



ARUBA

CLIMATOLOGICAL SUMMARY 2013

PRECIPITATION

The total amount of rainfall recorded at the Reina Beatrix International Airport for the year 2013 was 295.6 mm this is 37.3% below normal (Figure 1a).

During the first quarter of the year 2013 (January, February, March) a total of 115.6 mm of rainfall was recorded at the Reina Beatrix International Airport this is almost **39.1 %** of the total amount for 2013. During the second quarter of the year 2013 (April, May, June) a total 19.8 mm (**6.7 %** of the total amount for 2013) was recorded. The third quarter of the year 2013 (July, August, September) a total of 42.4 mm (**14.3 %** of the total amount for 2013) was recorded. For the last quarter of the year 2013 (October, November and December) a total of 117.8 mm (**39.9 %** of the total amount for 2013) was recorded. Evidently the last quarter of the year 2013 which is part of the rainy season, was the wettest quarter, but the total amount of rain was still below normal values.

The *wettest* month for 2013 was January with a total of 95.2 mm which was far above normal values. The highest rainfall accumulation in **24 hours** was recorded on January 16 (37.4 mm), which was total sum duration of 104 minutes of rainfall in on January 16. Longest *continuous* rain duration took place on January 12 2013 from 07:18 – 07:45 local time, which means a duration of 28 minutes of continuous rain. In the last 30 years the only year drier than 2013 was 2001 (137.2 mm).

After a seasonal decomposition, filters, and seasonal trend test, one can conclude that from 1981, there is a small upward trend related to rainfall (Figure 1b)

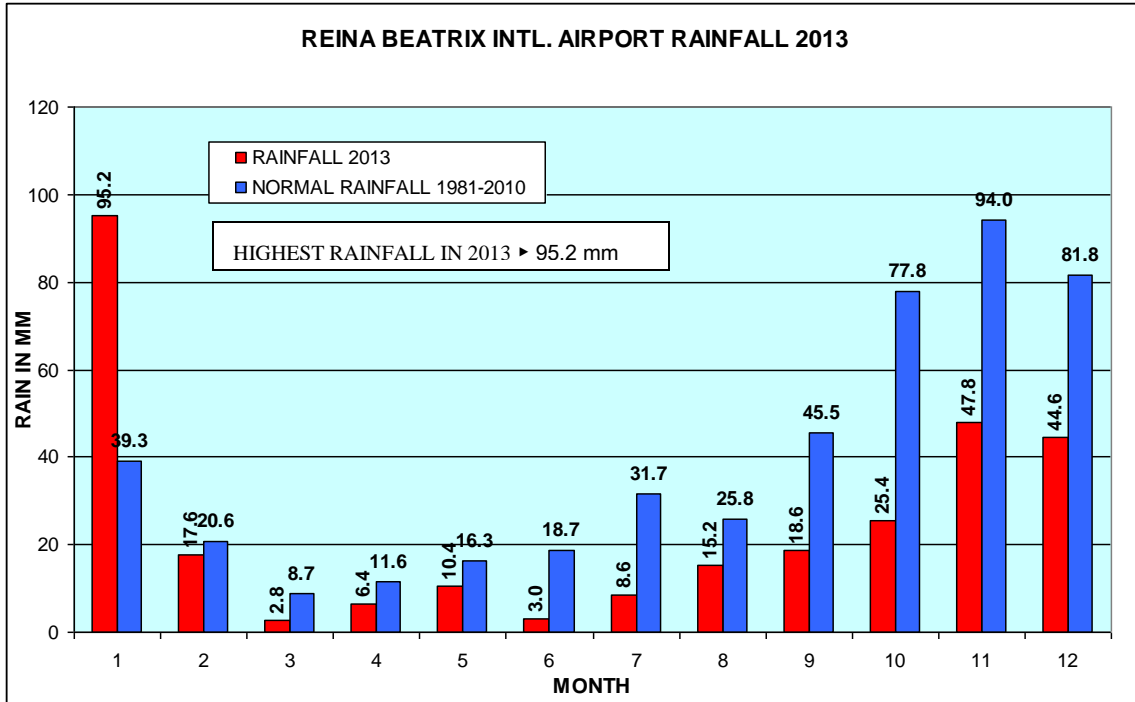


Figure 1. Rainfall 2013 versus 30 year normal (1981-2010)

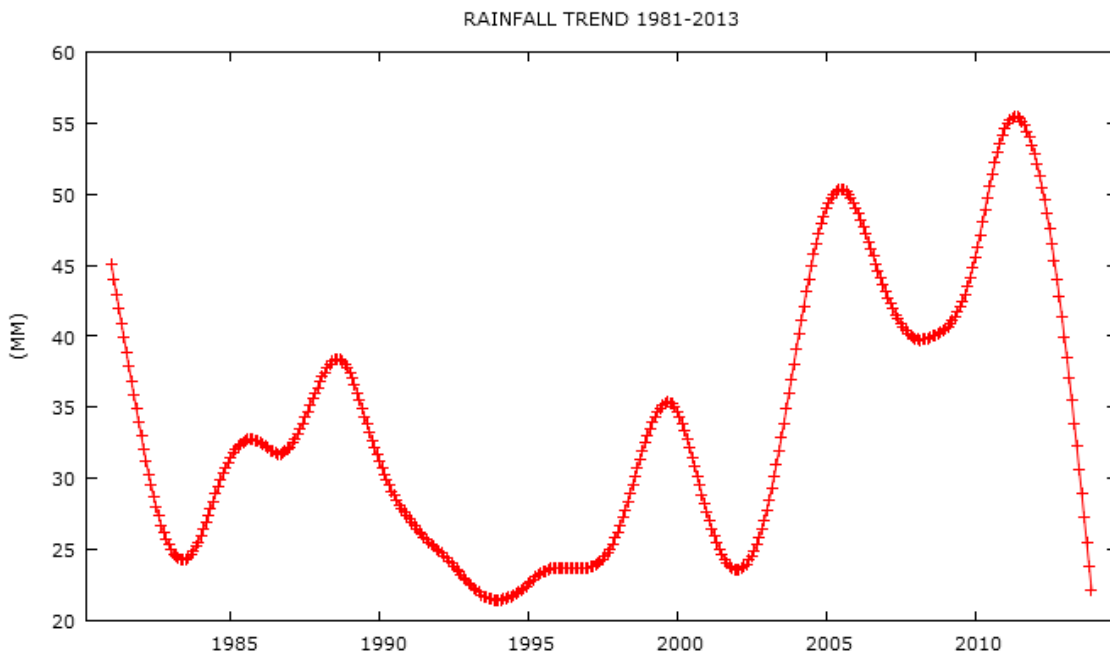


Figure 1b. Rainfall Trend 1981-2013

Figure 1c shows that most of the precipitations (38.3%) of 2013 took place during the early morning hours between 00:00 local time – 06:00 local time, 30.6% between 06:00-12:00pm, 19.6% between 12:00-18:00 local time, and a total of 11.6% between 18:00-24:00 local time. In 2012 the numbers were 35.0% between 00:00 – 06:00 local time, a total of 34.3% between 06:00 – 12:00 local time, a total of 20.8% between 12:00 – 18:00 local time and between 18:00 – 00:00 local time a total of 9.9%. Evidently on Aruba most of the precipitations are likely to develop after midnight hours (from 00:00 – 06:00), namely total of **35.0 %** in **2012** and a total of **38.3%** in **2013**.

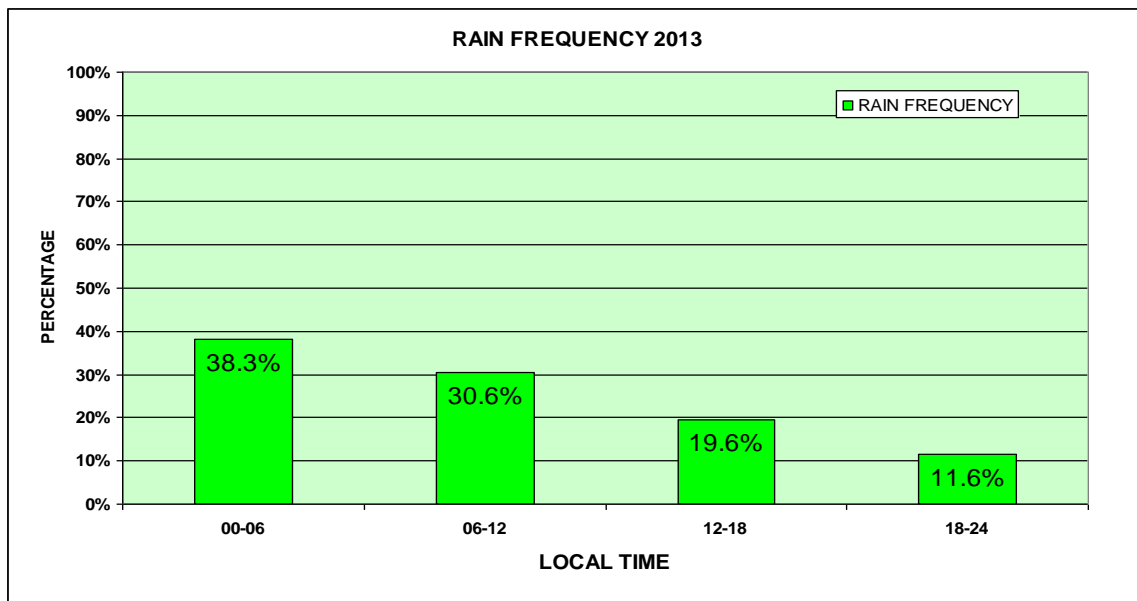


Figure 1c. Rain Frequency during 2013

TEMPERATURE

The year average air temperature recorded at the Reina Beatrix International Airport Aruba for 2013 was 28.6 °C (normal value 28.1 °C). August 2013 with an average of 29.6 °C, September 2013 with an average of 30.1 °C and October 2013 with an average of 29.6 °C, appear to be the warmest months of the year 2013 (Figure 2a).

The Average maximum temperature during August 2013 was 33.7 °C, the average maximum temperature during September 2013 was 34.0 °C and average maximum temperature of October 2013 was 33.5 °C. The absolute maximum temperature of 35.8 °C was recorded on August 20 2013.

The average minimum temperature during 2013 was 26.4 °C, with an absolute minimum temperature of 22.7 °C recorded on January 12 2013. January had also the lowest minimum monthly average temperature (24.5 °C).

The absolute maximum temperature over the last 30 years was recorded in September 2003 with a maximum of 36.5 °C (record high over the last 30 years).

The absolute minimum temperature over the last 30 years was recorded in February 1985 with a minimum of 20.6 °C (record low over the last 30 years).

The same procedure that was done for rainfall was done for monthly average temperatures. After a seasonal trend test, one can conclude that there was upward trend in temperature during the period 1981-2013 (Figure 2b)

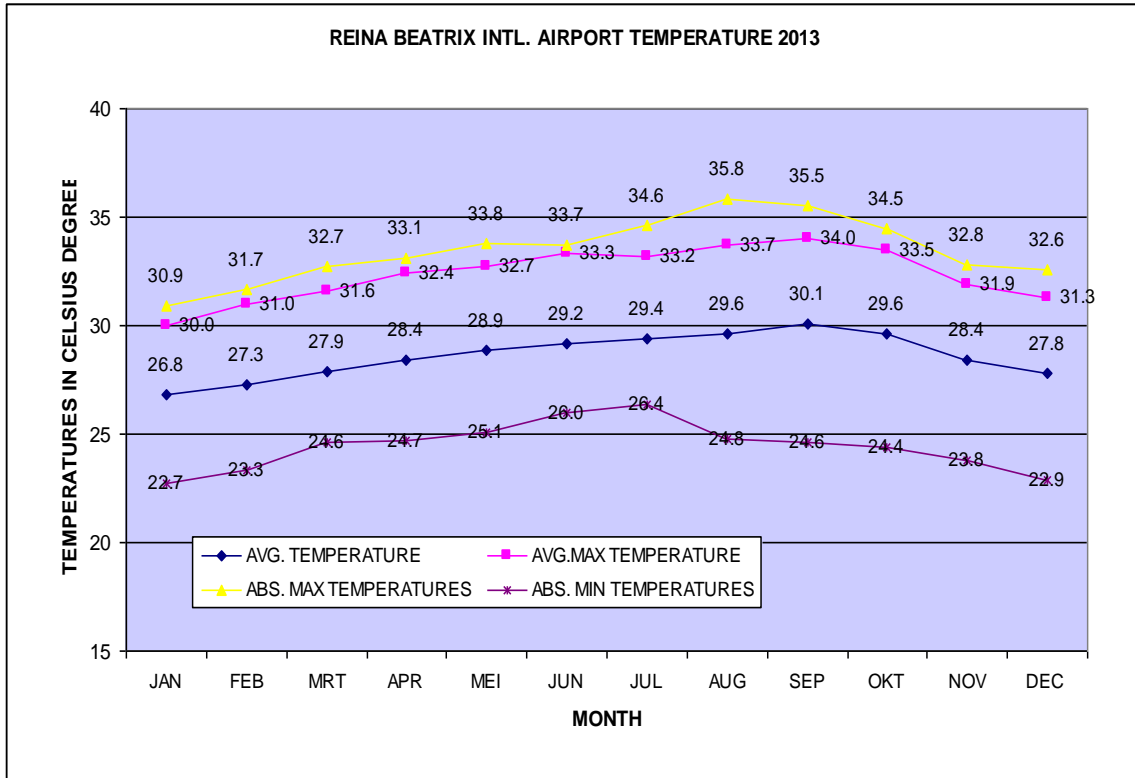


Figure 2a. Temperatures in Celsius degrees 2013

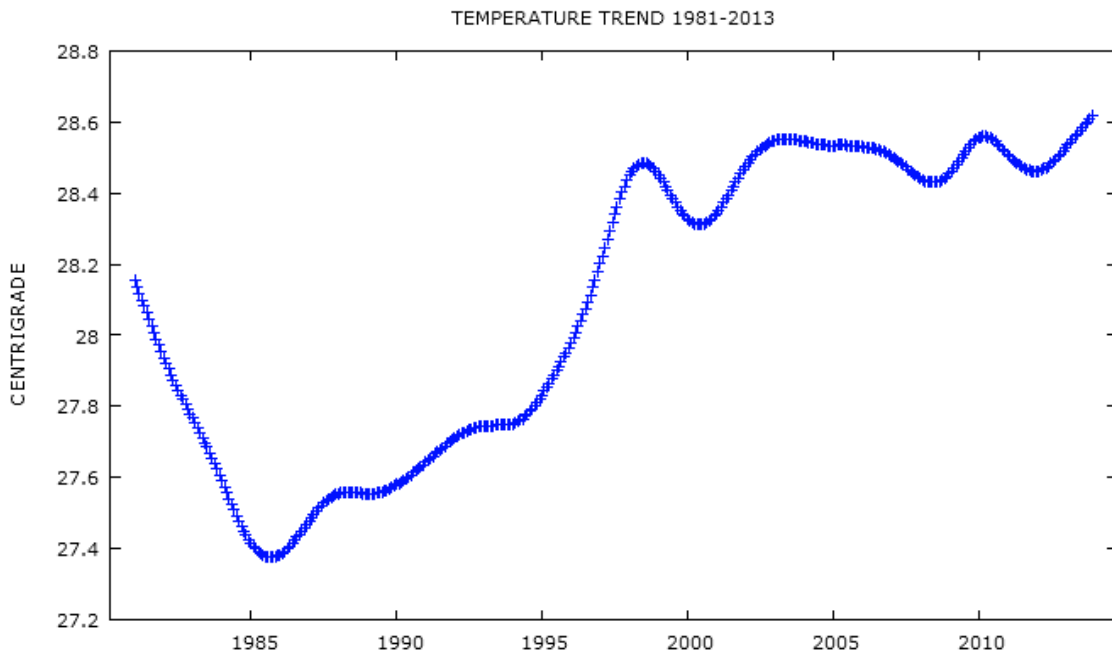


Figure 2b. Temperature trend 1981-2013

WINDSPEED

The year average wind-speed at 10 meters height for the year 2013 at the Reina Beatrix International Airport was 7.6 m/sec (27.4 km/h). The highest average wind-speed of 9.0 m/sec (32.4 km/h) was recorded during the month of June 2013 and the lowest during the month of November 2013 with a 5.5 m/sec (19.8 km/h). The highest average maximum of 17.3 m/sec (62.3 km/h) during June 2013 and the absolute maximum wind-speed of 22.6 m/sec (81.4 km/h) was recorded during the month of January 2013 (Figure 3a).

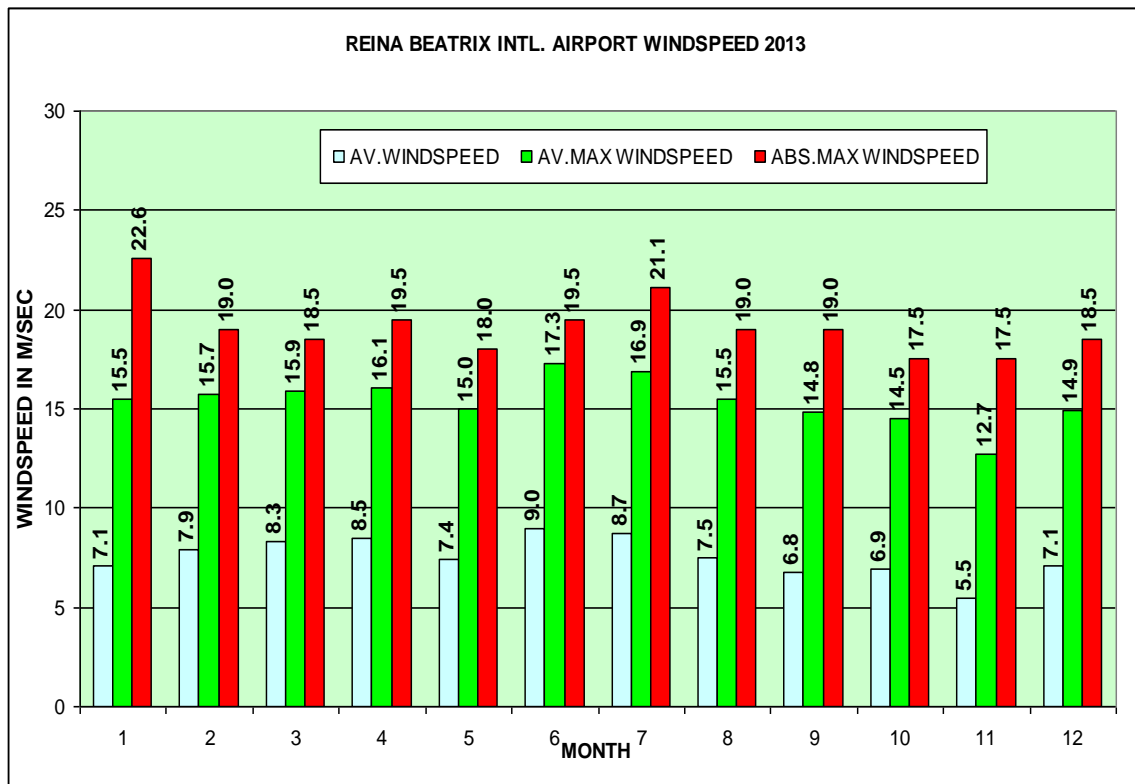


Figure 3a. Wind-speed 2013

The wind-rose figure indicates that for almost 78.2% of the time the wind was more than 22 knots. The wind was for roughly 33% of the time between 75 degrees (East-Northeast) to 85 degrees (East-Northeast) and almost for 77% between 65 degrees East-Northeast to 95 degrees (East) (Figure 3b).

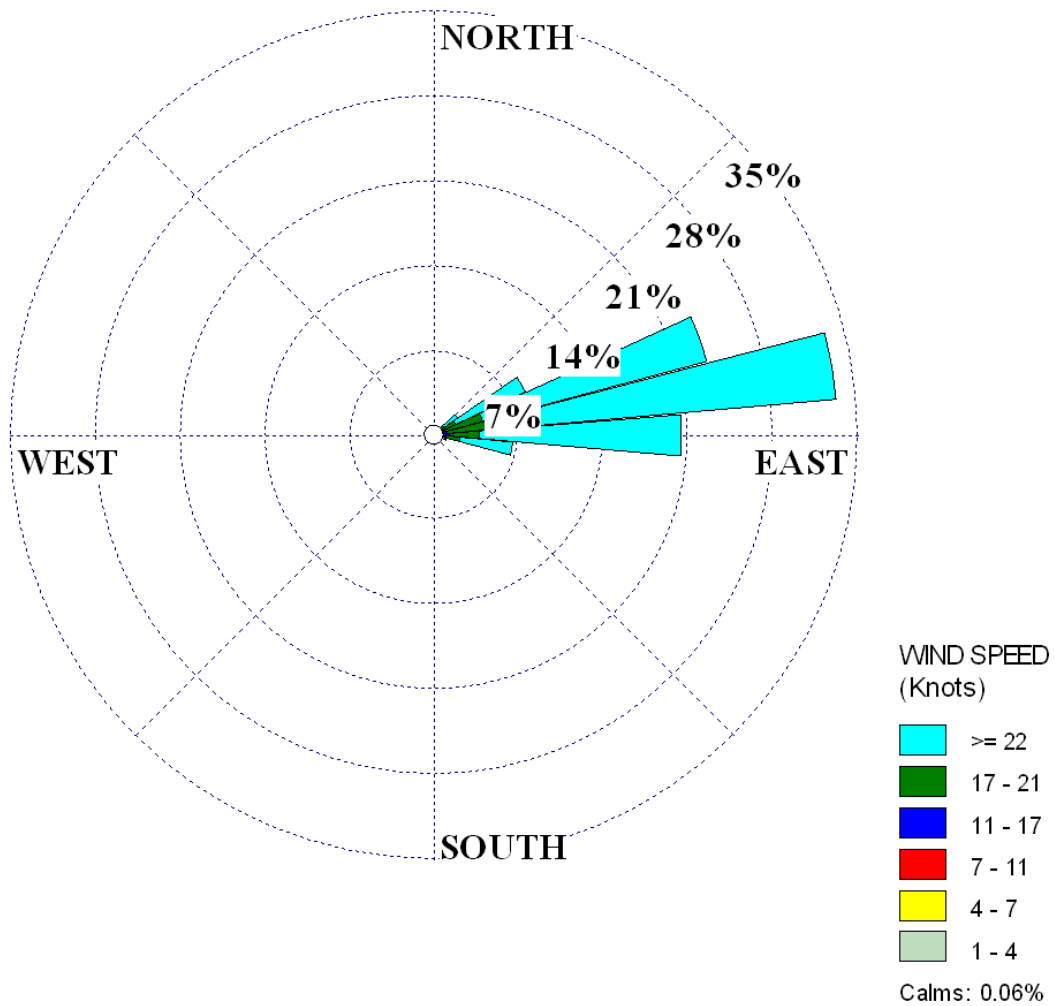


Figure 3b. Wind-rose data 2013.

ATMOSPHERIC PRESSURE

The average atmospheric pressure for 2013 recorded at the Reina Beatrix International Airport was 1011.7 hPa. The highest monthly average atmospheric Pressure of 1013.5 hPa was recorded during January 2013 with the lowest during October 2013 of 1010.0 hPa (Figure 4).

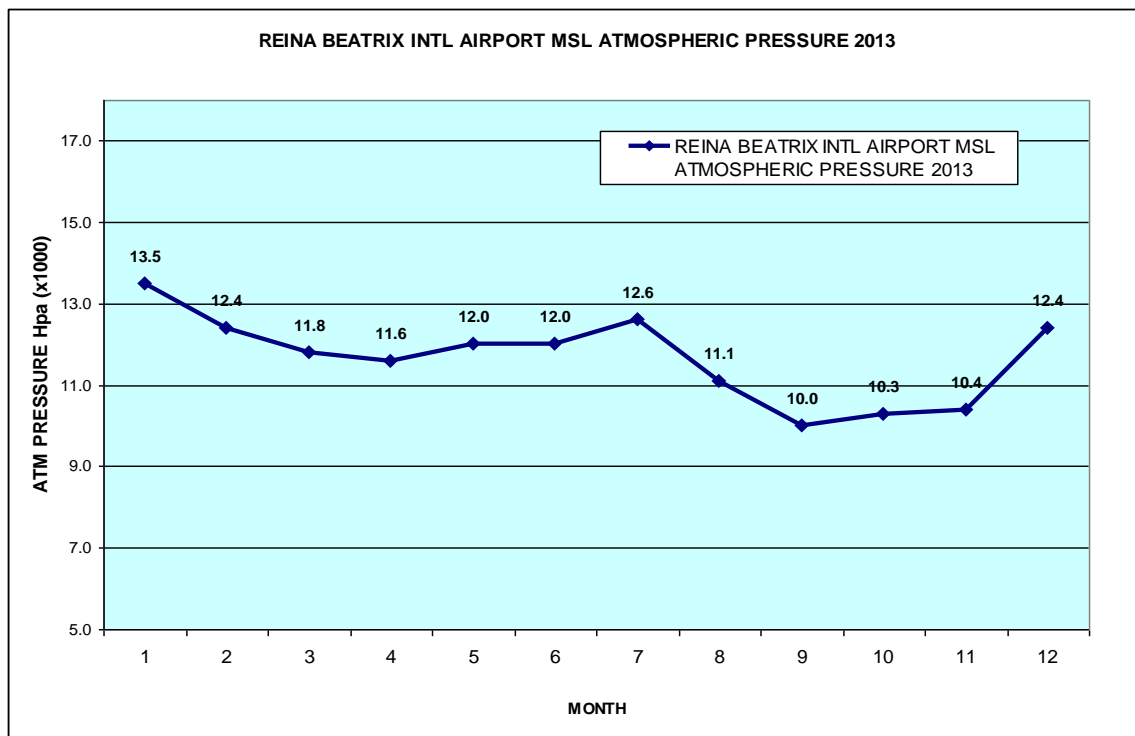


Figure 4. Atmospheric Pressure at MSL, (Mean Sea Level)

CLOUD COVERAGE DURING 2013

Highest average cloud coverage in 2013 was observed during May (64.5%) with the lowest during the month of February (37.2%) (Figure 5). Most of the cloud coverage in May was related to upper-level clouds.

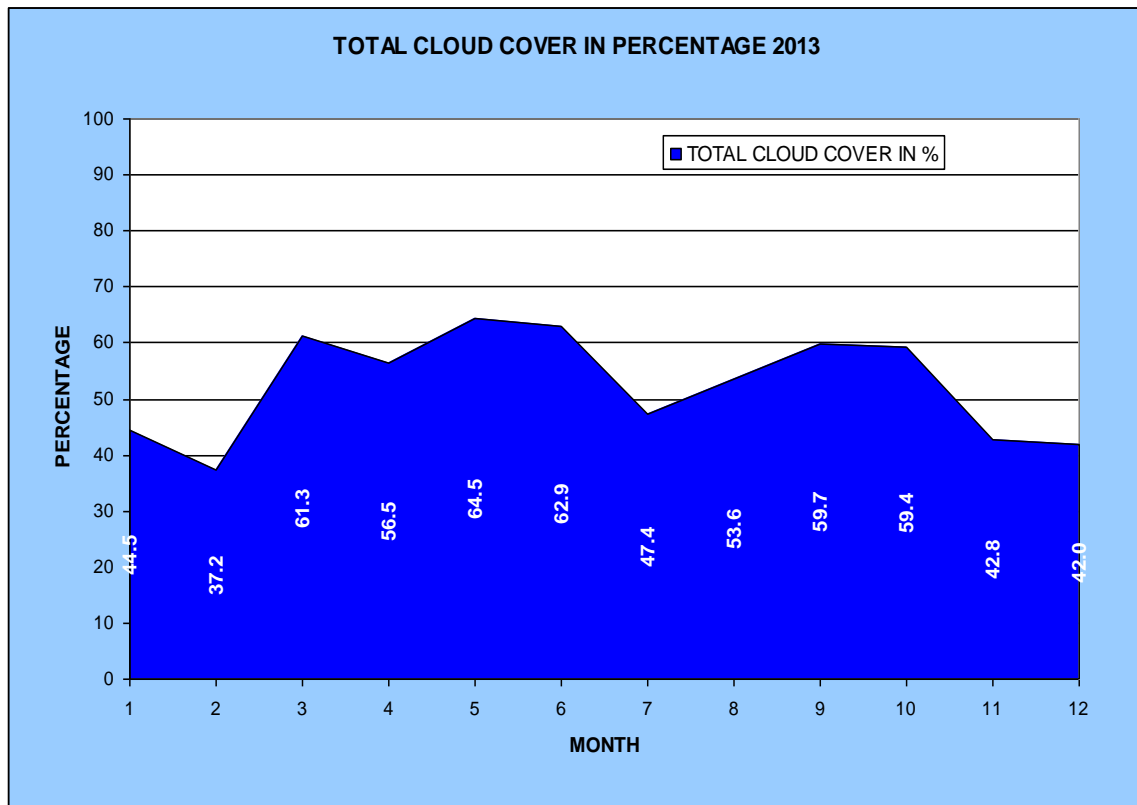


Figure 5. Total cloud cover in Percentage

RELATIVE HUMIDITY 2013

Highest monthly average relative humidity of 80.5% was recorded during the January 2013 with a low monthly average of 72.5 during the month of February & April 2013 (Figure 6).

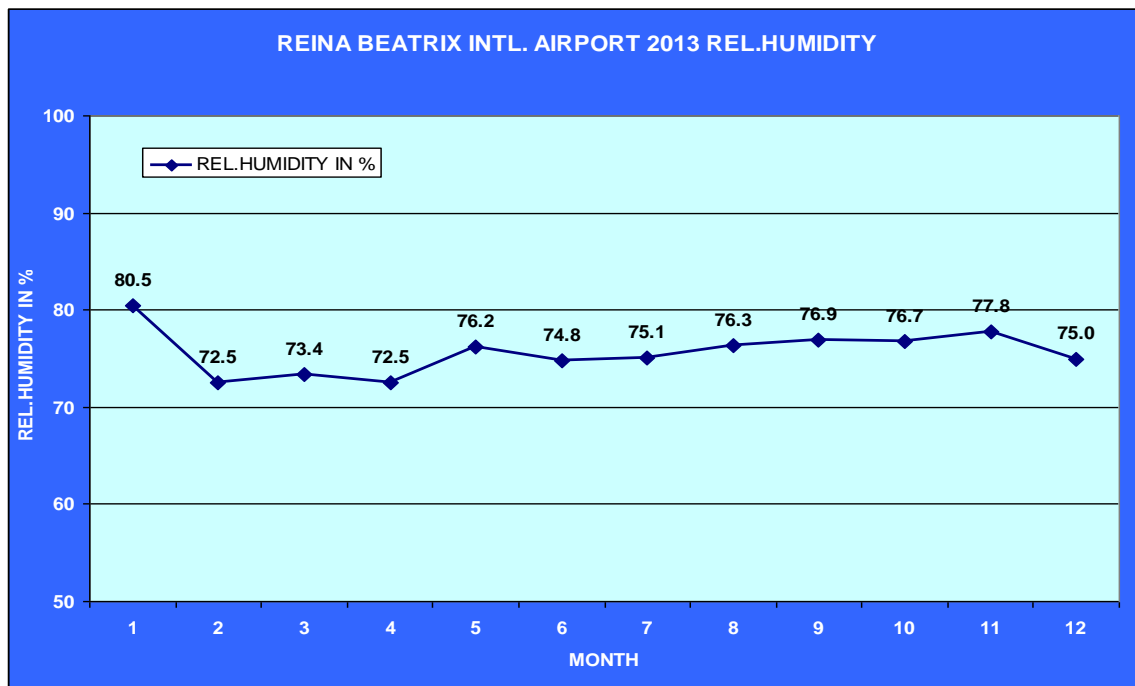


Figure 6. Humidity in percentage

SPECIAL OCCURRENCE (EVENTS) DURING THE YEAR 2013

SEISMIC ACTIVITIES:

On August 13 at 7:03 pm local time an earthquake was felt on several areas of Aruba namely, San Nicolas, Savaneta, Pos Chikito and St.Cruz. Data from DMA's seismic network indicate that the epicenter was located roughly east of the Paraguana Peninsula (Venezuela), latitude 12.07 degrees north and longitude 69.75 degrees west and had a magnitude of 3.2.

SEVERE BAD WEATHER

The only strong thunderstorm took place on October 17 2013, it initiated at 8:08 pm and ended at 11:00 pm. There were frequent cloud to ground lightning observed which caused some minor damage to some household electrical appliances. The year 2013 had less thunderstorm days (12 days) compared to the normal of 18 days.

Prepared by
J.M.E(Maikin) Pourrier
Chief Section Weather Observation

Supervised by :
Marck Oduber MSc.
Director Departamento Meteorologico Aruba