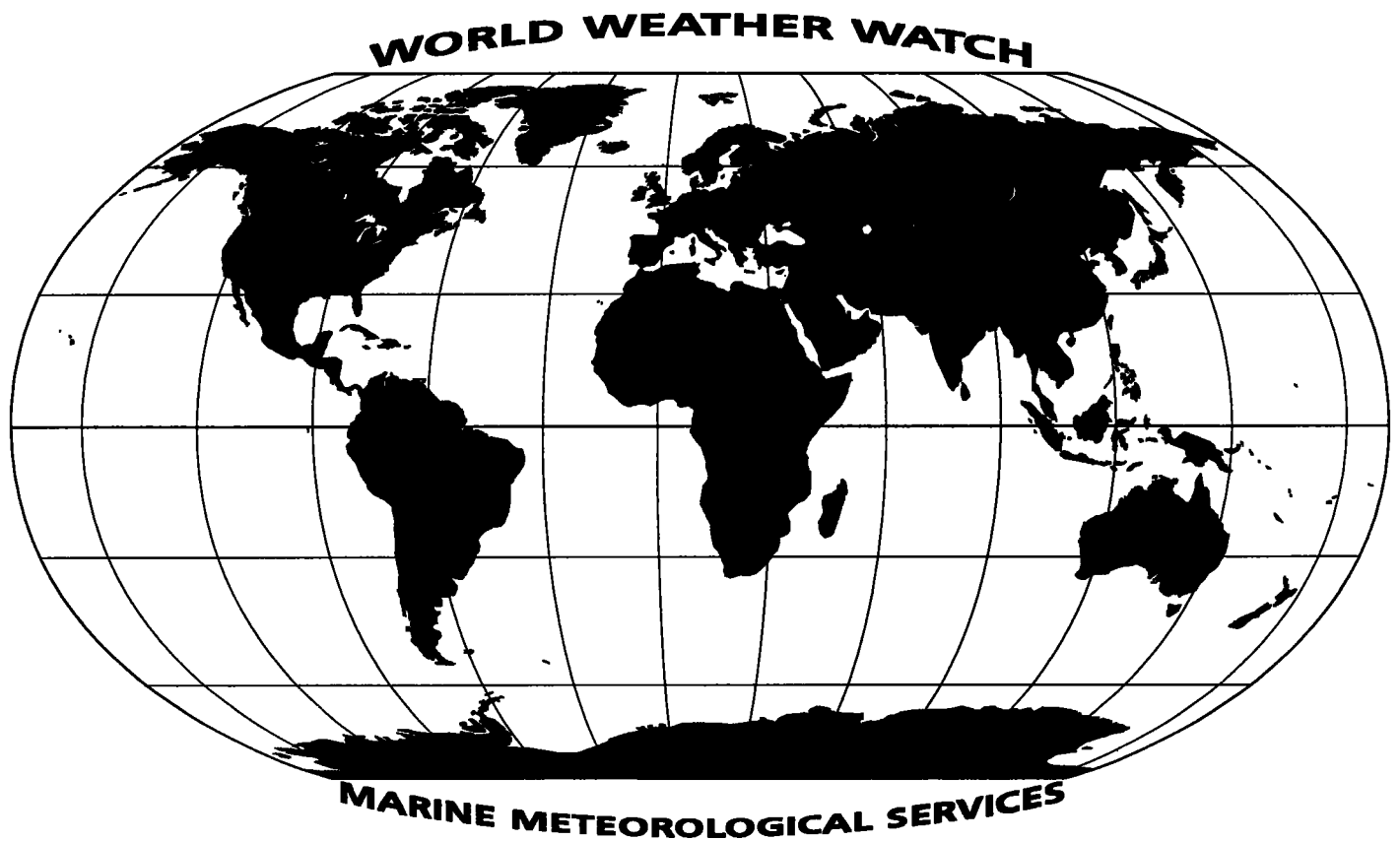


# **OPERATIONAL** *newsletter*

Volume 1994 — No. 5



World Meteorological Organization  
GENEVA


The WMO Secretariat would like to express its appreciation to all those who have contributed material to the "Operational Newsletter". ■

# Foreword

As you are aware, all the information on changes to the operation of the World Weather Watch (WWW) and Marine Meteorological Services (MMS) is being assembled and distributed by the Secretariat on a monthly basis to facilitate updating and follow-up action. In this connection we have created the "OPERATIONAL NEWSLETTER" to provide you with the latest operational information on WWW and MMS.

A special table is included in the "OPERATIONAL NEWSLETTER" in Annex I - *Global Observing System* to assist Members in reporting changes in the present status of implementation of observing programmes of SYNOP, TEMP and PILOT reporting stations.

Your co-operation in ensuring that the above information reaches the appropriate operational units of your service is greatly appreciated.



(G.O.P. Obasi)  
Secretary-General

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### ORDER FORM

# GLOBAL OBSERVING SYSTEM

## A. GOS REGULATORY OR GUIDANCE MATERIAL

### 3. Guidance material on instruments and observing methods

#### 3.1 WMO Catalogue of radiosondes and upper-air wind systems in use by Members

	Country: Croatia	Date: 4/94		Country: Slovakia	Date: 4/94
WMO Index Number:	13130		11952		
Name of Station:	Zagreb/Maksimir		Poprad/Ganovce		
Technical authority over station:	Croatia		Slovakia		
DEGREES: Latitude - = S	45.82		49.03		
Longitude - = W	16.03		20.32		
Height Metres:	128		706		
TEMP Program:	0012		0012		
PILOT Program:	0618		0618		
SONDE Regular type used:	VIZ		VRS80N		
Alternative type used:					
Frequency MHz:	1680		403		
RADIATION: Correction Y=Yes/N=No	N		Y		
Correction type:			V86		
Ground equipment used:	GMD1A		DIGICORA		
WINDFINDING: System used:	RADIO THEODOLITE		OMEGA		
Equipment used	GMD		DIGICORA		

## C. INFORMATION ON OPERATIONAL STATUS OF ELEMENTS OF THE SURFACE-BASED SUB-SYSTEM

### 1. Publication No. 9, Volume A - Stations

#### 1.2 Deleted stations

Region	Index No.	Name
II - India	42779	Pendra Road
IV - Saint Lucia	78946	Castries

### C. Information on operational status of elements of the surface-based sub-system (continued)

#### 1. Publication No. 9, Volume A - Stations (continued)

##### 1.3 Changes to existing stations

Index No.	Name	Surface observations								Obs.H Obs.S	Upper-air				Re- marks	
		00	03	06	09	12	15	18	21		00	06	12	18		
<b>Region IV - Belize</b>																
78588	Half Moon Caye	X	X	X	X	X	X	X	X			.	.	.	.	AUT
78596	Hunting Caye	X	X	X	X	X	X	X	X			.	.	.	.	Act
<b>Region IV - Saint Lucia</b>																
78947	Vigie	X	.	.	.	X	X	X	X	H10-24		.	.	.	.	
78948	Hewanorra Int'l Airport	X	X	X	X	X	X	X	X	H00-24		.	.	.	.	
<b>Region VI - Slovakia</b>																
11819	Jaslovske Bohunice	X	X	X	X	X	X	X	X			.	.	.	.	
11856	Močovce	X	X	X	X	X	X	X	X			.	.	.	.	

##### 1.5 Temporary changes

###### •Notification from the Former USSR

That for technical reasons station 89542 Molodeznaja has temporarily stopped upper-air observations as from 22.04.1994 and this data will therefore not be entered on the GTS.

#### 4. Automatic Marine Stations

<b>KEY - OBSERVED OR TECHNICAL PARAMETERS</b>			
<b>Column</b>	<b>Parameters</b>	<b>Column</b>	<b>Parameters</b>
1	Wind direction and speed	9	Subsurface temperatures
2	Air temperature	10	Relative humidity
3	Air pressure	11	Visibility
4	Pressure tendency		
5	Sea-surface temperature	-	Parameter not observed
6	Wave period and height	X	Buoy observes this parameter
7	Wave spectra	.	Data under evaluation,
8	Peak wind gust		not reported

##### 4.3 United States of America

List of U.S.A. Ocean Data Acquisition System (ODAS) included in the May 1994 Data Platform Status Report of the Data Buoy Centre of the National Oceanic and Atmospheric Administration (NOAA). Data from moored buoys and platforms are collected by geostationary meteorological satellites and reports are distributed on the GTS in SHIP code. Data from drifting buoys are collected by the ARGOS system and distributed on the GTS in DRIFTER code.

C. Information on operational status of elements of the surface-based sub-system (continued)

4. Automatic Marine Stations / 4.3 United States of America(continued)

4.3.1 Moored Buoys

WMO buoy Identifier	ARGOS Identifier	Position: 12-19 May 1994		Observed or technical parameters										
		Latitude	Longitude	1	2	3	4	5	6	7	8	9	10	11
32302		18.0S	85.1W	X	X	X	-	X	X	X	-	-	-	-
41001*		34.7N	72.7W	X	X	X	-	X	X	X	-	-	-	-
41002*		32.3N	75.2W	X	X	X	-	X	X	X	-	-	-	-
41004		32.5N	79.1W	X	+	X	-	+	X	X	-	-	-	-
41006*		29.3N	77.3W	X	X	X	-	X	X	X	-	-	-	-
41009		28.5N	80.2W	X	X	X	-	X	X	X	-	-	-	-
41010		28.9N	78.5W	X	X	X	-	X	X	X	-	-	-	-
41016		24.6N	76.5W	X	X	X	-	X	X	X	-	-	-	-
42001*		25.9N	89.7W	X	X	X	-	X	X	X	-	-	-	-
42002*		25.9N	93.6W	X	X	X	-	X	X	X	-	-	-	-
42003*		25.9N	85.9W	X	+	X	-	X	X	X	-	-	-	-
42007		30.1N	88.8W	X	X	X	-	X	.	.	-	-	-	-
42019		27.9N	95.0W	X	X	X	-	X	X	X	-	-	-	-
42020		27.0N	96.5W	X	X	X	-	X	X	X	-	-	-	-
42025		24.9N	80.4W	.	X	.	-	X	X	X	-	-	-	-
42035		29.2N	94.4W	X	X	X	-	X	X	X	-	-	-	-
42036		28.5N	84.5W	X	X	X	-	X	X	X	-	-	-	-
42037		24.5N	81.4W	X	X	+	-	X	X	X	-	-	-	-
44004*		38.5N	70.7W	X	X	X	-	X	X	X	-	-	-	-
44005*		42.9N	68.9W	X	X	X	-	X	X	X	-	-	-	-
44007		43.5N	70.1W	X	X	X	-	X	X	X	-	-	-	-
44008		40.5N	69.4W	X	X	X	-	X	X	X	-	-	-	-
44009		38.5N	74.7W	X	X	X	-	X	+	+	-	-	-	-
44011*		41.1N	66.6W	X	X	X	-	X	X	X	-	-	-	-
44013		42.4N	70.7W	X	X	X	-	X	X	X	-	-	-	-
44014		36.6N	74.8W	X	X	X	-	+	X	X	-	-	-	-
44025		40.3N	73.2W	X	X	X	-	X	X	X	-	-	-	-
45001*		48.0N	87.8W	X	X	X	-	X	X	X	-	-	-	-
45002*		45.3N	86.4W	X	X	X	-	X	X	X	-	-	-	-
45003*		45.3N	82.8W	X	X	X	-	X	X	X	-	-	-	-
45004*		47.5N	86.5W	X	X	X	-	X	X	X	-	-	-	-
45005*		41.7N	82.4W	X	X	X	-	X	X	X	-	-	-	-
45006*		47.3N	89.9W	X	X	X	-	X	X	X	-	-	-	-
45007*		42.7N	87.1W	X	X	X	-	X	X	X	-	-	-	-
45008*		44.3N	82.4W	X	X	X	-	X	X	X	-	-	-	-
45010		43.0N	87.8W	X	X	X	-	X	X	X	-	-	-	-
46001*		56.3N	148.2W	+	+	+	-	+	+	+	-	-	-	-
46002*		42.5N	130.3W	X	X	X	-	X	X	X	-	-	-	-

\* Base funded station of National Weather Service (NWS); however, all stations report data to NWS  
 + Sensor/system failure

### C. Information on operational status of elements of the surface-based sub-system (continued)

#### 4. Automatic Marine Stations / 4.3 United States of America / 4.3.1 Moored Buoys (continued)

WMO buoy Identifier	ARGOS Identifier	Position: 12-19 May 1994		Observed or technical parameters										
		Latitude	Longitude	1	2	3	4	5	6	7	8	9	10	11
46003*		51.9N	155.9W	+	X	X	-	X	X	X	-	-	-	-
46005*		46.1N	131.0W	X	X	X	-	X	X	X	-	-	-	-
46006*		40.9N	137.5W	+	X	+	-	X	X	X	-	-	-	-
46012		37.4N	122.7W	X	X	X	-	+	X	X	-	-	-	-
46013*		38.2N	123.3W	X	X	X	-	X	X	X	-	-	-	-
46014*		39.2N	124.0W	X	X	X	-	X	X	X	-	-	-	-
46022		40.8N	124.5W	X	X	X	-	X	X	X	-	-	-	-
46023		34.3N	120.7W	X	X	X	-	X	X	X	-	-	-	-
46025		33.7N	119.1W	X	X	X	-	X	X	X	-	-	-	-
46026		37.7N	122.8W	X	X	X	-	X	X	X	-	-	-	-
46027		41.9N	124.4W	X	X	X	-	X	X	X	-	-	-	-
46028*		35.8N	121.9W	X	X	X	-	X	X	X	-	-	-	-
46029		46.2N	124.2W	X	X	X	-	X	X	X	-	-	-	-
46030		40.4N	124.5W	X	X	X	-	X	X	X	-	-	-	-
46035		57.0N	177.7W	X	X	X	-	X	+	+	-	-	-	-
46041		47.4N	124.5W	X	X	X	-	X	X	X	-	-	-	-
46042		36.8N	122.4W	X	X	+	-	X	X	X	-	-	-	-
46045		33.8N	118.4W	X	X	X	-	X	X	X	-	-	-	-
46050		44.6N	124.5W	X	X	X	-	X	X	X	-	-	-	-
46051		34.5N	120.7W	X	X	X	-	X	+	+	-	-	-	-
46053		34.2N	119.8W	X	X	X	-	X	X	X	-	-	-	-
46054		34.3N	120.4W	X	X	X	-	X	X	X	-	-	-	-
51001*		23.4N	162.3W	+	+	+	-	+	+	+	-	-	-	-
51002		17.2N	157.8W	X	X	X	-	X	X	X	-	-	-	-
51003*		19.1N	160.8W	X	X	X	-	X	X	X	-	-	-	-
51004*		17.4N	152.5W	X	X	X	-	X	X	X	-	-	-	-
51026		21.4N	157.0W	X	X	X	-	X	+	+	-	-	-	-
52009		13.7N	144.7E	+	+	+	-	+	+	+	-	-	-	-

Total base funded buoys:	=	28
Total other buoys:	=	37
<b>TOTAL moored buoys:</b>		<b>65</b>

\* Base funded station of National Weather Service (NWS); however, all stations report data to NWS

+ Sensor/system failure



C. Information on operational status of elements of the surface-based sub-system (continued)

4. Automatic Marine Stations / 4.3 United States of America (continued)

4.3.2 Drifting Buoys

WMO buoy Identifier	ARGOS Identifier	Position: 18-19 May 1994		Observed or technical parameters										
		Latitude	Longitude	1	2	3	4	5	6	7	8	9	10	11
16811	17180	45°S	030°E	.	X	X	-	X	.	.	.	-	-	-
17818	17175	43°S	010°E	.	X	X	-	X	.	.	.	-	-	-
17819	17174	51°S	010°E	.	X	X	-	X	.	.	.	-	-	-
17820	17173	56°S	006°E	.	+	X	-	X	.	.	.	-	-	-
17821	17176	48°S	007°E	.	+	X	-	X	.	.	.	-	-	-
17822	17184	39°S	029°E	.	X	X	-	X	.	.	.	-	-	-
32811	17170	38°S	084°W	.	+	X	-	X	.	.	.	-	-	-
32812	17171	26°S	123°W	.	X	X	-	X	.	.	.	-	-	-
32813	17172	31°S	101°W	.	+	X	-	X	.	.	.	-	-	-
32814	17161	31°S	099°W	.	+	X	-	X	.	.	.	-	-	-
33833	01974	32°S	002°W	.	X	X	-	X	.	.	.	-	-	-
33834	01979	30°S	006°E	.	X	X	-	X	.	.	.	-	-	-
33838	17163	34°S	008°W	.	+	X	-	X	.	.	.	-	-	-
33839	17164	37°S	016°W	.	+	X	-	X	.	.	.	-	-	-
33840	17165	41°S	003°W	.	+	X	-	X	.	.	.	-	-	-
33841	17166	34°S	009°W	.	+	X	-	X	.	.	.	-	-	-
33842	17167	45°S	047°E	.	+	X	-	X	.	.	.	-	-	-
53823	05131	08°S	114°E	.	+	X	-	+	.	.	.	-	-	-
54844	17168	33°S	119°W	.	+	X	-	X	.	.	.	-	-	-
56801	05130	32°S	038°E	.	X	X	-	X	.	.	.	-	-	-
56804	01977	43°S	119°E	.	X	X	-	X	.	.	.	-	-	-
56805	01990	53°S	159°E	.	X	X	-	X	.	.	.	-	-	-
56806	01984	30°S	091°E	.	X	X	-	X	.	.	.	-	-	-
56807	20716	15°S	110°E	.	X	X		X	.	.	.			
74801	01982	63°S	067°E	.	X	X		X	.	.	.			

321 drifting buoys have been deployed in support of TOGA; 25 are operational

+ Sensor failure

### C. Information on operational status of elements of the surface-based sub-system (continued)

#### 4. Automatic Marine Stations (continued)

#### 4.6 United Kingdom of Great Britain and Northern Ireland

List of moored data buoys operated by the:

Operational Instrumentation Branch,  
Meteorological Office,  
Beaufort Park,  
Easthampstead,  
WOKINGHAM  
Berkshire RG11 3DN,  
United Kingdom.

##### 4.6.1 Moored Buoys (including light vessels, islands and fixed platforms)

WMO buoy Identifier	ARGOS Identifier	Position: 25 April 1994		Observed or technical parameters										
		Latitude	Longitude	1	2	3	4	5	6	7	8	9	10	11
03007*		60°35'N	01°16'W	X	X	-	-	-	-	-	X	-	X	-
03010*		59°05'N	04°24'W	X	X	X	X	-	-	-	X	-	X	-
03011*		59°10'N	05°50'W	X	X	X	X	-	-	-	X	-	X	-
03014*		60°07'N	02°04'W	X	X	X	X	-	-	-	X	-	X	-
03695*		51°40'N	01°06'E	X	X	X	X	-	-	-	X	-	X	-
62029		48°43'N	12°25'W	X	X	X	X	X	X	-	X	-	X	-
62081		51°00'N	13°20'W	X	X	X	X	X	-	-	X	-	X	-
62101		50°37'N	02°44'W	X	X	X	X	X	X	-	X	-	X	-
62103**		49°55'N	02°53'W	X	X	X	X	X	X	-	X	-	X	X
62105		55°59'N	14°11'W	X	X	X	X	X	X	-	X	-	X	-
62108		53°12'N	15°07'W	X	X	X	X	X	X	-	X	-	X	-
62112*		58°42'N	01°17'E	X	X	X	X	-	-	-	X	-	X	-
62118*		57°45'N	00°55'E	X	X	X	X	-	-	-	X	-	X	-
62124*		54°35'N	01°26'E	X	X	X	X	-	-	-	X	-	X	-
62126*		58°51'N	03°35'W	X	X	X	X	-	-	-	X	-	X	-
62129*		53°03'N	02°14'E	X	X	X	X	-	-	X	X	-	X	-
62301		52°10'N	05°05'W	X	X	X	X	X	-	-	X	-	X	-
62302		54°08'N	03°37'W	X	X	X	X	X	-	-	X	-	X	-
62304**		51°00'N	01°47'E	X	X	X	X	X	X		X	-	X	X
62305				X	X	X	X	X	X	-	X	-	X	X
63103*		61°14'N	01°09'E	X	X	X	X	-	-	-	X	-	X	-
63111*		59°33'N	01°32'E	X	X	X	X	-	-	X	X	-	X	-

\* Fixed platforms or islands

\*\* Automatic light vessels

### C. Information on operational status of elements of the surface-based sub-system (continued)

#### 4. Automatic Marine Stations / 4.3 United Kingdom of Great Britain and Northern Ireland (continued)

##### 4.6.2 Drifting Buoys

WMO buoy Identifier	ARGOS Identifier	Position: 25 April 1994		Observed or technical parameters										
		Latitude	Longitude	1	2	3	4	5	6	7	8	9	10	11
25013	4065+	83.4N	99.6E	-	X	X	-	-	-	-	-	-	-	-
44728	2952	65.8N	00.4E	-	X	X	-	X	-	-	-	-	-	-
44743	1370	32.9N	34.8W	-	-	X	-	-	-	-	-	-	-	-
44767	6297	54.1N	38.2W	-	X	X	-	X	-	-	-	-	-	-
44769	6291	53.4N	31.2W	-	X	X	-	X	-	-	-	-	-	-
44771	6290	55.4N	21.0W	-	X	X	-	X	-	-	-	-	-	-
44778	1259	62.8N	17.3W	-	X	X	-	X	-	-	-	-	-	-
62524	4625	34.8N	21.9W	-	X	X	-	X	-	-	-	-	-	-
62695	2956	34.9N	21.4W	-	X	X	-	X	-	-	-	-	-	-
62696	6288	60.1N	19.2W	-	X	X	-	X	-	-	-	-	-	-
—	6295	52.2N	36.5W	-	X	X	-	X	-	-	-	-	-	-

#### 5. ARGOS service

##### 5.1 ARGOS monthly status report

Date of statistics computation : 2 May 1994

**•Reports handled by ARGOS Service (list of monthly collected ARGOS platforms sorted by type of platform)**

Drifting Buoys	:	1058
Boats (<20 knots)	:	-
Marine Stations	:	3
Moored Buoys	:	294
Terrestrial Animals	:	98
Marine Animals	:	70
Balloons	:	3
Birds	:	39
Fixed Stations	:	425
<b>TOTAL</b>		<b>: 1990</b>

+ Ice drifter

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**C. Information on operational status of elements of the surface-based sub-system (continued)**


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**5. ARGOS service / 5.1 ARGOS monthly status report (continued)**

**•Reports for insertion into the GTS (list of monthly collected GTS platforms on every GTS site sorted by type of platform)**

**Transmission to RTH Paris:**

Boat (less than 20 knots) :	-
Drifting Buoys :	120
Fixed Stations :	7
Marine Stations :	3
Moored Buoys :	1
Synoptic PTT	1

**Transmission to NWS Washington:**

Drifting Buoys :	512
Fixed Stations :	5
High Speed :	-
Moored Buoys :	71

**•GTS coding statistics of platforms reporting through ARGOS and distributed over the GTS**

BATHY =	374
DRIFTER =	139743
SYNOP =	3615
TOTAL:	143732

**7. Wind Profiler Demonstration Network (WPDN)**
**Change in U.S. Wind Profiler Data**

It has been recently discovered that the standard deviation information generated by the U.S. Wind Profiler Demonstration Network (WPDN) was being incorrectly calculated. These values are the least understood outputs of the WPDN and the impact of this error is probably slight. Once the calculations have been corrected, neither the format of the output or the magnitude of the actual numbers will change, thus the ripple effects from correcting the errors are also expected to be slight. However it was felt the user community should be informed.

The Profiler Program Office plans to make the correction effective with the 1800 UTC wind profiler data on 17 May 1994. A summary describing the changes to the wind profiler data BUFR2 message follows.

Should there be any questions, please address them via OMNET to R.Decker.

---

**C. Information on operational status of elements of the surface-based sub-system (continued)**


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**7. Wind Profiler Demonstration Network (WPDN) (continued)**
**U.S. WIND PROFILER DEMONSTRATION NETWORK CHANGE OF STANDARD DEVIATION CALCULATION**

During a recent review of the Wind Profiler Demonstration Network BUFR2 message, it was noted that the standard deviation of the wind speed and vertical wind component were being incorrectly computed. Effective at 1800 UTC on Tuesday, 17 May 1994, correctly computed data will be provided.

On and after 1800 UTC on 17 May 1994 data encoded in fields 0 11 050 and 0 11 051 will conform to the following definition:

Wind speed standard deviation  $w_s$  is determined as follows:

$wV2$  = 2nd moment of the vertical beam Dvs

$wE2$  = 2nd moment of east (E) vertical beam Dvs

$wN2$  = 2nd moment of north (N) vertical beam Dvs

@ = angle between the vertical beam and the E or N beam

$w_s$  =  $| (wE2 + wN2 - 2 \cos^2@ wV2) | 0.5 \csc@$

As a reasonable approximation, the u and v component standard deviations are equal and either equals  $w_s/20.5$

The "w standard deviation" reported is  $wV$  defined above.

There are two changes from earlier definitions. First, the definitions of  $wV2$ ,  $wE2$ , and  $wN2$  have changed to reflect conventional usage of the term "second moment". Second, the sign of the third term in the equation defining  $w_s$  has changed, necessitating the use of the absolute value sign. Different beam sampling volumes and times or statistical fluctuations could produce a third term larger than the sum of the first two.

**8. Feed-back from Members to the Secretariat on any changes in the observing network**

In view of the difficulties experienced in identifying non-implemented observing stations or implemented stations which are closed or suspended for a certain period, or stations making observations but not reaching their NMCs. A special table accompanied by explanatory notes (see Appendix I) is attached, to serve as feed-back from Members to the Secretariat on any changes of the present state of implementation of observing programmes of SYNOP, TEMP and PILOT reporting stations.

Members are urged to fill in the special table as and when appropriate, and to return it to the Secretariat **before the 20th of each month** to enable changes to be included in the next "OPERATIONAL NEWSLETTER".



# FEED-BACK FROM MEMBERS TO THE SECRETARIAT ON ANY CHANGES IN THE OBSERVING NETWORK

*(Explanatory Notes overleaf)*

Global Exchange / Regional Exchange *(delete as appropriate)*

Country: \_\_\_\_\_

Station Index Number	Bulletin Identification TTAAii CCCC	Implementation of Observing Programme								Alternate Observing Station	Remarks
		00	03	06	09	12	15	18	21		
<b>1. SYNOP</b>											
<b>2. TEMP</b>											
<b>3. PILOT</b>											

## FEED-BACK FROM MEMBERS TO THE SECRETARIAT ON ANY CHANGES IN THE OBSERVING NETWORK

---

### Explanatory Notes

1. Separate tables should be prepared for global exchange and regional exchange respectively. These tables should contain information concerning any changes of the present state of implementation of observing programmes of SYNOP, TEMP and PILOT reporting stations, particularly for stations included in the Regional Basic Synoptic Networks (RBSN).
2. For entries in these tables, the following should be taken into account:
  - (a) In the column "*Station index number*", the index number (IIiii) of each station should be entered in case of any changes in the observing programmes of the stations;
  - (b) In the column "*Bulletin identification*", the TTAAii CCCC of the abbreviated heading of the meteorological bulletins which contains reports from the station should be inserted;
  - (c) In the column "*Implementation of observing programme*", "X" for implementation and "-" for non-implementation should be inserted as appropriate. In order to easily identify changes in the programme, this should be marked in red;
  - (d) In the column "*Alternate observing station*", the index number (IIiii) of an alternate observing station should be inserted in case another station is available with a view to filling gaps which are caused by suspension of observing programmes of the original station;
  - (e) The required information concerning the observing programme of the alternate station should be inserted in the next horizontal line of the original station;
  - (f) In the column "*Remarks*", reasons of temporary suspension of observing programmes and an expected date of resumption of the programmes should be given as far as possible. Non-standard collection and/or distribution times should also be included.
3. These tables should be sent to the Secretariat before the 20th of the month for inclusion in the "OPERATIONAL NEWSLETTER", as appropriate.



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**D. INFORMATION ON OPERATIONAL STATUS OF SPACE SUB-SYSTEM**

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**1. WMO Catalogue of Satellite Ground Receiving Stations in use by Members, 1994****INTRODUCTION**

A detailed description of satellite receiving stations in use by Members is required to facilitate ongoing WMO activities. Satellite ground receiving stations form part of the interface between the data received from the satellites and the derived products utilized by National Meteorological and Hydrological Services. A goal for implementation of satellite ground receiving equipment is that every Member will have at a minimum one polar orbiting satellite receiver and one geostationary satellite receiver. The status of implementation within WMO is currently 80 %. An accurate catalogue of satellite receiving stations would help identify gaps in coverage and weaknesses in the utilization of satellite data by Members. Additionally, there has been an increasing incursion of other satellite based services into the frequencies presently or planned to be used by the environmental satellites comprising the space-based sub-system of the Global Observing System. Proper identification and registration of satellite ground receiving stations will help protect the frequency spectrum assigned to the environmental satellites.

The "Satellite Ground Receiving Equipment in WMO Regions Status Report for 1992 (SAT-11), WMO Technical Document WMO/TD No. 576" contained a survey of ground receiving equipment based on information provided by Members. Since the publication of the Report, new information has been provided and Table 1 (in English only) contains the latest information available within the WMO Secretariat concerning satellite ground receiving stations.

**SUMMARY OF CATALOGUE Table 1**

Table 1 provides a description of each Member's satellite receiving station. Each entry represents one station to imply the reception of a particular type of satellite data. Four types of satellite data are identified: low and high resolution polar-orbiting data, and low and high resolution geostationary data. For the geostationary data, the particular satellite system (GOES, METEOSAT, GMS or INSAT [ India only ] ) are noted. For the polar-orbiting data only low resolution (APT) and high resolution (HRPT) are noted to imply the NOAA TIROS series or METEOR series where appropriate. For those Members who have provided totals but not individual locations, "Unnamed city" has been utilized.

**UPDATING THE CATALOGUE**

If any Member should find that the information given in this report is incorrect or has changed, please fill in the attached form (Appendix 2): "Feed-Back from Members to the Secretariat on any changes in the WMO Catalogue of Satellite Receiving Stations in use by Members" and forward to the WMO Secretariat at the address given below. Please note that the last three columns are optional but important if such information is available. "Equipment description" should contain the type of computer/receiving system, e.g. commercial nomenclature. Also note if the equipment is/is not computer based. "Registered with" should contain the name of the national agency with which the equipment is registered or "None" if not registered. To provide you with a speedier service we request that notification of changes be sent to us on diskette, in ASCII format, when possible.



**FEED-BACK FROM MEMBERS TO THE SECRETARIAT ON ANY CHANGES IN THE  
WMO CATALOGUE OF SATELLITE GROUND RECEIVING STATIONS**

Country: \_\_\_\_\_

Date: \_\_\_\_\_

Location	Polar		Geostationary		Equipment description	Year placed in service	Registered with
	Low Res	High Res	Low Res	High Res			



# GLOBAL TELECOMMUNICATION SYSTEM

## A. GTS REGULATORY OR GUIDANCE MATERIAL

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### 1. Telecommunication Procedures

#### Procedures for the GTS

The next issue (Volume 1994, No. 6) will include guidance material for the implementation of new or modified procedures for the GTS, as agreed upon by the Commission for Basic Systems at its tenth session (November 1992) and also submitted to its forthcoming 1994 extraordinary session (August 1994), in particular with respect to addressed messages, including request/reply messages.

## C. INFORMATION ON THE OPERATION OF THE GTS

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### 1. Catalogue of meteorological Bulletins (Publication No. 9, Volume C, Chapter I)

#### 1.3 Changes to bulletins

##### •Notification from New Zealand

That effective 1 June 1994 the following meteorological bulletin headers will change as follows:

Old Header	New Header
UEFJ01 NZKL	UEFJ01 NFFN
UGFJ20 NZKL	UGFJ20 NFFN
UHFJ01 NZKL	UHFJ01 NFFN
UKFJ01 NZKL	UKFJ01 NFFN
ULFJ01 NZKL	ULFJ01 NFFN
UPFJ01 NZKL	UPFJ01 NFFN
UQFJ20 NZKL	UQFJ20 NFFN
USFJ01 NZKL	USFJ01 NFFN
UETV01 NZKL	UETV01 NGFU
UGTV20 NZKL	UGTV20 NGFU
UHTV01 NZKL	UHTV01 NGFU
UKTV01 NZKL	UKTV01 NGFU
ULTV01 NZKL	ULTV01 NGFU
UPTV01 NZKL	UPTV01 NGFU

Old Header	New Header
UQTV20 NZKL	UQTV20 NGFU
USTV01 NZKL	USTV01 NGFU
UEKB01 NZKL	UEKB01 NGTT
UGKB20 NZKL	UGKB20 NGTT
UHKB01 NZKL	UHKB01 NGTT
UKKB01 NZKL	UKKB01 NGTT
ULKB01 NZKL	ULKB01 NGTT
UPKB01 NZKL	UPKB01 NGTT
UQKB20 NZKL	UQKB20 NGTT
USKB01 NZKL	USKB01 NGTT
UPTK01 NZKL	UPTK01 NSAP
UPPS01 NZKL	UPPS01 NFTF
UGTK20 NZKL	UGTK20 NSAP
UGPS20 NZKL	UGPS20 NFTF

# Order Form

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**Table 1**

**WMO CATALOGUE  
OF  
SATELLITE GROUND RECEIVING STATIONS  
IN USE BY MEMBERS**

**1994**

## Satellite receiving station location by country (WWW Surveys)

02-Jun-94

MEMBER	LOCATION	POLAR		GEOSTATIONARY	
		Low	High	Low	High
<b>Algeria</b>	Dar El Beida			METEOSAT	
	Tamanrasset		HRPT		
	Tamanrasset				METEOSAT
	Dar El Beida			METEOSAT	
	Tamanrasset				METEOSAT
	Dar El Beida	APT			
<b>Antigua and Barbuda</b>	St. John's			GOES	
	St. John's	APT			
<b>Argentina</b>	Buenos Aires			GOES	
	Antarctica	APT			
	Buenos Aires		HRPT		
	Buenos Aires			GOES	
	Sede Central del Ezeiza	APT			
	Ezeiza	APT			
<b>Australia</b>	Melbourne			GMS	
	Antarctica - Casey	APT			
	Darwin	APT			
	Melbourne	APT			
	Brisbane	APT			
	Darwin			GMS	
	Melbourne				GMS
	Brisbane		HRPT		
	Darwin		HRPT		
	Perth		HRPT		
	Melbourne		HRPT		
	Melbourne	APT			
	Perth			GMS	
	Perth	APT			
<b>Austria</b>	Wien	APT			
	Schwechat			METEOSAT	
<b>Bahamas</b>	Nassau	APT			
	Nassau			GOES	
<b>Bahrain</b>	Bahrain Intl. Airport	APT			
	Bahrain Intl. Airport			METEOSAT	
<b>Bangladesh</b>	Dhaka	APT			
	Dhaka			METEOSAT	
	Dhaka		HRPT		
<b>Barbados</b>	Grantley Adams Int. Airport	APT			
	Grantley Adams Int. Airport			GOES	
	Grantley Adams Int. Airport	APT			
<b>Belarus</b>	Minsk			METEOSAT	
	Minsk	APT			
<b>Belgium</b>	IRM, Avenue Circulaire 3, 1180 Bruxelles	APT			
	IRM, Avenue Circulaire 3, 1180 Bruxelles				METEOSAT
	IRM, Avenue Circulaire 3, 1180 Bruxelles			METEOSAT	
	IRM, Avenue Circulaire 3, 1180 Bruxelles		HRPT		
<b>Belize</b>	17 32 N, 88 18 W			GOES	
	17 32 N, 88 18 W	APT			
<b>Benin</b>	C M N/Cotonou			METEOSAT	
	C M N/Cotonou	APT			



MEMBER	LOCATION	POLAR		GEOSTATIONARY	
		Low	High	Low	High
<b>Botswana</b>	Gabaeowe	APT			
<b>Brazil</b>	Brasilia	APT			
	Brasilia			GOES	
	Brasilia	APT			
	Brasilia				GOES
	Brasilia	APT			
	Brasilia	APT			
	Brasilia	APT			
	Brasilia		HRPT		
	Brasilia		HRPT		
	Brasilia			GOES	
	Brasilia		HRPT		
	Brasilia			GOES	
	Brasilia			GOES	
	Brasilia		HRPT		
	Brasilia				GOES
	Brasilia				GOES
	Brasilia				GOES
	Brasilia			GOES	
	Brasilia			GOES	
<b>British Caribbean Territories</b>	Port of Spain	APT			
	Port of Spain			GOES	
<b>Brunei Darussalam</b>	Seria Met. Office, Brunei Intl. Airport			GMS	
	Seria Met. Office, Brunei Intl. Airport	APT			
	Seria Met. Office, Brunei Intl. Airport				GMS
<b>Bulgaria</b>	Sofia	APT			
	Sofia			METEOSAT	
<b>Burkina Faso</b>	Ouagadougou	APT			
<b>Burundi</b>	Bujumbura Airport	APT			
	Bujumbura Airport			METEOSAT	
<b>Cambodia</b>	Phnom Penh	APT			
<b>Cameroon</b>	Douala			METEOSAT	
	Douala	APT			
<b>Canada</b>	Downsview	APT			
	CMC	APT			
	Dorval			GOES	
	CMC			GOES	
	Dorval		HRPT		
	CMC		HRPT		
	Vancouver	APT			
	CMC				GOES
	CMC	APT			
	Vancouver				GOES
	Dorval	APT			
	Dorval				GOES
	Downsview				GOES
	Vancouver			GOES	
	Dorval	APT			
<b>Cape Verde</b>	Sal			METEOSAT	
	Sal	APT			
	Sal			METEOSAT	
	Sal	APT			

## MEMBER

## LOCATION

POLAR  
Low HighGEOSTATIONARY  
Low High

MEMBER	LOCATION	POLAR Low High	GEOSTATIONARY Low High
Central African Republic	Bangui	APT	
	Bangui		METEOSAT
Chad	Ndjamena	APT	
Chile	Pudahuel		GOES
	Unnamed city	APT	
	Antarctica	APT	
	Antarctica		GOES
	Unnamed city	APT	
	Pudahuel	APT	
	Unnamed city	APT	
	Pudahuel		GOES
	Unnamed city		GOES
	Antarctica		HRPT
	Unnamed city		GOES
	Unnamed city		GOES
	Unnamed city		GOES
	Unnamed city	APT	
	China	Chengdu	APT
Beijing			GMS
Unnamed city			GMS
Beijing			HRPT
Unnamed city			GMS
Guang Zhou		APT	
Chengdu			GMS
Guang Zhou			HRPT
Lasa			HRPT
Beijing		APT	
Unnamed city			HRPT
Unnamed city			HRPT
Lasa			GMS
Unnamed city			GMS
Unnamed city			HRPT
Unnamed city			HRPT
Unnamed city			HRPT
Chengdu			HRPT
Unnamed city		GMS	
Guang Zhou		GMS	
Colombia	Air p.El Drado,Bogota		GOES
	Air p.El Drado,Bogota	APT	
Comoros	Aeroport de Hahaya	APT	
	Aeroport de Hahaya		METEOSAT
Congo	Brazzaville/Maya-Maya		METEOSAT
	Brazzaville/Maya-Maya	APT	
Costa Rica	San Jose		GOES
	San Jose		GOES
	San Jose	APT	
Cote d'Ivoire	Abidjan (ASECNA)	APT	
	Abidjan (ASECNA)		METEOSAT
Cuba	Havana	APT	
Cyprus	17609 - Larnaca Airport		METEOSAT
	17609 - Larnaca Airport	APT	
Czech Republic	Praha-Libus, 50 01 N, 14 27 E		HRPT

MEMBER	LOCATION	POLAR		GEOSTATIONARY	
		Low	High	Low	High
Czech Republic	Praha-Libus, 50 01 N, 14 27 E			METEOSAT	
Democratic People's Republic of Korea	Pyongyang - 39 02 N, 125 47 E	APT			
	Pyongyang - 39 02 N, 125 47 E				GMS
	Pyongyang - 39 02 N, 125 47 E		HRPT		
Denmark	Sondrestrom		HRPT		
	Copenhagen		HRPT		
	Narsarsuaq	APT			
	Narsarsuaq			METEOSAT	
	Sondrestrom			METEOSAT	
	Copenhagen				METEOSAT
Djibouti	Djibouti	APT			
Dominican Republic	Aeropuerto Las Americas, Santo Domingo			GOES	
Ecuador	Quito-inaquito				GOES
Egypt	30 05 N, 31 17 E				METEOSAT
	30 05 N, 31 17 E			METEOSAT	
	30 05 N, 31 17 E	APT			
El Salvador	San Salvador			GOES	
	San Salvador	APT			
Ethiopia	Addis Ababa			METEOSAT	
	Addis Ababa	APT			
	Addis Ababa				METEOSAT
	Asmara			METEOSAT	
	Addis Ababa		HRPT		
	Asmara	APT			
Fiji	Nadi				GMS
	Nadi			GMS	
Finland	FMI				METEOSAT
	FMI		HRPT		
France	Martinique	APT			
	St Denis (Reunion)	APT			
	Paris			METEOSAT	
	Paris		HRPT		
	Paris	APT			
	Paris				METEOSAT
	Martinique				GOES
	Martinique			GOES	
	French Guiana			GOES	
	French Guiana	APT			
	Martinique		HRPT		
	Port Aux Francais	APT			
	St Denis(Reunion)		HRPT		
French Polynesia	Tahiti - Faaa	APT			
	Tahiti - Faaa			GMS	
Gabon	Libreville			METEOSAT	
	Libreville	APT			
Gambia	Banjul/Yundum			METEOSAT	
	Banjul/Yundum	APT			
Germany	Unnamed city			METEOSAT	
	Unnamed city			METEOSAT	
	Offenbach		HRPT		
	Unnamed city			METEOSAT	
	Unnamed city			METEOSAT	

## MEMBER

## LOCATION

POLAR  
Low HighGEOSTATIONARY  
Low High

MEMBER	LOCATION	POLAR Low High	GEOSTATIONARY Low High
Germany	Unnamed city		METEOSAT
	Unnamed city		METEOSAT
	Unnamed city		METEOSAT
	Unnamed city		METEOSAT
	Unnamed city		METEOSAT
	Unnamed city		METEOSAT
	Unnamed city		METEOSAT
	Unnamed city		METEOSAT
	Unnamed city		METEOSAT
	Unnamed city		METEOSAT
	Unnamed city		METEOSAT
	Unnamed city		METEOSAT
	Unnamed city		METEOSAT
	Unnamed city		METEOSAT
	Unnamed city		METEOSAT
	Unnamed city	APT	
	Offenbach		METEOSAT
	Unnamed city		METEOSAT
	Unnamed city		METEOSAT
	Potsdam		METEOSAT
Potsdam	HRPT		
Unnamed city		METEOSAT	
Unnamed city		METEOSAT	
Unnamed city		METEOSAT	
Unnamed city		METEOSAT	
Unnamed city		METEOSAT	
Ghana	Ghana		METEOSAT
	Ghana	APT	
	Ghana		METEOSAT
Greece	Souda Airport	APT	
	Larissa Airport		METEOSAT
	Athens Airport		METEOSAT
	Souda Airport		METEOSAT
	Athens Airport	APT	
Larissa Airport	APT		
Guatemala	Guatemala	APT	
	Guatemala		GOES
Guinea	Conakry - C M N		METEOSAT
Guyana	Timehri Airport		GOES
	Timehri Airport	APT	
Haiti	Port-au-Prince		GOES
	Port-au-Prince	APT	
Honduras	Tegucigalpa	APT	
	Tegucigalpa		GOES
Hong Kong	Royal Observatory		GMS
	Royal Observatory		GMS
	Royal Observatory	APT	
Hungary, Republic of	Budapest		METEOSAT
	Budapest		METEOSAT
	Budapest	HRPT	
Iceland	Reykjavik	APT	

## MEMBER

## LOCATION

POLAR  
Low HighGEOSTATIONARY  
Low High

MEMBER	LOCATION	POLAR Low High	GEOSTATIONARY Low High
Iceland	Reykjavik	APT	
India	Unnamed city	APT	
	Unnamed city	APT	
	Unnamed city		INSAT
	New Delhi		HRPT
	Unnamed city		INSAT
	New Delhi		INSAT
	Unnamed city	APT	
	Unnamed city	APT	
	Unnamed city	APT	
	Unnamed city	APT	
	Unnamed city		INSAT
	Unnamed city		INSAT
	Unnamed city	APT	
	Unnamed city		INSAT
	Unnamed city		INSAT
	Unnamed city		INSAT
	Unnamed city		INSAT
	Unnamed city		INSAT
	Unnamed city		INSAT
	Unnamed city		INSAT
	Unnamed city		INSAT
	Unnamed city		INSAT
	Unnamed city		INSAT
	Unnamed city		INSAT
	Unnamed city	APT	
	Unnamed city		INSAT
	Unnamed city		INSAT
	Unnamed city		INSAT
	Unnamed city		INSAT
	Unnamed city		INSAT
Indonesia	Jakarta		GMS
	Jakarta	APT	
	Jakarta	APT	
	Jakarta	APT	
	Jakarta	APT	
	Jakarta		GMS
	Jakarta	APT	
Iran, Islamic Republic of	Mehrabad	APT	
	Tehran		METEOSAT
	Tehran		METEOSAT
Iraq	Baghdad	APT	
Ireland	near Dublin Airport		METEOSAT
	near Shannon Airport		METEOSAT
	near Shannon Airport	APT	
	near Shannon Airport		METEOSAT
	near Dublin Airport	APT	
	near Dublin Airport		METEOSAT
	near Shannon Airport	APT	
	near Dublin Airport		METEOSAT
	near Dublin Airport	APT	
Islamic State of Afghanistan	Kabul	APT	
Israel	Bet-Dagan	APT	
	Bet-Dagan		METEOSAT

MEMBER	LOCATION	POLAR		GEOSTATIONARY	
		Low	High	Low	High

<b>Italy</b>	Rome				METEOSAT	
	Unnamed city				METEOSAT	
	Unnamed city				METEOSAT	
	Unnamed city				METEOSAT	
	Unnamed city				METEOSAT	
	Unnamed city				METEOSAT	
	Unnamed city				METEOSAT	
	Unnamed city				METEOSAT	
	Rome		HRPT			
	Unnamed city					METEOSAT
	Unnamed city					METEOSAT
	Unnamed city					METEOSAT
	Unnamed city					METEOSAT
	Unnamed city					METEOSAT
	Unnamed city					METEOSAT
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	Unnamed city					METEOSAT
Unnamed city					METEOSAT	
Unnamed city					METEOSAT	
Unnamed city					METEOSAT	
Unnamed city					METEOSAT	
<b>Jamaica</b>	Kingston		APT			

## MEMBER

## LOCATION

POLAR  
Low HighGEOSTATIONARY  
Low High

MEMBER	LOCATION	POLAR Low High	GEOSTATIONARY Low High
Jamaica	Kingston		GOES
Japan	Unnamed city		GMS
	Tokyo	HRPT	
	Unnamed city		GMS
	Antarctica	APT	
	Unnamed city		GMS
	Unnamed city		GMS
	Unnamed city		GMS
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	Unnamed city		GMS
	Tokyo		GMS
	Unnamed city		GMS
	Unnamed city		GMS
	Unnamed city		GMS
	Unnamed city		GMS
	Unnamed city		GMS
	Unnamed city		GMS
	Unnamed city		GMS
	Unnamed city		GMS
	Unnamed city		GMS
Jordan	Queen Alia Intl. Airport, Amman		METEOSAT
	Queen Alia Intl. Airport, Amman	APT	
	Queen Alia Intl. Airport, Amman		METEOSAT
Kenya	Nairobi		METEOSAT
	Nairobi	APT	
	Nairobi	HRPT	
Kuwait	29 13 N, 47 59 E		METEOSAT
	29 13 N, 47 59 E		METEOSAT
	29 13 N, 47 59 E	APT	
Latvia	Riga "Deka-1700"		METEOSAT
	Riga "Deka-1700"		METEOSAT
	Riga "Uran"	APT	
Lebanon	Olba		METEOSAT
	Olba		METEOSAT
Lesotho	Masuru	APT	
	Masuru		METEOSAT
Libyan Arab Jamahiriya	Met. Telecomm Centre, Tripoli Airport		METEOSAT
	Met. Telecomm Centre, Tripoli Airport		METEOSAT
	Met. Telecomm Centre, Tripoli Airport	APT	
	Met. Telecomm Centre, Tripoli Airport	HRPT	
Lithuania	Vilnius		METEOSAT
	Klaipeda	APT	
	Vilnius	APT	
Madagascar	Antananarivo	APT	
	Ivato		METEOSAT
Malawi	Kamuzu Intl. Airport	APT	
	Kamuzu Intl. Airport		METEOSAT

MEMBER	LOCATION	POLAR		GEOSTATIONARY	
		Low	High	Low	High
<b>Malaysia</b>	Kuching			GMS	
	Kuching	HRPT			
	Petaling Jaya		GMS		
	Kota Kinabalu		GMS		
<b>Maldives</b>	Kuching		GMS		
	NMC Maldives - 43555	APT			
	NMC Maldives - 43555			INSAT	
<b>Mali</b>	Bamako/Senou	APT			
	Bamako/Senou			METEOSAT	
<b>Malta</b>	Luqa Airport			METEOSAT	
	Luqa Airport	APT			
<b>Mauritania</b>	Nouakchott	APT			
	Nouakchott			METEOSAT	
<b>Mauritius</b>	Vacooas	APT			
	Vacooas			METEOSAT	
<b>Mexico</b>	Mexico, D.F.		HRPT		
	Mexico, D.F.			GOES	
	Mexico, D.F.				GOES
<b>Mongolia</b>	Ulaanbaator		HRPT		
<b>Morocco</b>	Casablanca/Anfa			METEOSAT	
	Casablanca/Anfa	APT			
<b>Mozambique</b>	Maputo			METEOSAT	
	Maputo	APT			
<b>Myanmar</b>	Yangon	APT			
	Yangon			GMS	
<b>Nepal</b>	Kathmandu			GMS	
	Kathmandu	APT			
<b>Netherlands</b>	Agricultural U. Wageningen				METEOSAT
	KNMI De Bilt		HRPT		
	KNMI De Bilt			METEOSAT	
	KNMI De Bilt				METEOSAT
<b>Netherlands Antilles</b>	Curacao			GOES	
	Curacao	APT			
	Curacao			GOES	
<b>New Caledonia</b>	Noumea	APT			
	Noumea			GMS	
<b>New Zealand</b>	Kelburn	APT			
	Kelburn		HRPT		
	Kelburn			GMS	
	Kelburn				GMS
<b>Nicaragua</b>	Managua	APT			
<b>Niger</b>	AGRHYMET Centre		HRPT		
	AGRHYMET Centre				METEOSAT
	Niamey - Aeroport			METEOSAT	
	Niamey - Aeroport	APT			
<b>Nigeria</b>	Kano	APT			
	Kano			METEOSAT	
	Kano	APT			
<b>Norway</b>	Oslo		HRPT		
	Oslo				METEOSAT
	Oslo			METEOSAT	
<b>Oman</b>	Seeb Int. Airport				METEOSAT



MEMBER	LOCATION	POLAR		GEOSTATIONARY	
		Low	High	Low	High
Oman	Seeb Int. Airport	APT			
	Seeb Int. Airport			METEOSAT	
Pakistan	Karachi	APT			
	Karachi	APT			
	Karachi	APT			
	Karachi			METEOSAT	
Panama	Panama			GOES	
	Panama		HRPT		
	Panama			GOES	
	Panama	APT			
	Panama	APT			
Papua New Guinea	Boroko			GMS	
Paraguay	Asuncion			GOES	
	Asuncion	APT			
Peru	SENAMHI - Lima			GOES	
	Aero Int.			GOES	
Philippines	Diliman - 14.65 N, 121.05 E		HRPT		
	Diliman - 14.65 N, 121.05 E			GMS	
	Diliman - 14.65 N, 121.05 E				GMS
Poland, Republic of	Warsaw			METEOSAT	
	Warsaw			METEOSAT	
	Warsaw	APT			
	Warsaw	APT			
	Warsaw			METEOSAT	
	Warsaw			METEOSAT	
	Warsaw	APT			
	Warsaw		HRPT		
Portugal	Macau	APT			
	Macau			GMS	
	INMG Headquarters, 38 46 N, 09 08 W		HRPT		
	INMG Headquarters, 38 46 N, 09 08 W				METEOSAT
Qatar	Doha	APT			
	Doha	APT			
Republic of Korea	Kwangju			GMS	
	Pusan			GMS	
	Seoul		HRPT		
	Seoul				GMS
	Seoul			GMS	
Republic of Yemen	Aden	APT			
	Aden			METEOSAT	
Romania	Bucharest, INMH				METEOSAT
	Bucharest, INMH			METEOSAT	
	Bucharest, INMH	APT			
Russian Federation	Moscow			METEOSAT	
	Antarctica	APT			
	Moscow				METEOSAT
	Moscow	APT			
	Moscow		HRPT		
	Obminsk	APT			
	Khabarovsk	APT			
	Novosibirsk	APT			
Khabarovsk			GMS		

MEMBER	LOCATION	POLAR		GEOSTATIONARY	
		Low	High	Low	High
Russian Federation	Antarctica	APT			
	Obminsk			METEOSAT	
Rwanda	Kigali			METEOSAT	
Sao Tome and Principe	Sao Tome	APT			
Saudi Arabia	Jeddah				METEOSAT
	Khamis				METEOSAT
	Mushait	APT			
Senegal	CRT Dakar			METEOSAT	
	CRT Dakar				METEOSAT
	CRT Dakar	APT			
Seychelles	Seychelles Intl. Airport	APT			
Sierra Leone	Free town/Lungi	APT			
Singapore	Changi Airport				GMS
	Changi Airport		HRPT		
	Changi Airport			GMS	
Slovakia	Bratislava				METEOSAT
Solomon Islands	91520 - Honiara/Henderson			GMS	
Somalia	Mogadiscio			METEOSAT	
	Mogadiscio	APT			
South Africa	Pretoria	APT			
Spain	Unnamed city	APT			
	Unnamed city	APT			
	Unnamed city	APT			
	Unnamed city	APT			
	Unnamed city	APT			
	Unnamed city	APT			
	Unnamed city	APT			
	Unnamed city	APT			
	Unnamed city	APT			
	Unnamed city	APT			
	Unnamed city	APT			
	Unnamed city	APT			
	Unnamed city			METEOSAT	
	Unnamed city	APT			
	Unnamed city			METEOSAT	
	Unnamed city	APT			
	Unnamed city			METEOSAT	
	Unnamed city			METEOSAT	
	Unnamed city			METEOSAT	
	Unnamed city			METEOSAT	
	Unnamed city			METEOSAT	
	Unnamed city			METEOSAT	
	Unnamed city	APT			
	Unnamed city			METEOSAT	
	Unnamed city			METEOSAT	
	Unnamed city			METEOSAT	
	Unnamed city			METEOSAT	
Unnamed city			METEOSAT		
Unnamed city			METEOSAT		



## MEMBER

## LOCATION

POLAR  
Low HighGEOSTATIONARY  
Low High

MEMBER	LOCATION	POLAR Low High	GEOSTATIONARY Low High
Spain	Unnamed city	APT	
	Unnamed city	APT	
	Unnamed city		METEOSAT
	Unnamed city	APT	
	Unnamed city	APT	
	Unnamed city	APT	
	Unnamed city	APT	
	Unnamed city	APT	
	Unnamed city	APT	
	Unnamed city	APT	
	Unnamed city	APT	
	Unnamed city	APT	
	Unnamed city	APT	
Sri Lanka	Colombo		INSAT
	Colombo	APT	
Sudan	Khartoum	APT	
	Khartoum		METEOSAT
	Khartoum		METEOSAT
Suriname	Duisburg	APT	
	Duisburg		GOES
Sweden	Town Norrkoping		HRPT
	Town Norrkoping		METEOSAT
Switzerland	Locarno		HRPT
	Colovrex		METEOSAT
	Locarno		METEOSAT
Syrian Arab Republic	Damascus Intl. Airport	APT	
	Damascus Intl. Airport		METEOSAT
Thailand	Met. Dept., Bangkok		GMS
	Met. Dept., Bangkok		GMS
	Met. Dept., Bangkok		HRPT
Togo	Lome		HRPT
	Lome	APT	
	Lome		METEOSAT
Trinidad and Tobago	Piarco Airport	APT	
	Piarco Airport		GOES
	Met Office, Piarco Airport		GOES
	Met Office, Piarco Airport	APT	
Tunisia	Tunis		METEOSAT
	Tunis		METEOSAT
	Tunis	APT	
	Tunis		HRPT
Turkey	Ankara		METEOSAT
	Ankara	APT	
Uganda	Entebbe NMC		METEOSAT
United Arab Emirates	Dubai	APT	
	Abu Dhabi		METEOSAT
	Al Dhafra	APT	
	Abu Dhabi	APT	
	Dubai		METEOSAT
	Sharjah		METEOSAT
	Abu Dhabi		METEOSAT
	Sharjah		METEOSAT

MEMBER	LOCATION	POLAR		GEOSTATIONARY	
		Low	High	Low	High
United Arab Emirates	Al Dhafra				METEOSAT
	Dubai				METEOSAT
	Sharjah	APT			
United Kingdom	Bracknell			METEOSAT	
	Lasham	APT			
	Bracknell		HRPT		
	Bracknell				METEOSAT
United Republic of Tanzania	Dar Es Salaam			METEOSAT	
	Dar Es Salaam	APT			
United States of America	Unnamed city	APT			
	Unnamed city				GOES
	Unnamed city			GOES	
	Unnamed city				GOES
	Unnamed city		HRPT		
	Unnamed city				GOES
	Unnamed city	APT			
	Unnamed city	APT			
	Unnamed city		HRPT		
	Unnamed city		HRPT		
	Unnamed city		HRPT		
	Pacific Island			GMS	
	Pacific Island			GMS	
	Unnamed city				GOES
	Unnamed city			GOES	
	Unnamed city	APT			
	Unnamed city		HRPT		
	Unnamed city		HRPT		
	Unnamed city		HRPT		
	Unnamed city		HRPT		
	Unnamed city		HRPT		
	Unnamed city			GOES	
	Unnamed city			GOES	
	Unnamed city				GOES
	Unnamed city				GOES
	Unnamed city		HRPT		
	Unnamed city			GOES	
Unnamed city				GOES	
Unnamed city		HRPT			
Uruguay	CMN Montevideo			GOES	
	Duranzno			GOES	
	CMN Montevideo	APT			
	Duranzno	APT			
Vanuatu	Port Vila - 17 45 S, 168 18 E			GMS	
Venezuela	Maracay-sermet	APT			
	Caracas-mernr			GOES	
Viet Nam, Socialist Republic of	Ha Noi			GMS	
	Ho Chi Minh			GMS	
	Da Nang			GMS	
Yugoslavia	Fed HydroMet Institute, Belgrade	APT			
	Fed HydroMet Institute, Belgrade			METEOSAT	
Zaire	Kinshasa/Binza	APT			

**MEMBER****LOCATION****POLAR**  
**Low High****GEOSTATIONARY**  
**Low High**

<b>MEMBER</b>	<b>LOCATION</b>	<b>POLAR</b>		<b>GEOSTATIONARY</b>	
		<b>Low</b>	<b>High</b>	<b>Low</b>	<b>High</b>
<b>Zaire</b>	Kinshasa/Binza			METEOSAT	
<b>Zambia</b>	Lusaka	APT			
	Lusaka			METEOSAT	
<b>Zimbabwe</b>	Harare	APT			
	Harare			METEOSAT	