



ECMWF Global Data Monitoring Report

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

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

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

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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	Jul	Aug	Ident	Time	Jul	Aug
40766	(00)	30	7	17607	(12)	47	61
40841	(12)	26	0	30054	(12)	16	29
42101	(12)	17	3	30673	(00)	8	31
61024	(12)	21	0	30673	(12)	8	29
61052	(00)	21	0	43333	(12)	15	28
68424	(00)	29	7	47186	(00)	0	15
78988	(00)	30	4	47186	(12)	0	16
78988	(12)	31	3	61291	(00)	0	31
82332	(12)	28	3	61291	(12)	0	30
82678	(12)	11	0	61641	(00)	3	29
83498	(12)	31	6	61641	(12)	3	29
-	-	-	-	64910	(00)	0	27
-	-	-	-	64910	(12)	0	24
-	-	-	-	70165	(00)	0	14
-	-	-	-	78866	(12)	6	30
-	-	-	-	78954	(00)	0	20
-	-	-	-	78954	(12)	7	31
-	-	-	-	82400	(00)	12	29
-	-	-	-	82400	(12)	14	27
-	-	-	-	82599	(00)	0	19
-	-	-	-	82705	(00)	0	26
-	-	-	-	82705	(12)	0	28
-	-	-	-	83971	(00)	0	14
-	-	-	-	83971	(12)	0	11
-	-	-	-	89512	(12)	0	14
-	-	-	-	89592	(12)	0	14
-	-	-	-	98646	(00)	8	30
-	-	-	-	98646	(12)	6	28

2.2 Drifting Buoys

Surface pressure observations from 2001 drifting buoys were received during the month.

3 Global monitoring statistics

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

3.1 Data Availability

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

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

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

3.2 Data Quality

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

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

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

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

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

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

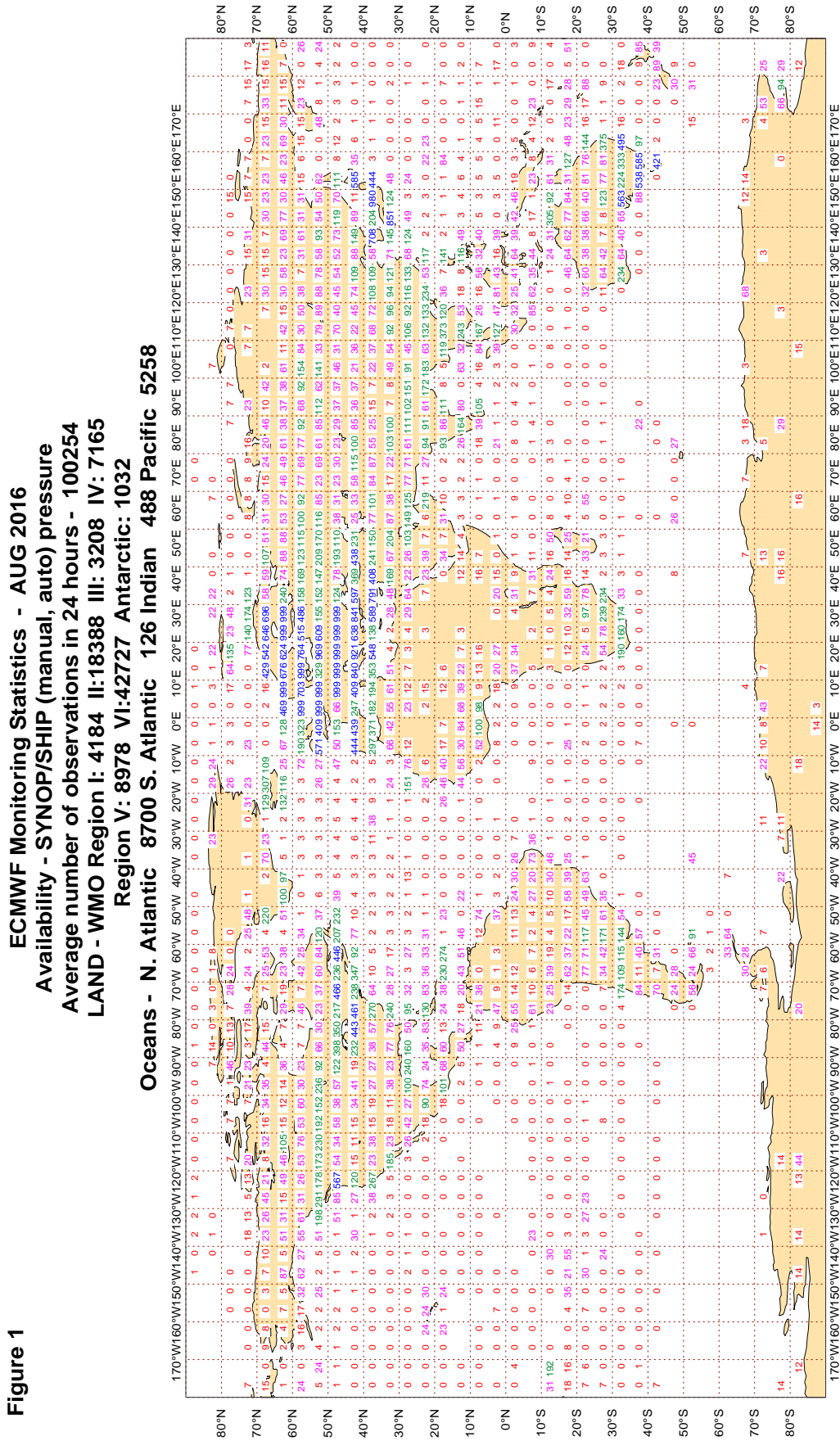
Tab	Parameter	Observation Time
10	Geopotential	00 and 12 UTC
11	Wind	00 and 12 UTC

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

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

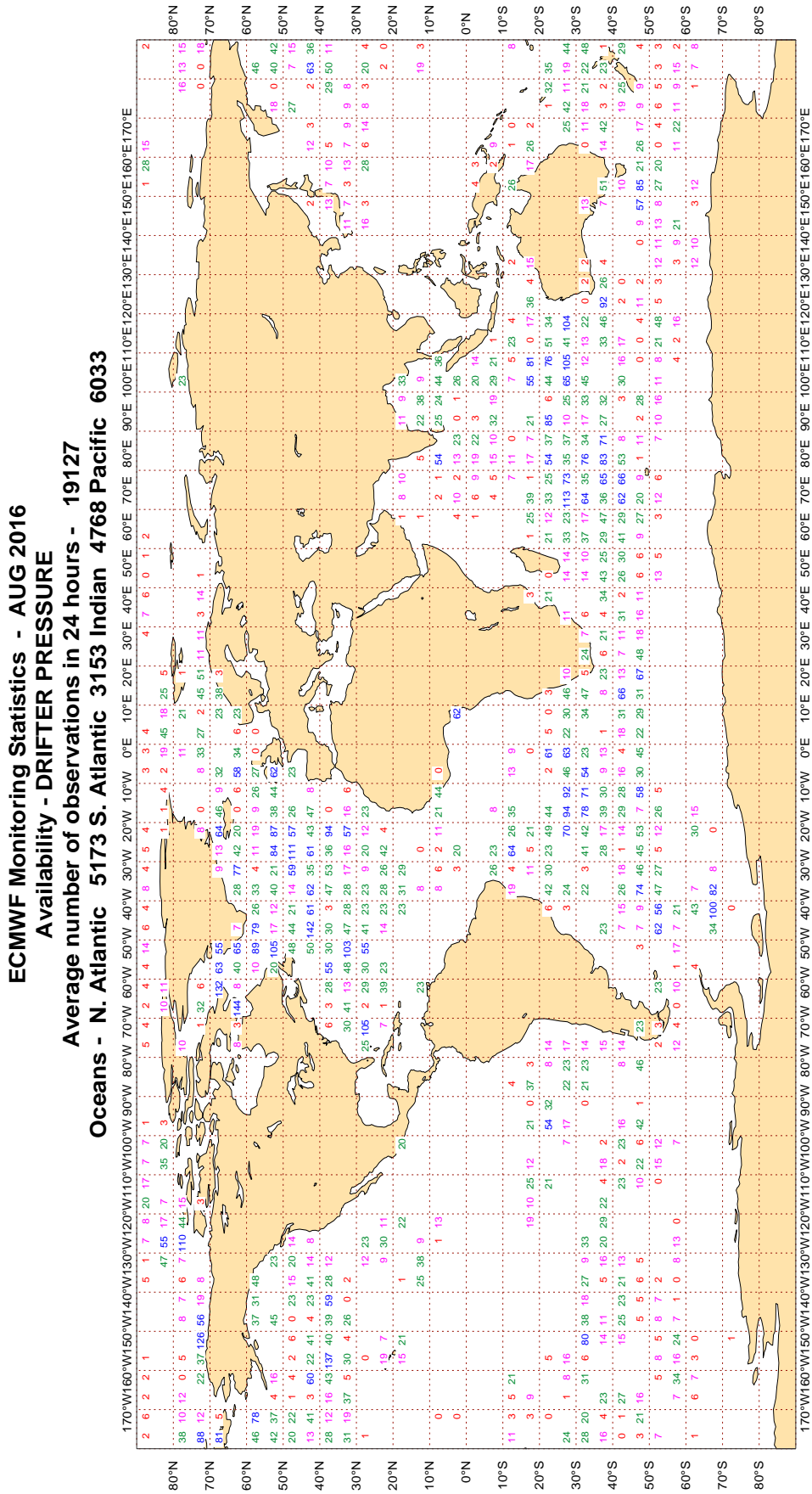
Table 12 provides quality statistics of aircraft wind observations stratified by airline carrier.

3.2.1 Figure 1 - Availability - SYNOP PRESSURE



3.2.2 Figure 2 - Availability - DRIFTER PRESSURE

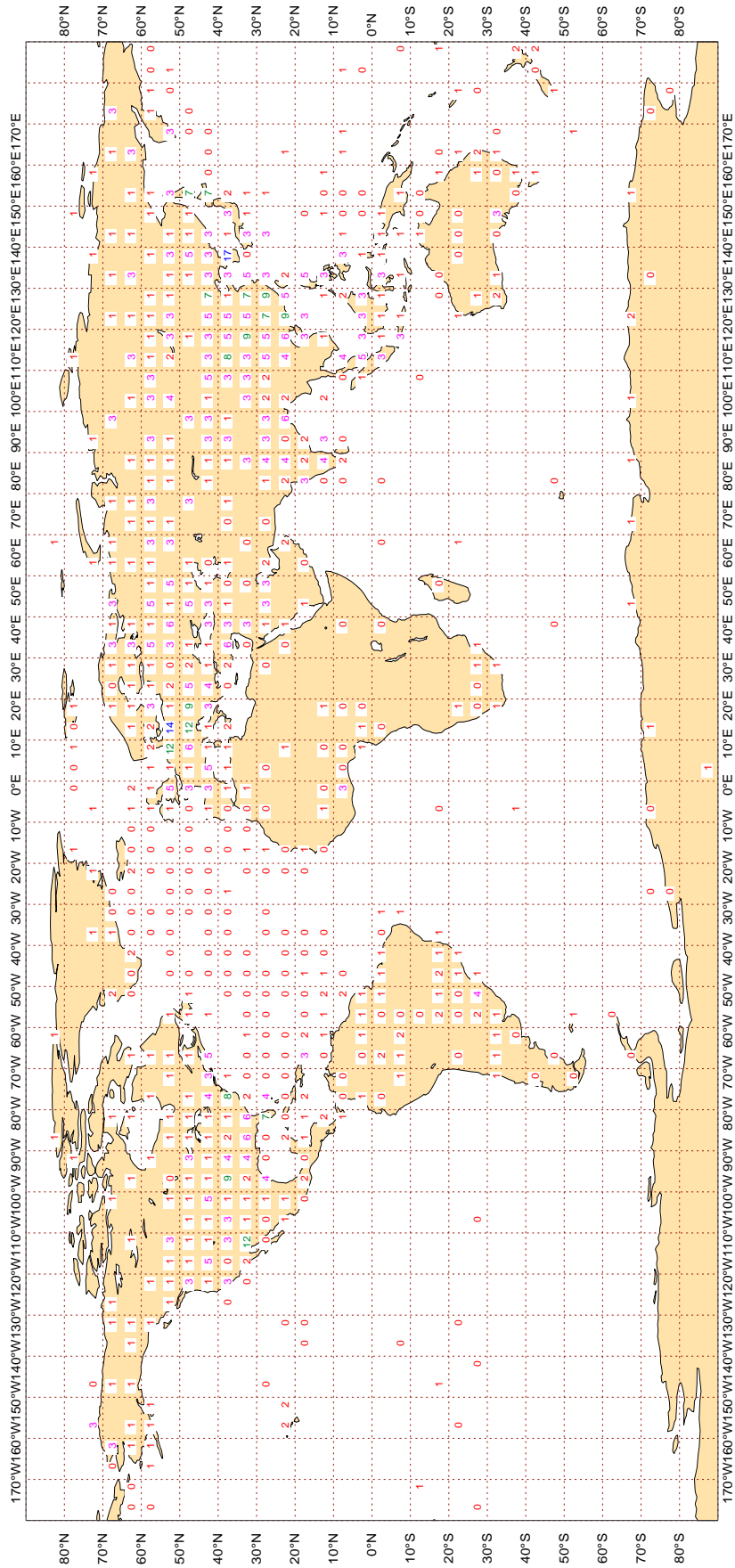
Figure 2



3.2.3 Figure 3 - Availability - TEMP 500 hPa geopotential

Figure 3

ECMWF Monitoring Statistics - AUG 2016
 Availability - TEMP 500 hPa Geopotential
 Average number of observations in 24 hours - 1353
 LAND - WMO Region I: 44 II: 528 III: 71 IV: 279
 Region V: 143 VI: 259 Antarctic: 17
 Oceans - N. Atlantic 12 S. Atlantic 0 Indian 0 Pacific 1



Magics 2.24.2 (64 bit)



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

Figure 4

ECMWF Monitoring Statistics - AUG 2016

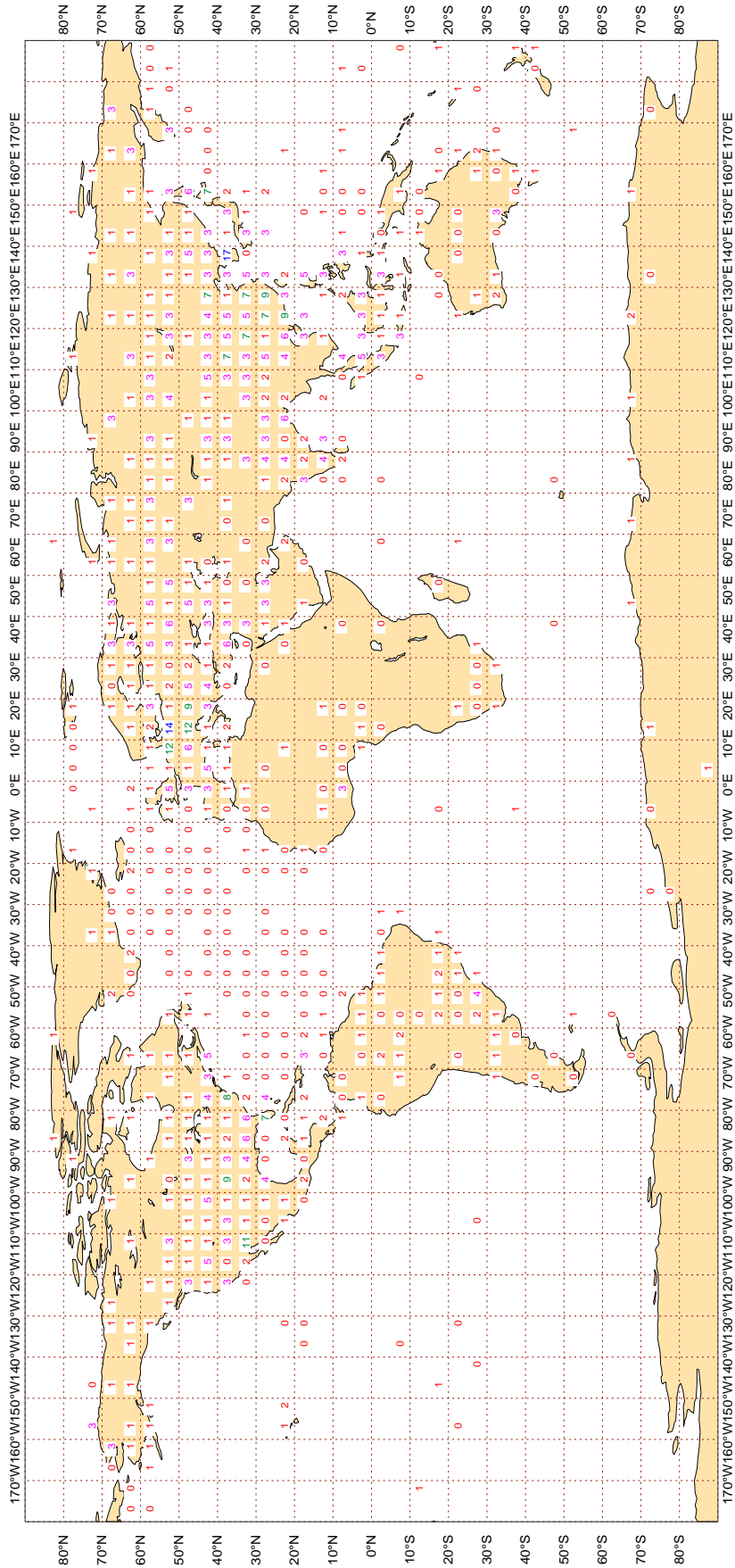
Availability - TEMP/PILOT 300 hPa wind

Average number of observations in 24 hours - 1313

LAND - WMO Region I: 43 II: 502 III: 70 IV: 275

Region V: 137 VI: 257 Antarctic: 17

Oceans - N. Atlantic 11 S. Atlantic 0 Indian 0 Pacific 1



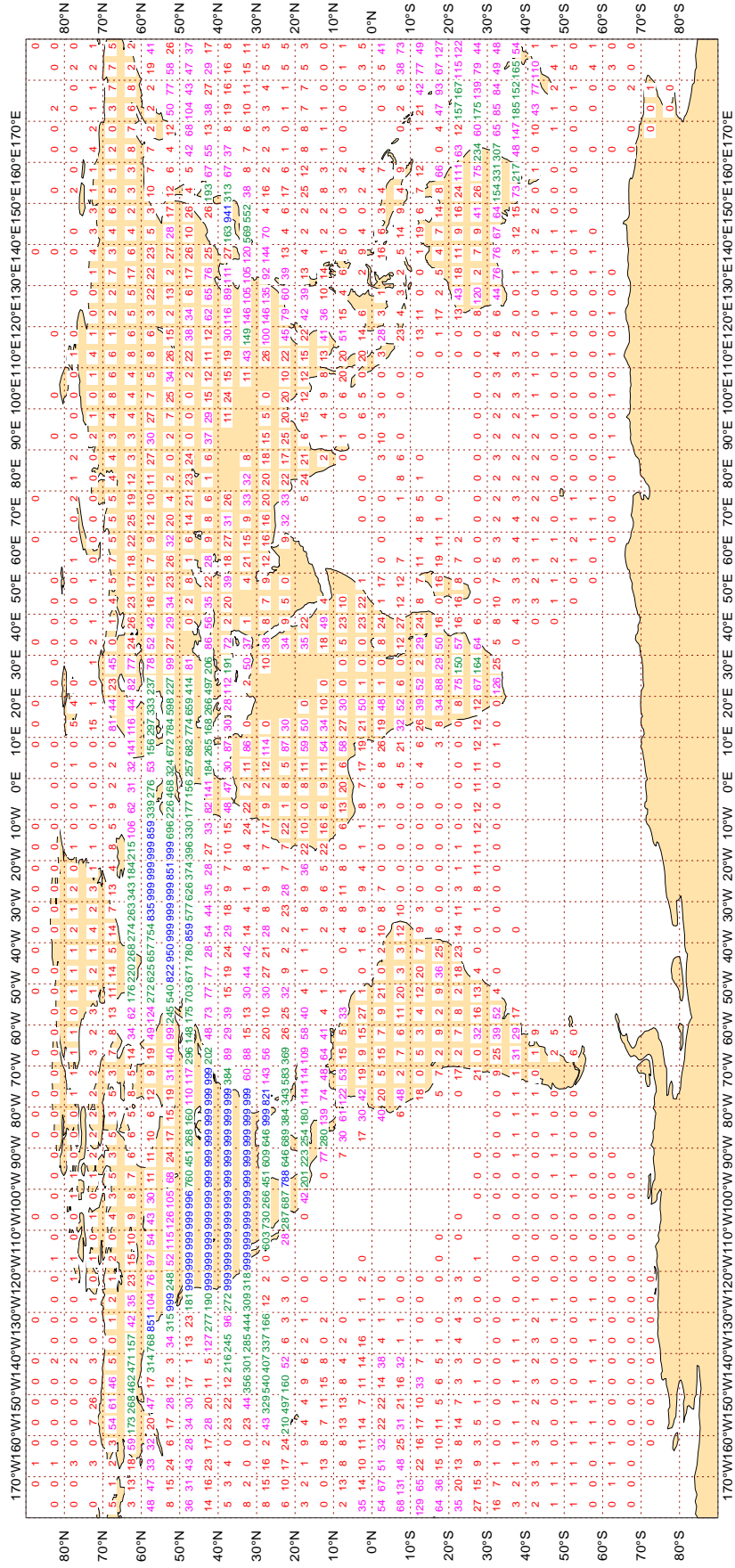
Magics 2.24.2 (64 bit)



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

Figure 5

ECMWF Monitoring Statistics - AUG 2016
Availability - Aircraft winds 300-150 hPa
Average number of observations in 24 hours - 208354



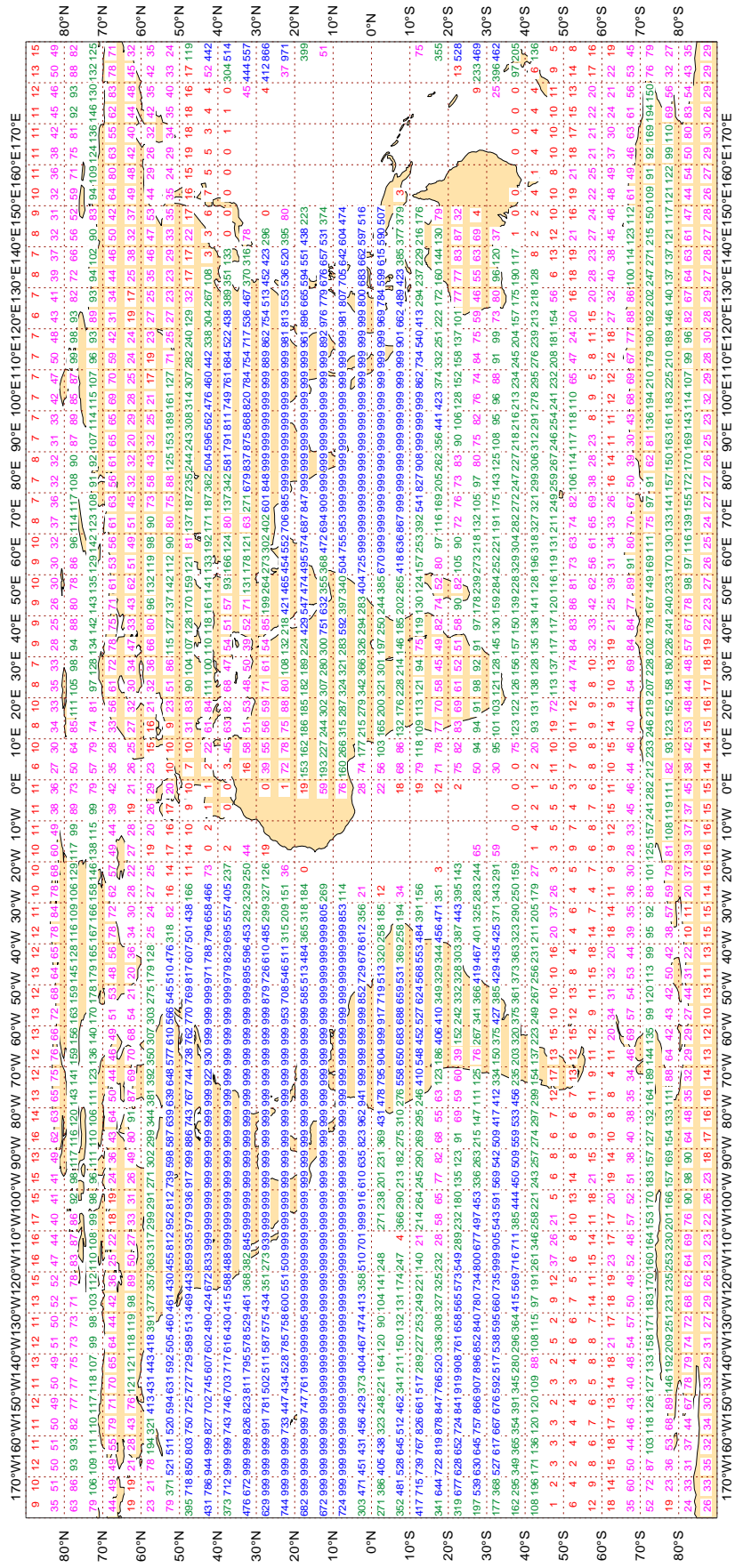
Majics 2.24.2 (64 bit)



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

Figure 6

ECMWF Monitoring Statistics - AUG 2016
Availability - AMV winds 400-150 hPa
Average number of observations in 24 hours - 753423

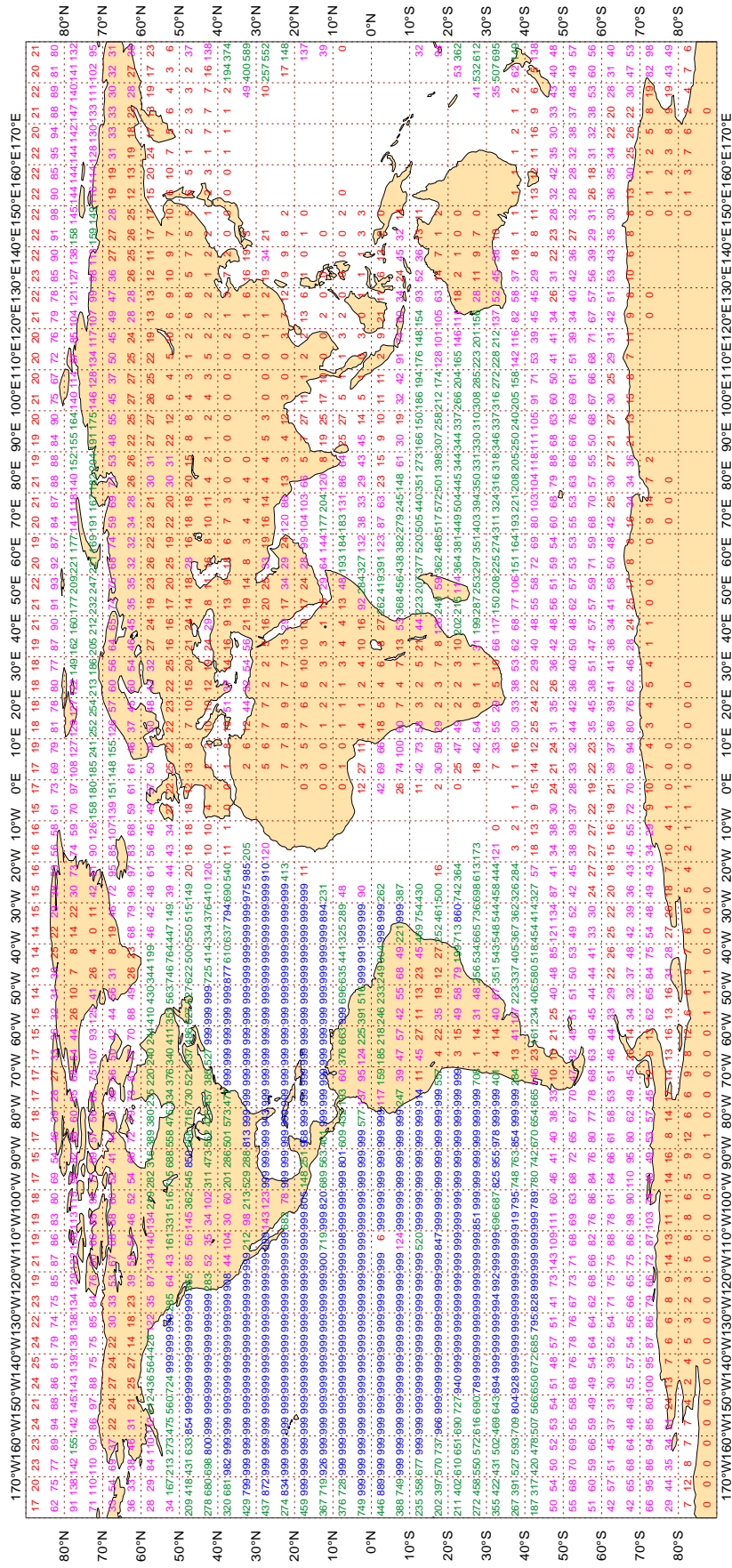


Majics 2.24.2 (64 bit)

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

Figure 7

ECMWF Monitoring Statistics - AUG 2016
Availability - AMV winds 1000-700 hPa
Average number of observations in 24 hours - 1107937



Magics 2.24.2 (64 bit)



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

Figure 8

ECMWF Monitoring Statistics - AUG 2016
Availability - NOAA15 ATOVS : AMSU-A
Average number of observations in 24 hours - 322950

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.

Majics 2.24.2 (64 bit)



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

Figure 9.1

ECMWF Monitoring Statistics - AUG 2016
Availability - NOAA18 ATOVS : AMSU-A
Average number of observations in 24 hours - 563659

Latitude	170°W	160°W	150°W	140°W	130°W	120°W	110°W	100°W	90°W	80°W	70°W	60°W	50°W	40°W	30°E	20°E	10°E	0°E	10°W	20°W	30°W	40°W	50°W	60°W	70°E	80°E	90°E	100°E	110°E	120°E	130°E	140°E	150°E	160°E	170°E																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
80°N	172	194	197	202	206	209	214	218	223	227	231	235	239	243	247	251	255	259	263	267	271	275	279	283	287	291	295	299	303	307	311	315	319	323	327	331	335	339	343	347	351	355	359	363	367	371	375	379	383	387	391	395	399	403	407	411	415	419	423	427	431	435	439	443	447	451	455	459	463	467	471	475	479	483	487	491	495	499	503	507	511	515	519	523	527	531	535	539	543	547	551	555	559	563	567	571	575	579	583	587	591	595	599	603	607	611	615	619	623	627	631	635	639	643	647	651	655	659	663	667	671	675	679	683	687	691	695	699	703	707	711	715	719	723	727	731	735	739	743	747	751	755	759	763	767	771	775	779	783	787	791	795	799	803	807	811	815	819	823	827	831	835	839	843	847	851	855	859	863	867	871	875	879	883	887	891	895	899	903	907	911	915	919	923	927	931	935	939	943	947	951	955	959	963	967	971	975	979	983	987	991	995	999	1003	1007	1011	1015	1019	1023	1027	1031	1035	1039	1043	1047	1051	1055	1059	1063	1067	1071	1075	1079	1083	1087	1091	1095	1099	1103	1107	1111	1115	1119	1123	1127	1131	1135	1139	1143	1147	1151	1155	1159	1163	1167	1171	1175	1179	1183	1187	1191	1195	1199	1203	1207	1211	1215	1219	1223	1227	1231	1235	1239	1243	1247	1251	1255	1259	1263	1267	1271	1275	1279	1283	1287	1291	1295	1299	1303	1307	1311	1315	1319	1323	1327	1331	1335	1339	1343	1347	1351	1355	1359	1363	1367	1371	1375	1379	1383	1387	1391	1395	1399	1403	1407	1411	1415	1419	1423	1427	1431	1435	1439	1443	1447	1451	1455	1459	1463	1467	1471	1475	1479	1483	1487	1491	1495	1499	1503	1507	1511	1515	1519	1523	1527	1531	1535	1539	1543	1547	1551	1555	1559	1563	1567	1571	1575	1579	1583	1587	1591	1595	1599	1603	1607	1611	1615	1619	1623	1627	1631	1635	1639	1643	1647	1651	1655	1659	1663	1667	1671	1675	1679	1683	1687	1691	1695	1699	1703	1707	1711	1715	1719	1723	1727	1731	1735	1739	1743	1747	1751	1755	1759	1763	1767	1771	1775	1779	1783	1787	1791	1795	1799	1803	1807	1811	1815	1819	1823	1827	1831	1835	1839	1843	1847	1851	1855	1859	1863	1867	1871	1875	1879	1883	1887	1891	1895	1899	1903	1907	1911	1915	1919	1923	1927	1931	1935	1939	1943	1947	1951	1955	1959	1963	1967	1971	1975	1979	1983	1987	1991	1995	1999	2003	2007	2011	2015	2019	2023	2027	2031	2035	2039	2043	2047	2051	2055	2059	2063	2067	2071	2075	2079	2083	2087	2091	2095	2099	2103	2107	2111	2115	2119	2123	2127	2131	2135	2139	2143	2147	2151	2155	2159	2163	2167	2171	2175	2179	2183	2187	2191	2195	2199	2203	2207	2211	2215	2219	2223	2227	2231	2235	2239	2243	2247	2251	2255	2259	2263	2267	2271	2275	2279	2283	2287	2291	2295	2299	2303	2307	2311	2315	2319	2323	2327	2331	2335	2339	2343	2347	2351	2355	2359	2363	2367	2371	2375	2379	2383	2387	2391	2395	2399	2403	2407	2411	2415	2419	2423	2427	2431	2435	2439	2443	2447	2451	2455	2459	2463	2467	2471	2475	2479	2483	2487	2491	2495	2499	2503	2507	2511	2515	2519	2523	2527	2531	2535	2539	2543	2547	2551	2555	2559	2563	2567	2571	2575	2579	2583	2587	2591	2595	2599	2603	2607	2611	2615	2619	2623	2627	2631	2635	2639	2643	2647	2651	2655	2659	2663	2667	2671	2675	2679	2683	2687	2691	2695	2699	2703	2707	2711	2715	2719	2723	2727	2731	2735	2739	2743	2747	2751	2755	2759	2763	2767	2771	2775	2779	2783	2787	2791	2795	2799	2803	2807	2811	2815	2819	2823	2827	2831	2835	2839	2843	2847	2851	2855	2859	2863	2867	2871	2875	2879	2883	2887	2891	2895	2899	2903	2907	2911	2915	2919	2923	2927	2931	2935	2939	2943	2947	2951	2955	2959	2963	2967	2971	2975	2979	2983	2987	2991	2995	2999	3003	3007	3011	3015	3019	3023	3027	3031	3035	3039	3043	3047	3051	3055	3059	3063	3067	3071	3075	3079	3083	3087	3091	3095	3099	3103	3107	3111	3115	3119	3123	3127	3131	3135	3139	3143	3147	3151	3155	3159	3163	3167	3171	3175	3179	3183	3187	3191	3195	3199	3203	3207	3211	3215	3219	3223	3227	3231	3235	3239	3243	3247	3251	3255	3259	3263	3267	3271	3275	3279	3283	3287	3291	3295	3299	3303	3307	3311	3315	3319	3323	3327	3331	3335	3339	3343	3347	3351	3355	3359	3363	3367	3371	3375	3379	3383	3387	3391	3395	3399	3403	3407	3411	3415	3419	3423	3427	3431	3435	3439	3443	3447	3451	3455	3459	3463	3467	3471	3475	3479	3483	3487	3491	3495	3499	3503	3507	3511	3515	3519	3523	3527	3531	3535	3539	3543	3547	3551	3555	3559	3563	3567	3571	3575	3579	3583	3587	3591	3595	3599	3603	3607	3611	3615	3619	3623	3627	3631	3635	3639	3643	3647	3651	3655	3659	3663	3667	3671	3675	3679	3683	3687	3691	3695	3699	3703	3707	3711	3715	3719	3723	3727	3731	3735	3739	3743	3747	3751	3755	3759	3763	3767	3771	3775	3779	3783	3787	3791	3795	3799	3803	3807	3811	3815	3819	3823	3827	3831	3835	3839	3843	3847	3851	3855	3859	3863	3867	3871	3875	3879	3883	3887	3891	3895	3899	3903	3907	3911	3915	3919	3923	3927	3931	3935	3939	3943	3947	3951	3955	3959	3963	3967	3971	3975	3979	3983	3987	3991	3995	3999	4003	4007	4011	4015	4019	4023	4027	4031	4035	4039	4043	4047	4051	4055	4059	4063	4067	4071	4075	4079	4083	4087	4091	4095	4099	4103	4107	4111	4115	4119	4123	4127	4131	4135	4139	4143	4147	4151	4155	4159	4163	4167	4171	4175	4179	4183	4187	4191	4195	4199	4203	4207	4211	4215	4219	4223	4227	4231	4235	4239	4243	4247	4251	4255	4259	4263	4267	4271	4275	4279	4283	4287	4291	4295	4299	4303	4307	4311	4315	4319	4323	4327	4331	4335	4339	4343	4347	4351	4355	4359	4363	4367	4371	4375	4379	4383	4387	4391	4395	4399	4403	4407	4411	4415	4419	4423	4427	4431	4435	4439	4443	4447	4451	4455	4459	4463	4467	4471	4475	4479	4483	4487	4491	4495	4499	4503	4507	4511	4515	4519	4523	4527	4531	4535	4539	4543	4547	4551	4555	4559	4563	4567	4571	4575	4579	4583	4587	4591	4595	4599	4603	4607	4611	4615	4619	4623	4627	4631	4635	4639	4643	4647	4651	4655	4659	4663	4667	4671	4675	4679	4683	4687	4691	4695	4699	4703	4707	4711	4715	4719	4723	4727	4731	4735	4739	4743	4747	4751	4755	4759	4763	4767	4771	4775	4779	4783	4787	4791	4795	4799	4803	4807	4811	4815	4819	4823	4827	4831	4835	4839	4843	4847	4851	4855	4859	4863	4867	4871	4875	4879	4883	4887	4891	4895	4899	4903	4907	4911	4915	4919	4923	4927	4931	4935	4939	4943	4947	4951	4955	4959	4963	4967	4971	4975	4979	4983	4987	4991	4995	4999	5003	5007	5011	5015	5019	5023	5027	5031	5035	5039	5043	5047	5051	5055	5059	5063	5067	5071	5075	5079	5083	5087	5091	5095	5099	5103	5107	5111	5115	5119	5123	5127	5131	5135	5139	5143	5147	5151	5155	5159	5163	5167	5171	5175	5179	5183	5187	5191	5195	5199	5203	5207	5211	5215	5219	5223	5227	5231	5235	5239	5243	5247	5251	5255	5259	5263	5267	5271	5275	5279	5283	5287	5291	5295	5299	5303	5307	5311	5315	5319	5323	5327	5331	5335	5339	5343	5347	5351	5355	5359	5363	5367	5371	5375	5379	5383	5387	5391	5395	5399	5403	5407	5411	5415	5419	5423	5427	5431	5435	5439	5443	5447	5451	5455	5459	5463	5467	5471	5475	5479

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 : AUG 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
9V9062	99	P	SUR	47	0	2.5	4.0	4.7
9V9290	99	P	SUR	23	0	1.8	-3.4	3.8
9V9574	99	P	SUR	28	0	1.7	4.5	4.8
A8PQ8	99	P	SUR	92	0	2.4	-3.6	4.3
A8SI7	99	P	SUR	15	0	0.7	5.3	5.4
AGRF	99	P	SUR	117	3	3.1	9.1	9.6
AUYL	99	P	SUR	27	0	2.1	10.2	10.4
AVLZ	99	P	SUR	17	0	1.5	-6.8	6.9
C6BR3	99	P	SUR	29	0	2.4	5.5	6.0
C6FV4	99	P	SUR	38	0	1.4	7.7	7.8
C6JT	99	P	SUR	35	0	1.1	-3.6	3.8
C6LU4	99	P	SUR	24	0	2.5	3.4	4.2
C6YA7	99	P	SUR	50	0	1.2	3.5	3.7
C6ZJ5	99	P	SUR	17	0	1.3	3.9	4.1
CBGR	99	P	SUR	124	19	3.6	9.1	9.8
CTEC	99	P	SUR	15	0	1.4	-4.6	4.8
DVRF	99	P	SUR	123	16	3.5	8.6	9.3
ELPP9	99	P	SUR	54	0	1.0	4.5	4.7
H3VR	99	P	SUR	18	0	1.2	-4.2	4.3
HRRF	99	P	SUR	123	15	3.6	9.1	9.8
ICIC	99	P	SUR	20	0	1.9	3.5	4.0
KRAU	99	P	SUR	15	2	0.7	6.9	6.9
LAQL7	99	P	SUR	29	0	1.7	4.4	4.7
LF8G	99	P	SUR	124	13	6.7	-0.3	6.7
MYRF	99	P	SUR	100	18	3.4	9.8	10.3
ONFI	99	P	SUR	27	0	1.3	3.0	3.3
OUJK2	99	P	SUR	20	0	1.4	3.6	3.9
OXOR2	99	P	SUR	19	0	2.2	3.3	3.9
OZ2049	99	P	SUR	29	0	0.6	-4.8	4.9
UANA	99	P	SUR	60	2	5.2	-1.3	5.3
UASX	99	P	SUR	60	2	1.8	6.4	6.6
UBSI9	99	P	SUR	17	0	0.9	-3.5	3.6

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

WMO IDENT	OBS TIME	ELM	LEVEL	NUM OBS	NUM GROSS	SD	BIAS	RMS
UBXS	99	P	SUR	33	1	1.8	-11.8	12.0
UCLD	99	P	SUR	31	0	0.9	3.5	3.6
UCSJ	99	P	SUR	50	0	0.7	3.0	3.1
UDYG	99	P	SUR	68	68	0.0	0.0	0.0
UFMK	99	P	SUR	40	0	1.0	3.7	3.8
UGZM	99	P	SUR	22	0	2.1	-5.0	5.4
UHOW	99	P	SUR	87	8	6.6	-2.4	7.1
V7RF2	99	P	SUR	23	0	1.6	5.3	5.5
VRDJ3	99	P	SUR	78	0	1.1	-3.2	3.3
VRFI7	99	P	SUR	27	0	0.9	5.0	5.0
VRFU8	99	P	SUR	17	0	0.9	-8.2	8.2
VRFU9	99	P	SUR	29	0	3.5	11.1	11.7
VRHE3	99	P	SUR	46	0	0.9	-3.9	4.0
VRJT8	99	P	SUR	58	0	2.4	4.7	5.3
VRKE9	99	P	SUR	80	4	3.4	3.3	4.8
VRKX8	99	P	SUR	23	0	1.6	3.0	3.4
VRKZ9	99	P	SUR	22	0	2.8	3.7	4.6
VRNF7	99	P	SUR	25	3	8.8	3.4	9.4
VRPY7	99	P	SUR	25	0	2.9	3.8	4.8
VRRC	99	P	SUR	18	0	1.0	3.2	3.4
VRWN4	99	P	SUR	24	0	1.3	3.0	3.3
WACW	99	P	SUR	19	0	0.6	3.9	4.0
WAIU	99	P	SUR	22	0	1.3	-4.2	4.3
WAPU	99	P	SUR	19	1	1.0	8.4	8.4
WAZV	99	P	SUR	15	0	0.7	-4.0	4.0
WDC6923	99	P	SUR	25	0	1.3	5.5	5.7
WJBU	99	P	SUR	26	0	2.0	-3.1	3.7
WRJP	99	P	SUR	50	0	1.1	-4.2	4.4

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

LIST OF SUSPECT STATIONS : SHIPS + FIXED MARINE PLATFORMS
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND DIRECTION (DEGREES)
 AREA : GLOBAL
 PERIOD : AUG 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
42369	99	DIRN	SUR	48	0	0	20.3	37.5	42.7
44058	99	DIRN	SUR	82	0	0	36.2	49.1	61.0
45020	99	DIRN	SUR	58	0	0	14.5	-32.6	35.6
45152	99	DIRN	SUR	49	0	0	19.8	-30.4	36.3
45165	99	DIRN	SUR	119	0	0	17.0	-33.4	37.5
45168	99	DIRN	SUR	87	0	0	32.0	-32.2	45.4
46118	99	DIRN	SUR	29	0	0	42.3	52.0	67.0
63119	99	DIRN	SUR	23	1	0	55.2	-39.6	67.9

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 : AUG 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
2300706	99	P	SUR	10	94	818	567	2.2	-0.3	2.2
23706	99	P	SUR	10	94	777	539	2.3	-0.3	2.3
4700509	99	P	SUR	70	-20	731	42	5.5	-4.7	7.2
4700567	99	P	SUR	50	-38	719	719	0.0	0.0	0.0
47509	99	P	SUR	70	-20	735	42	5.5	-4.7	7.2
47567	99	P	SUR	50	-38	741	741	0.0	0.0	0.0
4800513	99	P	SUR	75	168	739	236	8.3	-0.3	8.3
4800634	99	P	SUR	70	-146	701	243	6.7	-1.2	6.8
48513	99	P	SUR	75	168	712	225	8.2	-0.4	8.2
48634	99	P	SUR	70	-146	737	261	6.7	-1.2	6.8
5301601	99	P	SUR	-7	96	959	470	0.5	0.2	0.5
5500582	99	P	SUR	-41	175	86	45	2.2	-0.8	2.4
55582	99	P	SUR	-41	175	88	47	0.3	-0.5	0.6
5600506	99	P	SUR	-18	97	714	0	1.9	-4.4	4.8
56506	99	P	SUR	-18	97	735	0	1.9	-4.3	4.7
6400534	99	P	SUR	62	-30	354	354	0.0	0.0	0.0
64534	99	P	SUR	62	-30	322	322	0.0	0.0	0.0
7100245	99	P	SUR	-64	119	192	65	6.4	-2.8	7.0
7100576	99	P	SUR	-52	-34	480	167	1.8	-0.2	1.8
71576	99	P	SUR	-52	-34	383	138	2.0	-0.2	2.0
7200801	99	P	SUR	-75	-152	56	35	6.1	-0.6	6.1
72801	99	P	SUR	-75	-152	55	35	6.2	-0.7	6.3

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 : AUG 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	743	0	0	4.2	5.8	7.2

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

LIST OF SUSPECT STATIONS : DRIFTER
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND DIRECTION (DEGREES)
 PERIOD : AUG 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	307	0	0	16.0	-22.8	27.8
14041	99	DIRN	SUR	-8	55	225	0	0	16.6	-23.0	28.4
2300003	99	DIRN	SUR	-4	83	282	0	0	28.1	27.5	39.3
23003	99	DIRN	SUR	-4	83	169	0	0	28.0	27.3	39.1
23016	99	DIRN	SUR	-2	67	67	0	0	20.9	-22.2	30.5
23092	99	DIRN	SUR	18	90	166	3	0	94.0	110.3	145.0
23451	99	DIRN	SUR	15	69	246	0	0	7.4	26.6	27.6
23454	99	DIRN	SUR	10	73	202	0	0	132.8	-102.8	168.0
23460	99	DIRN	SUR	7	88	197	0	0	13.3	25.0	28.3
23497	99	DIRN	SUR	11	72	234	0	0	10.8	-21.8	24.3
3100053	99	DIRN	SUR	-32	-50	593	0	0	28.7	-24.9	38.0
3100231	99	DIRN	SUR	-29	-47	29	0	0	77.5	-19.7	80.0
3100262	99	DIRN	SUR	-23	-43	193	0	0	31.7	-29.5	43.3
3100374	99	DIRN	SUR	-25	-45	359	0	0	31.7	-23.2	39.3
3100380	99	DIRN	SUR	-20	-40	593	0	0	31.8	-26.3	41.3
31010	99	DIRN	SUR	-24	-42	113	0	0	12.4	-21.8	25.1
3101000	99	DIRN	SUR	-24	-42	559	0	0	23.1	-21.5	31.6
31053	99	DIRN	SUR	-32	-50	284	0	0	32.6	-25.4	41.3
31380	99	DIRN	SUR	-20	-40	305	0	0	32.8	-27.5	42.8
41057	99	DIRN	SUR	20	-71	1275	0	0	15.8	-23.7	28.5
42090	99	DIRN	SUR	18	-70	574	0	0	34.7	-24.3	42.3
42361	99	DIRN	SUR	28	-93	509	1	0	22.3	25.9	34.1
42365	99	DIRN	SUR	28	-89	442	0	0	22.6	-24.4	33.3
42369	99	DIRN	SUR	27	-90	270	0	0	29.8	37.2	47.7
4300001	99	DIRN	SUR	8	-110	39	0	0	68.6	-68.9	97.2
43001	99	DIRN	SUR	8	-110	35	0	0	67.4	-59.9	90.2
44058	99	DIRN	SUR	38	-76	641	0	0	29.0	53.1	60.5
45020	99	DIRN	SUR	45	-86	422	0	0	20.8	-30.1	36.6
45139	99	DIRN	SUR	43	-80	344	0	0	26.7	-22.5	34.9
45142	99	DIRN	SUR	43	-79	491	0	0	23.4	-25.3	34.5
45152	99	DIRN	SUR	46	-80	258	0	0	22.0	-29.2	36.6

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

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
45165	99	DIRN	SUR	42	-83	721	0	0	18.6	-33.1	38.0
45168	99	DIRN	SUR	42	-86	544	0	0	28.5	-33.5	44.0
45173	99	DIRN	SUR	47	-87	717	0	0	20.4	25.8	32.9
45174	99	DIRN	SUR	42	-88	499	0	0	26.8	-24.6	36.4
46060	99	DIRN	SUR	61	-147	458	0	0	22.0	22.0	31.1
46081	99	DIRN	SUR	61	-148	261	0	0	49.8	22.5	54.7
46087	99	DIRN	SUR	49	-125	169	0	0	24.5	24.0	34.3
46118	99	DIRN	SUR	49	-123	203	0	0	45.2	48.1	66.0
5200311	99	DIRN	SUR	0	-180	471	0	0	29.1	20.6	35.6
5200522	99	DIRN	SUR	6	146	434	0	0	39.4	74.8	84.6
52311	99	DIRN	SUR	0	-180	468	0	0	29.2	20.6	35.8
52522	99	DIRN	SUR	6	146	400	0	0	38.4	76.2	85.3
5300040	99	DIRN	SUR	-8	95	59	11	0	45.4	23.9	51.3
62140	99	DIRN	SUR	57	1	1148	0	0	42.3	-27.7	50.6
63119	99	DIRN	SUR	58	-4	24	1	0	54.2	-38.5	66.5

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

LIST OF SUSPECT STATIONS : RADIOSONDES
 MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : GEOPOTENTIAL HEIGHT (METRES)
 AREA : GLOBAL
 PERIOD : AUG 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	00	Z	925	66	-38	31	0	3.0	44.6	44.7
04360	12	Z	1000	66	-38	19	0	2.9	42.9	43.0
31510	12	Z	150	50	127	30	0	38.9	-98.4	105.8
31510	00	Z	200	50	127	30	0	25.3	-72.4	76.7
33658	00	Z	250	48	26	30	0	30.5	67.4	74.0
38341	12	Z	50	43	71	31	0	56.1	143.4	154.0
40437	00	Z	925	25	47	25	1	0.0	34.1	34.1
42361	12	Z	50	26	78	23	0	87.7	230.6	246.7
42492	12	Z	30	26	85	26	0	48.5	196.8	202.7
42874	00	Z	30	21	82	18	0	21.1	171.0	172.3
43014	00	Z	30	20	75	20	0	20.8	195.5	196.6
43041	00	Z	30	19	82	21	0	34.8	187.4	190.6
43110	00	Z	30	17	73	20	0	15.4	198.3	198.9
43128	12	Z	70	17	78	16	0	38.9	143.2	148.4
43295	12	Z	30	13	78	20	1	19.0	226.2	227.0
43311	00	Z	30	11	73	22	0	48.2	190.6	196.6
43333	12	Z	30	12	93	20	0	50.8	195.0	201.5
43333	00	Z	30	12	93	27	0	24.7	202.0	203.5
43371	12	Z	50	8	77	11	0	29.1	175.0	177.4
47155	00	Z	1000	35	129	17	3	20.9	73.7	76.6
47155	12	Z	1000	35	129	18	11	11.0	-86.7	87.4
65125	12	Z	850	9	7	15	0	8.5	44.4	45.2
76654	12	Z	30	19	-104	10	0	152.2	120.6	194.2
96147	12	Z	925	4	108	26	6	9.9	49.0	50.0
96147	00	Z	925	4	108	30	4	9.5	49.2	50.1
96481	00	Z	30	4	118	21	0	122.6	159.9	201.5
ASDE01	00	Z	1000	49	-27	13	0	5.3	-46.1	46.4
ASDE01	12	Z	1000	50	-22	10	0	5.8	-41.6	42.0
ASEU02	00	Z	925	47	-22	11	0	5.6	30.8	31.3

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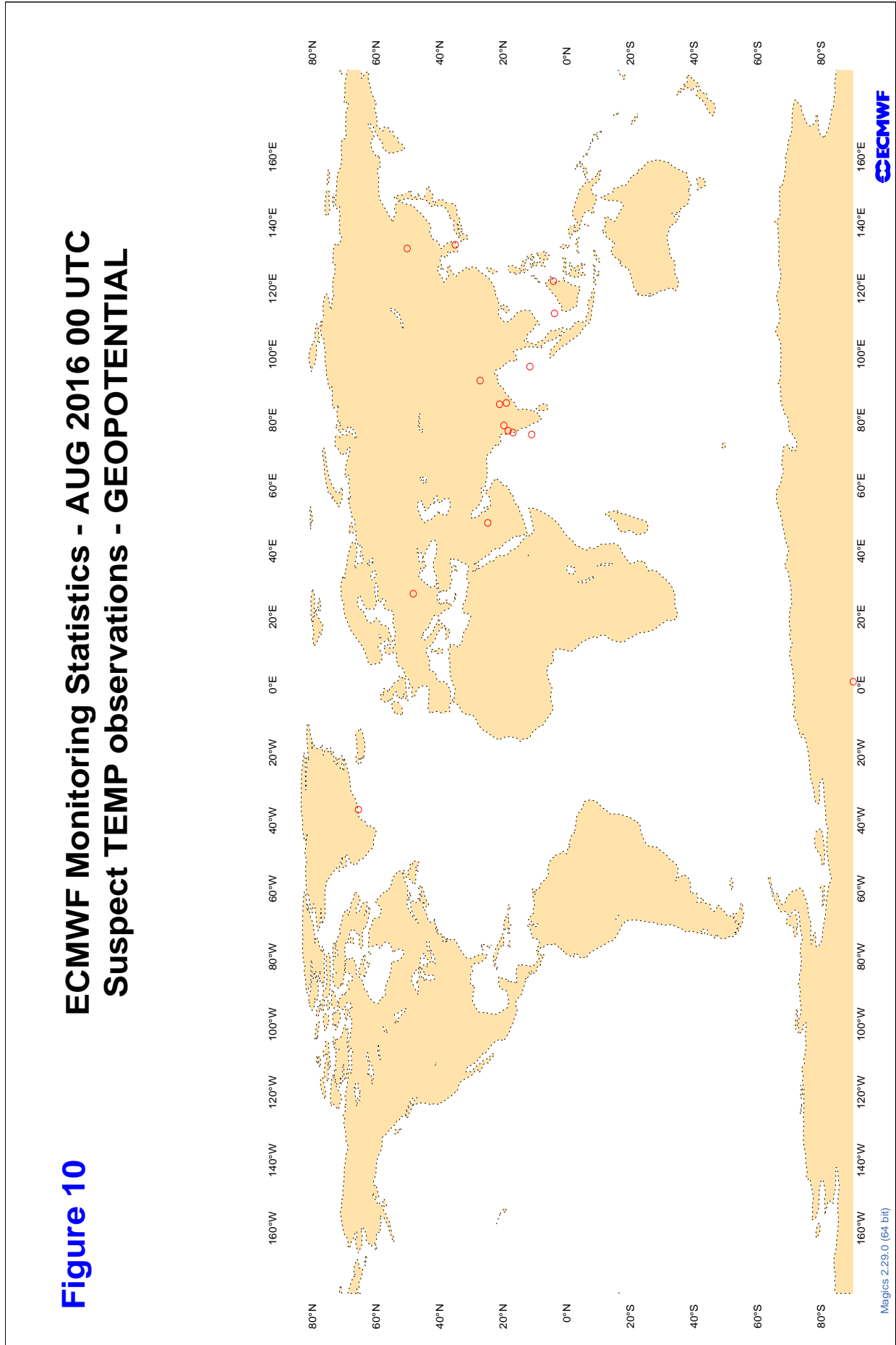
3.2.20 Table 9 - Suspect radiosondes: Wind direction (degrees)

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

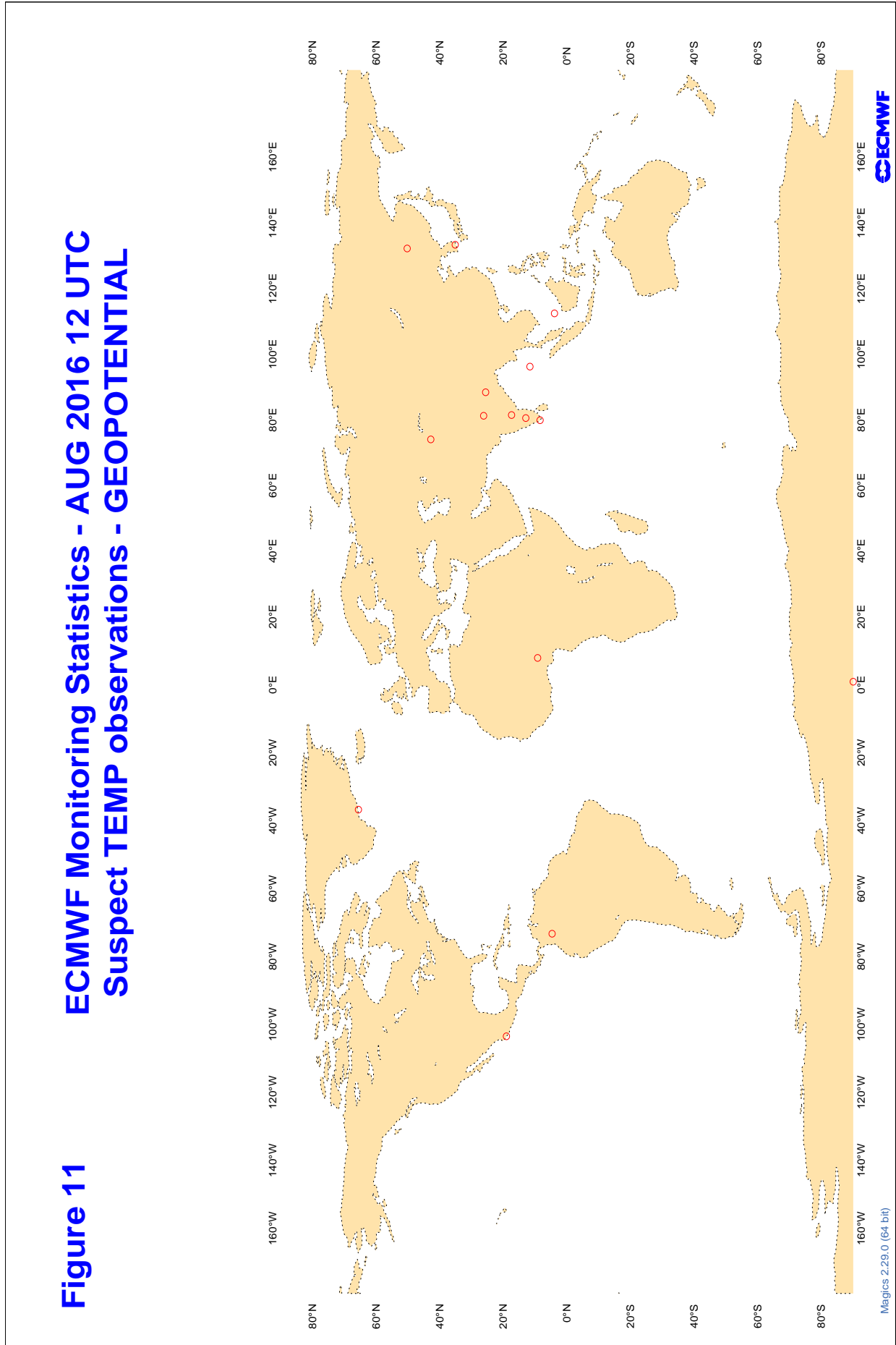
SELECTION CRITERIA: OBSERVED/FORECAST WIND SPEEDS ≥ 5 M/S
 NO. OF OBSERVATIONS ≥ 5 , AND,
 ABSOLUTE BIAS ≥ 10 DEGREES, WITH
 STANDARD DEVIATION < 30 DEGREES, AND,
 VERTICAL SPREAD < 10 DEGREES
 (AVERAGE BETWEEN 500 AND 150 HPA)

WMO IDENT	OBS TIME	ELM	LAT	LONG	NUM OBS	BIAS	MAX SPREAD	SD
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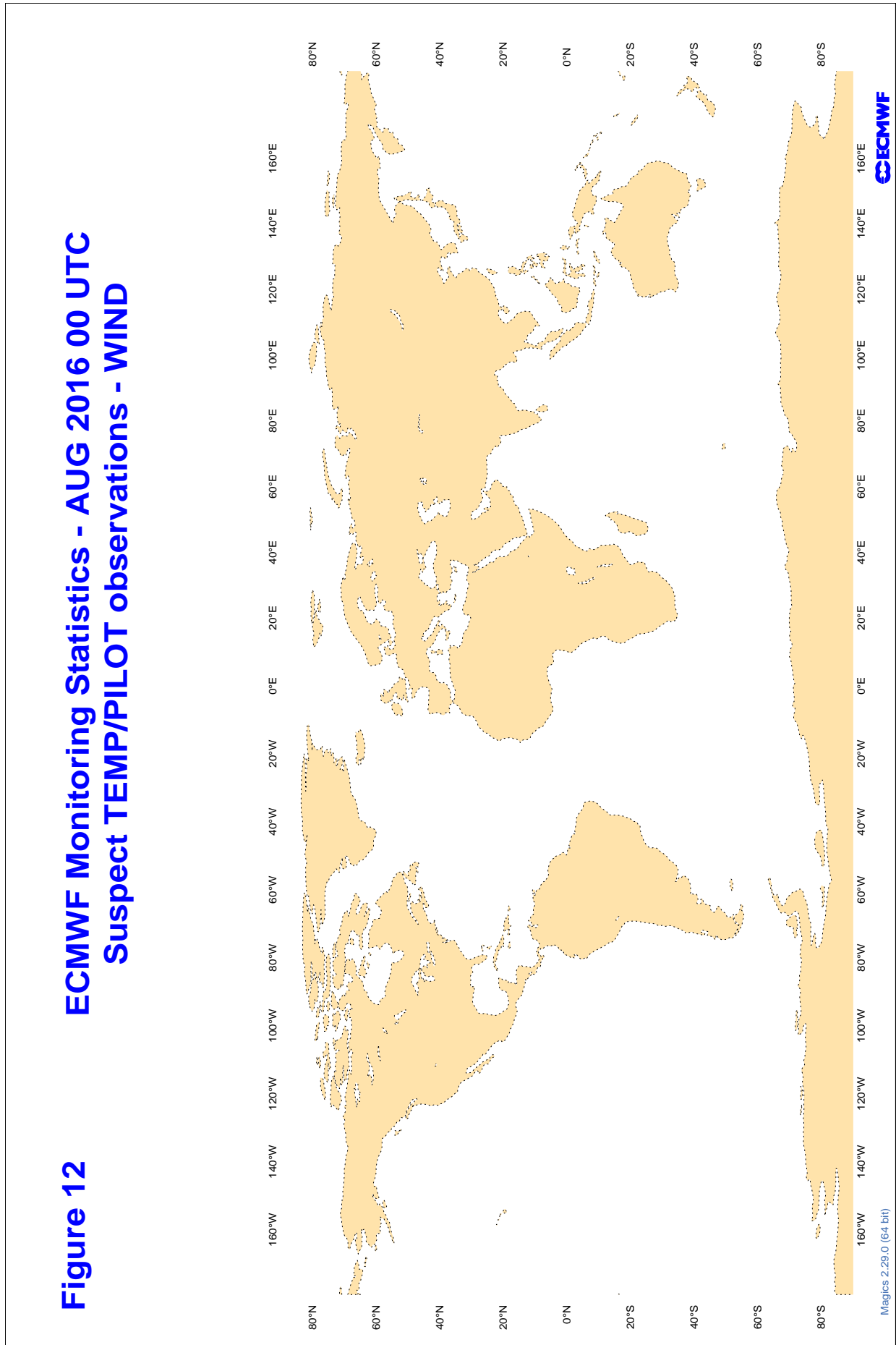
3.2.21 Figure 10 - Suspect TEMP observations - geopotential : 00 UTC



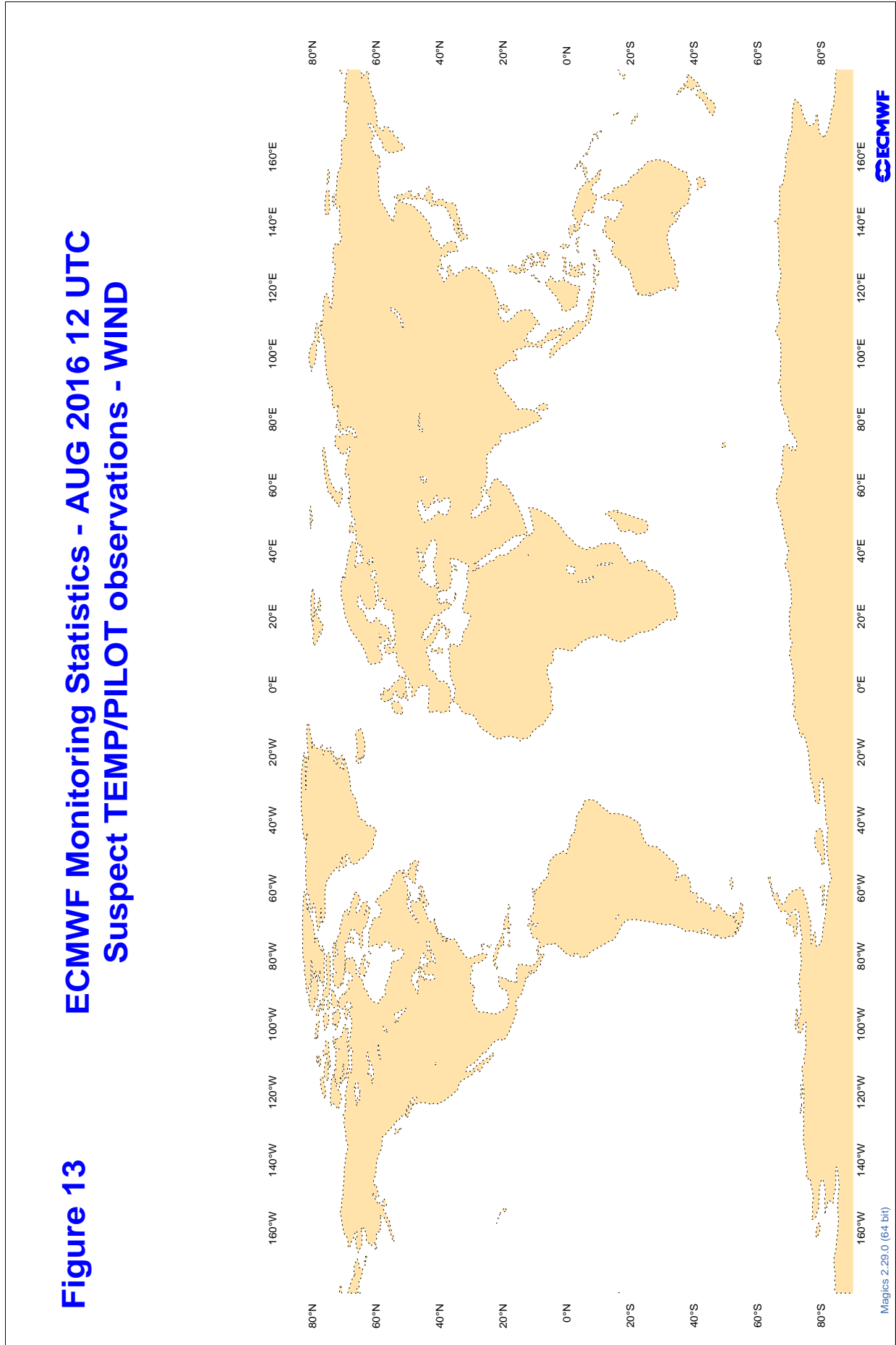
3.2.22 Figure 11 - Suspect TEMP observations - geopotential : 12 UTC



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 : AUG 2016
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
ASDE01	12	Z	100	10	53.6	15.3
ASDE01	00	Z	100	13	34.1	-33.0
ASDE02	12	Z	100	14	23.7	19.9
ASDE04	12	Z	100	3	38.8	38.3
ASDE04	00	Z	100	5	42.8	42.1
ASDE09	12	Z	100	2	62.8	62.8
ASDK01	12	Z	100	21	6.7	5.1
ASDK01	00	Z	100	17	7.3	6.4
ASDK02	12	Z	100	13	21.8	4.1
ASDK02	00	Z	100	11	5.6	4.4
ASDK03	12	Z	100	0	0.0	0.0
ASDK1	12	Z	100	12	4.6	-1.0
ASDK1	00	Z	100	9	7.8	6.1
ASDK2	12	Z	100	10	23.9	-7.9
ASDK2	00	Z	100	9	5.2	2.4
ASEU01	12	Z	100	12	12.4	11.8
ASEU01	00	Z	100	1	23.4	23.4
ASEU02	12	Z	100	10	39.8	39.0
ASEU02	00	Z	100	11	38.1	36.8
ASEU03	12	Z	100	10	9.8	5.9
ASEU03	00	Z	100	9	13.3	-2.0
ASEU04	12	Z	100	6	11.7	-7.9
ASEU04	00	Z	100	3	11.9	-10.7
ASEU05	12	Z	100	5	17.1	16.9
ASEU05	00	Z	100	5	9.0	-1.8
ASEU06	12	Z	100	6	98.8	60.6
ASEU06	00	Z	100	3	107.7	60.4
ASFR1	12	Z	100	7	13.9	10.3
ASFR1	00	Z	100	7	11.8	7.3
ASFR2	12	Z	100	7	15.5	14.4
ASFR2	00	Z	100	8	16.5	14.6
ASFR3	12	Z	100	15	24.8	19.0
ASFR3	00	Z	100	14	9.6	8.3
ASFR4	12	Z	100	14	23.3	22.6
ASFR4	00	Z	100	17	16.6	15.4
JGQH	12	Z	100	10	5.5	3.0
JGQH	00	Z	100	12	19.7	12.2
JNSR	12	Z	100	9	7.3	-6.2
JNSR	00	Z	100	9	8.7	-5.2

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

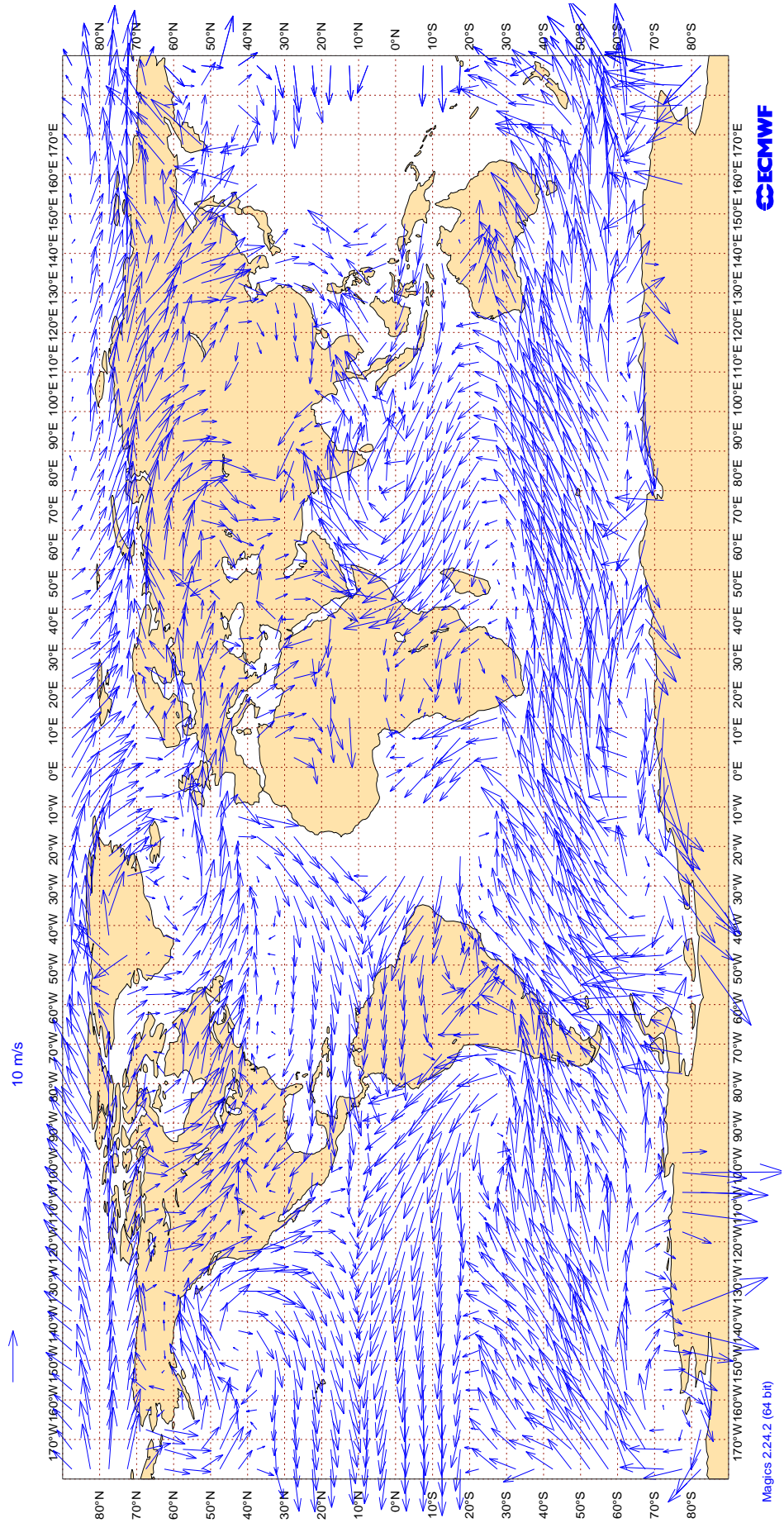
RADIOSONDE MONITORING STATISTICS (SHIPS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND (M/S)
 LEVEL : 100 HPA
 AREA : GLOBAL
 PERIOD : AUG 2016
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
ASDE01	12	V	100	8	3.1	0.0	-0.2
ASDE01	00	V	100	11	3.2	0.0	0.3
ASDE02	12	V	100	13	5.0	-0.4	0.0
ASDE04	12	V	100	3	3.6	0.0	1.3
ASDE04	00	V	100	4	2.8	1.7	1.0
ASDE09	12	V	100	1	3.3	2.7	-1.9
ASDK01	12	V	100	12	2.0	0.5	0.5
ASDK01	00	V	100	9	2.1	-0.2	0.8
ASDK02	12	V	100	12	2.4	0.2	0.0
ASDK02	00	V	100	9	1.9	-0.1	-0.5
ASDK03	12	V	100	0	0.0	0.0	0.0
ASDK1	12	V	100	12	2.3	0.9	0.1
ASDK1	00	V	100	9	2.5	-0.1	0.5
ASDK2	12	V	100	10	2.3	0.1	-0.5
ASDK2	00	V	100	9	1.5	0.1	-0.3
ASEU01	12	V	100	11	2.6	0.7	-1.2
ASEU01	00	V	100	0	0.0	0.0	0.0
ASEU02	12	V	100	8	3.3	-0.2	0.9
ASEU02	00	V	100	9	2.7	-1.0	-0.4
ASEU03	12	V	100	8	4.1	-1.1	0.5
ASEU03	00	V	100	7	3.4	0.4	2.1
ASEU04	12	V	100	5	2.8	-0.6	-0.1
ASEU04	00	V	100	2	2.7	-1.2	1.0
ASEU05	12	V	100	2	5.5	-1.7	-0.5
ASEU05	00	V	100	5	3.9	-1.3	-1.2
ASEU06	12	V	100	6	4.4	0.6	1.9
ASEU06	00	V	100	3	3.7	0.4	-1.3
ASFR1	12	V	100	7	3.5	-2.0	-0.4
ASFR1	00	V	100	7	5.1	0.7	0.1
ASFR2	12	V	100	5	4.8	-1.9	1.5
ASFR2	00	V	100	7	2.8	-0.6	0.6
ASFR3	12	V	100	14	2.8	0.2	-0.4
ASFR3	00	V	100	13	3.8	0.6	-0.6
ASFR4	12	V	100	13	4.0	-0.3	-0.2
ASFR4	00	V	100	13	3.9	-0.2	-0.2
JGQH	12	V	100	10	6.4	-2.1	-0.7
JGQH	00	V	100	12	8.0	-0.1	0.0
JNSR	12	V	100	9	4.3	1.0	1.0
JNSR	00	V	100	9	3.3	-0.5	0.5

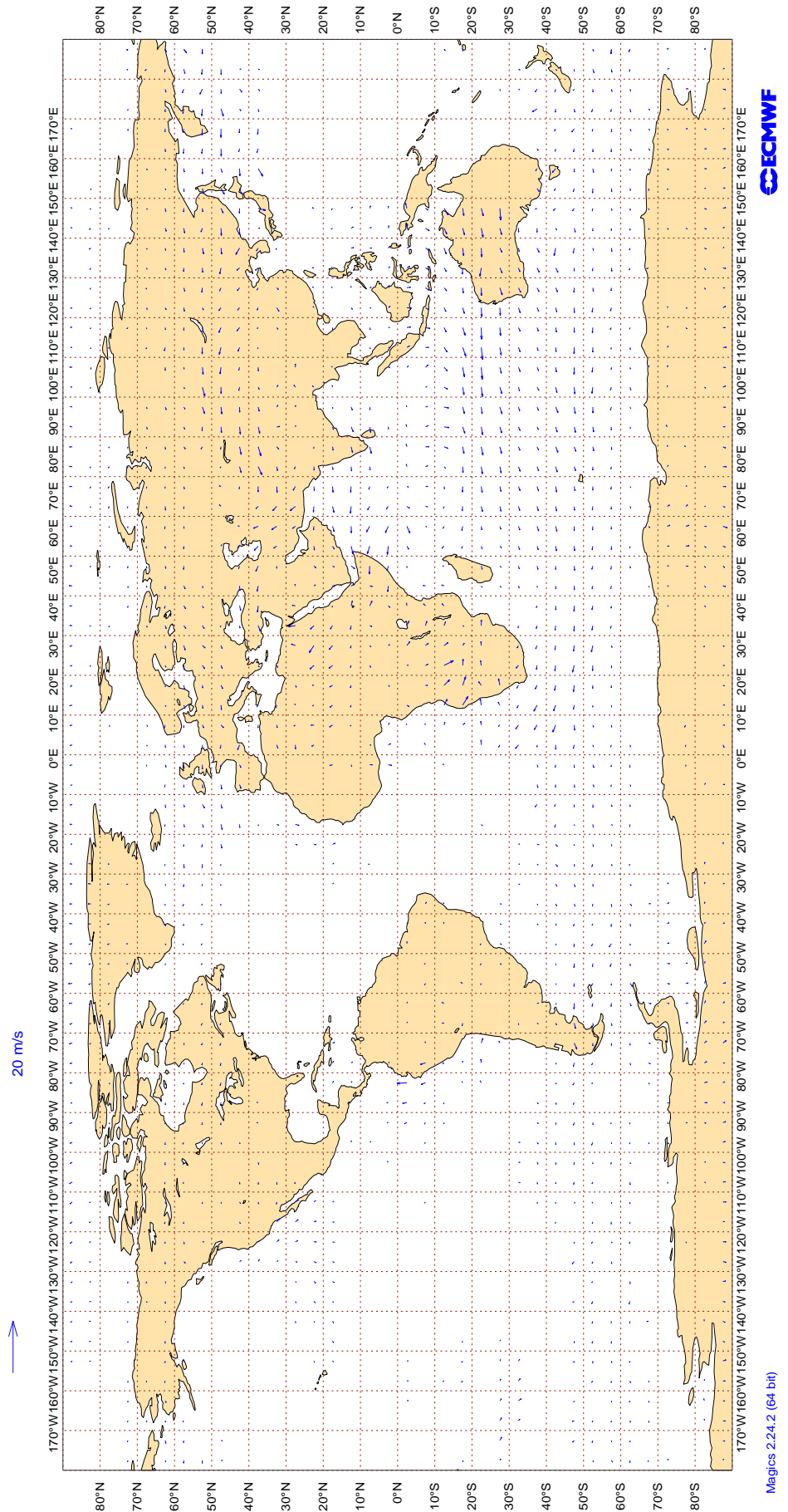
3.2.27 Figure 14 - SATOB Winds: 700-1000hPa

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



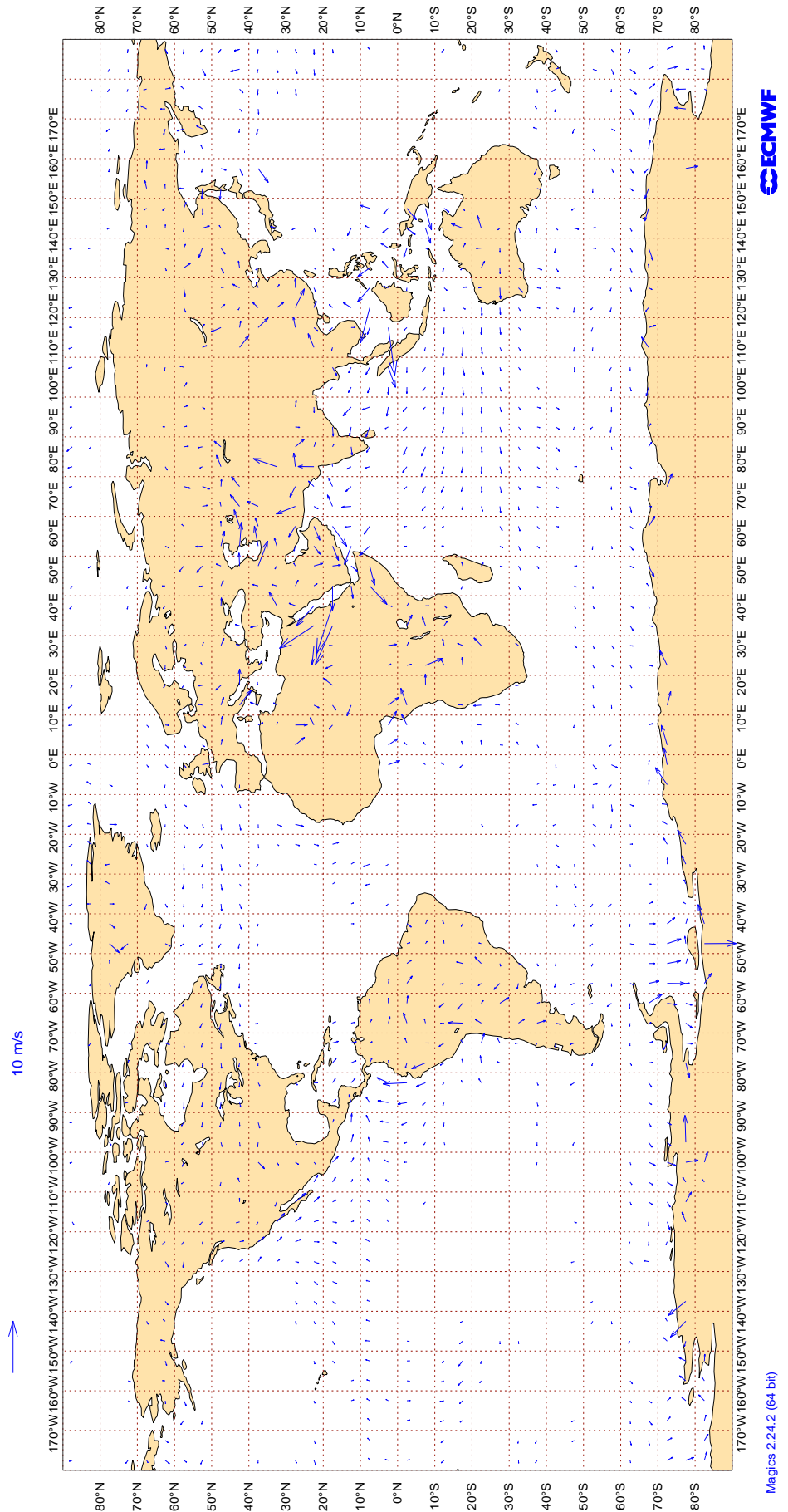
3.2.28 Figure 15 - SATOB Winds: 150- 400hPa

Figure 15
ECMWF Monitoring Statistics: Aug 2016
AMV Winds: 150- 400hPa
Wind bias: Observation - FG



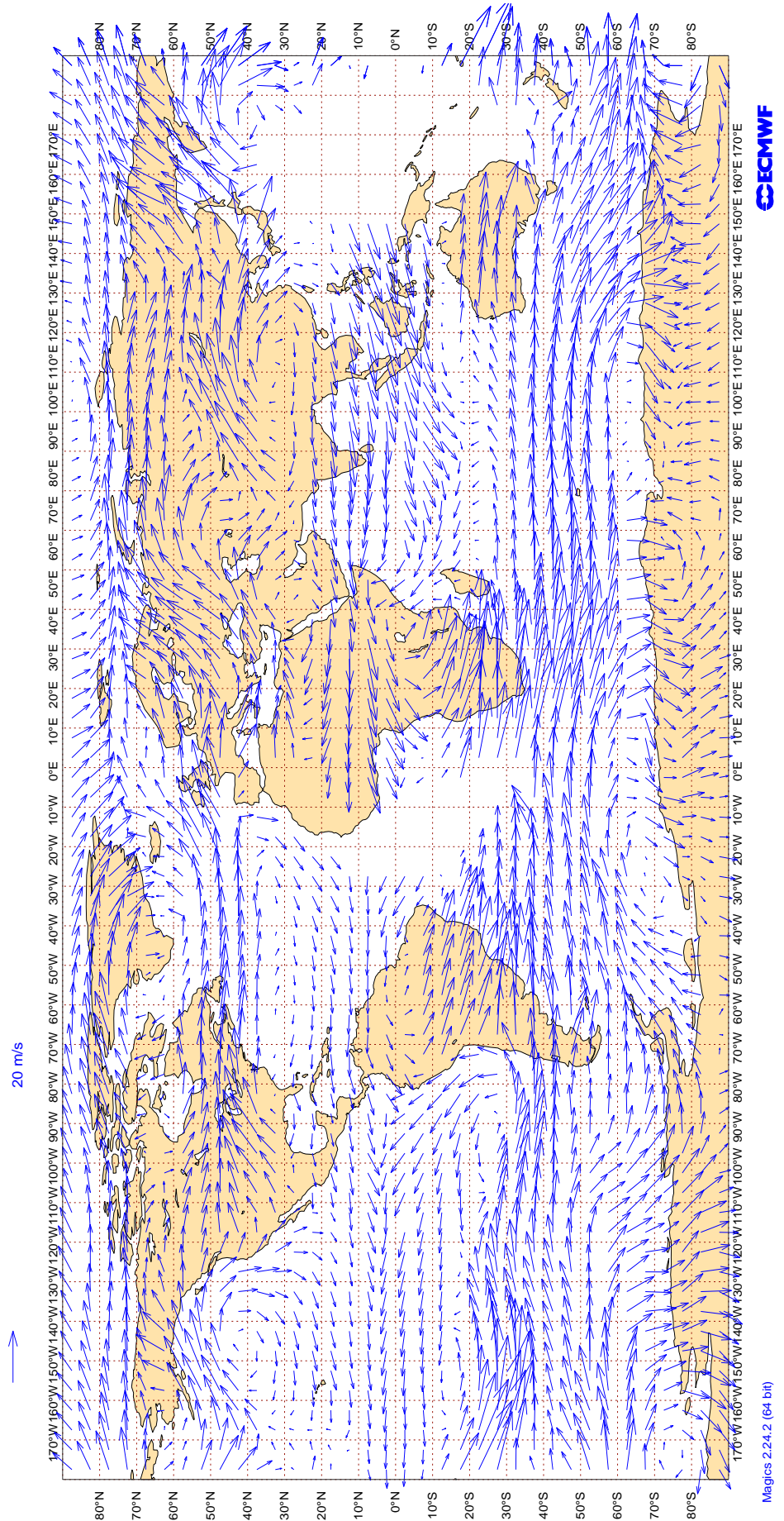
3.2.29 Figure 16 - SATOB Winds: 700-1000hPa

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



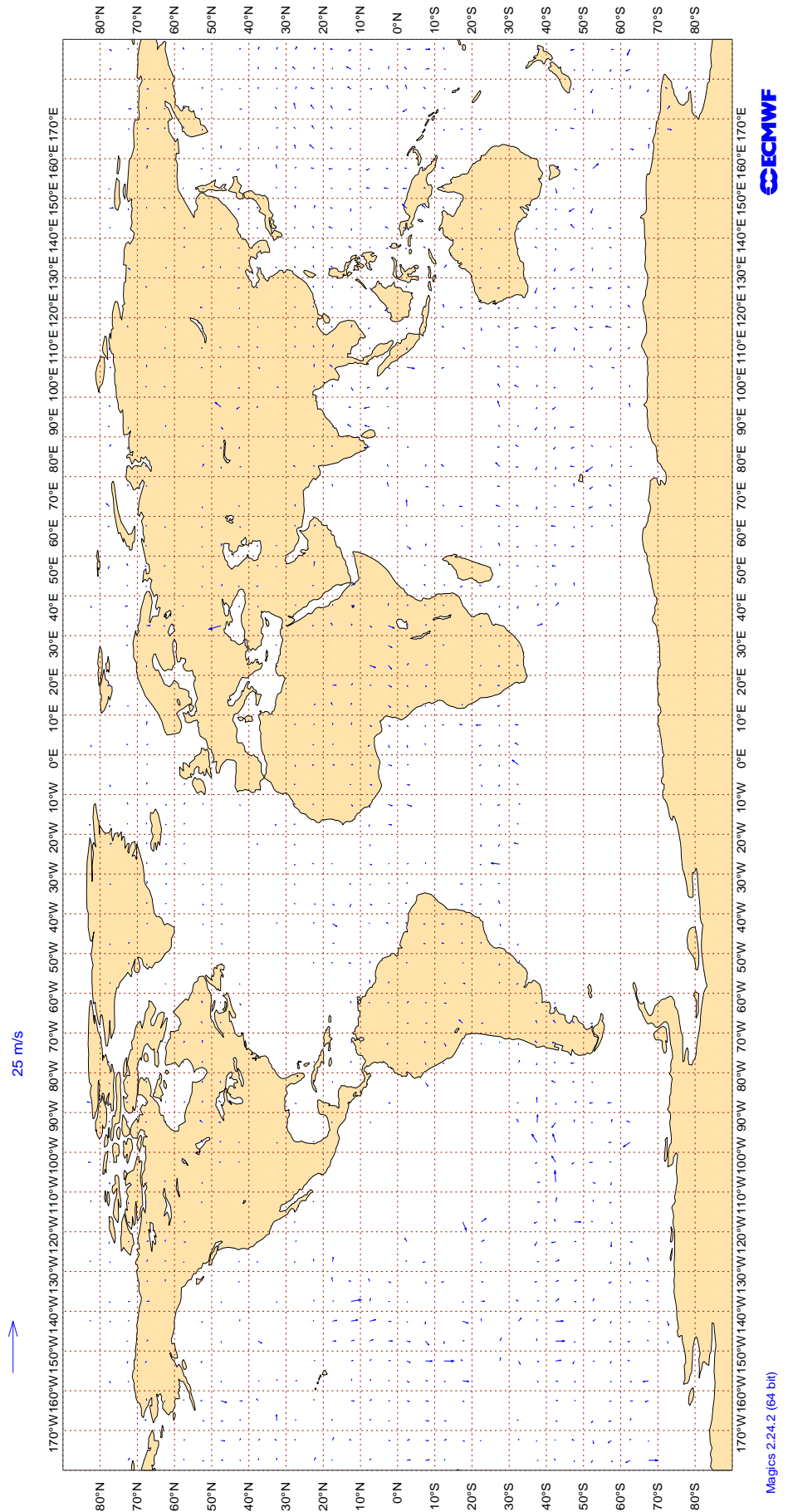
3.2.30 Figure 17 - SATOB Winds: 150- 400hPa

Figure 17 ECMWF Monitoring Statistics: Aug 2016
AMV Winds: 150- 400hPa
Mean Observed Wind



3.2.31 Figure 18 - AIRCRAFT Winds: 150- 300hPa

Figure 18
ECMWF Monitoring Statistics: Aug 2016
Aircraft Winds: 150- 300hPa
Wind bias: Observation - FG



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

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : VECTOR WIND (M/S)
 AREA : GLOBAL
 PERIOD : AUG 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	33	0	0	3.1	-0.1
AAL	99	V	300-150	71394	0	0	4.2	0.3
AAR	99	V	300-150	280	0	0	4.8	-1.7
AAY	99	V	300-150	368	0	1	4.2	0.6
ABW	99	V	300-150	958	0	0	4.0	-0.4
ABX	99	V	300-150	178	0	1	4.6	-0.0
ACA	99	V	300-150	38312	3	0	5.9	0.2
ACI	99	V	300-150	2893	0	0	3.9	0.3
AEA	99	V	300-150	1085	1	0	4.7	0.6
AFL	99	V	300-150	2018	0	0	3.3	0.4
AFR	99	V	300-150	36337	0	0	3.8	0.3
AHY	99	V	300-150	339	7	0	7.2	-0.3
AIB	99	V	300-150	20	0	0	2.6	-0.5
AIC	99	V	300-150	1613	2	0	6.1	-0.0
AMX	99	V	300-150	2509	12	0	9.5	0.2
ANZ	99	V	300-150	18765	2	0	5.4	0.4
AOJ	99	V	300-150	45	13	0	15.3	0.9
ASA	99	V	300-150	6175	0	0	3.9	0.3
ASL	99	V	300-150	732	0	0	3.7	0.3
ASY	99	V	300-150	424	0	0	5.5	0.1
AUA	99	V	300-150	5595	0	0	4.3	-0.1
AUH	99	V	300-150	88	2	0	13.4	-1.9
AVA	99	V	300-150	433	0	0	3.5	0.4
AVN	99	V	300-150	195	5	1	4.8	0.1

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
AXM	99	V	300-150	150	0	0	5.9	-0.5
AZA	99	V	300-150	10685	0	0	3.7	0.3
AZG	99	V	300-150	96	0	0	3.2	0.0
BAH	99	V	300-150	65	0	0	3.0	-0.5
BAW	99	V	300-150	57874	1	0	5.0	0.2
BBR	99	V	300-150	133	1	2	8.7	1.4
BEL	99	V	300-150	3091	0	0	3.5	0.4
BER	99	V	300-150	9473	0	0	3.5	0.4
BLU	99	V	300-150	81	0	0	5.3	0.3
BMW	99	V	300-150	55	0	0	3.3	-0.1
BOB	99	V	300-150	26	0	0	3.1	-0.5
BOG	99	V	300-150	43	0	0	4.6	-0.2
BOX	99	V	300-150	688	0	0	4.1	0.1
BOX	99	V	300-150	39	0	0	3.5	0.3
BRK	99	V	300-150	50	0	0	6.2	0.9
CAL	99	V	300-150	243	0	0	4.0	0.3
CAO	99	V	300-150	173	0	0	3.7	0.5
CAP	99	V	300-150	43	0	0	4.7	1.1
CAZ	99	V	300-150	22	0	0	3.0	0.4
CCA	99	V	300-150	352	0	0	4.0	0.9
CES	99	V	300-150	1231	0	0	3.8	0.2
CFC	99	V	300-150	408	0	0	4.4	0.3
CFG	99	V	300-150	5643	0	0	4.2	-0.1
CJT	99	V	300-150	158	0	0	3.7	0.0
CKS	99	V	300-150	1973	0	0	4.1	-0.2
CLE	99	V	300-150	55	0	0	5.8	-0.5
CLX	99	V	300-150	3467	0	0	3.9	-0.1
CMB	99	V	300-150	808	0	0	4.0	-0.1
CNV	99	V	300-150	249	0	0	4.4	0.8
COP	99	V	300-150	22	0	0	4.9	1.5
CPA	99	V	300-150	82	0	0	3.3	-0.2
CRL	99	V	300-150	1648	0	0	3.7	0.3
CRV	99	V	300-150	32	0	0	3.4	-0.6
CSN	99	V	300-150	810	4	0	5.7	0.3
DAH	99	V	300-150	1568	0	0	3.8	0.6
DAL	99	V	300-150	90060	0	0	4.0	0.1
DAR	99	V	300-150	21	0	0	5.1	2.6
DHK	99	V	300-150	1964	0	0	4.6	-0.4
DJT	99	V	300-150	891	0	0	4.6	0.5
DLH	99	V	300-150	39609	0	0	3.8	0.1
DSO	99	V	300-150	41	0	0	3.7	0.2
DUB	99	V	300-150	76	0	0	4.0	0.1
EDG	99	V	300-150	122	0	0	3.8	0.4

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
EDG	99	V	300-150	27	0	0	3.2	1.2
EDW	99	V	300-150	1509	0	0	4.0	0.5
EIN	99	V	300-150	13746	0	0	3.8	0.3
EJM	99	V	300-150	686	20	0	12.0	0.6
ELY	99	V	300-150	3466	0	0	4.1	-0.2
EMM	99	V	300-150	25	4	0	14.1	0.9
ETD	99	V	300-150	3381	3	0	5.2	-0.0
ETH	99	V	300-150	2193	5	0	7.6	0.0
EWG	99	V	300-150	1387	0	0	3.8	0.4
FDX	99	V	300-150	5921	0	0	3.6	0.2
FIL	99	V	300-150	40	0	0	4.5	-2.2
FIN	99	V	300-150	985	0	0	2.9	0.3
FJI	99	V	300-150	5526	0	0	4.2	0.6
FWI	99	V	300-150	1358	0	0	3.5	0.2
GAF	99	V	300-150	43	0	0	2.9	0.2
GEC	99	V	300-150	2735	0	0	3.6	0.1
GES	99	V	300-150	46	0	0	3.0	-0.3
GLJ	99	V	300-150	20	0	0	2.8	1.1
GLO	99	V	300-150	75	3	4	8.8	1.1
GNJ	99	V	300-150	86	0	0	3.5	-0.6
GOL	99	V	300-150	47	0	0	5.3	-3.3
GTH	99	V	300-150	39	0	0	3.7	0.1
GTI	99	V	300-150	2949	0	0	4.3	-0.1
HAL	99	V	300-150	3905	0	0	4.3	0.7
HUF	99	V	300-150	42	0	0	5.9	0.6
HZM	99	V	300-150	22	0	0	3.9	2.2
HZS	99	V	300-150	58	0	0	4.1	0.8
HZS	99	V	300-150	32	0	0	3.3	-0.7
IBE	99	V	300-150	3156	0	0	4.1	0.4
ICE	99	V	300-150	42	2	7	8.4	-2.1
ICL	99	V	300-150	233	0	0	4.4	-0.3
ICV	99	V	300-150	306	0	0	4.5	0.0
IFA	99	V	300-150	45	11	0	21.8	0.1
IJM	99	V	300-150	25	28	4	22.9	-0.9
ISS	99	V	300-150	397	0	0	5.3	-0.5
JAF	99	V	300-150	1153	10	0	7.3	0.4
JAI	99	V	300-150	1100	0	0	3.7	0.3
JAS	99	V	300-150	75	19	0	8.1	0.3
JEF	99	V	300-150	42	0	0	2.8	0.7
JJA	99	V	300-150	58	2	0	5.4	0.6
JSI	99	V	300-150	37	0	0	3.3	1.1
JST	99	V	300-150	2061	4	0	10.2	0.4
JUV	99	V	300-150	21	0	0	3.7	-0.2

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
KAC	99	V	300-150	493	0	0	4.4	0.5
KAI	99	V	300-150	87	0	1	4.8	0.6
KAL	99	V	300-150	1258	0	0	4.1	0.3
KAN	99	V	300-150	39	0	0	3.6	0.3
KAY	99	V	300-150	42	0	0	3.3	0.3
KCE	99	V	300-150	106	0	0	2.7	-0.1
KIW	99	V	300-150	79	0	0	4.2	0.2
KLM	99	V	300-150	19594	0	0	4.2	0.0
LAN	99	V	300-150	1862	11	0	8.4	0.2
LCO	99	V	300-150	156	0	0	3.9	-0.3
LDM	99	V	300-150	22	59	0	30.8	-1.0
LEA	99	V	300-150	41	0	0	2.5	0.5
LGT	99	V	300-150	74	0	0	4.6	-0.0
LOT	99	V	300-150	2637	6	0	11.2	-0.2
LUC	99	V	300-150	63	57	0	29.0	-0.9
LXJ	99	V	300-150	260	10	0	11.6	0.1
MAS	99	V	300-150	268	0	1	4.5	0.6
MET	99	V	300-150	42	0	0	4.2	-1.2
MHV	99	V	300-150	53	0	0	3.2	0.1
MLM	99	V	300-150	28	57	0	24.8	0.6
MMD	99	V	300-150	58	0	0	3.1	0.7
MPH	99	V	300-150	698	0	0	4.2	-0.7
MSR	99	V	300-150	1404	0	0	3.8	0.2
MXD	99	V	300-150	21	0	0	9.4	3.2
NAF	99	V	300-150	20	0	0	4.9	-1.1
NAS	99	V	300-150	24	0	0	3.5	-0.3
NAX	99	V	300-150	7455	11	0	10.3	-0.2
NCA	99	V	300-150	333	0	0	4.6	-0.6
NJE	99	V	300-150	420	20	0	14.9	-0.2
NOS	99	V	300-150	399	0	0	5.9	-0.9
OAE	99	V	300-150	177	0	0	3.5	0.5
OPM	99	V	300-150	40	60	0	30.9	-0.8
OSY	99	V	300-150	22	0	0	5.4	-0.5
PAC	99	V	300-150	189	0	0	4.3	0.2
PAL	99	V	300-150	57	0	0	9.2	1.3
PIA	99	V	300-150	634	0	0	3.7	0.1
QAF	99	V	300-150	80	0	0	2.9	0.3
QFA	99	V	300-150	17146	0	0	4.3	0.4
QQE	99	V	300-150	74	49	0	21.9	-0.2
QTR	99	V	300-150	8464	0	0	4.0	0.2
RAM	99	V	300-150	280	7	0	5.0	0.5
RCH	99	V	300-150	8035	0	0	4.8	0.3
RJA	99	V	300-150	1363	14	0	10.1	-0.3

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
ROM	99	V	300-150	24	0	0	9.0	0.3
ROU	99	V	300-150	13457	0	0	4.3	-0.0
RRR	99	V	300-150	300	0	0	3.1	0.6
SAM	99	V	300-150	253	10	0	8.7	-0.3
SAS	99	V	300-150	4374	0	0	3.2	0.3
SHE	99	V	300-150	57	0	0	3.8	0.6
SIA	99	V	300-150	1934	0	0	3.7	0.3
SLM	99	V	300-150	150	0	0	3.2	0.1
SOO	99	V	300-150	568	0	0	4.1	0.2
SPA	99	V	300-150	153	0	0	3.8	0.9
SPU	99	V	300-150	110	0	0	6.6	-0.8
SQC	99	V	300-150	565	0	0	4.2	-0.4
SVA	99	V	300-150	3592	0	0	3.7	0.3
SVW	99	V	300-150	102	30	1	8.3	0.5
SWR	99	V	300-150	13686	0	0	3.7	0.3
TAM	99	V	300-150	414	0	0	4.1	-0.1
TAP	99	V	300-150	586	0	0	4.5	0.8
TAR	99	V	300-150	354	0	0	3.4	0.5
TAY	99	V	300-150	611	0	0	5.1	-0.7
TBJ	99	V	300-150	126	32	0	18.9	-0.7
TCV	99	V	300-150	98	0	0	7.2	-0.2
TCX	99	V	300-150	8219	0	0	3.5	0.3
TER	99	V	300-150	20	0	0	4.3	-0.9
TFL	99	V	300-150	1964	11	0	8.5	-0.1
TGM	99	V	300-150	27	0	0	4.6	0.5
THA	99	V	300-150	167	0	0	3.6	-0.0
THT	99	V	300-150	4796	0	0	3.9	0.4
THY	99	V	300-150	9698	0	0	4.2	0.2
TJS	99	V	300-150	47	0	0	3.7	0.6
TMN	99	V	300-150	109	0	0	6.8	0.4
TOM	99	V	300-150	6867	13	0	9.8	0.3
TSC	99	V	300-150	20104	0	0	3.7	0.2
TWB	99	V	300-150	34	0	0	7.3	0.4
TWY	99	V	300-150	162	27	0	16.8	0.0
UAE	99	V	300-150	10301	0	0	4.0	0.1
UAL	99	V	300-150	99970	1	1	5.0	0.2
ULA	99	V	300-150	30	0	0	2.2	0.0
ULC	99	V	300-150	108	44	0	23.8	0.5
UPS	99	V	300-150	5506	0	0	4.1	0.1
VAL	99	V	300-150	23	0	0	2.4	0.3
VIR	99	V	300-150	28430	3	0	5.7	0.2
VJT	99	V	300-150	952	42	0	25.6	-0.2
VMP	99	V	300-150	45	29	0	26.2	-1.2

AIREP MONITORING STATISTICS FOR AIRLINE CARRIERS
(CONTINUED)

IDENT	OBS TIME	ELM	LEVEL	NUM OBS	% GROSS	% CALM	VECTOR RMS	SPEE D BIAS
VOZ	99	V	300-150	5903	0	0	4.2	0.5
VRD	99	V	300-150	21	5	0	7.7	0.4
WGT	99	V	300-150	75	0	0	2.7	0.4
WJA	99	V	300-150	5994	0	0	3.8	0.2
WOW	99	V	300-150	572	0	0	3.4	-0.1
XAX	99	V	300-150	309	0	0	3.8	0.5
XLF	99	V	300-150	1644	0	0	3.5	0.5

4 EUCOS Area Monitoring Statistics

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

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

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

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

RADIOSONDE MONITORING STATISTICS (EUCOS)

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

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	00	Z	50	31	11.9	6.3
01001	12	Z	50	31	17.1	10.8
01028	00	Z	50	29	13.2	10.0
01028	12	Z	50	31	23.4	16.2
01400	12	Z	50	25	17.9	14.8
01400	00	Z	50	22	22.0	19.8
01415	12	Z	50	27	13.5	10.6
01415	00	Z	50	27	15.5	14.1
02365	12	Z	50	26	14.2	9.7
02365	00	Z	50	25	13.9	10.3
02591	12	Z	50	29	20.8	18.2
02591	00	Z	50	31	37.0	27.4
02836	12	Z	50	31	16.2	13.7
02836	00	Z	50	29	13.8	9.8
02963	12	Z	50	30	15.0	11.8
02963	00	Z	50	26	12.8	11.1
03005	00	Z	50	29	10.3	7.2
03005	12	Z	50	34	9.9	6.3
03238	12	Z	50	10	23.9	22.1
03238	00	Z	50	28	15.7	13.6
03808	12	Z	50	29	17.1	6.0
03808	00	Z	50	29	12.5	10.6
03918	12	Z	50	9	19.3	17.5
03918	00	Z	50	28	15.5	9.9
03953	12	Z	50	21	24.4	23.1
03953	00	Z	50	15	13.9	6.7
04018	12	Z	50	31	16.5	14.2
04018	00	Z	50	31	13.0	11.8
04220	00	Z	50	31	18.3	10.8
04220	12	Z	50	31	18.3	13.3
04270	12	Z	50	30	9.6	7.3
04270	00	Z	50	31	8.9	6.8
04320	12	Z	50	30	12.4	9.2
04320	00	Z	50	30	12.7	11.0
04339	00	Z	50	31	14.1	4.6
04339	12	Z	50	30	19.8	12.5
04360	00	Z	50	24	53.7	49.8
04360	12	Z	50	25	56.5	54.9
06011	12	Z	50	28	19.1	10.8

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06011	00	Z	50	30	18.5	6.1
06260	00	Z	50	31	16.4	14.4
06260	12	Z	50	5	18.9	18.6
06610	12	Z	50	11	13.8	8.7
06610	00	Z	50	14	13.9	7.1
07110	12	Z	50	30	44.0	40.7
07110	00	Z	50	31	35.0	33.8
07510	00	Z	50	29	37.3	36.5
07510	12	Z	50	29	53.0	51.3
07645	00	Z	50	31	17.8	15.2
07645	12	Z	50	31	39.8	32.5
07761	12	Z	50	30	32.9	28.0
07761	00	Z	50	29	21.4	20.5
08001	00	Z	50	31	17.3	16.1
08001	12	Z	50	29	17.8	13.5
08221	00	Z	50	30	15.5	14.2
08221	12	Z	50	31	13.8	10.9
08302	00	Z	50	30	6.9	4.3
08302	12	Z	50	28	9.0	-2.7
08508	12	Z	50	30	25.0	23.7
08522	12	Z	50	31	13.9	12.2
085228	12	Z	50	0	0.0	0.0
08579	12	Z	50	31	18.1	13.6
10035	00	Z	50	31	14.2	11.4
10035	12	Z	50	31	11.1	3.9
10393	00	Z	50	31	11.8	9.9
10393	12	Z	50	31	10.2	4.3
10410	12	Z	50	31	12.7	8.9
10410	00	Z	50	30	10.4	8.6
10739	12	Z	50	31	17.6	14.5
10739	00	Z	50	31	42.0	7.5
11035	12	Z	50	31	15.8	13.4
11035	00	Z	50	30	20.1	17.8
12982	00	Z	50	30	19.6	18.8
12982	12	Z	50	29	44.5	38.1
16080	00	Z	50	24	13.8	10.4
16080	12	Z	50	30	11.5	3.8
16245	12	Z	50	30	11.5	-1.9
16245	00	Z	50	31	13.6	9.8
16320	12	Z	50	25	11.5	7.0
16320	00	Z	50	6	15.5	14.9
16429	12	Z	50	40	11.1	-1.9
16429	00	Z	50	31	14.2	11.7

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
16622	00	Z	50	27	56.8	53.6
16622	12	Z	50	0	0.0	0.0
16754	00	Z	50	30	37.8	36.3
17607	12	Z	50	60	23.1	-21.2
26435	00	Z	50	15	15.2	9.8
60018	00	Z	50	31	17.3	13.9
60018	12	Z	50	31	10.4	5.8
ASDE01	12	Z	50	8	73.0	41.5
ASDE01	00	Z	50	10	23.9	-22.9
ASDE02	12	Z	50	13	28.9	26.5
ASDE04	12	Z	50	3	56.6	54.9
ASDE04	00	Z	50	4	55.4	55.0
ASDE09	12	Z	50	1	100.4	100.4
ASDK01	12	Z	50	12	14.3	13.4
ASDK01	00	Z	50	9	16.0	15.3
ASDK02	12	Z	50	10	26.1	9.1
ASDK02	00	Z	50	8	14.5	13.2
ASDK03	12	Z	50	0	0.0	0.0
ASDK1	12	Z	50	12	8.2	4.2
ASDK1	00	Z	50	9	16.5	14.9
ASDK2	12	Z	50	10	24.5	1.2
ASDK2	00	Z	50	8	12.4	11.5
ASEU01	12	Z	50	11	29.9	29.2
ASEU01	00	Z	50	1	47.8	47.8
ASEU02	12	Z	50	8	53.4	52.3
ASEU02	00	Z	50	8	41.5	40.7
ASEU03	12	Z	50	9	24.0	22.4
ASEU03	00	Z	50	8	84.6	28.8
ASEU04	12	Z	50	5	12.3	2.1
ASEU04	00	Z	50	1	2.1	2.1
ASEU05	12	Z	50	3	41.7	41.7
ASEU05	00	Z	50	4	12.7	6.3
ASEU06	12	Z	50	6	159.6	114.8
ASEU06	00	Z	50	3	106.5	66.9
ASFR1	12	Z	50	6	27.8	24.6
ASFR1	00	Z	50	7	19.7	18.7
ASFR2	12	Z	50	5	22.7	19.5
ASFR2	00	Z	50	7	28.9	25.4
ASFR3	12	Z	50	14	43.1	35.3
ASFR3	00	Z	50	12	24.0	20.9
ASFR4	12	Z	50	12	43.4	42.5
ASFR4	00	Z	50	11	29.9	28.5

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 : AUG 2016
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	00	V	50	31	2.4	0.5	0.3
01001	12	V	50	31	2.6	0.5	-0.2
01028	00	V	50	29	2.6	0.0	0.1
01028	12	V	50	30	3.0	0.0	0.6
01400	12	V	50	20	3.2	0.8	-0.5
01400	00	V	50	18	2.9	-0.4	0.0
01415	12	V	50	26	2.6	0.2	-0.3
01415	00	V	50	27	2.9	0.0	0.6
02365	12	V	50	26	3.6	0.2	-0.6
02365	00	V	50	24	2.9	0.5	-0.4
02591	12	V	50	29	2.8	0.1	0.3
02591	00	V	50	30	3.3	0.1	1.3
02836	12	V	50	31	3.3	0.1	0.0
02836	00	V	50	29	3.5	0.6	0.4
02963	12	V	50	30	3.3	0.3	-0.2
02963	00	V	50	26	3.2	-0.2	-0.4
03005	00	V	50	29	2.6	0.7	0.5
03005	12	V	50	31	2.8	0.0	-0.2
03238	12	V	50	10	2.5	0.4	0.3
03238	00	V	50	28	3.1	-0.2	-1.0
03808	12	V	50	29	2.6	0.4	0.3
03808	00	V	50	28	3.1	0.2	0.4
03918	12	V	50	9	3.2	0.4	-0.2
03918	00	V	50	27	2.8	0.3	-0.1
03953	12	V	50	21	2.9	1.2	0.1
03953	00	V	50	15	2.8	0.4	0.2
04018	12	V	50	31	3.2	0.2	0.4
04018	00	V	50	31	2.8	-0.4	-0.6
04220	00	V	50	31	2.6	-0.1	0.1
04220	12	V	50	31	2.8	-0.1	-0.1
04270	12	V	50	30	3.2	-0.3	0.4
04270	00	V	50	31	3.1	-0.9	0.9
04320	12	V	50	30	3.1	0.7	-0.2
04320	00	V	50	30	3.3	-0.3	-0.3
04339	00	V	50	31	2.3	0.2	-0.4
04339	12	V	50	30	2.7	0.6	0.4
04360	00	V	50	24	3.0	-0.3	0.4
04360	12	V	50	25	2.9	-0.5	0.7
06011	12	V	50	28	3.3	1.3	0.3

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06011	00	V	50	30	2.7	0.7	0.2
06260	00	V	50	31	3.0	0.3	0.7
06260	12	V	50	5	3.7	-0.3	0.0
06610	12	V	50	11	3.6	0.3	1.1
06610	00	V	50	14	3.1	0.7	0.7
07110	12	V	50	30	3.1	-0.1	-0.1
07110	00	V	50	31	3.4	0.4	0.4
07510	00	V	50	29	4.0	-0.6	0.6
07510	12	V	50	29	3.9	-0.2	1.8
07645	00	V	50	31	3.6	-0.2	0.7
07645	12	V	50	31	3.8	0.9	0.1
07761	12	V	50	30	3.1	0.4	0.7
07761	00	V	50	29	3.9	0.4	0.8
08001	00	V	50	31	3.3	-0.2	0.3
08001	12	V	50	28	2.4	0.1	0.4
08221	00	V	50	30	3.0	0.2	0.7
08221	12	V	50	31	3.2	0.8	0.8
08302	00	V	50	30	3.4	-0.6	0.3
08302	12	V	50	28	3.1	0.5	0.5
08508	12	V	50	28	2.5	-0.1	0.3
08522	12	V	50	31	4.0	0.1	1.1
085228	12	V	50	0	0.0	0.0	0.0
08579	12	V	50	29	2.8	0.6	0.4
10035	00	V	50	30	3.2	-0.1	0.0
10035	12	V	50	31	2.8	0.4	0.0
10393	00	V	50	31	2.6	0.1	-0.1
10393	12	V	50	31	2.7	0.3	0.3
10410	12	V	50	31	3.1	0.6	0.1
10410	00	V	50	30	3.0	0.5	-0.1
10739	12	V	50	31	3.3	0.8	0.3
10739	00	V	50	30	3.0	0.6	0.4
11035	12	V	50	31	3.1	0.7	-0.7
11035	00	V	50	30	3.4	0.0	0.1
12982	00	V	50	28	3.4	-0.4	-0.3
12982	12	V	50	28	3.6	-0.4	0.5
16080	00	V	50	24	3.5	0.6	0.0
16080	12	V	50	29	3.1	0.7	0.0
16245	12	V	50	30	4.0	0.8	0.5
16245	00	V	50	30	3.3	0.5	0.5
16320	12	V	50	24	3.0	0.2	0.0
16320	00	V	50	6	3.6	1.1	0.4
16429	12	V	50	31	3.7	1.3	-0.2
16429	00	V	50	25	3.1	0.1	0.5

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
16622	00	V	50	25	3.8	-1.9	0.0
16622	12	V	50	0	0.0	0.0	0.0
16754	00	V	50	29	2.7	0.4	0.7
17607	12	V	50	29	2.3	0.8	-0.5
26435	00	V	50	14	3.7	1.4	0.0
60018	00	V	50	31	3.7	-0.2	-0.2
60018	12	V	50	31	3.8	0.7	0.3
ASDE01	12	V	50	8	2.5	-0.5	1.9
ASDE01	00	V	50	10	3.4	0.3	1.1
ASDE02	12	V	50	13	4.7	0.5	0.1
ASDE04	12	V	50	3	4.6	2.9	-2.3
ASDE04	00	V	50	3	2.5	1.4	-1.7
ASDE09	12	V	50	1	0.7	0.0	0.7
ASDK01	12	V	50	12	3.0	-0.1	1.0
ASDK01	00	V	50	9	2.3	0.1	0.3
ASDK02	12	V	50	10	2.7	0.5	-0.5
ASDK02	00	V	50	8	1.9	-0.6	0.7
ASDK03	12	V	50	0	0.0	0.0	0.0
ASDK1	12	V	50	12	3.2	-0.5	0.7
ASDK1	00	V	50	9	1.8	0.4	0.2
ASDK2	12	V	50	10	1.7	0.2	-0.4
ASDK2	00	V	50	8	2.4	-0.1	0.1
ASEU01	12	V	50	10	2.7	-0.1	0.6
ASEU01	00	V	50	0	0.0	0.0	0.0
ASEU02	12	V	50	7	4.1	0.7	1.4
ASEU02	00	V	50	8	2.2	-0.6	0.3
ASEU03	12	V	50	7	2.5	-0.7	0.0
ASEU03	00	V	50	7	2.3	-1.4	-0.2
ASEU04	12	V	50	4	3.8	1.9	0.4
ASEU04	00	V	50	1	4.5	4.1	-1.9
ASEU05	12	V	50	3	3.5	-1.6	0.3
ASEU05	00	V	50	3	3.8	0.6	1.2
ASEU06	12	V	50	6	7.5	2.0	1.5
ASEU06	00	V	50	3	3.7	0.1	1.0
ASFR1	12	V	50	6	4.2	0.2	2.8
ASFR1	00	V	50	7	3.0	-1.0	-0.5
ASFR2	12	V	50	5	2.0	-0.4	1.1
ASFR2	00	V	50	7	2.3	-0.3	-0.2
ASFR3	12	V	50	14	2.8	-0.6	0.3
ASFR3	00	V	50	12	3.8	0.1	-0.3
ASFR4	12	V	50	12	3.3	-0.9	-0.4
ASFR4	00	V	50	10	3.9	-0.5	2.0

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

RADIOSONDE MONITORING STATISTICS (EUCOS)

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

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	00	Z	100	31	7.7	-3.0
01001	12	Z	100	31	10.3	-0.7
01028	00	Z	100	30	6.8	-1.4
01028	12	Z	100	31	16.0	3.0
01400	12	Z	100	27	10.2	1.3
01400	00	Z	100	24	11.0	7.3
01415	12	Z	100	27	7.5	2.1
01415	00	Z	100	27	6.0	2.4
02365	12	Z	100	26	8.2	-1.5
02365	00	Z	100	26	6.9	-1.5
02591	12	Z	100	30	10.5	8.2
02591	00	Z	100	31	25.1	14.0
02836	12	Z	100	31	6.0	-0.6
02836	00	Z	100	29	8.8	-2.3
02963	12	Z	100	30	6.6	0.8
02963	00	Z	100	28	5.6	1.7
03005	00	Z	100	31	6.3	-3.9
03005	12	Z	100	35	6.3	-3.1
03238	12	Z	100	10	12.5	8.7
03238	00	Z	100	30	10.5	3.4
03808	12	Z	100	31	12.0	-3.1
03808	00	Z	100	29	5.7	1.6
03918	12	Z	100	9	7.1	5.6
03918	00	Z	100	28	7.5	1.0
03953	12	Z	100	31	12.2	9.2
03953	00	Z	100	30	9.1	1.1
04018	12	Z	100	30	7.7	3.3
04018	00	Z	100	31	4.8	2.9
04220	00	Z	100	31	10.4	3.3
04220	12	Z	100	31	12.9	4.3
04270	12	Z	100	30	5.2	2.5
04270	00	Z	100	31	4.9	0.9
04320	12	Z	100	30	7.5	0.9
04320	00	Z	100	29	6.1	1.3
04339	00	Z	100	31	14.8	-4.6
04339	12	Z	100	31	13.2	4.8
04360	00	Z	100	27	49.5	47.9
04360	12	Z	100	26	50.7	50.0
06011	12	Z	100	28	11.0	-3.1

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06011	00	Z	100	30	14.6	-4.3
06260	00	Z	100	31	6.8	3.6
06260	12	Z	100	5	7.1	6.2
06610	12	Z	100	31	9.1	1.4
06610	00	Z	100	31	8.7	1.7
07110	12	Z	100	30	26.0	24.3
07110	00	Z	100	31	17.4	15.8
07510	00	Z	100	30	21.6	20.9
07510	12	Z	100	30	32.3	30.6
07645	00	Z	100	31	9.7	6.8
07645	12	Z	100	31	22.5	17.9
07761	12	Z	100	30	16.6	13.8
07761	00	Z	100	31	9.9	7.2
08001	00	Z	100	31	9.8	8.6
08001	12	Z	100	30	10.0	6.4
08221	00	Z	100	31	8.0	5.3
08221	12	Z	100	31	7.5	2.8
08302	00	Z	100	30	4.4	-0.5
08302	12	Z	100	28	11.2	-9.7
08508	12	Z	100	31	14.6	11.8
08522	12	Z	100	31	8.5	5.3
085228	12	Z	100	0	0.0	0.0
08579	12	Z	100	31	10.2	2.2
10035	00	Z	100	32	6.0	-0.9
10035	12	Z	100	31	9.5	-5.3
10393	00	Z	100	31	6.0	-1.1
10393	12	Z	100	31	8.9	-6.0
10410	12	Z	100	31	7.7	-1.5
10410	00	Z	100	31	5.9	-1.5
10739	12	Z	100	31	8.1	3.6
10739	00	Z	100	31	40.5	0.0
11035	12	Z	100	31	7.2	2.0
11035	00	Z	100	30	11.3	9.4
12982	00	Z	100	30	10.2	7.5
12982	12	Z	100	30	25.3	23.0
16080	00	Z	100	31	6.4	0.2
16080	12	Z	100	31	9.4	-5.8
16245	12	Z	100	30	11.4	-7.8
16245	00	Z	100	31	8.0	3.9
16320	12	Z	100	32	11.0	-2.5
16320	00	Z	100	20	15.5	13.6
16429	12	Z	100	41	11.6	-7.7
16429	00	Z	100	38	8.4	5.8

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
16622	00	Z	100	28	37.7	34.2
16622	12	Z	100	0	0.0	0.0
16754	00	Z	100	31	26.2	24.3
17607	12	Z	100	60	21.6	-20.0
26435	00	Z	100	15	9.4	0.5
60018	00	Z	100	31	11.8	8.0
60018	12	Z	100	31	7.2	2.3
ASDE01	12	Z	100	10	53.6	15.3
ASDE01	00	Z	100	13	34.1	-33.0
ASDE02	12	Z	100	14	23.7	19.9
ASDE04	12	Z	100	3	38.8	38.3
ASDE04	00	Z	100	5	42.8	42.1
ASDE09	12	Z	100	2	62.8	62.8
ASDK01	12	Z	100	21	6.7	5.1
ASDK01	00	Z	100	17	7.3	6.4
ASDK02	12	Z	100	13	21.8	4.1
ASDK02	00	Z	100	11	5.6	4.4
ASDK03	12	Z	100	0	0.0	0.0
ASDK1	12	Z	100	12	4.6	-1.0
ASDK1	00	Z	100	9	7.8	6.1
ASDK2	12	Z	100	10	23.9	-7.9
ASDK2	00	Z	100	9	5.2	2.4
ASEU01	12	Z	100	12	12.4	11.8
ASEU01	00	Z	100	1	23.4	23.4
ASEU02	12	Z	100	10	39.8	39.0
ASEU02	00	Z	100	11	38.1	36.8
ASEU03	12	Z	100	10	9.8	5.9
ASEU03	00	Z	100	9	13.3	-2.0
ASEU04	12	Z	100	6	11.7	-7.9
ASEU04	00	Z	100	3	11.9	-10.7
ASEU05	12	Z	100	5	17.1	16.9
ASEU05	00	Z	100	5	9.0	-1.8
ASEU06	12	Z	100	6	98.8	60.6
ASEU06	00	Z	100	3	107.7	60.4
ASFR1	12	Z	100	7	13.9	10.3
ASFR1	00	Z	100	7	11.8	7.3
ASFR2	12	Z	100	7	15.5	14.4
ASFR2	00	Z	100	8	16.5	14.6
ASFR3	12	Z	100	15	24.8	19.0
ASFR3	00	Z	100	14	9.6	8.3
ASFR4	12	Z	100	14	23.3	22.6
ASFR4	00	Z	100	17	16.6	15.4

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

RADIOSONDE MONITORING STATISTICS (EUCOS)

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

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	00	V	100	31	2.5	0.3	0.2
01001	12	V	100	31	2.5	0.5	-0.1
01028	00	V	100	30	2.3	0.2	0.0
01028	12	V	100	31	2.5	-0.1	0.4
01400	12	V	100	22	3.8	0.5	1.0
01400	00	V	100	20	2.8	0.3	0.2
01415	12	V	100	27	4.1	0.0	-0.5
01415	00	V	100	27	4.4	-0.7	-0.8
02365	12	V	100	26	3.3	0.7	0.0
02365	00	V	100	25	3.1	-0.4	-0.2
02591	12	V	100	30	2.7	-0.1	-0.1
02591	00	V	100	30	3.1	0.4	0.3
02836	12	V	100	31	2.8	0.7	-0.2
02836	00	V	100	29	2.9	0.3	-0.2
02963	12	V	100	30	3.4	0.0	0.2
02963	00	V	100	27	3.4	-0.6	-0.4
03005	00	V	100	31	3.5	0.5	-0.7
03005	12	V	100	31	3.3	0.1	0.6
03238	12	V	100	10	5.0	-0.6	1.3
03238	00	V	100	30	3.8	0.3	0.4
03808	12	V	100	31	3.0	0.2	-0.5
03808	00	V	100	28	3.3	0.0	-0.2
03918	12	V	100	9	2.8	0.1	-0.6
03918	00	V	100	28	4.3	1.7	0.8
03953	12	V	100	31	3.1	0.0	0.3
03953	00	V	100	30	3.4	-0.6	-0.1
04018	12	V	100	30	2.7	0.7	0.3
04018	00	V	100	31	2.4	0.8	-0.2
04220	00	V	100	31	2.8	-0.2	-0.1
04220	12	V	100	31	2.4	-0.2	0.4
04270	12	V	100	30	2.8	-0.2	0.1
04270	00	V	100	31	2.5	-0.1	0.0
04320	12	V	100	30	4.0	-0.9	0.7
04320	00	V	100	29	2.8	-0.2	0.6
04339	00	V	100	31	2.8	0.4	-0.6
04339	12	V	100	31	2.1	0.6	-0.1
04360	00	V	100	27	2.7	-0.4	0.5
04360	12	V	100	26	2.8	-0.7	0.5
06011	12	V	100	28	2.4	0.5	0.1

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06011	00	V	100	30	2.5	0.4	-0.2
06260	00	V	100	31	3.3	-0.3	0.4
06260	12	V	100	5	2.5	-0.2	0.3
06610	12	V	100	31	3.3	-0.2	-0.1
06610	00	V	100	31	2.3	0.1	-0.3
07110	12	V	100	27	3.0	0.6	0.1
07110	00	V	100	31	3.0	-0.2	0.4
07510	00	V	100	28	3.4	-0.1	0.0
07510	12	V	100	30	2.7	0.7	0.0
07645	00	V	100	31	3.9	0.3	0.3
07645	12	V	100	31	3.3	0.1	-0.1
07761	12	V	100	29	3.3	-0.1	0.6
07761	00	V	100	30	4.3	0.5	0.8
08001	00	V	100	31	3.6	-1.4	0.7
08001	12	V	100	29	2.7	0.1	0.4
08221	00	V	100	30	3.5	0.2	0.9
08221	12	V	100	31	3.1	0.2	0.3
08302	00	V	100	30	2.9	0.5	0.2
08302	12	V	100	28	3.2	-0.8	1.2
08508	12	V	100	29	2.8	-0.1	0.1
08522	12	V	100	31	3.8	1.0	0.0
085228	12	V	100	0	0.0	0.0	0.0
08579	12	V	100	31	3.6	0.7	0.0
10035	00	V	100	30	2.8	0.3	0.4
10035	12	V	100	31	3.1	0.9	0.2
10393	00	V	100	31	2.4	1.0	-0.1
10393	12	V	100	31	3.0	0.1	-0.4
10410	12	V	100	31	2.6	0.1	0.5
10410	00	V	100	31	3.0	0.0	-0.1
10739	12	V	100	31	3.0	0.3	-0.2
10739	00	V	100	31	2.5	-0.5	0.3
11035	12	V	100	31	3.3	-0.6	0.2
11035	00	V	100	30	3.5	-0.7	0.3
12982	00	V	100	29	3.1	0.3	0.8
12982	12	V	100	28	3.1	0.7	-0.4
16080	00	V	100	31	3.4	-0.4	-0.4
16080	12	V	100	31	3.1	0.5	0.3
16245	12	V	100	30	3.4	0.4	0.0
16245	00	V	100	31	3.7	0.1	0.2
16320	12	V	100	30	3.3	0.6	0.2
16320	00	V	100	20	3.0	-0.2	0.2
16429	12	V	100	31	3.8	1.1	1.0
16429	00	V	100	30	3.9	0.1	0.2

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
16622	00	V	100	24	4.0	0.6	0.0
16622	12	V	100	0	0.0	0.0	0.0
16754	00	V	100	31	4.0	0.4	0.0
17607	12	V	100	30	3.5	0.4	0.1
26435	00	V	100	15	3.2	-1.1	-0.1
60018	00	V	100	31	3.5	0.1	0.6
60018	12	V	100	31	4.7	-1.7	1.1
ASDE01	12	V	100	8	3.1	0.0	-0.2
ASDE01	00	V	100	11	3.2	0.0	0.3
ASDE02	12	V	100	13	5.0	-0.4	0.0
ASDE04	12	V	100	3	3.6	0.0	1.3
ASDE04	00	V	100	4	2.8	1.7	1.0
ASDE09	12	V	100	1	3.3	2.7	-1.9
ASDK01	12	V	100	12	2.0	0.5	0.5
ASDK01	00	V	100	9	2.1	-0.2	0.8
ASDK02	12	V	100	12	2.4	0.2	0.0
ASDK02	00	V	100	9	1.9	-0.1	-0.5
ASDK03	12	V	100	0	0.0	0.0	0.0
ASDK1	12	V	100	12	2.3	0.9	0.1
ASDK1	00	V	100	9	2.5	-0.1	0.5
ASDK2	12	V	100	10	2.3	0.1	-0.5
ASDK2	00	V	100	9	1.5	0.1	-0.3
ASEU01	12	V	100	11	2.6	0.7	-1.2
ASEU01	00	V	100	0	0.0	0.0	0.0
ASEU02	12	V	100	8	3.3	-0.2	0.9
ASEU02	00	V	100	9	2.7	-1.0	-0.4
ASEU03	12	V	100	8	4.1	-1.1	0.5
ASEU03	00	V	100	7	3.4	0.4	2.1
ASEU04	12	V	100	5	2.8	-0.6	-0.1
ASEU04	00	V	100	2	2.7	-1.2	1.0
ASEU05	12	V	100	2	5.5	-1.7	-0.5
ASEU05	00	V	100	5	3.9	-1.3	-1.2
ASEU06	12	V	100	6	4.4	0.6	1.9
ASEU06	00	V	100	3	3.7	0.4	-1.3
ASFR1	12	V	100	7	3.5	-2.0	-0.4
ASFR1	00	V	100	7	5.1	0.7	0.1
ASFR2	12	V	100	5	4.8	-1.9	1.5
ASFR2	00	V	100	7	2.8	-0.6	0.6
ASFR3	12	V	100	14	2.8	0.2	-0.4
ASFR3	00	V	100	13	3.8	0.6	-0.6
ASFR4	12	V	100	13	4.0	-0.3	-0.2
ASFR4	00	V	100	13	3.9	-0.2	-0.2

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

RADIOSONDE MONITORING STATISTICS (EUCOS)

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

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	00	Z	500	31	6.9	-0.3
01001	12	Z	500	31	6.7	-1.7
01028	00	Z	500	30	4.4	-1.1
01028	12	Z	500	31	14.0	2.2
01400	12	Z	500	27	7.6	3.1
01400	00	Z	500	24	7.6	4.7
01415	12	Z	500	27	4.6	1.3
01415	00	Z	500	27	5.2	3.2
02365	12	Z	500	27	7.1	-3.0
02365	00	Z	500	26	3.9	0.6
02591	12	Z	500	30	8.8	8.2
02591	00	Z	500	31	14.1	11.1
02836	12	Z	500	31	3.5	0.6
02836	00	Z	500	29	4.0	1.8
02963	12	Z	500	30	3.6	2.0
02963	00	Z	500	29	4.3	3.1
03005	00	Z	500	31	4.0	-2.7
03005	12	Z	500	35	6.2	-2.7
03238	12	Z	500	10	9.3	6.9
03238	00	Z	500	30	7.9	3.7
03808	12	Z	500	31	8.4	-2.1
03808	00	Z	500	29	3.9	1.6
03918	12	Z	500	9	6.4	5.0
03918	00	Z	500	28	6.7	5.1
03953	12	Z	500	31	6.7	0.9
03953	00	Z	500	30	5.9	-1.4
04018	12	Z	500	30	4.8	2.3
04018	00	Z	500	31	4.8	2.3
04220	00	Z	500	31	10.3	6.4
04220	12	Z	500	31	13.3	5.4
04270	12	Z	500	31	3.8	0.3
04270	00	Z	500	31	4.9	2.7
04320	12	Z	500	29	5.7	1.9
04320	00	Z	500	30	5.4	3.9
04339	00	Z	500	31	13.8	-1.6
04339	12	Z	500	31	13.0	1.3
04360	00	Z	500	30	47.0	46.8
04360	12	Z	500	27	48.9	48.6
06011	12	Z	500	31	8.9	-4.6

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06011	00	Z	500	30	15.9	-3.0
06260	00	Z	500	31	4.6	3.0
06260	12	Z	500	5	4.0	2.7
06610	12	Z	500	31	4.2	3.5
06610	00	Z	500	31	6.3	5.5
07110	12	Z	500	31	9.2	8.4
07110	00	Z	500	31	7.5	5.5
07510	00	Z	500	31	10.5	9.5
07510	12	Z	500	31	15.0	14.2
07645	00	Z	500	31	4.1	2.1
07645	12	Z	500	31	8.5	7.6
07761	12	Z	500	30	4.9	1.1
07761	00	Z	500	31	4.7	-1.1
08001	00	Z	500	31	8.9	8.4
08001	12	Z	500	31	7.9	6.5
08221	00	Z	500	31	6.2	5.8
08221	12	Z	500	31	6.1	5.3
08302	00	Z	500	30	2.8	-0.6
08302	12	Z	500	28	4.3	-3.5
08508	12	Z	500	31	12.3	10.3
08522	12	Z	500	31	7.3	6.0
085228	12	Z	500	1	9.1	9.1
08579	12	Z	500	31	6.5	3.1
10035	00	Z	500	32	3.9	0.3
10035	12	Z	500	31	4.4	-0.2
10393	00	Z	500	31	2.8	0.2
10393	12	Z	500	31	4.1	-3.1
10410	12	Z	500	31	7.5	-2.1
10410	00	Z	500	32	3.3	0.3
10739	12	Z	500	31	7.8	7.1
10739	00	Z	500	31	10.2	9.8
11035	12	Z	500	31	6.0	1.7
11035	00	Z	500	31	7.8	6.6
12982	00	Z	500	31	7.2	4.3
12982	12	Z	500	30	9.7	7.2
16080	00	Z	500	31	5.8	-4.0
16080	12	Z	500	31	8.0	-7.0
16245	12	Z	500	31	11.0	-9.3
16245	00	Z	500	31	6.1	-4.0
16320	12	Z	500	32	8.1	-4.7
16320	00	Z	500	21	7.3	4.0
16429	12	Z	500	42	9.5	-8.0
16429	00	Z	500	38	5.2	-1.7

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
16622	00	Z	500	29	22.6	20.8
16622	12	Z	500	0	0.0	0.0
16754	00	Z	500	31	29.7	18.0
17607	12	Z	500	61	4.4	0.4
26435	00	Z	500	15	9.6	-0.2
60018	00	Z	500	31	3.6	1.5
60018	12	Z	500	31	4.3	2.6
ASDE01	12	Z	500	10	31.5	-30.0
ASDE01	00	Z	500	13	42.8	-42.1
ASDE02	12	Z	500	14	12.1	9.6
ASDE04	12	Z	500	3	33.0	32.4
ASDE04	00	Z	500	5	35.0	34.5
ASDE09	12	Z	500	2	22.9	22.9
ASDK01	12	Z	500	21	5.4	4.7
ASDK01	00	Z	500	17	7.2	6.5
ASDK02	12	Z	500	16	17.7	0.0
ASDK02	00	Z	500	16	6.9	5.2
ASDK03	12	Z	500	0	0.0	0.0
ASDK1	12	Z	500	12	6.5	-1.3
ASDK1	00	Z	500	9	7.9	2.4
ASDK2	12	Z	500	11	24.1	-11.3
ASDK2	00	Z	500	11	8.3	3.2
ASEU01	12	Z	500	13	5.5	4.3
ASEU01	00	Z	500	1	8.9	8.9
ASEU02	12	Z	500	10	32.5	31.9
ASEU02	00	Z	500	11	34.8	34.3
ASEU03	12	Z	500	11	16.8	-9.4
ASEU03	00	Z	500	10	20.9	-8.4
ASEU04	12	Z	500	7	13.0	-12.2
ASEU04	00	Z	500	5	14.6	-12.6
ASEU05	12	Z	500	5	7.8	-5.5
ASEU05	00	Z	500	5	10.2	-7.3
ASEU06	12	Z	500	6	23.1	18.6
ASEU06	00	Z	500	6	27.7	3.8
ASFR1	12	Z	500	7	10.1	-4.8
ASFR1	00	Z	500	8	9.6	-5.7
ASFR2	12	Z	500	7	10.7	10.2
ASFR2	00	Z	500	8	11.4	9.6
ASFR3	12	Z	500	15	5.8	3.9
ASFR3	00	Z	500	14	3.3	0.0
ASFR4	12	Z	500	17	10.1	4.7
ASFR4	00	Z	500	19	3.2	1.1

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 : AUG 2016
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	00	V	500	31	2.0	0.4	-0.1
01001	12	V	500	31	2.5	0.1	-0.3
01028	00	V	500	30	2.4	0.2	0.1
01028	12	V	500	31	2.5	0.0	-0.4
01400	12	V	500	27	2.1	-0.3	0.0
01400	00	V	500	24	2.9	0.4	1.1
01415	12	V	500	27	3.0	-0.5	0.5
01415	00	V	500	27	2.5	0.4	0.4
02365	12	V	500	27	2.8	0.5	0.4
02365	00	V	500	25	2.6	0.4	-0.2
02591	12	V	500	30	2.8	-0.4	0.0
02591	00	V	500	30	2.6	-0.2	-0.4
02836	12	V	500	31	2.5	-0.2	-0.6
02836	00	V	500	29	2.7	0.0	0.5
02963	12	V	500	30	2.7	0.5	-0.1
02963	00	V	500	29	2.8	0.0	0.4
03005	00	V	500	31	3.1	-0.3	0.3
03005	12	V	500	31	3.0	-0.3	0.5
03238	12	V	500	10	1.9	0.0	-0.1
03238	00	V	500	30	3.3	0.0	-0.1
03808	12	V	500	31	3.6	-0.9	0.2
03808	00	V	500	28	3.3	0.3	0.4
03918	12	V	500	9	2.7	0.8	0.1
03918	00	V	500	28	3.3	-0.2	1.1
03953	12	V	500	31	3.0	0.8	0.2
03953	00	V	500	30	2.9	0.1	0.2
04018	12	V	500	30	2.8	0.3	0.3
04018	00	V	500	31	2.7	0.3	0.3
04220	00	V	500	31	1.9	0.3	0.0
04220	12	V	500	31	2.4	0.1	0.2
04270	12	V	500	31	3.1	-0.7	-0.3
04270	00	V	500	31	2.4	-0.4	-0.5
04320	12	V	500	29	3.8	-0.6	0.3
04320	00	V	500	29	2.9	0.4	0.5
04339	00	V	500	31	2.3	0.2	-0.3
04339	12	V	500	31	2.5	-0.1	0.3
04360	00	V	500	30	2.1	0.0	-0.3
04360	12	V	500	27	2.8	-0.1	0.5
06011	12	V	500	31	2.3	0.2	-0.1

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06011	00	V	500	30	2.3	0.1	0.0
06260	00	V	500	31	2.0	0.5	0.0
06260	12	V	500	5	3.3	-0.7	-0.8
06610	12	V	500	31	2.5	0.8	0.1
06610	00	V	500	31	5.7	0.7	1.3
07110	12	V	500	31	3.0	-0.6	-0.4
07110	00	V	500	31	3.0	-0.2	0.3
07510	00	V	500	31	3.3	1.1	0.1
07510	12	V	500	30	3.3	1.4	0.3
07645	00	V	500	31	2.7	-0.4	0.8
07645	12	V	500	31	2.5	0.1	0.1
07761	12	V	500	30	2.1	0.4	-0.3
07761	00	V	500	31	2.7	0.5	-0.4
08001	00	V	500	31	2.1	0.4	-0.1
08001	12	V	500	29	1.7	0.2	-0.1
08221	00	V	500	31	2.3	-0.2	0.2
08221	12	V	500	31	2.1	0.4	0.6
08302	00	V	500	29	2.5	0.6	-0.1
08302	12	V	500	28	2.1	0.4	-0.2
08508	12	V	500	30	3.0	1.3	-0.4
08522	12	V	500	31	2.4	0.0	0.0
085228	12	V	500	1	1.5	0.0	1.5
08579	12	V	500	31	2.4	0.3	-0.3
10035	00	V	500	31	2.3	0.2	0.4
10035	12	V	500	31	2.3	-0.1	0.2
10393	00	V	500	31	2.7	0.4	0.4
10393	12	V	500	31	2.6	0.3	0.5
10410	12	V	500	31	2.6	0.4	-0.3
10410	00	V	500	31	2.1	0.0	0.5
10739	12	V	500	31	2.1	0.0	0.0
10739	00	V	500	31	2.5	-0.7	0.0
11035	12	V	500	31	3.1	0.2	-0.3
11035	00	V	500	31	2.5	0.5	-0.6
12982	00	V	500	30	2.9	0.0	0.9
12982	12	V	500	30	2.5	-0.4	0.1
16080	00	V	500	31	2.6	-0.3	0.2
16080	12	V	500	31	2.7	0.3	-0.5
16245	12	V	500	31	2.7	-0.1	-0.5
16245	00	V	500	31	2.3	0.5	0.1
16320	12	V	500	30	2.4	-0.2	-0.3
16320	00	V	500	21	2.5	0.3	0.5
16429	12	V	500	31	2.3	-0.1	-0.1
16429	00	V	500	30	2.1	-0.1	-0.1

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
16622	00	V	500	26	4.6	0.7	0.9
16622	12	V	500	0	0.0	0.0	0.0
16754	00	V	500	31	2.2	0.2	0.2
17607	12	V	500	31	2.8	0.5	0.7
26435	00	V	500	15	3.1	0.4	0.6
60018	00	V	500	31	3.0	0.4	0.4
60018	12	V	500	31	4.1	0.2	-0.8
ASDE01	12	V	500	9	3.1	-0.3	0.3
ASDE01	00	V	500	11	2.5	1.6	0.2
ASDE02	12	V	500	13	3.4	1.6	1.0
ASDE04	12	V	500	3	3.3	0.0	-0.1
ASDE04	00	V	500	4	3.6	0.1	-2.1
ASDE09	12	V	500	1	1.4	-1.3	0.4
ASDK01	12	V	500	12	2.8	0.2	-1.0
ASDK01	00	V	500	9	3.1	-0.8	-1.1
ASDK02	12	V	500	14	2.4	-0.7	0.0
ASDK02	00	V	500	12	3.0	-0.4	-0.2
ASDK03	12	V	500	0	0.0	0.0	0.0
ASDK1	12	V	500	12	3.3	0.4	-0.8
ASDK1	00	V	500	9	2.9	-1.5	-0.7
ASDK2	12	V	500	11	2.1	-0.1	0.0
ASDK2	00	V	500	11	2.9	0.3	-0.7
ASEU01	12	V	500	13	2.2	-0.9	0.3
ASEU01	00	V	500	1	1.6	-0.9	1.3
ASEU02	12	V	500	8	2.1	0.7	0.1
ASEU02	00	V	500	9	1.6	0.2	-0.7
ASEU03	12	V	500	10	2.6	-0.1	-0.7
ASEU03	00	V	500	10	2.9	0.5	0.2
ASEU04	12	V	500	6	3.6	1.0	0.7
ASEU04	00	V	500	4	2.8	-1.1	2.1
ASEU05	12	V	500	3	3.4	-2.3	0.0
ASEU05	00	V	500	5	3.1	0.2	-0.7
ASEU06	12	V	500	6	4.7	-1.4	-2.4
ASEU06	00	V	500	6	4.1	-0.6	-0.1
ASFR1	12	V	500	7	2.8	1.1	0.7
ASFR1	00	V	500	8	4.0	0.7	-1.4
ASFR2	12	V	500	6	2.8	0.3	0.8
ASFR2	00	V	500	7	3.8	0.0	0.4
ASFR3	12	V	500	14	2.6	-0.4	0.0
ASFR3	00	V	500	13	3.6	0.5	-0.1
ASFR4	12	V	500	16	4.0	1.0	1.0
ASFR4	00	V	500	15	2.8	-0.2	0.5

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

RADIOSONDE MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : GEOPOTENTIAL HEIGHT (METRES)
 LEVEL : 850 HPA
 AREA : 0 - 90N, 100W - 40E
 PERIOD : AUG 2016
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
01001	00	Z	850	32	6.1	-0.3
01001	12	Z	850	31	6.1	-2.9
01028	00	Z	850	30	2.6	-0.5
01028	12	Z	850	31	13.8	1.0
01400	12	Z	850	27	6.2	2.4
01400	00	Z	850	25	6.9	4.1
01415	12	Z	850	27	4.7	2.8
01415	00	Z	850	27	5.0	3.0
02365	12	Z	850	27	3.0	0.4
02365	00	Z	850	27	2.2	1.0
02591	12	Z	850	30	8.9	8.5
02591	00	Z	850	31	10.2	10.0
02836	12	Z	850	31	4.1	3.5
02836	00	Z	850	29	2.9	1.9
02963	12	Z	850	30	4.8	4.3
02963	00	Z	850	29	5.1	4.8
03005	00	Z	850	31	3.0	-1.3
03005	12	Z	850	35	3.6	-1.9
03238	12	Z	850	10	4.9	4.2
03238	00	Z	850	30	5.6	4.6
03808	12	Z	850	31	4.4	-1.9
03808	00	Z	850	29	2.4	1.3
03918	12	Z	850	9	5.6	5.3
03918	00	Z	850	28	4.5	4.0
03953	12	Z	850	31	3.6	0.8
03953	00	Z	850	30	3.4	0.4
04018	12	Z	850	30	2.4	0.1
04018	00	Z	850	31	3.0	1.7
04220	00	Z	850	31	9.2	4.5
04220	12	Z	850	31	14.0	5.2
04270	12	Z	850	31	2.5	0.9
04270	00	Z	850	31	2.3	0.7
04320	12	Z	850	29	4.4	2.3
04320	00	Z	850	29	6.4	4.6
04339	00	Z	850	31	15.8	-0.8
04339	12	Z	850	31	12.9	4.3
04360	00	Z	850	31	45.3	45.2
04360	12	Z	850	29	45.1	45.0
06011	12	Z	850	31	2.8	0.3

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
06011	00	Z	850	30	13.4	1.9
06260	00	Z	850	31	3.4	0.8
06260	12	Z	850	5	0.8	-0.3
06610	12	Z	850	31	3.7	3.2
06610	00	Z	850	31	5.5	5.1
07110	12	Z	850	31	2.3	1.1
07110	00	Z	850	31	2.3	1.0
07510	00	Z	850	31	5.2	4.7
07510	12	Z	850	31	5.1	4.5
07645	00	Z	850	31	2.8	1.0
07645	12	Z	850	32	4.0	3.0
07761	12	Z	850	31	4.1	-2.9
07761	00	Z	850	31	4.4	-3.5
08001	00	Z	850	31	5.8	5.3
08001	12	Z	850	31	4.8	3.9
08221	00	Z	850	31	3.0	2.6
08221	12	Z	850	31	2.7	1.9
08302	00	Z	850	30	2.4	-2.0
08302	12	Z	850	28	4.5	-4.1
08508	12	Z	850	31	8.6	4.9
08522	12	Z	850	31	3.7	2.4
085228	12	Z	850	1	4.5	4.5
08579	12	Z	850	31	3.4	0.7
10035	00	Z	850	32	3.8	0.6
10035	12	Z	850	31	2.6	0.3
10393	00	Z	850	31	2.3	-0.1
10393	12	Z	850	31	1.7	-0.8
10410	12	Z	850	31	3.1	-2.3
10410	00	Z	850	32	2.8	-1.9
10739	12	Z	850	31	7.7	7.4
10739	00	Z	850	31	8.6	7.6
11035	12	Z	850	31	5.1	2.9
11035	00	Z	850	31	6.0	3.7
12982	00	Z	850	31	5.2	3.5
12982	12	Z	850	30	7.1	6.0
16080	00	Z	850	31	6.9	-5.5
16080	12	Z	850	31	8.3	-7.5
16245	12	Z	850	31	10.1	-8.8
16245	00	Z	850	31	6.3	-4.8
16320	12	Z	850	32	8.1	-4.3
16320	00	Z	850	24	7.5	1.8
16429	12	Z	850	42	9.1	-7.5
16429	00	Z	850	42	5.2	-3.5

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	BIAS
16622	00	Z	850	29	12.3	11.4
16622	12	Z	850	0	0.0	0.0
16754	00	Z	850	31	13.3	10.1
17607	12	Z	850	61	3.0	0.8
26435	00	Z	850	15	6.8	0.3
60018	00	Z	850	31	3.9	-3.5
60018	12	Z	850	31	4.0	-2.7
ASDE01	12	Z	850	10	39.7	-39.2
ASDE01	00	Z	850	13	44.3	-44.1
ASDE02	12	Z	850	14	6.3	3.7
ASDE04	12	Z	850	3	26.6	26.5
ASDE04	00	Z	850	5	28.5	28.1
ASDE09	12	Z	850	2	11.6	11.6
ASDK01	12	Z	850	21	6.1	5.4
ASDK01	00	Z	850	17	9.5	9.0
ASDK02	12	Z	850	16	19.7	-2.3
ASDK02	00	Z	850	16	6.4	4.6
ASDK03	12	Z	850	1	28.0	28.0
ASDK1	12	Z	850	12	5.5	3.3
ASDK1	00	Z	850	9	11.7	9.9
ASDK2	12	Z	850	11	23.3	-7.2
ASDK2	00	Z	850	11	8.0	6.3
ASEU01	12	Z	850	13	3.9	1.8
ASEU01	00	Z	850	1	3.8	3.8
ASEU02	12	Z	850	10	27.3	26.6
ASEU02	00	Z	850	11	31.4	30.9
ASEU03	12	Z	850	11	18.5	-11.8
ASEU03	00	Z	850	10	22.4	-13.1
ASEU04	12	Z	850	7	16.9	-15.2
ASEU04	00	Z	850	7	12.9	-11.4
ASEU05	12	Z	850	5	6.1	-5.6
ASEU05	00	Z	850	5	8.2	-6.9
ASEU06	12	Z	850	6	12.2	2.6
ASEU06	00	Z	850	6	25.7	3.7
ASFR1	12	Z	850	7	6.0	-3.4
ASFR1	00	Z	850	8	7.4	-5.8
ASFR2	12	Z	850	7	10.7	9.7
ASFR2	00	Z	850	8	10.0	8.8
ASFR3	12	Z	850	15	3.4	-0.9
ASFR3	00	Z	850	14	3.8	-0.9
ASFR4	12	Z	850	17	5.3	-1.3
ASFR4	00	Z	850	19	3.1	-1.5

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 : AUG 2016
 STANDARD OF COMPARISON: FIRST-GUESS FIELD

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
01001	00	V	850	31	2.9	-0.5	-0.8
01001	12	V	850	31	2.7	0.1	-0.5
01028	00	V	850	30	2.5	-0.8	-0.1
01028	12	V	850	31	2.3	0.4	0.2
01400	12	V	850	27	2.1	0.2	0.0
01400	00	V	850	25	2.0	0.3	-0.1
01415	12	V	850	27	2.8	0.0	0.0
01415	00	V	850	27	2.8	-0.7	0.6
02365	12	V	850	27	2.8	-1.0	-0.2
02365	00	V	850	26	2.6	-0.1	0.0
02591	12	V	850	30	2.9	0.1	-0.8
02591	00	V	850	30	2.8	0.3	-0.7
02836	12	V	850	31	2.5	0.2	0.3
02836	00	V	850	29	2.1	-0.1	-0.1
02963	12	V	850	30	2.5	-0.7	0.3
02963	00	V	850	29	2.3	0.3	-0.3
03005	00	V	850	31	2.9	0.4	-0.8
03005	12	V	850	31	2.3	-0.2	-0.1
03238	12	V	850	10	2.8	1.0	0.0
03238	00	V	850	30	2.4	0.5	0.0
03808	12	V	850	31	2.8	0.3	0.3
03808	00	V	850	28	2.6	0.7	0.7
03918	12	V	850	9	2.9	-0.4	-0.1
03918	00	V	850	28	2.4	0.4	0.5
03953	12	V	850	31	3.1	0.4	0.0
03953	00	V	850	30	2.9	0.4	0.6
04018	12	V	850	30	2.8	0.2	0.2
04018	00	V	850	31	3.2	-0.7	0.9
04220	00	V	850	31	2.5	-0.4	0.3
04220	12	V	850	31	3.0	-0.6	0.2
04270	12	V	850	31	3.1	-0.7	-0.7
04270	00	V	850	31	3.6	-1.5	-0.6
04320	12	V	850	29	3.4	-0.5	-0.1
04320	00	V	850	29	3.1	0.7	0.5
04339	00	V	850	31	3.3	0.1	-0.8
04339	12	V	850	31	3.0	0.5	0.1
04360	00	V	850	31	4.2	0.7	-0.7
04360	12	V	850	29	4.2	1.1	0.2
06011	12	V	850	31	2.6	-0.4	0.9

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
06011	00	V	850	30	2.3	-0.2	0.2
06260	00	V	850	31	2.2	-0.1	-0.2
06260	12	V	850	5	2.5	1.2	-0.4
06610	12	V	850	31	3.0	0.1	0.5
06610	00	V	850	31	3.9	0.7	-0.2
07110	12	V	850	31	2.9	-0.3	-0.5
07110	00	V	850	31	2.7	0.7	0.1
07510	00	V	850	31	3.3	0.2	-0.3
07510	12	V	850	30	3.4	0.3	0.1
07645	00	V	850	31	3.3	0.3	0.2
07645	12	V	850	31	3.3	0.3	-0.2
07761	12	V	850	30	4.2	0.4	-1.1
07761	00	V	850	31	3.6	0.1	-0.7
08001	00	V	850	31	2.9	0.5	-0.8
08001	12	V	850	30	2.6	-0.2	0.1
08221	00	V	850	31	3.6	0.6	0.4
08221	12	V	850	31	2.4	0.9	0.1
08302	00	V	850	29	3.0	-0.1	-0.2
08302	12	V	850	28	2.7	0.4	-0.3
08508	12	V	850	30	2.8	0.2	0.0
08522	12	V	850	31	2.5	-0.1	-0.5
085228	12	V	850	1	1.8	0.3	-1.8
08579	12	V	850	31	2.5	0.0	0.0
10035	00	V	850	31	2.1	-0.1	-0.2
10035	12	V	850	31	2.6	-0.1	-0.1
10393	00	V	850	31	2.3	0.4	0.3
10393	12	V	850	31	2.5	0.3	0.0
10410	12	V	850	31	2.4	0.4	0.5
10410	00	V	850	31	3.3	0.1	0.4
10739	12	V	850	31	2.3	-0.2	0.5
10739	00	V	850	31	2.8	0.2	0.5
11035	12	V	850	31	2.8	0.1	-0.5
11035	00	V	850	31	2.7	0.0	-0.4
12982	00	V	850	31	3.1	0.7	0.2
12982	12	V	850	30	3.0	0.4	0.0
16080	00	V	850	31	4.0	0.4	-0.7
16080	12	V	850	31	2.9	-0.1	-0.4
16245	12	V	850	31	2.8	0.4	-0.1
16245	00	V	850	31	2.9	0.2	0.1
16320	12	V	850	30	2.5	0.6	-0.5
16320	00	V	850	23	3.1	0.8	-1.3
16429	12	V	850	31	2.1	0.1	0.1
16429	00	V	850	30	2.2	0.0	0.1

RADIOSONDE MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	OBS RECD	RMS	UBIAS	VBIAS
16622	00	V	850	27	5.2	0.3	-1.8
16622	12	V	850	0	0.0	0.0	0.0
16754	00	V	850	31	2.5	0.2	-0.5
17607	12	V	850	31	2.9	1.0	-0.2
26435	00	V	850	15	2.6	0.1	0.0
60018	00	V	850	31	3.6	0.8	0.2
60018	12	V	850	31	4.4	1.1	0.8
ASDE01	12	V	850	9	2.8	-0.2	0.3
ASDE01	00	V	850	11	2.4	-0.1	1.0
ASDE02	12	V	850	13	4.1	0.4	-1.1
ASDE04	12	V	850	3	0.5	-0.3	-0.2
ASDE04	00	V	850	4	3.1	0.5	-0.4
ASDE09	12	V	850	1	1.1	1.0	-0.4
ASDK01	12	V	850	12	2.2	-0.7	0.1
ASDK01	00	V	850	9	3.4	0.5	0.7
ASDK02	12	V	850	14	4.4	-0.1	-1.2
ASDK02	00	V	850	12	3.3	0.5	-0.9
ASDK03	12	V	850	0	0.0	0.0	0.0
ASDK1	12	V	850	12	2.0	-0.6	-0.1
ASDK1	00	V	850	9	4.0	0.2	0.4
ASDK2	12	V	850	11	3.5	0.8	-0.7
ASDK2	00	V	850	11	3.5	1.0	-1.3
ASEU01	12	V	850	13	1.9	-0.6	0.0
ASEU01	00	V	850	1	0.5	0.5	-0.1
ASEU02	12	V	850	8	2.3	1.0	-0.2
ASEU02	00	V	850	9	1.7	0.8	-0.3
ASEU03	12	V	850	10	3.0	0.7	-0.1
ASEU03	00	V	850	10	2.6	0.7	-0.6
ASEU04	12	V	850	6	2.2	0.4	0.7
ASEU04	00	V	850	6	2.7	0.1	0.9
ASEU05	12	V	850	3	4.1	-2.0	1.5
ASEU05	00	V	850	5	2.1	0.3	-0.4
ASEU06	12	V	850	6	3.3	-1.0	0.8
ASEU06	00	V	850	6	3.3	-1.6	-1.4
ASFR1	12	V	850	7	4.7	2.2	1.9
ASFR1	00	V	850	8	3.5	-0.1	0.4
ASFR2	12	V	850	6	2.2	-0.8	0.7
ASFR2	00	V	850	7	1.7	-0.1	0.9
ASFR3	12	V	850	14	2.1	0.3	0.4
ASFR3	00	V	850	13	2.6	1.2	0.0
ASFR4	12	V	850	16	2.7	-0.7	-0.3
ASFR4	00	V	850	15	3.3	1.1	-0.6

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 : AUG 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
03380	99	P	SUR	54	0	746	0	0.3	-0.0	0.3
1300001	99	P	SUR	11	-23	696	0	0.4	-0.2	0.5
1300515	99	P	SUR	27	-55	705	0	0.4	0.2	0.5
1300519	99	P	SUR	23	-67	110	0	1.1	0.1	1.1
1300572	99	P	SUR	25	-28	742	0	0.3	0.2	0.3
1300633	99	P	SUR	25	-50	731	0	0.4	-0.6	0.7
1300665	99	P	SUR	20	-31	672	0	0.3	0.2	0.3
1300868	99	P	SUR	25	-19	743	0	0.4	0.5	0.6
1300869	99	P	SUR	20	-43	743	0	0.7	0.2	0.7
1300871	99	P	SUR	26	-42	594	0	0.3	0.5	0.6
1300872	99	P	SUR	25	-46	728	0	0.4	0.5	0.6
1301500	99	P	SUR	18	-39	740	0	0.5	0.0	0.5
1301501	99	P	SUR	19	-34	742	0	0.3	0.4	0.5
1301502	99	P	SUR	20	-35	737	0	0.3	0.6	0.6
13515	99	P	SUR	27	-55	560	0	0.4	0.2	0.5
13519	99	P	SUR	23	-67	90	0	1.2	0.1	1.2
13572	99	P	SUR	25	-28	419	0	0.3	0.2	0.3
13633	99	P	SUR	25	-50	531	0	0.4	-0.6	0.7
13665	99	P	SUR	20	-31	672	0	0.3	0.2	0.3
13868	99	P	SUR	25	-19	744	0	0.4	0.5	0.6
13869	99	P	SUR	20	-43	744	0	0.7	0.2	0.7
13871	99	P	SUR	26	-42	594	0	0.3	0.5	0.6
13872	99	P	SUR	25	-46	729	0	0.4	0.5	0.6
2100942	99	P	SUR	28	-46	727	0	0.3	0.3	0.5
21942	99	P	SUR	28	-46	667	0	0.3	0.3	0.5
2500575	99	P	SUR	63	-55	742	0	0.4	0.1	0.4
2500617	99	P	SUR	58	-48	743	0	1.1	-0.2	1.1
25575	99	P	SUR	63	-55	688	0	0.4	0.1	0.4
25617	99	P	SUR	58	-48	744	0	1.1	-0.2	1.1
2600537	99	P	SUR	71	14	734	0	0.3	0.0	0.3
2600545	99	P	SUR	67	-8	731	17	4.6	0.3	4.6
26537	99	P	SUR	71	14	741	0	0.3	0.0	0.3
26545	99	P	SUR	67	-8	738	17	4.6	0.3	4.6
3100706	99	P	SUR	10	-37	734	0	0.4	-0.1	0.5
3100863	99	P	SUR	29	-62	743	0	0.4	0.5	0.6
31706	99	P	SUR	10	-37	271	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
31863	99	P	SUR	29	-62	743	0	0.4	0.5	0.6
4100139	99	P	SUR	20	-38	351	0	0.3	-0.1	0.3
4100300	99	P	SUR	16	-57	743	0	0.3	0.4	0.6
4100506	99	P	SUR	35	-55	716	0	0.4	-0.1	0.5
4100590	99	P	SUR	43	-43	742	0	0.5	-0.4	0.6
4100594	99	P	SUR	43	-40	742	0	0.4	-0.1	0.4
4100597	99	P	SUR	31	-54	743	0	0.4	0.1	0.4
4100598	99	P	SUR	32	-65	50	0	2.3	-1.7	2.8
4100635	99	P	SUR	23	-58	743	0	0.3	0.5	0.6
4100706	99	P	SUR	30	-35	743	0	0.2	0.2	0.3
4100707	99	P	SUR	14	-61	743	0	0.3	-0.9	1.0
4100708	99	P	SUR	24	-61	743	0	0.3	0.1	0.4
4100709	99	P	SUR	32	-65	742	0	0.3	0.3	0.4
4100729	99	P	SUR	39	-51	743	0	0.5	-0.1	0.5
4100731	99	P	SUR	31	-55	743	0	0.5	0.2	0.6
4100936	99	P	SUR	38	-52	737	0	0.4	-1.1	1.2
4100970	99	P	SUR	34	-62	743	0	0.3	0.0	0.3
4100972	99	P	SUR	38	-40	739	0	0.3	-0.2	0.4
4100975	99	P	SUR	24	-37	740	0	0.3	0.1	0.3
4101700	99	P	SUR	36	-46	743	0	1.0	0.0	1.0
41040	99	P	SUR	15	-53	736	0	0.3	-0.6	0.7
41041	99	P	SUR	14	-46	728	0	0.3	-0.4	0.5
41043	99	P	SUR	21	-65	909	0	0.3	0.7	0.7
41044	99	P	SUR	22	-59	929	0	0.4	-0.0	0.4
41046	99	P	SUR	24	-68	928	0	0.4	-0.1	0.4
41048	99	P	SUR	32	-70	752	0	0.4	-0.6	0.7
41049	99	P	SUR	28	-63	736	0	0.4	0.1	0.4
41051	99	P	SUR	18	-65	564	0	0.3	-0.2	0.4
41052	99	P	SUR	18	-65	1833	0	0.3	-1.2	1.2
41053	99	P	SUR	19	-66	1705	0	0.4	-0.3	0.5
41056	99	P	SUR	18	-66	1628	0	0.4	-0.7	0.8
41139	99	P	SUR	20	-38	241	0	0.3	-0.1	0.3
41506	99	P	SUR	35	-55	618	0	0.4	-0.1	0.4
41590	99	P	SUR	43	-43	705	0	0.5	-0.4	0.6
41594	99	P	SUR	43	-40	588	0	0.4	-0.1	0.4
41597	99	P	SUR	31	-54	743	0	0.4	0.1	0.4
41598	99	P	SUR	32	-65	50	0	2.3	-1.7	2.8
41635	99	P	SUR	23	-58	744	0	0.3	0.5	0.6
41706	99	P	SUR	30	-35	744	0	0.2	0.2	0.3
41707	99	P	SUR	14	-61	743	0	0.3	-0.9	1.0
41708	99	P	SUR	24	-61	744	0	0.3	0.1	0.4
41709	99	P	SUR	32	-65	744	0	0.3	0.3	0.4
41729	99	P	SUR	39	-51	744	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
41731	99	P	SUR	31	-55	744	0	0.5	0.2	0.6
41936	99	P	SUR	38	-52	621	0	0.5	-1.1	1.2
41970	99	P	SUR	34	-62	744	0	0.3	0.0	0.3
41972	99	P	SUR	38	-40	739	0	0.3	-0.2	0.4
41975	99	P	SUR	24	-37	612	0	0.3	0.1	0.3
42059	99	P	SUR	15	-68	943	0	0.4	0.4	0.6
42085	99	P	SUR	18	-67	1710	0	0.4	-0.7	0.8
42087	99	P	SUR	11	-61	326	0	0.5	-0.2	0.6
42088	99	P	SUR	11	-61	1408	0	0.6	0.1	0.6
42090	99	P	SUR	18	-70	1742	0	0.5	0.2	0.5
44005	99	P	SUR	43	-69	747	0	0.4	0.0	0.4
4400510	99	P	SUR	46	-50	1619	1	0.4	0.7	0.8
4400513	99	P	SUR	54	-10	743	0	0.4	0.4	0.5
4400515	99	P	SUR	52	-20	743	0	0.4	0.0	0.4
4400516	99	P	SUR	44	-17	639	0	0.3	0.4	0.5
4400517	99	P	SUR	34	-16	742	0	0.3	0.5	0.6
4400521	99	P	SUR	42	-34	740	0	0.3	-0.5	0.6
4400546	99	P	SUR	29	-53	743	0	0.3	-0.1	0.3
4400551	99	P	SUR	69	14	743	0	0.4	0.3	0.5
4400557	99	P	SUR	46	-32	742	0	0.4	0.3	0.5
4400558	99	P	SUR	33	-52	740	0	0.4	0.5	0.6
4400614	99	P	SUR	50	-10	683	0	0.4	-0.1	0.4
4400624	99	P	SUR	25	-54	724	0	0.3	-0.1	0.3
4400670	99	P	SUR	44	-49	730	0	0.4	0.0	0.4
4400739	99	P	SUR	36	-36	679	0	0.4	0.6	0.8
4400744	99	P	SUR	51	-14	745	0	0.5	0.1	0.5
4400746	99	P	SUR	37	-25	742	0	0.3	0.3	0.4
4400747	99	P	SUR	53	-11	534	2	2.8	-0.7	2.9
4400761	99	P	SUR	56	-9	743	0	0.4	-0.5	0.6
4400765	99	P	SUR	51	-28	743	0	0.6	0.1	0.6
4400766	99	P	SUR	41	-27	743	0	0.3	0.0	0.3
4400768	99	P	SUR	35	-24	743	0	0.3	0.8	0.8
4400772	99	P	SUR	47	-29	742	0	0.5	-0.1	0.5
4400773	99	P	SUR	46	-7	743	0	0.3	0.7	0.7
4400776	99	P	SUR	33	-25	743	0	0.3	0.7	0.7
4400777	99	P	SUR	43	-53	744	0	0.6	0.1	0.6
4400778	99	P	SUR	41	-29	742	0	0.3	0.4	0.5
4400779	99	P	SUR	43	-55	651	0	0.4	-0.1	0.4
44008	99	P	SUR	41	-69	736	0	0.3	-0.3	0.4
4400835	99	P	SUR	28	-34	742	0	0.2	-0.3	0.4
4400837	99	P	SUR	22	-61	743	0	0.3	-0.0	0.3
4400839	99	P	SUR	29	-23	743	0	0.3	-0.0	0.3
4400846	99	P	SUR	33	-23	743	0	0.2	0.6	0.6

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
4400848	99	P	SUR	30	-22	743	0	0.3	0.4	0.5
4400856	99	P	SUR	43	-36	743	0	0.4	0.5	0.6
4400857	99	P	SUR	46	-31	742	0	0.4	0.3	0.5
4400863	99	P	SUR	31	-56	743	0	0.3	-0.5	0.6
4400866	99	P	SUR	70	15	743	0	0.3	-0.1	0.3
4400868	99	P	SUR	29	-59	566	0	2.5	-0.5	2.5
4400873	99	P	SUR	34	-47	743	0	0.4	0.8	0.9
4400874	99	P	SUR	35	-36	743	0	0.3	0.2	0.4
4400875	99	P	SUR	35	-35	743	0	0.3	0.0	0.3
4400885	99	P	SUR	18	-38	743	0	0.3	-0.1	0.3
4400887	99	P	SUR	30	-44	743	0	0.3	-0.0	0.3
4400889	99	P	SUR	34	-53	743	0	0.5	-0.2	0.6
4400891	99	P	SUR	30	-60	743	0	0.3	-0.3	0.5
4400896	99	P	SUR	34	-37	736	0	0.2	-0.4	0.5
4400901	99	P	SUR	46	-42	742	0	0.5	-0.0	0.5
4400902	99	P	SUR	47	-32	743	0	0.3	0.2	0.4
4400904	99	P	SUR	45	-32	742	0	0.4	-0.2	0.4
44011	99	P	SUR	41	-67	744	0	0.3	-0.9	1.0
4401500	99	P	SUR	37	-60	739	0	0.4	0.3	0.5
4401501	99	P	SUR	35	-59	741	0	0.4	0.0	0.4
4401503	99	P	SUR	32	-55	742	1	1.1	0.2	1.1
4401550	99	P	SUR	42	-44	742	0	0.4	-0.3	0.5
4401551	99	P	SUR	37	-38	729	0	0.3	0.3	0.5
4401552	99	P	SUR	37	-50	646	0	0.4	0.0	0.4
4401553	99	P	SUR	56	-46	558	0	0.4	0.0	0.4
4401554	99	P	SUR	57	-43	558	0	0.4	0.3	0.5
4401555	99	P	SUR	51	-46	555	0	0.4	-0.2	0.5
44016	99	P	SUR	62	-66	2030	0	0.9	0.4	1.0
4401601	99	P	SUR	59	-51	730	0	0.4	-0.0	0.4
4401602	99	P	SUR	63	-58	727	0	0.4	0.1	0.4
4401603	99	P	SUR	59	-51	729	0	0.3	0.3	0.4
4401604	99	P	SUR	60	-54	734	0	0.3	-0.2	0.4
4401605	99	P	SUR	58	-45	730	0	0.5	-0.1	0.5
4401608	99	P	SUR	68	-61	731	0	0.3	0.1	0.3
4401610	99	P	SUR	61	-66	734	0	1.0	0.2	1.0
4401612	99	P	SUR	52	-55	722	0	0.4	0.3	0.5
4401614	99	P	SUR	61	-66	731	0	0.5	0.3	0.6
4401618	99	P	SUR	70	-62	727	0	0.3	0.4	0.5
4401619	99	P	SUR	62	-66	730	0	1.3	0.9	1.5
4401620	99	P	SUR	69	-60	730	0	0.3	-0.2	0.3
4401622	99	P	SUR	61	-67	733	0	0.5	0.2	0.5
4401625	99	P	SUR	52	-55	726	0	0.4	0.2	0.4
4401627	99	P	SUR	62	-66	727	0	0.5	0.4	0.7

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
4401629	99	P	SUR	69	-62	725	0	0.3	-0.1	0.3
4401632	99	P	SUR	54	-55	733	0	0.4	0.0	0.4
4401634	99	P	SUR	54	-55	729	0	0.4	-0.1	0.5
4401635	99	P	SUR	61	-66	728	0	0.5	-0.1	0.5
4401637	99	P	SUR	61	-66	731	0	0.5	0.3	0.6
44018	99	P	SUR	42	-70	841	0	0.7	-0.6	1.0
44024	99	P	SUR	42	-66	828	0	0.3	-1.3	1.4
44027	99	P	SUR	44	-67	836	0	0.4	-0.1	0.4
44032	99	P	SUR	44	-69	743	0	0.4	-0.1	0.4
44033	99	P	SUR	44	-69	301	0	0.3	-1.2	1.2
44034	99	P	SUR	44	-68	730	0	0.4	0.1	0.4
44037	99	P	SUR	44	-68	595	0	0.4	-0.0	0.4
44137	99	P	SUR	42	-62	744	0	0.4	-0.1	0.4
44139	99	P	SUR	44	-57	733	0	0.4	0.1	0.4
44141	99	P	SUR	43	-58	688	0	0.4	0.0	0.4
44150	99	P	SUR	43	-64	15	0	0.3	0.4	0.5
44251	99	P	SUR	46	-53	737	0	0.5	0.0	0.5
44255	99	P	SUR	47	-57	1164	0	0.4	0.2	0.5
44258	99	P	SUR	45	-63	739	0	0.3	-0.0	0.3
44510	99	P	SUR	46	-50	1425	1	0.4	0.7	0.8
44513	99	P	SUR	54	-10	744	0	0.4	0.4	0.5
44515	99	P	SUR	52	-20	744	0	0.4	0.0	0.4
44516	99	P	SUR	44	-17	553	0	0.3	0.4	0.5
44517	99	P	SUR	34	-16	743	0	0.3	0.5	0.6
44521	99	P	SUR	42	-34	574	0	0.3	-0.5	0.6
44546	99	P	SUR	29	-53	744	0	0.3	-0.1	0.3
44551	99	P	SUR	69	14	744	0	0.4	0.3	0.5
44557	99	P	SUR	46	-32	743	0	0.4	0.3	0.5
44558	99	P	SUR	33	-52	579	0	0.4	0.5	0.6
44614	99	P	SUR	50	-10	685	0	0.4	-0.1	0.4
44624	99	P	SUR	25	-54	725	0	0.3	-0.1	0.3
44670	99	P	SUR	44	-49	739	0	0.4	0.0	0.4
44739	99	P	SUR	36	-36	680	0	0.4	0.6	0.8
44744	99	P	SUR	51	-14	745	0	0.5	0.1	0.5
44746	99	P	SUR	37	-25	744	0	0.3	0.3	0.4
44747	99	P	SUR	53	-11	555	13	3.1	-0.8	3.2
44761	99	P	SUR	56	-9	743	0	0.4	-0.5	0.6
44765	99	P	SUR	51	-28	744	0	0.6	0.1	0.6
44766	99	P	SUR	41	-27	744	0	0.3	0.0	0.3
44768	99	P	SUR	35	-24	743	0	0.3	0.8	0.8
44772	99	P	SUR	47	-29	743	0	0.5	-0.1	0.5
44773	99	P	SUR	46	-7	744	0	0.3	0.7	0.7
44776	99	P	SUR	33	-25	744	0	0.3	0.7	0.7

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
44777	99	P	SUR	43	-53	743	0	0.6	0.1	0.6
44778	99	P	SUR	41	-29	743	0	0.3	0.4	0.5
44779	99	P	SUR	43	-54	651	0	0.4	-0.1	0.4
44835	99	P	SUR	28	-34	743	0	0.2	-0.3	0.4
44837	99	P	SUR	22	-61	743	0	0.3	-0.0	0.3
44839	99	P	SUR	29	-23	744	0	0.3	-0.0	0.3
44846	99	P	SUR	33	-23	744	0	0.2	0.6	0.6
44848	99	P	SUR	30	-22	744	0	0.3	0.4	0.5
44856	99	P	SUR	43	-36	743	0	0.4	0.5	0.6
44857	99	P	SUR	46	-31	743	0	0.4	0.3	0.5
44863	99	P	SUR	31	-56	744	0	0.3	-0.5	0.6
44866	99	P	SUR	70	15	744	0	0.3	-0.1	0.3
44868	99	P	SUR	29	-59	591	3	3.3	-1.0	3.5
44873	99	P	SUR	34	-47	744	0	0.4	0.8	0.9
44874	99	P	SUR	36	-36	744	0	0.3	0.2	0.4
44875	99	P	SUR	35	-35	744	0	0.3	0.0	0.3
44885	99	P	SUR	18	-38	743	0	0.3	-0.1	0.3
44887	99	P	SUR	30	-44	743	0	0.3	-0.0	0.3
44889	99	P	SUR	34	-53	744	0	0.5	-0.2	0.5
44891	99	P	SUR	30	-60	744	0	0.3	-0.3	0.5
44896	99	P	SUR	34	-37	634	0	0.2	-0.4	0.5
44901	99	P	SUR	47	-42	743	0	0.5	-0.0	0.5
44902	99	P	SUR	47	-32	744	0	0.3	0.2	0.4
44904	99	P	SUR	45	-32	743	0	0.4	-0.2	0.4
45138	99	P	SUR	50	-66	711	0	0.6	-0.2	0.6
4700509	99	P	SUR	70	-20	731	42	5.5	-4.7	7.2
4700539	99	P	SUR	44	-28	728	0	0.4	0.1	0.4
4700540	99	P	SUR	52	-29	727	0	0.5	0.6	0.8
4700546	99	P	SUR	44	-50	710	0	0.4	0.3	0.5
4700549	99	P	SUR	54	-28	722	0	0.5	0.0	0.5
4700551	99	P	SUR	54	-57	739	2	3.7	-0.3	3.7
4700552	99	P	SUR	67	-63	741	0	0.3	-1.9	2.0
4700555	99	P	SUR	46	-51	727	0	0.4	0.2	0.4
4700557	99	P	SUR	48	-30	724	0	0.3	-0.0	0.3
4700560	99	P	SUR	52	-21	723	0	0.5	0.4	0.7
4700562	99	P	SUR	50	-27	740	0	0.4	0.2	0.5
4700567	99	P	SUR	50	-38	719	719	0.0	0.0	0.0
4700568	99	P	SUR	48	-26	719	0	0.5	0.4	0.6
4700569	99	P	SUR	46	-20	719	0	0.6	-0.4	0.7
4700574	99	P	SUR	42	-49	728	0	0.4	0.2	0.4
4700584	99	P	SUR	44	-44	730	14	4.0	-1.0	4.1
4700589	99	P	SUR	67	-63	737	0	0.5	-2.2	2.2
4701657	99	P	SUR	80	-65	363	0	0.5	-1.7	1.8

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
47509	99	P	SUR	70	-20	735	42	5.5	-4.7	7.2
47539	99	P	SUR	44	-28	730	0	0.4	0.1	0.4
47540	99	P	SUR	52	-29	733	0	0.5	0.6	0.8
47546	99	P	SUR	44	-50	719	0	0.4	0.3	0.5
47549	99	P	SUR	54	-28	731	0	0.6	0.0	0.6
47551	99	P	SUR	54	-57	736	1	3.7	-0.3	3.7
47552	99	P	SUR	67	-63	730	0	0.3	-1.9	2.0
47555	99	P	SUR	46	-51	732	0	0.4	0.2	0.4
47557	99	P	SUR	48	-30	733	0	0.3	-0.0	0.3
47560	99	P	SUR	52	-21	737	0	0.5	0.4	0.7
47562	99	P	SUR	50	-27	736	0	0.4	0.2	0.5
47567	99	P	SUR	50	-38	741	741	0.0	0.0	0.0
47568	99	P	SUR	48	-26	731	0	0.5	0.4	0.7
47569	99	P	SUR	46	-20	734	0	0.6	-0.4	0.7
47574	99	P	SUR	42	-49	737	0	0.4	0.2	0.4
47584	99	P	SUR	44	-44	739	16	3.9	-1.0	4.0
47589	99	P	SUR	67	-63	739	0	0.5	-2.2	2.2
4800520	99	P	SUR	84	-21	321	0	0.6	0.0	0.6
4800568	99	P	SUR	60	-3	618	0	0.6	-0.4	0.7
4800664	99	P	SUR	73	-69	743	0	0.4	0.3	0.5
48520	99	P	SUR	84	-21	307	0	0.6	0.0	0.6
48568	99	P	SUR	60	-3	715	0	0.4	-0.4	0.5
6100001	99	P	SUR	43	8	742	0	0.4	0.1	0.4
6100002	99	P	SUR	42	5	743	0	0.3	0.2	0.4
6200091	99	P	SUR	53	-5	736	0	0.4	0.0	0.4
6200092	99	P	SUR	51	-11	736	0	0.4	-0.2	0.5
6200093	99	P	SUR	55	-10	736	0	0.5	-0.3	0.5
6200094	99	P	SUR	52	-7	736	0	0.4	0.0	0.4
62001	99	P	SUR	45	-5	744	0	0.5	0.1	0.5
6200513	99	P	SUR	63	-32	743	0	0.4	-0.0	0.4
6200553	99	P	SUR	60	-27	743	0	0.4	-0.1	0.4
6200554	99	P	SUR	44	-15	722	0	0.4	0.2	0.4
6200556	99	P	SUR	34	-25	742	0	0.3	-0.1	0.3
6200557	99	P	SUR	54	-11	630	0	0.4	0.2	0.4
6200558	99	P	SUR	48	-19	743	0	0.6	0.1	0.6
6200559	99	P	SUR	45	-33	743	0	0.4	0.6	0.7
6200560	99	P	SUR	24	-26	742	0	0.3	0.5	0.6
6200713	99	P	SUR	36	-58	731	0	0.4	-0.5	0.7
6200714	99	P	SUR	41	-46	730	0	0.4	-0.4	0.6
6200940	99	P	SUR	42	-23	743	0	0.3	0.0	0.3
6200941	99	P	SUR	24	-25	743	0	0.3	-0.1	0.3
62027	99	P	SUR	49	-2	221	0	0.5	0.1	0.5
62029	99	P	SUR	49	-12	1322	1	0.7	-0.1	0.7

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
62030	99	P	SUR	50	-4	1255	0	0.4	0.3	0.5
6203501	99	P	SUR	36	-26	743	0	0.3	0.6	0.6
6203503	99	P	SUR	37	-20	743	0	0.3	0.0	0.3
6203504	99	P	SUR	35	-30	741	0	0.3	0.4	0.4
62050	99	P	SUR	50	-4	745	0	0.3	0.3	0.5
62081	99	P	SUR	51	-13	743	0	0.4	-0.1	0.5
62082	99	P	SUR	55	6	2	0	0.2	0.0	0.2
62086	99	P	SUR	55	6	727	0	0.3	0.0	0.3
62095	99	P	SUR	53	-16	713	2	0.4	-0.3	0.5
62102	99	P	SUR	58	2	745	0	0.4	0.3	0.5
62103	99	P	SUR	50	-3	746	0	0.4	0.6	0.7
62104	99	P	SUR	57	1	746	0	0.4	0.3	0.5
62105	99	P	SUR	55	-13	685	1	0.4	-0.2	0.5
62107	99	P	SUR	50	-6	1448	2	0.4	0.5	0.6
62111	99	P	SUR	58	0	742	0	0.4	1.5	1.6
62112	99	P	SUR	58	0	747	0	0.4	0.4	0.6
62113	99	P	SUR	58	0	746	0	0.4	0.4	0.6
62114	99	P	SUR	58	0	1485	0	0.5	0.4	0.6
62115	99	P	SUR	58	-3	747	0	0.4	0.3	0.5
62116	99	P	SUR	58	1	741	0	0.4	0.2	0.5
62117	99	P	SUR	58	0	744	0	0.3	0.4	0.5
62118	99	P	SUR	58	1	718	0	0.4	0.8	0.8
62119	99	P	SUR	57	2	745	0	0.4	0.3	0.5
62120	99	P	SUR	56	2	744	0	0.4	0.1	0.4
62121	99	P	SUR	54	3	676	0	0.4	0.7	0.8
62122	99	P	SUR	57	2	1483	0	0.4	0.3	0.5
62123	99	P	SUR	56	2	1486	0	0.5	0.3	0.5
62124	99	P	SUR	54	-4	654	0	0.3	0.2	0.4
62127	99	P	SUR	54	1	746	0	0.3	0.8	0.8
62128	99	P	SUR	59	1	711	0	0.5	0.5	0.7
62129	99	P	SUR	58	0	746	0	0.4	0.3	0.5
62130	99	P	SUR	59	1	743	0	0.3	0.2	0.4
62131	99	P	SUR	54	1	746	0	0.4	0.7	0.7
62132	99	P	SUR	56	2	745	0	0.4	0.7	0.8
62133	99	P	SUR	57	1	747	0	0.5	0.3	0.5
62134	99	P	SUR	58	1	740	0	0.3	0.5	0.6
62135	99	P	SUR	54	2	743	0	0.3	0.5	0.6
62136	99	P	SUR	54	3	746	0	0.4	0.8	0.8
62137	99	P	SUR	57	2	741	0	0.3	0.2	0.4
62138	99	P	SUR	54	0	1486	0	0.4	1.0	1.1
62139	99	P	SUR	53	2	1485	0	0.3	0.5	0.6
62140	99	P	SUR	57	1	1473	0	0.4	0.3	0.5
62141	99	P	SUR	61	1	745	0	0.4	0.2	0.5

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
62143	99	P	SUR	58	2	744	0	0.4	0.7	0.8
62144	99	P	SUR	53	2	743	0	0.3	0.5	0.6
62145	99	P	SUR	53	3	1477	0	0.3	0.6	0.7
62146	99	P	SUR	57	2	738	0	0.4	0.5	0.7
62148	99	P	SUR	54	2	420	0	0.3	1.1	1.2
62149	99	P	SUR	54	1	746	0	0.3	0.9	1.0
62150	99	P	SUR	54	1	693	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	746	0	0.4	0.7	0.7
62153	99	P	SUR	57	2	1437	0	0.3	0.4	0.5
62154	99	P	SUR	56	2	746	0	0.3	0.2	0.4
62155	99	P	SUR	58	1	714	0	0.3	0.6	0.7
62157	99	P	SUR	58	0	745	0	0.4	0.3	0.5
62160	99	P	SUR	57	2	1486	0	0.3	0.4	0.5
62161	99	P	SUR	58	1	643	0	0.6	0.1	0.6
62162	99	P	SUR	57	1	704	0	0.6	0.2	0.7
62163	99	P	SUR	48	-8	741	0	0.4	0.3	0.5
62164	99	P	SUR	57	1	747	0	0.3	0.5	0.6
62165	99	P	SUR	54	1	743	0	0.3	0.7	0.8
62167	99	P	SUR	53	2	1487	0	0.3	0.5	0.6
62168	99	P	SUR	58	1	738	0	0.3	0.3	0.5
62170	99	P	SUR	51	2	747	0	0.7	-0.3	0.7
62296	99	P	SUR	53	2	742	0	0.3	0.3	0.4
62297	99	P	SUR	59	2	1434	0	0.3	0.3	0.5
62302	99	P	SUR	61	-2	747	0	0.6	0.2	0.6
62304	99	P	SUR	51	2	709	2	0.5	0.3	0.6
62513	99	P	SUR	63	-32	744	0	0.4	-0.0	0.4
62553	99	P	SUR	60	-27	744	0	0.4	-0.1	0.4
62554	99	P	SUR	44	-15	722	0	0.4	0.2	0.4
62556	99	P	SUR	34	-25	743	0	0.3	-0.1	0.3
62557	99	P	SUR	54	-11	631	0	0.4	0.2	0.4
62558	99	P	SUR	48	-19	744	0	0.6	0.1	0.6
62559	99	P	SUR	45	-33	744	0	0.4	0.6	0.7
62560	99	P	SUR	24	-26	743	0	0.3	0.5	0.6
62713	99	P	SUR	36	-58	732	0	0.4	-0.5	0.7
62714	99	P	SUR	41	-46	731	0	0.4	-0.4	0.6
62940	99	P	SUR	42	-23	743	0	0.3	0.0	0.3
62941	99	P	SUR	24	-25	744	0	0.3	-0.1	0.3
6300561	99	P	SUR	74	6	743	0	0.4	0.1	0.4
6300646	99	P	SUR	68	5	742	0	0.3	0.4	0.5
63055	99	P	SUR	61	2	747	0	0.4	0.2	0.5
63056	99	P	SUR	60	2	746	0	0.4	0.5	0.6
63057	99	P	SUR	59	2	746	0	0.3	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
63058	99	P	SUR	53	2	2227	0	0.3	0.6	0.7
63059	99	P	SUR	58	-1	742	0	0.4	0.6	0.7
63101	99	P	SUR	61	1	747	0	0.4	0.3	0.5
63102	99	P	SUR	61	1	747	0	0.4	0.4	0.6
63103	99	P	SUR	61	1	747	0	0.3	0.5	0.6
63104	99	P	SUR	61	2	747	0	0.4	0.3	0.5
63105	99	P	SUR	61	2	746	0	0.4	0.3	0.5
63108	99	P	SUR	61	2	747	0	0.5	0.2	0.5
63109	99	P	SUR	60	2	746	0	0.4	0.1	0.4
63110	99	P	SUR	60	2	746	0	0.4	0.0	0.4
63111	99	P	SUR	61	2	1419	0	0.4	0.0	0.4
63112	99	P	SUR	61	1	747	0	0.4	-0.0	0.4
63115	99	P	SUR	62	1	747	0	0.5	0.3	0.6
63117	99	P	SUR	61	1	1487	0	0.4	0.5	0.7
63118	99	P	SUR	57	2	1478	0	0.3	0.1	0.4
63119	99	P	SUR	58	-4	45	0	1.0	0.6	1.1
63120	99	P	SUR	54	2	745	0	0.3	0.7	0.8
63561	99	P	SUR	74	6	695	0	0.4	0.1	0.4
63646	99	P	SUR	68	5	744	0	0.3	0.4	0.5
6400476	99	P	SUR	87	-7	740	0	0.4	-0.1	0.4
6400519	99	P	SUR	72	-8	743	0	0.5	0.2	0.6
6400523	99	P	SUR	72	16	739	0	0.3	0.2	0.4
6400524	99	P	SUR	67	13	738	0	0.4	0.6	0.7
6400526	99	P	SUR	64	-53	659	0	0.4	0.1	0.4
6400528	99	P	SUR	72	26	743	0	0.3	0.3	0.4
6400530	99	P	SUR	79	8	742	0	0.5	0.1	0.5
6400534	99	P	SUR	62	-30	354	354	0.0	0.0	0.0
6400547	99	P	SUR	71	0	743	0	0.3	0.0	0.3
6400549	99	P	SUR	65	-21	743	0	0.4	-0.1	0.4
6400551	99	P	SUR	64	-32	743	0	0.3	-0.0	0.3
6400553	99	P	SUR	71	-4	743	0	0.4	-0.3	0.5
6400554	99	P	SUR	66	-18	743	0	0.3	0.2	0.4
6400555	99	P	SUR	62	6	742	0	1.0	-0.5	1.1
6400560	99	P	SUR	66	-22	739	0	0.3	0.1	0.4
6400562	99	P	SUR	64	-29	743	0	0.3	0.0	0.3
6400606	99	P	SUR	74	34	617	0	0.4	0.7	0.8
6400666	99	P	SUR	69	-16	743	0	0.3	0.4	0.5
6400694	99	P	SUR	59	-40	743	0	0.7	-0.4	0.8
6400749	99	P	SUR	78	-5	184	0	0.3	-0.4	0.5
6400757	99	P	SUR	86	-55	737	0	0.5	-0.4	0.6
6400758	99	P	SUR	84	-3	684	0	0.5	-0.3	0.5
6400760	99	P	SUR	87	-7	247	0	0.4	-0.2	0.5
6400973	99	P	SUR	84	4	742	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
6401500	99	P	SUR	62	-25	743	0	0.4	0.3	0.5
6401550	99	P	SUR	61	-8	743	0	0.4	0.3	0.5
6401551	99	P	SUR	63	-19	743	0	0.3	0.0	0.3
6401552	99	P	SUR	61	-34	743	0	0.4	0.6	0.7
64041	99	P	SUR	61	-3	747	0	0.4	0.3	0.5
64045	99	P	SUR	59	-12	1483	2	0.5	-0.1	0.5
64046	99	P	SUR	61	-4	744	0	0.4	0.2	0.4
64476	99	P	SUR	87	-7	727	0	0.4	-0.1	0.5
64519	99	P	SUR	72	-8	743	0	0.5	0.2	0.6
64523	99	P	SUR	72	16	740	0	0.3	0.2	0.4
64524	99	P	SUR	67	13	738	0	0.4	0.6	0.7
64526	99	P	SUR	64	-53	659	0	0.4	0.1	0.4
64528	99	P	SUR	72	26	744	0	0.3	0.3	0.4
64530	99	P	SUR	79	8	743	0	0.5	0.1	0.5
64534	99	P	SUR	62	-30	322	322	0.0	0.0	0.0
64547	99	P	SUR	71	0	744	0	0.3	0.0	0.3
64549	99	P	SUR	65	-21	743	0	0.4	-0.1	0.4
64551	99	P	SUR	64	-32	744	0	0.3	-0.0	0.3
64553	99	P	SUR	71	-4	744	0	0.4	-0.3	0.5
64554	99	P	SUR	66	-18	744	0	0.3	0.2	0.4
64555	99	P	SUR	62	6	742	0	1.0	-0.5	1.1
64560	99	P	SUR	66	-22	739	0	0.3	0.1	0.4
64562	99	P	SUR	64	-29	744	0	0.3	0.0	0.3
64606	99	P	SUR	74	34	617	0	0.4	0.7	0.8
64666	99	P	SUR	69	-16	744	0	0.3	0.4	0.5
64694	99	P	SUR	59	-39	744	0	0.7	-0.4	0.8
64749	99	P	SUR	78	-5	184	0	0.3	-0.4	0.5
64757	99	P	SUR	86	-55	734	0	0.5	-0.4	0.6
64758	99	P	SUR	84	-3	734	0	0.5	-0.3	0.6
64760	99	P	SUR	87	-7	244	0	0.5	-0.2	0.5
64973	99	P	SUR	84	4	736	0	0.4	0.0	0.4
6500514	99	P	SUR	52	-29	743	0	0.6	0.1	0.6
6500515	99	P	SUR	62	-35	743	0	0.4	-0.0	0.4
6500519	99	P	SUR	59	-11	743	1	1.4	0.6	1.6
6500596	99	P	SUR	59	-16	733	0	0.5	0.4	0.6
6500599	99	P	SUR	61	-10	742	0	0.5	0.1	0.5
6500601	99	P	SUR	66	-56	718	0	0.4	0.0	0.4
6500602	99	P	SUR	55	-34	743	0	0.5	-1.0	1.2
6500603	99	P	SUR	68	-54	734	0	0.3	0.0	0.3
6501551	99	P	SUR	59	-50	742	0	0.4	-0.1	0.4
6501552	99	P	SUR	59	-50	743	0	0.4	0.3	0.5
6501553	99	P	SUR	59	-53	742	0	0.4	0.2	0.4
6501555	99	P	SUR	65	-53	743	0	0.5	-0.2	0.5

DRIFTER MONITORING STATISTICS (EUCOS)
(CONTINUED)

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS
6501556	99	P	SUR	59	-45	743	0	0.4	0.3	0.5
6501557	99	P	SUR	59	-36	742	0	0.4	0.2	0.4
6501558	99	P	SUR	62	-52	624	0	0.4	0.2	0.4
65514	99	P	SUR	52	-29	743	0	0.6	0.1	0.6
65515	99	P	SUR	63	-35	743	0	0.4	-0.0	0.4
65519	99	P	SUR	59	-11	744	1	1.4	0.6	1.6
65596	99	P	SUR	59	-16	733	0	0.5	0.4	0.6
65599	99	P	SUR	61	-10	742	0	0.5	0.1	0.5
65601	99	P	SUR	66	-56	719	0	0.4	0.0	0.4
65602	99	P	SUR	55	-34	743	0	0.5	-1.0	1.1
65603	99	P	SUR	68	-54	735	0	0.3	0.0	0.3
71245	99	P	SUR	62	-66	2304	120	2.5	-0.2	2.5

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

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND SPEED (M/S)
 AREA : 10N - 90N, 70W - 40E
 PERIOD : AUG 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
1300001	99	SPEED	SUR	11	-23	696	0	0	1.7	-0.2	1.7
1300002	99	SPEED	SUR	20	-23	377	0	0	0.9	0.2	0.9
13002	99	SPEED	SUR	20	-23	250	0	0	0.9	0.3	1.0
4100026	99	SPEED	SUR	11	-38	339	0	0	1.4	0.6	1.5
4100139	99	SPEED	SUR	20	-38	351	0	0	0.8	-0.2	0.9
4100300	99	SPEED	SUR	16	-57	740	0	0	0.9	-0.2	1.0
41026	99	SPEED	SUR	12	-38	103	0	0	1.3	0.7	1.5
41040	99	SPEED	SUR	15	-53	736	0	0	1.1	-0.1	1.1
41041	99	SPEED	SUR	14	-46	728	0	0	1.1	-0.0	1.1
41043	99	SPEED	SUR	21	-65	909	0	0	1.0	-0.5	1.1
41044	99	SPEED	SUR	22	-59	928	0	0	1.0	-0.3	1.1
41046	99	SPEED	SUR	24	-68	926	0	0	1.1	-0.4	1.2
41048	99	SPEED	SUR	32	-70	752	0	0	1.3	0.0	1.3
41049	99	SPEED	SUR	28	-63	736	0	0	1.5	0.2	1.5
41051	99	SPEED	SUR	18	-65	564	0	0	1.8	-0.8	2.0
41052	99	SPEED	SUR	18	-65	1833	0	0	1.1	-0.3	1.2
41053	99	SPEED	SUR	19	-66	1705	0	0	1.5	0.1	1.5
41056	99	SPEED	SUR	18	-66	1629	0	0	1.2	-0.6	1.3
41139	99	SPEED	SUR	20	-38	241	0	0	0.9	-0.2	0.9
42059	99	SPEED	SUR	15	-68	945	0	0	1.0	0.1	1.0
42085	99	SPEED	SUR	18	-67	1710	0	0	1.3	-0.2	1.3
42087	99	SPEED	SUR	11	-61	326	0	0	1.3	0.2	1.3
42088	99	SPEED	SUR	11	-61	1408	0	0	1.3	-2.0	2.4
42090	99	SPEED	SUR	18	-70	1742	0	0	1.4	0.0	1.4
44005	99	SPEED	SUR	43	-69	747	0	0	1.2	0.1	1.2
44008	99	SPEED	SUR	41	-69	736	0	0	1.1	-0.4	1.2
44018	99	SPEED	SUR	42	-70	841	0	0	1.9	-0.3	1.9
44024	99	SPEED	SUR	42	-66	828	0	0	1.1	0.1	1.1
44027	99	SPEED	SUR	44	-67	836	0	0	1.3	-0.8	1.5
44032	99	SPEED	SUR	44	-69	743	0	0	1.5	-1.1	1.8
44033	99	SPEED	SUR	44	-69	741	0	0	1.6	-0.5	1.6
44034	99	SPEED	SUR	44	-68	730	0	0	1.4	-1.5	2.0
44037	99	SPEED	SUR	44	-68	595	0	0	1.2	-0.4	1.3
44137	99	SPEED	SUR	42	-62	746	0	0	1.2	-0.1	1.2

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF

ELEMENT MONITORED : WIND SPEED (M/S)

(CONTINU

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
44139	99	SPEED	SUR	44	-57	736	0	0	1.3	-0.1	1.3
44141	99	SPEED	SUR	43	-58	688	0	0	1.5	-0.1	1.5
44150	99	SPEED	SUR	43	-64	15	0	0	0.9	-0.5	1.0
44251	99	SPEED	SUR	46	-53	737	0	0	1.4	-0.7	1.5
44255	99	SPEED	SUR	47	-57	1165	0	0	1.3	-0.2	1.3
44258	99	SPEED	SUR	45	-63	739	0	0	1.3	-0.1	1.3
45138	99	SPEED	SUR	50	-66	725	0	0	1.8	-0.3	1.8
6100001	99	SPEED	SUR	43	8	742	0	0	1.4	-0.2	1.4
6100002	99	SPEED	SUR	42	5	743	0	0	4.2	5.8	7.2
6200091	99	SPEED	SUR	53	-5	736	0	0	1.2	-0.2	1.2
6200092	99	SPEED	SUR	51	-11	736	0	0	1.2	-0.4	1.3
6200093	99	SPEED	SUR	55	-10	736	0	0	1.1	-0.3	1.1
6200094	99	SPEED	SUR	52	-7	736	0	0	1.3	-0.2	1.3
62001	99	SPEED	SUR	45	-5	744	0	0	1.2	0.6	1.3
62027	99	SPEED	SUR	49	-2	184	0	0	1.2	0.5	1.3
62029	99	SPEED	SUR	49	-12	1322	0	0	0.9	0.4	1.0
62050	99	SPEED	SUR	50	-4	666	0	0	1.2	0.2	1.3
62081	99	SPEED	SUR	51	-13	743	0	0	1.1	0.1	1.1
62082	99	SPEED	SUR	55	6	2	0	0	0.3	1.3	1.3
62086	99	SPEED	SUR	55	6	741	0	0	1.3	0.4	1.3
62095	99	SPEED	SUR	53	-16	711	0	0	1.1	0.2	1.1
62102	99	SPEED	SUR	58	2	745	0	0	1.2	-0.0	1.2
62103	99	SPEED	SUR	50	-3	745	0	0	1.5	0.8	1.8
62104	99	SPEED	SUR	57	1	746	0	0	1.1	-0.2	1.1
62105	99	SPEED	SUR	55	-13	673	0	0	1.1	0.4	1.2
62107	99	SPEED	SUR	50	-6	1444	0	0	1.4	0.9	1.7
62111	99	SPEED	SUR	58	0	436	0	0	1.3	0.1	1.3
62112	99	SPEED	SUR	58	0	747	0	0	2.1	-1.2	2.4
62113	99	SPEED	SUR	58	0	698	0	0	1.9	-0.5	2.0
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	720	0	0	1.3	0.5	1.4
62119	99	SPEED	SUR	57	2	746	0	0	1.3	-0.2	1.4
62120	99	SPEED	SUR	56	2	744	0	0	1.1	0.0	1.2
62121	99	SPEED	SUR	54	3	676	0	0	1.1	-0.3	1.2
62122	99	SPEED	SUR	57	2	1483	0	0	1.1	-0.0	1.1
62123	99	SPEED	SUR	56	2	1486	0	0	1.2	0.1	1.2
62128	99	SPEED	SUR	59	1	711	0	0	1.5	0.2	1.5
62129	99	SPEED	SUR	58	0	746	0	0	1.2	-0.2	1.3
62131	99	SPEED	SUR	54	1	746	0	0	1.9	-1.2	2.2
62132	99	SPEED	SUR	56	2	745	0	0	1.7	-1.2	2.1

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF

ELEMENT MONITORED : WIND SPEED (M/S)

(CONTINU

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
62133	99	SPEED	SUR	57	1	747	0	0	1.3	-0.1	1.3
62134	99	SPEED	SUR	58	1	740	0	0	1.3	-0.1	1.3
62140	99	SPEED	SUR	57	1	1414	0	0	1.2	-0.1	1.2
62143	99	SPEED	SUR	58	2	744	0	0	1.9	-0.9	2.1
62144	99	SPEED	SUR	53	2	743	0	0	1.5	-0.4	1.6
62145	99	SPEED	SUR	53	3	1437	0	0	1.6	-0.7	1.8
62146	99	SPEED	SUR	57	2	722	0	0	1.1	0.0	1.1
62148	99	SPEED	SUR	54	2	420	0	0	1.8	-0.6	1.9
62149	99	SPEED	SUR	54	1	746	0	0	1.4	-0.1	1.4
62150	99	SPEED	SUR	54	1	693	0	0	1.6	-0.6	1.7
62152	99	SPEED	SUR	57	2	746	0	0	1.5	-1.0	1.8
62153	99	SPEED	SUR	57	2	1437	0	0	2.0	-1.2	2.3
62154	99	SPEED	SUR	56	2	746	0	0	1.1	-0.4	1.2
62155	99	SPEED	SUR	58	1	714	0	0	1.3	0.1	1.3
62163	99	SPEED	SUR	48	-8	741	0	0	1.0	0.1	1.0
62164	99	SPEED	SUR	57	1	747	0	0	1.4	-0.8	1.6
62165	99	SPEED	SUR	54	1	743	0	0	1.5	-0.7	1.7
62170	99	SPEED	SUR	51	2	747	0	0	1.8	1.8	2.5
62304	99	SPEED	SUR	51	2	708	0	0	1.6	1.2	2.0
62305	99	SPEED	SUR	50	0	791	0	0	1.5	0.9	1.8
63055	99	SPEED	SUR	61	2	747	0	0	1.3	-0.8	1.5
63056	99	SPEED	SUR	60	2	746	0	0	1.3	0.1	1.3
63057	99	SPEED	SUR	59	2	746	0	0	1.6	0.1	1.6
63058	99	SPEED	SUR	53	2	776	0	0	1.2	0.0	1.2
63101	99	SPEED	SUR	61	1	740	0	0	1.3	-0.5	1.4
63103	99	SPEED	SUR	61	1	149	0	0	1.7	0.0	1.8
63104	99	SPEED	SUR	61	2	747	0	0	1.2	-0.1	1.2
63105	99	SPEED	SUR	61	2	746	0	0	1.3	-0.0	1.3
63106	99	SPEED	SUR	61	2	746	0	0	1.3	0.0	1.3
63108	99	SPEED	SUR	61	2	747	0	0	1.3	0.0	1.3
63109	99	SPEED	SUR	60	2	740	0	0	1.4	0.3	1.4
63110	99	SPEED	SUR	60	2	745	0	0	1.4	-0.3	1.4
63112	99	SPEED	SUR	61	1	747	0	0	1.2	-0.2	1.2
63113	99	SPEED	SUR	61	2	746	0	0	1.2	-0.1	1.2
63115	99	SPEED	SUR	62	1	747	0	0	1.2	-0.1	1.2
63117	99	SPEED	SUR	61	1	1487	0	0	1.2	-0.1	1.2
63119	99	SPEED	SUR	58	-4	45	1	0	2.6	-0.5	2.7
64041	99	SPEED	SUR	61	-3	747	0	0	1.2	0.2	1.2
64045	99	SPEED	SUR	59	-12	1483	0	0	1.1	0.3	1.1
64046	99	SPEED	SUR	61	-4	744	0	0	1.0	0.3	1.1
66021	99	SPEED	SUR	55	14	730	0	0	1.3	0.3	1.4

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF

ELEMENT MONITORED : WIND SPEED (M/S)

(CONTINU

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
66024	99	SPEED	SUR	55	13	737	0	0	1.3	0.2	1.3

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

DRIFTER MONITORING STATISTICS (EUCOS)

MONITORING CENTRE : ECMWF
 ELEMENT MONITORED : WIND DIRECTION (DEGREES)
 AREA : 10N - 90N, 70W - 40E
 PERIOD : AUG 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	408	0	0	29.4	-2.1	29.5
1300002	99	DIRN	SUR	20	-23	351	0	0	11.9	7.6	14.1
13002	99	DIRN	SUR	20	-23	226	0	0	12.0	7.4	14.1
4100026	99	DIRN	SUR	11	-38	240	0	0	19.1	-0.0	19.1
4100139	99	DIRN	SUR	20	-38	349	0	0	9.5	1.7	9.7
41002	99	DIRN	SUR	32	-75	596	0	0	17.8	7.5	19.3
4100300	99	DIRN	SUR	16	-57	702	0	0	11.4	6.2	12.9
41004	99	DIRN	SUR	33	-79	706	0	0	19.0	6.3	20.0
41008	99	DIRN	SUR	31	-81	692	0	0	20.2	8.1	21.8
41009	99	DIRN	SUR	29	-80	474	0	0	20.0	3.9	20.4
41010	99	DIRN	SUR	29	-79	335	0	0	17.9	6.3	19.0
41013	99	DIRN	SUR	33	-78	833	0	0	16.4	8.2	18.4
41024	99	DIRN	SUR	34	-79	556	0	0	23.2	-6.3	24.1
41025	99	DIRN	SUR	35	-75	531	0	0	19.4	-0.4	19.4
41026	99	DIRN	SUR	12	-38	70	0	0	18.7	-3.9	19.1
41029	99	DIRN	SUR	33	-80	730	0	0	25.7	-3.9	26.0
41033	99	DIRN	SUR	32	-80	639	0	0	22.2	-3.8	22.5
41037	99	DIRN	SUR	34	-77	567	0	0	20.8	4.4	21.2
41038	99	DIRN	SUR	34	-78	526	0	0	25.5	-7.7	26.6
41040	99	DIRN	SUR	15	-53	679	0	0	13.0	5.2	14.0
41041	99	DIRN	SUR	14	-46	633	0	0	11.1	5.6	12.5
41043	99	DIRN	SUR	21	-65	829	0	0	12.0	7.0	13.8
41044	99	DIRN	SUR	22	-59	776	0	0	13.5	2.3	13.7
41046	99	DIRN	SUR	24	-68	698	0	0	18.9	7.4	20.3
41047	99	DIRN	SUR	28	-72	457	0	0	19.1	1.2	19.2
41048	99	DIRN	SUR	32	-70	531	0	0	17.6	8.8	19.7
41049	99	DIRN	SUR	28	-63	283	0	0	20.3	4.5	20.8
41051	99	DIRN	SUR	18	-65	528	0	0	13.9	-7.7	15.9
41052	99	DIRN	SUR	18	-65	1754	0	0	14.1	4.9	14.9
41053	99	DIRN	SUR	19	-66	1234	0	0	17.3	2.1	17.5
41056	99	DIRN	SUR	18	-66	1522	0	0	15.9	5.0	16.7
41057	99	DIRN	SUR	20	-71	1275	0	0	15.8	-23.7	28.5

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
41064	99	DIRN	SUR	34	-77	581	0	0	18.7	-0.8	18.7
41139	99	DIRN	SUR	20	-38	239	0	0	9.6	2.2	9.8
42013	99	DIRN	SUR	27	-83	579	0	0	33.1	-6.4	33.7
42022	99	DIRN	SUR	28	-84	844	0	0	24.2	-1.0	24.3
42023	99	DIRN	SUR	26	-83	703	0	0	25.1	0.6	25.1
42036	99	DIRN	SUR	29	-85	481	0	0	24.7	-3.8	25.0
42056	99	DIRN	SUR	20	-85	823	0	0	14.5	3.1	14.8
42058	99	DIRN	SUR	15	-75	725	0	0	9.3	0.7	9.3
42059	99	DIRN	SUR	15	-68	931	0	0	11.8	3.9	12.5
42085	99	DIRN	SUR	18	-67	1574	0	0	16.7	8.6	18.8
42087	99	DIRN	SUR	11	-61	202	0	0	21.0	-12.2	24.3
42088	99	DIRN	SUR	11	-61	741	0	0	22.7	-11.6	25.4
42089	99	DIRN	SUR	20	-80	1845	0	0	20.8	-1.9	20.9
42090	99	DIRN	SUR	18	-70	574	0	0	34.7	-24.3	42.3
44005	99	DIRN	SUR	43	-69	632	0	0	17.9	11.5	21.3
44007	99	DIRN	SUR	44	-70	467	0	0	26.1	4.3	26.5
44008	99	DIRN	SUR	41	-69	521	0	0	13.1	15.4	20.2
44013	99	DIRN	SUR	42	-71	577	0	0	18.0	16.3	24.2
44014	99	DIRN	SUR	37	-75	594	0	0	17.8	5.2	18.5
44017	99	DIRN	SUR	41	-72	539	0	0	16.7	2.2	16.8
44018	99	DIRN	SUR	42	-70	618	0	0	27.5	11.5	29.8
44020	99	DIRN	SUR	41	-70	623	0	0	18.3	2.4	18.5
44022	99	DIRN	SUR	41	-74	199	0	0	16.8	5.8	17.8
44024	99	DIRN	SUR	42	-66	667	0	0	13.9	4.9	14.7
44025	99	DIRN	SUR	40	-73	621	0	0	12.8	1.5	12.9
44027	99	DIRN	SUR	44	-67	525	0	0	16.8	16.8	23.8
44029	99	DIRN	SUR	43	-71	666	0	0	17.5	7.3	18.9
44030	99	DIRN	SUR	43	-70	456	0	0	23.0	5.6	23.6
44032	99	DIRN	SUR	44	-69	432	0	0	21.8	5.5	22.5
44033	99	DIRN	SUR	44	-69	359	0	0	21.2	3.4	21.5
44034	99	DIRN	SUR	44	-68	361	0	0	18.9	8.8	20.8
44037	99	DIRN	SUR	44	-68	437	0	0	11.7	5.3	12.9
44039	99	DIRN	SUR	41	-73	443	0	0	22.0	1.0	22.0
44041	99	DIRN	SUR	37	-77	38	0	0	27.5	1.9	27.6
44042	99	DIRN	SUR	38	-76	615	0	0	25.0	-17.7	30.6
44043	99	DIRN	SUR	39	-76	579	0	0	23.9	-13.0	27.3
44057	99	DIRN	SUR	40	-76	247	0	0	23.5	-14.6	27.7
44058	99	DIRN	SUR	38	-76	641	0	0	29.0	53.1	60.5
44060	99	DIRN	SUR	41	-72	336	0	0	21.3	0.8	21.3
44061	99	DIRN	SUR	39	-77	72	0	0	14.8	-4.2	15.4
44062	99	DIRN	SUR	39	-76	628	0	0	21.8	-10.4	24.1

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

WMO IDENT	OBS TIME	ELM	LEVEL	MEAN LAT	MEAN LONG	NUM OBS	NUM GROSS	% GROSS	SD	BIAS	RMS
44063	99	DIRN	SUR	39	-76	554	0	0	20.5	-13.0	24.3
44064	99	DIRN	SUR	37	-76	698	0	0	19.7	-17.1	26.1
44065	99	DIRN	SUR	40	-74	535	0	0	16.8	3.2	17.1
44069	99	DIRN	SUR	41	-73	605	0	0	21.0	-3.3	21.3
44072	99	DIRN	SUR	37	-76	754	0	0	24.1	-8.4	25.5
44137	99	DIRN	SUR	42	-62	619	0	0	17.3	3.6	17.6
44139	99	DIRN	SUR	44	-57	615	0	0	14.4	7.5	16.2
44141	99	DIRN	SUR	43	-58	572	0	0	13.6	3.0	13.9
44150	99	DIRN	SUR	43	-64	12	0	0	20.0	0.6	20.0
44251	99	DIRN	SUR	46	-53	578	0	0	14.8	13.5	20.0
44255	99	DIRN	SUR	47	-57	952	0	0	14.3	9.7	17.3
44258	99	DIRN	SUR	45	-63	553	0	0	14.7	4.5	15.4
45003	99	DIRN	SUR	45	-83	497	0	0	20.9	2.0	21.0
45005	99	DIRN	SUR	42	-82	708	0	0	21.4	4.8	21.9
45008	99	DIRN	SUR	44	-82	817	0	0	24.4	8.3	25.8
45012	99	DIRN	SUR	44	-77	461	0	0	29.5	12.2	31.9
45132	99	DIRN	SUR	43	-81	498	0	0	22.2	-12.9	25.7
45135	99	DIRN	SUR	44	-77	663	0	0	21.6	-18.0	28.2
45137	99	DIRN	SUR	46	-81	532	0	0	23.6	-10.4	25.8
45138	99	DIRN	SUR	50	-66	447	0	0	23.7	4.6	24.2
45139	99	DIRN	SUR	43	-80	344	0	0	26.7	-22.5	34.9
45142	99	DIRN	SUR	43	-79	491	0	0	23.4	-25.3	34.5
45143	99	DIRN	SUR	45	-81	706	0	0	24.8	-18.5	30.9
45147	99	DIRN	SUR	42	-83	421	0	0	23.4	-2.5	23.5
45149	99	DIRN	SUR	44	-82	432	0	0	24.4	-9.8	26.3
45151	99	DIRN	SUR	45	-79	403	0	0	25.4	6.5	26.2
45152	99	DIRN	SUR	46	-80	258	0	0	22.0	-29.2	36.6
45154	99	DIRN	SUR	46	-83	622	0	0	22.9	-13.9	26.8
45159	99	DIRN	SUR	44	-79	360	0	0	27.0	-8.1	28.1
45162	99	DIRN	SUR	45	-83	424	0	0	22.2	-3.6	22.5
45163	99	DIRN	SUR	44	-84	467	0	0	28.5	-2.9	28.6
45164	99	DIRN	SUR	42	-82	410	0	0	26.6	-8.0	27.8
45165	99	DIRN	SUR	42	-83	721	0	0	18.6	-33.1	38.0
45167	99	DIRN	SUR	42	-80	673	0	0	30.3	-18.3	35.3
45169	99	DIRN	SUR	42	-82	712	0	0	24.1	-10.0	26.1
45175	99	DIRN	SUR	46	-85	839	0	0	34.1	-15.8	37.6
45176	99	DIRN	SUR	42	-82	729	0	0	27.4	-9.4	29.0
6200091	99	DIRN	SUR	53	-5	519	0	0	17.8	9.5	20.2
6200092	99	DIRN	SUR	51	-11	655	0	0	11.1	7.7	13.5
6200093	99	DIRN	SUR	55	-10	679	0	0	10.7	0.1	10.7
6200094	99	DIRN	SUR	52	-7	574	0	0	13.3	8.0	15.5

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	603	0	0	19.7	4.9	20.3
62027	99	DIRN	SUR	49	-2	148	0	0	34.6	-2.8	34.7
62029	99	DIRN	SUR	49	-12	1213	0	0	13.1	7.2	14.9
62050	99	DIRN	SUR	50	-4	574	0	0	10.3	1.9	10.5
62081	99	DIRN	SUR	51	-13	687	0	0	12.8	11.4	17.1
62095	99	DIRN	SUR	53	-16	669	0	0	14.1	7.9	16.2
62103	99	DIRN	SUR	50	-3	643	0	0	28.0	4.6	28.4
62105	99	DIRN	SUR	55	-13	619	0	0	14.8	5.9	15.9
62107	99	DIRN	SUR	50	-6	1308	0	0	16.5	-0.4	16.5
62111	99	DIRN	SUR	58	0	319	0	0	14.1	8.0	16.3
62112	99	DIRN	SUR	58	0	552	0	0	14.4	4.7	15.2
62114	99	DIRN	SUR	58	0	1216	0	0	15.2	1.1	15.2
62117	99	DIRN	SUR	58	0	600	0	0	14.2	4.3	14.8
62163	99	DIRN	SUR	48	-8	620	0	0	13.0	0.7	13.0
62305	99	DIRN	SUR	50	0	696	0	0	16.7	6.4	17.9
63119	99	DIRN	SUR	58	-4	24	1	0	54.2	-38.5	66.5
64041	99	DIRN	SUR	61	-3	614	0	0	11.2	7.0	13.2
64045	99	DIRN	SUR	59	-12	1244	0	0	12.9	6.8	14.5
64046	99	DIRN	SUR	61	-4	627	0	0	11.4	-3.5	11.9

4.12 Table 24 - List of Assimilated BUFR Encoded Radiosonde Stations

ASDE01	ASDE02	ASDE04	ASDE09	ASDK01	ASDK02	ASDK03	ASEU01	ASEU02
ASEU03	ASEU04	ASEU05	ASEU06	ASFR1	ASFR2	ASFR3	ASFR4	01001
01004	01010	01028	01241	01400	01415	01492	02185	02365
02527	02591	02836	02935	02963	03005	03354	03808	03882
03918	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	43599	47155	60018	76743	89002	89564	89571	89611
93112	93417	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	ASDE04	ASDE09	ASDK01	ASDK02	ASDK03	ASEU01	ASEU02
ASEU03	ASEU04	ASEU05	ASEU06	10141	47155	76743	76903	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.