



Наш исх.: OBS/WIS/DMA/WWR-II

ЖЕНЕВА, 8 июня 2016 г.

Приложение: 1 (имеется только на английском языке)

Вопрос: Сбор данных из Региона II для включения в публикацию «World Weather Records» (Мировые данные о погоде) за 2015 г.

Предлагаемые меры: Представление данных в региональный координационный центр (адрес см. ниже) как можно скорее, **но не позднее 31 июля 2016 г.**

Уважаемый господин/Уважаемая госпожа!

Были приняты меры по подготовке и публикации серии «World Weather Records» (WWR) (Мировые данные о погоде, МДП) за 2015 г. Как Вам, вероятно, известно, Семнадцатый Всемирный метеорологический конгресс (Кг-17) отметил успехи в осуществлении нового подхода к ежегодному представлению мировых данных о погоде и настоятельно призвал Члены своевременно представлять свои данные, как указано в резолюции 14 (ИС-64) — Представление мировых данных о погоде на ежегодной основе.

Комиссия по основным системам (КОС) призвала ведущие центры КОС по ГСНК принимать активное участие в сборе, компиляции и распространении этих данных, как указано в резолюции 14 (ИС-64).

Японское метеорологическое агентство (ЯМА) в Токио, являясь ведущим центром КОС в РА II, любезно согласилось выступить в качестве регионального координационного центра по сбору МДП, т. е. заниматься сбором и редактированием соответствующих данных, поступающих от Членов РА II, для последующего их препровождения в целях опубликования в Мировой центр данных по метеорологии, национальные центры по информации об окружающей среде (НЦИОС, ранее НЦКД), Эшвилл, США.

В этой связи предлагаю Вам подготовить данные из вашей страны с примечаниями по станциям. Данные должны охватывать 2015 г., а **если еще не были представлены** данные за 1991-2000 гг., 2001-2010 гг., а также за 2011, 2012, 2013 и 2014 гг., то просьба представить также и эти данные. В наших базах данных по-прежнему присутствуют значительные пробелы в данных из большинства частей мира за указанные периоды и годы.

Постоянным представителям Членов Региональной ассоциации II (ASE-646)

Копии: Президенту и вице-президенту Региональной ассоциации II)
Президенту и вице-президенту ККл)
Президенту и вице-президенту КОС) (для информации)
Директору национальных центров по информации)
об окружающей среде (НЦИОС), Эшвилл)

Элементы данных для включения представляют собой среднемесячные и среднегодовые значения давления на уровне станции, давления на уровне моря, средней температуры, максимальной температуры и минимальной температуры, а также месячных и годовых суммарных осадков. Эти данные необходимы в отношении станций, включенных в публикацию ВМО-№ 9, том А, Станции наблюдений (см.: <http://www.wmo.int/pages/prog/www/ois/volume-a/vola-home.htm>). Данные с дополнительных станций также приветствуются и должны включать в себя имеющиеся данные с самого раннего срока начала наблюдений.

Необходимо, чтобы данные были оцифрованы и представлены либо в формате EXCEL, либо в текстовом формате, **предпочтительно в соответствии с новым проектом руководящих указаний, который содержится в приложении к этому письму. Новый шаблон EXCEL** размещен по ссылке: http://www.wmo.int/pages/prog/wcp/wcdmp/GCDS_2.php. Предыдущие руководящие указания, включая шаблон, размещены по этой же ссылке, и им можно следовать в случае возникновения у Членов каких-либо трудностей с применением *нового проекта руководящих указаний*.

Просьба обратить внимание на то, что из *нового проекта руководящих указаний* исключена возможность использования формата ASCII. Кроме того, в проект внесены различные небольшие технические и редакционные изменения, а также добавлена некоторая информация практического характера. Предлагаю Вам поделиться своими замечаниями относительно нового проекта руководящих указаний до 30 сентября 2016 г. (контактная информация — см. ниже). На основе Вашей обратной связи планируется опубликовать новые руководящие указания до конца 2016 г., которые начнут полноценно применяться с 2017 г., т. е. в отношении сбора МДП за 2016 г.

В целях содействия включению данных по Азии в публикацию «World Weather Records» (Мировые данные о погоде) была бы признательна, если бы Вы направили свой вклад как можно скорее по адресу:

Mr Kenji Kamiguchi
GSN Monitoring Centre & CBS Lead Centre for GCOS Data
Japan Meteorological Agency (JMA)
Tel.: + 81 3 3212 8341
Fax: + 81 3 3211 8406
climatemonitor@met.kishou.go.jp

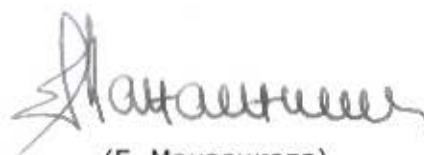
Данные могут быть также направлены по следующему адресу:

Mr Peer Hechler (OBS/WIS/DMA)
World Meteorological Organization
7 bis, avenue de la Paix
CH 1211 Geneva 2
Switzerland
Tel.: +41 (0) 22 730 82 24
wcdmp@wmo.int

Хотела бы подчеркнуть необходимость в особом внимании и тщательности при подготовке материала со строгим соблюдением указанных форматов и предоставлением всей необходимой информации относительно станций. Примечания по станциям считаются важной частью представляемых данных в целом и должны подготавливаться одновременно с подготовкой перечисленных данных.

Если Вам потребуются дополнительные разъяснения, просьба связаться с Отделом прикладных аспектов управления данными ВМО (г-н Омар Баддур и г-н Пер Хехлер: wcdmp@wmo.int).

С уважением,

A handwritten signature in black ink, appearing to read 'Е. Манаенкова'.

(Е. Манаенкова)
за Генерального секретаря

New Draft Guidelines for the Submission of the World Weather Records 2011+

Version 2.0, May 2016, WMO/DMA/PH

Draft

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I. BACKGROUND

I.1 History

The World Weather Records (WWR) database contains historical monthly climatic data from land surface stations worldwide. First released in 1927, the WWR database has been widely employed in operational climate monitoring, international climate assessments, and numerous other applications. To date, there have been nine editions of WWR, the first containing data up through 1920, with each successive release containing data for another decade (i.e., 1921-1930, 1931-1940, 1941-1950, 1951-1960, 1961-1970, 1971-1980, 1981-1990, 1991-2000, 2001-2010). Since its inception, WWR has been produced by three different institutions: the Smithsonian Institution (1927, 1934, 1947); the U.S. Weather Bureau (1959, 1967); and the U.S. National Oceanic and Atmospheric Administration (NOAA; 1983, 1991, 2005). The current edition will also be produced by NOAA. It addresses the 2011+ period, consistent with WMO Secretariat guidance. However, the previous edition lacked data for many countries, posing an impediment to climate monitoring and assessment activities because of the decline in station coverage starting in 1991. The Sixteenth World Meteorological Congress, Geneva 2011, emphasized the importance of updating the World Weather Records continuously. It requested Members to complete the data sets for WWR 1991-2000, submit WWR for 2001-2010, and - starting from 2011- move towards annual updates of the WWR. This approach has been formalized through Resolution 14 (EC-64) - Submission of World Weather Records on an Annual Basis.

I.2 Submission Channels of the WWRs

Each WMO Member should submit two types of files to the responsible CBS Lead Center for GCOS or to WMO as appropriate (see suggested collection mechanisms in ANNEX-I). The first file type should contain station data for the country (single Excel file containing all stations OR single text file per station), and the second should contain a history Metadata file (ANNEX-IV). These files can be submitted via electronic mail following guidance provided by the WMO Secretariat or by a regional coordinating center. In the list of countries in ANNEX-I the responsible institutions are given for each Region including an E-mail address. In case of any question the Members are encouraged to contact WMO: wcdmp@wmo.int.

I.3 Quality Assurance and Accessibility of WWRs

WWRs can be accessed through the World Data Centre for Meteorology, National Centers for Environmental Information (NCEI), Asheville, United States of America at <http://www1.ncdc.noaa.gov/pub/data/wwr/>. It is planned to provide access to quality-controlled WWRs within six months of the WMO's submission deadline annually. Routine quality assurance reviews of NCEI focus on gross data problems and include format consistency checks, determination of duplication and reasonableness of submitted values and metadata.

II. METHODOLOGY FOR REPRESENTING THE WWRs

II.1 Data Elements

This document provides guidance on how to format data for submission to the current edition of WWR. As in the previous edition, the database will contain six climatic elements:

- (code 2) Monthly mean station pressure,
- (code 3) Monthly mean sea level pressure,
- (code 4) Monthly mean temperature,
- (code 5) Monthly mean maximum temperature,
- (code 6) Monthly mean minimum temperature,
- (code 7) Total monthly precipitation.

As practiced in recent years, monthly means of daily relative humidity can be submitted too:

- (code 8) Monthly mean relative humidity.*

The primary goal is to capture year-by-year, month-by-month data for each element at each station (e.g., total monthly precipitation for Geneva in January 2011, February 2011, ..., December 2015+). However, station metadata are also of particular importance. At a minimum these metadata should include station name, coordinates, and elevation. Preferably,

observation times, averaging formulas, instrumentation types, and station changes will also be documented. WMO Members should submit data for all of their surface stations that have an official WMO station index number.

II.2 Data Format

Each WMO Member should submit the WWRs data in either Excel or text file format. This section describes the format of these files, which are similar to previous editions of WWR. There are generally two record types in these formats:

- (a) Station Header records documenting basic station characteristics;
- (b) Yearly Data records with monthly and annual data for a particular year.

Note that Decadal Average (MEAN) and Climate Normal (CLINO) records are no longer necessary with this data submission.

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Option 1: Excel

An example of a properly formatted Excel submission is given in ANNEX-II, and an electronic template is provided to Members. *A single Excel file should contain all stations for a given country, with a single station on each tab, and each tab containing a single station's elements.*

The first line for each station must be a Station Header record. There must be only one Station Header record for each station, and it should contain the most recent information for the station.

The next Yearly Data record section contains data for each climatic element for that station. Leave the element section blank if the station does not report that element.

(a) Station Header Records

Station Header records contain 14 fields documenting basic station characteristics. These characteristics should represent the most recent location of the station. Stated in tabular form, the contents include the following:

FIELD	COLUMNS	CONTENTS	NOTES
	1-2		Leave these columns blank
1	3-7	WMO number	5-digit with leading 0 if applicable, right-justified
2	8-8	Record type	1 = Station Header record
3	9-10	Degrees of latitude (0-90)	Right-justified
4	11-12	Minutes of latitude (0-59)	Right-justified
5	13-14	Seconds of latitude (if available, 0-59)	Right-justified
6	15-15	Hemisphere of latitude	N (Northern) or S (Southern)
7	16-18	Degrees of longitude (0-180)	Right-justified
8	19-20	Minutes of longitude (0-59)	Right-justified
9	21-22	Seconds of longitude (if available, 0-59)	Right-justified
10	23-23	Hemisphere of longitude	E (Eastern) or W (Western)
11	24-47	Name of country in English	Left-justified
12	48-71	Name of station in English	Left-justified
13	72-76	Height of station above sea level (whole meters)	Right-justified
14	77-83	Height of barometer above sea level (tenths of meters)	Right-justified

(b) Yearly Data Records

Each Yearly Data record contains monthly and annual data for a particular year. These records contain 17 fields documenting the WMO number, element type, year, monthly data values, and the annual value. Stated in tabular form, the contents include the following:

FIELD	COLUMNS	CONTENTS	NOTES
	1-2		Leave these columns blank
1	3-7	WMO number	5-digit with leading 0 if applicable, right-justified
2	8-8	Element type	2 = mean station pressure in tenths of hpa. 3 = mean sea level pressure in tenths of hpa. 4 = mean daily air temperature in tenths of a °C. 5 = total precipitation in tenths of a mm. 6 = mean daily maximum air temperature in tenths of a °C. 7 = mean daily minimum air temperature in tenths of a °C. 8 = mean of the daily relative humidity in whole percent.
3	9-12	Year	4-digits
4	13-13	Record type	Blank = Yearly Data record
5	14-18	January	If a value is missing, then leave the field blank. All values should be right-justified. Decimal points are implied (e.g., 1014.1 hpa should be entered as "10141"). If there is no value after the decimal, the last character should be
6	19-23	February	
7	24-28	March	
8	29-33	April	
9	34-38	May	
10	39-43	June	
11	44-48	July	
12	49-53	August	

13	54-58	September	"0" (e.g., 1014.0 hpa should be "10140").
14	59-63	October	
15	64-68	November	If the temperature is negative, the 1 st value of the field should be "-" (e.g., -13).
16	69-73	December	
17	74-78	Annual	If precipitation is zero, the field should be "0". If there was trace precipitation, the field should be "T".

If data are missing for an entire year, then only complete Fields 1-4.

Yearly Data can be provided only for the data-year in question but also for other data-years where data were not previously submitted or need to be corrected.

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Option 2: Text

An example of a properly formatted text file submission is given in ANNEX-III, and a template is provided. A single text file should contain one station containing that single station's elements.

The first section for each station must be a Station Header record. There must be only one Station Header record for each station, and it should contain the most recent information for the station.

The next Yearly Data record section contains data for each climatic element for that station. Leave the element section blank by using spaces if the station does not report that element. Do not use 9's or -9's or tabs to represent missing data.

(a) Station Header Records

Station Header records contain 7 rows documenting basic station characteristics. These characteristics should represent the most recent location of the station.

LINE	POSITION	CONTENTS	NOTES
1	40-44	WMO number	5-digit with leading 0 if applicable, left-justified
2	40-63	Name of station in English	Left-justified
3	40-63	Name of country in English	Left-justified
4	40-49	Latitude Degrees (0-90) Minutes (0-59) Seconds (0-59) Direction (N or S)	Left-justified, example 09 04 00N
5	40-50	Longitude Degrees (0-180) Minutes (0-59) Seconds (0-59) Direction (E or W)	Left-justified, example 000 45 59S
6	40-49	Height of station above sea level	Left-justified, whole meters
7	40-49	Height of barometer above sea level	Left-justified, tenths of meters, explicit decimal

(b) Yearly Data Records

Each Yearly Data record contains monthly and annual data for a particular year. These records contain 14 fields documenting the year, element type, monthly data values, and the annual value. Stated in tabular form, the contents include the following:

FIELD	COLUMNS	CONTENTS	NOTES
1	1-4	Year	4-digits
2	6-11	January	If a value is missing, then leave the field blank. All values should be right-justified. Decimal points should be explicitly noted except for relative humidity (which is rounded to whole percent). If there is no value after the decimal, the last character should be "0" (e.g., 1014 hpa should be "1014.0"). If the temperature is negative, the 1 st value of the field should be "-" (e.g., -13). If precipitation is zero, the field should be "0". If there was trace precipitation, the field should be "T".
3	13-18	February	
4	20-25	March	
5	27-32	April	
6	34-39	May	
7	41-46	June	
8	48-53	July	
9	55-60	August	
10	62-67	September	
11	69-74	October	
12	76-81	November	
13	83-88	December	
14	90-95	Annual	

If data are missing for an entire year, then only complete Field 1. *If data are missing for any months, use spaces to fill (not the tab key).*

Yearly Data can be provided only for the data-year in question but also for other data-years where data were not previously submitted or need to be corrected.

II.3 History Metadata (Station Notes)

Each WMO Member should submit one file containing all of the Metadata (station notes) for all of the stations in their country. There is no required format for this information, but there is some preferred content to make the greatest possible use of the submitted climatic data. Critical content includes the times of observation, the formulas used in computing means, and the types of instrumentation. To the extent possible, this information should be specific to each climatic element. Furthermore, it is extremely helpful if historical changes are explicitly documented for all types of metadata, including observation times, averaging formulas, instrumentation types, and basic parameters such as location and elevation. An example of station notes is given in ANNEX-IV.

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Annex I: Proposed Collection Mechanism By Region

Note: Members may choose to submit their WWRs through any of the below mentioned CBS Lead Centers for GCOS. Members are invited to notify WMO (wcdmp@wmo.int) should they decide to deviate from the below proposed scheme.

REGION	Countries (ENG)	Collection mechanism	Alternative
RA I	All Members of RA I	CBS Lead Center for GCOS Africa, Morocco (DMN); cbs.lead.centre.4gcos@gmail.com	WMO, Geneva; wcdmp@wmo.int
RA II	All Members of RA II	CBS Lead Center for GCOS Asia, Japan (JMA); climatemonitor@met.kishou.go.jp	WMO, Geneva; wcdmp@wmo.int
RA III	All Members of RA III	CBS Lead Center for GCOS South America, Chile (DMC)	WMO, Geneva; wcdmp@wmo.int
RA IV	All countries of RA IV	CBS Lead Center for GCOS North and Central America, Caribbean, USA (NCEI); gcos.ncdc@noaa.gov	WMO, Geneva; wcdmp@wmo.int
RA V	All Members of RA V	CBS Lead Center for GCOS South West Pacific, Australia, (BOM); GCOS_Lead_Centre_RAV@bom.gov.au	WMO, Geneva; wcdmp@wmo.int
RA VI	All Members of RA VI	CBS Lead Center for GCOS Europe, Germany (DWD); christiana.lefebvre@dwd.de	WMO, Geneva; wcdmp@wmo.int

Annex II: Example Excel File (single station per tab)

World Weather Records

Data Sheet, Single Station (All Elements)

Scroll to Detailed Column Description Instructions

Station Header Record

Blank	A	B	C	D	E	F	G	H
WMO Number	Latitude	Longitude	Country Name (English)	Station Name (English)	Station Height	Barometer Height		
	D D M M S S	D D M M S S			Whole Meters	Meters, to tenths		
99999	1 47 22 59	8 34 0	COUNTRY NAME	STATION NAME	31	31.1		3

Yearly Data Record

(2) Mean Station Pressure (tenths of hPa, decimal implied, example 10228 means 1022.8)

Blank	A	B	I	J	K										
WMO Number	Year	January	February	March	April	May	June	July	August	September	October	November	December	Annual	
99999	2	2011	10228	10218	10123	10111	10031	9998	10000	10056	10124	10166	10206	10284	10129
99999	2	2012	10207	10205	10127	10094	10076	10020	9997	10044	10124	10161	10200	10266	10127
99999	2	2013	10238	10209	10190	10101	10070	10008	10004	10040	10101	10158	10227	10247	10133
99999	2	2014	10238	10168	10152	10086	10041	10039	10001	10045	10107	10185	10204	10248	10126
99999	2	2015	10234	10249	10181	10077	10049	9979	10000	10036	10119	10174	10170	10263	10128
	2	2016													

(3) Mean Sea Level Pressure (tenths of hPa, decimal implied, example 10269 means 1026.9)

Blank	A	B	I	J	K										
WMO Number	Year	January	February	March	April	May	June	July	August	September	October	November	December	Annual	
99999	3	2011	10269	10258	10162	10149	10067	10034	10036	10092	10161	10204	10245	10325	10167
99999	3	2012	10247	10245	10165	10132	10113	10056	10033	10080	10161	10199	10240	10307	10165
99999	3	2013	10279	10249	10229	10139	10107	10044	10040	10076	10138	10196	10267	10287	10171
99999	3	2014	10279	10207	10191	10123	10078	10075	10037	10081	10144	10223	10243	10288	10164
99999	3	2015	10275	10290	10220	10114	10086	10015	10036	10072	10156	10212	10209	10304	10166
	3	2016													

(4) Mean Daily Air Temperature (tenths of degree Celsius, decimal implied, example -54 means -5.4 C)

Blank	A	B	I	J	K										
WMO Number	Year	January	February	March	April	May	June	July	August	September	October	November	December	Annual	
99999	4	2011	-54	-15	73	144	231	257	273	258	212	138	53	-24	129
99999	4	2012	1	34	98	141	219	236	275	257	205	107	34	-29	132
99999	4	2013	-31	9	63	153	210	247	261	262	206	132	35	3	129
99999	4	2014	-23	29	78	163	205	250	260	249	213	140	65	-5	135
99999	4	2015	-28	-29	63	164	198	256	279	260	221	149	75	-25	132
	4	2016													

(5) Total Precipitation (tenths of mm, decimal implied, example 122 means 12.2 mm)

Blank	A	B	I	J	K										
WMO Number	Year	January	February	March	April	May	June	July	August	September	October	November	December	Annual	
99999	5	2011	122	39	0	144	50	458	1286	497	92	457	214	30	3389
99999	5	2012	0	5	60	377	123	1035	549	743	507	226	0	79	3704
99999	5	2013	96	29	329	130	308	661	577	342	879	668	429	1	4449
99999	5	2014	7	88	1	372	391	696	1820	507	742	99	80	32	4835
99999	5	2015	15	100	2	170	684	664	961	1234	245				
	5	2016													

(6) Mean Daily Maximum Air Temperature (tenths of degree Celsius, decimal implied, example -13 means -1.3 C)

Blank	A	B	I	J	K										
WMO Number	Year	January	February	March	April	May	June	July	August	September	October	November	December	Annual	
99999	6	2011	-13	36	139	204	295	308	323	305	267	191	111	16	183
99999	6	2012	59	101	163	200	279	285	327	306	271	161	83	5	187
99999	6	2013	16	61	110	208	268	304	310	317	255	186	71	53	180
99999	6	2014	26	82	134	223	264	304	307	293	267	200	119	31	188
99999	6	2015	21	13	125	227	256	315	327	303	272	206	134	16	185
	6	2016													

(7) Mean Daily Minimum Air Temperature (tenths of degree Celsius, decimal implied, example -93 means -9.3 C)

Blank	A	B	I	J	K										
WMO Number	Year	January	February	March	April	May	June	July	August	September	October	November	December	Annual	
99999	7	2011	-93	-60	13	83	158	207	227	212	160	88	-3	-66	77
99999	7	2012	-52	-28	32	89	154	194	228	215	143	57	-16	-62	80
99999	7	2013	-75	-39	19	96	154	194	220	212	164	78	2	-42	82
99999	7	2014	-66	-16	26	107	148	202	219	210	164	87	21	-36	89
99999	7	2015	-65	-63	4	100	145	203	236	222	174	95	26	-59	85
	7	2016													

(8) Mean of the Daily Relative Humidity (whole percent, example 57 means 57%)

Blank	A	B	I	J	K										
WMO Number	Year	January	February	March	April	May	June	July	August	September	October	November	December	Annual	
99999	8	2011	57	62	31	46	44	63	68	71	63	73	56	42	56
99999	8	2012	42	43	36	45	49	64	68	74	66	56	46	65	55
99999	8	2013	50	52	56	50	62	56	71	67	73	59	64	42	59
99999	8	2014	36	34	32	40	44	54	67	65	60	54	48	56	49
99999	8	2015	41	47	31	34	48	60	66	73	59	50	45	36	49
	8	2016													

Column Descriptions

A World Meteorological Organization (WMO) Number. 99999=Unassigned.

B *Element Designator Code. 1=Header Record, 2=Mean Station Pressure (tenths of hPa), 3=Mean Sea Level Pressure (tenths of hPa), 4=Mean Air Temperature (tenths of deg C), 5=Total Amount of Precipitation (tenths of mm), 6=Mean of the Daily Maximum Air Temperature (tenths of deg C), 7=Mean of the Daily Minimum Air Temperature (tenths of deg C), 8=Mean of the Daily Relative Humidity in whole percent

C Latitude. Format: DDMMSS (N or S), where DD=Degrees (00 to 90), MM=Minutes (00 to 59), SS=Seconds (00 to 59), N = North, S = South

D Longitude. Format: DDDMMSS (E or W), where DDD=Degrees (000 to 180), MM=Minutes (00 to 59), SS=Seconds (00 to 59), E = East, W = West

E Country Name (in English)

F Station Name (in English)

G Height of Station. Format: whole meters.

H Height of Barometer. Format: tenths of a meter (decimal implied).

I Year of Data.

J #Average Value Designator Code. Format: Blank=Yearly Data

K Monthly/Annual Data Values. Format: tenths of a deg C, mm, or hPa (decimal implied), blank=missing value, annual value mean of monthly values.

Precipitation: All values to tenths of a mm, annual value sum of monthly values, zero precipitation indicated with a 0, trace precipitation total (>0 and <0.05 mm) indicated with a T

Annex III: Example Text File (single station per file)

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WMO Number: 85629
Station Name: CURICO GENERAL FREIRE
Country Name: CHILE
Latitude (DD MM SS N/S): 34 58 00 S
Longitude (DDD MM SS E/W): 071 14 00 W
Station Height (whole meters): 228
Barometer Height (meters, to tenths): 228.0

(2) Mean Station Pressure (tenths of hPa)

Year Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec MEAN
2011 989.0 986.9 989.1 989.8 990.0 993.8 993.2 992.9 993.5 991.6 989.9 988.3 990.7
2012 988.3 988.5 988.7 990.7 990.5 991.5 990.7 991.3 990.9 991.6 988.6 986.3 989.8
2013 985.2 986.3 987.3 988.3 989.5 991.4 991.2 991.9 992.9 990.1 989.1 987.8 989.3
2014 986.9 986.2 987.3 989.8 990.7 992.0 989.0 992.7 990.9 990.7 990.0 986.2 989.4
2015 987.5 986.1 986.3 990.3 990.1 990.0 991.4 992.7 990.4 989.6 988.7 988.1 989.3
2016

(3) Mean Sea Level Pressure (tenths of hPa)

Year Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec MEAN
2011 1015.1 1012.9 1015.4 1016.5 1016.9 1021.2 1020.6 1020.2 1020.6 1018.4 1016.3 1014.4 1017.4
2012 1014.3 1014.6 1015.0 1017.5 1017.7 1018.8 1017.9 1018.5 1017.8 1018.5 1015.0 1012.3 1016.5
2013 1011.0 1012.3 1013.6 1015.1 1016.7 1019.0 1018.6 1019.2 1020.0 1016.7 1015.3 1013.7 1015.9
2014 1012.8 1012.3 1013.6 1016.7 1018.0 1019.5 1016.3 1020.0 1017.8 1017.4 1016.6 1012.3 1016.1
2015 1013.5 1012.1 1012.6 1017.3 1017.2 1017.1 1018.7 1020.1 1017.3 1016.3 1015.0 1014.2 1016.0
2016

(4) Mean Daily Air Temperature (tenths of degrees Celsius)

Year Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec MEAN
2011 19.4 19.3 16.7 13.6 12.0 7.2 7.7 8.2 9.8 12.8 15.9 18.8 13.5
2012 19.9 18.6 16.4 12.7 9.6 8.3 9.3 8.8 11.7 12.5 14.9 19.7 13.5
2013 20.5 19.1 16.1 12.2 7.9 5.4 6.5 8.6 9.7 14.0 17.3 19.9 13.1
2014 20.3 18.2 16.4 11.4 8.3 6.1 7.4 7.6 10.9 13.1 15.1 18.1 12.7
2015 19.3 18.6 15.8 10.6 9.6 9.6 7.6 7.6 11.0 13.0 16.2 18.6 13.1
2016

(5) Total Precipitation (tenths of mm)

Year Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec MEAN
2011 11.7 0 0 2.4 191.1 75.2 44.6 110.8 33.7 18.9 0.2 0 488.6
2012 7.0 0 37.7 14.7 168.9 408.8 208.7 115.1 186.7 43.9 2.0 0 1193.5
2013 8.3 1.0 0.3 17.5 55.9 147.9 139.7 116.0 24.9 0.4 0 0.2 512.1
2014 0 1.5 3.0 22.4 203.7 135.2 390.3 108.3 65.2 47.4 6.7 0 983.7
2015 0.3 0 29.9 25.0 127.1 26.1 126.5 6.6 46.7 71.9 0.2 0 460.3
2016

(6) Mean Daily Maximum Air Temperature (tenths of degree Celsius)

Year Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec MEAN
2011 1.3 3.6 13.9 20.4 29.5 30.8 32.3 30.5 26.7 19.1 11.1 1.6 18.2
2012 5.9 10.1 16.3 20.0 27.9 28.5 32.7 30.6 27.1 16.1 8.3 0.5 18.7
2013 1.6 6.1 11.0 20.8 26.8 30.4 31.0 31.7 25.5 18.6 7.1 5.3 18.0
2014 2.6 8.2 13.4 22.3 26.4 30.4 30.7 29.3 26.7 20.0 11.9 3.1 18.8
2015 2.1 1.3 12.5 22.7 25.6 31.5 32.7 30.3 27.2 20.6 13.4 1.6 18.5
2016

(7) Mean Daily Minimum Air Temperature (tenths of degree Celsius)

Year Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec MEAN
2011 9.3 6.0 1.3 8.3 15.8 20.7 22.7 21.2 16.0 8.8 0.3 6.6 7.7
2012 5.2 2.8 3.2 8.9 15.4 19.4 22.8 21.5 14.3 5.7 1.6 6.2 8.0
2013 1.6 6.1 11.0 20.8 26.8 30.4 31.0 31.7 25.5 18.6 7.1 5.3 18.0
2014 2.6 8.2 13.4 22.3 26.4 30.4 30.7 29.3 26.7 20.0 11.9 3.1 18.8
2015 2.1 1.3 12.5 22.7 25.6 31.5 32.7 30.3 27.2 20.6 13.4 1.6 18.5
2016

(8) Mean of the Daily Relative Humidity (whole percent)

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[illegible]

Annex IV: Station Notes Example

TRINIDAD AND TOBAGO (2 stations)

General:

All observation hours were in local time. A total of 24 hourly observations per day were used in computing the means of temperature and pressure except at Crown Point. At this station, part time operation existed during June to December 1980; January 1976; 1977, and 1978; February, March, April 1976; and for February, March, and April 1978. Observation hours during these periods were 0700 to 2300 hours or 0800 to 22 hours.

At Piarco, the period of record of CLINO values for sea level pressure and temperature was 1946-1975. For precipitation it was 1946-1980. No CLINO exists for Crown Point since past records begin only in 1970.

Pressure:

Pressure was measured by a Kew Pattern barometer until 1974 after which a precision Aneroid type was used. Heights of the barometers were 13.4 meters at Piarco and 6.7 meters at Crown Point.

Temperature:

Thermometers, housed in a standard Stevenson Screen, were 1.2 meters above ground at both stations.

Precipitation:

Rainfall was measured by a pot gauge. A Tilting – Siphon rain recorder adjusted the pot gauge. Rainfall was measured four times daily at 0200, 0800, 1400, and 2000 hours local time at both stations except during part time operations at Crown Point. Heights of the rain gauges were .3 meters at Piarco, and 3 meters at Crown Point.

URUGUAY (13 stations)

General:

CLINO values correspond to the period 1951-80 for precipitation and 1946-1980 for other elements. Rain gauges and thermometers were located 1.5 meters above the ground.

Pressure and Temperature:

The monthly pressure and temperature values were both computed from the equation:
 $1/10(00+03+06+09+12+15+18+21 \text{ hours GMT} + \text{Mean Max} + \text{Mean Min})$

Precipitation:

The daily values were measured at 0900 hours GMT.