



BUREAU OF METEOROLOGY, AUSTRALIA

**MONITORING OF THE QUALITY OF
LAND SURFACE OBSERVATIONS
IN RA-V**

CONSOLIDATED LIST OF SUSPECT STATIONS

JANUARY - JUNE 2001

REPORT No. 9

***Data Management Section
Central Operations & Systems Branch
Bureau of Meteorology, Australia***

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1. Introduction

Within the Data Management Section (DMS) of the Bureau Of Meteorology (Australia) lie responsibilities for collecting a full set of meteorological data in real-time from the WMO Global Observing System, and for making such data available to Analysis_Prognosis models along with some indication as to reliability of report content.

Real-time judgement as to whether a reported element be assimilated by models relies largely on first guess fields, supplemented by observations from any neighbouring stations. Additionally, listings of platforms which are currently considered suspect are presented to the Analysis model.

To monitor platform performance, and also to expose likely positional errors, selected reported elements are paired with the interpolated first-guess value from the global model (6 hour forecast field) and analysed statistically each 6 months in a format which accords with the CBS recommended standards for the exchange of monitoring results. All observations used are unvalidated or "raw" data.

As part of WMO responsibilities as a WMC, copies of this report are made available to major GDPS Centres participating in data monitoring activities.

2. Global Data Monitoring Statistics

The following table and figures contain information relating to the monitoring of the quality of land surface observations in Region V.

To achieve more complete reporting profiles for the investigation of suspect stations, observations were not retrieved for statistical analysis until 24 hours after real-time, thus not all values used in such computations may have been available to the assimilation processing.

Further figures will be incorporated into this document as more comprehensive quality control procedures are implemented by Data Management.

2.1 Land Surface Observations (Synop)

Table 1 contains a list of synoptic stations which are considered to have reported suspect observations of mean sea level pressure (MSLP) during the 6 months.

The criteria for quality control are given on the header page of Table 1. Stations which exhibited 100% gross errors for the 6 months are included, with asterisks substituted for their poorly defined statistical measures.

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TABLE 1

MONITORING OF SURFACE DATA

MONTHLY SUSPECT LIST

MONITORING CENTRE: DMS MELBOURNE

JANUARY to JUNE 2001

MONITORING PROCEDURES :-

PERIOD : SIX CALENDAR MONTHS

DATA MONITORED : REPORTS FROM EACH UNIQUE IDENTIFIER
FOR SYNOP

AREA : FULL GLOBAL

STANDARD OF COMPARISON : +6H FIRST GUESS FIELD FROM THE AUSTRALIAN GLOBAL
ASSIMILATION PREDICTION (GASP) MODEL

OBSERVATION TIMES : 00, 06, 12, 18 UTC

ELEMENT MONITORED : MSLP - MEAN SEA LEVEL PRESSURE (hPa)

PARAMETERS MONITORED :-

NOBS : NUMBER OF OBSERVATIONS RECEIVED (WITH FIRST
GUESS AVAILABLE) EXCLUDING DUPLICATES

NGE : NUMBER OF OBSERVATIONS WITH GROSS ERRORS

PGE : PERCENTAGE OF OBSERVATIONS WITH GROSS ERRORS

SD : STANDARD DEVIATION OF DIFFERENCE BETWEEN
OBSERVATIONS AND BACKGROUND FIELD
EXCLUDING OBSERVATIONS WITH GROSS ERRORS

BIAS : MEAN OF DIFFERENCE BETWEEN
OBSERVATIONS AND BACKGROUND FIELD
EXCLUDING OBSERVATIONS WITH GROSS ERRORS

RMS : ROOT MEAN SQUARE OF DIFFERENCE BETWEEN
OBSERVATIONS AND BACKGROUND FIELD
EXCLUDING OBSERVATIONS WITH GROSS ERRORS

GROSS ERROR LIMIT : 15.0 hPa

SELECTION CRITERIA : NOBS >= 120 AND ONE OR MORE OF THE FOLLOWING:
1. |BIAS| >= 3.0hPa
2. SD >= 5.0hPa
3. PGE >= 25%

MONTHLY LIST OF SUSPECT LAND SURFACE STATIONS FOR JAN to JUN 2001

WMO REGION 1

STN NO.	LAT	LONG	HT (M)	TIME	ELEM	NOBS	NGE	PGE	SD	BIAS	RMS
61492	16.1	-13.5	18	ALL	MSLP	356	0	0	1.4	3.5	3.8
62271	24.2	23.3	436	ALL	MSLP	446	2	0	1.6	3.8	4.2
62941	4.9	31.6	457	ALL	MSLP	159	1	1	2.8	3.6	4.6
65401	10.9	-1.1	203	ALL	MSLP	155	0	0	1.6	4.3	4.5
65404	10.1	-2.5	323	ALL	MSLP	258	0	0	1.4	3.7	4.0
65416	9.0	-2.5	301	ALL	MSLP	223	0	0	1.9	3.0	3.6
65418	9.5	-0.9	173	ALL	MSLP	175	0	0	1.5	3.7	3.9
68016	-19.3	12.7	0	ALL	MSLP	313	0	0	2.1	3.9	4.5

WMO REGION 2

STN NO.	LAT	LONG	HT (M)	TIME	ELEM	NOBS	NGE	PGE	SD	BIAS	RMS
24688	63.3	143.1	741	ALL	MSLP	713	97	14	5.8	1.9	6.1
30967	49.9	115.8	623	ALL	MSLP	525	2	0	2.5	-6.1	6.6
31137	56.3	131.1	850	ALL	MSLP	709	12	2	5.4	1.9	5.7
36535	48.8	82.4	512	ALL	MSLP	711	4	1	3.3	3.6	4.9
40700	39.7	48.1	45	ALL	MSLP	432	0	0	2.0	-4.5	4.9
40726	36.8	45.7	1385	ALL	MSLP	457	2	0	3.0	3.4	4.5
40741	36.5	61.2	236	ALL	MSLP	465	0	0	2.2	-3.9	4.5
40754	35.7	51.3	1191	ALL	MSLP	611	1	0	3.1	-3.3	4.5
40757	35.5	53.4	1171	ALL	MSLP	426	0	0	3.3	-3.6	4.9
41396	16.0	49.0	700	ALL	MSLP	330	0	0	1.4	4.6	4.8
41530	34.0	71.6	360	ALL	MSLP	419	0	0	2.0	-3.0	3.7
44203	51.1	99.7	1583	ALL	MSLP	688	94	14	5.3	3.0	6.0
44207	50.4	100.2	1687	ALL	MSLP	689	13	2	5.0	1.9	5.4
44212	49.8	92.1	936	ALL	MSLP	687	144	21	5.6	3.4	6.5
44213	49.7	94.4	1232	ALL	MSLP	688	105	15	5.6	3.0	6.4
44215	49.1	91.7	1591	ALL	MSLP	665	12	2	5.4	-.5	5.4
44218	48.0	91.7	1406	ALL	MSLP	695	11	2	5.6	-2.4	6.1
44225	48.7	98.3	1723	ALL	MSLP	652	133	20	5.7	2.6	6.2
44265	46.1	91.6	1186	ALL	MSLP	668	106	16	5.1	4.6	6.9
44272	47.8	96.8	1753	ALL	MSLP	672	17	3	6.3	-.6	6.3
44275	46.8	98.1	2255	ALL	MSLP	689	26	4	6.3	-.9	6.3
44277	46.4	96.3	2147	ALL	MSLP	691	6	1	5.1	-1.6	5.3
44284	46.7	100.1	2117	ALL	MSLP	694	31	4	5.5	2.8	6.2
50727	47.2	119.9	1028	ALL	MSLP	719	0	0	2.6	3.0	4.0
51076	47.7	88.1	737	ALL	MSLP	719	2	0	4.0	3.7	5.4
51087	47.0	89.5	827	ALL	MSLP	718	16	2	4.5	4.3	6.2
51334	44.6	82.9	321	ALL	MSLP	717	3	0	3.7	3.5	5.1
51379	44.0	89.6	794	ALL	MSLP	719	8	1	4.4	3.4	5.6
51463	43.8	87.7	919	ALL	MSLP	719	4	1	4.1	3.0	5.1
51495	43.5	91.6	874	ALL	MSLP	717	21	3	2.9	7.5	8.0
51747	39.0	83.7	1099	ALL	MSLP	719	2	0	5.0	-1.1	5.2
51777	39.0	88.2	889	ALL	MSLP	718	0	0	5.4	-1.2	5.5
53192	44.0	114.9	1128	ALL	MSLP	718	0	0	2.8	3.6	4.5
54587	39.0	123.2	10	ALL	MSLP	711	0	0	1.4	-3.7	4.0
56096	33.4	104.9	1079	ALL	MSLP	720	0	0	3.2	-3.3	4.6

WMO REGION 3

STN NO.	LAT	LONG	HT (M)	TIME	ELEM	NOBS	NGE	PGE	SD	BIAS	RMS
80099	7.1	-70.7	128	ALL	MSLP	260	0	0	1.8	-5.6	5.9
80315	3.0	-75.3	443	ALL	MSLP	473	0	0	1.6	-3.3	3.7
82331	-3.1	-60.0	72	ALL	MSLP	523	0	0	1.3	3.1	3.4
82445	-4.3	-55.6	45	ALL	MSLP	518	0	0	1.1	3.2	3.4
82678	-6.8	-43.0	127	ALL	MSLP	524	0	0	1.0	3.3	3.5
82765	-7.3	-47.5	193	ALL	MSLP	503	0	0	1.2	3.6	3.8
82780	-7.1	-41.5	208	ALL	MSLP	521	0	0	1.0	3.1	3.2
83214	-10.3	-54.9	285	ALL	MSLP	500	1	0	4.2	-6.4	7.6
83319	-14.7	-52.3	315	ALL	MSLP	509	0	0	1.5	4.2	4.5
83361	-15.6	-56.1	151	ALL	MSLP	511	0	0	1.8	3.9	4.3
83773	-23.1	-48.9	793	ALL	MSLP	503	3	1	1.5	-10.8	10.9
84401	-5.2	-80.6	55	ALL	MSLP	567	0	0	1.7	5.6	5.8
84425	-5.9	-76.1	184	ALL	MSLP	193	0	0	1.5	5.0	5.3
84452	-6.8	-79.8	34	ALL	MSLP	562	1	0	1.9	3.3	3.8
84455	-6.4	-76.4	282	ALL	MSLP	410	2	0	2.4	6.0	6.5
84501	-8.1	-79.0	30	ALL	MSLP	418	1	0	1.5	4.8	5.1
84515	-8.4	-74.6	149	ALL	MSLP	561	0	0	2.0	3.2	3.8
84720	-14.9	-74.9	567	ALL	MSLP	272	0	0	1.3	5.3	5.5
84782	-18.1	-70.3	458	ALL	MSLP	454	0	0	1.6	8.0	8.2
85041	-11.0	-68.8	235	ALL	MSLP	284	1	0	1.6	6.3	6.5
85141	-14.5	-67.6	204	ALL	MSLP	209	0	0	1.9	3.7	4.1
85365	-22.0	-63.7	645	ALL	MSLP	243	0	0	2.5	3.7	4.4
85394	-22.8	-64.3	381	ALL	MSLP	197	0	0	2.4	4.2	4.8
85406	-18.4	-70.3	55	ALL	MSLP	706	0	0	1.6	5.2	5.4
85418	-20.5	-70.2	48	ALL	MSLP	711	0	0	1.5	4.3	4.6
85442	-23.4	-70.4	140	ALL	MSLP	714	0	0	1.3	3.4	3.7
85836	-43.6	-71.8	277	ALL	MSLP	231	1	0	1.8	3.3	3.7
87222	-28.6	-65.8	454	ALL	MSLP	686	1	0	2.5	-3.3	4.1
87803	-42.9	-71.2	785	ALL	MSLP	706	2	0	2.4	-3.5	4.3

WMO REGION 4

STN NO.	LAT	LONG	HT (M)	TIME	ELEM	NOBS	NGE	PGE	SD	BIAS	RMS
71075	58.2	-103.7	492	ALL	MSLP	284	0	0	3.4	-3.6	5.0
71498	66.1	-96.5	61	ALL	MSLP	228	0	0	2.4	-3.9	4.6
71506	67.0	-136.2	720	ALL	MSLP	706	3	0	2.7	-5.2	5.8
71977	68.8	-140.8	542	ALL	MSLP	207	0	0	2.6	-3.2	4.1
72375	35.1	-11.2	2139	ALL	MSLP	675	68	10	6.1	-2.6	6.6
72570	40.5	-107.5	1915	ALL	MSLP	649	2	0	4.3	3.8	5.7
76118	30.4	-109.7	1040	ALL	MSLP	188	2	1	5.8	-8.2	10.0
76220	29.0	-107.8	1932	ALL	MSLP	348	24	7	4.5	7.6	8.8
76243	28.7	-100.5	250	ALL	MSLP	473	1	0	2.1	5.3	5.7
76323	26.9	-105.7	1661	ALL	MSLP	417	5	1	4.6	4.8	6.7
76390	25.5	-101.0	1790	ALL	MSLP	558	0	0	2.6	-3.1	4.0
76632	20.1	-98.7	2417	ALL	MSLP	124	1	1	3.0	-5.9	6.6
76658	19.2	-103.7	494	ALL	MSLP	194	0	0	1.7	5.3	5.6
76680	19.4	-99.2	2303	ALL	MSLP	171	0	0	3.3	-5.0	6.0
76687	19.5	-96.9	1389	ALL	MSLP	604	0	0	2.0	3.9	4.4
76726	18.9	-99.2	1618	ALL	MSLP	457	0	0	2.5	-4.4	5.1
76743	18.0	-92.9	10	ALL	MSLP	502	0	0	1.5	5.6	5.8
76762	17.5	-99.5	1265	ALL	MSLP	452	0	0	2.1	-5.1	5.5
76773	17.8	-97.8	1680	ALL	MSLP	160	0	0	2.2	3.1	3.8
76843	16.8	-93.1	528	ALL	MSLP	517	0	0	1.2	5.4	5.6
76855	15.6	-96.5	43	ALL	MSLP	327	0	0	1.9	-3.1	3.6
76903	14.9	-92.3	118	ALL	MSLP	539	0	0	1.5	5.9	6.1
78482	18.2	-71.1	12	ALL	MSLP	389	0	0	2.5	-3.8	4.6

STN NO.	LAT	LONG	HT (M)	TIME	ELEM	NOBS	NGE	PGE	SD	BIAS	RMS
78718	14.4	-89.2	626	ALL	MSLP	191	0	0	1.4	-3.0	3.3

WMO REGION 5

STN NO.	LAT	LONG	HT (M)	TIME	ELEM	NOBS	NGE	PGE	SD	BIAS	RMS
92010	-6.1	145.4	1587	ALL	MSLP	271	0	0	1.1	9.3	9.4
96753	-6.5	106.8	250	ALL	MSLP	143	0	0	.8	6.0	6.0
97008	3.6	125.5	38	ALL	MSLP	501	0	0	.8	3.3	3.4
97126	-2.5	120.4	50	ALL	MSLP	610	0	0	1.2	-3.3	3.5
97378	-10.7	123.1	1	ALL	MSLP	264	192	73	3.4	-13.4	13.8

WMO REGION 6

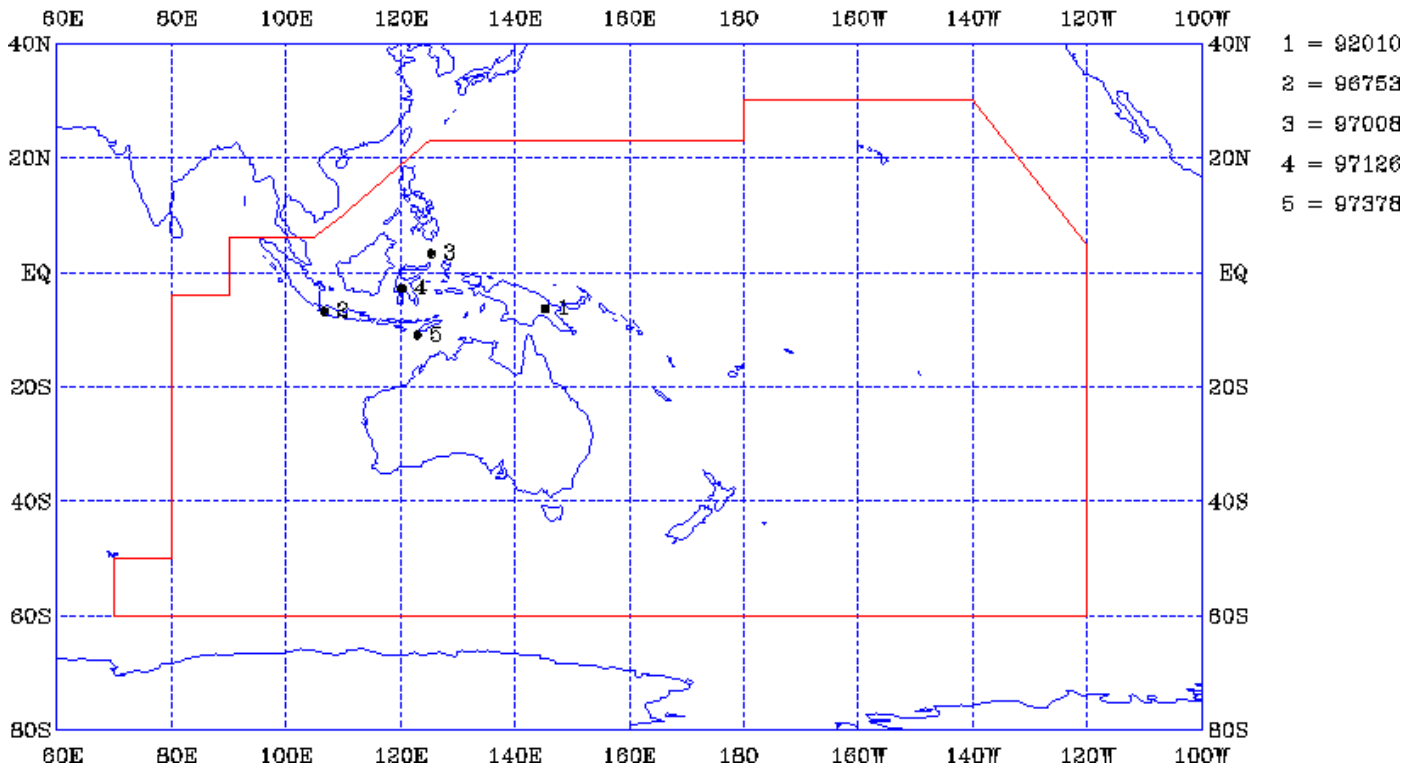
STN NO.	LAT	LONG	HT (M)	TIME	ELEM	NOBS	NGE	PGE	SD	BIAS	RMS
14528	44.8	15.9	250	ALL	MSLP	331	0	0	3.0	3.6	4.7
37788	42.2	44.4	854	ALL	MSLP	689	2	0	5.1	-2.5	5.7
40296	31.0	35.5	-350	ALL	MSLP	685	0	0	1.3	3.3	3.6

WMO REGION ANTARCTICA

STN NO.	LAT	LONG	HT (M)	TIME	ELEM	NOBS	NGE	PGE	SD	BIAS	RMS
89512	-70.8	11.8	102	ALL	MSLP	694	2	0	2.3	-3.1	3.8

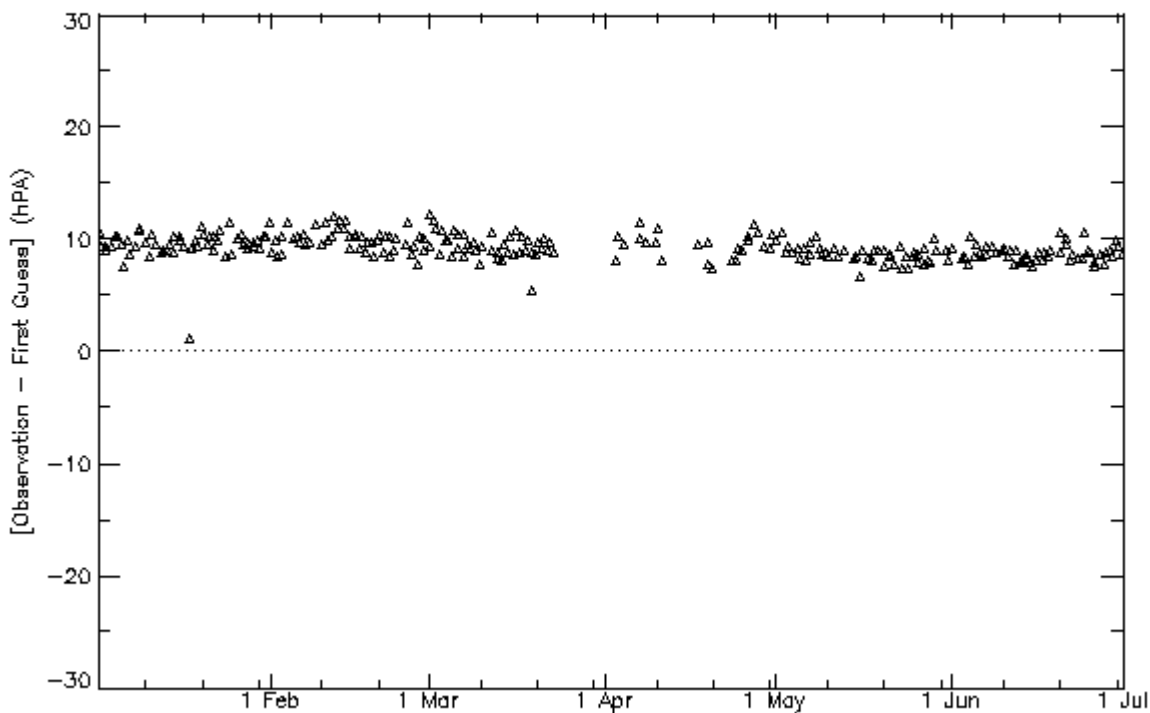
3.1 Plot of Suspect Stations for Land Surface Observations for MSLP on RA-V world map

SUSPECT STATIONS FOR LAND SURFACE OBSERVATIONS
FOR MSLP in RA-V
JANUARY to JUNE 2001

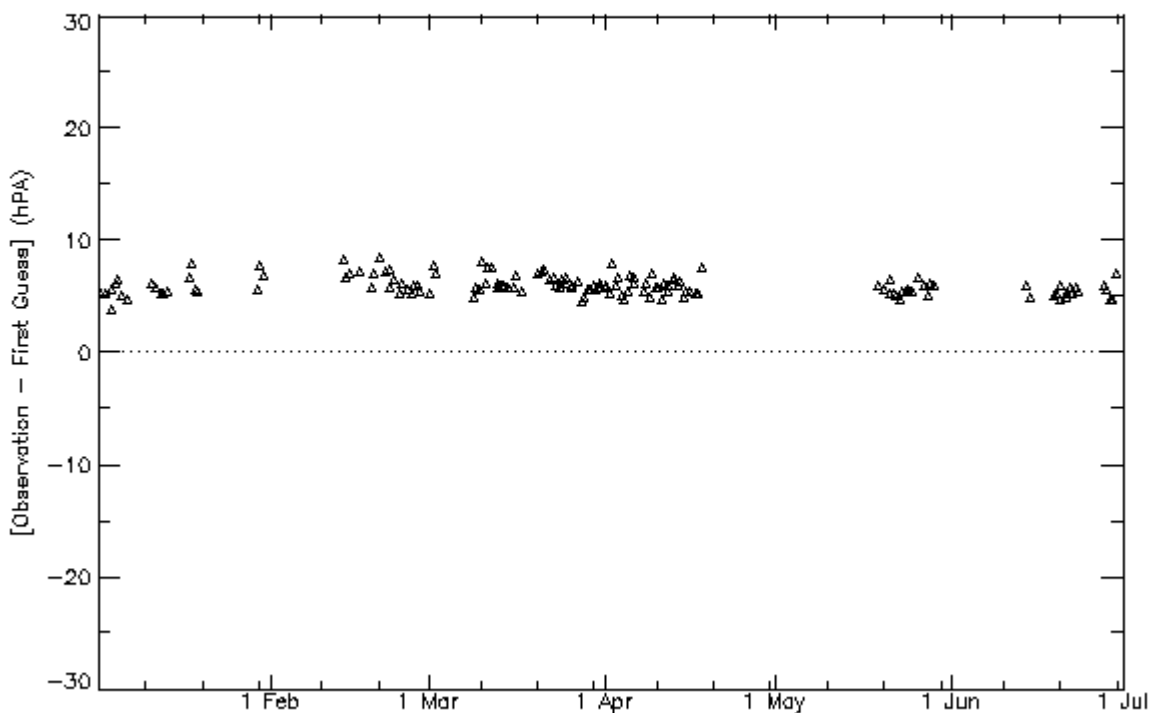


3.2 Plots of Suspect Stations Showing Residuals of MSLP

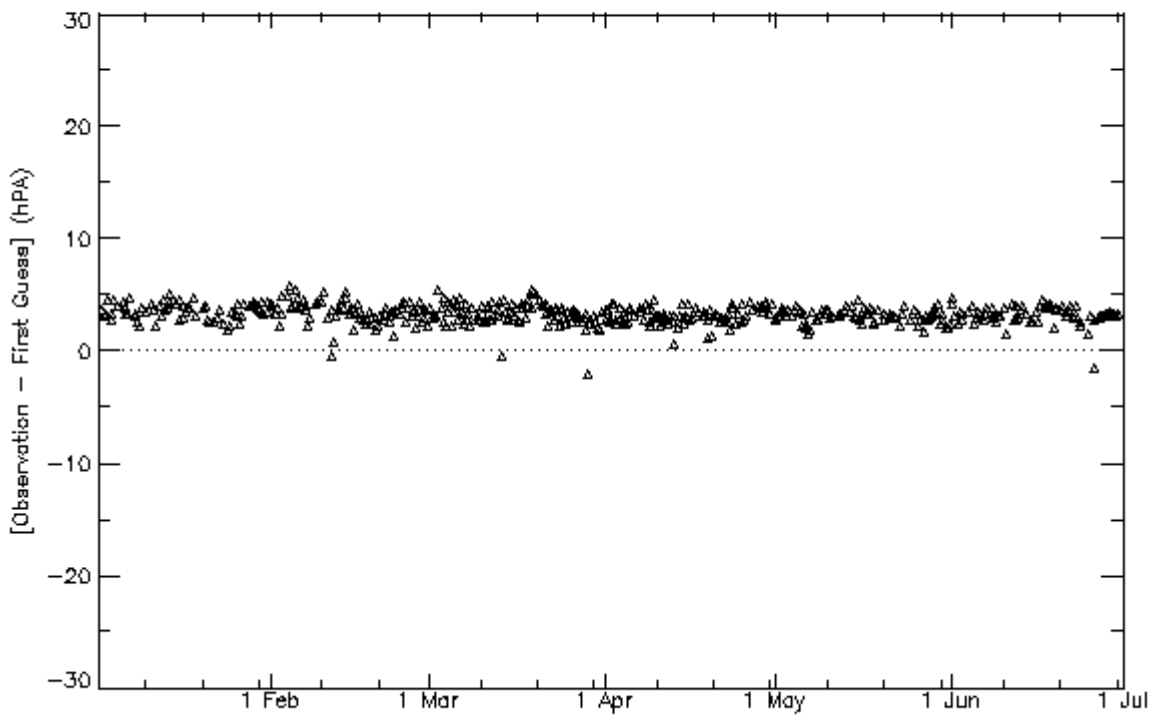
Residuals of MSL Pressure
January – June 2001
STATION: **92010** GOROKA



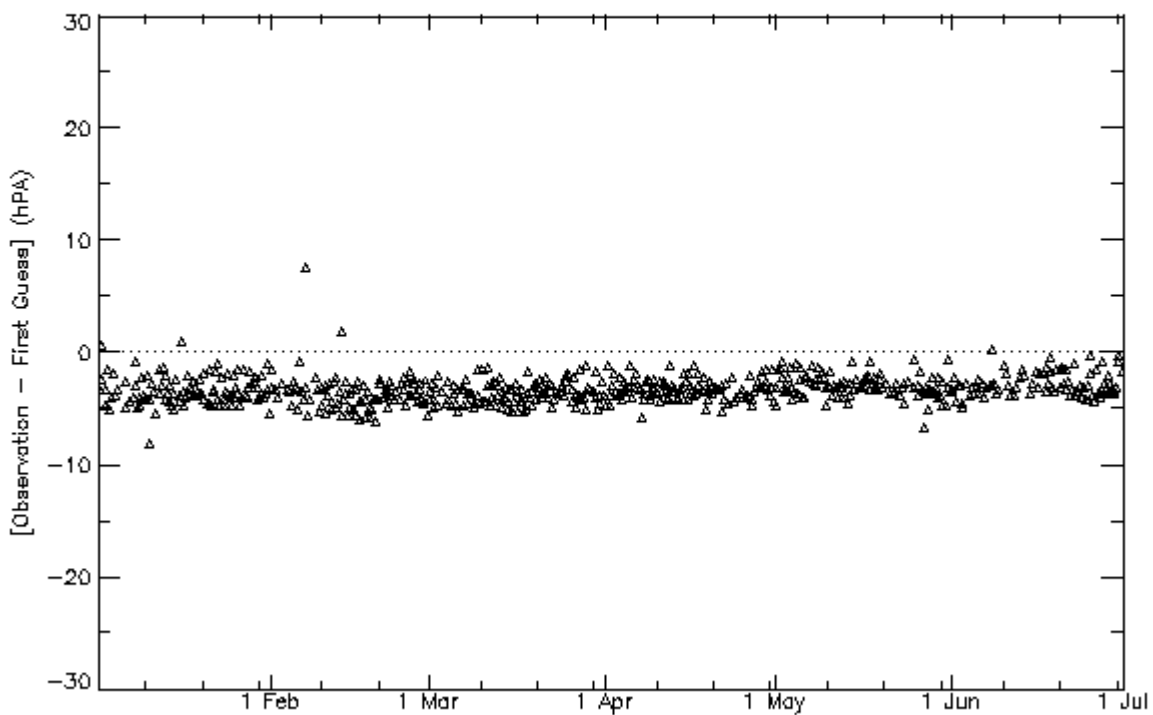
Residuals of MSL Pressure
January – June 2001
STATION: **96753** BOGOR/DERMAGA



Residuals of MSL Pressure
January – June 2001
STATION: **97008** TAHUNA



Residuals of MSL Pressure
January – June 2001
STATION: **97126** MASAMBA



Residuals of MSL Pressure
January – June 2001
STATION: **97378** ROTE/BAA

