



ECMWF Global Data Monitoring Report

July 2016

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

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Summary of Revisions (in reverse order)

- Revision 28 (June 18) - 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 (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 26 (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 25 (Dec 14) - Coverage chart for ATOVS AMSU-A for NOAA_16 removed
- 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
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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
16044	(00)	16	0	16045	(00)	14	31
16044	(12)	16	0	16045	(12)	14	31
32540	(00)	17	0	17607	(12)	20	47
32540	(12)	17	0	30635	(00)	2	31
40875	(00)	30	3	30635	(12)	2	31
61052	(12)	25	0	31770	(00)	20	31
61442	(12)	19	0	31770	(12)	19	31
78866	(12)	29	6	40582	(12)	0	11
78954	(12)	28	7	41923	(00)	17	29
80035	(12)	11	0	41923	(12)	11	29
82765	(12)	19	4	43346	(00)	0	23
82983	(12)	24	0	48565	(00)	0	12
83650	(12)	26	0	64500	(00)	5	24
98646	(00)	30	8	65578	(12)	19	31
98646	(12)	26	6	68816	(00)	10	31
-	-	-	-	68816	(12)	9	30
-	-	-	-	68906	(00)	17	31
-	-	-	-	68906	(12)	16	29
-	-	-	-	74005	(00)	5	23
-	-	-	-	76654	(12)	10	25
-	-	-	-	78073	(00)	9	31
-	-	-	-	78762	(12)	9	21
-	-	-	-	78988	(00)	16	30
-	-	-	-	78988	(12)	17	31
-	-	-	-	82022	(00)	0	26
-	-	-	-	82026	(00)	0	29
-	-	-	-	82099	(00)	0	29
-	-	-	-	82107	(00)	0	26
-	-	-	-	82193	(00)	0	30
-	-	-	-	82244	(00)	0	29
-	-	-	-	82281	(00)	0	28
-	-	-	-	82332	(00)	0	30
-	-	-	-	82400	(00)	0	12
-	-	-	-	82411	(00)	0	28
-	-	-	-	82532	(00)	0	19
-	-	-	-	82824	(00)	0	30
-	-	-	-	82917	(00)	0	30
-	-	-	-	83378	(00)	0	30
-	-	-	-	83554	(00)	0	30
-	-	-	-	83566	(00)	0	29
-	-	-	-	83612	(00)	0	29
-	-	-	-	83746	(00)	0	30
-	-	-	-	83779	(00)	0	30
-	-	-	-	83827	(00)	0	30
-	-	-	-	83899	(00)	0	30
-	-	-	-	83928	(00)	0	30
-	-	-	-	83937	(00)	0	30
-	-	-	-	94510	(00)	9	31

2.2 Drifting Buoys

Surface pressure observations from **2041** 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

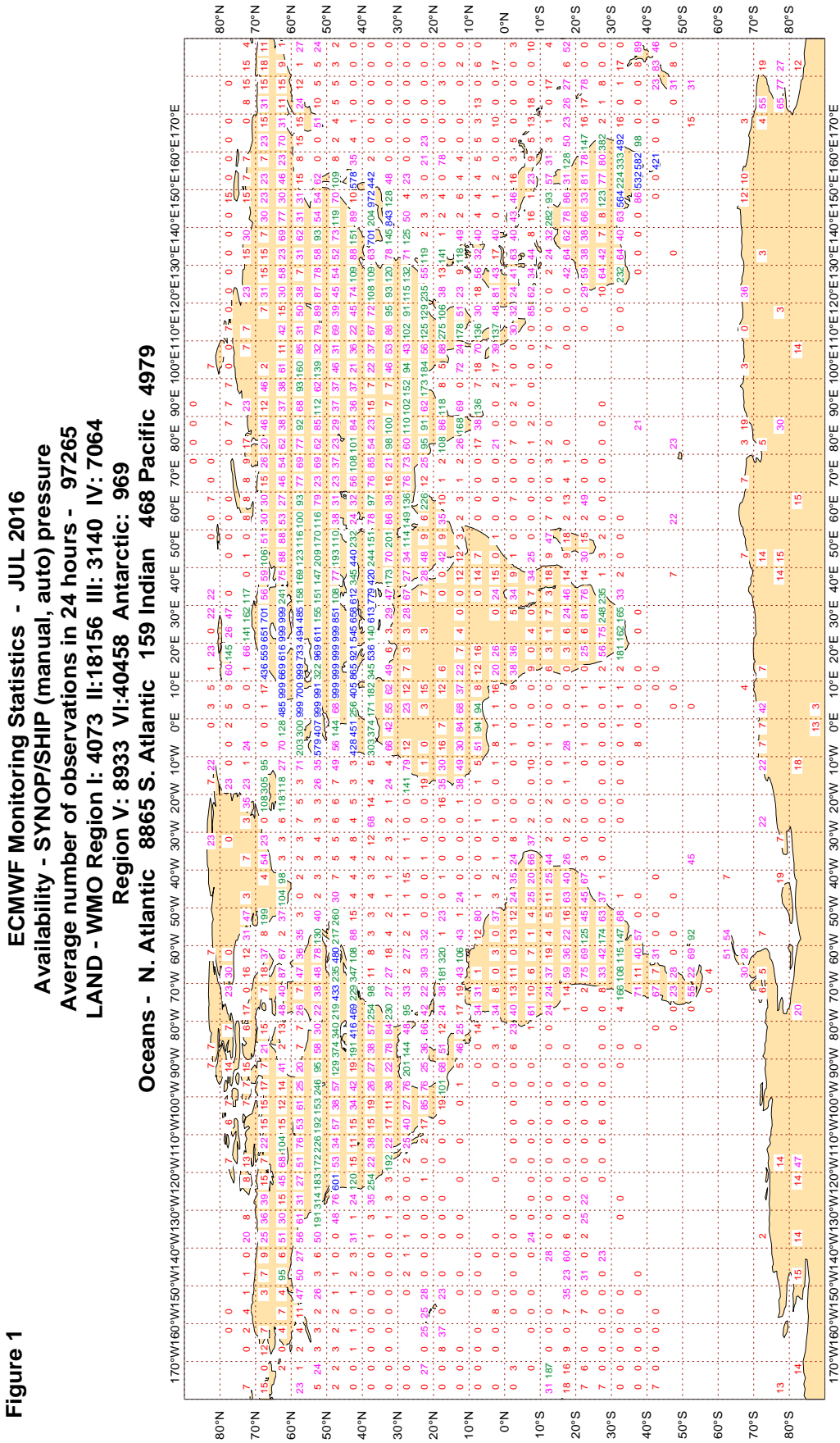
Figures 14-18 show global charts of SATOB and aircraft wind statistics in the form of wind vectors averaged over 5 degree boxes.

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.

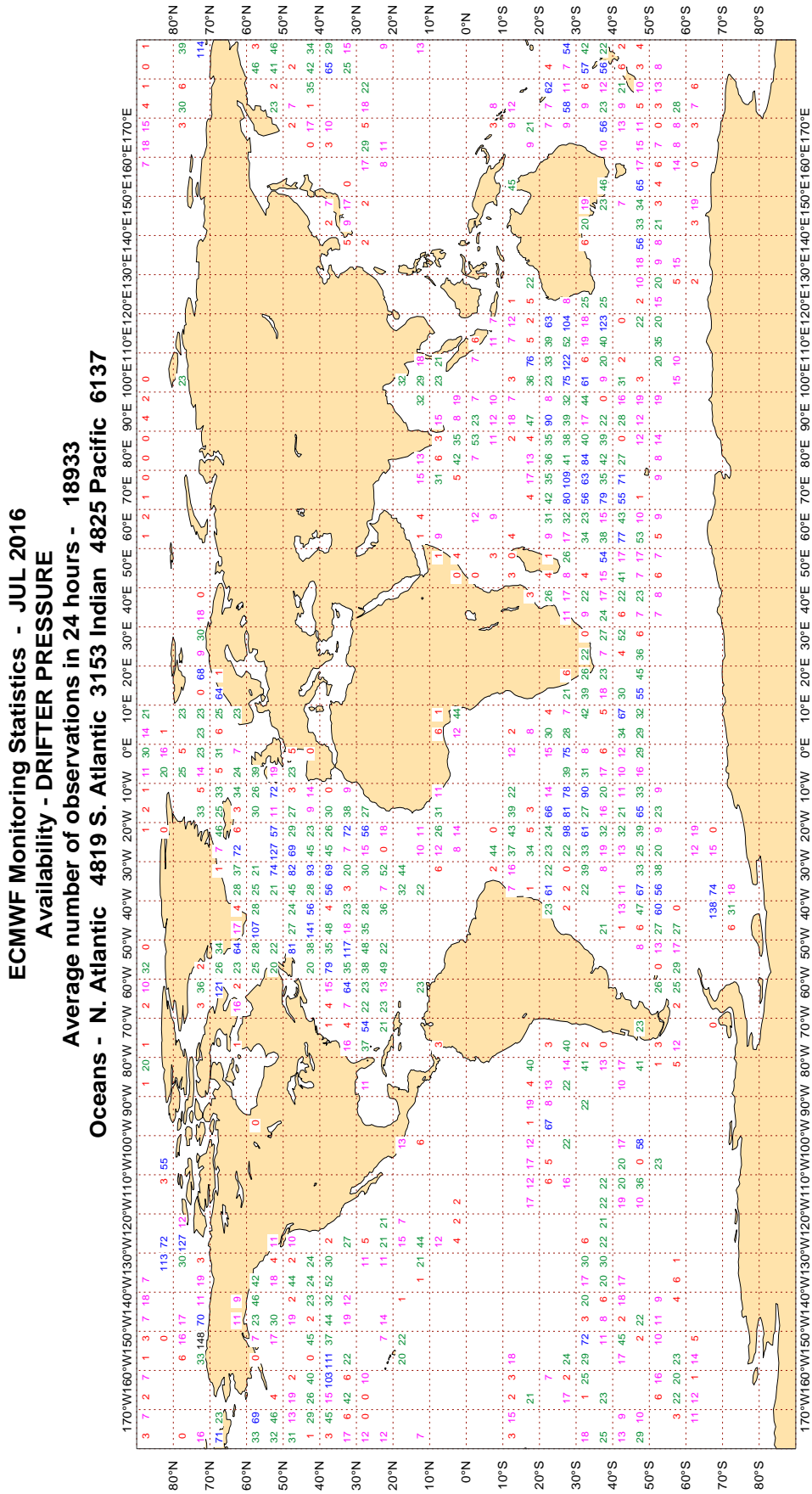
3.2.1 Figure 1 - Availability - SYNOP PRESSURE

Figure 1



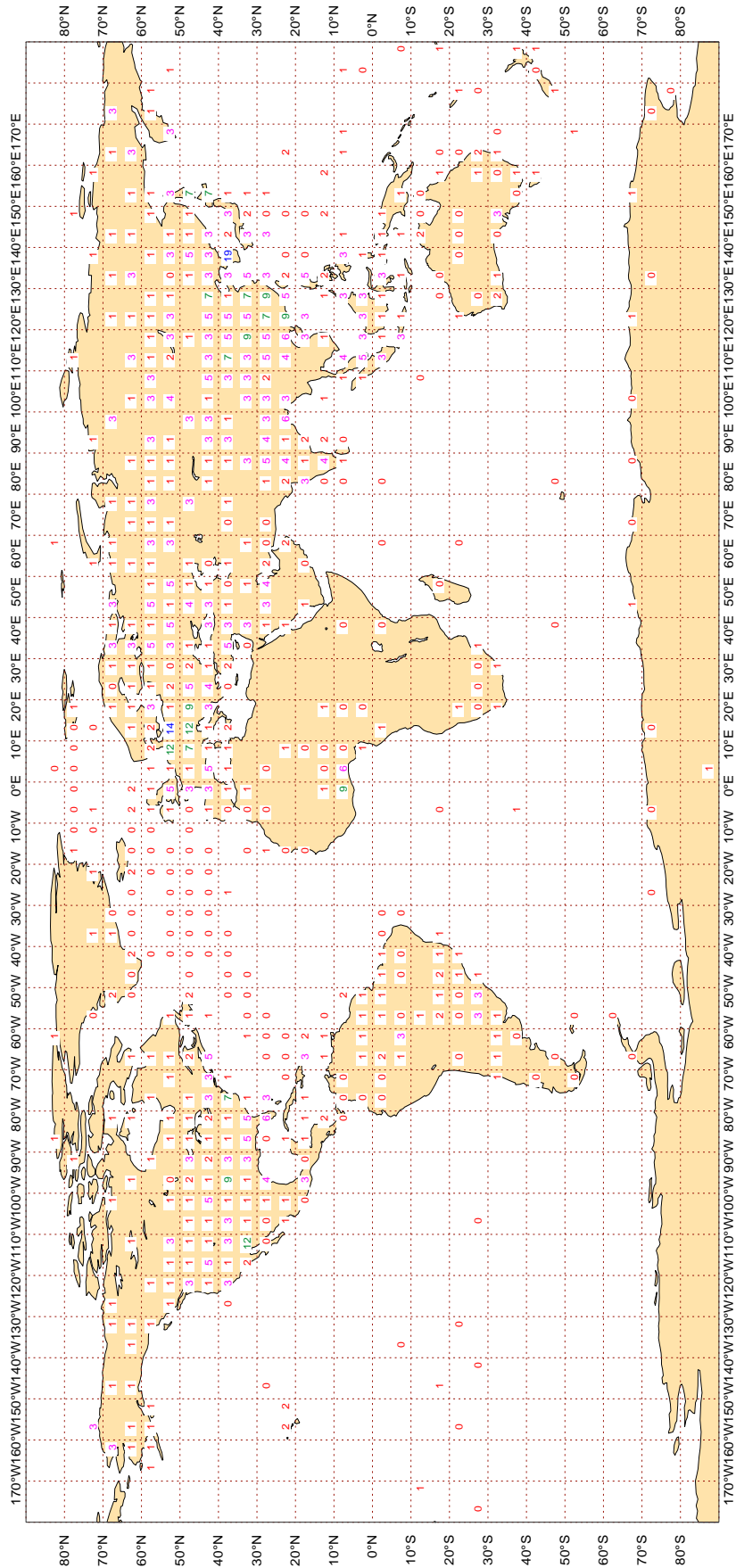
3.2.2 Figure 2 - Availability - DRIFTER PRESSURE

Figure 2



3.2.3 Figure 3 - Availability - TEMP 500 hPa geopotential

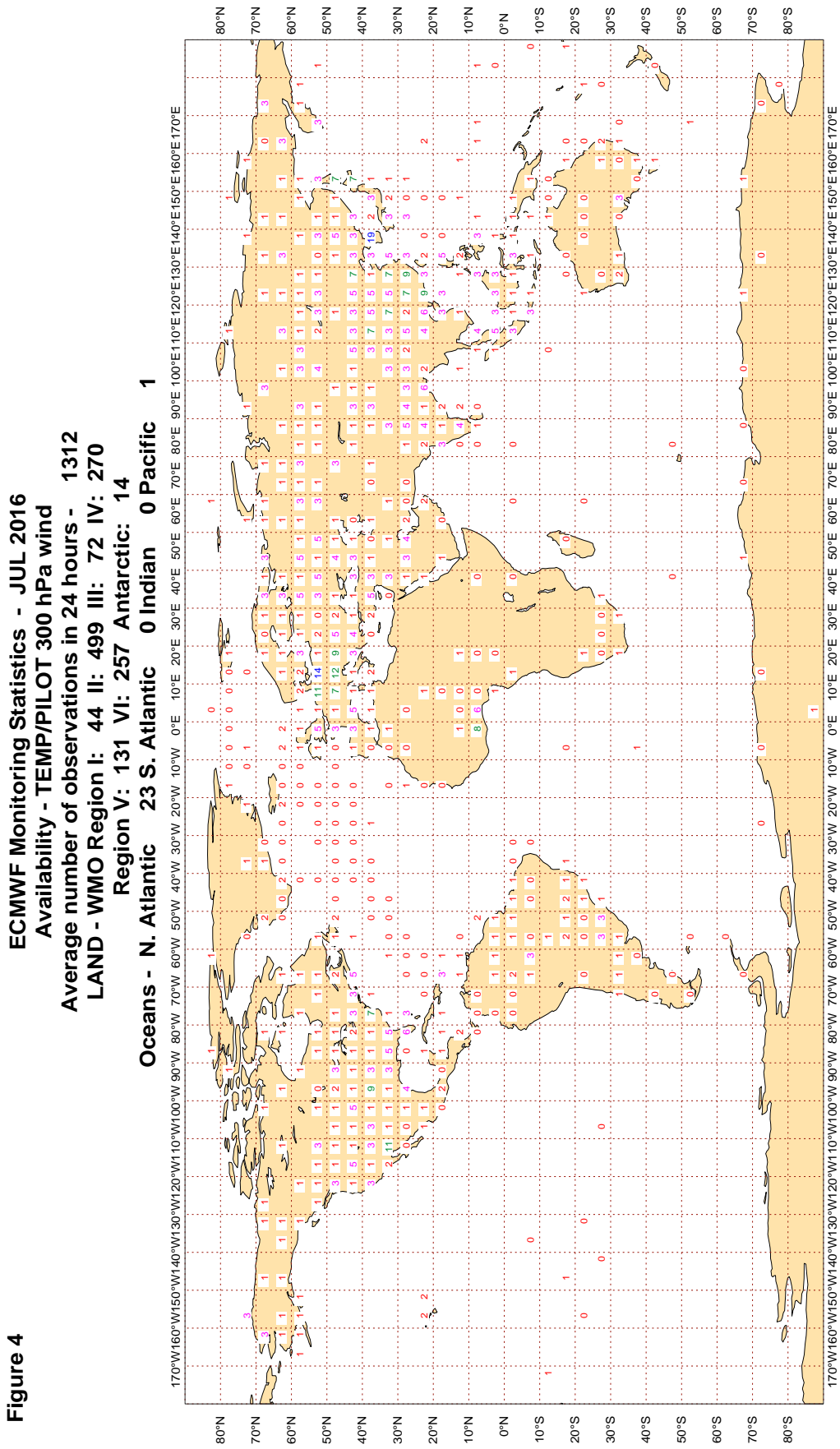
Figure 3
 ECMWF Monitoring Statistics - JUL 2016
 Availability - TEMP 500 hPa Geopotential
 Average number of observations in 24 hours - 1346
 LAND - WMO Region I: 45 II: 517 III: 72 IV: 274
 Region V: 141 VI: 259 Antarctic: 14
 Oceans - N. Atlantic 24 S. Atlantic 0 Indian 0 Pacific 1



Magics 2.24.2 (64 bit)



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

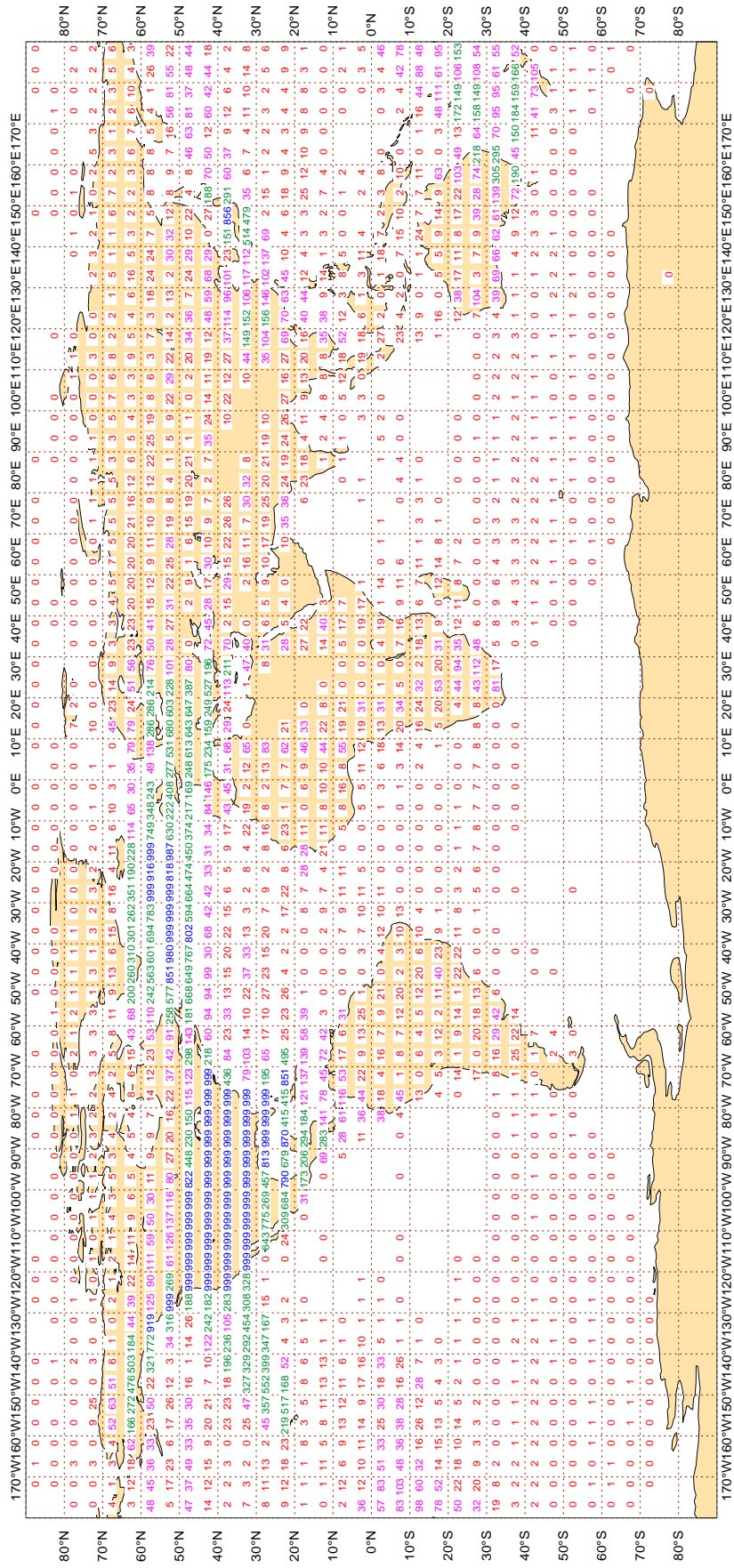


Magics 2.24.2 (64 bit)

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

Figure 5

ECMWF Monitoring Statistics - JUL 2016
Availability - Aircraft winds 300-150 hPa
Average number of observations in 24 hours - 211086



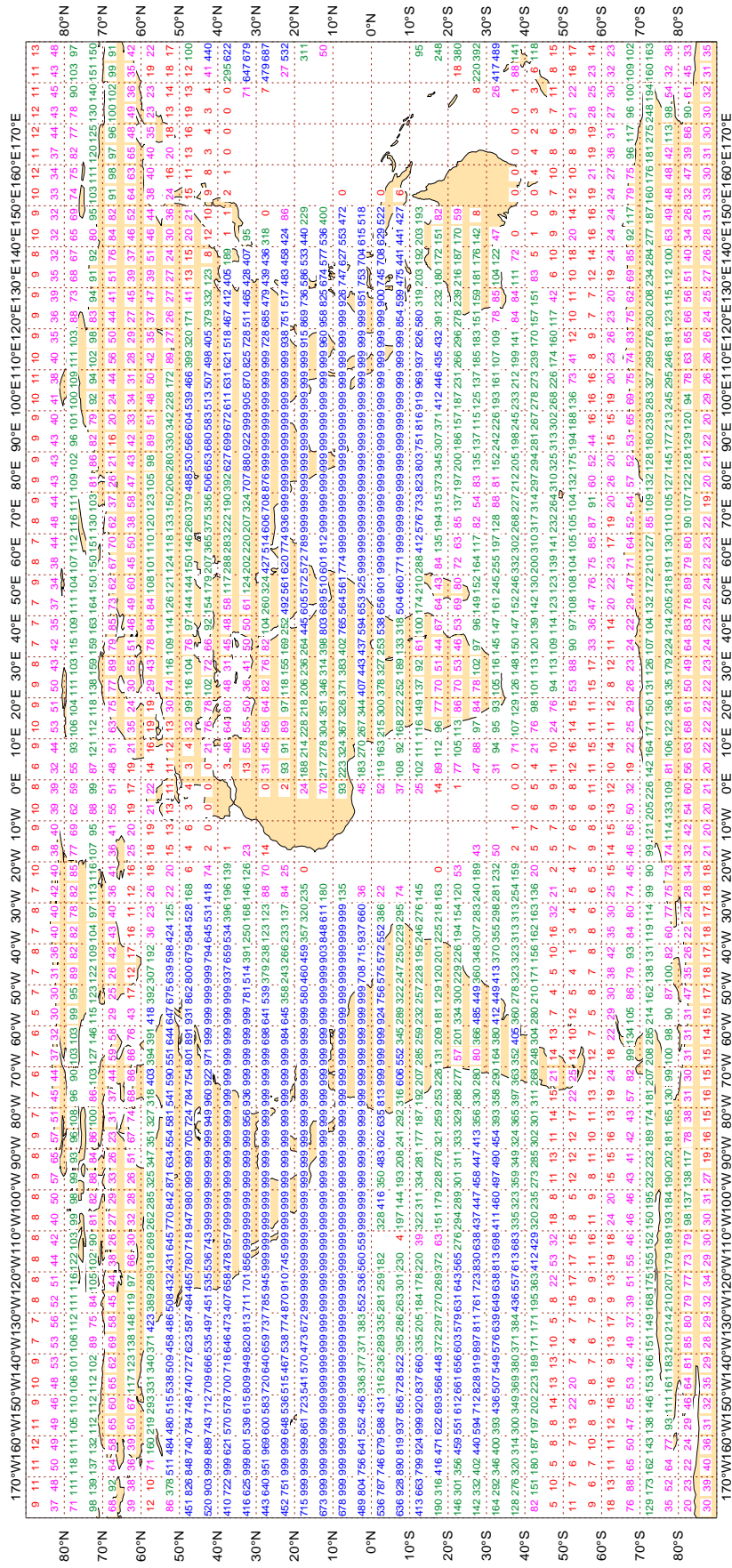
Magics 2.24.2 (64 bit)



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

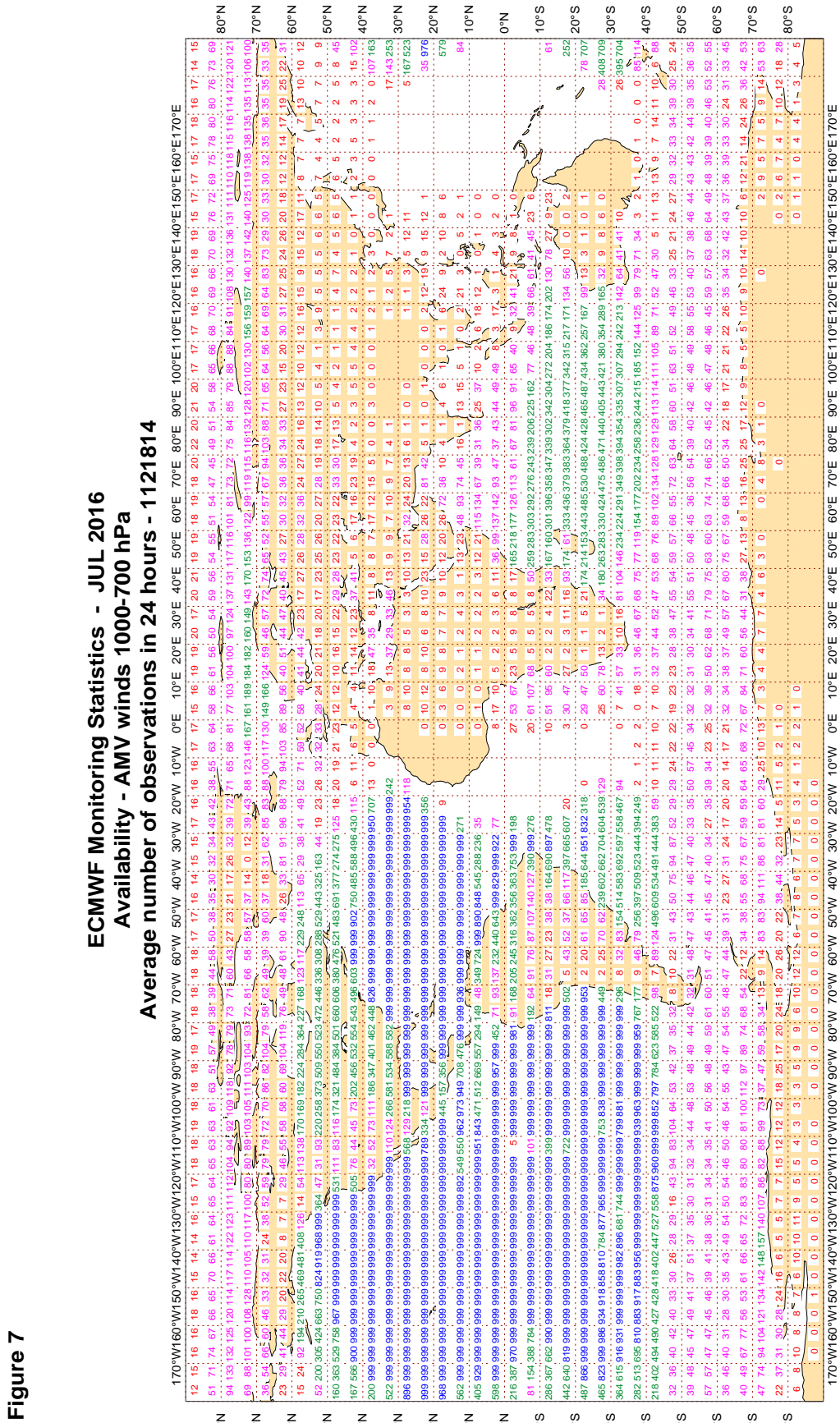
Figure 6

ECMWF Monitoring Statistics - JUL 2016
Availability - AMV winds 400-150 hPa
Average number of observations in 24 hours - 773741



Magics 2.24.2 (64 bit)

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



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

Figure 8

ECMWF Monitoring Statistics - JUL 2016
Availability - NOAA15 ATOVS : AMSU-A
Average number of observations in 24 hours - 329503

Table with 12 columns representing longitude (170°W to 170°E) and 12 rows representing latitude (80°N to 80°S). The cells contain numerical data representing the average number of observations.

Majics 2.24.2 (64 bit)



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

Figure 9.1

ECMWF Monitoring Statistics - JUL 2016
Availability - NOAA18 ATOVS : AMSU-A
Average number of observations in 24 hours - 554154

Table with 180 columns (representing 1-degree longitude bins from 170°W to 170°E) and 18 rows (representing 2-degree latitude bins from 80°N to 80°S). The table contains numerical data representing the average number of observations per 2-degree bin.

Magics 2.24.2 (64 bit)



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

Figure 9.2

ECMWF Monitoring Statistics - JUL 2016
Availability - AQUA ATOVS : AMSU-A
Average number of observations in 24 hours - 304600

Table with 180 columns representing longitude (170°W to 170°E) and 12 rows representing latitude (80°N to 70°S). The table contains numerical data representing the average number of observations per 24 hours for AMSU-A.

Magics 2.24.2 (64 bit)



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

Figure 9.3

ECMWF Monitoring Statistics - JUL 2016
Availability - METOP ATOVS : AMSU-A
Average number of observations in 24 hours - 439483

Latitude	70°N	70°N	60°W	50°W	40°W	30°W	20°W	10°W	0°E	10°E	20°E	30°E	40°E	50°E	60°E	70°E	80°E	90°E	100°E	110°E	120°E	130°E	140°E	150°E	160°E	170°E
80°N	39	43	41	41	41	40	38	39	38	37	36	35	35	35	34	33	32	31	30	29	28	27	26	25	24	23
70°N	131	146	140	139	138	134	136	129	131	120	116	115	114	113	112	111	110	109	108	107	106	105	104	103	102	101
60°N	204	225	232	231	230	228	227	224	223	222	221	220	219	218	217	216	215	214	213	212	211	210	209	208	207	206
50°N	170	189	187	186	184	183	182	181	180	179	178	177	176	175	174	173	172	171	170	169	168	167	166	165	164	163
40°N	163	177	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203
30°N	165	177	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203
20°N	165	177	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203
10°N	165	177	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203
0°N	135	142	137	135	136	131	126	124	126	124	129	130	134	143	163	197	212	202	182	176	178	183	184	180	177	177
10°S	108	121	122	123	122	121	121	122	122	122	122	121	121	121	121	121	121	121	121	121	121	121	121	121	121	121
20°S	109	123	124	122	124	122	124	122	124	122	124	122	124	122	124	122	124	122	124	122	124	122	124	122	124	122
30°S	109	124	125	122	119	121	123	125	122	119	120	122	124	122	121	121	121	121	121	121	121	121	121	121	121	121
40°S	110	125	126	122	119	121	123	125	122	119	120	122	124	122	121	121	121	121	121	121	121	121	121	121	121	121
50°S	115	129	128	127	129	130	131	130	127	126	126	124	123	123	124	123	123	123	123	123	123	123	123	123	123	123
60°S	116	129	128	127	129	130	131	130	127	126	126	124	123	123	124	123	123	123	123	123	123	123	123	123	123	123
70°S	121	131	135	134	135	134	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133
80°S	128	143	143	142	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144



Magic's 2.24.2 (64 bit)

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 2016
 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
2FRE8	99	P	SUR	24	0	4.1	4.3	6.0
2FRK8	99	P	SUR	22	0	1.2	7.8	7.9
3EBG2	99	P	SUR	32	0	1.7	-3.4	3.8
42887	99	P	SUR	15	0	0.4	-4.5	4.5
4XIS	99	P	SUR	34	0	1.3	3.1	3.4
8884	99	P	SUR	18	0	0.5	5.8	5.8
9HA3489	99	P	SUR	21	0	1.1	-3.5	3.7
9V2782	99	P	SUR	53	0	1.9	8.6	8.8
9V9062	99	P	SUR	66	3	3.7	4.2	5.6
9V9128	99	P	SUR	19	0	1.6	4.3	4.5
AGRF	99	P	SUR	103	0	1.6	4.3	4.6
AVBD	99	P	SUR	27	7	2.7	-5.4	6.0
AVLZ	99	P	SUR	20	6	1.8	-11.0	11.2
C6BR3	99	P	SUR	43	1	1.4	3.1	3.4
C6JT	99	P	SUR	25	0	0.9	-3.7	3.8
C6XC2	99	P	SUR	30	0	1.5	4.8	5.0
C6YM7	99	P	SUR	21	0	2.1	4.6	5.0
C6ZJ4	99	P	SUR	15	0	1.8	-4.0	4.3
C6ZJ8	99	P	SUR	16	0	2.3	5.2	5.7
CBGR	99	P	SUR	118	0	2.5	4.3	5.0
CTEC	99	P	SUR	19	0	1.1	-6.0	6.1
DGZL	99	P	SUR	49	0	3.3	7.2	7.9
DVRF	99	P	SUR	112	0	2.4	3.7	4.4
HRRF	99	P	SUR	117	0	2.6	4.1	4.8
KLBO	99	P	SUR	17	0	0.5	3.2	3.2
LAPE7	99	P	SUR	22	0	1.1	8.2	8.3
LAQL7	99	P	SUR	16	0	1.2	4.3	4.5
LF8G	99	P	SUR	110	2	6.9	-0.2	6.9
MYRF	99	P	SUR	92	0	2.2	3.8	4.4
OZ2049	99	P	SUR	28	0	0.4	-4.9	4.9
PBAD	99	P	SUR	26	0	1.9	-3.9	4.3
PBWQ	99	P	SUR	24	0	2.4	-3.3	4.1

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
UASX	99	P	SUR	28	0	1.2	6.2	6.3
UBMI9	99	P	SUR	16	0	2.2	4.3	4.8
UBMO9	99	P	SUR	19	0	2.4	4.2	4.8
UBXS	99	P	SUR	109	5	2.1	-10.8	11.0
UCLD	99	P	SUR	33	0	0.6	4.3	4.3
UGZM	99	P	SUR	23	1	3.5	-3.2	4.8
VRDJ3	99	P	SUR	80	0	0.7	-3.2	3.2
VRDY5	99	P	SUR	49	0	1.9	4.7	5.1
VRFI7	99	P	SUR	35	0	0.9	4.8	4.8
VRFU8	99	P	SUR	17	1	1.6	-8.5	8.6
VRGO7	99	P	SUR	23	0	1.5	-3.1	3.4
VRHE3	99	P	SUR	24	1	1.9	-4.6	5.0
VRJT8	99	P	SUR	63	0	2.0	4.5	4.9
VRRC	99	P	SUR	24	1	2.4	3.2	4.0
WACW	99	P	SUR	18	0	0.8	3.7	3.8

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

LIST OF SUSPECT STATIONS : SHIPS + FIXED MARINE PLATFORMS
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND SPEED (M/S)
 AREA : GLOBAL
 PERIOD : JUL 2016
 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
46027	99	SPEED	SUR	124	0	0	4.0	-4.2	5.8
46206	99	SPEED	SUR	59	0	0	2.0	-4.4	4.8

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 2016
 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
42365	99	DIRN	SUR	62	0	0	21.1	-36.4	42.1
45020	99	DIRN	SUR	66	0	0	46.4	-36.5	59.0
45144	99	DIRN	SUR	41	0	0	29.2	-50.2	58.0
45165	99	DIRN	SUR	125	0	0	22.9	-36.3	42.9
46118	99	DIRN	SUR	53	0	0	45.6	35.0	57.5

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 2016
 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
2100541	99	P	SUR	35	-129	429	123	0.5	0.2	0.5
21541	99	P	SUR	35	-129	409	114	0.5	0.2	0.5
2600545	99	P	SUR	68	0	727	198	4.1	7.9	9.0
26545	99	P	SUR	68	0	732	199	4.1	7.9	9.0
42887	99	P	SUR	28	-89	96	0	0.4	-4.5	4.5
4800513	99	P	SUR	75	161	740	165	8.0	-1.2	8.1
4800634	99	P	SUR	70	-147	673	170	4.4	-1.0	4.5
4800643	99	P	SUR	70	-144	141	47	6.5	-4.1	7.7
48513	99	P	SUR	75	161	712	159	8.0	-1.2	8.1
48634	99	P	SUR	70	-147	742	202	4.3	-0.9	4.4
48643	99	P	SUR	70	-144	151	48	6.6	-4.2	7.8
5600936	99	P	SUR	-55	130	102	7	6.2	-0.1	6.2

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 2016
 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
6100002	99	SPEED	SUR	42	5	738	0	0	3.8	6.6	7.6

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 2016
 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
1400041	99	DIRN	SUR	-8	55	280	0	0	12.0	-21.4	24.5
14041	99	DIRN	SUR	-8	55	188	0	0	11.4	-21.5	24.4
2300003	99	DIRN	SUR	-3	88	256	0	0	28.8	28.2	40.4
23003	99	DIRN	SUR	-3	88	167	0	0	26.3	29.2	39.3
23092	99	DIRN	SUR	18	90	147	1	0	129.8	68.0	146.5
23451	99	DIRN	SUR	15	69	200	0	0	9.8	32.2	33.7
23454	99	DIRN	SUR	10	73	184	0	0	104.2	-125.2	162.9
23460	99	DIRN	SUR	7	88	182	0	0	16.1	21.5	26.9
3100053	99	DIRN	SUR	-32	-50	621	0	0	22.1	-21.3	30.7
3100231	99	DIRN	SUR	-29	-47	130	0	0	35.5	-24.6	43.2
3100260	99	DIRN	SUR	-16	-38	90	0	0	70.7	149.4	165.3
3100374	99	DIRN	SUR	-25	-45	537	0	0	28.1	-32.3	42.8
3100380	99	DIRN	SUR	-20	-40	606	0	0	24.3	-30.6	39.1
31010	99	DIRN	SUR	-24	-42	64	0	0	11.6	-22.5	25.4
3101000	99	DIRN	SUR	-24	-42	101	0	0	10.0	-23.4	25.5
31053	99	DIRN	SUR	-32	-50	255	0	0	20.6	-24.3	31.8
31260	99	DIRN	SUR	-16	-38	46	0	0	84.8	142.6	165.9
31374	99	DIRN	SUR	-25	-45	30	0	0	14.6	-31.8	35.0
31380	99	DIRN	SUR	-20	-40	311	0	0	22.2	-31.8	38.8
42361	99	DIRN	SUR	28	-93	553	0	0	16.3	24.8	29.6
42365	99	DIRN	SUR	28	-89	358	0	0	18.5	-32.7	37.6
4300001	99	DIRN	SUR	8	-110	559	0	0	45.2	-22.1	50.3
43001	99	DIRN	SUR	8	-110	558	0	0	44.7	-21.2	49.5
44013	99	DIRN	SUR	42	-71	546	0	0	23.3	20.1	30.8
45020	99	DIRN	SUR	45	-86	381	0	0	43.7	-42.1	60.7
45144	99	DIRN	SUR	53	-98	232	0	0	29.8	-46.2	55.0
45152	99	DIRN	SUR	46	-80	322	0	0	22.9	-23.9	33.1
45165	99	DIRN	SUR	42	-83	689	0	0	24.3	-32.4	40.5
45168	99	DIRN	SUR	42	-86	545	0	0	32.9	-33.1	46.7
45173	99	DIRN	SUR	47	-87	288	0	0	22.3	23.3	32.3
45174	99	DIRN	SUR	42	-88	578	0	0	31.3	-22.1	38.3

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
46081	99	DIRN	SUR	61	-148	198	0	0	62.6	14.8	64.3
46087	99	DIRN	SUR	49	-125	210	0	0	33.3	28.0	43.5
46118	99	DIRN	SUR	49	-123	313	0	0	42.8	40.4	58.9
46125	99	DIRN	SUR	48	-123	237	0	0	36.7	23.5	43.6
46206	99	DIRN	SUR	49	-126	48	0	0	11.5	25.9	28.4
5100019	99	DIRN	SUR	-5	-155	262	0	0	46.0	-37.0	59.1
51019	99	DIRN	SUR	-5	-155	252	0	0	46.0	-37.8	59.5
5200522	99	DIRN	SUR	5	147	314	0	0	48.4	76.8	90.8
52522	99	DIRN	SUR	5	147	272	0	0	47.6	75.8	89.5
53040	99	DIRN	SUR	-8	95	27	0	0	44.0	-30.5	53.6
63119	99	DIRN	SUR	58	-4	50	0	0	68.0	10.4	68.8

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

LIST OF SUSPECT STATIONS : RADIOSONDES
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : GEOPOTENTIAL HEIGHT (METRES)
 AREA : GLOBAL
 PERIOD : JUL 2016
 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
04360	12	Z	1000	66	-38	25	0	2.9	42.0	42.1
04360	00	Z	925	66	-38	26	0	0.0	45.0	45.0
04417	00	Z	1000	73	-38	30	28	0.0	-95.4	95.4
04417	12	Z	1000	73	-38	28	27	0.0	-91.5	91.5
31510	12	Z	200	50	127	31	0	31.1	-73.7	80.0
33658	00	Z	250	48	26	31	0	22.0	69.7	73.1
33791	12	Z	100	48	33	28	0	82.7	-70.9	108.9
37860	00	Z	1000	41	50	11	1	33.8	9.9	35.2
38064	12	Z	30	45	66	20	3	113.3	177.4	210.5
38341	00	Z	50	43	71	22	0	58.1	150.7	161.5
38341	12	Z	50	43	71	20	1	52.4	161.3	169.6
40437	12	Z	925	25	47	28	0	2.6	34.2	34.3
40437	00	Z	925	25	47	31	0	2.6	34.0	34.1
42299	00	Z	1000	27	89	13	0	4.5	-51.5	51.7
42348	00	Z	30	27	76	18	0	77.0	204.6	218.6
42361	00	Z	50	26	78	25	0	49.2	147.3	155.3
42361	12	Z	30	26	78	23	0	71.5	245.3	255.5
42492	12	Z	30	26	85	28	0	22.3	205.8	207.0
42886	00	Z	50	22	84	19	0	50.0	162.7	170.2
43014	00	Z	30	20	75	19	0	20.7	194.6	195.7
43041	00	Z	30	19	82	15	0	25.4	201.5	203.1
43128	12	Z	30	17	78	14	0	69.7	259.2	268.4
43128	00	Z	30	17	78	14	0	46.7	195.3	200.8
43295	12	Z	30	13	78	18	0	42.1	244.5	248.1
43311	00	Z	30	11	73	17	0	24.7	178.7	180.4
43333	12	Z	30	12	93	11	0	24.0	191.2	192.7
43333	00	Z	30	12	93	24	0	22.8	198.5	199.8
43346	00	Z	500	11	80	23	0	48.4	49.9	69.5
43369	00	Z	50	8	73	18	0	12.6	132.4	133.0
43371	12	Z	100	8	77	12	0	8.4	116.9	117.2
47155	12	Z	1000	35	129	33	11	37.8	-67.3	77.2
47155	00	Z	1000	35	129	32	5	30.4	52.9	61.0
48565	00	Z	1000	8	98	12	0	16.9	-24.8	30.0
65125	12	Z	925	9	7	31	1	6.8	46.0	46.5

LIST OF SUSPECT STATIONS (CONTINUED)

WMO IDENT	OBS TIME	ELM	LEV	LAT	LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
76405	12	Z	400	24	-110	26	0	62.3	98.9	116.9
76654	12	Z	250	19	-104	24	3	78.4	77.0	109.9
76679	12	Z	1000	19	-99	30	0	8.5	-59.8	60.4
89592	00	Z	30	-67	93	24	0	195.6	-57.8	204.0
96147	00	Z	925	4	108	29	2	16.8	55.0	57.5
96147	12	Z	925	4	108	26	0	15.2	47.1	49.5
ASDK03	00	Z	850	70	-58	17	0	8.5	32.2	33.3
IVLAM	00	Z	1000	6	-5	13	0	0.0	71.6	71.6
IVLAM	12	Z	1000	6	-5	17	0	3.9	77.4	77.5

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 2016
 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
37860	00	V	200	41	50	11	0	-7.1	4.1	16.6

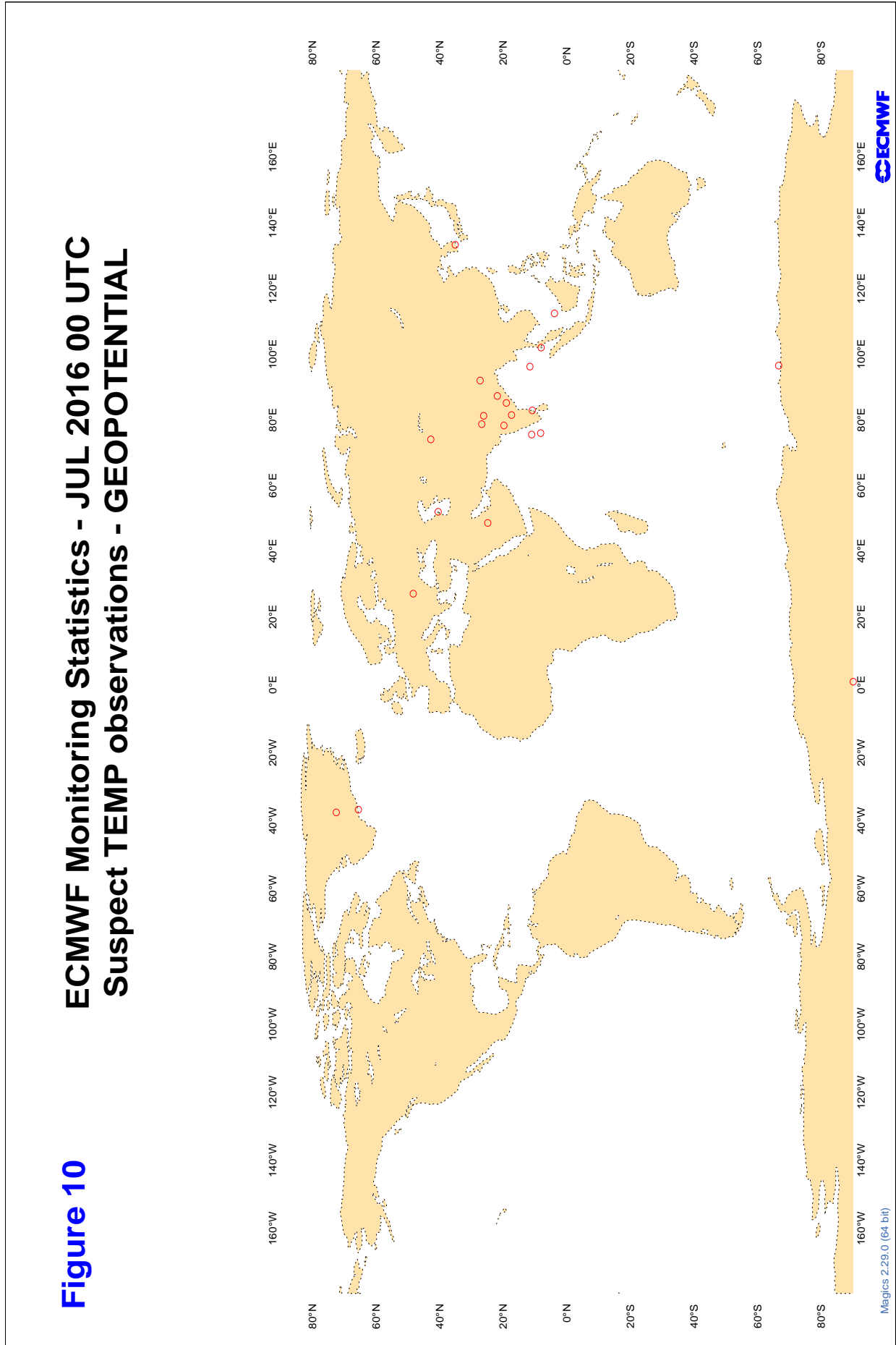
3.2.20 Table 9 - Suspect radiosondes: Wind direction (degrees)

LIST OF SUSPECT STATIONS : RADIOSONDES
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND DIRECTION (DEGREES)
 AREA : GLOBAL
 PERIOD : JUL 2016
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

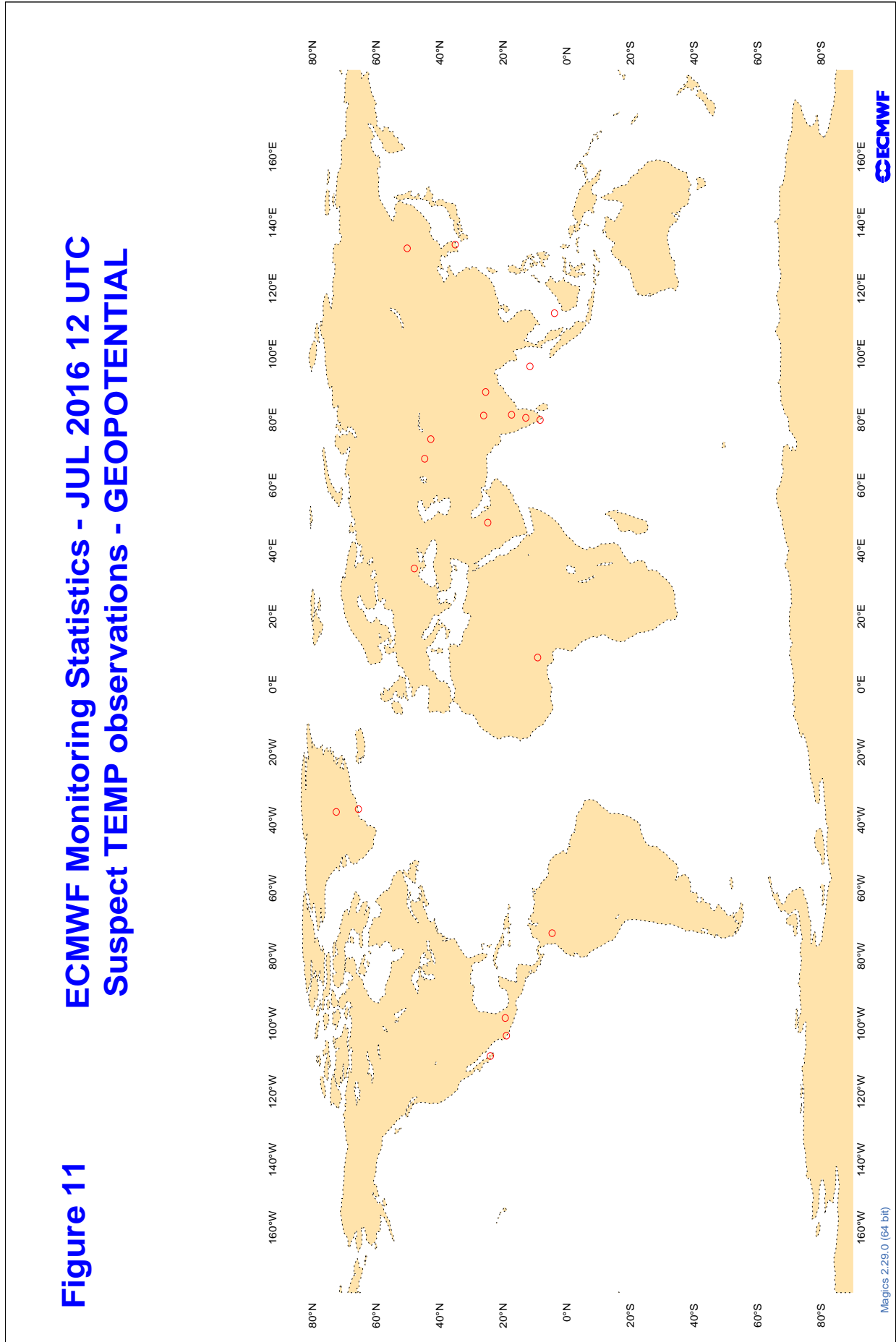
SELECTION CRITERIA: OBSERVED/FORECAST WIND SPEEDS \geq 5 M/S
 NO. OF OBSERVATIONS \geq 5, AND,
 ABSOLUTE BIAS \geq 10 DEGREES, WITH
 STANDARD DEVIATION $<$ 30 DEGREES, AND,
 VERTICAL SPREAD $<$ 10 DEGREES
 (AVERAGE BETWEEN 500 AND 150 HPA)

WMO IDENT	OBS TIME	ELM	LAT	LONG	NUM OBS	BIAS	MAX SPREAD	SD
37860	00	DD	41	50	11	11.3	5.9	12.3

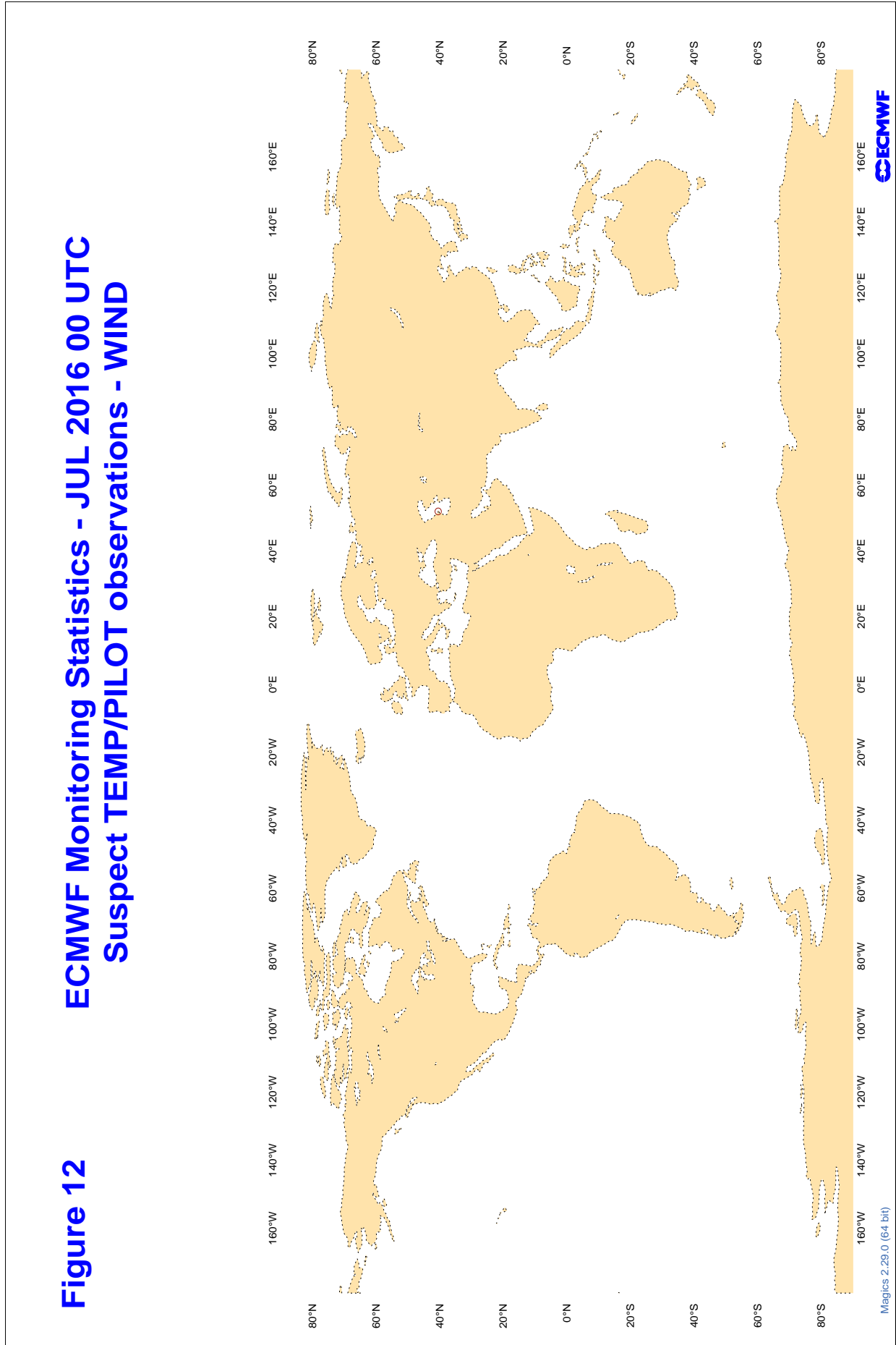
3.2.21 Figure 10 - Suspect TEMP observations - geopotential : 00 UTC



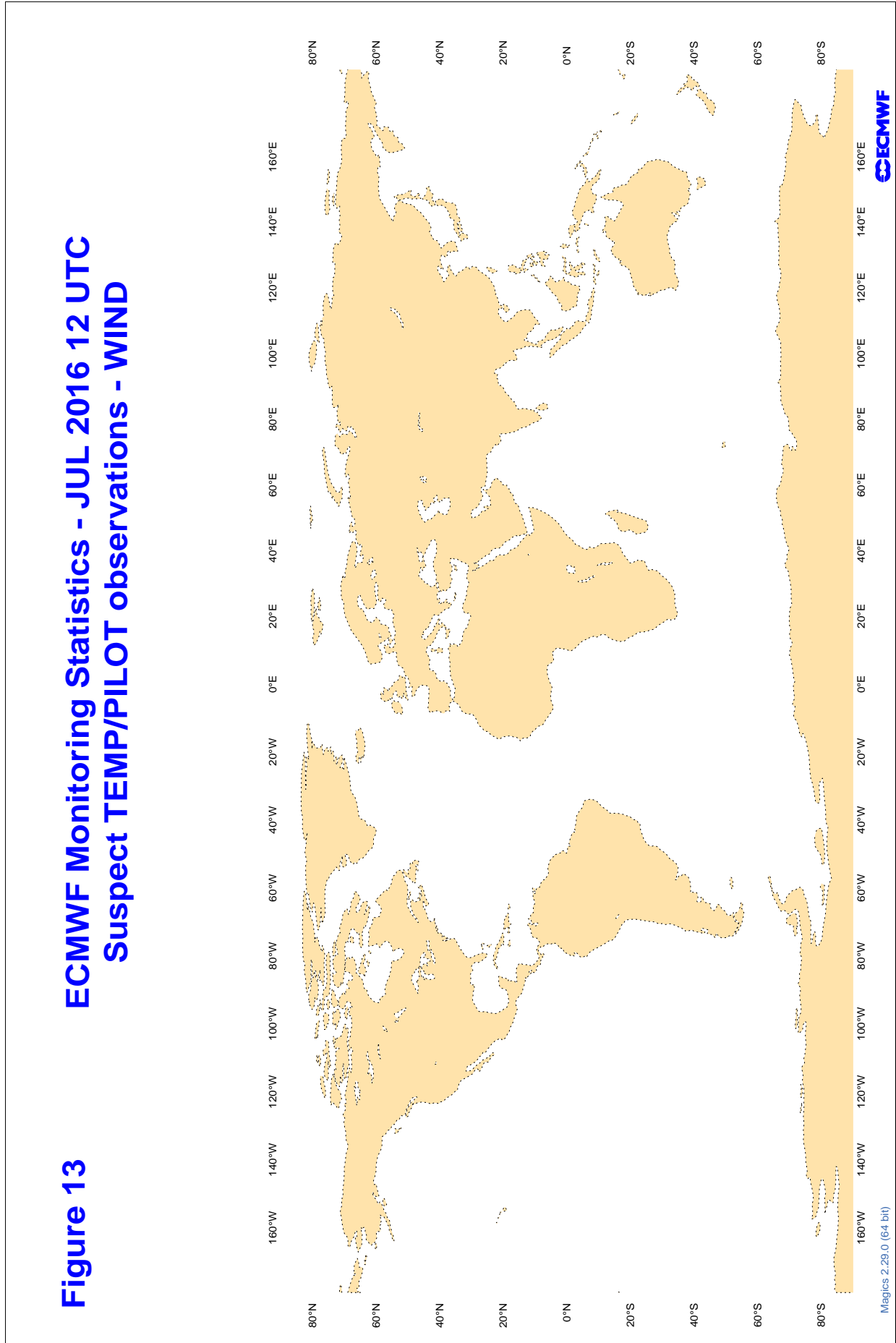
3.2.22 Figure 11 - Suspect TEMP observations - geopotential : 12 UTC



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



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



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

RADIOSONDE MONITORING STATISTICS (SHIPS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : GEOPOTENTIAL HEIGHT (METRES)
 LEVEL : 100 HPA
 AREA : GLOBAL
 PERIOD : JUL 2016
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
ASDE01	12	Z	100	2	107.5	88.7
ASDE02	00	Z	100	19	16.6	15.8
ASDE03	12	Z	100	19	51.7	40.3
ASDE03	00	Z	100	12	19.7	8.0
ASDE04	00	Z	100	9	37.8	37.2
ASDE04	12	Z	100	11	44.9	43.8
ASDE09	12	Z	100	1	9.5	9.5
ASDK01	00	Z	100	21	15.3	12.3
ASDK01	12	Z	100	22	13.4	12.3
ASDK02	12	Z	100	12	7.7	6.2
ASDK02	00	Z	100	10	16.4	10.4
ASDK03	12	Z	100	10	26.2	25.6
ASDK03	00	Z	100	13	23.4	22.9
ASDK1	00	Z	100	10	15.0	11.0
ASDK1	12	Z	100	14	7.7	5.0
ASDK2	12	Z	100	8	5.5	-2.3
ASDK2	00	Z	100	9	16.8	9.0
ASDK3	12	Z	100	9	19.2	18.5
ASDK3	00	Z	100	12	21.3	20.8
ASES01	12	Z	100	1	6.8	-6.8
ASEU01	00	Z	100	2	7.9	7.9
ASEU01	12	Z	100	3	16.3	13.0
ASEU02	12	Z	100	8	46.7	46.1
ASEU02	00	Z	100	6	39.0	38.0
ASEU03	12	Z	100	5	21.0	17.5
ASEU03	00	Z	100	7	11.5	-6.3
ASEU04	12	Z	100	6	8.6	6.7
ASEU04	00	Z	100	7	6.3	-1.7
ASEU05	00	Z	100	3	1.7	1.7
ASEU05	12	Z	100	6	23.3	22.8
ASEU06	12	Z	100	5	25.5	25.4
ASEU06	00	Z	100	8	67.4	8.6
ASFR1	12	Z	100	11	15.1	13.0
ASFR1	00	Z	100	11	8.8	1.3
ASFR3	12	Z	100	12	10.1	9.2
ASFR3	00	Z	100	14	10.3	7.5
ASFR4	12	Z	100	7	34.5	29.0
ASFR4	00	Z	100	7	18.7	13.8
ASUK2	12	Z	100	5	25.7	-6.4

RADIOSONDE MONITORING STATISTICS (SHIPS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
ASUK2	00	Z	100	4	28.1	-17.7
BJPAR	12	Z	100	17	41.8	39.6
BJPAR	00	Z	100	18	39.9	24.7
DBLK	12	Z	100	23	12.8	12.1
GHACC	12	Z	100	14	44.9	41.1
GHACC	00	Z	100	13	25.5	23.3
GHKUM	12	Z	100	6	25.0	-1.8
GHKUM	00	Z	100	5	25.5	-12.5
IVLAM	12	Z	100	15	83.2	82.6
IVLAM	00	Z	100	13	66.0	65.2
JGQH	12	Z	100	13	9.8	2.9
JGQH	00	Z	100	14	12.5	0.1

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 2016
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

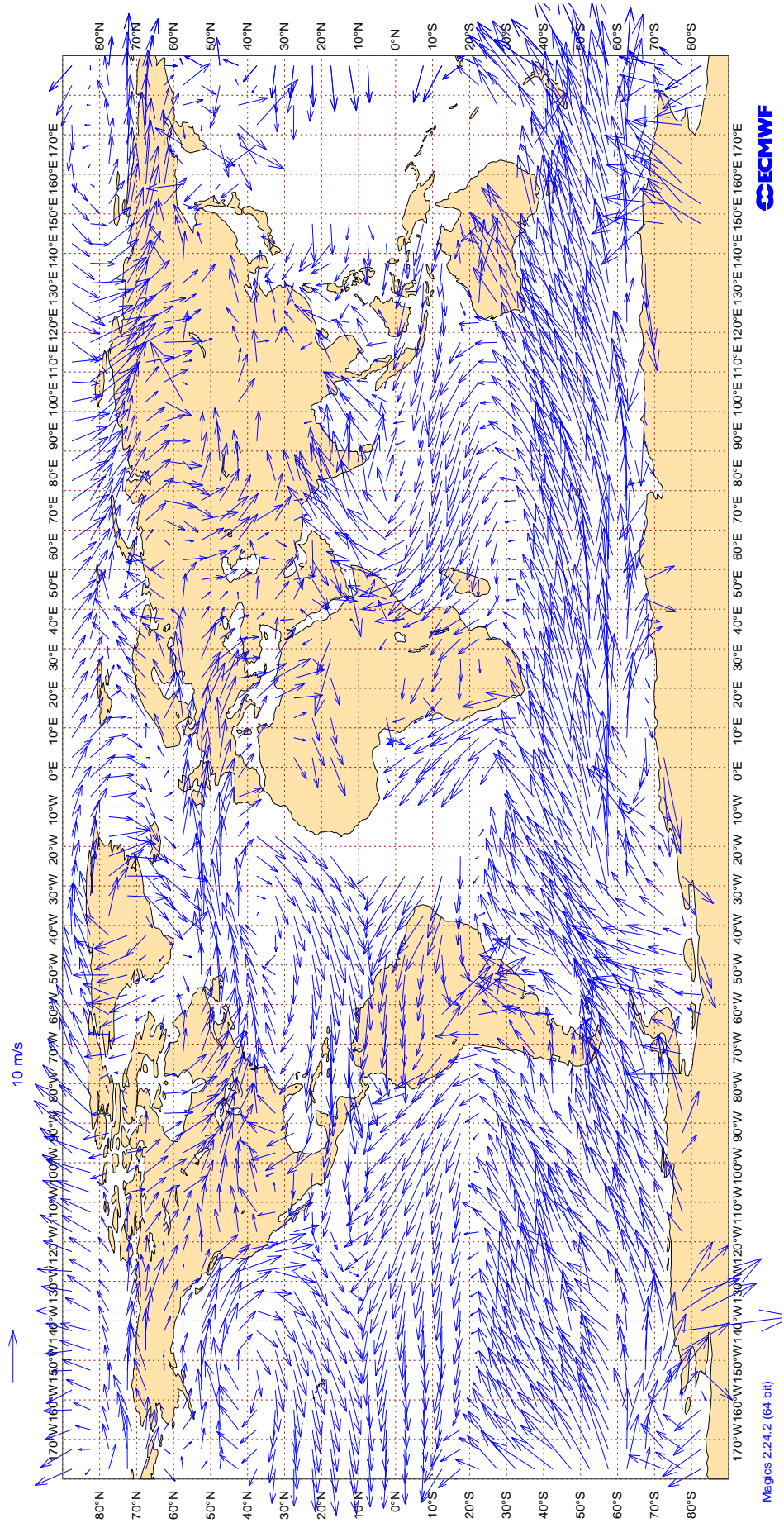
WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
ASDE01	12	V	100	2	2.1	1.8	-0.1
ASDE02	00	V	100	14	2.9	0.5	0.6
ASDE03	12	V	100	16	4.6	0.3	2.0
ASDE03	00	V	100	10	3.6	-0.1	0.4
ASDE04	00	V	100	7	3.9	-1.6	-0.1
ASDE04	12	V	100	8	2.6	-1.1	-0.1
ASDE09	12	V	100	1	1.5	-1.3	-0.7
ASDK01	00	V	100	11	2.1	0.7	0.6
ASDK01	12	V	100	14	2.7	0.6	0.9
ASDK02	12	V	100	10	2.2	0.2	0.0
ASDK02	00	V	100	9	2.3	0.2	1.1
ASDK03	12	V	100	10	2.4	0.3	0.9
ASDK03	00	V	100	12	2.8	0.5	0.1
ASDK1	00	V	100	10	3.0	1.1	1.2
ASDK1	12	V	100	14	3.0	0.6	0.8
ASDK2	12	V	100	8	2.2	0.7	0.6
ASDK2	00	V	100	9	2.1	0.5	1.0
ASDK3	12	V	100	9	2.2	0.5	0.3
ASDK3	00	V	100	12	3.0	1.0	0.2
ASES01	12	V	100	1	2.9	-0.4	2.9
ASEU01	00	V	100	1	2.3	-2.2	-0.6
ASEU01	12	V	100	3	2.2	-2.1	0.0
ASEU02	12	V	100	6	3.9	-2.3	-0.3
ASEU02	00	V	100	6	3.0	-0.4	-1.1
ASEU03	12	V	100	4	4.3	-0.9	-0.5
ASEU03	00	V	100	6	3.0	1.2	-0.8
ASEU04	12	V	100	6	3.1	-0.5	2.3
ASEU04	00	V	100	6	4.7	-1.4	2.9
ASEU05	00	V	100	3	4.7	-1.9	2.6
ASEU05	12	V	100	4	4.3	-3.3	0.6
ASEU06	12	V	100	3	2.5	-1.2	0.9
ASEU06	00	V	100	5	5.0	1.6	0.2
ASFR1	12	V	100	10	3.6	-0.6	0.0
ASFR1	00	V	100	10	3.2	-0.4	0.8
ASFR3	12	V	100	11	2.5	-0.5	0.3
ASFR3	00	V	100	12	3.0	0.4	-0.6
ASFR4	12	V	100	7	3.4	1.1	2.0
ASFR4	00	V	100	7	2.0	0.1	0.7
ASUK2	12	V	100	5	7.9	-0.8	1.6

RADIOSONDE MONITORING STATISTICS (SHIPS)
(CONTINUED)

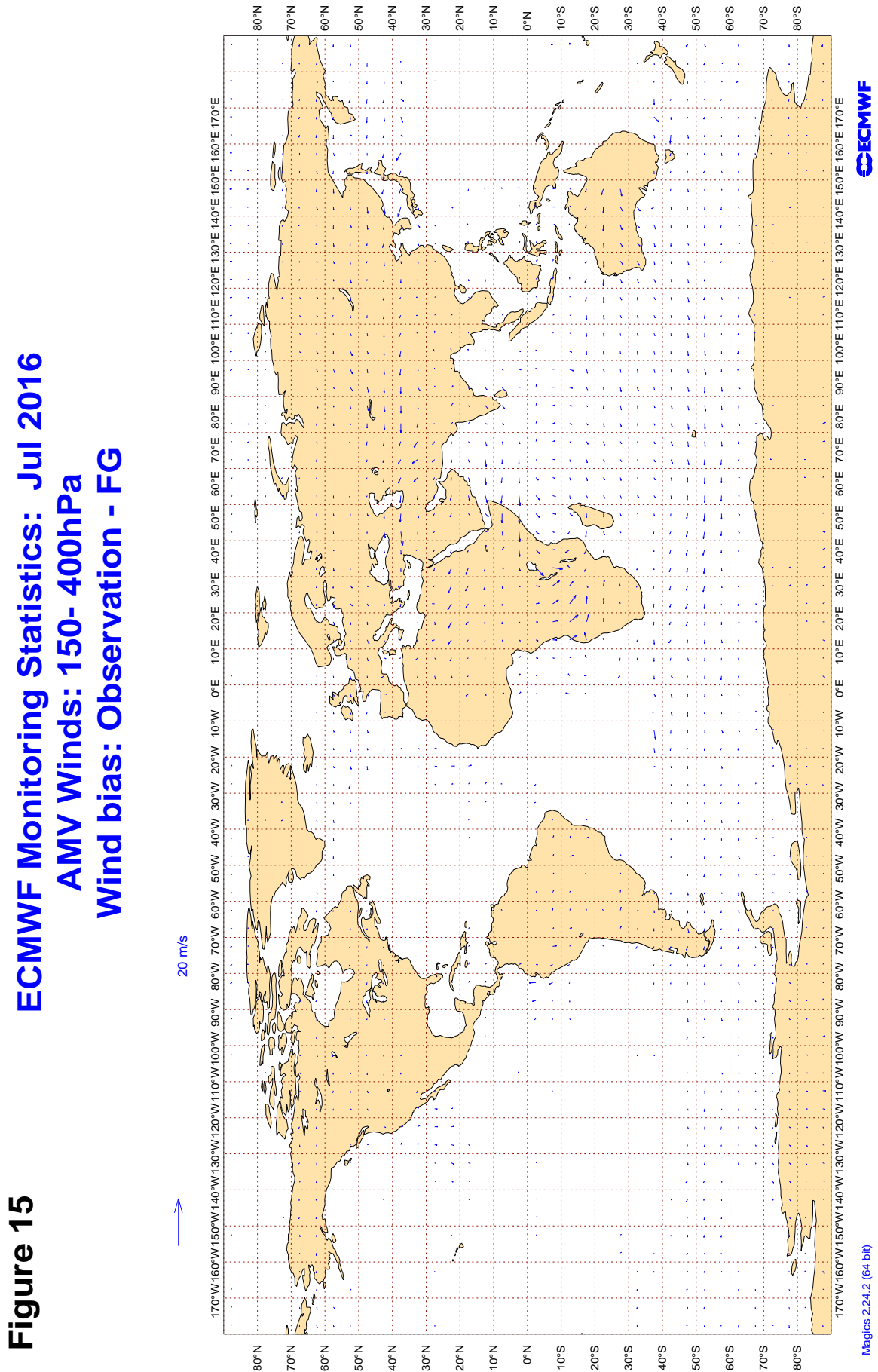
WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
ASUK2	00	V	100	4	2.8	-0.3	-0.4
BJPAR	12	V	100	17	7.8	-0.6	-0.8
BJPAR	00	V	100	16	6.1	1.4	-1.1
DBLK	12	V	100	12	2.6	0.8	0.4
GHACC	12	V	100	14	4.7	-0.7	-1.4
GHACC	00	V	100	13	4.6	1.2	0.8
GHKUM	12	V	100	6	7.4	-0.8	0.5
GHKUM	00	V	100	5	3.0	-0.9	-0.5
IVLAM	12	V	100	14	5.2	-0.7	0.6
IVLAM	00	V	100	11	3.9	-1.1	0.3
JGQH	12	V	100	13	5.0	1.0	-0.8
JGQH	00	V	100	14	4.5	-0.4	-0.8

3.2.27 Figure 14 - SATOB Winds: 700-1000hPa

Figure 14
ECMWF Monitoring Statistics: Jul 2016
AMV Winds: 700-1000hPa
Mean Observed Wind

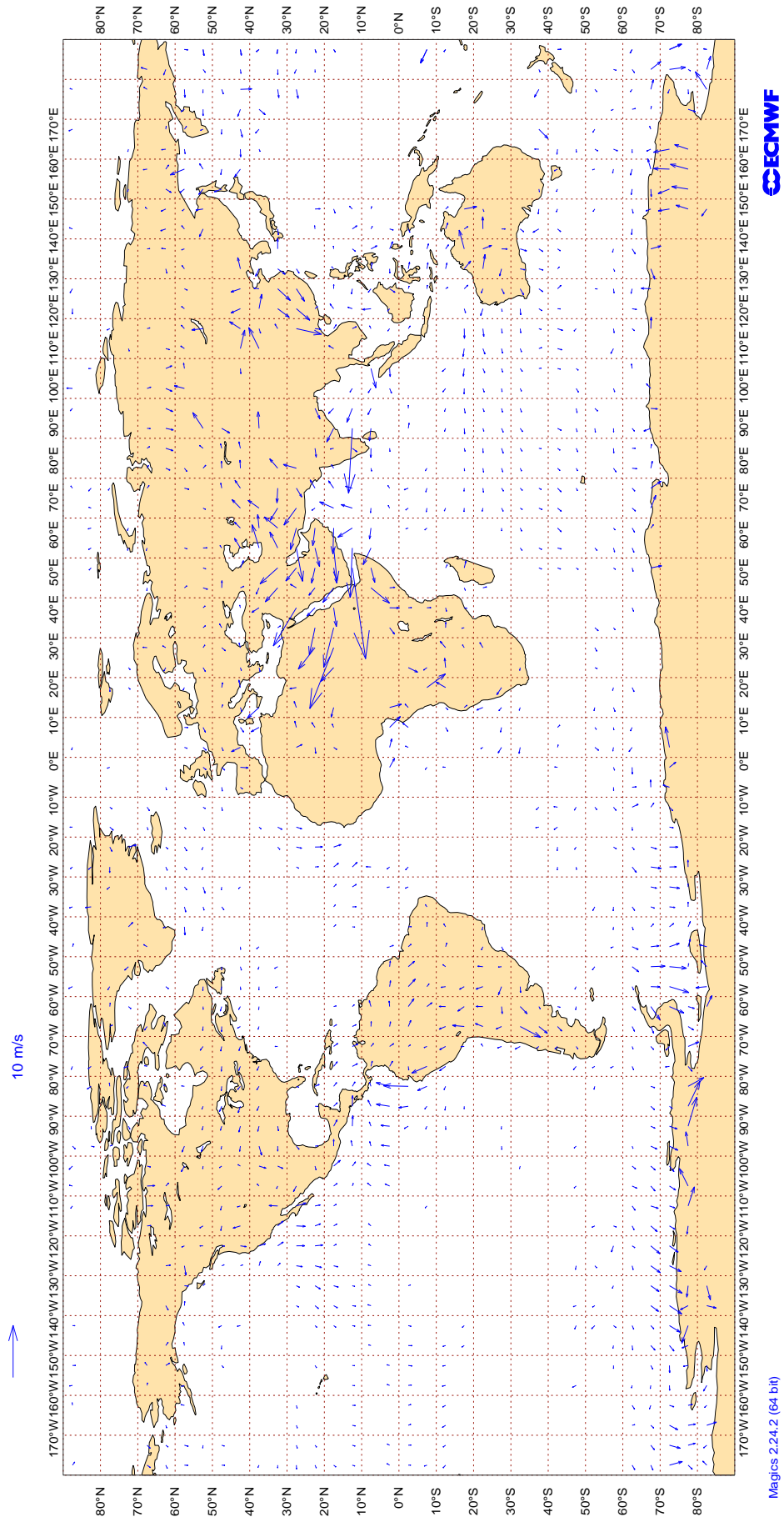


3.2.28 Figure 15 - SATOB Winds: 150- 400hPa



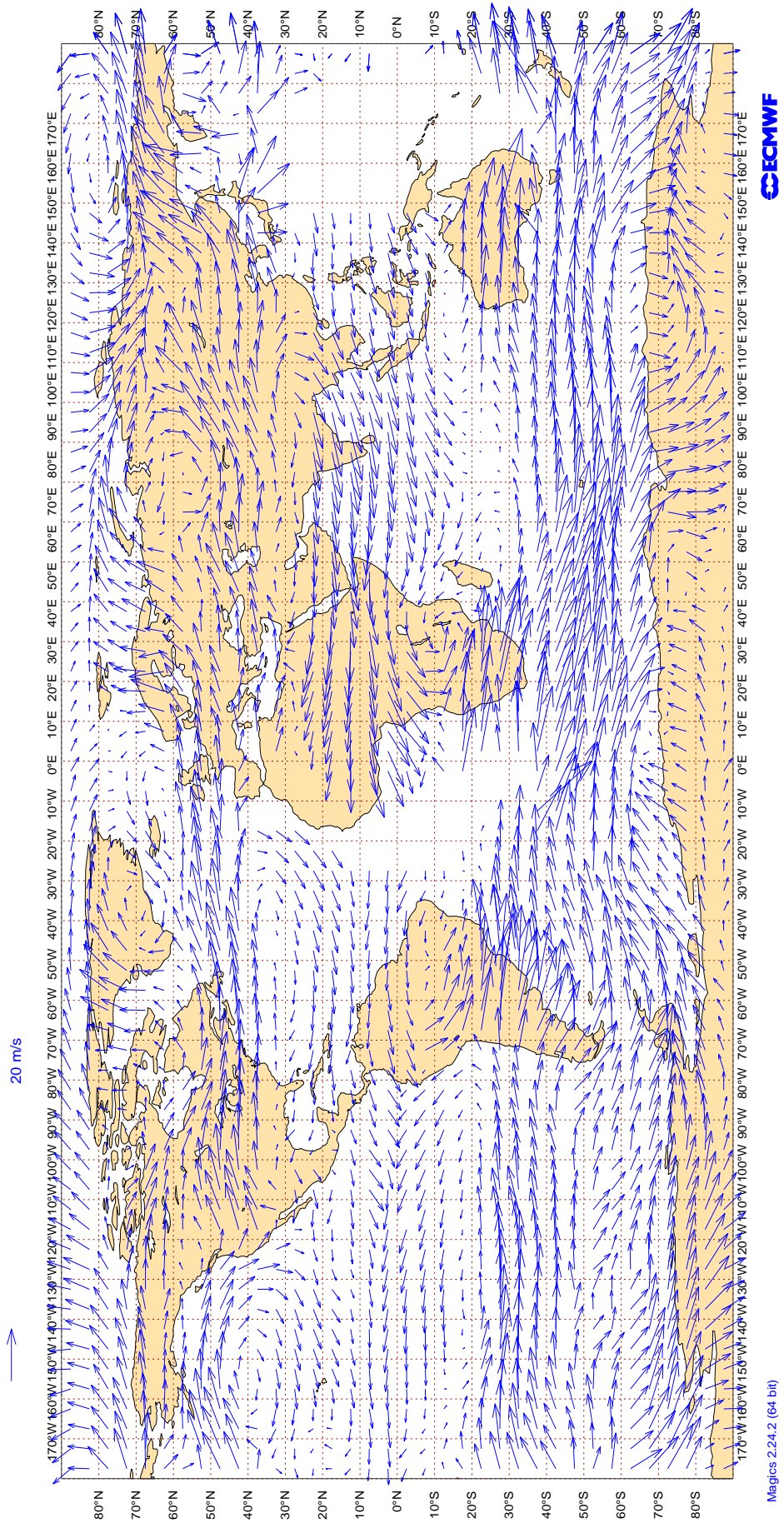
3.2.29 Figure 16 - SATOB Winds: 700-1000hPa

Figure 16
ECMWF Monitoring Statistics: Jul 2016
AMV Winds: 700-1000hPa
Wind bias: Observation - FG

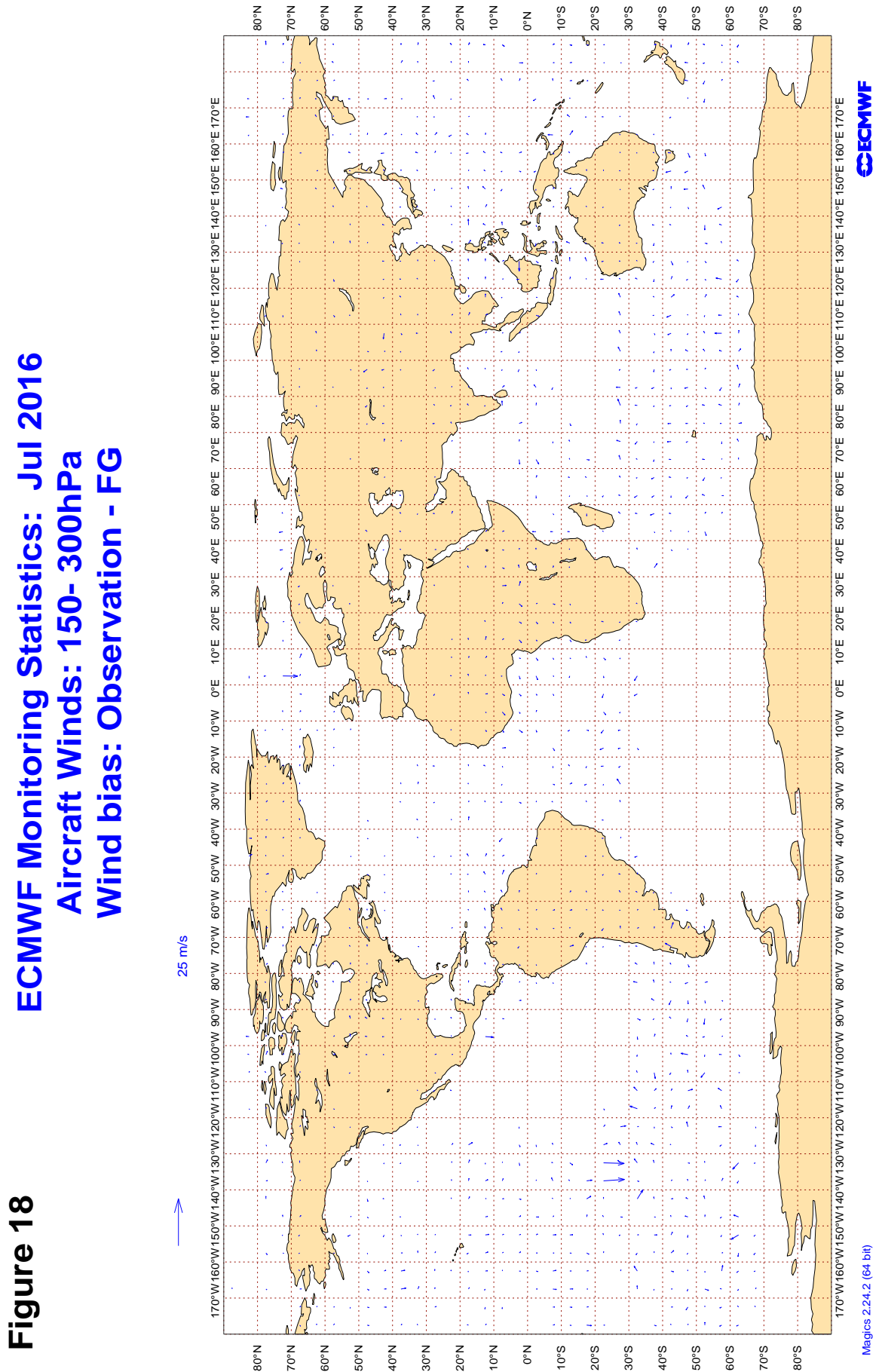


3.2.30 Figure 17 - SATOB Winds: 150- 400hPa

Figure 17
ECMWF Monitoring Statistics: Jul 2016
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 2016
 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	54	0	0	3.0	0.3
AAL	99	V	300-150	73021	0	0	4.1	0.3
AAR	99	V	300-150	306	0	0	4.0	-1.7
AAY	99	V	300-150	508	0	0	5.1	0.4
ABW	99	V	300-150	994	0	0	3.8	-0.7
ABX	99	V	300-150	132	0	0	6.5	0.3
ACA	99	V	300-150	37963	1	0	5.3	0.3
ACI	99	V	300-150	2494	0	0	3.6	0.3
AEA	99	V	300-150	954	0	0	4.7	0.3
AFL	99	V	300-150	2217	0	0	3.2	0.4
AFR	99	V	300-150	35060	0	0	3.6	0.3
AHY	99	V	300-150	336	6	0	8.6	-0.2
AIC	99	V	300-150	1243	0	0	3.1	0.0
AMX	99	V	300-150	2534	7	0	8.4	0.2
ANZ	99	V	300-150	21273	2	0	4.9	0.4
AOJ	99	V	300-150	33	0	0	3.7	2.3
ASA	99	V	300-150	6265	0	0	4.2	0.4
ASL	99	V	300-150	667	0	0	3.2	0.4
ASY	99	V	300-150	236	0	0	4.8	1.2
AUA	99	V	300-150	5301	0	0	4.2	-0.1
AVA	99	V	300-150	426	0	0	3.2	0.3
AVN	99	V	300-150	194	1	1	4.9	-0.6
AXM	99	V	300-150	158	0	0	4.8	0.5
AZA	99	V	300-150	10534	0	0	3.7	0.4
AZG	99	V	300-150	85	0	0	4.3	-1.1
BAH	99	V	300-150	80	0	0	4.5	0.4

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
BAW	99	V	300-150	56735	1	0	4.4	0.2
BBR	99	V	300-150	148	1	1	9.2	1.1
BEL	99	V	300-150	2985	0	0	3.6	0.4
BER	99	V	300-150	8786	0	0	3.3	0.4
BLU	99	V	300-150	33	0	0	3.8	-0.7
BMW	99	V	300-150	49	0	0	4.4	1.3
BOX	99	V	300-150	669	0	0	3.7	0.0
BOX	99	V	300-150	131	0	0	3.8	0.6
BRK	99	V	300-150	47	0	0	5.8	1.7
BVR	99	V	300-150	42	21	0	12.0	-0.2
CAL	99	V	300-150	268	0	0	4.0	0.7
CAM	99	V	300-150	40	0	0	4.4	0.5
CAO	99	V	300-150	149	0	0	3.8	0.1
CCA	99	V	300-150	412	0	0	3.7	0.5
CES	99	V	300-150	1262	0	0	3.4	0.2
CFC	99	V	300-150	349	0	0	3.7	0.4
CFG	99	V	300-150	5536	0	0	4.0	-0.2
CJT	99	V	300-150	159	0	0	3.4	-0.4
CKS	99	V	300-150	1747	0	0	4.2	-0.2
CLE	99	V	300-150	137	0	0	6.2	-1.2
CLU	99	V	300-150	24	0	0	2.8	0.5
CLX	99	V	300-150	3294	0	0	3.6	-0.2
CMB	99	V	300-150	618	0	0	4.0	-0.5
CNV	99	V	300-150	202	0	0	3.7	0.3
CPA	99	V	300-150	26	0	4	4.0	1.3
CRL	99	V	300-150	1661	0	0	3.5	0.3
CRV	99	V	300-150	38	0	0	5.0	1.8
CSN	99	V	300-150	917	5	0	4.1	0.4
CTM	99	V	300-150	57	0	0	3.3	0.2
DAH	99	V	300-150	1373	0	0	3.5	0.4
DAL	99	V	300-150	90650	0	0	3.9	0.2
DGX	99	V	300-150	35	0	0	2.6	1.1
DHK	99	V	300-150	1864	0	0	4.3	-0.1
DJT	99	V	300-150	316	0	1	4.0	0.4
DLH	99	V	300-150	36847	0	0	3.6	0.2
DUB	99	V	300-150	131	0	0	3.3	-0.3
EDW	99	V	300-150	1481	0	0	3.5	0.4
EIN	99	V	300-150	13713	0	0	3.7	0.5
EJM	99	V	300-150	1095	17	0	10.3	0.0
ELY	99	V	300-150	3230	0	0	3.8	-0.0
ETD	99	V	300-150	3471	2	0	4.9	-0.0
ETH	99	V	300-150	2159	2	0	6.7	0.1
EWG	99	V	300-150	1650	0	0	3.1	0.2

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
FDX	99	V	300-150	5961	0	0	3.4	0.2
FIN	99	V	300-150	1075	0	0	3.1	0.6
FJI	99	V	300-150	6423	0	0	4.2	0.6
FPG	99	V	300-150	63	0	0	3.5	0.0
FWI	99	V	300-150	1362	0	0	2.8	0.1
FYG	99	V	300-150	56	0	0	3.0	0.7
GAF	99	V	300-150	40	0	0	4.3	-1.0
GEC	99	V	300-150	2575	0	0	3.4	0.4
GES	99	V	300-150	61	30	0	18.3	0.4
GLJ	99	V	300-150	25	0	0	3.7	1.6
GLO	99	V	300-150	76	1	1	10.5	1.2
GMA	99	V	300-150	65	6	0	15.9	-0.4
GTH	99	V	300-150	81	0	0	3.1	1.2
GTI	99	V	300-150	3152	0	0	4.0	-0.1
HAL	99	V	300-150	3996	0	0	4.4	0.8
HZM	99	V	300-150	61	0	0	3.9	-0.4
HZS	99	V	300-150	72	0	0	2.5	0.5
IAM	99	V	300-150	69	0	0	4.1	-0.5
IBE	99	V	300-150	3976	0	0	3.6	0.4
ICE	99	V	300-150	22	0	32	9.8	-2.7
ICL	99	V	300-150	430	0	0	4.2	-0.1
ICV	99	V	300-150	402	0	0	4.1	-0.1
IJM	99	V	300-150	52	33	0	26.0	1.0
ISS	99	V	300-150	104	0	0	3.7	-0.5
JAF	99	V	300-150	1166	4	0	6.0	-0.1
JAI	99	V	300-150	1171	0	0	3.5	0.5
JAS	99	V	300-150	97	21	0	19.0	0.5
JJA	99	V	300-150	52	0	2	5.2	0.9
JST	99	V	300-150	3016	5	0	8.5	0.2
KAC	99	V	300-150	533	0	0	3.8	0.4
KAI	99	V	300-150	70	0	0	4.0	0.3
KAL	99	V	300-150	1249	0	0	3.6	0.5
KAY	99	V	300-150	84	0	0	3.0	0.1
KCE	99	V	300-150	79	0	0	3.3	0.2
KIW	99	V	300-150	158	0	0	4.8	0.7
KLM	99	V	300-150	18837	0	0	3.7	0.1
LAN	99	V	300-150	1723	10	0	7.2	0.7
LCO	99	V	300-150	118	0	0	3.5	0.6
LDM	99	V	300-150	56	16	0	19.3	0.2
LEA	99	V	300-150	35	0	0	3.2	0.1
LGT	99	V	300-150	46	0	0	3.7	0.5
LMJ	99	V	300-150	42	0	0	4.2	0.1
LOT	99	V	300-150	2904	2	0	8.1	-0.3

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
LXJ	99	V	300-150	176	14	0	11.3	-0.5
MAS	99	V	300-150	356	0	0	3.6	0.5
MMD	99	V	300-150	124	0	0	3.7	0.9
MPH	99	V	300-150	714	0	0	4.1	-0.6
MSR	99	V	300-150	1250	0	0	3.5	0.2
NAX	99	V	300-150	6620	5	0	8.4	-0.1
NCA	99	V	300-150	399	0	0	3.7	-0.7
NJE	99	V	300-150	352	41	0	19.9	-0.2
NOS	99	V	300-150	439	0	0	5.4	-1.1
OAE	99	V	300-150	173	1	1	6.7	0.2
OPM	99	V	300-150	110	53	0	31.6	-0.1
PAC	99	V	300-150	195	0	0	4.0	-0.2
PAL	99	V	300-150	86	2	0	6.2	0.7
PAT	99	V	300-150	36	0	0	3.3	-0.7
PIA	99	V	300-150	714	0	0	3.5	0.1
PLM	99	V	300-150	56	0	0	4.2	-1.3
QAF	99	V	300-150	144	0	0	4.7	0.2
QFA	99	V	300-150	16731	0	0	4.2	0.2
QQE	99	V	300-150	22	27	0	29.4	0.6
QTR	99	V	300-150	8716	0	0	3.7	0.1
RAM	99	V	300-150	153	8	0	11.8	0.2
RCH	99	V	300-150	8071	0	0	4.6	0.4
RJA	99	V	300-150	1333	5	0	9.5	-0.1
RMA	99	V	300-150	21	0	0	4.0	1.4
ROJ	99	V	300-150	95	0	0	4.6	0.3
ROU	99	V	300-150	12527	0	0	4.0	0.0
RRR	99	V	300-150	146	0	1	2.4	0.0
SAM	99	V	300-150	545	3	0	7.5	0.9
SAS	99	V	300-150	4538	0	0	3.0	0.3
SDM	99	V	300-150	23	0	9	3.4	-0.2
SIA	99	V	300-150	2032	0	0	3.7	0.3
SLM	99	V	300-150	214	0	0	3.2	0.0
SOO	99	V	300-150	679	0	0	3.4	-0.2
SPA	99	V	300-150	117	0	0	3.1	0.3
SQC	99	V	300-150	595	0	0	4.2	-0.6
SVA	99	V	300-150	3416	0	0	3.5	0.2
SVW	99	V	300-150	126	0	1	3.5	0.4
SWR	99	V	300-150	13077	0	0	3.5	0.4
SXN	99	V	300-150	53	0	0	2.9	-0.0
TAM	99	V	300-150	458	0	0	3.6	0.1
TAP	99	V	300-150	589	0	0	3.9	0.7
TAR	99	V	300-150	359	0	0	3.5	0.3
TAY	99	V	300-150	845	0	0	4.0	0.2

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
TCV	99	V	300-150	71	1	0	7.6	0.5
TCX	99	V	300-150	7098	0	0	3.5	0.2
TES	99	V	300-150	45	0	0	4.1	0.8
TFL	99	V	300-150	2172	6	0	6.5	0.1
TGM	99	V	300-150	130	29	0	15.7	-1.0
THA	99	V	300-150	178	0	0	4.1	0.5
THT	99	V	300-150	4470	0	0	4.0	0.6
THY	99	V	300-150	7423	0	0	3.8	0.2
TMN	99	V	300-150	77	4	0	4.8	1.2
TOM	99	V	300-150	6987	8	0	7.5	0.0
TSC	99	V	300-150	19840	0	0	3.5	0.2
TWB	99	V	300-150	54	0	0	5.5	0.4
TWY	99	V	300-150	139	22	1	13.1	1.0
UAE	99	V	300-150	10921	0	0	3.8	0.0
UAL	99	V	300-150	98673	1	1	4.7	0.2
ULA	99	V	300-150	20	0	0	3.0	-2.0
ULC	99	V	300-150	63	27	0	26.4	-0.2
UPS	99	V	300-150	5286	0	0	3.9	0.2
VIR	99	V	300-150	26732	1	0	5.1	0.1
VJT	99	V	300-150	601	50	0	26.9	-0.5
VKG	99	V	300-150	66	0	0	2.8	0.5
VMP	99	V	300-150	80	9	0	20.6	1.3
VOZ	99	V	300-150	5401	0	0	3.8	0.4
WGT	99	V	300-150	75	0	0	3.4	0.2
WJA	99	V	300-150	6042	0	0	3.7	0.3
WOW	99	V	300-150	741	0	1	2.5	0.0
XAX	99	V	300-150	335	0	0	3.5	0.2
XLF	99	V	300-150	1574	0	0	3.4	0.4
YZR	99	V	300-150	23	0	0	3.5	-1.0

4 EUCOS Area Monitoring Statistics

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

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

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

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

RADIOSONDE MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : GEOPOTENTIAL HEIGHT (METRES)
 LEVEL : 50 HPA
 AREA : 0 - 90N, 100W - 40E
 PERIOD : JUL 2016
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	00	Z	50	30	17.0	13.6
01001	12	Z	50	30	16.1	12.6
01028	00	Z	50	31	16.9	15.0
01028	12	Z	50	30	18.7	16.6
01400	12	Z	50	23	16.9	14.9
01400	00	Z	50	22	25.2	23.3
01415	12	Z	50	26	15.6	14.3
01415	00	Z	50	28	16.6	15.8
02365	00	Z	50	29	17.2	15.4
02365	12	Z	50	29	12.0	8.2
02591	00	Z	50	31	26.8	26.3
02591	12	Z	50	31	19.9	18.5
02836	12	Z	50	31	17.1	15.2
02836	00	Z	50	30	21.6	18.7
02963	12	Z	50	31	16.7	14.7
02963	00	Z	50	31	15.5	14.6
03005	00	Z	50	31	12.6	7.1
03005	12	Z	50	29	11.4	6.9
03238	00	Z	50	25	20.1	13.7
03238	12	Z	50	11	24.0	22.9
03808	00	Z	50	30	13.2	11.9
03808	12	Z	50	31	12.1	9.3
03918	12	Z	50	18	17.7	16.7
03918	00	Z	50	31	18.2	16.4
03953	00	Z	50	16	16.2	8.5
03953	12	Z	50	16	32.1	29.1
04018	12	Z	50	28	14.4	12.7
04018	00	Z	50	29	16.2	14.6
04220	00	Z	50	31	15.3	13.5
04220	12	Z	50	31	14.0	11.6
04270	00	Z	50	31	12.9	12.0
04270	12	Z	50	31	15.9	12.0
04320	00	Z	50	31	13.9	12.9
04320	12	Z	50	31	11.9	9.9
04339	00	Z	50	30	15.8	12.2
04339	12	Z	50	31	14.6	12.8
04360	12	Z	50	21	56.4	55.6
04360	00	Z	50	23	53.6	52.8
06011	12	Z	50	29	36.1	25.1

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06011	00	Z	50	28	15.9	2.4
06260	00	Z	50	27	24.0	22.1
06260	12	Z	50	5	19.1	18.3
06610	12	Z	50	18	21.8	16.5
06610	00	Z	50	14	17.2	12.5
07110	12	Z	50	31	62.5	55.5
07110	00	Z	50	31	35.1	33.0
07510	12	Z	50	29	54.9	52.8
07510	00	Z	50	30	40.5	39.7
07645	00	Z	50	30	19.1	14.5
07645	12	Z	50	31	31.5	28.3
07761	12	Z	50	30	24.7	21.7
07761	00	Z	50	29	21.4	19.6
08001	00	Z	50	30	20.2	18.8
08001	12	Z	50	31	13.7	9.7
08221	12	Z	50	30	20.4	16.2
08221	00	Z	50	30	15.1	12.2
08302	00	Z	50	31	7.9	6.0
08302	12	Z	50	31	8.6	3.4
08508	12	Z	50	31	29.7	20.0
08522	12	Z	50	31	16.1	14.5
08579	12	Z	50	30	24.9	20.2
10035	12	Z	50	30	11.8	8.1
10035	00	Z	50	29	13.7	11.9
10393	12	Z	50	31	10.3	6.2
10393	00	Z	50	31	14.6	12.5
10410	12	Z	50	31	13.0	10.3
10410	00	Z	50	31	14.3	10.9
10739	12	Z	50	31	18.7	16.8
10739	00	Z	50	31	17.3	14.6
11035	00	Z	50	30	18.0	16.3
11035	12	Z	50	31	14.8	12.4
12982	00	Z	50	29	17.8	16.5
12982	12	Z	50	29	64.5	38.4
16080	12	Z	50	27	10.4	3.5
16080	00	Z	50	18	14.7	10.4
16245	00	Z	50	29	13.9	10.1
16245	12	Z	50	31	28.6	-6.5
16320	12	Z	50	28	14.0	4.4
16320	00	Z	50	14	19.3	17.9
16429	00	Z	50	35	15.0	13.3
16429	12	Z	50	43	8.9	-3.5
16622	00	Z	50	30	54.6	52.9

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
16754	00	Z	50	28	44.0	42.5
17607	12	Z	50	40	24.7	-23.0
26435	00	Z	50	13	14.7	12.0
60018	12	Z	50	30	12.0	6.7
60018	00	Z	50	29	13.6	10.8
ASDE01	12	Z	50	2	126.6	114.4
ASDE02	00	Z	50	14	21.3	20.6
ASDE03	12	Z	50	14	66.8	56.3
ASDE03	00	Z	50	7	20.5	7.9
ASDE04	00	Z	50	7	48.8	47.5
ASDE04	12	Z	50	8	56.7	55.1
ASDE09	12	Z	50	1	22.5	22.5
ASDK01	00	Z	50	11	24.6	20.9
ASDK01	12	Z	50	14	22.4	21.4
ASDK02	12	Z	50	9	17.1	16.5
ASDK02	00	Z	50	8	31.1	24.4
ASDK03	12	Z	50	9	33.1	32.6
ASDK03	00	Z	50	12	31.8	30.9
ASDK1	00	Z	50	11	21.7	16.3
ASDK1	12	Z	50	14	16.5	15.4
ASDK2	12	Z	50	8	9.0	7.0
ASDK2	00	Z	50	8	31.5	24.1
ASDK3	12	Z	50	9	28.1	27.5
ASDK3	00	Z	50	12	26.7	26.3
ASES01	12	Z	50	1	4.2	4.2
ASEU01	00	Z	50	1	26.7	26.7
ASEU01	12	Z	50	2	32.7	30.0
ASEU02	12	Z	50	6	58.3	58.1
ASEU02	00	Z	50	5	43.7	42.5
ASEU03	12	Z	50	3	25.7	23.4
ASEU03	00	Z	50	4	15.6	-4.0
ASEU04	12	Z	50	5	17.3	16.3
ASEU04	00	Z	50	5	13.5	4.9
ASEU05	00	Z	50	3	3.4	3.4
ASEU05	12	Z	50	4	38.8	38.5
ASEU06	12	Z	50	2	34.2	34.2
ASEU06	00	Z	50	5	25.1	-21.6
ASFR1	12	Z	50	10	31.3	27.8
ASFR1	00	Z	50	9	20.2	13.4
ASFR3	12	Z	50	10	25.0	23.7
ASFR3	00	Z	50	12	19.1	15.5
ASFR4	12	Z	50	7	55.3	47.5
ASFR4	00	Z	50	7	28.7	25.0

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
ASUK2	12	Z	50	5	30.7	-13.7
ASUK2	00	Z	50	2	32.8	-14.1
BJPAR	12	Z	50	15	61.7	57.9
BJPAR	00	Z	50	17	69.4	38.6
DBLK	12	Z	50	12	24.9	24.3
GHACC	12	Z	50	12	52.4	46.3
GHACC	00	Z	50	13	34.9	33.4
GHKUM	12	Z	50	6	27.6	-9.7
GHKUM	00	Z	50	3	30.7	-0.8
IVLAM	12	Z	50	9	95.2	94.9
IVLAM	00	Z	50	12	80.3	79.7

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 2016
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	00	V	50	29	2.3	-0.3	0.3
01001	12	V	50	30	2.1	0.1	0.3
01028	00	V	50	30	2.6	-0.1	0.8
01028	12	V	50	30	2.5	0.5	0.1
01400	12	V	50	23	2.8	-0.4	0.1
01400	00	V	50	16	2.8	0.0	0.3
01415	12	V	50	26	2.8	-0.1	0.3
01415	00	V	50	28	2.4	-0.1	0.0
02365	00	V	50	26	3.0	-0.6	0.2
02365	12	V	50	28	2.8	-0.1	-0.2
02591	00	V	50	30	2.8	0.2	0.3
02591	12	V	50	31	2.4	-0.1	0.1
02836	12	V	50	31	2.7	0.3	0.1
02836	00	V	50	27	2.8	0.7	-0.1
02963	12	V	50	31	2.5	-0.2	-0.5
02963	00	V	50	30	2.7	0.4	0.4
03005	00	V	50	29	3.1	0.2	-0.3
03005	12	V	50	29	2.5	0.4	0.6
03238	00	V	50	25	2.3	-0.1	-0.2
03238	12	V	50	11	2.5	0.1	-0.7
03808	00	V	50	29	3.7	0.2	0.6
03808	12	V	50	31	3.3	0.5	0.7
03918	12	V	50	18	2.2	0.1	0.1
03918	00	V	50	30	3.0	0.3	0.6
03953	00	V	50	15	3.8	-0.1	0.1
03953	12	V	50	16	2.9	0.2	0.5
04018	12	V	50	26	3.0	0.3	0.8
04018	00	V	50	27	2.5	0.4	0.7
04220	00	V	50	30	2.7	0.3	-0.5
04220	12	V	50	31	2.8	-0.3	-0.2
04270	00	V	50	30	2.8	-0.3	-0.2
04270	12	V	50	31	2.8	0.0	-0.1
04320	00	V	50	30	2.6	0.2	0.0
04320	12	V	50	31	2.3	0.3	-0.2
04339	00	V	50	29	2.5	0.3	-0.1
04339	12	V	50	31	2.8	-0.2	0.2
04360	12	V	50	21	3.1	1.0	-0.3
04360	00	V	50	22	3.0	0.3	-0.4
06011	12	V	50	29	2.3	0.6	0.0

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06011	00	V	50	27	2.3	0.2	-0.1
06260	00	V	50	26	2.9	0.1	-0.4
06260	12	V	50	5	2.1	0.3	-0.8
06610	12	V	50	18	4.2	0.8	-0.3
06610	00	V	50	14	3.8	-0.7	0.2
07110	12	V	50	31	4.2	0.7	-0.4
07110	00	V	50	30	3.4	-0.5	0.4
07510	12	V	50	29	3.8	-0.1	0.0
07510	00	V	50	29	3.5	-0.2	0.2
07645	00	V	50	29	3.7	-0.7	0.0
07645	12	V	50	31	4.6	0.0	0.8
07761	12	V	50	30	3.2	1.0	0.5
07761	00	V	50	28	4.0	-0.4	0.7
08001	00	V	50	28	3.3	-0.2	1.0
08001	12	V	50	30	4.0	1.0	0.6
08221	12	V	50	30	3.3	0.1	0.8
08221	00	V	50	28	3.6	-0.4	0.5
08302	00	V	50	30	3.3	-0.1	0.7
08302	12	V	50	31	3.6	0.9	0.1
08508	12	V	50	28	3.1	0.1	0.1
08522	12	V	50	31	3.5	0.0	0.9
08579	12	V	50	30	4.0	0.0	0.3
10035	12	V	50	29	2.7	0.2	0.3
10035	00	V	50	28	3.0	0.2	-0.5
10393	12	V	50	31	2.8	0.2	0.3
10393	00	V	50	30	2.7	0.2	-0.1
10410	12	V	50	31	3.0	0.2	0.3
10410	00	V	50	30	3.3	0.6	0.1
10739	12	V	50	31	3.0	0.2	0.1
10739	00	V	50	30	3.8	0.8	0.3
11035	00	V	50	30	3.2	-0.2	-0.1
11035	12	V	50	31	3.2	0.2	-0.3
12982	00	V	50	29	3.0	0.3	-0.5
12982	12	V	50	28	3.2	0.2	-0.5
16080	12	V	50	27	3.4	0.4	0.2
16080	00	V	50	17	3.4	-0.1	0.4
16245	00	V	50	28	3.5	0.6	1.2
16245	12	V	50	30	3.3	0.7	0.3
16320	12	V	50	28	3.9	1.4	-0.5
16320	00	V	50	14	3.5	-0.9	-0.6
16429	00	V	50	26	3.2	0.7	0.3
16429	12	V	50	31	3.3	0.7	-0.2
16622	00	V	50	25	3.6	-0.1	0.2

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
16754	00	V	50	27	3.3	1.0	-0.3
17607	12	V	50	25	3.7	0.5	0.1
26435	00	V	50	11	4.0	0.9	-0.5
60018	12	V	50	30	3.8	0.7	1.5
60018	00	V	50	28	3.8	-1.4	0.5
ASDE01	12	V	50	2	3.7	1.3	1.4
ASDE02	00	V	50	13	3.3	-0.3	0.6
ASDE03	12	V	50	14	3.5	-1.0	-0.5
ASDE03	00	V	50	7	3.9	-1.8	1.7
ASDE04	00	V	50	7	3.4	0.5	-1.2
ASDE04	12	V	50	7	4.4	0.1	1.0
ASDE09	12	V	50	1	2.1	-1.4	-1.6
ASDK01	00	V	50	11	2.6	-0.6	0.3
ASDK01	12	V	50	14	2.7	0.8	-0.1
ASDK02	12	V	50	9	2.5	0.9	0.8
ASDK02	00	V	50	8	3.2	1.7	0.0
ASDK03	12	V	50	9	2.2	0.2	0.4
ASDK03	00	V	50	12	3.1	-0.1	1.0
ASDK1	00	V	50	11	3.0	-0.8	0.5
ASDK1	12	V	50	14	2.6	0.7	-0.4
ASDK2	12	V	50	8	2.6	0.8	0.6
ASDK2	00	V	50	8	3.7	2.2	0.2
ASDK3	12	V	50	9	2.9	0.3	0.8
ASDK3	00	V	50	12	2.6	-0.1	1.0
ASES01	12	V	50	1	4.7	0.5	4.7
ASEU01	00	V	50	1	2.2	1.8	1.2
ASEU01	12	V	50	2	1.6	0.4	1.6
ASEU02	12	V	50	6	4.3	0.6	0.3
ASEU02	00	V	50	5	1.9	-0.8	-1.0
ASEU03	12	V	50	2	3.2	0.6	-2.0
ASEU03	00	V	50	4	2.4	-0.6	-1.2
ASEU04	12	V	50	5	2.0	0.1	1.4
ASEU04	00	V	50	5	2.7	1.2	-0.4
ASEU05	00	V	50	3	13.1	10.8	1.1
ASEU05	12	V	50	2	4.0	-1.0	-0.3
ASEU06	12	V	50	1	1.5	1.1	1.0
ASEU06	00	V	50	4	11.7	5.0	3.4
ASFR1	12	V	50	10	2.2	0.0	0.1
ASFR1	00	V	50	9	3.9	-0.9	-0.5
ASFR3	12	V	50	10	3.4	-0.9	1.8
ASFR3	00	V	50	12	3.7	1.0	-0.8
ASFR4	12	V	50	7	4.9	2.0	-2.0
ASFR4	00	V	50	6	2.3	-0.5	-0.3

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
ASUK2	12	V	50	4	5.2	-2.7	1.3
ASUK2	00	V	50	2	4.6	-1.6	-0.3
BJPAR	12	V	50	15	5.0	0.6	0.7
BJPAR	00	V	50	16	4.5	-1.0	0.6
DBLK	12	V	50	12	2.6	-0.3	1.0
GHACC	12	V	50	12	4.5	-1.3	0.8
GHACC	00	V	50	13	4.6	0.4	0.2
GHKUM	12	V	50	5	5.4	-1.0	0.7
GHKUM	00	V	50	2	4.6	-1.6	-0.3
IVLAM	12	V	50	9	4.8	1.0	2.9
IVLAM	00	V	50	9	4.7	2.7	-1.4

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

RADIOSONDE MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : GEOPOTENTIAL HEIGHT (METRES)
 LEVEL : 100 HPA
 AREA : 0 - 90N, 100W - 40E
 PERIOD : JUL 2016
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	00	Z	100	31	8.9	1.3
01001	12	Z	100	31	8.9	-1.4
01028	00	Z	100	31	7.3	2.9
01028	12	Z	100	30	7.0	3.3
01400	12	Z	100	25	8.7	3.0
01400	00	Z	100	24	13.1	10.1
01415	12	Z	100	27	6.0	1.9
01415	00	Z	100	28	6.2	5.1
02365	00	Z	100	31	5.8	2.0
02365	12	Z	100	31	7.4	-2.7
02591	00	Z	100	31	14.8	14.2
02591	12	Z	100	31	7.4	5.9
02836	12	Z	100	31	5.9	0.8
02836	00	Z	100	30	8.6	5.1
02963	12	Z	100	31	6.5	2.8
02963	00	Z	100	31	6.7	5.2
03005	00	Z	100	31	9.1	-3.4
03005	12	Z	100	30	8.9	-3.0
03238	00	Z	100	29	10.1	4.7
03238	12	Z	100	11	14.1	11.8
03808	00	Z	100	31	5.0	1.6
03808	12	Z	100	31	5.8	1.5
03918	12	Z	100	18	8.0	6.2
03918	00	Z	100	31	9.2	6.7
03953	00	Z	100	30	11.1	-1.6
03953	12	Z	100	31	17.2	13.6
04018	12	Z	100	28	5.6	3.5
04018	00	Z	100	29	8.1	5.0
04220	00	Z	100	31	8.0	5.4
04220	12	Z	100	31	7.0	4.1
04270	00	Z	100	31	6.9	5.1
04270	12	Z	100	31	9.7	4.4
04320	00	Z	100	31	6.1	3.9
04320	12	Z	100	31	5.9	1.1
04339	00	Z	100	30	7.9	3.1
04339	12	Z	100	31	6.4	2.9
04360	12	Z	100	23	53.9	53.2
04360	00	Z	100	24	48.7	48.2
06011	12	Z	100	29	18.1	8.8

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06011	00	Z	100	28	13.4	-5.6
06260	00	Z	100	29	13.8	9.3
06260	12	Z	100	5	6.1	4.5
06610	12	Z	100	31	12.1	7.2
06610	00	Z	100	31	13.1	9.5
07110	12	Z	100	31	37.4	31.9
07110	00	Z	100	31	16.7	15.5
07510	12	Z	100	30	33.9	32.7
07510	00	Z	100	30	23.8	23.0
07645	00	Z	100	30	10.4	3.7
07645	12	Z	100	31	17.0	14.2
07761	12	Z	100	30	13.9	11.8
07761	00	Z	100	30	11.5	9.9
08001	00	Z	100	31	11.1	9.7
08001	12	Z	100	31	6.6	1.2
08221	12	Z	100	30	10.4	6.3
08221	00	Z	100	30	9.8	5.9
08302	00	Z	100	31	5.9	1.8
08302	12	Z	100	31	8.8	-6.0
08508	12	Z	100	31	20.2	11.1
08522	12	Z	100	31	7.0	4.9
08579	12	Z	100	30	15.8	8.2
10035	12	Z	100	30	7.1	-3.0
10035	00	Z	100	29	7.0	0.5
10393	12	Z	100	31	9.0	-6.4
10393	00	Z	100	31	4.8	1.2
10410	12	Z	100	31	6.1	-1.0
10410	00	Z	100	31	7.6	1.0
10739	12	Z	100	31	7.9	4.4
10739	00	Z	100	31	9.4	6.1
11035	00	Z	100	31	9.5	5.6
11035	12	Z	100	32	7.5	1.5
12982	00	Z	100	28	8.5	6.9
12982	12	Z	100	30	41.5	20.6
16080	12	Z	100	31	11.6	-8.3
16080	00	Z	100	31	25.5	-2.6
16245	00	Z	100	30	8.3	4.0
16245	12	Z	100	31	25.8	-12.8
16320	12	Z	100	31	11.6	-4.3
16320	00	Z	100	31	11.5	9.2
16429	00	Z	100	39	10.0	8.3
16429	12	Z	100	43	10.2	-7.5
16622	00	Z	100	31	37.6	36.7

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
16754	00	Z	100	31	29.5	27.6
17607	12	Z	100	47	21.2	-19.9
26435	00	Z	100	13	6.4	0.9
60018	12	Z	100	30	7.0	1.8
60018	00	Z	100	30	8.8	5.1
ASDE01	12	Z	100	2	107.5	88.7
ASDE02	00	Z	100	19	16.6	15.8
ASDE03	12	Z	100	19	51.7	40.3
ASDE03	00	Z	100	12	19.7	8.0
ASDE04	00	Z	100	9	37.8	37.2
ASDE04	12	Z	100	11	44.9	43.8
ASDE09	12	Z	100	1	9.5	9.5
ASDK01	00	Z	100	21	15.3	12.3
ASDK01	12	Z	100	22	13.4	12.3
ASDK02	12	Z	100	12	7.7	6.2
ASDK02	00	Z	100	10	16.4	10.4
ASDK03	12	Z	100	10	26.2	25.6
ASDK03	00	Z	100	13	23.4	22.9
ASDK1	00	Z	100	10	15.0	11.0
ASDK1	12	Z	100	14	7.7	5.0
ASDK2	12	Z	100	8	5.5	-2.3
ASDK2	00	Z	100	9	16.8	9.0
ASDK3	12	Z	100	9	19.2	18.5
ASDK3	00	Z	100	12	21.3	20.8
ASES01	12	Z	100	1	6.8	-6.8
ASEU01	00	Z	100	2	7.9	7.9
ASEU01	12	Z	100	3	16.3	13.0
ASEU02	12	Z	100	8	46.7	46.1
ASEU02	00	Z	100	6	39.0	38.0
ASEU03	12	Z	100	5	21.0	17.5
ASEU03	00	Z	100	7	11.5	-6.3
ASEU04	12	Z	100	6	8.6	6.7
ASEU04	00	Z	100	7	6.3	-1.7
ASEU05	00	Z	100	3	1.7	1.7
ASEU05	12	Z	100	6	23.3	22.8
ASEU06	12	Z	100	5	25.5	25.4
ASEU06	00	Z	100	8	67.4	8.6
ASFR1	12	Z	100	11	15.1	13.0
ASFR1	00	Z	100	11	8.8	1.3
ASFR3	12	Z	100	12	10.1	9.2
ASFR3	00	Z	100	14	10.3	7.5
ASFR4	12	Z	100	7	34.5	29.0
ASFR4	00	Z	100	7	18.7	13.8

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
ASUK2	12	Z	100	5	25.7	-6.4
ASUK2	00	Z	100	4	28.1	-17.7
BJPAR	12	Z	100	17	41.8	39.6
BJPAR	00	Z	100	18	39.9	24.7
DBLK	12	Z	100	23	12.8	12.1
GHACC	12	Z	100	14	44.9	41.1
GHACC	00	Z	100	13	25.5	23.3
GHKUM	12	Z	100	6	25.0	-1.8
GHKUM	00	Z	100	5	25.5	-12.5
IVLAM	12	Z	100	15	83.2	82.6
IVLAM	00	Z	100	13	66.0	65.2

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

RADIOSONDE MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND (M/S)
 LEVEL : 100 HPA
 AREA : 0 - 90N, 100W - 40E
 PERIOD : JUL 2016
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	00	V	100	30	2.1	-0.1	-0.1
01001	12	V	100	31	1.8	0.2	-0.1
01028	00	V	100	30	2.5	0.8	0.2
01028	12	V	100	30	2.4	0.1	0.3
01400	12	V	100	23	3.7	-1.0	-0.6
01400	00	V	100	19	2.8	-0.1	-0.5
01415	12	V	100	27	2.5	0.3	0.1
01415	00	V	100	28	2.2	-0.3	0.5
02365	00	V	100	29	2.8	0.5	-0.3
02365	12	V	100	30	2.7	0.6	-0.1
02591	00	V	100	30	3.0	-0.3	-0.8
02591	12	V	100	31	2.9	0.5	-0.2
02836	12	V	100	31	2.9	0.3	-0.7
02836	00	V	100	27	2.6	-0.1	-0.1
02963	12	V	100	31	2.6	0.2	-0.7
02963	00	V	100	30	2.9	0.7	1.0
03005	00	V	100	29	2.5	-0.1	0.0
03005	12	V	100	30	2.6	0.8	0.2
03238	00	V	100	28	3.1	0.5	0.6
03238	12	V	100	11	4.0	0.5	-0.7
03808	00	V	100	29	3.5	0.2	0.4
03808	12	V	100	31	2.8	0.0	0.3
03918	12	V	100	18	3.1	0.4	1.1
03918	00	V	100	30	3.1	0.5	-0.1
03953	00	V	100	29	3.8	0.1	0.9
03953	12	V	100	31	3.3	0.7	0.0
04018	12	V	100	27	2.7	0.8	0.8
04018	00	V	100	28	2.6	0.9	0.4
04220	00	V	100	30	2.1	-0.4	0.4
04220	12	V	100	31	2.0	0.3	0.0
04270	00	V	100	30	2.7	-0.2	0.4
04270	12	V	100	31	2.8	-0.1	0.5
04320	00	V	100	30	2.5	-0.7	0.4
04320	12	V	100	31	2.2	0.2	-0.4
04339	00	V	100	29	2.5	0.3	-0.1
04339	12	V	100	31	2.1	0.4	0.0
04360	12	V	100	23	2.3	0.2	0.5
04360	00	V	100	23	2.6	0.7	0.4
06011	12	V	100	29	2.2	0.3	0.3

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06011	00	V	100	27	2.1	-0.2	0.0
06260	00	V	100	26	3.4	-0.7	-1.0
06260	12	V	100	5	4.4	0.9	-0.5
06610	12	V	100	31	3.4	0.7	-0.4
06610	00	V	100	31	4.1	-0.7	0.6
07110	12	V	100	30	2.5	-0.2	0.1
07110	00	V	100	29	2.7	-0.1	0.3
07510	12	V	100	28	2.9	0.0	0.6
07510	00	V	100	27	3.1	-0.8	0.4
07645	00	V	100	28	3.5	1.0	0.0
07645	12	V	100	28	3.1	-0.3	0.3
07761	12	V	100	30	3.3	0.8	-0.6
07761	00	V	100	26	3.5	0.4	-0.2
08001	00	V	100	29	3.5	0.6	0.6
08001	12	V	100	31	3.3	-0.5	0.3
08221	12	V	100	30	3.5	-1.0	0.9
08221	00	V	100	28	4.3	0.0	-0.4
08302	00	V	100	30	3.7	0.8	1.2
08302	12	V	100	31	3.6	0.2	0.4
08508	12	V	100	28	3.7	0.0	0.3
08522	12	V	100	31	3.7	0.4	-0.5
08579	12	V	100	30	3.2	-0.2	-0.2
10035	12	V	100	30	3.3	0.5	-1.1
10035	00	V	100	28	3.6	0.0	0.5
10393	12	V	100	31	3.3	-0.3	0.0
10393	00	V	100	30	3.3	0.0	0.2
10410	12	V	100	31	3.2	0.6	-0.1
10410	00	V	100	30	3.1	0.2	0.7
10739	12	V	100	31	3.5	0.0	0.5
10739	00	V	100	30	2.9	0.1	0.0
11035	00	V	100	31	4.0	-0.4	-0.8
11035	12	V	100	31	3.0	-0.4	-0.3
12982	00	V	100	28	3.1	0.1	0.3
12982	12	V	100	29	3.5	0.1	0.4
16080	12	V	100	31	3.2	1.4	-0.5
16080	00	V	100	30	3.8	-1.2	0.4
16245	00	V	100	29	3.6	0.6	-0.2
16245	12	V	100	31	3.3	0.5	0.3
16320	12	V	100	31	4.1	1.6	0.0
16320	00	V	100	30	4.1	0.0	0.9
16429	00	V	100	30	4.2	1.6	0.4
16429	12	V	100	31	4.7	-0.1	1.7
16622	00	V	100	27	4.4	0.7	-0.5

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
16754	00	V	100	31	4.2	0.0	1.5
17607	12	V	100	29	3.9	1.1	-0.5
26435	00	V	100	13	2.7	0.6	0.3
60018	12	V	100	30	3.5	-0.2	-0.4
60018	00	V	100	29	4.0	-0.6	0.7
ASDE01	12	V	100	2	2.1	1.8	-0.1
ASDE02	00	V	100	14	2.9	0.5	0.6
ASDE03	12	V	100	16	4.6	0.3	2.0
ASDE03	00	V	100	10	3.6	-0.1	0.4
ASDE04	00	V	100	7	3.9	-1.6	-0.1
ASDE04	12	V	100	8	2.6	-1.1	-0.1
ASDE09	12	V	100	1	1.5	-1.3	-0.7
ASDK01	00	V	100	11	2.1	0.7	0.6
ASDK01	12	V	100	14	2.7	0.6	0.9
ASDK02	12	V	100	10	2.2	0.2	0.0
ASDK02	00	V	100	9	2.3	0.2	1.1
ASDK03	12	V	100	10	2.4	0.3	0.9
ASDK03	00	V	100	12	2.8	0.5	0.1
ASDK1	00	V	100	10	3.0	1.1	1.2
ASDK1	12	V	100	14	3.0	0.6	0.8
ASDK2	12	V	100	8	2.2	0.7	0.6
ASDK2	00	V	100	9	2.1	0.5	1.0
ASDK3	12	V	100	9	2.2	0.5	0.3
ASDK3	00	V	100	12	3.0	1.0	0.2
ASES01	12	V	100	1	2.9	-0.4	2.9
ASEU01	00	V	100	1	2.3	-2.2	-0.6
ASEU01	12	V	100	3	2.2	-2.1	0.0
ASEU02	12	V	100	6	3.9	-2.3	-0.3
ASEU02	00	V	100	6	3.0	-0.4	-1.1
ASEU03	12	V	100	4	4.3	-0.9	-0.5
ASEU03	00	V	100	6	3.0	1.2	-0.8
ASEU04	12	V	100	6	3.1	-0.5	2.3
ASEU04	00	V	100	6	4.7	-1.4	2.9
ASEU05	00	V	100	3	4.7	-1.9	2.6
ASEU05	12	V	100	4	4.3	-3.3	0.6
ASEU06	12	V	100	3	2.5	-1.2	0.9
ASEU06	00	V	100	5	5.0	1.6	0.2
ASFR1	12	V	100	10	3.6	-0.6	0.0
ASFR1	00	V	100	10	3.2	-0.4	0.8
ASFR3	12	V	100	11	2.5	-0.5	0.3
ASFR3	00	V	100	12	3.0	0.4	-0.6
ASFR4	12	V	100	7	3.4	1.1	2.0
ASFR4	00	V	100	7	2.0	0.1	0.7

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
ASUK2	12	V	100	5	7.9	-0.8	1.6
ASUK2	00	V	100	4	2.8	-0.3	-0.4
BJPAR	12	V	100	17	7.8	-0.6	-0.8
BJPAR	00	V	100	16	6.1	1.4	-1.1
DBLK	12	V	100	12	2.6	0.8	0.4
GHACC	12	V	100	14	4.7	-0.7	-1.4
GHACC	00	V	100	13	4.6	1.2	0.8
GHKUM	12	V	100	6	7.4	-0.8	0.5
GHKUM	00	V	100	5	3.0	-0.9	-0.5
IVLAM	12	V	100	14	5.2	-0.7	0.6
IVLAM	00	V	100	11	3.9	-1.1	0.3

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

RADIOSONDE MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : GEOPOTENTIAL HEIGHT (METRES)
 LEVEL : 500 HPA
 AREA : 0 - 90N, 100W - 40E
 PERIOD : JUL 2016
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	00	Z	500	31	5.9	-0.2
01001	12	Z	500	31	7.0	-1.8
01028	00	Z	500	31	5.7	1.8
01028	12	Z	500	30	5.6	2.6
01400	12	Z	500	27	7.1	4.5
01400	00	Z	500	25	10.6	5.6
01415	12	Z	500	30	4.5	0.7
01415	00	Z	500	29	4.9	4.2
02365	00	Z	500	32	3.2	2.1
02365	12	Z	500	31	3.3	-0.5
02591	00	Z	500	31	10.3	10.0
02591	12	Z	500	31	8.8	8.5
02836	12	Z	500	31	3.9	2.1
02836	00	Z	500	30	4.4	3.5
02963	12	Z	500	31	3.8	2.7
02963	00	Z	500	31	5.2	4.8
03005	00	Z	500	31	4.8	-1.8
03005	12	Z	500	31	5.4	-1.2
03238	00	Z	500	30	8.2	6.6
03238	12	Z	500	11	4.5	2.7
03808	00	Z	500	31	4.7	2.4
03808	12	Z	500	31	4.8	0.4
03918	12	Z	500	19	6.1	3.3
03918	00	Z	500	31	7.2	4.6
03953	00	Z	500	30	10.3	-4.6
03953	12	Z	500	31	9.8	0.2
04018	12	Z	500	28	4.3	2.6
04018	00	Z	500	30	5.2	3.8
04220	00	Z	500	31	6.3	4.5
04220	12	Z	500	31	6.1	4.5
04270	00	Z	500	31	3.9	1.6
04270	12	Z	500	31	6.4	3.1
04320	00	Z	500	31	5.6	4.3
04320	12	Z	500	31	5.3	2.8
04339	00	Z	500	30	4.9	3.7
04339	12	Z	500	31	4.5	2.4
04360	12	Z	500	24	47.8	47.7
04360	00	Z	500	25	47.1	47.0
06011	12	Z	500	29	7.2	-3.6

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06011	00	Z	500	30	12.5	-1.1
06260	00	Z	500	31	10.2	6.8
06260	12	Z	500	5	3.0	1.8
06610	12	Z	500	31	4.9	3.7
06610	00	Z	500	31	8.3	7.4
07110	12	Z	500	32	11.9	9.1
07110	00	Z	500	31	6.7	3.6
07510	12	Z	500	30	14.8	13.9
07510	00	Z	500	31	12.9	12.1
07645	00	Z	500	30	5.1	3.1
07645	12	Z	500	31	7.4	5.5
07761	12	Z	500	30	4.8	0.2
07761	00	Z	500	30	3.7	-1.0
08001	00	Z	500	31	9.2	8.6
08001	12	Z	500	31	6.1	5.3
08221	12	Z	500	30	7.4	6.2
08221	00	Z	500	30	6.9	5.7
08302	00	Z	500	31	2.2	-0.2
08302	12	Z	500	31	3.2	-2.1
08508	12	Z	500	31	11.1	6.7
08522	12	Z	500	31	6.7	5.3
08579	12	Z	500	30	11.7	6.2
10035	12	Z	500	30	5.3	-2.2
10035	00	Z	500	29	3.8	-0.1
10393	12	Z	500	31	5.3	-3.9
10393	00	Z	500	32	2.9	1.0
10410	12	Z	500	31	3.7	-1.0
10410	00	Z	500	31	3.5	0.8
10739	12	Z	500	31	7.5	6.1
10739	00	Z	500	31	9.4	8.5
11035	00	Z	500	31	5.3	1.9
11035	12	Z	500	32	5.6	1.2
12982	00	Z	500	28	7.0	5.4
12982	12	Z	500	31	7.5	3.4
16080	12	Z	500	31	9.3	-7.3
16080	00	Z	500	31	25.2	-7.0
16245	00	Z	500	30	5.3	-3.8
16245	12	Z	500	31	14.3	-10.9
16320	12	Z	500	31	12.4	-8.2
16320	00	Z	500	31	6.7	-0.3
16429	00	Z	500	39	4.6	-1.2
16429	12	Z	500	44	10.6	-9.1
16622	00	Z	500	31	22.7	20.8

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
16754	00	Z	500	31	15.8	14.5
17607	12	Z	500	47	4.0	0.1
26435	00	Z	500	14	4.9	0.7
60018	12	Z	500	30	3.2	2.3
60018	00	Z	500	30	7.0	0.3
ASDE01	12	Z	500	2	19.2	16.2
ASDE02	00	Z	500	19	5.6	5.1
ASDE03	12	Z	500	19	9.4	5.7
ASDE03	00	Z	500	13	8.0	1.2
ASDE04	00	Z	500	11	30.4	30.1
ASDE04	12	Z	500	13	32.1	31.7
ASDE09	12	Z	500	1	8.7	-8.7
ASDK01	00	Z	500	23	9.7	8.3
ASDK01	12	Z	500	22	8.5	7.1
ASDK02	12	Z	500	13	4.9	2.9
ASDK02	00	Z	500	10	6.2	5.4
ASDK03	12	Z	500	12	25.8	25.2
ASDK03	00	Z	500	13	25.2	25.0
ASDK1	00	Z	500	11	5.4	2.9
ASDK1	12	Z	500	14	6.1	0.4
ASDK2	12	Z	500	8	6.7	-3.1
ASDK2	00	Z	500	9	5.3	3.1
ASDK3	12	Z	500	10	17.4	16.7
ASDK3	00	Z	500	12	22.0	21.1
ASES01	12	Z	500	1	4.3	4.3
ASEU01	00	Z	500	2	13.8	13.8
ASEU01	12	Z	500	3	13.6	11.4
ASEU02	12	Z	500	8	39.8	39.5
ASEU02	00	Z	500	6	35.2	34.9
ASEU03	12	Z	500	6	18.4	-7.2
ASEU03	00	Z	500	7	22.9	-14.1
ASEU04	12	Z	500	9	3.7	-1.5
ASEU04	00	Z	500	11	9.2	-6.8
ASEU05	00	Z	500	3	7.5	-7.5
ASEU05	12	Z	500	6	5.4	2.5
ASEU06	12	Z	500	6	7.5	3.8
ASEU06	00	Z	500	9	35.0	-22.3
ASFR1	12	Z	500	11	4.5	-3.8
ASFR1	00	Z	500	11	9.9	-8.5
ASFR3	12	Z	500	13	4.8	3.4
ASFR3	00	Z	500	14	6.2	-1.9
ASFR4	12	Z	500	8	12.8	0.9
ASFR4	00	Z	500	9	10.2	0.7

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
ASUK2	12	Z	500	5	41.3	-21.6
ASUK2	00	Z	500	5	53.5	-43.5
BJPAR	12	Z	500	17	11.4	10.6
BJPAR	00	Z	500	18	6.6	4.2
DBLK	12	Z	500	25	11.3	10.6
GHACC	12	Z	500	15	26.6	25.9
GHACC	00	Z	500	17	19.4	18.7
GHKUM	12	Z	500	7	35.6	-12.3
GHKUM	00	Z	500	6	49.0	-35.1
IVLAM	12	Z	500	17	74.2	73.7
IVLAM	00	Z	500	13	70.4	70.2

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 2016
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	00	V	500	30	1.9	0.2	0.1
01001	12	V	500	31	2.1	0.0	-0.1
01028	00	V	500	30	2.2	-0.2	0.4
01028	12	V	500	30	2.1	0.6	0.0
01400	12	V	500	27	2.2	0.5	0.1
01400	00	V	500	24	2.3	-0.1	0.5
01415	12	V	500	30	3.4	1.3	0.1
01415	00	V	500	29	3.1	-0.2	0.8
02365	00	V	500	30	2.2	0.2	0.1
02365	12	V	500	31	2.5	0.7	0.4
02591	00	V	500	30	3.0	0.2	0.3
02591	12	V	500	31	1.9	-0.1	0.0
02836	12	V	500	31	2.6	0.5	-0.4
02836	00	V	500	27	3.0	0.1	-0.1
02963	12	V	500	31	2.2	-0.1	0.2
02963	00	V	500	30	2.9	-0.4	0.8
03005	00	V	500	29	2.9	-0.6	0.0
03005	12	V	500	31	3.1	0.0	-0.4
03238	00	V	500	29	2.8	0.3	0.6
03238	12	V	500	11	2.8	0.7	-0.1
03808	00	V	500	30	2.2	0.1	-0.2
03808	12	V	500	31	2.8	-0.2	0.3
03918	12	V	500	19	2.3	-0.1	-0.1
03918	00	V	500	30	2.5	0.3	0.3
03953	00	V	500	29	2.6	-0.3	-0.1
03953	12	V	500	31	2.5	-0.4	-0.3
04018	12	V	500	28	2.2	-0.1	-0.1
04018	00	V	500	28	2.6	0.1	0.8
04220	00	V	500	30	2.5	-0.7	0.6
04220	12	V	500	31	2.8	-0.7	0.3
04270	00	V	500	30	2.7	0.3	0.2
04270	12	V	500	31	2.5	0.0	-0.3
04320	00	V	500	30	2.5	0.1	0.1
04320	12	V	500	31	2.5	0.1	0.7
04339	00	V	500	29	2.2	0.0	0.0
04339	12	V	500	31	2.6	-0.3	0.0
04360	12	V	500	24	2.2	0.0	-0.2
04360	00	V	500	24	1.8	0.2	-0.2
06011	12	V	500	29	2.3	0.2	0.2

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06011	00	V	500	29	2.8	-0.6	-0.1
06260	00	V	500	30	2.1	0.7	0.0
06260	12	V	500	5	3.1	1.2	0.6
06610	12	V	500	31	2.5	0.6	-0.3
06610	00	V	500	31	2.8	1.0	0.0
07110	12	V	500	31	2.6	0.2	0.2
07110	00	V	500	30	3.1	0.3	0.3
07510	12	V	500	30	4.3	-0.3	0.5
07510	00	V	500	29	2.7	0.2	0.6
07645	00	V	500	29	2.9	0.6	0.3
07645	12	V	500	31	2.9	0.0	0.6
07761	12	V	500	30	2.5	0.4	-0.1
07761	00	V	500	29	3.7	-0.7	0.2
08001	00	V	500	29	2.3	0.3	-0.1
08001	12	V	500	31	2.6	0.7	0.3
08221	12	V	500	30	2.2	0.8	-0.5
08221	00	V	500	29	2.6	0.5	0.2
08302	00	V	500	30	2.9	0.1	-0.1
08302	12	V	500	31	2.1	0.2	-0.1
08508	12	V	500	29	2.5	-0.3	-0.3
08522	12	V	500	31	2.5	0.6	-0.7
08579	12	V	500	30	2.5	0.1	-0.4
10035	12	V	500	30	2.1	-0.1	-0.1
10035	00	V	500	28	2.3	-0.4	-0.2
10393	12	V	500	31	2.9	1.0	0.5
10393	00	V	500	30	2.3	0.1	-0.3
10410	12	V	500	31	2.6	0.1	0.0
10410	00	V	500	30	2.2	0.3	-0.1
10739	12	V	500	31	2.5	0.6	-0.4
10739	00	V	500	30	3.2	0.6	0.3
11035	00	V	500	31	2.8	-0.1	0.1
11035	12	V	500	31	2.5	-0.1	-0.1
12982	00	V	500	28	2.4	0.0	0.5
12982	12	V	500	31	2.8	0.2	0.1
16080	12	V	500	31	2.7	-0.3	-0.3
16080	00	V	500	30	2.8	0.5	-0.2
16245	00	V	500	29	2.1	0.1	0.6
16245	12	V	500	31	2.1	0.4	0.1
16320	12	V	500	31	2.2	0.3	-0.4
16320	00	V	500	30	2.2	0.1	0.1
16429	00	V	500	30	2.5	0.6	-0.5
16429	12	V	500	31	2.0	0.3	-0.3
16622	00	V	500	28	5.4	1.2	0.6

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
16754	00	V	500	31	2.7	0.4	-0.1
17607	12	V	500	29	2.2	0.7	0.3
26435	00	V	500	14	3.0	0.4	0.2
60018	12	V	500	30	3.5	0.1	0.7
60018	00	V	500	29	3.1	-0.7	0.0
ASDE01	12	V	500	2	2.0	0.9	-0.8
ASDE02	00	V	500	14	2.4	0.1	0.1
ASDE03	12	V	500	15	2.5	0.9	0.0
ASDE03	00	V	500	12	2.9	-0.1	0.3
ASDE04	00	V	500	10	3.2	0.5	0.5
ASDE04	12	V	500	10	2.1	0.4	-1.0
ASDE09	12	V	500	1	1.1	-0.7	-0.9
ASDK01	00	V	500	11	2.9	1.0	1.1
ASDK01	12	V	500	14	2.3	0.5	-0.2
ASDK02	12	V	500	11	2.7	1.0	1.4
ASDK02	00	V	500	9	2.5	0.3	0.7
ASDK03	12	V	500	12	1.8	0.0	-0.1
ASDK03	00	V	500	12	2.0	-0.7	-0.3
ASDK1	00	V	500	10	1.8	0.5	0.6
ASDK1	12	V	500	14	2.5	0.7	-0.9
ASDK2	12	V	500	8	2.6	2.1	0.5
ASDK2	00	V	500	9	2.4	0.4	0.8
ASDK3	12	V	500	10	2.1	0.3	-0.1
ASDK3	00	V	500	12	1.7	-0.5	-0.4
ASES01	12	V	500	1	1.6	0.6	1.5
ASEU01	00	V	500	1	4.0	-1.2	-3.8
ASEU01	12	V	500	3	3.6	-1.1	1.0
ASEU02	12	V	500	6	2.6	-0.9	-0.6
ASEU02	00	V	500	6	2.7	0.2	-0.8
ASEU03	12	V	500	6	2.3	1.4	0.3
ASEU03	00	V	500	7	3.5	1.7	0.8
ASEU04	12	V	500	9	2.6	0.9	-0.9
ASEU04	00	V	500	10	1.8	-0.6	-0.2
ASEU05	00	V	500	3	8.5	-6.3	-0.6
ASEU05	12	V	500	4	1.9	-0.8	0.0
ASEU06	12	V	500	5	3.1	1.6	-0.9
ASEU06	00	V	500	7	5.1	-0.6	2.4
ASFR1	12	V	500	10	2.4	0.3	-0.3
ASFR1	00	V	500	10	2.4	-0.7	0.9
ASFR3	12	V	500	12	3.4	-0.9	-0.2
ASFR3	00	V	500	12	2.5	0.5	0.0
ASFR4	12	V	500	8	2.9	0.3	2.1
ASFR4	00	V	500	9	3.6	1.1	-0.1

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
ASUK2	12	V	500	5	1.8	-0.1	-1.0
ASUK2	00	V	500	5	2.5	0.2	0.8
BJPAR	12	V	500	17	4.6	1.0	1.5
BJPAR	00	V	500	16	3.8	0.1	1.5
DBLK	12	V	500	13	2.1	0.1	-0.1
GHACC	12	V	500	15	2.0	0.8	-0.4
GHACC	00	V	500	17	2.8	0.2	0.6
GHKUM	12	V	500	7	2.2	0.4	-0.1
GHKUM	00	V	500	6	2.3	0.4	0.5
IVLAM	12	V	500	14	2.1	0.1	0.6
IVLAM	00	V	500	10	3.0	0.0	-0.7

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 2016
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	00	Z	850	31	6.3	-2.2
01001	12	Z	850	31	7.5	-3.3
01028	00	Z	850	31	5.3	1.3
01028	12	Z	850	30	4.2	0.8
01400	12	Z	850	27	7.1	4.1
01400	00	Z	850	25	11.1	4.6
01415	12	Z	850	30	4.8	1.9
01415	00	Z	850	29	4.4	4.1
02365	00	Z	850	32	2.2	1.0
02365	12	Z	850	31	2.9	1.4
02591	00	Z	850	31	9.6	9.4
02591	12	Z	850	31	10.6	10.4
02836	12	Z	850	31	4.5	3.9
02836	00	Z	850	30	4.0	3.4
02963	12	Z	850	31	5.1	4.6
02963	00	Z	850	31	5.0	4.5
03005	00	Z	850	31	2.9	-0.7
03005	12	Z	850	31	2.5	-1.1
03238	00	Z	850	30	6.7	6.4
03238	12	Z	850	11	5.2	4.5
03808	00	Z	850	31	2.5	1.8
03808	12	Z	850	31	1.5	0.2
03918	12	Z	850	19	5.4	5.0
03918	00	Z	850	31	5.7	5.3
03953	00	Z	850	30	3.0	1.3
03953	12	Z	850	31	4.0	1.9
04018	12	Z	850	28	2.6	0.4
04018	00	Z	850	30	3.1	1.9
04220	00	Z	850	31	4.7	4.1
04220	12	Z	850	31	6.5	4.8
04270	00	Z	850	31	2.8	1.4
04270	12	Z	850	31	3.1	1.0
04320	00	Z	850	31	5.0	4.5
04320	12	Z	850	31	5.6	4.5
04339	00	Z	850	30	5.4	4.6
04339	12	Z	850	31	5.0	4.6
04360	12	Z	850	25	45.6	45.5
04360	00	Z	850	26	45.7	45.7
06011	12	Z	850	29	3.2	1.3

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06011	00	Z	850	30	10.6	3.8
06260	00	Z	850	31	9.6	5.0
06260	12	Z	850	5	3.5	2.9
06610	12	Z	850	31	4.5	4.0
06610	00	Z	850	31	6.2	5.7
07110	12	Z	850	33	3.1	2.0
07110	00	Z	850	31	2.8	1.0
07510	12	Z	850	30	6.2	5.8
07510	00	Z	850	31	5.1	4.6
07645	00	Z	850	30	2.6	1.3
07645	12	Z	850	31	4.3	3.5
07761	12	Z	850	31	4.3	-3.2
07761	00	Z	850	30	3.2	-2.5
08001	00	Z	850	31	6.7	5.8
08001	12	Z	850	31	5.0	4.6
08221	12	Z	850	30	2.8	2.1
08221	00	Z	850	30	5.0	3.7
08302	00	Z	850	31	2.3	-0.8
08302	12	Z	850	31	3.5	-3.2
08508	12	Z	850	31	7.2	5.1
08522	12	Z	850	31	2.4	1.5
08579	12	Z	850	31	9.5	3.3
10035	12	Z	850	30	3.0	-0.6
10035	00	Z	850	29	3.7	1.8
10393	12	Z	850	31	1.7	0.0
10393	00	Z	850	32	2.0	1.1
10410	12	Z	850	31	2.3	-1.0
10410	00	Z	850	31	1.9	-0.2
10739	12	Z	850	31	7.9	7.7
10739	00	Z	850	31	8.8	8.5
11035	00	Z	850	31	4.2	2.7
11035	12	Z	850	32	6.9	4.8
12982	00	Z	850	31	4.6	3.6
12982	12	Z	850	31	6.5	5.1
16080	12	Z	850	31	6.9	-4.7
16080	00	Z	850	32	6.7	-3.6
16245	00	Z	850	30	6.4	-5.5
16245	12	Z	850	31	10.1	-8.9
16320	12	Z	850	31	12.5	-8.5
16320	00	Z	850	31	6.3	-2.2
16429	00	Z	850	39	5.0	-2.0
16429	12	Z	850	44	9.7	-8.4
16622	00	Z	850	31	13.5	12.7

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
16754	00	Z	850	31	9.9	9.0
17607	12	Z	850	47	2.1	-0.4
26435	00	Z	850	14	2.6	-0.1
60018	12	Z	850	30	4.0	-3.3
60018	00	Z	850	30	6.3	-4.0
ASDE01	12	Z	850	2	3.3	-3.0
ASDE02	00	Z	850	19	1.5	0.7
ASDE03	12	Z	850	19	4.5	-2.5
ASDE03	00	Z	850	13	5.8	-2.3
ASDE04	00	Z	850	11	26.7	26.6
ASDE04	12	Z	850	13	26.2	25.7
ASDE09	12	Z	850	1	7.5	-7.5
ASDK01	00	Z	850	25	8.0	7.1
ASDK01	12	Z	850	22	8.8	7.3
ASDK02	12	Z	850	13	3.7	1.3
ASDK02	00	Z	850	10	4.2	4.0
ASDK03	12	Z	850	14	25.4	24.9
ASDK03	00	Z	850	17	33.3	32.2
ASDK1	00	Z	850	12	8.9	8.1
ASDK1	12	Z	850	14	8.9	7.9
ASDK2	12	Z	850	8	4.9	-0.5
ASDK2	00	Z	850	9	5.6	5.0
ASDK3	12	Z	850	10	22.9	22.6
ASDK3	00	Z	850	15	30.7	29.8
ASES01	12	Z	850	1	0.7	0.7
ASEU01	00	Z	850	2	11.7	11.7
ASEU01	12	Z	850	3	9.6	8.6
ASEU02	12	Z	850	8	35.4	35.0
ASEU02	00	Z	850	6	30.6	30.5
ASEU03	12	Z	850	6	21.7	-13.8
ASEU03	00	Z	850	7	21.5	-15.0
ASEU04	12	Z	850	9	6.7	-4.6
ASEU04	00	Z	850	11	10.5	-6.9
ASEU05	00	Z	850	3	11.5	-10.7
ASEU05	12	Z	850	6	6.8	-1.1
ASEU06	12	Z	850	6	7.3	-3.1
ASEU06	00	Z	850	9	28.8	-24.6
ASFR1	12	Z	850	11	9.8	-9.5
ASFR1	00	Z	850	11	10.0	-8.9
ASFR3	12	Z	850	13	3.0	-0.9
ASFR3	00	Z	850	14	3.3	-1.3
ASFR4	12	Z	850	8	9.1	-3.4
ASFR4	00	Z	850	9	9.5	-3.5

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
ASUK2	12	Z	850	5	45.8	-28.4
ASUK2	00	Z	850	5	64.9	-52.5
BJPAR	12	Z	850	17	4.7	1.9
BJPAR	00	Z	850	18	3.2	1.1
DBLK	12	Z	850	25	10.4	9.7
GHACC	12	Z	850	15	21.4	21.3
GHACC	00	Z	850	17	16.4	16.2
GHKUM	12	Z	850	7	39.4	-17.9
GHKUM	00	Z	850	6	59.3	-43.7
IVLAM	12	Z	850	17	75.6	75.5
IVLAM	00	Z	850	13	71.7	71.7

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 2016
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	00	V	850	30	3.5	-0.1	-0.1
01001	12	V	850	31	3.8	0.9	0.1
01028	00	V	850	30	2.5	0.4	-0.7
01028	12	V	850	30	3.1	-0.3	0.3
01400	12	V	850	27	2.7	0.6	-0.3
01400	00	V	850	24	2.3	-0.4	0.7
01415	12	V	850	30	2.6	0.3	-0.6
01415	00	V	850	29	2.2	-0.2	0.3
02365	00	V	850	30	2.1	0.2	-0.2
02365	12	V	850	31	2.6	-0.1	-0.1
02591	00	V	850	30	2.1	-0.3	0.3
02591	12	V	850	31	2.2	0.2	0.0
02836	12	V	850	31	2.4	0.2	-0.3
02836	00	V	850	27	1.8	0.1	-0.2
02963	12	V	850	31	2.8	-0.1	-0.2
02963	00	V	850	30	2.5	-0.2	-0.3
03005	00	V	850	29	3.2	0.3	-0.2
03005	12	V	850	31	3.4	0.6	0.0
03238	00	V	850	29	2.4	0.0	0.7
03238	12	V	850	11	5.2	1.6	-1.0
03808	00	V	850	30	2.7	0.6	0.5
03808	12	V	850	31	2.6	0.6	-0.6
03918	12	V	850	19	1.9	0.2	0.2
03918	00	V	850	30	2.1	0.2	-0.2
03953	00	V	850	29	2.5	0.4	0.2
03953	12	V	850	31	2.6	0.0	0.5
04018	12	V	850	28	2.2	0.0	0.1
04018	00	V	850	28	2.9	-0.1	0.9
04220	00	V	850	30	3.0	-0.2	0.2
04220	12	V	850	31	2.8	0.7	0.1
04270	00	V	850	30	2.9	-1.1	0.2
04270	12	V	850	31	3.0	-1.3	-0.2
04320	00	V	850	30	3.0	0.8	-0.5
04320	12	V	850	31	3.1	0.2	-1.0
04339	00	V	850	29	3.2	-1.2	-0.3
04339	12	V	850	31	2.8	0.0	-0.2
04360	12	V	850	25	3.1	0.4	0.2
04360	00	V	850	25	3.0	-0.2	-0.4
06011	12	V	850	29	2.6	0.1	0.0

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06011	00	V	850	29	2.8	-0.2	-0.4
06260	00	V	850	30	2.5	0.3	0.9
06260	12	V	850	5	1.7	0.3	1.0
06610	12	V	850	31	2.8	0.7	1.2
06610	00	V	850	30	2.8	1.2	0.4
07110	12	V	850	31	3.9	-0.2	1.0
07110	00	V	850	30	2.5	0.4	0.5
07510	12	V	850	30	3.3	0.7	0.9
07510	00	V	850	29	3.2	-0.5	-0.1
07645	00	V	850	29	3.5	0.7	0.2
07645	12	V	850	31	3.5	-0.1	0.8
07761	12	V	850	30	3.0	-0.8	-0.4
07761	00	V	850	29	3.0	-0.1	-0.7
08001	00	V	850	29	2.8	1.2	-0.3
08001	12	V	850	31	2.8	0.1	0.0
08221	12	V	850	30	2.7	0.3	0.1
08221	00	V	850	29	4.1	0.2	-0.8
08302	00	V	850	29	3.5	-0.5	0.3
08302	12	V	850	31	2.8	0.1	0.5
08508	12	V	850	29	2.4	-0.2	0.0
08522	12	V	850	31	2.8	-0.4	-0.9
08579	12	V	850	31	2.5	0.6	-0.6
10035	12	V	850	30	2.5	0.2	0.0
10035	00	V	850	28	2.5	0.7	-0.1
10393	12	V	850	31	3.5	0.6	-0.2
10393	00	V	850	30	2.5	0.5	-0.1
10410	12	V	850	31	2.1	0.6	0.1
10410	00	V	850	30	2.5	0.2	0.4
10739	12	V	850	31	2.9	-0.2	0.0
10739	00	V	850	30	2.7	0.5	0.1
11035	00	V	850	31	3.8	-0.6	-0.7
11035	12	V	850	31	3.0	0.3	-0.2
12982	00	V	850	31	2.8	0.2	-0.6
12982	12	V	850	31	2.8	-0.1	0.7
16080	12	V	850	31	3.0	0.3	-0.9
16080	00	V	850	30	3.3	-0.4	-0.4
16245	00	V	850	29	3.0	0.5	-0.7
16245	12	V	850	31	2.9	-0.1	-0.1
16320	12	V	850	31	3.0	0.3	-0.6
16320	00	V	850	30	2.1	0.2	-0.5
16429	00	V	850	30	2.7	-0.3	-0.2
16429	12	V	850	31	2.5	-0.4	-0.2
16622	00	V	850	28	4.9	1.5	-1.5

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
16754	00	V	850	31	2.6	0.8	0.4
17607	12	V	850	29	3.3	1.3	-0.1
26435	00	V	850	14	2.4	0.0	0.4
60018	12	V	850	30	3.6	0.7	0.2
60018	00	V	850	29	3.5	0.7	0.3
ASDE01	12	V	850	2	2.9	2.1	0.0
ASDE02	00	V	850	14	2.5	-0.1	0.5
ASDE03	12	V	850	16	2.3	-0.4	0.3
ASDE03	00	V	850	12	3.2	1.0	-0.4
ASDE04	00	V	850	10	1.8	0.3	0.7
ASDE04	12	V	850	10	1.8	-0.3	0.6
ASDE09	12	V	850	1	1.5	-0.6	1.4
ASDK01	00	V	850	13	2.5	0.6	-0.2
ASDK01	12	V	850	14	2.6	-0.1	-0.2
ASDK02	12	V	850	11	3.0	0.2	-0.4
ASDK02	00	V	850	9	1.7	0.0	0.1
ASDK03	12	V	850	14	2.3	-0.3	0.1
ASDK03	00	V	850	14	3.2	0.4	1.4
ASDK1	00	V	850	12	3.0	0.5	-0.2
ASDK1	12	V	850	14	2.2	-0.4	-0.2
ASDK2	12	V	850	8	2.1	1.0	-0.4
ASDK2	00	V	850	9	2.2	-0.3	-0.2
ASDK3	12	V	850	10	2.6	-0.6	0.4
ASDK3	00	V	850	14	3.5	0.6	1.1
ASES01	12	V	850	1	1.0	1.0	-0.1
ASEU01	00	V	850	1	3.9	-2.3	3.2
ASEU01	12	V	850	3	1.8	0.9	-0.1
ASEU02	12	V	850	6	2.0	0.5	-0.8
ASEU02	00	V	850	6	1.1	-0.2	-0.3
ASEU03	12	V	850	6	3.6	1.3	-0.4
ASEU03	00	V	850	7	2.0	-0.7	0.2
ASEU04	12	V	850	9	3.6	-1.5	-0.6
ASEU04	00	V	850	10	2.8	0.6	0.7
ASEU05	00	V	850	3	2.0	-1.0	-0.4
ASEU05	12	V	850	4	2.6	0.5	-0.2
ASEU06	12	V	850	5	2.7	1.1	1.4
ASEU06	00	V	850	4	3.6	-2.0	-0.4
ASFR1	12	V	850	10	3.0	-0.4	1.1
ASFR1	00	V	850	10	2.9	0.9	-0.9
ASFR3	12	V	850	12	2.9	1.0	0.0
ASFR3	00	V	850	12	2.9	-1.3	-0.7
ASFR4	12	V	850	8	3.3	0.5	0.1
ASFR4	00	V	850	9	2.5	-0.3	0.7

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
ASUK2	12	V	850	5	1.9	0.4	0.1
ASUK2	00	V	850	5	2.1	-0.2	0.0
BJPAR	12	V	850	17	5.7	-0.7	-1.0
BJPAR	00	V	850	16	2.9	0.5	-0.7
DBLK	12	V	850	13	2.7	-0.1	0.5
GHACC	12	V	850	15	2.1	-0.2	-0.5
GHACC	00	V	850	17	1.9	-0.6	-0.4
GHKUM	12	V	850	7	2.2	0.1	-0.4
GHKUM	00	V	850	6	1.9	-0.2	0.0
IVLAM	12	V	850	15	2.4	0.6	-0.3
IVLAM	00	V	850	11	1.8	-0.3	0.4

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 2016
 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
007	99	P	SUR	78	28	1	0	0.0	-5.7	5.7
03380	99	P	SUR	54	0	731	0	0.3	0.0	0.3
1300001	99	P	SUR	11	-23	726	0	0.4	-0.1	0.4
1300008	99	P	SUR	15	-38	90	0	0.4	0.2	0.4
1300515	99	P	SUR	26	-54	703	0	0.3	0.2	0.4
1300519	99	P	SUR	21	-65	4	0	0.6	-0.2	0.7
1300530	99	P	SUR	12	-25	694	0	0.4	-0.4	0.5
1300572	99	P	SUR	29	-23	729	0	0.4	0.2	0.5
1300633	99	P	SUR	25	-44	303	0	0.3	-0.5	0.6
1300661	99	P	SUR	21	-64	743	0	0.3	-0.3	0.5
1300665	99	P	SUR	21	-31	744	0	0.3	0.3	0.4
13008	99	P	SUR	15	-38	24	0	0.4	0.2	0.4
1300868	99	P	SUR	25	-18	744	0	0.4	0.5	0.7
1300869	99	P	SUR	21	-42	744	0	0.3	0.3	0.4
1300871	99	P	SUR	26	-41	652	0	0.2	0.8	0.8
1300872	99	P	SUR	24	-41	741	0	0.2	0.7	0.7
1301500	99	P	SUR	18	-36	733	0	0.3	0.1	0.3
1301501	99	P	SUR	19	-35	734	0	0.3	0.6	0.6
1301502	99	P	SUR	19	-33	730	0	0.3	0.7	0.8
13515	99	P	SUR	26	-54	511	0	0.3	0.3	0.4
13519	99	P	SUR	21	-65	2	0	0.6	-0.7	0.9
13530	99	P	SUR	12	-25	194	0	0.4	-0.4	0.6
13572	99	P	SUR	29	-23	425	0	0.5	0.2	0.5
13633	99	P	SUR	25	-44	225	0	0.3	-0.5	0.6
13661	99	P	SUR	21	-64	743	0	0.3	-0.3	0.5
13665	99	P	SUR	21	-31	744	0	0.3	0.3	0.4
13868	99	P	SUR	25	-18	744	0	0.4	0.5	0.7
13869	99	P	SUR	21	-42	744	0	0.3	0.3	0.4
13871	99	P	SUR	26	-41	652	0	0.2	0.8	0.8
13872	99	P	SUR	24	-41	741	0	0.2	0.7	0.7
2100942	99	P	SUR	27	-48	732	1	0.2	0.5	0.5
21942	99	P	SUR	27	-48	672	1	0.2	0.5	0.5
2500575	99	P	SUR	60	-48	744	0	0.4	-0.0	0.4
2500617	99	P	SUR	60	-38	744	0	0.7	-0.4	0.8
25575	99	P	SUR	60	-48	679	0	0.4	-0.0	0.4
25617	99	P	SUR	60	-38	744	0	0.7	-0.4	0.8

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
2600537	99	P	SUR	72	18	741	0	0.4	0.0	0.4
2600545	99	P	SUR	68	0	727	198	4.1	7.9	9.0
26537	99	P	SUR	72	18	739	0	0.4	0.0	0.4
26545	99	P	SUR	68	0	732	199	4.1	7.9	9.0
3100706	99	P	SUR	11	-36	717	0	0.4	0.1	0.4
3100863	99	P	SUR	29	-62	741	0	0.4	0.7	0.8
31706	99	P	SUR	11	-36	238	0	0.4	0.1	0.4
31863	99	P	SUR	29	-62	741	0	0.4	0.7	0.8
4100139	99	P	SUR	20	-38	360	0	0.3	0.0	0.3
4100300	99	P	SUR	16	-57	744	0	0.3	0.4	0.5
4100506	99	P	SUR	33	-54	720	0	0.4	-0.0	0.4
4100564	99	P	SUR	31	-32	210	0	0.2	0.6	0.6
4100590	99	P	SUR	42	-45	736	0	0.5	-0.4	0.6
4100594	99	P	SUR	41	-54	735	0	0.4	-0.1	0.4
4100597	99	P	SUR	30	-54	744	0	0.4	0.2	0.4
4100598	99	P	SUR	32	-64	744	0	1.2	-0.9	1.5
4100635	99	P	SUR	24	-54	743	0	0.3	0.6	0.7
4100638	99	P	SUR	21	-68	315	1	0.4	0.2	0.4
4100706	99	P	SUR	31	-35	744	0	0.2	0.3	0.4
4100707	99	P	SUR	14	-61	739	0	0.3	-1.0	1.0
4100708	99	P	SUR	21	-58	744	0	0.3	0.2	0.4
4100709	99	P	SUR	35	-67	744	0	0.4	0.2	0.5
4100729	99	P	SUR	37	-65	744	0	0.4	-0.2	0.5
4100731	99	P	SUR	30	-54	744	0	0.3	0.1	0.4
4100936	99	P	SUR	35	-58	735	0	0.4	-1.1	1.1
4100970	99	P	SUR	34	-60	744	0	0.4	0.1	0.4
4100972	99	P	SUR	35	-42	742	0	0.4	-0.0	0.4
4100975	99	P	SUR	24	-34	728	0	0.2	0.2	0.3
4101700	99	P	SUR	38	-53	744	0	0.4	0.2	0.5
4101701	99	P	SUR	28	-66	744	0	0.4	0.4	0.6
41040	99	P	SUR	15	-53	734	0	0.4	-0.8	0.8
41041	99	P	SUR	14	-46	720	0	0.3	-0.5	0.5
41043	99	P	SUR	21	-65	947	0	0.4	0.7	0.7
41044	99	P	SUR	22	-59	976	0	0.3	0.0	0.3
41046	99	P	SUR	24	-69	972	0	0.4	-0.1	0.4
41048	99	P	SUR	32	-70	751	0	0.4	-0.9	1.0
41049	99	P	SUR	28	-63	733	0	0.3	0.2	0.4
41051	99	P	SUR	18	-65	1461	0	0.4	-0.2	0.4
41052	99	P	SUR	18	-65	1867	0	0.4	-1.1	1.2
41053	99	P	SUR	19	-66	1870	0	0.4	-0.3	0.5
41056	99	P	SUR	18	-66	1669	0	0.4	-0.7	0.8
41139	99	P	SUR	20	-38	250	0	0.3	0.0	0.3
41506	99	P	SUR	33	-54	593	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
41564	99	P	SUR	31	-32	139	0	0.2	0.6	0.6
41590	99	P	SUR	42	-45	694	0	0.5	-0.4	0.6
41594	99	P	SUR	41	-54	550	0	0.4	-0.0	0.4
41597	99	P	SUR	30	-54	744	0	0.4	0.2	0.4
41598	99	P	SUR	32	-64	744	0	1.2	-0.9	1.5
41635	99	P	SUR	24	-54	743	0	0.3	0.6	0.7
41638	99	P	SUR	21	-68	315	1	0.4	0.2	0.4
41706	99	P	SUR	31	-35	744	0	0.2	0.3	0.4
41707	99	P	SUR	14	-61	739	0	0.3	-1.0	1.0
41708	99	P	SUR	21	-58	744	0	0.3	0.2	0.4
41709	99	P	SUR	35	-67	744	0	0.4	0.2	0.5
41729	99	P	SUR	37	-65	744	0	0.4	-0.2	0.5
41731	99	P	SUR	30	-54	744	0	0.3	0.1	0.4
41936	99	P	SUR	35	-58	610	0	0.4	-1.1	1.1
41970	99	P	SUR	34	-60	744	0	0.4	0.1	0.4
41972	99	P	SUR	35	-42	742	0	0.4	-0.0	0.4
41975	99	P	SUR	24	-34	566	0	0.2	0.2	0.3
42059	99	P	SUR	15	-68	972	0	0.5	0.5	0.7
42060	99	P	SUR	16	-63	479	0	0.4	0.5	0.6
42085	99	P	SUR	18	-67	1675	0	0.4	-0.7	0.8
42087	99	P	SUR	11	-61	2029	0	0.5	-0.1	0.5
42088	99	P	SUR	11	-61	1261	0	0.6	0.1	0.6
44005	99	P	SUR	43	-69	734	0	0.4	-0.1	0.5
4400510	99	P	SUR	47	-51	1625	1	0.4	0.5	0.7
4400513	99	P	SUR	53	-11	744	0	0.4	0.5	0.6
4400515	99	P	SUR	52	-28	744	0	0.4	-0.2	0.4
4400516	99	P	SUR	44	-16	126	0	0.2	0.6	0.6
4400517	99	P	SUR	35	-16	743	0	0.3	0.6	0.7
4400521	99	P	SUR	40	-35	739	0	0.3	-0.3	0.4
4400546	99	P	SUR	29	-52	744	0	0.3	-0.0	0.3
4400551	99	P	SUR	68	12	744	0	0.3	0.2	0.4
4400557	99	P	SUR	42	-34	744	0	0.4	0.5	0.6
4400558	99	P	SUR	30	-52	737	0	0.3	0.6	0.7
4400614	99	P	SUR	52	-11	652	0	0.3	-0.1	0.3
4400624	99	P	SUR	24	-52	725	0	0.2	-0.1	0.2
4400670	99	P	SUR	45	-50	722	0	0.4	-0.1	0.4
4400739	99	P	SUR	36	-36	744	0	0.4	0.9	1.0
4400744	99	P	SUR	52	-18	745	0	0.3	-0.1	0.4
4400746	99	P	SUR	36	-26	744	0	0.3	0.5	0.5
4400747	99	P	SUR	54	-14	744	0	0.4	-0.0	0.4
4400761	99	P	SUR	57	-12	744	0	0.3	-0.4	0.5
4400764	99	P	SUR	57	-14	41	0	0.3	-0.3	0.4
4400765	99	P	SUR	52	-31	714	0	0.5	0.1	0.5

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
4400766	99	P	SUR	43	-31	744	0	0.4	0.1	0.4
4400768	99	P	SUR	34	-24	744	0	0.2	1.0	1.0
4400772	99	P	SUR	47	-32	743	0	0.3	-0.1	0.4
4400773	99	P	SUR	45	-8	744	0	0.3	0.8	0.8
4400776	99	P	SUR	34	-19	742	0	0.3	0.9	0.9
4400777	99	P	SUR	44	-56	744	0	0.4	0.1	0.4
4400778	99	P	SUR	40	-33	744	0	0.3	0.5	0.6
4400779	99	P	SUR	44	-57	719	0	0.4	-0.0	0.4
44008	99	P	SUR	41	-69	737	0	0.5	-0.3	0.6
4400835	99	P	SUR	28	-29	744	0	0.2	-0.1	0.2
4400836	99	P	SUR	66	12	76	0	0.4	0.0	0.4
4400837	99	P	SUR	21	-55	744	0	0.3	0.0	0.3
4400839	99	P	SUR	30	-21	744	0	0.3	0.1	0.3
4400846	99	P	SUR	35	-18	743	0	0.2	0.7	0.8
4400848	99	P	SUR	31	-19	744	0	0.3	0.5	0.5
4400856	99	P	SUR	43	-35	744	0	0.4	0.7	0.8
4400857	99	P	SUR	45	-33	744	0	0.4	0.4	0.6
4400863	99	P	SUR	31	-56	744	0	0.3	-0.6	0.7
4400866	99	P	SUR	69	8	744	0	0.3	-0.1	0.3
4400868	99	P	SUR	26	-59	744	0	0.7	0.2	0.7
4400873	99	P	SUR	34	-46	744	0	0.3	1.0	1.0
4400874	99	P	SUR	35	-32	744	0	0.4	0.6	0.7
4400875	99	P	SUR	36	-34	744	0	0.4	0.6	0.7
4400885	99	P	SUR	19	-32	744	0	0.3	0.0	0.3
4400887	99	P	SUR	30	-41	744	0	0.2	0.2	0.3
4400889	99	P	SUR	33	-54	744	0	0.4	-0.2	0.4
4400891	99	P	SUR	28	-59	744	0	0.4	-0.3	0.5
4400896	99	P	SUR	35	-39	736	2	0.2	-0.3	0.4
4400901	99	P	SUR	44	-44	743	0	0.5	0.1	0.5
4400902	99	P	SUR	46	-35	744	0	0.4	0.3	0.5
4400904	99	P	SUR	44	-35	741	0	0.3	-0.1	0.3
44011	99	P	SUR	41	-67	742	0	0.4	-0.9	1.0
4401500	99	P	SUR	37	-59	740	0	0.4	0.4	0.5
4401501	99	P	SUR	35	-61	743	0	0.3	0.2	0.4
4401503	99	P	SUR	32	-57	743	0	0.5	0.3	0.6
4401550	99	P	SUR	43	-42	744	0	0.5	-0.2	0.6
4401551	99	P	SUR	39	-40	712	0	0.3	0.4	0.6
4401552	99	P	SUR	35	-48	705	0	0.4	0.1	0.4
44016	99	P	SUR	61	-66	208	0	0.5	0.0	0.5
4401601	99	P	SUR	59	-50	737	0	0.4	0.2	0.4
4401602	99	P	SUR	63	-56	736	0	0.4	0.0	0.4
4401603	99	P	SUR	60	-50	736	0	0.4	0.4	0.6
4401604	99	P	SUR	60	-52	733	0	0.4	0.0	0.4

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
4401605	99	P	SUR	58	-48	730	0	0.4	0.1	0.4
4401608	99	P	SUR	70	-62	691	0	0.3	-0.0	0.3
4401610	99	P	SUR	61	-66	103	0	0.3	0.2	0.4
4401612	99	P	SUR	54	-55	195	0	0.4	0.1	0.4
4401614	99	P	SUR	61	-66	101	0	0.3	0.2	0.4
4401618	99	P	SUR	70	-63	603	0	0.3	0.1	0.3
4401619	99	P	SUR	61	-66	78	0	0.4	-0.0	0.4
4401620	99	P	SUR	69	-61	536	0	0.4	-0.2	0.4
4401622	99	P	SUR	61	-66	103	0	0.3	0.2	0.4
4401625	99	P	SUR	54	-55	195	0	0.3	0.0	0.3
4401627	99	P	SUR	61	-66	75	0	0.4	0.3	0.5
4401629	99	P	SUR	70	-60	718	0	0.3	-0.1	0.4
4401632	99	P	SUR	54	-54	145	0	0.3	-0.2	0.4
4401634	99	P	SUR	54	-55	184	0	0.4	-0.4	0.5
4401635	99	P	SUR	61	-65	77	0	0.4	-0.2	0.5
4401637	99	P	SUR	61	-66	105	0	0.3	0.3	0.5
44018	99	P	SUR	42	-70	880	0	0.8	-0.8	1.1
44024	99	P	SUR	42	-66	465	0	0.4	-1.0	1.1
44027	99	P	SUR	44	-67	859	0	0.4	-0.2	0.5
44032	99	P	SUR	44	-69	722	0	0.7	-0.4	0.8
44033	99	P	SUR	44	-69	740	0	0.4	-1.2	1.3
44034	99	P	SUR	44	-68	724	0	0.4	-0.1	0.4
44037	99	P	SUR	44	-68	550	0	0.4	-0.1	0.4
44137	99	P	SUR	42	-62	750	0	0.4	-0.1	0.4
44139	99	P	SUR	44	-57	734	0	0.4	0.1	0.4
44141	99	P	SUR	43	-58	743	0	0.5	0.3	0.5
44150	99	P	SUR	43	-64	65	0	0.4	0.1	0.4
44251	99	P	SUR	46	-53	734	0	0.4	-0.1	0.4
44255	99	P	SUR	47	-57	1196	0	0.4	0.0	0.4
44258	99	P	SUR	45	-63	740	0	0.4	-0.1	0.4
44510	99	P	SUR	47	-51	1392	1	0.4	0.5	0.7
44513	99	P	SUR	53	-11	744	0	0.4	0.5	0.6
44515	99	P	SUR	53	-28	744	0	0.4	-0.2	0.4
44516	99	P	SUR	44	-16	110	0	0.3	0.6	0.6
44517	99	P	SUR	35	-16	743	0	0.3	0.6	0.7
44521	99	P	SUR	40	-35	531	0	0.3	-0.3	0.4
44546	99	P	SUR	29	-52	744	0	0.3	-0.0	0.3
44551	99	P	SUR	68	12	744	0	0.3	0.2	0.4
44557	99	P	SUR	42	-34	744	0	0.4	0.5	0.6
44558	99	P	SUR	30	-52	529	0	0.3	0.6	0.7
44614	99	P	SUR	52	-11	652	0	0.3	-0.1	0.3
44624	99	P	SUR	24	-52	725	0	0.2	-0.1	0.2
44670	99	P	SUR	45	-50	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
44739	99	P	SUR	36	-36	744	0	0.4	0.9	1.0
44744	99	P	SUR	52	-18	745	0	0.3	-0.1	0.4
44746	99	P	SUR	36	-26	744	0	0.3	0.5	0.5
44747	99	P	SUR	54	-14	744	0	0.4	-0.0	0.4
44761	99	P	SUR	57	-12	744	0	0.3	-0.4	0.5
44764	99	P	SUR	57	-14	41	0	0.3	-0.3	0.4
44765	99	P	SUR	52	-31	714	0	0.5	0.1	0.5
44766	99	P	SUR	43	-31	744	0	0.4	0.1	0.4
44768	99	P	SUR	34	-24	744	0	0.2	1.0	1.0
44772	99	P	SUR	47	-32	743	0	0.3	-0.1	0.4
44773	99	P	SUR	45	-8	744	0	0.3	0.8	0.8
44776	99	P	SUR	34	-19	742	0	0.3	0.9	0.9
44777	99	P	SUR	44	-56	744	0	0.4	0.1	0.4
44778	99	P	SUR	40	-33	744	0	0.3	0.5	0.6
44779	99	P	SUR	44	-57	719	0	0.4	-0.0	0.4
44835	99	P	SUR	28	-29	744	0	0.2	-0.1	0.2
44836	99	P	SUR	66	12	76	0	0.4	0.0	0.4
44837	99	P	SUR	21	-55	744	0	0.3	0.0	0.3
44839	99	P	SUR	30	-21	744	0	0.3	0.1	0.3
44846	99	P	SUR	35	-18	743	0	0.2	0.7	0.8
44848	99	P	SUR	31	-19	744	0	0.3	0.5	0.5
44856	99	P	SUR	43	-35	744	0	0.4	0.7	0.8
44857	99	P	SUR	45	-33	744	0	0.4	0.4	0.6
44863	99	P	SUR	31	-56	744	0	0.3	-0.6	0.7
44866	99	P	SUR	69	8	744	0	0.3	-0.1	0.3
44868	99	P	SUR	26	-59	744	0	0.7	0.2	0.7
44873	99	P	SUR	34	-46	744	0	0.3	1.0	1.0
44874	99	P	SUR	35	-32	744	0	0.4	0.6	0.7
44875	99	P	SUR	36	-34	744	0	0.4	0.6	0.7
44885	99	P	SUR	19	-32	744	0	0.3	0.0	0.3
44887	99	P	SUR	30	-41	744	0	0.2	0.2	0.3
44889	99	P	SUR	33	-54	744	0	0.4	-0.2	0.4
44891	99	P	SUR	28	-59	744	0	0.4	-0.3	0.5
44896	99	P	SUR	35	-39	638	2	0.2	-0.3	0.4
44901	99	P	SUR	44	-44	743	0	0.5	0.1	0.5
44902	99	P	SUR	46	-35	744	0	0.3	0.3	0.5
44904	99	P	SUR	44	-35	741	0	0.3	-0.1	0.3
45138	99	P	SUR	50	-66	688	1	0.5	-0.2	0.6
4700509	99	P	SUR	74	-14	727	1	4.6	-1.5	4.9
4700539	99	P	SUR	45	-31	725	0	0.4	0.2	0.5
4700540	99	P	SUR	50	-37	729	0	0.4	0.4	0.6
4700546	99	P	SUR	44	-50	712	0	0.4	0.2	0.5
4700549	99	P	SUR	52	-33	732	0	0.4	-0.1	0.5

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
4700551	99	P	SUR	56	-58	729	109	4.3	-2.4	4.9
4700552	99	P	SUR	67	-63	737	0	0.5	-2.1	2.2
4700555	99	P	SUR	46	-51	722	0	0.4	0.2	0.4
4700557	99	P	SUR	50	-35	736	0	0.4	-0.2	0.4
4700560	99	P	SUR	53	-24	737	0	0.4	0.3	0.5
4700562	99	P	SUR	50	-30	739	0	0.4	0.0	0.4
4700567	99	P	SUR	49	-37	727	115	4.3	2.0	4.8
4700568	99	P	SUR	49	-28	734	0	0.3	0.3	0.4
4700569	99	P	SUR	46	-24	733	0	0.3	-0.4	0.5
4700574	99	P	SUR	42	-49	721	0	0.5	0.2	0.5
4700584	99	P	SUR	44	-48	727	0	0.4	0.2	0.4
4700589	99	P	SUR	67	-63	745	0	0.6	-2.3	2.4
47509	99	P	SUR	74	-14	738	1	4.6	-1.5	4.8
47539	99	P	SUR	45	-31	728	0	0.4	0.2	0.5
47540	99	P	SUR	50	-37	737	0	0.4	0.4	0.6
47546	99	P	SUR	44	-50	720	0	0.4	0.2	0.5
47549	99	P	SUR	52	-33	732	0	0.4	-0.1	0.5
47551	99	P	SUR	56	-58	735	108	4.3	-2.4	4.9
47552	99	P	SUR	67	-63	740	0	0.5	-2.1	2.2
47555	99	P	SUR	46	-51	733	0	0.4	0.2	0.4
47557	99	P	SUR	50	-35	739	0	0.4	-0.2	0.4
47560	99	P	SUR	53	-24	736	0	0.4	0.3	0.5
47562	99	P	SUR	50	-30	736	0	0.4	0.0	0.4
47567	99	P	SUR	49	-37	730	116	4.3	2.0	4.7
47568	99	P	SUR	49	-28	738	0	0.3	0.3	0.4
47569	99	P	SUR	46	-24	733	0	0.3	-0.4	0.5
47574	99	P	SUR	42	-49	740	0	0.5	0.2	0.5
47584	99	P	SUR	44	-48	734	0	0.4	0.1	0.4
47589	99	P	SUR	67	-63	742	0	0.6	-2.4	2.5
4800520	99	P	SUR	85	-25	57	0	0.4	0.3	0.5
4800568	99	P	SUR	59	-11	529	0	0.7	-0.4	0.8
4800664	99	P	SUR	72	-69	125	0	0.3	0.5	0.5
48520	99	P	SUR	85	-25	56	0	0.4	0.3	0.5
48568	99	P	SUR	59	-11	695	0	0.4	-0.5	0.6
6100001	99	P	SUR	43	8	744	0	0.4	0.4	0.5
6100002	99	P	SUR	42	5	739	0	0.3	0.3	0.5
6200091	99	P	SUR	53	-5	722	0	0.4	0.0	0.4
6200092	99	P	SUR	51	-11	721	0	0.4	-0.1	0.4
6200093	99	P	SUR	55	-10	502	0	0.4	-0.2	0.5
6200094	99	P	SUR	52	-7	721	0	0.3	0.1	0.3
62001	99	P	SUR	45	-5	744	0	0.4	0.2	0.4
6200513	99	P	SUR	64	-28	744	0	0.3	0.0	0.3
6200553	99	P	SUR	61	-24	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
6200554	99	P	SUR	44	-15	744	0	0.2	0.3	0.4
6200555	99	P	SUR	45	-3	211	0	0.3	0.7	0.8
6200556	99	P	SUR	34	-21	732	0	0.3	0.1	0.3
6200557	99	P	SUR	54	-14	675	0	0.4	0.2	0.4
6200558	99	P	SUR	48	-25	744	0	0.3	0.1	0.4
6200559	99	P	SUR	43	-35	744	0	0.4	0.9	1.0
6200560	99	P	SUR	28	-20	744	0	0.3	0.7	0.7
6200713	99	P	SUR	36	-60	716	0	0.4	-0.5	0.7
6200714	99	P	SUR	39	-47	719	0	0.4	-0.3	0.5
6200940	99	P	SUR	40	-22	744	0	0.3	0.2	0.3
6200941	99	P	SUR	25	-21	744	0	0.3	0.1	0.3
62027	99	P	SUR	49	-2	244	0	0.4	0.2	0.5
62029	99	P	SUR	49	-12	1321	0	0.6	0.0	0.7
62030	99	P	SUR	50	-4	972	0	0.3	0.3	0.4
6203501	99	P	SUR	37	-25	743	0	0.3	0.8	0.8
6203503	99	P	SUR	37	-19	740	0	0.3	0.1	0.3
6203504	99	P	SUR	34	-30	741	0	0.2	0.6	0.6
62050	99	P	SUR	50	-4	745	0	0.3	0.4	0.5
62081	99	P	SUR	51	-13	730	0	0.3	0.0	0.3
62082	99	P	SUR	55	6	5	0	0.1	-0.0	0.2
62086	99	P	SUR	55	6	722	0	0.3	0.0	0.3
62095	99	P	SUR	53	-16	716	1	0.5	-0.3	0.6
62102	99	P	SUR	58	2	744	0	0.4	0.3	0.5
62103	99	P	SUR	50	-3	743	0	0.3	0.7	0.8
62104	99	P	SUR	57	1	740	0	0.3	0.4	0.5
62105	99	P	SUR	55	-13	663	0	0.4	-0.0	0.4
62107	99	P	SUR	50	-6	1413	2	0.5	0.5	0.7
62111	99	P	SUR	58	0	738	0	0.4	1.6	1.6
62112	99	P	SUR	58	0	744	0	0.3	0.5	0.6
62113	99	P	SUR	58	0	744	0	0.4	0.5	0.7
62114	99	P	SUR	58	0	1485	0	0.4	0.4	0.6
62115	99	P	SUR	58	-3	738	0	0.4	0.4	0.5
62116	99	P	SUR	58	1	739	0	0.3	0.2	0.4
62117	99	P	SUR	58	0	744	0	0.3	0.5	0.6
62118	99	P	SUR	58	1	744	0	0.3	0.8	0.9
62119	99	P	SUR	57	2	692	0	0.3	0.4	0.5
62120	99	P	SUR	56	2	725	0	0.3	0.1	0.3
62121	99	P	SUR	54	3	738	0	0.3	0.7	0.8
62122	99	P	SUR	57	2	1481	0	0.3	0.4	0.5
62123	99	P	SUR	56	2	1481	0	0.4	0.3	0.5
62124	99	P	SUR	54	-4	732	0	0.3	0.1	0.3
62127	99	P	SUR	54	1	731	0	0.3	0.8	0.9
62128	99	P	SUR	59	1	742	0	0.4	0.5	0.6

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
62129	99	P	SUR	58	0	744	0	0.4	0.4	0.5
62130	99	P	SUR	59	1	743	0	0.3	0.3	0.4
62131	99	P	SUR	54	1	662	0	0.3	0.6	0.7
62132	99	P	SUR	56	2	743	0	0.3	0.7	0.8
62133	99	P	SUR	57	1	739	0	0.4	0.3	0.5
62134	99	P	SUR	58	1	741	0	0.3	0.6	0.7
62135	99	P	SUR	54	2	743	0	0.3	0.5	0.6
62136	99	P	SUR	54	3	744	0	0.3	0.8	0.8
62137	99	P	SUR	57	2	744	0	0.3	0.3	0.4
62138	99	P	SUR	54	0	1485	0	0.4	1.0	1.1
62139	99	P	SUR	53	2	1479	0	0.3	0.6	0.7
62140	99	P	SUR	57	1	1485	0	0.3	0.3	0.5
62141	99	P	SUR	61	1	708	0	0.4	0.2	0.4
62143	99	P	SUR	58	2	732	0	0.3	0.8	0.9
62144	99	P	SUR	53	2	739	0	0.3	0.5	0.6
62145	99	P	SUR	53	3	1485	0	0.3	0.6	0.7
62146	99	P	SUR	57	2	743	0	0.3	0.5	0.6
62148	99	P	SUR	54	2	739	0	0.3	1.3	1.3
62149	99	P	SUR	54	1	731	0	0.3	1.0	1.0
62150	99	P	SUR	54	1	731	0	0.3	1.5	1.5
62151	99	P	SUR	57	2	1485	0	0.3	0.4	0.5
62152	99	P	SUR	57	2	744	0	0.3	0.7	0.8
62153	99	P	SUR	57	2	1457	0	0.3	0.4	0.5
62154	99	P	SUR	56	2	744	0	0.3	0.3	0.5
62155	99	P	SUR	58	1	709	0	0.3	0.7	0.7
62157	99	P	SUR	58	0	744	0	0.3	0.4	0.5
62160	99	P	SUR	57	2	1257	0	0.3	0.4	0.5
62161	99	P	SUR	58	1	196	0	0.2	0.1	0.3
62162	99	P	SUR	57	1	716	0	0.4	0.4	0.5
62163	99	P	SUR	48	-8	742	0	0.4	0.4	0.5
62164	99	P	SUR	57	1	744	0	0.4	0.8	0.8
62165	99	P	SUR	54	1	727	0	0.3	0.7	0.8
62167	99	P	SUR	53	2	1482	0	0.3	0.4	0.5
62168	99	P	SUR	58	1	743	0	0.3	0.4	0.5
62170	99	P	SUR	51	2	744	0	0.6	-0.1	0.6
62296	99	P	SUR	53	2	743	0	0.3	0.3	0.5
62297	99	P	SUR	59	2	1483	2	0.4	0.4	0.6
62302	99	P	SUR	61	-2	696	0	0.3	0.2	0.4
62304	99	P	SUR	51	2	543	3	0.4	0.5	0.6
62305	99	P	SUR	50	0	313	0	1.9	0.4	1.9
62513	99	P	SUR	64	-28	744	0	0.3	0.0	0.3
62553	99	P	SUR	61	-24	744	0	0.3	0.1	0.3
62554	99	P	SUR	44	-15	744	0	0.2	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
62555	99	P	SUR	45	-3	211	0	0.3	0.7	0.8
62556	99	P	SUR	34	-21	732	0	0.3	0.1	0.3
62557	99	P	SUR	54	-15	675	0	0.4	0.2	0.4
62558	99	P	SUR	48	-25	744	0	0.3	0.1	0.4
62559	99	P	SUR	43	-35	744	0	0.4	0.9	1.0
62560	99	P	SUR	28	-20	744	0	0.3	0.7	0.7
62713	99	P	SUR	36	-60	716	0	0.4	-0.5	0.7
62714	99	P	SUR	39	-47	719	0	0.4	-0.3	0.5
62940	99	P	SUR	40	-22	744	0	0.3	0.2	0.3
62941	99	P	SUR	25	-21	744	0	0.3	0.1	0.3
6300561	99	P	SUR	74	9	744	0	0.4	0.1	0.4
6300646	99	P	SUR	67	7	744	0	0.3	0.3	0.4
63055	99	P	SUR	61	2	744	0	0.4	0.2	0.4
63056	99	P	SUR	60	2	742	0	0.3	0.5	0.6
63057	99	P	SUR	59	2	739	0	0.3	0.1	0.3
63058	99	P	SUR	53	2	2223	0	0.3	0.6	0.7
63059	99	P	SUR	58	-1	698	0	0.4	0.7	0.8
63101	99	P	SUR	61	1	744	0	0.4	0.3	0.5
63102	99	P	SUR	61	1	742	0	0.4	0.3	0.5
63103	99	P	SUR	61	1	744	0	0.4	0.4	0.5
63104	99	P	SUR	61	2	744	0	0.3	0.3	0.5
63105	99	P	SUR	61	2	739	0	0.3	0.3	0.4
63107	99	P	SUR	61	2	319	0	0.3	0.1	0.3
63108	99	P	SUR	61	2	744	0	0.4	0.2	0.4
63109	99	P	SUR	60	2	744	0	0.3	0.2	0.4
63110	99	P	SUR	60	2	744	0	0.3	0.1	0.3
63111	99	P	SUR	61	2	1449	0	0.3	0.0	0.3
63112	99	P	SUR	61	1	744	0	0.3	-0.0	0.3
63115	99	P	SUR	62	1	735	0	0.3	0.2	0.4
63117	99	P	SUR	61	1	1485	0	0.3	0.5	0.6
63118	99	P	SUR	60	-4	1322	0	0.3	0.2	0.4
63119	99	P	SUR	58	-4	71	0	1.4	-0.2	1.4
63120	99	P	SUR	54	2	742	0	0.3	0.7	0.8
63561	99	P	SUR	74	9	690	0	0.4	0.1	0.4
63646	99	P	SUR	67	7	744	0	0.3	0.3	0.4
6400476	99	P	SUR	88	-21	737	0	0.3	-0.2	0.4
6400519	99	P	SUR	76	-4	733	0	0.4	0.3	0.5
6400521	99	P	SUR	72	26	520	16	2.8	-0.8	2.9
6400523	99	P	SUR	73	17	741	0	0.4	0.2	0.5
6400524	99	P	SUR	67	13	743	0	0.4	0.7	0.8
6400526	99	P	SUR	61	-51	659	0	0.4	0.1	0.4
6400528	99	P	SUR	72	25	744	0	0.3	0.3	0.4
6400530	99	P	SUR	79	9	744	0	0.4	0.1	0.5

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
6400547	99	P	SUR	70	2	743	0	0.3	0.1	0.3
6400549	99	P	SUR	67	-20	744	0	0.4	-0.1	0.4
6400551	99	P	SUR	64	-29	744	0	0.3	-0.0	0.3
6400553	99	P	SUR	69	-2	744	0	0.3	-0.2	0.4
6400554	99	P	SUR	67	-20	744	0	0.4	0.2	0.4
6400555	99	P	SUR	62	6	744	0	0.3	0.1	0.3
6400560	99	P	SUR	67	-23	744	0	0.4	0.1	0.4
6400562	99	P	SUR	65	-25	744	0	0.3	0.1	0.3
6400606	99	P	SUR	74	33	607	0	0.4	0.8	0.9
6400623	99	P	SUR	66	-15	473	0	2.1	-1.9	2.9
6400666	99	P	SUR	70	-11	744	0	0.3	0.5	0.6
6400694	99	P	SUR	60	-36	744	0	0.8	-0.4	0.9
6400749	99	P	SUR	81	-9	740	1	2.3	0.6	2.3
6400757	99	P	SUR	86	-67	735	0	0.3	-0.4	0.5
6400758	99	P	SUR	85	-3	734	0	0.4	-0.2	0.4
6400760	99	P	SUR	88	-21	248	0	0.3	-0.3	0.4
6400973	99	P	SUR	85	6	607	0	0.4	0.0	0.4
6401500	99	P	SUR	62	-26	146	0	0.3	0.3	0.4
6401550	99	P	SUR	61	-11	744	0	0.4	0.3	0.5
6401551	99	P	SUR	63	-16	744	0	0.3	0.2	0.4
6401552	99	P	SUR	59	-33	493	0	0.4	0.6	0.7
64041	99	P	SUR	61	-3	742	0	0.3	0.4	0.5
64045	99	P	SUR	59	-12	1485	0	0.4	-0.1	0.5
64046	99	P	SUR	61	-4	744	0	0.3	0.2	0.4
64476	99	P	SUR	88	-21	732	0	0.3	-0.2	0.4
64519	99	P	SUR	76	-4	733	0	0.4	0.3	0.5
64521	99	P	SUR	72	26	543	16	3.6	-1.3	3.9
64523	99	P	SUR	73	17	741	0	0.4	0.2	0.5
64524	99	P	SUR	67	13	743	0	0.4	0.7	0.8
64526	99	P	SUR	61	-51	659	0	0.4	0.1	0.4
64528	99	P	SUR	72	25	744	0	0.3	0.3	0.4
64530	99	P	SUR	79	9	744	0	0.4	0.1	0.5
64547	99	P	SUR	70	2	743	0	0.3	0.1	0.3
64549	99	P	SUR	67	-20	744	0	0.4	-0.0	0.4
64551	99	P	SUR	64	-29	744	0	0.3	-0.0	0.3
64553	99	P	SUR	69	-2	744	0	0.3	-0.2	0.4
64554	99	P	SUR	67	-20	744	0	0.4	0.2	0.4
64555	99	P	SUR	62	6	744	0	0.3	0.1	0.3
64560	99	P	SUR	67	-23	744	0	0.4	0.1	0.4
64562	99	P	SUR	65	-25	744	0	0.3	0.1	0.3
64606	99	P	SUR	74	33	607	0	0.4	0.8	0.9
64623	99	P	SUR	66	-15	495	0	2.1	-1.9	2.8
64666	99	P	SUR	70	-11	744	0	0.3	0.5	0.6

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
64694	99	P	SUR	60	-36	744	0	0.8	-0.4	0.9
64749	99	P	SUR	81	-9	738	1	2.3	0.6	2.4
64757	99	P	SUR	86	-67	738	0	0.3	-0.4	0.6
64758	99	P	SUR	85	-3	744	0	0.4	-0.2	0.5
64760	99	P	SUR	88	-20	243	0	0.3	-0.3	0.5
64973	99	P	SUR	85	6	603	0	0.4	0.0	0.4
6500514	99	P	SUR	52	-36	744	0	0.5	-0.1	0.5
6500515	99	P	SUR	63	-33	744	0	0.4	0.1	0.4
6500519	99	P	SUR	60	-18	744	0	0.7	0.4	0.8
6500596	99	P	SUR	59	-19	732	0	0.4	0.3	0.6
6500599	99	P	SUR	60	-15	744	0	0.5	0.0	0.5
6500601	99	P	SUR	65	-56	740	0	0.3	0.0	0.3
6500602	99	P	SUR	56	-33	744	0	0.5	-0.9	1.0
6500603	99	P	SUR	68	-54	730	0	0.4	-0.2	0.5
6501551	99	P	SUR	58	-50	744	0	0.4	0.2	0.4
6501552	99	P	SUR	58	-49	744	0	0.4	0.6	0.7
6501553	99	P	SUR	58	-51	744	0	0.4	0.5	0.6
6501555	99	P	SUR	63	-52	493	0	0.4	-0.1	0.4
6501556	99	P	SUR	60	-39	470	0	0.4	0.4	0.5
6501557	99	P	SUR	59	-37	470	0	0.3	0.1	0.4
6501558	99	P	SUR	60	-42	419	0	0.4	0.2	0.4
65514	99	P	SUR	52	-36	744	0	0.5	-0.1	0.5
65515	99	P	SUR	63	-33	744	0	0.4	0.1	0.4
65519	99	P	SUR	60	-18	744	0	0.7	0.4	0.8
65596	99	P	SUR	59	-19	732	0	0.4	0.3	0.6
65599	99	P	SUR	60	-15	744	0	0.5	0.0	0.5
65601	99	P	SUR	65	-56	740	0	0.3	0.0	0.3
65602	99	P	SUR	56	-33	744	0	0.5	-0.9	1.0
65603	99	P	SUR	68	-54	730	0	0.4	-0.2	0.5
7100235	99	P	SUR	86	4	136	0	0.3	0.0	0.3
71235	99	P	SUR	86	4	137	0	0.3	0.0	0.3

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 2016
 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
007	99	SPEED	SUR	78	28	1	0	0	0.0	0.9	0.9
1300001	99	SPEED	SUR	11	-23	726	0	0	1.7	0.4	1.8
1300002	99	SPEED	SUR	20	-23	376	0	0	0.9	0.2	0.9
1300008	99	SPEED	SUR	15	-38	90	0	0	1.9	-0.8	2.0
13002	99	SPEED	SUR	20	-23	254	0	0	0.9	0.2	0.9
13008	99	SPEED	SUR	15	-38	24	0	0	1.2	-0.3	1.2
4100026	99	SPEED	SUR	12	-38	343	0	0	1.4	0.6	1.5
4100139	99	SPEED	SUR	20	-38	360	0	0	0.9	-0.2	0.9
4100300	99	SPEED	SUR	16	-57	744	0	0	0.9	-0.4	1.0
41026	99	SPEED	SUR	12	-38	71	0	0	1.5	0.4	1.6
41040	99	SPEED	SUR	15	-53	734	0	0	1.0	-0.0	1.0
41041	99	SPEED	SUR	14	-46	720	0	0	1.0	0.0	1.0
41043	99	SPEED	SUR	21	-65	946	0	0	1.0	-0.5	1.1
41044	99	SPEED	SUR	22	-59	976	0	0	0.8	-0.4	1.0
41046	99	SPEED	SUR	24	-69	972	0	0	0.9	-0.2	1.0
41048	99	SPEED	SUR	32	-70	751	0	0	1.3	-0.2	1.3
41049	99	SPEED	SUR	28	-63	733	0	0	1.0	-0.0	1.0
41051	99	SPEED	SUR	18	-65	1460	0	0	1.2	-0.6	1.4
41052	99	SPEED	SUR	18	-65	1867	0	0	0.9	-0.6	1.1
41053	99	SPEED	SUR	19	-66	1870	0	0	1.5	-0.1	1.5
41056	99	SPEED	SUR	18	-66	1671	0	0	1.2	-0.9	1.5
41139	99	SPEED	SUR	20	-38	250	0	0	0.9	-0.2	0.9
42059	99	SPEED	SUR	15	-68	973	0	0	0.9	-0.2	1.0
42060	99	SPEED	SUR	16	-63	478	0	0	1.1	-0.2	1.1
42085	99	SPEED	SUR	18	-67	1675	0	0	1.4	-0.4	1.4
42087	99	SPEED	SUR	11	-61	2029	0	0	1.5	0.4	1.5
42088	99	SPEED	SUR	11	-61	1261	0	0	1.4	-2.5	2.9
44005	99	SPEED	SUR	43	-69	734	0	0	1.3	-0.3	1.4
44008	99	SPEED	SUR	41	-69	737	0	0	1.5	-0.7	1.7
44018	99	SPEED	SUR	42	-70	880	0	0	2.0	-0.4	2.0
44024	99	SPEED	SUR	42	-66	465	0	0	1.3	0.1	1.3
44027	99	SPEED	SUR	44	-67	859	0	0	1.5	-0.7	1.7
44032	99	SPEED	SUR	44	-69	722	0	0	1.6	-0.9	1.8
44033	99	SPEED	SUR	44	-69	740	0	0	1.4	-0.4	1.5

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF

ELEMENT MONITORED : WIND SPEED (M/S)

(CONTINU

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
44034	99	SPEED	SUR	44	-68	724	0	0	1.7	-1.4	2.2
44037	99	SPEED	SUR	44	-68	550	0	0	1.3	-0.5	1.4
44137	99	SPEED	SUR	42	-62	751	0	0	1.4	0.0	1.4
44139	99	SPEED	SUR	44	-57	734	0	0	1.3	-0.5	1.3
44141	99	SPEED	SUR	43	-58	743	0	0	1.4	-0.5	1.5
44150	99	SPEED	SUR	43	-64	65	0	0	1.1	-0.2	1.1
44251	99	SPEED	SUR	46	-53	735	0	0	1.4	-0.6	1.5
44255	99	SPEED	SUR	47	-57	1200	0	0	1.5	-0.6	1.6
44258	99	SPEED	SUR	45	-63	740	0	0	1.4	-0.4	1.5
45138	99	SPEED	SUR	50	-66	361	0	0	3.8	-3.1	4.9
6100001	99	SPEED	SUR	43	8	744	0	0	1.5	-0.3	1.5
6100002	99	SPEED	SUR	42	5	738	0	0	3.8	6.6	7.6
6200091	99	SPEED	SUR	53	-5	722	0	0	1.3	0.0	1.3
6200092	99	SPEED	SUR	51	-11	721	0	0	1.1	-0.3	1.1
6200093	99	SPEED	SUR	55	-10	502	0	0	1.1	-0.1	1.1
6200094	99	SPEED	SUR	52	-7	721	0	0	1.0	-0.2	1.0
62001	99	SPEED	SUR	45	-5	744	0	0	1.1	0.8	1.3
62027	99	SPEED	SUR	49	-2	211	0	0	1.2	0.3	1.2
62029	99	SPEED	SUR	49	-12	1321	0	0	0.9	0.2	1.0
62050	99	SPEED	SUR	50	-4	744	0	0	1.1	0.3	1.2
62081	99	SPEED	SUR	51	-13	730	0	0	1.0	0.0	1.0
62082	99	SPEED	SUR	55	6	5	0	0	0.3	1.1	1.1
62086	99	SPEED	SUR	55	6	721	0	0	1.1	0.3	1.2
62095	99	SPEED	SUR	53	-16	714	0	0	1.7	-0.2	1.7
62102	99	SPEED	SUR	58	2	744	0	0	1.3	-0.2	1.3
62103	99	SPEED	SUR	50	-3	743	0	0	1.5	0.6	1.6
62104	99	SPEED	SUR	57	1	740	0	0	1.2	-0.2	1.2
62105	99	SPEED	SUR	55	-13	627	0	0	1.3	0.4	1.4
62107	99	SPEED	SUR	50	-6	1407	0	0	1.3	0.8	1.5
62111	99	SPEED	SUR	58	0	481	0	0	1.4	-0.0	1.4
62112	99	SPEED	SUR	58	0	744	0	0	2.0	-1.4	2.5
62113	99	SPEED	SUR	58	0	744	0	0	1.4	-0.0	1.4
62114	99	SPEED	SUR	58	0	1485	0	0	1.3	0.4	1.4
62117	99	SPEED	SUR	58	0	744	0	0	1.3	-0.1	1.3
62118	99	SPEED	SUR	58	1	744	0	0	1.2	0.3	1.3
62119	99	SPEED	SUR	57	2	692	0	0	1.3	-0.2	1.3
62120	99	SPEED	SUR	56	2	725	0	0	1.2	0.2	1.2
62121	99	SPEED	SUR	54	3	737	0	0	1.1	-0.2	1.1
62122	99	SPEED	SUR	57	2	1481	0	0	1.1	-0.0	1.1
62123	99	SPEED	SUR	56	2	1481	0	0	1.2	0.2	1.2
62127	99	SPEED	SUR	54	1	578	0	0	2.3	0.5	2.3

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF

ELEMENT MONITORED : WIND SPEED (M/S)

(CONTINU

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
62128	99	SPEED	SUR	59	1	742	0	0	1.4	0.2	1.4
62129	99	SPEED	SUR	58	0	744	0	0	1.2	-0.2	1.2
62131	99	SPEED	SUR	54	1	662	0	0	1.4	-0.5	1.5
62132	99	SPEED	SUR	56	2	743	0	0	1.6	-1.1	1.9
62133	99	SPEED	SUR	57	1	739	0	0	1.3	-0.3	1.3
62134	99	SPEED	SUR	58	1	741	0	0	1.3	-0.2	1.3
62140	99	SPEED	SUR	57	1	1423	0	0	1.2	0.0	1.2
62143	99	SPEED	SUR	58	2	732	0	0	1.7	-0.9	1.9
62144	99	SPEED	SUR	53	2	739	0	0	1.6	-0.0	1.6
62145	99	SPEED	SUR	53	3	1485	0	0	1.2	-0.0	1.2
62146	99	SPEED	SUR	57	2	743	0	0	1.2	-0.1	1.2
62148	99	SPEED	SUR	54	2	739	0	0	1.6	0.0	1.6
62149	99	SPEED	SUR	54	1	731	0	0	1.3	0.3	1.3
62150	99	SPEED	SUR	54	1	731	0	0	1.6	-0.4	1.6
62152	99	SPEED	SUR	57	2	744	0	0	1.4	-0.8	1.6
62153	99	SPEED	SUR	57	2	1457	0	0	2.0	-2.4	3.1
62154	99	SPEED	SUR	56	2	744	0	0	1.3	-0.2	1.3
62155	99	SPEED	SUR	58	1	709	0	0	1.2	0.2	1.2
62163	99	SPEED	SUR	48	-8	742	0	0	0.9	0.2	1.0
62164	99	SPEED	SUR	57	1	744	0	0	1.4	-0.6	1.5
62165	99	SPEED	SUR	54	1	727	0	0	1.3	-0.2	1.3
62170	99	SPEED	SUR	51	2	744	0	0	1.8	1.7	2.5
62304	99	SPEED	SUR	51	2	540	0	0	1.5	1.1	1.8
62305	99	SPEED	SUR	50	0	791	0	0	1.4	0.8	1.6
63055	99	SPEED	SUR	61	2	744	0	0	1.3	-0.7	1.5
63056	99	SPEED	SUR	60	2	739	0	0	1.2	-0.3	1.3
63057	99	SPEED	SUR	59	2	739	0	0	1.7	-0.7	1.8
63058	99	SPEED	SUR	53	2	738	0	0	1.3	0.4	1.3
63101	99	SPEED	SUR	61	1	730	0	0	1.8	-0.6	1.9
63104	99	SPEED	SUR	61	2	744	0	0	1.3	-0.1	1.3
63105	99	SPEED	SUR	61	2	739	0	0	1.3	-0.1	1.3
63106	99	SPEED	SUR	61	2	739	0	0	1.3	-0.1	1.3
63107	99	SPEED	SUR	61	2	319	0	0	1.1	-0.0	1.1
63108	99	SPEED	SUR	61	2	744	0	0	1.4	0.1	1.4
63109	99	SPEED	SUR	60	2	736	0	0	1.3	-0.1	1.3
63110	99	SPEED	SUR	60	2	744	0	0	1.3	-0.6	1.4
63112	99	SPEED	SUR	61	1	744	0	0	1.3	-0.3	1.3
63113	99	SPEED	SUR	61	2	736	0	0	1.2	-0.2	1.2
63115	99	SPEED	SUR	62	1	734	0	0	1.4	-0.1	1.4
63117	99	SPEED	SUR	61	1	1485	0	0	1.4	-0.0	1.4
63119	99	SPEED	SUR	58	-4	71	0	0	2.8	-0.2	2.9

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF

ELEMENT MONITORED : WIND SPEED (M/S)

(CONTINU

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
64041	99	SPEED	SUR	61	-3	742	0	0	1.3	0.0	1.3
64045	99	SPEED	SUR	59	-12	1485	0	0	1.2	0.3	1.3
64046	99	SPEED	SUR	61	-4	743	0	0	1.2	0.5	1.3
66021	99	SPEED	SUR	55	14	731	1	0	1.3	0.2	1.3
66024	99	SPEED	SUR	55	13	723	0	0	1.5	0.3	1.5

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 2016
 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	518	0	0	28.1	-0.6	28.2
1300002	99	DIRN	SUR	20	-23	364	0	0	10.8	8.5	13.8
1300008	99	DIRN	SUR	15	-38	79	0	0	8.5	4.3	9.5
13002	99	DIRN	SUR	20	-23	245	0	0	11.6	9.0	14.7
13008	99	DIRN	SUR	15	-38	23	0	0	9.4	2.4	9.7
4100026	99	DIRN	SUR	12	-38	258	0	0	23.1	-3.5	23.4
4100139	99	DIRN	SUR	20	-38	360	0	0	10.6	1.1	10.6
41002	99	DIRN	SUR	32	-75	528	0	0	21.7	15.3	26.6
4100300	99	DIRN	SUR	16	-57	743	0	0	10.3	6.3	12.1
41004	99	DIRN	SUR	33	-79	723	0	0	14.1	4.9	15.0
41008	99	DIRN	SUR	31	-81	666	0	0	21.3	11.1	24.0
41009	99	DIRN	SUR	29	-80	453	0	0	18.6	5.0	19.2
41010	99	DIRN	SUR	29	-79	485	0	0	15.0	4.2	15.6
41013	99	DIRN	SUR	33	-78	877	0	0	16.9	8.9	19.1
41024	99	DIRN	SUR	34	-79	598	0	0	24.7	-8.9	26.2
41025	99	DIRN	SUR	35	-75	548	0	0	22.1	2.1	22.2
41026	99	DIRN	SUR	12	-38	52	0	0	20.4	-2.8	20.6
41029	99	DIRN	SUR	33	-80	687	0	0	21.2	-10.2	23.6
41033	99	DIRN	SUR	32	-80	608	0	0	22.3	-8.1	23.7
41037	99	DIRN	SUR	34	-77	468	0	0	21.3	1.0	21.3
41038	99	DIRN	SUR	34	-78	550	0	0	24.0	-6.5	24.9
41040	99	DIRN	SUR	15	-53	733	0	0	10.5	3.3	11.0
41041	99	DIRN	SUR	14	-46	713	0	0	10.9	5.2	12.1
41043	99	DIRN	SUR	21	-65	933	0	0	9.3	7.6	12.0
41044	99	DIRN	SUR	22	-59	965	0	0	9.1	1.5	9.2
41046	99	DIRN	SUR	24	-69	921	0	0	10.8	6.1	12.4
41047	99	DIRN	SUR	28	-72	395	0	0	22.2	0.8	22.2
41048	99	DIRN	SUR	32	-70	458	0	0	21.5	9.7	23.6
41049	99	DIRN	SUR	28	-63	363	0	0	13.5	4.2	14.2
41051	99	DIRN	SUR	18	-65	1456	0	0	11.5	-11.0	15.9
41052	99	DIRN	SUR	18	-65	1866	0	0	9.1	4.3	10.1
41053	99	DIRN	SUR	19	-66	1671	0	0	13.8	1.5	13.8

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

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
41056	99	DIRN	SUR	18	-66	1649	0	0	13.7	3.2	14.0
41064	99	DIRN	SUR	34	-77	596	0	0	21.1	3.3	21.4
41139	99	DIRN	SUR	20	-38	250	0	0	11.4	1.1	11.5
42013	99	DIRN	SUR	27	-83	305	0	0	21.8	-16.1	27.1
42022	99	DIRN	SUR	28	-84	354	0	0	19.4	-4.3	19.9
42023	99	DIRN	SUR	26	-83	417	0	0	32.2	1.8	32.2
42036	99	DIRN	SUR	29	-85	296	0	0	19.8	-2.0	19.9
42056	99	DIRN	SUR	20	-85	832	0	0	16.0	4.4	16.6
42058	99	DIRN	SUR	15	-75	735	0	0	6.3	2.2	6.7
42059	99	DIRN	SUR	15	-68	973	0	0	8.8	4.3	9.8
42060	99	DIRN	SUR	16	-63	477	0	0	8.7	5.1	10.1
42085	99	DIRN	SUR	18	-67	1632	0	0	13.7	7.6	15.7
42087	99	DIRN	SUR	11	-61	1315	0	0	24.1	-18.8	30.5
42088	99	DIRN	SUR	11	-61	742	0	0	16.6	-13.4	21.4
44005	99	DIRN	SUR	43	-69	569	0	0	18.5	13.7	23.0
44007	99	DIRN	SUR	44	-70	463	0	0	23.6	4.4	24.0
44008	99	DIRN	SUR	41	-69	441	0	0	19.4	16.3	25.3
44013	99	DIRN	SUR	42	-71	546	0	0	23.3	20.1	30.8
44014	99	DIRN	SUR	37	-75	509	0	0	25.2	3.9	25.5
44017	99	DIRN	SUR	41	-72	508	0	0	16.2	3.2	16.5
44018	99	DIRN	SUR	42	-70	588	0	0	22.9	17.0	28.5
44020	99	DIRN	SUR	41	-70	597	0	0	18.4	-2.4	18.5
44022	99	DIRN	SUR	41	-74	130	0	0	23.2	8.8	24.8
44024	99	DIRN	SUR	42	-66	320	0	0	22.9	3.7	23.2
44025	99	DIRN	SUR	40	-73	616	0	0	21.7	3.4	22.0
44027	99	DIRN	SUR	44	-67	571	0	0	19.3	17.0	25.8
44029	99	DIRN	SUR	43	-71	438	0	0	19.0	10.0	21.5
44030	99	DIRN	SUR	43	-70	435	0	0	29.4	5.1	29.8
44032	99	DIRN	SUR	44	-69	418	0	0	18.1	9.6	20.5
44033	99	DIRN	SUR	44	-69	357	0	0	23.8	8.5	25.3
44034	99	DIRN	SUR	44	-68	366	0	0	22.5	13.3	26.2
44037	99	DIRN	SUR	44	-68	389	0	0	18.2	7.4	19.7
44039	99	DIRN	SUR	41	-73	425	0	0	20.3	3.6	20.7
44041	99	DIRN	SUR	37	-77	49	0	0	30.7	-6.8	31.4
44042	99	DIRN	SUR	38	-76	513	0	0	31.0	-15.9	34.8
44043	99	DIRN	SUR	39	-76	542	0	0	33.7	-11.6	35.6
44057	99	DIRN	SUR	40	-76	224	0	0	37.9	-12.0	39.8
44058	99	DIRN	SUR	38	-76	484	0	0	36.7	11.0	38.3
44060	99	DIRN	SUR	41	-72	254	0	0	21.9	0.2	21.9
44061	99	DIRN	SUR	39	-77	66	0	0	29.2	0.9	29.2
44062	99	DIRN	SUR	39	-76	505	0	0	35.6	-3.3	35.8

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

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
44063	99	DIRN	SUR	39	-76	486	0	0	34.1	-12.6	36.3
44064	99	DIRN	SUR	37	-76	596	0	0	29.3	2.2	29.4
44065	99	DIRN	SUR	40	-74	494	0	0	25.3	3.1	25.5
44069	99	DIRN	SUR	41	-73	557	0	0	23.5	-4.0	23.8
44072	99	DIRN	SUR	37	-76	174	0	0	35.0	-12.5	37.2
44137	99	DIRN	SUR	42	-62	579	0	0	17.9	1.2	17.9
44139	99	DIRN	SUR	44	-57	590	0	0	16.4	10.8	19.6
44141	99	DIRN	SUR	43	-58	559	0	0	19.6	8.7	21.5
44150	99	DIRN	SUR	43	-64	53	0	0	13.1	-1.1	13.1
44251	99	DIRN	SUR	46	-53	512	0	0	19.0	16.3	25.1
44255	99	DIRN	SUR	47	-57	696	0	0	17.1	10.3	20.0
44258	99	DIRN	SUR	45	-63	510	0	0	16.5	8.8	18.7
45003	99	DIRN	SUR	45	-83	492	0	0	22.6	5.3	23.2
45005	99	DIRN	SUR	42	-82	661	0	0	25.4	1.7	25.5
45008	99	DIRN	SUR	44	-82	815	0	0	21.2	7.5	22.5
45012	99	DIRN	SUR	44	-77	463	0	0	23.1	11.2	25.7
45132	99	DIRN	SUR	43	-81	481	0	0	21.5	-10.4	23.9
45135	99	DIRN	SUR	44	-77	644	0	0	19.0	-16.5	25.1
45137	99	DIRN	SUR	46	-81	500	0	0	27.8	-5.2	28.3
45138	99	DIRN	SUR	50	-66	122	0	0	17.7	0.3	17.7
45139	99	DIRN	SUR	43	-80	392	0	0	27.2	-17.8	32.5
45142	99	DIRN	SUR	43	-79	515	0	0	20.2	-20.0	28.4
45143	99	DIRN	SUR	45	-81	783	0	0	24.3	-16.9	29.6
45147	99	DIRN	SUR	42	-83	404	0	0	26.6	-1.8	26.7
45149	99	DIRN	SUR	44	-82	460	0	0	23.1	-6.1	23.9
45151	99	DIRN	SUR	45	-79	436	0	0	25.0	7.1	26.0
45152	99	DIRN	SUR	46	-80	322	0	0	22.9	-23.9	33.1
45154	99	DIRN	SUR	46	-83	628	0	0	22.6	-14.2	26.7
45159	99	DIRN	SUR	44	-79	387	0	0	26.1	-10.8	28.2
45162	99	DIRN	SUR	45	-83	411	0	0	22.4	-3.1	22.6
45163	99	DIRN	SUR	44	-84	557	0	0	23.3	1.1	23.3
45164	99	DIRN	SUR	42	-82	379	0	0	31.8	-12.1	34.0
45165	99	DIRN	SUR	42	-83	689	0	0	24.3	-32.4	40.5
45167	99	DIRN	SUR	42	-80	697	0	0	32.8	-13.1	35.3
45169	99	DIRN	SUR	42	-82	592	0	0	26.5	-17.5	31.8
45175	99	DIRN	SUR	46	-85	773	0	0	45.2	-15.7	47.9
45176	99	DIRN	SUR	42	-82	651	0	0	33.7	-11.9	35.7
6200091	99	DIRN	SUR	53	-5	567	0	0	19.7	7.3	21.0
6200092	99	DIRN	SUR	51	-11	621	0	0	12.5	6.4	14.0
6200093	99	DIRN	SUR	55	-10	454	0	0	12.8	1.6	12.9
6200094	99	DIRN	SUR	52	-7	649	0	0	12.1	6.0	13.5

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF

ELEMENT MONITORED : WIND DIRECTION (DEGREES)

(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
62001	99	DIRN	SUR	45	-5	553	0	0	14.7	2.6	14.9
62027	99	DIRN	SUR	49	-2	149	0	0	31.9	0.3	31.9
62029	99	DIRN	SUR	49	-12	1152	0	0	10.0	6.0	11.7
62050	99	DIRN	SUR	50	-4	631	0	0	13.2	1.0	13.2
62081	99	DIRN	SUR	51	-13	651	0	0	16.9	13.9	21.9
62095	99	DIRN	SUR	53	-16	645	0	0	14.4	7.6	16.3
62103	99	DIRN	SUR	50	-3	625	0	0	21.1	5.8	21.9
62105	99	DIRN	SUR	55	-13	583	0	0	13.7	5.9	14.9
62107	99	DIRN	SUR	50	-6	1305	0	0	18.6	-0.5	18.7
62111	99	DIRN	SUR	58	0	420	0	0	13.9	0.7	13.9
62112	99	DIRN	SUR	58	0	604	0	0	14.5	1.3	14.5
62114	99	DIRN	SUR	58	0	1359	0	0	16.8	-2.5	17.0
62117	99	DIRN	SUR	58	0	664	0	0	13.4	2.0	13.6
62163	99	DIRN	SUR	48	-8	604	0	0	14.2	-0.5	14.2
62305	99	DIRN	SUR	50	0	718	0	0	15.4	7.0	16.9
63119	99	DIRN	SUR	58	-4	50	0	0	68.0	10.4	68.8
64041	99	DIRN	SUR	61	-3	596	0	0	14.8	6.7	16.2
64045	99	DIRN	SUR	59	-12	1299	0	0	18.2	5.6	19.1
64046	99	DIRN	SUR	61	-4	615	0	0	14.0	-1.0	14.0

4.12 Table 24 - List of Assimilated BUFR Encoded Radiosonde Stations

ASDE01	ASDE02	ASDE03	ASDE04	ASDK01	ASDK02	ASDK03	ASES01	ASEU01
ASEU02	ASEU04	ASEU05	ASEU06	ASFR1	ASFR3	ASFR4	DBLK	01001
01004	01010	01028	01241	01400	01415	01492	02185	02365
02527	02591	02836	02935	02963	03953	06260	06610	08001
08023	08190	08221	08302	08430	10035	10113	10141	10184
10238	10304	10393	10410	10618	10739	10868	10954	10962
16080	16245	16320	16429	16546	47155	60018	76743	93817
94120	94150	94170	94203	94294	94299	94302	94312	94326
94332	94374	94403	94430	94461	94510	94578	94610	94637
94638	94653	94659	94672	94711	94767	94776	94802	94821
94866	94910	94975	94995	94996	94998	95527		

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

ASDE01	ASDE02	ASDE03	ASDE04	ASDE09	ASDK01	ASDK02	ASDK03	ASES01
ASEU01	ASEU02	ASEU03	ASEU04	ASEU05	ASEU06	DBLK	10141	17516
47155	76743	84132	93817	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.