6
06011	12	Z	100	25	8.4	4.0

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06011	00	Z	100	1	3.9	-3.9
06260	12	Z	100	4	5.4	-3.7
06260	00	Z	100	30	17.0	0.7
06610	12	Z	100	33	9.5	-4.6
06610	00	Z	100	31	6.1	-0.7
07110	12	Z	100	30	29.2	-28.3
07110	00	Z	100	29	55.3	-23.0
07510	00	Z	100	27	9.7	3.5
07510	12	Z	100	27	11.1	7.5
07645	00	Z	100	28	25.1	-5.5
07645	12	Z	100	31	15.4	-14.5
07761	12	Z	100	31	11.3	-8.9
07761	00	Z	100	31	14.9	-3.6
08001	00	Z	100	31	6.7	3.6
08001	12	Z	100	31	5.4	-0.4
08221	12	Z	100	30	6.5	-2.0
08221	00	Z	100	30	6.0	1.2
08302	12	Z	100	31	12.1	-11.4
08302	00	Z	100	30	8.9	-6.6
08508	12	Z	100	31	4.7	2.4
08522	12	Z	100	31	4.3	2.7
10035	00	Z	100	31	10.4	8.8
10035	12	Z	100	31	7.2	5.7
10393	12	Z	100	31	9.6	-8.2
10393	00	Z	100	31	5.1	-2.2
10410	00	Z	100	30	4.9	-2.4
10410	12	Z	100	30	8.8	-7.4
10739	00	Z	100	31	9.5	4.7
10739	12	Z	100	31	8.1	-3.8
11035	12	Z	100	31	11.5	2.0
11035	00	Z	100	31	7.1	1.7
12982	12	Z	100	31	6.9	-5.1
12982	00	Z	100	31	6.1	4.4
16245	12	Z	100	28	5.6	-3.6
16245	00	Z	100	28	7.0	0.6
16429	12	Z	100	31	4.9	-1.3
16429	00	Z	100	31	6.4	5.3
16622	00	Z	100	30	12.2	11.1
16622	12	Z	100	9	7.5	7.2
16754	00	Z	100	23	26.1	18.1
16754	12	Z	100	5	29.6	16.3
17607	12	Z	100	11	5.2	2.8
26435	12	Z	100	14	7.9	-6.4

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
2EERTV	12	Z	100	5	6.2	-3.4
2EERTV	00	Z	100	7	15.5	-13.7
60018	12	Z	100	31	4.9	-0.1
60018	00	Z	100	30	7.4	6.6
7JUNA4	00	Z	100	0	0.0	0.0
7JUNA4	12	Z	100	1	48.6	48.6
9ZT9MR	12	Z	100	12	25.3	-23.1
9ZT9MR	00	Z	100	19	40.2	-32.6
ATGU3F	12	Z	100	9	37.7	-24.7
ATGU3F	00	Z	100	9	27.6	-25.5
BPMWB2	12	Z	100	8	11.8	-9.8
BPMWB2	00	Z	100	7	11.4	-9.2
DBLK	12	Z	100	30	12.0	11.7
FPUW5G	12	Z	100	16	9.9	8.1
GQBZLZ	00	Z	100	0	0.0	0.0
JNKN7J	00	Z	100	7	22.1	21.1
JNKN7J	12	Z	100	8	55.7	46.6
KJJF9X	00	Z	100	11	88.9	-48.0
KJJF9X	12	Z	100	11	102.4	-46.9
KMPLHP	12	Z	100	8	68.9	53.5
KMPLHP	00	Z	100	8	25.2	24.4
LAGY8	00	Z	100	1	67.5	-67.5
LAGY8	12	Z	100	2	8.7	-5.4
LAGZ8	12	Z	100	2	64.3	-64.0
LRYQE3	00	Z	100	13	13.9	-11.5
LRYQE3	12	Z	100	11	16.3	-11.7
UXK5JT	12	Z	100	9	5.8	-0.2
UXK5JT	00	Z	100	8	23.2	-12.5
WDK38H	12	Z	100	19	14.5	-13.8
XKQLWQ	12	Z	100	22	31.2	11.5
YLV96W	12	Z	100	8	38.6	31.9
YLV96W	00	Z	100	8	9.4	-5.2
ZVQEQC	12	Z	100	8	4.9	1.6
ZVQEQC	00	Z	100	1	10.4	10.4

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 : JUL 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	00	V	100	27	2.1	0.4	0.1
01001	12	V	100	29	2.2	0.4	0.4
01028	12	V	100	31	2.1	0.2	0.5
01028	00	V	100	30	2.1	0.1	0.5
01400	12	V	100	21	3.4	1.1	-0.1
01400	00	V	100	22	2.7	0.1	-0.2
01415	00	V	100	27	2.2	-0.1	-0.4
01415	12	V	100	30	2.5	-0.1	-0.4
02365	12	V	100	30	2.4	0.0	-1.1
02365	00	V	100	27	2.6	0.6	-0.4
02591	00	V	100	23	2.3	0.7	-0.5
02591	12	V	100	28	2.9	-0.4	-0.7
02836	00	V	100	29	2.5	0.1	0.1
02836	12	V	100	28	2.3	-0.1	-0.3
02963	00	V	100	30	2.8	0.4	0.5
02963	12	V	100	31	2.3	-0.2	-0.2
03005	00	V	100	27	2.2	0.3	0.1
03005	12	V	100	31	2.5	0.2	0.0
03238	00	V	100	26	2.3	-0.1	-0.5
03238	12	V	100	4	1.7	-0.3	-0.3
03808	00	V	100	26	3.1	0.8	0.7
03808	12	V	100	30	2.5	-0.2	-0.4
03918	00	V	100	30	2.7	0.4	-0.4
03918	12	V	100	8	3.5	-0.2	0.9
03953	00	V	100	28	2.6	0.4	0.2
03953	12	V	100	31	2.6	0.2	-0.2
04018	00	V	100	29	2.4	0.4	0.5
04018	12	V	100	30	2.4	0.2	0.6
04220	12	V	100	31	2.2	0.7	0.2
04220	00	V	100	30	2.1	0.4	-0.3
04270	12	V	100	29	2.8	0.1	0.1
04270	00	V	100	28	2.7	-0.3	0.6
04320	00	V	100	30	1.8	0.3	-0.1
04320	12	V	100	31	1.9	0.4	-0.3
04339	00	V	100	30	2.2	-0.2	0.1
04339	12	V	100	30	1.8	0.2	0.1
04360	00	V	100	24	2.7	0.5	-0.2
04360	12	V	100	27	2.1	-0.1	0.3
06011	12	V	100	25	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	100	1	4.5	-0.5	-4.5
06260	12	V	100	4	2.2	1.6	0.6
06260	00	V	100	28	3.0	0.0	0.7
06610	12	V	100	31	3.9	1.2	-1.0
06610	00	V	100	30	4.4	-0.4	-0.8
07110	12	V	100	30	2.5	0.0	0.2
07110	00	V	100	24	2.3	0.3	0.0
07510	00	V	100	27	3.7	0.4	-1.0
07510	12	V	100	27	3.2	-0.5	0.1
07645	00	V	100	26	3.7	0.5	-0.6
07645	12	V	100	31	3.6	-0.3	0.0
07761	12	V	100	31	4.0	0.4	-0.6
07761	00	V	100	28	4.8	1.3	0.4
08001	00	V	100	30	3.4	1.1	-0.3
08001	12	V	100	31	2.5	0.0	-0.4
08221	12	V	100	30	3.7	0.1	-0.5
08221	00	V	100	29	3.8	0.8	0.1
08302	12	V	100	31	3.5	-0.2	-0.8
08302	00	V	100	28	3.5	0.2	1.2
08508	12	V	100	31	2.3	0.1	-0.1
08522	12	V	100	31	3.1	0.2	-0.1
10035	00	V	100	30	2.5	0.5	0.2
10035	12	V	100	31	3.1	-0.1	-0.4
10393	12	V	100	31	3.4	-0.1	0.3
10393	00	V	100	30	3.4	1.0	-0.3
10410	00	V	100	29	2.8	-0.7	0.3
10410	12	V	100	30	2.8	0.5	-0.2
10739	00	V	100	30	3.8	0.2	-0.2
10739	12	V	100	31	3.9	-0.5	-0.1
11035	12	V	100	31	3.2	0.5	0.2
11035	00	V	100	29	3.8	0.4	-0.9
12982	12	V	100	31	3.6	1.2	0.5
12982	00	V	100	30	3.9	0.2	-0.4
16245	12	V	100	28	3.3	-0.2	-0.4
16245	00	V	100	27	4.0	1.3	0.6
16429	12	V	100	31	3.6	0.0	-0.1
16429	00	V	100	30	3.4	-0.2	0.5
16622	00	V	100	26	3.8	0.2	-1.7
16622	12	V	100	9	3.9	-2.1	-0.3
16754	00	V	100	21	3.0	0.4	0.6
16754	12	V	100	5	2.4	-0.5	-0.3
17607	12	V	100	3	4.0	0.0	-2.3
26435	12	V	100	14	3.0	0.2	0.2

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
2EERV	12	V	100	5	2.6	-1.6	0.1
2EERV	00	V	100	7	4.5	-0.9	-0.2
60018	12	V	100	31	4.0	-0.1	-0.3
60018	00	V	100	29	4.8	-0.6	1.4
7JUNA4	00	V	100	0	0.0	0.0	0.0
7JUNA4	12	V	100	1	3.4	1.5	3.0
9ZT9MR	12	V	100	12	1.6	0.0	0.2
9ZT9MR	00	V	100	19	3.2	0.5	0.3
ATGU3F	12	V	100	9	2.4	-0.1	0.7
ATGU3F	00	V	100	9	2.1	-0.3	0.1
BPMWB2	12	V	100	8	3.1	0.5	1.2
BPMWB2	00	V	100	7	3.5	1.3	-0.5
DBLK	12	V	100	30	2.1	0.0	0.0
FPUW5G	12	V	100	16	2.5	0.8	1.1
GQBZLZ	00	V	100	0	0.0	0.0	0.0
JNKN7J	00	V	100	7	2.8	0.4	0.1
JNKN7J	12	V	100	8	2.4	1.2	0.2
KJJF9X	00	V	100	11	5.9	-2.2	-1.0
KJJF9X	12	V	100	11	3.6	-0.6	0.6
KMPLHP	12	V	100	8	2.3	-0.4	0.4
KMPLHP	00	V	100	8	2.3	-1.1	0.7
LAGY8	00	V	100	1	3.2	2.7	1.8
LAGY8	12	V	100	2	3.9	0.2	2.5
LAGZ8	12	V	100	2	3.5	0.0	0.2
LRVQE3	00	V	100	13	2.7	1.0	-0.4
LRVQE3	12	V	100	11	3.0	-0.1	-0.3
UXK5JT	12	V	100	9	2.5	-0.4	0.7
UXK5JT	00	V	100	8	2.4	-0.6	-0.5
WDK38H	12	V	100	18	2.1	0.4	0.7
XKQLWQ	12	V	100	22	3.9	0.7	-0.4
YLV96W	12	V	100	8	2.7	-0.3	0.6
YLV96W	00	V	100	8	2.3	-0.1	0.0
ZVQEQC	12	V	100	8	2.7	0.3	0.0
ZVQEQC	00	V	100	1	3.0	-2.1	2.1

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

RADIOSONDE MONITORING STATISTICS (EUCOS)

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

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	00	Z	500	30	13.6	-11.1
01001	12	Z	500	31	3.8	-2.2
01028	12	Z	500	31	1.8	0.1
01028	00	Z	500	31	2.3	-0.1
01400	12	Z	500	27	78.2	78.1
01400	00	Z	500	30	77.3	77.2
01415	00	Z	500	30	3.1	0.5
01415	12	Z	500	30	2.7	0.9
02365	12	Z	500	30	2.3	-1.1
02365	00	Z	500	29	2.2	0.3
02591	00	Z	500	28	5.9	5.7
02591	12	Z	500	28	6.7	6.1
02836	00	Z	500	31	2.9	0.8
02836	12	Z	500	31	3.1	1.0
02963	00	Z	500	31	2.6	1.0
02963	12	Z	500	31	2.5	0.0
03005	00	Z	500	29	4.3	-3.4
03005	12	Z	500	31	3.4	-2.7
03238	00	Z	500	31	2.9	0.1
03238	12	Z	500	4	5.0	-3.5
03808	00	Z	500	27	15.5	3.6
03808	12	Z	500	36	3.0	0.7
03918	00	Z	500	31	5.8	5.2
03918	12	Z	500	8	5.8	5.2
03953	00	Z	500	31	5.8	-4.9
03953	12	Z	500	31	5.3	-3.5
04018	00	Z	500	30	2.1	0.3
04018	12	Z	500	30	2.3	-0.2
04220	12	Z	500	31	6.3	-5.0
04220	00	Z	500	31	9.1	-6.9
04270	12	Z	500	31	8.6	-5.7
04270	00	Z	500	30	7.5	-6.8
04320	00	Z	500	31	7.7	4.0
04320	12	Z	500	31	9.6	5.8
04339	00	Z	500	31	8.8	-8.0
04339	12	Z	500	30	9.6	-7.0
04360	00	Z	500	27	5.8	-4.8
04360	12	Z	500	28	4.2	-1.2
06011	12	Z	500	26	6.2	3.0

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06011	00	Z	500	2	9.0	-7.9
06260	12	Z	500	4	2.0	0.5
06260	00	Z	500	31	12.0	1.4
06610	12	Z	500	34	4.3	2.7
06610	00	Z	500	31	3.5	2.3
07110	12	Z	500	30	11.8	-10.9
07110	00	Z	500	32	23.4	-8.4
07510	00	Z	500	28	7.8	6.4
07510	12	Z	500	30	9.4	8.1
07645	00	Z	500	31	4.2	-3.0
07645	12	Z	500	31	4.5	-3.0
07761	12	Z	500	31	3.5	0.3
07761	00	Z	500	31	11.6	1.8
08001	00	Z	500	31	3.8	3.3
08001	12	Z	500	31	4.4	3.6
08221	12	Z	500	31	4.2	3.6
08221	00	Z	500	30	4.8	4.2
08302	12	Z	500	31	5.2	-4.9
08302	00	Z	500	30	4.9	-4.1
08508	12	Z	500	31	6.9	5.8
08522	12	Z	500	31	6.7	6.2
10035	00	Z	500	31	12.6	12.5
10035	12	Z	500	31	10.3	10.1
10393	12	Z	500	31	3.4	-2.2
10393	00	Z	500	31	2.7	-0.1
10410	00	Z	500	30	3.5	-1.8
10410	12	Z	500	30	3.9	-2.6
10739	00	Z	500	31	9.0	6.0
10739	12	Z	500	31	3.9	2.0
11035	12	Z	500	32	5.9	2.2
11035	00	Z	500	31	4.3	-1.3
12982	12	Z	500	31	3.5	1.2
12982	00	Z	500	31	4.1	2.8
16245	12	Z	500	28	3.3	2.4
16245	00	Z	500	28	4.1	3.7
16429	12	Z	500	31	4.9	4.5
16429	00	Z	500	31	5.6	5.3
16622	00	Z	500	30	10.8	10.0
16622	12	Z	500	9	11.9	11.8
16754	00	Z	500	24	6.6	3.9
16754	12	Z	500	7	6.0	5.5
17607	12	Z	500	11	3.1	1.4
26435	12	Z	500	15	2.9	-2.2

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
2EERV	12	Z	500	5	7.3	-4.7
2EERV	00	Z	500	6	15.5	-12.3
60018	12	Z	500	31	4.8	3.1
60018	00	Z	500	30	4.8	3.1
7JUNA4	00	Z	500	1	11.5	-11.5
7JUNA4	12	Z	500	2	9.9	6.1
9ZT9MR	12	Z	500	12	13.6	-12.0
9ZT9MR	00	Z	500	16	34.6	-21.6
ATGU3F	12	Z	500	10	48.0	-17.6
ATGU3F	00	Z	500	9	22.5	-19.1
BPMWB2	12	Z	500	8	9.1	-7.0
BPMWB2	00	Z	500	8	10.6	-9.9
DBLK	12	Z	500	30	17.6	17.5
FPUW5G	12	Z	500	19	11.6	11.1
GQBZLZ	00	Z	500	1	26.8	-26.8
JNKN7J	00	Z	500	8	34.5	34.0
JNKN7J	12	Z	500	11	37.3	36.9
KJFF9X	00	Z	500	12	51.0	-23.3
KJFF9X	12	Z	500	11	4.6	-1.1
KMPLHP	12	Z	500	8	44.1	43.0
KMPLHP	00	Z	500	8	37.8	36.9
LAGY8	00	Z	500	1	52.5	-52.5
LAGY8	12	Z	500	2	8.8	-6.0
LAGZ8	12	Z	500	3	75.5	-75.3
LRQE3	00	Z	500	13	7.0	-3.0
LRQE3	12	Z	500	12	4.6	-0.7
UXK5JT	12	Z	500	10	3.8	0.9
UXK5JT	00	Z	500	10	11.3	-5.5
WDK38H	12	Z	500	22	9.8	-9.3
XKQLWQ	12	Z	500	23	28.2	4.3
YLV96W	12	Z	500	8	7.6	3.7
YLV96W	00	Z	500	9	5.7	-2.7
ZVQEQC	12	Z	500	8	6.3	6.1
ZVQEQC	00	Z	500	1	6.9	6.9

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 : JUL 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	00	V	500	29	1.6	0.1	0.1
01001	12	V	500	31	2.1	-0.1	-0.3
01028	12	V	500	31	1.8	0.3	0.1
01028	00	V	500	30	2.3	0.2	0.4
01400	12	V	500	27	2.2	0.3	-0.1
01400	00	V	500	30	2.6	-0.3	-0.4
01415	00	V	500	29	3.3	0.2	1.0
01415	12	V	500	30	3.0	0.5	1.0
02365	12	V	500	30	2.2	-0.3	0.3
02365	00	V	500	28	2.3	0.2	0.2
02591	00	V	500	27	2.3	-0.2	-0.4
02591	12	V	500	28	1.9	0.3	0.1
02836	00	V	500	30	2.4	0.1	-0.1
02836	12	V	500	31	1.8	-0.1	-0.4
02963	00	V	500	30	1.9	0.0	0.0
02963	12	V	500	31	2.8	-0.2	0.4
03005	00	V	500	28	2.9	-0.1	0.6
03005	12	V	500	31	2.6	-0.1	-0.4
03238	00	V	500	30	2.5	0.4	0.2
03238	12	V	500	4	2.7	-0.1	-0.7
03808	00	V	500	26	2.3	-0.6	0.7
03808	12	V	500	30	3.0	0.5	-0.3
03918	00	V	500	30	2.4	0.2	-0.6
03918	12	V	500	8	2.4	-0.7	-0.1
03953	00	V	500	30	2.1	0.6	0.2
03953	12	V	500	31	2.5	0.2	0.0
04018	00	V	500	29	1.9	-0.3	0.2
04018	12	V	500	30	2.0	0.3	0.4
04220	12	V	500	31	2.4	-0.6	-0.2
04220	00	V	500	30	2.4	0.2	0.1
04270	12	V	500	31	2.3	-0.3	0.1
04270	00	V	500	29	2.4	0.1	-0.5
04320	00	V	500	30	1.8	0.3	0.1
04320	12	V	500	31	2.3	-0.2	0.0
04339	00	V	500	30	1.7	0.0	-0.2
04339	12	V	500	30	2.0	0.4	-0.1
04360	00	V	500	26	2.2	0.0	-0.1
04360	12	V	500	28	2.3	-0.6	-0.3
06011	12	V	500	25	1.9	-0.4	0.5

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06011	00	V	500	2	1.4	0.0	-0.4
06260	12	V	500	4	2.3	-0.1	0.2
06260	00	V	500	30	2.0	0.1	0.2
06610	12	V	500	31	2.0	0.6	0.2
06610	00	V	500	30	2.3	0.5	0.0
07110	12	V	500	30	2.5	0.6	-0.1
07110	00	V	500	28	2.6	0.3	0.0
07510	00	V	500	28	2.4	0.3	0.5
07510	12	V	500	29	2.1	0.4	0.2
07645	00	V	500	29	2.7	0.7	0.1
07645	12	V	500	31	2.5	0.7	0.2
07761	12	V	500	31	2.6	0.8	-0.6
07761	00	V	500	30	2.9	1.3	-0.1
08001	00	V	500	30	1.7	0.0	0.1
08001	12	V	500	31	1.6	0.2	-0.2
08221	12	V	500	31	1.9	0.2	0.4
08221	00	V	500	29	2.3	0.0	0.4
08302	12	V	500	31	2.3	0.5	0.4
08302	00	V	500	29	2.6	0.2	0.0
08508	12	V	500	31	3.0	0.6	-0.3
08522	12	V	500	31	2.1	-0.2	-0.3
10035	00	V	500	30	3.5	0.6	-0.7
10035	12	V	500	31	2.5	0.5	-0.1
10393	12	V	500	31	2.3	0.5	0.1
10393	00	V	500	30	2.3	0.5	0.5
10410	00	V	500	29	2.6	0.8	0.3
10410	12	V	500	30	2.1	0.4	0.1
10739	00	V	500	30	4.7	0.2	0.2
10739	12	V	500	31	3.1	0.9	-0.3
11035	12	V	500	31	2.8	0.1	0.0
11035	00	V	500	30	3.8	0.7	-0.5
12982	12	V	500	31	2.7	0.5	0.3
12982	00	V	500	30	3.4	0.6	-0.2
16245	12	V	500	28	2.6	-0.1	-0.7
16245	00	V	500	27	2.0	0.1	-0.4
16429	12	V	500	31	2.5	1.1	-0.6
16429	00	V	500	30	2.7	0.3	-0.4
16622	00	V	500	29	2.8	0.5	0.4
16622	12	V	500	9	2.0	-0.2	-0.2
16754	00	V	500	23	2.2	0.2	-0.2
16754	12	V	500	7	1.7	0.6	-0.5
17607	12	V	500	9	2.3	0.1	-0.9
26435	12	V	500	15	2.3	0.4	-0.3

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
2EERV	12	V	500	5	2.6	-0.3	1.3
2EERV	00	V	500	6	1.7	0.1	0.5
60018	12	V	500	31	2.7	0.4	0.6
60018	00	V	500	29	2.1	0.2	0.1
7JUNA4	00	V	500	1	1.9	0.1	1.9
7JUNA4	12	V	500	2	2.6	-0.7	0.2
9ZT9MR	12	V	500	12	3.5	-0.5	-0.1
9ZT9MR	00	V	500	16	4.4	1.1	0.2
ATGU3F	12	V	500	10	1.9	0.3	0.3
ATGU3F	00	V	500	9	2.3	0.0	0.8
BPMWB2	12	V	500	8	2.3	1.1	-0.5
BPMWB2	00	V	500	8	2.4	0.3	-0.1
DBLK	12	V	500	30	1.6	0.0	0.0
FPUW5G	12	V	500	19	2.6	1.2	-0.4
GQBZLZ	00	V	500	1	2.9	-1.9	-2.2
JNKN7J	00	V	500	8	4.2	-0.2	-0.4
JNKN7J	12	V	500	11	2.6	1.0	-0.3
KJJF9X	00	V	500	12	10.2	-3.1	0.0
KJJF9X	12	V	500	11	3.0	0.4	0.3
KMPLHP	12	V	500	8	1.8	0.6	0.1
KMPLHP	00	V	500	8	2.3	0.8	-0.7
LAGY8	00	V	500	1	2.5	-0.5	2.4
LAGY8	12	V	500	2	2.5	-1.1	2.1
LAGZ8	12	V	500	3	4.2	-0.3	1.5
LRYQE3	00	V	500	13	2.4	-0.6	0.1
LRYQE3	12	V	500	12	1.8	0.0	0.1
UXK5JT	12	V	500	10	2.1	-0.4	0.2
UXK5JT	00	V	500	10	1.3	0.2	-0.1
WDK38H	12	V	500	22	2.5	-0.5	0.2
XKQLWQ	12	V	500	23	4.3	1.2	-0.4
YLV96W	12	V	500	8	1.8	-0.2	-0.4
YLV96W	00	V	500	9	2.7	0.0	0.3
ZVQEQC	12	V	500	8	2.1	0.9	-0.4
ZVQEQC	00	V	500	1	2.3	1.7	-1.6

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 : JUL 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	00	Z	850	30	12.8	-11.1
01001	12	Z	850	31	4.5	-1.8
01028	12	Z	850	31	2.9	1.7
01028	00	Z	850	31	2.8	1.8
01400	12	Z	850	28	79.6	79.5
01400	00	Z	850	30	79.1	78.9
01415	00	Z	850	30	3.3	2.8
01415	12	Z	850	31	3.4	2.6
02365	12	Z	850	30	2.5	1.4
02365	00	Z	850	29	2.5	1.6
02591	00	Z	850	28	8.6	8.4
02591	12	Z	850	28	8.4	8.2
02836	00	Z	850	31	2.5	1.8
02836	12	Z	850	31	2.5	1.2
02963	00	Z	850	31	3.4	3.2
02963	12	Z	850	31	3.5	2.8
03005	00	Z	850	29	6.8	-3.5
03005	12	Z	850	31	2.7	-1.3
03238	00	Z	850	31	3.1	2.2
03238	12	Z	850	4	4.8	4.5
03808	00	Z	850	27	17.4	5.4
03808	12	Z	850	36	2.8	1.6
03918	00	Z	850	31	6.4	6.2
03918	12	Z	850	8	7.1	6.6
03953	00	Z	850	31	3.0	-1.3
03953	12	Z	850	31	3.1	-1.5
04018	00	Z	850	30	2.3	1.5
04018	12	Z	850	30	2.2	0.9
04220	12	Z	850	31	4.7	-3.8
04220	00	Z	850	31	4.5	-3.7
04270	12	Z	850	31	6.7	-6.0
04270	00	Z	850	31	7.4	-6.8
04320	00	Z	850	31	8.2	5.8
04320	12	Z	850	31	9.2	6.1
04339	00	Z	850	31	7.5	-7.1
04339	12	Z	850	30	7.6	-3.9
04360	00	Z	850	27	4.9	-4.0
04360	12	Z	850	29	4.1	-3.4
06011	12	Z	850	26	3.3	0.7

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06011	00	Z	850	2	2.5	-0.5
06260	12	Z	850	4	2.1	0.4
06260	00	Z	850	31	12.1	1.6
06610	12	Z	850	35	4.0	2.5
06610	00	Z	850	31	2.7	1.6
07110	12	Z	850	30	7.1	-6.6
07110	00	Z	850	32	7.2	-6.9
07510	00	Z	850	28	3.5	2.8
07510	12	Z	850	30	3.7	3.3
07645	00	Z	850	31	7.6	-7.2
07645	12	Z	850	31	6.7	-6.3
07761	12	Z	850	31	2.7	0.8
07761	00	Z	850	31	2.8	-0.5
08001	00	Z	850	31	1.8	0.8
08001	12	Z	850	31	3.2	2.9
08221	12	Z	850	31	2.5	2.0
08221	00	Z	850	30	1.6	0.7
08302	12	Z	850	31	8.1	-7.9
08302	00	Z	850	30	8.6	-8.3
08508	12	Z	850	31	6.1	5.4
08522	12	Z	850	31	4.2	3.7
10035	00	Z	850	31	12.5	12.4
10035	12	Z	850	31	12.7	12.5
10393	12	Z	850	31	2.2	1.1
10393	00	Z	850	31	2.4	0.6
10410	00	Z	850	30	2.1	-1.3
10410	12	Z	850	30	2.1	-0.4
10739	00	Z	850	31	6.5	5.0
10739	12	Z	850	31	5.4	3.3
11035	12	Z	850	32	3.9	3.0
11035	00	Z	850	31	2.5	0.3
12982	12	Z	850	31	4.4	3.6
12982	00	Z	850	31	4.5	3.3
16245	12	Z	850	30	3.8	3.3
16245	00	Z	850	28	3.5	3.1
16429	12	Z	850	31	3.2	2.8
16429	00	Z	850	31	4.4	3.7
16622	00	Z	850	30	11.0	10.5
16622	12	Z	850	9	11.4	11.3
16754	00	Z	850	24	4.7	3.7
16754	12	Z	850	7	3.0	2.5
17607	12	Z	850	11	1.8	0.8
26435	12	Z	850	15	1.7	-0.3

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
2EERV	12	Z	850	5	8.3	-5.5
2EERV	00	Z	850	6	8.0	-6.3
60018	12	Z	850	31	2.9	-0.1
60018	00	Z	850	30	2.8	-1.2
7JUNA4	00	Z	850	2	2.6	-1.6
7JUNA4	12	Z	850	2	1.3	-0.7
9ZT9MR	12	Z	850	15	12.0	-9.3
9ZT9MR	00	Z	850	18	22.1	-4.1
ATGU3F	12	Z	850	10	35.5	-12.3
ATGU3F	00	Z	850	9	24.5	-21.6
BPMWB2	12	Z	850	8	6.6	-5.2
BPMWB2	00	Z	850	8	7.3	-6.3
DBLK	12	Z	850	30	19.1	18.9
FPUW5G	12	Z	850	19	10.8	10.2
GQBZLZ	00	Z	850	1	27.4	-27.4
JNKN7J	00	Z	850	8	39.5	39.3
JNKN7J	12	Z	850	11	39.9	39.8
KJJF9X	00	Z	850	12	31.8	-16.1
KJJF9X	12	Z	850	11	4.2	-1.8
KMPLHP	12	Z	850	8	45.5	44.6
KMPLHP	00	Z	850	8	47.8	46.6
LAGY8	00	Z	850	1	54.7	-54.7
LAGY8	12	Z	850	2	9.7	-2.0
LAGZ8	12	Z	850	3	79.9	-79.9
LRVQE3	00	Z	850	13	6.1	-1.5
LRVQE3	12	Z	850	12	4.1	-1.0
UXK5JT	12	Z	850	10	3.4	1.2
UXK5JT	00	Z	850	10	6.0	-2.7
WDK38H	12	Z	850	22	9.3	-8.7
XKQLWQ	12	Z	850	23	12.7	9.4
YLV96W	12	Z	850	8	5.1	-0.1
YLV96W	00	Z	850	9	4.6	-0.2
ZVQEQC	12	Z	850	8	4.2	4.1
ZVQEQC	00	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 : JUL 2023
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	00	V	850	29	3.9	-0.2	1.3
01001	12	V	850	31	3.2	-0.3	-0.2
01028	12	V	850	31	2.1	-0.3	0.0
01028	00	V	850	30	2.6	0.0	0.3
01400	12	V	850	28	2.0	0.6	-0.2
01400	00	V	850	30	2.2	0.5	0.6
01415	00	V	850	29	2.8	0.3	0.5
01415	12	V	850	30	2.5	-0.2	0.5
02365	12	V	850	30	3.1	0.2	-0.5
02365	00	V	850	28	2.4	-0.4	-0.2
02591	00	V	850	27	2.1	-0.4	0.0
02591	12	V	850	28	2.6	0.0	-0.5
02836	00	V	850	30	2.2	-0.4	0.0
02836	12	V	850	31	2.9	0.8	0.2
02963	00	V	850	30	2.0	-0.4	0.3
02963	12	V	850	31	2.2	-0.3	-0.3
03005	00	V	850	28	2.5	-0.5	-0.2
03005	12	V	850	31	2.9	0.9	-0.2
03238	00	V	850	30	2.5	0.2	-0.4
03238	12	V	850	4	1.5	-0.3	0.6
03808	00	V	850	26	2.1	0.5	0.1
03808	12	V	850	30	2.5	0.5	0.0
03918	00	V	850	30	2.5	0.2	0.4
03918	12	V	850	8	2.4	0.3	-0.2
03953	00	V	850	30	2.6	1.1	0.2
03953	12	V	850	31	2.9	0.3	0.4
04018	00	V	850	29	3.0	-0.3	1.1
04018	12	V	850	30	2.8	-0.2	0.8
04220	12	V	850	31	3.4	-0.9	0.1
04220	00	V	850	30	3.0	0.2	-0.6
04270	12	V	850	31	2.5	0.0	-0.1
04270	00	V	850	30	2.6	-0.5	0.2
04320	00	V	850	30	2.3	-0.1	0.0
04320	12	V	850	31	2.5	-0.8	-0.6
04339	00	V	850	30	2.8	-0.5	-0.8
04339	12	V	850	30	2.6	0.2	-0.2
04360	00	V	850	26	3.5	0.2	0.2
04360	12	V	850	28	4.2	0.8	0.1
06011	12	V	850	25	3.1	-0.5	0.3

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06011	00	V	850	2	4.2	-3.2	1.6
06260	12	V	850	4	3.2	-0.8	-0.9
06260	00	V	850	30	2.3	-0.2	0.2
06610	12	V	850	31	3.3	0.5	0.2
06610	00	V	850	30	2.8	0.6	0.3
07110	12	V	850	30	2.8	0.2	0.0
07110	00	V	850	28	2.3	-0.1	0.2
07510	00	V	850	28	2.3	-0.3	0.5
07510	12	V	850	29	2.2	0.0	0.1
07645	00	V	850	29	3.3	0.1	1.5
07645	12	V	850	31	3.1	-0.2	0.1
07761	12	V	850	31	2.5	-0.1	-0.2
07761	00	V	850	30	2.6	0.4	-0.1
08001	00	V	850	30	2.9	0.1	0.7
08001	12	V	850	31	2.2	-0.1	0.4
08221	12	V	850	31	2.1	0.4	0.6
08221	00	V	850	29	2.8	0.3	0.1
08302	12	V	850	31	2.6	0.6	-0.2
08302	00	V	850	29	2.6	0.1	0.5
08508	12	V	850	31	2.5	0.2	-0.7
08522	12	V	850	31	2.9	-1.1	0.0
10035	00	V	850	30	2.5	-0.3	0.7
10035	12	V	850	31	2.2	-0.3	-0.1
10393	12	V	850	31	2.9	0.1	-0.5
10393	00	V	850	30	2.7	0.2	-0.4
10410	00	V	850	29	2.5	0.4	-0.1
10410	12	V	850	30	2.7	0.9	-0.1
10739	00	V	850	30	4.6	0.5	-0.5
10739	12	V	850	31	3.4	0.0	0.5
11035	12	V	850	31	3.3	0.5	0.6
11035	00	V	850	30	3.3	0.8	-0.4
12982	12	V	850	31	3.3	0.1	0.0
12982	00	V	850	30	4.3	0.5	-0.2
16245	12	V	850	29	2.7	0.2	0.4
16245	00	V	850	27	2.6	1.0	0.0
16429	12	V	850	31	1.8	0.1	-0.4
16429	00	V	850	30	2.5	0.6	1.1
16622	00	V	850	29	3.5	0.9	0.1
16622	12	V	850	9	2.1	-0.5	-0.3
16754	00	V	850	23	2.5	0.2	-0.3
16754	12	V	850	7	3.4	0.6	0.6
17607	12	V	850	11	3.2	1.3	1.1
26435	12	V	850	15	3.3	0.6	0.1

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
2EERV	12	V	850	5	3.3	-0.5	1.5
2EERV	00	V	850	6	2.1	0.2	-0.2
60018	12	V	850	31	4.7	0.2	1.5
60018	00	V	850	29	3.7	0.8	1.5
7JUNA4	00	V	850	2	2.8	-0.4	-2.0
7JUNA4	12	V	850	2	1.7	-0.6	1.1
9ZT9MR	12	V	850	15	5.6	0.2	-0.3
9ZT9MR	00	V	850	18	7.2	2.0	-0.9
ATGU3F	12	V	850	10	2.6	-0.1	-0.7
ATGU3F	00	V	850	9	2.9	-0.2	-0.3
BPMWB2	12	V	850	8	1.7	0.0	0.0
BPMWB2	00	V	850	8	2.3	0.1	0.8
DBLK	12	V	850	30	2.5	-0.6	0.4
FPUW5G	12	V	850	19	2.7	0.1	0.1
GQBZLZ	00	V	850	1	1.3	0.1	1.3
JNKN7J	00	V	850	8	3.3	-1.5	0.6
JNKN7J	12	V	850	11	1.8	0.4	0.0
KJFF9X	00	V	850	12	6.0	1.8	0.1
KJFF9X	12	V	850	11	6.5	2.6	-0.9
KMPLHP	12	V	850	8	2.3	0.2	0.1
KMPLHP	00	V	850	8	2.6	0.3	0.2
LAGY8	00	V	850	1	4.9	3.3	-3.6
LAGY8	12	V	850	2	2.6	-0.3	2.4
LAGZ8	12	V	850	3	1.6	-1.3	0.7
LRYQE3	00	V	850	13	2.4	-0.6	0.8
LRYQE3	12	V	850	12	2.1	-0.6	-0.5
UXK5JT	12	V	850	10	1.8	0.4	-0.6
UXK5JT	00	V	850	10	2.0	0.3	-1.1
WDK38H	12	V	850	22	2.1	-0.3	0.1
XKQLWQ	12	V	850	23	4.0	1.5	0.3
YLV96W	12	V	850	8	1.6	0.8	-0.2
YLV96W	00	V	850	9	2.8	-0.4	0.1
ZVQEQC	12	V	850	8	2.0	1.1	-0.3
ZVQEQC	00	V	850	1	2.3	-0.5	2.2

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 : JUL 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	1488	0	0.3	-0.2	0.3
1300001	99	P	SUR	11	-23	612	0	0.5	0.2	0.5
1300008	99	P	SUR	15	-38	616	0	0.3	0.1	0.3
1300130	99	P	SUR	28	-16	737	0	0.3	0.2	0.4
1300131	99	P	SUR	28	-17	737	0	0.4	0.3	0.5
1301608	99	P	SUR	31	-55	742	0	0.3	0.2	0.4
1301619	99	P	SUR	39	-25	744	0	0.2	-0.2	0.3
1301629	99	P	SUR	20	-37	744	0	0.3	0.1	0.3
1301700	99	P	SUR	24	-56	744	0	0.3	0.0	0.3
1301706	99	P	SUR	20	-64	744	0	0.3	0.2	0.4
1301712	99	P	SUR	20	-57	743	0	0.3	0.2	0.3
1301713	99	P	SUR	17	-62	744	0	0.3	0.3	0.4
1301714	99	P	SUR	23	-53	744	0	0.4	0.3	0.5
1301718	99	P	SUR	26	-45	744	0	0.3	0.3	0.4
1301719	99	P	SUR	23	-59	743	0	0.3	0.8	0.8
1301720	99	P	SUR	23	-34	742	0	0.3	0.1	0.3
1301723	99	P	SUR	22	-21	742	0	0.4	0.9	1.0
1301725	99	P	SUR	22	-29	743	0	0.3	0.3	0.4
1301726	99	P	SUR	18	-33	743	0	0.3	0.2	0.3
1301731	99	P	SUR	22	-29	744	0	0.3	0.4	0.5
1301735	99	P	SUR	31	-40	743	0	0.3	-0.6	0.6
1301736	99	P	SUR	28	-43	742	0	0.3	0.3	0.4
1301737	99	P	SUR	27	-60	744	0	0.4	0.2	0.4
1301767	99	P	SUR	33	-17	744	0	0.2	-0.3	0.4
1301769	99	P	SUR	32	-13	414	0	0.2	1.3	1.4
1301770	99	P	SUR	32	-13	744	0	0.2	0.2	0.3
1301771	99	P	SUR	33	-13	744	0	0.2	0.2	0.3
1301778	99	P	SUR	30	-20	743	0	0.2	0.2	0.3
1301779	99	P	SUR	18	-50	535	0	0.3	0.1	0.3
1301781	99	P	SUR	26	-25	744	0	0.3	0.3	0.4
1301783	99	P	SUR	18	-55	494	0	0.3	0.5	0.5
1301792	99	P	SUR	18	-36	721	0	0.3	-0.6	0.6
1301793	99	P	SUR	56	-18	737	0	0.3	0.1	0.4
1301794	99	P	SUR	44	-20	739	0	0.3	0.2	0.4
1301795	99	P	SUR	11	-31	720	0	0.4	-0.1	0.4
1301796	99	P	SUR	14	-30	719	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
1301797	99	P	SUR	15	-31	718	0	0.3	0.2	0.4
1301798	99	P	SUR	37	-23	743	0	0.2	0.3	0.4
1301799	99	P	SUR	29	-26	743	0	0.2	0.2	0.3
1501638	99	P	SUR	11	-22	744	0	0.5	-0.1	0.5
1801681	99	P	SUR	36	14	564	0	0.3	0.1	0.3
1801735	99	P	SUR	50	-9	743	0	0.2	0.2	0.3
2302623	99	P	SUR	45	34	10	0	0.3	-4.8	4.8
2302627	99	P	SUR	45	34	11	0	0.3	-4.8	4.8
2302635	99	P	SUR	45	34	10	0	0.3	-5.2	5.2
2302637	99	P	SUR	45	34	12	0	0.3	-4.9	4.9
2601716	99	P	SUR	85	35	46	0	0.4	0.1	0.4
2801988	99	P	SUR	46	-1	2	0	0.0	-0.9	0.9
2802074	99	P	SUR	56	-60	386	0	0.4	0.3	0.5
2802075	99	P	SUR	55	-56	548	0	0.3	-0.2	0.4
3801550	99	P	SUR	84	-19	743	0	0.4	-0.7	0.8
3801586	99	P	SUR	75	17	744	0	0.3	-0.5	0.5
3801588	99	P	SUR	74	17	744	0	0.3	0.2	0.4
3801596	99	P	SUR	36	-39	743	0	0.5	0.0	0.5
4100040	99	P	SUR	15	-53	4442	0	0.3	-0.3	0.5
4100043	99	P	SUR	21	-65	4440	0	0.3	-0.2	0.4
4100044	99	P	SUR	22	-59	4442	0	0.3	-0.4	0.5
4100046	99	P	SUR	24	-68	4445	0	0.4	0.2	0.5
4100048	99	P	SUR	32	-70	4444	0	0.4	-0.1	0.4
4100049	99	P	SUR	28	-63	4444	0	0.4	-0.1	0.4
4100052	99	P	SUR	18	-65	4387	0	0.3	-1.0	1.0
4100053	99	P	SUR	18	-66	4430	0	0.4	-0.6	0.7
4100056	99	P	SUR	18	-65	4438	0	0.3	-0.8	0.9
4100139	99	P	SUR	20	-38	744	0	0.3	0.2	0.3
4100300	99	P	SUR	16	-57	713	0	0.4	0.1	0.4
4101616	99	P	SUR	29	-36	317	1	0.7	-0.1	0.7
4101618	99	P	SUR	30	-51	607	0	0.3	0.3	0.4
4101663	99	P	SUR	26	-34	672	0	0.3	0.1	0.3
4101665	99	P	SUR	69	5	743	0	0.4	0.0	0.4
4101696	99	P	SUR	27	-33	744	0	0.3	0.0	0.3
4101717	99	P	SUR	16	-62	744	0	0.4	-1.3	1.3
4101719	99	P	SUR	26	-19	744	1	1.0	0.2	1.0
4101724	99	P	SUR	33	-67	624	6	1.3	-0.2	1.3
4101725	99	P	SUR	18	-63	744	0	0.3	0.1	0.3
4101727	99	P	SUR	26	-26	744	0	0.3	0.1	0.3
4101728	99	P	SUR	34	-47	742	0	0.3	0.3	0.5
4101729	99	P	SUR	29	-50	744	0	0.3	0.1	0.3
4101730	99	P	SUR	11	-22	744	0	0.5	0.2	0.5
4101743	99	P	SUR	43	-26	744	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
4101753	99	P	SUR	30	-44	744	0	0.5	0.5	0.7
4101755	99	P	SUR	34	-58	744	0	0.4	0.3	0.5
4101756	99	P	SUR	12	-62	663	0	0.4	-0.8	0.9
4101842	99	P	SUR	69	16	569	0	0.5	-0.3	0.6
4101843	99	P	SUR	74	19	744	0	0.3	0.0	0.3
4101845	99	P	SUR	69	1	743	0	0.3	0.1	0.3
4101851	99	P	SUR	27	-56	744	0	0.4	-0.2	0.4
4102547	99	P	SUR	24	-61	740	0	0.3	0.5	0.6
4102559	99	P	SUR	42	-62	743	0	0.4	-0.2	0.5
4102561	99	P	SUR	14	-61	173	0	0.4	0.1	0.4
4102636	99	P	SUR	30	-66	721	0	0.4	0.4	0.6
41040	99	P	SUR	15	-53	741	0	0.4	-0.3	0.5
41043	99	P	SUR	21	-65	743	0	0.3	-0.2	0.4
41044	99	P	SUR	22	-59	743	0	0.3	-0.5	0.5
41046	99	P	SUR	24	-68	744	0	0.4	0.3	0.5
41048	99	P	SUR	32	-70	738	0	0.4	-0.1	0.4
41049	99	P	SUR	28	-63	740	0	0.4	-0.1	0.4
41052	99	P	SUR	18	-65	737	0	0.4	-0.9	1.0
41053	99	P	SUR	19	-66	744	0	0.4	-0.6	0.7
41056	99	P	SUR	18	-66	743	0	0.4	-0.9	0.9
4200059	99	P	SUR	15	-67	4442	0	0.4	-0.3	0.5
4200060	99	P	SUR	16	-63	4444	0	0.3	-0.3	0.5
4200085	99	P	SUR	18	-67	3568	0	0.4	-0.7	0.8
42059	99	P	SUR	15	-68	739	0	0.4	-0.3	0.5
42060	99	P	SUR	16	-63	735	0	0.4	-0.3	0.5
42085	99	P	SUR	18	-67	711	0	0.4	-0.8	0.8
4400005	99	P	SUR	43	-69	4446	0	0.4	-0.3	0.5
4400008	99	P	SUR	40	-69	4435	0	0.4	-0.6	0.8
4400011	99	P	SUR	41	-67	4443	0	0.4	-0.5	0.7
4400032	99	P	SUR	44	-69	739	0	0.4	-1.0	1.0
4400033	99	P	SUR	44	-69	739	0	0.4	-0.9	0.9
4400150	99	P	SUR	43	-64	716	0	0.4	0.0	0.4
4400488	99	P	SUR	45	-61	569	0	0.4	0.1	0.4
4400489	99	P	SUR	45	-61	577	0	0.4	0.1	0.4
44005	99	P	SUR	43	-69	741	0	0.4	-0.3	0.5
44008	99	P	SUR	41	-69	740	0	0.4	-0.6	0.7
44011	99	P	SUR	41	-67	736	0	0.4	-0.5	0.7
4401581	99	P	SUR	32	-66	743	0	0.4	0.1	0.4
4401582	99	P	SUR	26	-33	744	0	0.3	0.5	0.6
4401584	99	P	SUR	30	-45	744	0	0.3	0.1	0.3
4401585	99	P	SUR	23	-46	743	0	0.3	0.0	0.3
4401587	99	P	SUR	79	9	744	0	0.3	0.2	0.4
4401588	99	P	SUR	64	8	743	0	0.3	0.0	0.3

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
4401864	99	P	SUR	24	-66	743	0	0.4	0.0	0.4
4401867	99	P	SUR	36	-48	212	0	0.2	0.1	0.3
4401872	99	P	SUR	27	-68	644	0	0.4	0.2	0.4
4402603	99	P	SUR	68	12	744	0	0.4	-0.3	0.5
4402606	99	P	SUR	65	6	742	0	0.3	0.2	0.3
4402613	99	P	SUR	38	-18	744	0	0.4	-0.2	0.4
4402618	99	P	SUR	30	-59	744	0	0.4	0.4	0.5
4402656	99	P	SUR	30	-34	743	0	0.3	0.3	0.4
4402660	99	P	SUR	24	-38	744	0	0.3	0.4	0.5
4402663	99	P	SUR	45	-10	744	0	0.2	-0.1	0.2
4402670	99	P	SUR	20	-47	743	0	0.3	-0.1	0.3
4402672	99	P	SUR	21	-51	743	0	0.3	0.0	0.3
4402674	99	P	SUR	22	-65	744	0	0.4	0.5	0.6
4402675	99	P	SUR	23	-36	744	0	0.3	0.1	0.3
4402676	99	P	SUR	32	-36	744	0	0.3	0.2	0.4
4402721	99	P	SUR	45	-13	744	0	0.2	0.2	0.3
4402726	99	P	SUR	54	-34	743	0	0.3	0.1	0.3
4402727	99	P	SUR	65	10	744	0	0.3	0.0	0.3
4402729	99	P	SUR	50	-49	167	0	0.4	0.1	0.4
4402730	99	P	SUR	50	-50	180	0	0.4	0.0	0.4
4402731	99	P	SUR	48	-53	463	3	0.4	-0.2	0.4
4402732	99	P	SUR	48	-34	744	0	0.3	0.0	0.3
4402733	99	P	SUR	45	-52	744	0	0.4	0.1	0.4
4402735	99	P	SUR	46	-44	744	0	0.3	-0.2	0.4
4402736	99	P	SUR	44	-27	742	0	0.2	0.0	0.2
4402737	99	P	SUR	52	-46	742	0	0.3	-0.2	0.4
4402738	99	P	SUR	55	-53	116	0	0.4	-1.0	1.1
4402739	99	P	SUR	50	-49	177	0	0.3	0.1	0.3
4402740	99	P	SUR	55	-53	112	0	0.4	0.1	0.4
4402741	99	P	SUR	50	-48	154	0	0.3	0.2	0.4
4402742	99	P	SUR	49	-25	744	0	0.3	-0.2	0.3
4402743	99	P	SUR	42	-49	743	0	0.3	-0.4	0.5
4402744	99	P	SUR	43	-62	741	0	0.4	0.1	0.4
4402746	99	P	SUR	48	-22	744	0	0.3	-0.1	0.3
4402747	99	P	SUR	47	-41	744	0	0.3	0.1	0.3
4402749	99	P	SUR	54	-39	744	0	0.3	0.0	0.3
4402750	99	P	SUR	55	-41	744	0	0.3	-0.4	0.5
4402878	99	P	SUR	40	-62	734	0	0.5	0.5	0.7
4402879	99	P	SUR	36	-59	702	0	0.4	0.6	0.7
4402880	99	P	SUR	38	-36	675	0	0.4	0.5	0.7
4402881	99	P	SUR	49	-27	99	0	0.4	0.2	0.5
4402882	99	P	SUR	28	-65	735	0	0.4	0.7	0.8
44032	99	P	SUR	44	-69	740	0	0.4	-1.0	1.0

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
44033	99	P	SUR	44	-69	740	0	0.4	-0.9	0.9
4403557	99	P	SUR	59	6	728	0	0.4	0.0	0.4
4403558	99	P	SUR	48	-11	741	0	0.3	0.0	0.3
4403568	99	P	SUR	39	-40	740	0	0.3	0.3	0.4
4403569	99	P	SUR	47	-27	740	0	0.2	-0.1	0.3
44078	99	P	SUR	60	-40	62	0	0.4	0.0	0.4
44150	99	P	SUR	43	-64	717	0	0.4	0.0	0.4
44258	99	P	SUR	45	-63	729	0	0.3	0.0	0.3
44488	99	P	SUR	45	-61	726	0	0.4	0.1	0.4
44489	99	P	SUR	46	-61	733	0	0.4	0.1	0.4
4601782	99	P	SUR	35	-17	744	0	0.2	0.5	0.5
4601812	99	P	SUR	79	-8	743	0	0.4	0.1	0.4
4601818	99	P	SUR	88	-19	744	0	0.3	0.2	0.4
4701518	99	P	SUR	75	-19	391	0	0.4	-0.3	0.5
4701738	99	P	SUR	70	-67	724	724	0.0	0.0	0.0
4801663	99	P	SUR	84	-55	708	0	0.6	-0.3	0.7
4801723	99	P	SUR	77	22	744	0	0.4	-0.1	0.4
4801761	99	P	SUR	66	-20	104	0	1.5	0.8	1.7
4801763	99	P	SUR	84	-30	736	0	0.5	-0.8	1.0
4801771	99	P	SUR	67	-57	743	0	0.3	-0.1	0.4
4802506	99	P	SUR	59	-32	742	0	0.4	0.0	0.4
4802602	99	P	SUR	63	-39	709	0	0.3	0.1	0.3
4802603	99	P	SUR	88	35	708	0	0.3	-0.2	0.4
4802663	99	P	SUR	70	-60	743	0	0.4	-0.2	0.5
4803978	99	P	SUR	84	-21	742	0	0.5	-0.5	0.7
5802034	99	P	SUR	49	-11	744	0	0.3	-0.1	0.3
5802068	99	P	SUR	55	-56	547	0	0.3	0.2	0.4
6100001	99	P	SUR	43	8	519	0	0.4	0.3	0.5
6100002	99	P	SUR	42	5	728	0	0.4	0.0	0.4
6100196	99	P	SUR	42	4	737	0	0.4	0.2	0.5
6100197	99	P	SUR	40	4	392	0	0.4	0.6	0.7
6100198	99	P	SUR	37	-2	737	0	0.4	0.6	0.7
6100280	99	P	SUR	41	1	736	0	0.5	0.5	0.7
6100281	99	P	SUR	40	0	735	0	0.5	0.5	0.7
6100417	99	P	SUR	38	0	737	0	0.3	0.6	0.7
6100430	99	P	SUR	40	2	733	0	0.4	0.3	0.5
6101007	99	P	SUR	36	25	42	0	0.4	-0.3	0.5
6101009	99	P	SUR	35	25	132	0	0.4	-0.2	0.5
6101031	99	P	SUR	42	8	742	0	0.4	0.1	0.4
6102732	99	P	SUR	33	19	744	0	0.3	0.1	0.3
6102809	99	P	SUR	34	16	733	0	1.3	-2.5	2.8
6102810	99	P	SUR	40	3	742	0	0.5	0.0	0.5
6102812	99	P	SUR	40	6	742	0	0.4	-0.1	0.4

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
6200001	99	P	SUR	45	-5	740	0	0.2	0.1	0.2
6200024	99	P	SUR	44	-3	714	0	0.3	0.4	0.5
6200025	99	P	SUR	44	-6	725	0	0.3	0.5	0.5
6200029	99	P	SUR	49	-12	736	0	0.3	-0.3	0.4
6200050	99	P	SUR	50	-4	738	0	0.3	0.1	0.3
6200081	99	P	SUR	51	-13	741	0	0.3	0.0	0.3
6200082	99	P	SUR	44	-8	733	0	0.3	0.4	0.5
6200083	99	P	SUR	43	-9	730	0	0.3	0.3	0.5
6200084	99	P	SUR	42	-9	735	0	0.3	0.5	0.6
6200085	99	P	SUR	36	-7	736	0	0.3	0.5	0.6
6200086	99	P	SUR	55	6	358	0	0.3	-0.2	0.4
6200087	99	P	SUR	55	7	374	0	0.3	-0.3	0.5
6200091	99	P	SUR	53	-5	739	0	0.3	0.0	0.3
6200092	99	P	SUR	51	-11	739	0	0.3	-0.1	0.3
6200093	99	P	SUR	55	-10	738	0	0.3	-0.1	0.3
6200094	99	P	SUR	52	-7	739	0	0.3	0.0	0.3
6200095	99	P	SUR	53	-16	739	0	0.4	-0.2	0.4
6200103	99	P	SUR	50	-3	739	0	0.3	-0.2	0.4
6200163	99	P	SUR	47	-8	738	0	0.3	-0.1	0.3
6200191	99	P	SUR	41	-10	692	0	0.3	-0.3	0.5
6200192	99	P	SUR	40	-10	691	0	0.4	0.3	0.5
6200199	99	P	SUR	40	-9	687	0	0.3	0.0	0.3
6200200	99	P	SUR	36	-8	380	0	0.3	-0.3	0.4
6201065	99	P	SUR	54	7	696	0	0.3	1.2	1.2
6201081	99	P	SUR	38	-9	691	0	0.3	-0.4	0.5
6202597	99	P	SUR	46	-37	744	0	0.3	0.0	0.3
6202598	99	P	SUR	40	-39	744	0	0.3	0.0	0.3
6202623	99	P	SUR	72	40	744	0	0.4	-0.3	0.5
6202627	99	P	SUR	67	13	667	0	0.3	-0.2	0.3
6202637	99	P	SUR	67	-8	744	0	0.3	0.0	0.3
6202639	99	P	SUR	30	-35	709	0	0.3	0.0	0.3
6202640	99	P	SUR	35	-23	662	0	0.2	-0.1	0.2
6202644	99	P	SUR	41	-35	487	0	0.7	0.1	0.7
62029	99	P	SUR	49	-12	1481	0	0.3	-0.2	0.4
6203516	99	P	SUR	45	-18	735	0	0.3	-0.1	0.3
6203607	99	P	SUR	34	-30	742	0	0.2	0.2	0.3
6203612	99	P	SUR	29	-58	744	0	0.4	0.4	0.6
6203613	99	P	SUR	48	-21	744	0	0.3	0.0	0.3
6203616	99	P	SUR	28	-69	743	0	0.4	0.3	0.5
6203621	99	P	SUR	27	-29	743	0	0.3	0.1	0.3
6203624	99	P	SUR	33	-55	744	0	0.4	0.0	0.4
6203625	99	P	SUR	29	-29	743	0	0.3	-0.1	0.3
6203632	99	P	SUR	25	-49	743	0	0.3	0.3	0.4

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
6203633	99	P	SUR	68	15	63	12	3.1	-2.0	3.7
6203634	99	P	SUR	27	-34	744	0	0.3	0.4	0.5
6203639	99	P	SUR	32	-25	744	0	0.2	-0.1	0.2
6203640	99	P	SUR	28	-68	743	0	0.4	0.0	0.5
6203651	99	P	SUR	46	-23	744	0	0.3	0.1	0.3
6203658	99	P	SUR	88	16	30	30	0.0	0.0	0.0
6203659	99	P	SUR	89	22	171	0	0.4	0.1	0.5
6203660	99	P	SUR	89	22	170	0	0.5	0.1	0.5
6203665	99	P	SUR	87	35	9	0	0.1	0.4	0.4
6203669	99	P	SUR	83	10	168	0	0.4	0.0	0.4
6203730	99	P	SUR	24	-69	744	0	0.4	0.5	0.6
6203737	99	P	SUR	21	-53	741	0	0.3	0.5	0.5
6203741	99	P	SUR	62	-1	744	0	0.3	0.0	0.3
6203744	99	P	SUR	69	14	743	0	0.3	0.2	0.4
6203753	99	P	SUR	59	-49	744	0	0.4	-0.3	0.5
6203755	99	P	SUR	32	-12	743	0	0.4	-0.1	0.4
6203765	99	P	SUR	27	-52	81	0	0.3	0.5	0.5
6203768	99	P	SUR	30	-21	743	0	0.2	0.4	0.5
6203771	99	P	SUR	24	-36	744	0	0.3	0.1	0.3
6203772	99	P	SUR	28	-68	744	0	0.4	0.3	0.5
6203773	99	P	SUR	31	-54	744	0	0.3	-0.2	0.4
6203776	99	P	SUR	27	-29	476	0	0.3	0.1	0.3
6203825	99	P	SUR	68	-10	744	0	0.3	0.1	0.3
6203827	99	P	SUR	66	12	744	0	0.3	-0.1	0.3
6203838	99	P	SUR	21	-67	744	0	0.4	0.6	0.7
6203839	99	P	SUR	29	-56	744	0	0.3	0.0	0.3
6203840	99	P	SUR	23	-42	743	0	0.3	0.3	0.4
6203842	99	P	SUR	34	-21	743	0	0.2	0.1	0.2
6203844	99	P	SUR	43	-22	744	0	0.3	0.3	0.5
6203845	99	P	SUR	55	-10	744	0	0.3	0.0	0.3
6203846	99	P	SUR	32	-29	743	0	0.2	0.0	0.2
6203848	99	P	SUR	53	-26	743	0	0.4	0.0	0.4
6203849	99	P	SUR	25	-29	744	0	0.3	0.3	0.4
6203853	99	P	SUR	70	11	744	0	0.3	0.0	0.3
6203854	99	P	SUR	63	-24	744	0	0.3	0.2	0.3
6203855	99	P	SUR	68	12	743	0	0.3	-0.3	0.4
6203856	99	P	SUR	61	5	140	0	0.3	0.1	0.3
6203859	99	P	SUR	18	-22	744	0	4.3	-2.4	4.9
6203861	99	P	SUR	24	-26	744	0	0.3	0.3	0.4
6203864	99	P	SUR	65	1	744	0	0.3	0.0	0.3
6203865	99	P	SUR	64	-32	743	0	0.3	0.1	0.3
6203866	99	P	SUR	69	15	744	0	0.3	0.1	0.3
6204603	99	P	SUR	40	5	724	0	0.4	0.4	0.6

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
6204604	99	P	SUR	40	1	734	0	0.4	-0.7	0.8
6204605	99	P	SUR	40	4	735	570	1.0	13.7	13.7
6204607	99	P	SUR	40	3	733	0	0.4	0.1	0.4
6204608	99	P	SUR	40	1	741	0	0.4	0.4	0.5
6204609	99	P	SUR	39	1	741	0	0.4	-0.4	0.6
62050	99	P	SUR	50	-4	1485	0	0.3	0.0	0.3
62081	99	P	SUR	51	-13	1483	0	0.3	-0.1	0.3
62091	99	P	SUR	53	-5	740	0	0.3	0.0	0.3
62092	99	P	SUR	51	-11	740	0	0.3	-0.1	0.3
62093	99	P	SUR	55	-10	739	0	0.3	-0.1	0.3
62094	99	P	SUR	52	-7	740	0	0.3	0.0	0.3
62095	99	P	SUR	53	-16	740	0	0.4	-0.2	0.4
62102	99	P	SUR	58	2	1486	0	0.3	0.2	0.4
62103	99	P	SUR	50	-3	1483	0	0.3	-0.2	0.4
62104	99	P	SUR	57	1	1485	0	0.3	0.1	0.3
62105	99	P	SUR	55	-13	1479	0	0.3	-0.2	0.4
62107	99	P	SUR	50	-6	1356	0	0.3	-0.1	0.3
62112	99	P	SUR	58	0	1488	0	0.3	0.4	0.5
62113	99	P	SUR	58	0	1486	0	0.3	0.0	0.3
62114	99	P	SUR	58	0	1464	0	0.3	0.4	0.5
62115	99	P	SUR	58	-3	1458	0	0.3	0.2	0.4
62116	99	P	SUR	58	1	1487	0	0.3	0.1	0.3
62118	99	P	SUR	58	1	1484	0	0.3	0.6	0.6
62119	99	P	SUR	57	2	1488	0	0.4	0.2	0.4
62120	99	P	SUR	56	2	1488	0	0.3	0.0	0.3
62121	99	P	SUR	54	3	1444	0	0.4	0.4	0.6
62122	99	P	SUR	57	2	1479	0	0.4	0.3	0.4
62124	99	P	SUR	54	-4	1374	0	0.3	0.2	0.3
62127	99	P	SUR	54	1	1488	0	0.3	0.8	0.8
62129	99	P	SUR	58	0	1487	0	0.3	0.1	0.3
62130	99	P	SUR	59	1	1280	0	0.3	0.0	0.3
62131	99	P	SUR	54	1	1486	0	0.3	0.6	0.7
62132	99	P	SUR	56	2	1488	0	0.3	0.5	0.6
62133	99	P	SUR	57	1	1488	0	0.3	0.2	0.4
62134	99	P	SUR	58	1	1478	0	0.3	0.7	0.8
62140	99	P	SUR	57	1	1487	0	0.3	0.2	0.4
62141	99	P	SUR	56	-3	662	0	0.4	0.3	0.5
62143	99	P	SUR	58	2	1486	0	0.5	0.8	1.0
62144	99	P	SUR	53	2	1488	0	0.4	0.5	0.6
62145	99	P	SUR	53	3	1488	0	0.3	0.5	0.6
62146	99	P	SUR	57	2	1488	0	0.4	0.2	0.4
62148	99	P	SUR	54	2	1488	0	0.4	0.9	1.0
62149	99	P	SUR	54	1	1488	0	0.3	0.9	0.9

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
62151	99	P	SUR	57	2	854	0	0.2	0.3	0.4
62152	99	P	SUR	57	2	1488	0	0.3	0.5	0.6
62153	99	P	SUR	57	2	530	0	0.2	0.4	0.4
62154	99	P	SUR	56	2	1488	0	0.3	0.2	0.3
62155	99	P	SUR	58	1	1487	0	0.3	0.6	0.7
62157	99	P	SUR	58	0	1486	0	0.3	0.1	0.3
62160	99	P	SUR	57	2	1482	0	0.3	0.3	0.4
62161	99	P	SUR	58	1	1382	0	0.4	-0.1	0.4
62162	99	P	SUR	57	1	1465	0	0.3	0.2	0.3
62163	99	P	SUR	48	-9	1479	0	0.3	-0.1	0.3
62164	99	P	SUR	57	1	1488	0	0.3	0.4	0.5
62165	99	P	SUR	54	1	1488	0	0.3	0.3	0.4
62168	99	P	SUR	58	1	1486	0	0.3	0.2	0.3
62170	99	P	SUR	51	2	1485	0	0.3	0.0	0.3
62297	99	P	SUR	59	2	1487	0	0.3	0.1	0.3
62302	99	P	SUR	61	-2	1480	0	0.3	0.1	0.3
62304	99	P	SUR	51	2	1485	0	0.4	0.0	0.4
62305	99	P	SUR	50	0	1486	0	0.3	0.1	0.3
62442	99	P	SUR	49	-16	918	0	0.3	-0.2	0.4
6301001	99	P	SUR	64	5	740	0	0.2	-0.1	0.3
6301004	99	P	SUR	72	20	603	0	0.3	-0.3	0.4
6301572	99	P	SUR	53	-31	716	0	2.6	-0.5	2.6
6301575	99	P	SUR	54	-40	744	0	0.3	0.1	0.3
6301577	99	P	SUR	67	-7	744	0	0.3	-0.2	0.3
63055	99	P	SUR	61	2	1468	0	0.3	0.0	0.3
63056	99	P	SUR	60	2	1471	0	0.3	0.3	0.5
63057	99	P	SUR	59	2	1485	0	0.3	0.0	0.3
63058	99	P	SUR	53	2	805	0	0.3	0.2	0.3
63059	99	P	SUR	58	-1	1488	0	0.3	0.6	0.7
63101	99	P	SUR	61	1	1485	0	0.3	0.2	0.3
63102	99	P	SUR	61	1	1480	0	0.3	0.0	0.3
63103	99	P	SUR	61	1	1487	0	0.3	0.2	0.4
63108	99	P	SUR	61	2	1488	0	0.3	-0.1	0.3
63109	99	P	SUR	60	2	1484	0	0.3	-0.2	0.4
63110	99	P	SUR	60	2	1488	0	0.3	-0.2	0.4
63111	99	P	SUR	61	2	1488	0	0.3	-0.1	0.3
63112	99	P	SUR	61	1	1487	0	0.3	-0.2	0.4
63115	99	P	SUR	62	1	1488	0	0.3	0.2	0.4
63117	99	P	SUR	61	1	1488	0	0.3	0.3	0.4
63118	99	P	SUR	58	1	1484	0	0.4	-0.1	0.4
6400045	99	P	SUR	59	-12	734	0	0.3	-0.2	0.4
6400046	99	P	SUR	60	-4	738	0	0.3	-0.2	0.3
6401583	99	P	SUR	64	-34	744	0	0.3	0.3	0.4

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
6401584	99	P	SUR	70	-1	744	0	0.3	0.2	0.3
6401587	99	P	SUR	75	-19	744	0	0.4	-0.2	0.5
6401590	99	P	SUR	70	37	743	0	0.3	0.1	0.4
6401592	99	P	SUR	74	22	744	0	0.4	0.2	0.4
6401759	99	P	SUR	56	-36	743	0	0.4	-0.2	0.4
6401762	99	P	SUR	62	-2	744	0	0.2	0.2	0.3
6401763	99	P	SUR	66	12	743	0	0.3	0.1	0.3
6402539	99	P	SUR	69	34	732	0	0.3	-0.2	0.4
6402551	99	P	SUR	53	-22	743	0	0.3	0.2	0.4
6402594	99	P	SUR	53	-27	496	0	0.3	0.2	0.3
6402597	99	P	SUR	57	-24	743	0	0.4	0.0	0.4
6402615	99	P	SUR	20	-60	744	0	0.3	0.3	0.5
6402616	99	P	SUR	29	-41	742	0	0.4	-0.1	0.4
6402617	99	P	SUR	25	-48	742	0	0.3	0.5	0.6
6402618	99	P	SUR	23	-43	744	0	0.3	0.3	0.4
6402619	99	P	SUR	37	-14	744	0	0.2	0.2	0.3
6402620	99	P	SUR	43	-5	229	1	0.3	0.5	0.6
6402621	99	P	SUR	37	-11	744	0	0.2	0.5	0.6
6402622	99	P	SUR	33	-15	742	0	0.2	0.3	0.3
64041	99	P	SUR	61	-3	1480	0	0.3	0.3	0.4
64045	99	P	SUR	59	-12	1481	0	0.5	-0.2	0.5
64046	99	P	SUR	61	-4	1485	0	0.3	-0.2	0.3
6600021	99	P	SUR	55	14	249	0	0.3	-0.9	1.0
6600022	99	P	SUR	54	14	206	0	0.4	-0.2	0.4
6600023	99	P	SUR	55	11	294	0	0.3	-0.2	0.3
6600024	99	P	SUR	55	13	242	0	0.3	-1.3	1.3
6801791	99	P	SUR	39	-46	744	0	0.5	0.5	0.8
7801552	99	P	SUR	86	-30	743	0	0.4	-0.3	0.5
7801563	99	P	SUR	45	-65	730	0	0.5	0.2	0.5

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 : JUL 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	612	0	0	1.6	0.6	1.7
1300002	99	SPEED	SUR	20	-23	607	0	0	0.9	-0.1	0.9
1300008	99	SPEED	SUR	15	-38	616	0	0	1.0	-0.3	1.0
1300131	99	SPEED	SUR	28	-17	734	0	0	2.5	3.3	4.1
4100026	99	SPEED	SUR	12	-38	289	0	0	1.3	-0.1	1.3
4100040	99	SPEED	SUR	15	-53	4443	0	0	0.9	-0.2	1.0
4100043	99	SPEED	SUR	21	-65	4437	0	0	0.9	-0.1	0.9
4100044	99	SPEED	SUR	22	-59	4441	0	0	0.8	-0.2	0.8
4100046	99	SPEED	SUR	24	-68	4443	0	0	1.1	-0.4	1.2
4100048	99	SPEED	SUR	32	-70	4440	0	0	1.1	0.0	1.1
4100049	99	SPEED	SUR	28	-63	4443	0	0	1.1	0.1	1.1
4100052	99	SPEED	SUR	18	-65	4436	0	0	0.8	-0.3	0.9
4100053	99	SPEED	SUR	18	-66	4430	0	0	1.3	0.2	1.4
4100056	99	SPEED	SUR	18	-65	4438	0	0	1.2	-0.7	1.4
4100139	99	SPEED	SUR	20	-38	744	0	0	0.7	-0.3	0.8
4100300	99	SPEED	SUR	16	-57	708	0	0	0.9	-0.7	1.2
41040	99	SPEED	SUR	15	-53	741	0	0	1.0	-0.1	1.0
41043	99	SPEED	SUR	21	-65	743	0	0	0.9	0.0	0.9
41044	99	SPEED	SUR	22	-59	743	0	0	0.9	-0.2	0.9
41046	99	SPEED	SUR	24	-68	744	0	0	1.2	-0.4	1.2
41048	99	SPEED	SUR	32	-70	738	0	0	1.1	0.0	1.1
41049	99	SPEED	SUR	28	-63	740	0	0	1.2	0.1	1.2
41052	99	SPEED	SUR	18	-65	744	0	0	0.9	-0.2	0.9
41053	99	SPEED	SUR	19	-66	744	0	0	1.4	-0.4	1.4
41056	99	SPEED	SUR	18	-66	743	0	0	1.2	-0.6	1.4
4200059	99	SPEED	SUR	15	-67	4442	0	0	0.8	-0.1	0.8
4200060	99	SPEED	SUR	16	-63	4443	0	0	1.0	0.0	1.0
4200085	99	SPEED	SUR	18	-67	3601	0	0	1.3	-0.6	1.4
42059	99	SPEED	SUR	15	-68	739	0	0	0.9	0.0	0.9
42060	99	SPEED	SUR	16	-63	735	0	0	1.1	0.1	1.1
42085	99	SPEED	SUR	18	-67	715	0	0	1.3	0.0	1.3
4400005	99	SPEED	SUR	43	-69	4443	0	0	1.1	-0.3	1.2
4400008	99	SPEED	SUR	40	-69	4431	0	0	1.4	-0.5	1.5
4400011	99	SPEED	SUR	41	-67	4441	0	0	1.3	-0.6	1.4

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF

ELEMENT MONITORED : WIND SPEED (M/S)

(CONTINU

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
4400027	99	SPEED	SUR	44	-67	4426	0	0	1.2	-0.5	1.3
4400032	99	SPEED	SUR	44	-69	739	0	0	1.5	-0.6	1.6
4400033	99	SPEED	SUR	44	-69	740	0	0	1.5	-0.4	1.5
4400034	99	SPEED	SUR	44	-68	737	0	0	1.4	-0.9	1.7
4400150	99	SPEED	SUR	43	-64	714	0	0	1.3	-0.1	1.3
4400488	99	SPEED	SUR	45	-61	569	0	0	1.5	-0.3	1.5
4400489	99	SPEED	SUR	45	-61	577	0	0	1.5	0.3	1.5
44005	99	SPEED	SUR	43	-69	741	0	0	1.2	-0.4	1.3
44008	99	SPEED	SUR	41	-69	740	0	0	1.4	-0.5	1.5
44011	99	SPEED	SUR	41	-67	736	0	0	1.3	-0.5	1.4
44027	99	SPEED	SUR	44	-67	743	0	0	1.2	-0.4	1.3
44032	99	SPEED	SUR	44	-69	740	0	0	1.6	-0.5	1.7
44033	99	SPEED	SUR	44	-69	741	0	0	1.5	-0.2	1.5
44034	99	SPEED	SUR	44	-68	738	0	0	1.4	-0.9	1.7
44078	99	SPEED	SUR	60	-40	63	0	0	0.9	0.0	0.9
44150	99	SPEED	SUR	43	-64	715	0	0	1.3	-0.1	1.3
44258	99	SPEED	SUR	45	-63	729	0	0	1.5	-0.4	1.5
44488	99	SPEED	SUR	45	-61	726	0	0	1.5	0.1	1.5
44489	99	SPEED	SUR	46	-61	733	0	0	1.5	0.3	1.5
6100001	99	SPEED	SUR	43	8	740	0	0	1.7	-0.2	1.7
6100002	99	SPEED	SUR	42	5	728	0	0	1.3	0.1	1.3
6100196	99	SPEED	SUR	42	4	722	0	0	1.6	-0.5	1.7
6100197	99	SPEED	SUR	40	4	380	0	0	1.2	-0.6	1.3
6100198	99	SPEED	SUR	37	-2	727	0	0	1.4	-0.3	1.4
6100280	99	SPEED	SUR	41	1	730	0	0	1.4	-0.3	1.5
6100281	99	SPEED	SUR	40	0	721	0	0	1.7	0.0	1.7
6100417	99	SPEED	SUR	38	0	722	0	0	1.1	-0.3	1.2
6100430	99	SPEED	SUR	40	2	729	0	0	1.7	0.2	1.8
6101007	99	SPEED	SUR	36	25	45	0	0	0.9	0.1	0.9
6101008	99	SPEED	SUR	37	22	127	0	0	2.4	-5.8	6.3
6101009	99	SPEED	SUR	35	25	132	0	0	1.3	1.0	1.7
6101031	99	SPEED	SUR	42	8	742	0	0	1.4	-0.6	1.5
6200001	99	SPEED	SUR	45	-5	736	0	0	0.9	-0.7	1.2
6200024	99	SPEED	SUR	44	-3	700	0	0	1.2	-0.7	1.4
6200025	99	SPEED	SUR	44	-6	721	0	0	1.2	-0.3	1.3
6200029	99	SPEED	SUR	49	-12	734	0	0	1.1	0.5	1.2
6200050	99	SPEED	SUR	50	-4	733	0	0	1.0	-0.3	1.1
6200081	99	SPEED	SUR	51	-13	741	0	0	1.2	0.0	1.2
6200082	99	SPEED	SUR	44	-8	728	0	0	1.0	-0.5	1.1
6200083	99	SPEED	SUR	43	-9	730	0	0	1.0	-0.3	1.0
6200084	99	SPEED	SUR	42	-9	703	0	0	0.9	-1.1	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
6200085	99	SPEED	SUR	36	-7	291	0	0	1.1	-0.5	1.2
6200086	99	SPEED	SUR	55	6	358	0	0	1.7	1.3	2.1
6200087	99	SPEED	SUR	55	7	376	0	0	1.4	1.4	2.0
6200091	99	SPEED	SUR	53	-5	739	0	0	1.3	0.3	1.3
6200092	99	SPEED	SUR	51	-11	739	0	0	1.0	0.0	1.0
6200093	99	SPEED	SUR	55	-10	738	0	0	1.0	0.3	1.0
6200094	99	SPEED	SUR	52	-7	739	0	0	1.0	0.2	1.0
6200095	99	SPEED	SUR	53	-16	739	0	0	0.9	-0.5	1.0
6200103	99	SPEED	SUR	50	-3	737	0	0	1.1	-0.5	1.3
6200163	99	SPEED	SUR	47	-8	737	0	0	1.0	0.0	1.0
6200200	99	SPEED	SUR	36	-8	488	0	0	1.0	0.2	1.0
6201065	99	SPEED	SUR	54	7	696	0	0	1.6	-0.8	1.8
6201081	99	SPEED	SUR	38	-9	589	0	0	1.6	0.8	1.8
62029	99	SPEED	SUR	49	-12	1473	0	0	1.1	0.5	1.2
62050	99	SPEED	SUR	50	-4	1473	0	0	1.0	0.2	1.0
62081	99	SPEED	SUR	51	-13	1481	0	0	1.2	0.6	1.3
62091	99	SPEED	SUR	53	-5	740	0	0	1.3	0.4	1.3
62092	99	SPEED	SUR	51	-11	740	0	0	1.1	0.0	1.1
62093	99	SPEED	SUR	55	-10	739	0	0	1.0	0.3	1.1
62094	99	SPEED	SUR	52	-7	740	0	0	1.1	0.3	1.1
62095	99	SPEED	SUR	53	-16	740	0	0	1.0	-0.4	1.1
62102	99	SPEED	SUR	58	2	1486	0	0	1.2	0.2	1.2
62103	99	SPEED	SUR	50	-3	1481	0	0	1.2	-0.7	1.4
62104	99	SPEED	SUR	57	1	1485	0	0	1.0	-0.2	1.1
62105	99	SPEED	SUR	55	-13	1479	0	0	1.0	0.5	1.1
62107	99	SPEED	SUR	50	-6	752	0	0	1.1	-0.1	1.1
62112	99	SPEED	SUR	58	0	1488	0	0	1.3	-0.5	1.4
62113	99	SPEED	SUR	58	0	1486	0	0	1.3	-0.1	1.3
62114	99	SPEED	SUR	58	0	1464	0	0	1.3	0.4	1.4
62118	99	SPEED	SUR	58	1	1486	0	0	1.1	0.3	1.1
62119	99	SPEED	SUR	57	2	1486	0	0	1.3	-0.7	1.4
62120	99	SPEED	SUR	56	2	1488	0	0	1.6	-0.3	1.7
62121	99	SPEED	SUR	54	3	1444	0	0	1.4	-0.5	1.5
62122	99	SPEED	SUR	57	2	1479	0	0	1.2	-0.1	1.2
62129	99	SPEED	SUR	58	0	1487	0	0	1.2	0.1	1.2
62131	99	SPEED	SUR	54	1	1486	0	0	1.4	0.0	1.4
62132	99	SPEED	SUR	56	2	1488	0	0	1.5	-1.1	1.8
62133	99	SPEED	SUR	57	1	1478	0	0	1.4	-0.3	1.4
62134	99	SPEED	SUR	58	1	1478	0	0	1.2	-0.1	1.2
62140	99	SPEED	SUR	57	1	1487	0	0	1.1	-0.2	1.1
62143	99	SPEED	SUR	58	2	1486	0	0	1.9	-1.0	2.1

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF

ELEMENT MONITORED : WIND SPEED (M/S)

(CONTINU

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
62144	99	SPEED	SUR	53	2	1486	0	0	1.8	-0.5	1.8
62145	99	SPEED	SUR	53	3	1488	0	0	1.6	0.8	1.8
62146	99	SPEED	SUR	57	2	1488	0	0	1.2	-0.1	1.2
62148	99	SPEED	SUR	54	2	1488	0	0	1.9	-0.7	2.0
62149	99	SPEED	SUR	54	1	1488	0	0	1.3	0.0	1.3
62152	99	SPEED	SUR	57	2	1488	0	0	1.5	-1.0	1.8
62153	99	SPEED	SUR	57	2	1461	0	0	2.8	-1.8	3.3
62154	99	SPEED	SUR	56	2	1488	0	0	1.3	-0.1	1.3
62155	99	SPEED	SUR	58	1	1487	0	0	1.5	0.0	1.5
62163	99	SPEED	SUR	48	-9	1477	0	0	1.0	0.5	1.1
62164	99	SPEED	SUR	57	1	1376	0	0	1.3	-1.0	1.7
62165	99	SPEED	SUR	54	1	1488	0	0	1.8	-0.6	1.8
62170	99	SPEED	SUR	51	2	1485	0	0	1.4	0.3	1.5
62304	99	SPEED	SUR	51	2	1459	0	0	1.7	0.9	1.9
62442	99	SPEED	SUR	49	-16	918	0	0	1.0	0.3	1.0
6301001	99	SPEED	SUR	64	5	740	0	0	1.2	0.1	1.2
6301004	99	SPEED	SUR	72	20	603	0	0	1.0	-0.6	1.2
63055	99	SPEED	SUR	61	2	1468	0	0	1.4	-0.8	1.6
63056	99	SPEED	SUR	60	2	1471	0	0	1.2	0.3	1.2
63057	99	SPEED	SUR	59	2	1485	0	0	2.0	-0.7	2.1
63058	99	SPEED	SUR	53	2	801	0	0	1.5	0.2	1.5
63101	99	SPEED	SUR	61	1	1485	0	0	1.2	-0.1	1.2
63103	99	SPEED	SUR	61	1	1487	0	0	1.2	-0.6	1.4
63106	99	SPEED	SUR	61	2	1487	0	0	1.5	-1.3	2.0
63108	99	SPEED	SUR	61	2	1488	0	0	1.5	-0.4	1.5
63109	99	SPEED	SUR	60	2	1450	0	0	1.2	0.1	1.2
63110	99	SPEED	SUR	60	2	1488	0	0	1.2	-0.1	1.2
63112	99	SPEED	SUR	61	1	1487	0	0	1.2	-0.3	1.2
63115	99	SPEED	SUR	62	1	1480	0	0	1.2	-0.3	1.3
63117	99	SPEED	SUR	61	1	1488	0	0	1.3	-0.3	1.3
6400045	99	SPEED	SUR	59	-12	734	0	0	1.2	0.1	1.2
64041	99	SPEED	SUR	61	-3	1480	0	0	1.2	-0.3	1.3
64045	99	SPEED	SUR	59	-12	1481	0	0	1.2	0.5	1.3
6600021	99	SPEED	SUR	55	14	249	0	0	1.2	0.3	1.3
6600022	99	SPEED	SUR	54	14	206	0	0	1.7	0.0	1.7
6600024	99	SPEED	SUR	55	13	182	0	0	1.5	0.5	1.6

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 : JUL 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	360	0	0	32.6	2.4	32.7
1300002	99	DIRN	SUR	20	-23	600	0	0	9.2	0.1	9.2
1300008	99	DIRN	SUR	15	-38	605	0	0	11.7	4.4	12.5
1300131	99	DIRN	SUR	28	-17	515	0	0	12.9	-2.7	13.2
4100001	99	DIRN	SUR	35	-72	3616	0	0	22.0	13.8	26.0
4100002	99	DIRN	SUR	32	-75	3443	0	0	18.4	6.3	19.5
4100004	99	DIRN	SUR	33	-79	3271	0	0	24.6	2.1	24.7
4100008	99	DIRN	SUR	31	-81	3367	0	0	22.7	1.6	22.7
4100009	99	DIRN	SUR	29	-80	2566	0	0	29.3	4.3	29.6
4100013	99	DIRN	SUR	33	-78	3070	0	0	26.0	2.9	26.1
4100024	99	DIRN	SUR	34	-78	469	0	0	32.7	-1.0	32.7
4100025	99	DIRN	SUR	35	-75	3185	0	0	20.2	5.0	20.8
4100026	99	DIRN	SUR	12	-38	241	0	0	25.7	4.7	26.2
4100029	99	DIRN	SUR	33	-80	425	0	0	28.3	-3.1	28.5
4100033	99	DIRN	SUR	32	-80	567	0	0	22.4	3.9	22.8
4100037	99	DIRN	SUR	34	-77	521	0	0	26.2	3.7	26.4
4100038	99	DIRN	SUR	34	-78	484	0	0	28.3	2.3	28.4
4100040	99	DIRN	SUR	15	-53	4031	0	0	9.6	7.5	12.2
4100043	99	DIRN	SUR	21	-65	4109	0	0	11.7	8.1	14.2
4100044	99	DIRN	SUR	22	-59	4181	0	0	10.8	5.9	12.3
4100046	99	DIRN	SUR	24	-68	3534	0	0	17.5	5.0	18.2
4100047	99	DIRN	SUR	27	-71	2645	0	0	17.2	6.2	18.3
4100048	99	DIRN	SUR	32	-70	3340	0	0	15.6	12.3	19.9
4100049	99	DIRN	SUR	28	-63	2798	0	0	20.2	9.2	22.2
4100052	99	DIRN	SUR	18	-65	4432	0	0	8.6	5.8	10.4
4100053	99	DIRN	SUR	18	-66	4045	0	0	13.7	10.5	17.3
4100056	99	DIRN	SUR	18	-65	4415	0	0	12.1	7.8	14.5
4100064	99	DIRN	SUR	34	-77	529	0	0	20.6	-2.6	20.8
4100066	99	DIRN	SUR	33	-80	529	0	0	21.7	3.5	22.0
41001	99	DIRN	SUR	35	-72	590	0	0	22.0	13.8	26.0
4100139	99	DIRN	SUR	20	-38	743	0	0	7.6	2.8	8.1
41002	99	DIRN	SUR	32	-75	560	0	0	19.3	6.5	20.4

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
4100300	99	DIRN	SUR	16	-57	690	0	0	13.0	-8.3	15.4
41004	99	DIRN	SUR	33	-79	530	0	0	26.4	2.6	26.5
41008	99	DIRN	SUR	31	-81	546	0	0	23.1	1.4	23.2
41009	99	DIRN	SUR	29	-80	409	0	0	31.1	3.8	31.3
41013	99	DIRN	SUR	33	-78	487	0	0	24.9	2.6	25.1
41024	99	DIRN	SUR	34	-79	497	0	0	32.3	-1.6	32.3
41025	99	DIRN	SUR	35	-76	536	0	0	19.9	4.9	20.5
41029	99	DIRN	SUR	33	-80	410	0	0	27.4	-3.4	27.6
41033	99	DIRN	SUR	32	-80	543	0	0	22.7	3.2	23.0
41037	99	DIRN	SUR	34	-77	507	0	0	25.2	2.5	25.3
41038	99	DIRN	SUR	34	-78	484	0	0	29.4	2.3	29.5
41040	99	DIRN	SUR	15	-53	667	0	0	10.5	6.9	12.5
41043	99	DIRN	SUR	21	-65	684	0	0	11.4	7.8	13.8
41044	99	DIRN	SUR	22	-59	693	0	0	11.2	5.6	12.5
41046	99	DIRN	SUR	24	-68	574	0	0	18.0	5.1	18.8
41047	99	DIRN	SUR	28	-72	428	0	0	17.1	6.2	18.2
41048	99	DIRN	SUR	32	-70	544	0	0	16.4	12.5	20.6
41049	99	DIRN	SUR	28	-63	442	0	0	20.7	9.0	22.5
41052	99	DIRN	SUR	18	-65	741	0	0	9.0	4.8	10.2
41053	99	DIRN	SUR	19	-66	683	0	0	12.9	10.7	16.7
41056	99	DIRN	SUR	18	-66	736	0	0	12.4	8.4	15.0
41064	99	DIRN	SUR	34	-77	520	0	0	22.0	-2.5	22.1
41066	99	DIRN	SUR	33	-80	523	0	0	21.8	2.8	22.0
4200013	99	DIRN	SUR	27	-83	627	0	0	21.6	-1.4	21.7
4200022	99	DIRN	SUR	28	-84	494	0	0	21.5	1.1	21.6
4200023	99	DIRN	SUR	26	-83	433	0	0	24.1	-2.1	24.2
4200026	99	DIRN	SUR	25	-83	439	0	0	22.1	-2.5	22.2
4200036	99	DIRN	SUR	29	-85	2110	0	0	21.9	5.2	22.5
4200056	99	DIRN	SUR	20	-85	4269	0	0	14.0	-1.8	14.1
4200057	99	DIRN	SUR	17	-82	4314	0	0	11.4	5.9	12.8
4200058	99	DIRN	SUR	15	-75	4444	0	0	5.9	4.8	7.7
4200059	99	DIRN	SUR	15	-67	4442	0	0	8.0	8.5	11.7
4200060	99	DIRN	SUR	16	-63	4418	0	0	9.5	7.5	12.1
4200085	99	DIRN	SUR	18	-67	3589	0	0	14.2	12.0	18.6
42013	99	DIRN	SUR	27	-83	306	0	0	22.2	0.2	22.2
42022	99	DIRN	SUR	28	-84	240	0	0	22.4	2.3	22.5
42023	99	DIRN	SUR	26	-83	184	0	0	26.3	0.2	26.3
42026	99	DIRN	SUR	25	-84	194	0	0	23.9	-0.3	23.9
42036	99	DIRN	SUR	29	-85	341	0	0	23.2	4.8	23.7
42056	99	DIRN	SUR	20	-85	703	0	0	14.1	-2.1	14.3
42057	99	DIRN	SUR	17	-82	713	0	0	11.9	5.5	13.1

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF

ELEMENT MONITORED : WIND DIRECTION (DEGREES)

(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
42058	99	DIRN	SUR	15	-75	743	0	0	6.3	4.6	7.8
42059	99	DIRN	SUR	15	-68	739	0	0	8.5	8.1	11.7
42060	99	DIRN	SUR	16	-63	729	0	0	10.0	7.1	12.2
42085	99	DIRN	SUR	18	-67	706	0	0	13.8	10.8	17.5
4400005	99	DIRN	SUR	43	-69	2866	0	0	15.7	12.1	19.8
4400007	99	DIRN	SUR	44	-70	1820	0	0	25.0	12.3	27.8
4400008	99	DIRN	SUR	40	-69	2061	0	0	18.3	24.8	30.9
4400009	99	DIRN	SUR	38	-75	2929	0	0	31.3	5.1	31.8
4400011	99	DIRN	SUR	41	-67	2642	0	0	17.6	18.1	25.3
4400013	99	DIRN	SUR	42	-71	2341	0	0	27.0	14.3	30.5
4400014	99	DIRN	SUR	37	-75	2504	0	0	16.8	6.5	18.0
4400018	99	DIRN	SUR	42	-70	2512	0	0	23.5	13.0	26.9
4400020	99	DIRN	SUR	41	-70	3358	0	0	24.5	5.5	25.1
4400022	99	DIRN	SUR	41	-74	307	0	0	26.8	-2.0	26.9
4400027	99	DIRN	SUR	44	-67	2101	0	0	14.5	16.6	22.0
4400029	99	DIRN	SUR	43	-71	424	0	0	31.4	14.4	34.6
4400030	99	DIRN	SUR	43	-70	400	0	0	27.0	6.8	27.9
4400032	99	DIRN	SUR	44	-69	309	0	0	22.8	9.6	24.8
4400033	99	DIRN	SUR	44	-69	251	0	0	27.8	27.7	39.2
4400034	99	DIRN	SUR	44	-68	256	0	0	16.5	12.9	21.0
4400039	99	DIRN	SUR	41	-73	332	0	0	70.8	44.5	83.6
4400040	99	DIRN	SUR	41	-74	2	0	0	0.0	62.7	62.7
4400041	99	DIRN	SUR	37	-77	652	0	0	26.9	-1.5	26.9
4400042	99	DIRN	SUR	38	-76	2422	0	0	28.6	-4.5	29.0
4400058	99	DIRN	SUR	38	-76	3721	0	0	27.6	-2.8	27.7
4400062	99	DIRN	SUR	39	-76	3097	0	0	32.0	-4.7	32.4
4400063	99	DIRN	SUR	39	-76	2332	0	0	31.4	-4.7	31.7
4400064	99	DIRN	SUR	37	-76	3637	0	0	28.0	3.4	28.2
4400066	99	DIRN	SUR	40	-73	2820	0	0	21.0	5.0	21.6
4400072	99	DIRN	SUR	37	-76	3504	0	0	24.5	-1.4	24.5
4400150	99	DIRN	SUR	43	-64	523	0	0	18.1	16.5	24.5
4400488	99	DIRN	SUR	45	-61	354	0	0	19.3	-14.6	24.2
4400489	99	DIRN	SUR	45	-61	287	0	0	21.7	-18.7	28.7
44005	99	DIRN	SUR	43	-69	446	0	0	16.5	11.2	19.9
44007	99	DIRN	SUR	44	-70	322	0	0	26.9	14.7	30.6
44008	99	DIRN	SUR	41	-69	327	0	0	14.7	25.2	29.2
44009	99	DIRN	SUR	39	-75	469	0	0	31.6	4.6	32.0
44011	99	DIRN	SUR	41	-67	407	0	0	19.3	16.2	25.3
44013	99	DIRN	SUR	42	-71	329	0	0	28.2	14.9	31.9
44014	99	DIRN	SUR	37	-75	413	0	0	16.3	6.8	17.7
44018	99	DIRN	SUR	42	-70	404	0	0	23.3	12.2	26.3

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
44020	99	DIRN	SUR	42	-70	538	0	0	25.0	5.1	25.6
44022	99	DIRN	SUR	41	-74	97	0	0	31.3	1.9	31.3
44027	99	DIRN	SUR	44	-67	316	0	0	14.8	16.1	21.9
44029	99	DIRN	SUR	43	-71	393	0	0	31.9	13.8	34.7
44030	99	DIRN	SUR	43	-70	379	0	0	25.9	7.4	26.9
44032	99	DIRN	SUR	44	-69	279	0	0	26.7	8.7	28.1
44033	99	DIRN	SUR	44	-69	232	0	0	31.7	25.3	40.6
44034	99	DIRN	SUR	44	-68	235	0	0	20.4	12.6	24.0
44039	99	DIRN	SUR	41	-73	344	0	0	76.4	42.9	87.6
44040	99	DIRN	SUR	41	-74	2	0	0	22.6	93.1	95.8
44041	99	DIRN	SUR	37	-77	71	0	0	21.7	0.0	21.7
44042	99	DIRN	SUR	38	-76	312	0	0	28.3	-0.6	28.3
44058	99	DIRN	SUR	38	-76	356	0	0	28.9	-0.1	28.9
44062	99	DIRN	SUR	39	-76	342	0	0	33.6	-4.3	33.9
44063	99	DIRN	SUR	39	-76	231	0	0	27.9	-5.2	28.4
44064	99	DIRN	SUR	37	-76	405	0	0	31.7	5.0	32.1
44066	99	DIRN	SUR	40	-73	449	0	0	20.9	4.2	21.3
44069	99	DIRN	SUR	41	-73	403	0	0	26.6	-17.1	31.7
44072	99	DIRN	SUR	37	-76	376	0	0	26.7	-0.8	26.7
44078	99	DIRN	SUR	60	-40	35	0	0	14.2	-22.2	26.4
44150	99	DIRN	SUR	43	-64	498	0	0	18.1	16.6	24.6
44258	99	DIRN	SUR	45	-63	408	0	0	19.9	-3.2	20.1
44488	99	DIRN	SUR	45	-61	441	0	0	20.3	-16.2	26.0
44489	99	DIRN	SUR	46	-61	383	0	0	21.2	-21.1	29.9
4500003	99	DIRN	SUR	45	-83	223	0	0	6.6	-6.1	9.0
4500005	99	DIRN	SUR	42	-82	2252	0	0	30.3	2.6	30.4
4500008	99	DIRN	SUR	44	-82	2341	0	0	25.6	8.3	26.9
4500012	99	DIRN	SUR	44	-77	2180	0	0	29.2	12.3	31.7
4500132	99	DIRN	SUR	42	-81	463	0	0	29.5	-4.7	29.8
4500135	99	DIRN	SUR	44	-77	475	0	0	27.3	0.3	27.3
4500137	99	DIRN	SUR	46	-81	465	0	0	24.7	13.7	28.2
4500139	99	DIRN	SUR	43	-80	260	0	0	35.6	1.6	35.7
4500142	99	DIRN	SUR	43	-79	433	0	0	31.7	-4.1	31.9
4500143	99	DIRN	SUR	45	-81	388	0	0	28.1	1.2	28.2
4500159	99	DIRN	SUR	44	-79	308	0	0	31.8	-5.4	32.2
4500162	99	DIRN	SUR	45	-83	1090	0	0	32.5	3.3	32.6
4500163	99	DIRN	SUR	44	-84	1301	0	0	27.9	0.4	27.9
4500164	99	DIRN	SUR	42	-82	247	0	0	24.5	-7.2	25.6
4500165	99	DIRN	SUR	42	-83	1992	0	0	32.0	-0.8	32.0
4500175	99	DIRN	SUR	46	-85	2257	0	0	35.6	7.2	36.3
4500176	99	DIRN	SUR	42	-82	1935	0	0	32.0	-86.3	92.0

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
4500178	99	DIRN	SUR	45	-73	174	0	0	29.4	11.0	31.4
4500196	99	DIRN	SUR	42	-82	1397	0	0	24.2	-10.3	26.3
4500197	99	DIRN	SUR	42	-82	1406	0	0	26.7	-18.8	32.6
4500200	99	DIRN	SUR	42	-83	1710	0	0	31.5	15.2	34.9
4500203	99	DIRN	SUR	41	-83	1349	0	0	76.9	-56.4	95.4
4500205	99	DIRN	SUR	42	-82	1655	0	0	52.3	-75.5	91.8
4500209	99	DIRN	SUR	43	-82	1595	0	0	30.5	8.9	31.8
45003	99	DIRN	SUR	45	-83	39	0	0	7.8	-7.8	11.0
45005	99	DIRN	SUR	42	-82	367	0	0	34.4	4.9	34.8
45008	99	DIRN	SUR	44	-82	390	0	0	25.5	8.3	26.8
45012	99	DIRN	SUR	44	-77	346	0	0	33.3	11.5	35.2
45132	99	DIRN	SUR	43	-81	451	0	0	31.3	-4.6	31.6
45135	99	DIRN	SUR	44	-77	444	0	0	28.5	-0.7	28.6
45137	99	DIRN	SUR	46	-81	446	0	0	25.6	14.0	29.2
45139	99	DIRN	SUR	43	-80	274	0	0	37.0	2.1	37.0
45142	99	DIRN	SUR	43	-79	414	0	0	28.5	-4.3	28.8
45143	99	DIRN	SUR	45	-81	372	0	0	26.6	-2.0	26.7
45147	99	DIRN	SUR	42	-83	357	0	0	37.0	2.0	37.1
45149	99	DIRN	SUR	44	-82	380	0	0	27.4	-5.5	28.0
45151	99	DIRN	SUR	45	-79	274	0	0	31.1	4.3	31.4
45152	99	DIRN	SUR	46	-80	293	0	0	24.8	-4.8	25.2
45154	99	DIRN	SUR	46	-83	388	0	0	25.4	6.3	26.2
45159	99	DIRN	SUR	44	-79	249	0	0	28.5	-7.0	29.4
45162	99	DIRN	SUR	45	-83	325	0	0	33.7	5.6	34.2
45163	99	DIRN	SUR	44	-84	404	0	0	28.8	2.4	28.9
45164	99	DIRN	SUR	42	-82	243	0	0	24.7	-7.7	25.8
45165	99	DIRN	SUR	42	-83	311	0	0	32.1	6.0	32.7
45175	99	DIRN	SUR	46	-85	183	0	0	33.2	9.3	34.5
45176	99	DIRN	SUR	42	-82	326	0	0	32.1	-83.8	89.7
45178	99	DIRN	SUR	45	-73	39	0	0	24.7	12.1	27.5
45196	99	DIRN	SUR	42	-82	272	0	0	23.6	-8.9	25.2
45197	99	DIRN	SUR	42	-82	285	0	0	28.3	-19.4	34.3
45200	99	DIRN	SUR	42	-83	291	0	0	28.0	17.7	33.2
45203	99	DIRN	SUR	41	-83	205	0	0	75.3	-56.5	94.1
45205	99	DIRN	SUR	42	-82	256	0	0	53.4	-76.1	92.9
45209	99	DIRN	SUR	43	-82	243	0	0	29.8	9.6	31.3
6100198	99	DIRN	SUR	37	-2	465	0	0	20.4	2.1	20.5
6100281	99	DIRN	SUR	40	0	350	0	0	37.1	-6.9	37.7
6100417	99	DIRN	SUR	38	0	387	0	0	18.8	8.3	20.6
6200001	99	DIRN	SUR	45	-5	568	0	0	13.5	-0.8	13.5
6200024	99	DIRN	SUR	44	-3	289	0	0	16.9	3.8	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
6200025	99	DIRN	SUR	44	-6	335	0	0	14.5	1.3	14.6
6200029	99	DIRN	SUR	49	-12	718	0	0	10.7	-7.4	13.1
6200050	99	DIRN	SUR	50	-4	705	0	0	16.2	0.9	16.2
6200081	99	DIRN	SUR	51	-13	712	0	0	18.8	-6.0	19.7
6200082	99	DIRN	SUR	44	-8	487	0	0	14.4	3.2	14.8
6200083	99	DIRN	SUR	43	-9	513	0	0	16.3	8.0	18.2
6200084	99	DIRN	SUR	42	-9	440	0	0	9.6	0.5	9.6
6200085	99	DIRN	SUR	36	-7	234	0	0	10.5	9.3	14.0
6200091	99	DIRN	SUR	53	-5	646	0	0	15.4	6.9	16.8
6200092	99	DIRN	SUR	51	-11	723	0	0	12.7	3.9	13.2
6200093	99	DIRN	SUR	55	-10	679	0	0	13.2	6.1	14.6
6200094	99	DIRN	SUR	52	-7	718	0	0	11.5	6.9	13.4
6200095	99	DIRN	SUR	53	-16	693	0	0	11.1	0.3	11.1
6200103	99	DIRN	SUR	50	-3	681	0	0	12.6	5.1	13.6
6200163	99	DIRN	SUR	47	-8	695	0	0	17.9	0.8	18.0
6200200	99	DIRN	SUR	36	-8	432	0	0	9.7	3.2	10.2
6201081	99	DIRN	SUR	38	-9	559	0	0	6.8	-2.0	7.1
62029	99	DIRN	SUR	49	-12	1442	0	0	11.3	-7.6	13.6
62050	99	DIRN	SUR	50	-4	1409	0	0	16.7	1.3	16.7
62081	99	DIRN	SUR	51	-13	1421	0	0	21.2	-5.6	22.0
62091	99	DIRN	SUR	53	-5	642	0	0	15.5	5.9	16.6
62092	99	DIRN	SUR	51	-11	723	0	0	12.8	3.2	13.2
62093	99	DIRN	SUR	55	-10	672	0	0	13.4	5.8	14.6
62094	99	DIRN	SUR	52	-7	714	0	0	11.8	6.5	13.5
62095	99	DIRN	SUR	53	-16	693	0	0	11.4	-0.1	11.5
62103	99	DIRN	SUR	50	-3	1365	0	0	12.7	5.4	13.8
62105	99	DIRN	SUR	55	-13	1348	0	0	11.8	-3.8	12.4
62107	99	DIRN	SUR	50	-6	737	0	0	11.8	4.1	12.5
62112	99	DIRN	SUR	58	0	1285	0	0	13.0	-3.0	13.3
62114	99	DIRN	SUR	58	0	1304	0	0	11.7	-1.1	11.8
62163	99	DIRN	SUR	48	-9	1385	0	0	18.5	1.1	18.6
62442	99	DIRN	SUR	49	-16	881	0	0	10.5	-1.3	10.6
6400045	99	DIRN	SUR	59	-12	594	0	0	14.7	-10.2	17.9
64041	99	DIRN	SUR	61	-3	1337	0	0	11.7	8.6	14.6
64045	99	DIRN	SUR	59	-12	1203	0	0	15.1	-10.3	18.3

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	LRYQE3U	UXK5JTU	WDK38HS	XKQLWQB
YLV96WM	ZVQEQCM	2EERVTP	7JUNA4N	9ZT9MRK	01001	01004	01010	01028
01241	01400	01415	01492	02185	02365	02591	02836	02963
03005	03238	03354	03502	03743	03808	03882	03918	03953
04018	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	15420	15614	16045	16064	16113	16144
16224	16245	16332	16429	16546	16622	16716	16754	17030
17064	17095	17196	17220	17240	17351	17516	17607	20046
20674	22008	22820	22845	23205	23472	23884	23921	23955
24641	24908	26038	26435	26629	26708	27459	27707	27713
27962	28225	28661	28695	29612	29698	30557	30673	30935
31770	31873	34122	34172	34731	35121	35671	40179	40186
42369	42971	43150	43333	43371	45004	47102	47104	47138
47155	47169	47183	47186	47194	47195	47230	47401	47412
47582	47600	47646	47678	47778	47807	47827	47909	47918
47945	47971	47991	48601	48615	48650	48657	48698	50527
50557	50578	50774	50953	51076	51243	51431	51463	51644
51656	51709	51777	51828	51839	52203	52267	52323	52418
52533	52652	52681	52818	52836	52866	52983	53068	53463
53513	53543	53614	53772	53845	53915	54102	54135	54161
54218	54292	54374	54511	54662	54727	54857	55299	55591
56029	56046	56080	56137	56146	56187	56492	56571	56651
56691	56739	56778	56964	56985	57083	57127	57131	57178
57245	57461	57494	57516	57541	57687	57749	57816	57957
57972	57993	58027	58150	58203	58238	58362	58424	58457
58606	58633	58665	58725	58847	59023	59134	59211	59265
59280	59293	59316	59431	59758	59981	60018	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	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	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	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	78384	78397	78583	78866	78897	78954
78970	80001	81405	82965	85442	85586	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	91765
91925	91938	91948	91958	93112	93417	93817	93844	94001
94120	94150	94170	94203	94299	94302	94312	94326	94332
94403	94430	94461	94510	94578	94610	94637	94638	94653
94659	94672	94711	94767	94776	94802	94821	94866	94910
94975	94995	94996	94998	95282	95527	96413	96441	96471
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	LRVQE3U	M2HATS_I		UXK5JTU	WDK38HS	XKQLWQB	YLV96WM
ZVQEQCM	2EERVTP	7JUNA4N	9ZT9MRK	01010	01028	01415	02185	02365
02591	02836	02963	06610	07110	07145	07510	07645	07761
08001	08023	08190	08221	08302	08383	08430	08508	08522
08536	11010	11035	11120	11240	12575	17607	40186	47183
47194	47195	47230	48698	50527	50557	50578	50774	50953
51076	51243	51431	51463	51644	51656	51709	51777	51828
51839	52203	52267	52323	52418	52533	52652	52681	52818
52836	52866	52983	53068	53463	53513	53543	53614	53772
53845	53915	54102	54135	54161	54218	54292	54374	54511
54662	54727	54857	55299	55591	56029	56046	56080	56137
56146	56187	56492	56571	56651	56691	56739	56778	56964
56985	57083	57127	57131	57178	57245	57461	57494	57516
57541	57687	57749	57816	57957	57972	57993	58027	58150
58203	58238	58362	58424	58457	58606	58633	58665	58725
58847	59023	59134	59211	59265	59280	59293	59316	59431
59758	59981	60253	72413	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.