As entry to the

2020 International Virtual Science Symposium (IVSS)

The Relationship between Cloud Cover to Temperature and Humidity

Proponents

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Abstract

Far from the human's knowledge cloud is as important as the other factors here on earth, it isn't only a decor to our atmosphere like what's the majority thinks. The significance of this study is to give new information to people which is the relationship of cloud cover to temperature and humidity. This study answers the question, does cloud cover contribute to the changes in temperature and humidity on the earth's ground. The procedure of this study is to get cloud data using the globe observer app and the temperature and humidity data from DOST-PAGASA weather bulletin for the day. A graph to show the relationship of the variables will be made to know how they are related. The average cloud cover in July 26 to August 3 is 96.69%, Humidity is 93.7% and temperature is 27.7 °C . On August 5 to August 13 the average measures of Cloud Cover, Humidity and temperature are 84.42%, 91.6% and 27.72°C. On August 14 to 23 are 63.67%, 79.8% and 28.94°C . Lastly on August 23 to 31 are 89.82, 92.1 and 27.06. The researchers concluded that cloud cover is directly proportional to humidity inversely proportional to temperature meaning as cloud cover increase so is humidity and as cloud cover increase temperature decrease. recommend to future researchers to continue collecting data further support analysis and broadened new informations.

Introduction

Clouds are the fluffy, white objects that we see in the skies. Furthermore, clouds are made up of ice crystals in the air and water according to Dunbar (2017). Clouds are formed when water vapor evaporates, Cloud cover has many effects, like the temperature during the day when the sun's heat reach the earth the temperature rises but if clouds cover it the sun rays will not directly go to the earth's surface reducing its temperature. During daytimes, when the sky is cloudy, lower temperatures are expected and when the night comes it became vise versa because the clouds trap the cold in the atmosphere resulting higher temperatures (WW ,2010) Clouds block the sun and cool the air underneath them, which increases the relative humidity of the air. However, clouds can form near mountains even if the humidity is low because updrafts on the slopes push air higher. When the air cools near the mountain peaks, whatever moisture it contains condenses (Murmson, 2018. The significance of this study is to give new information to people and scientist, The researchers conducted this study to determine if cloud cover has an effect to temperature and humidity. This study answers the question 1.does cloud cover contribute to the changes in temperature and humidity on the earth's ground? 2. what is the relationship of cloud cover to temperature and humidity? 3. can we identify the temperature and humidity just by identifying the cloud cover?. the researchers forsee that there is a significant relationship between the types of cloud cover to temperature and humidity

Methodology

To conduct this study the researchers used the GLOBE cloud protocol wherein different citizen scientists use this app in order to help the NASA scientists on comprehending the different types of clouds on certain locations and the effect of it on the environment. The researchers used this protocol in the globe observer app where you can explore different data that's in need of study and send these straight to NASA. Moreover, the researchers applied the steps on how to properly use the cloud protocol taught by their environmental science professor by accomplishing the mandatory data for this protocol then sending this data to NASA via the globe observer app. Subsequentially, the researchers accumulated temperature and humidity data with the same dates as the cloud observations were made, they amass these data by visiting the DOST website and took a screenshot. Lastly, all of the data were assembled by classifying these data according to their date to accurately observe the relationship between the cloud cover to temperature and humidity.

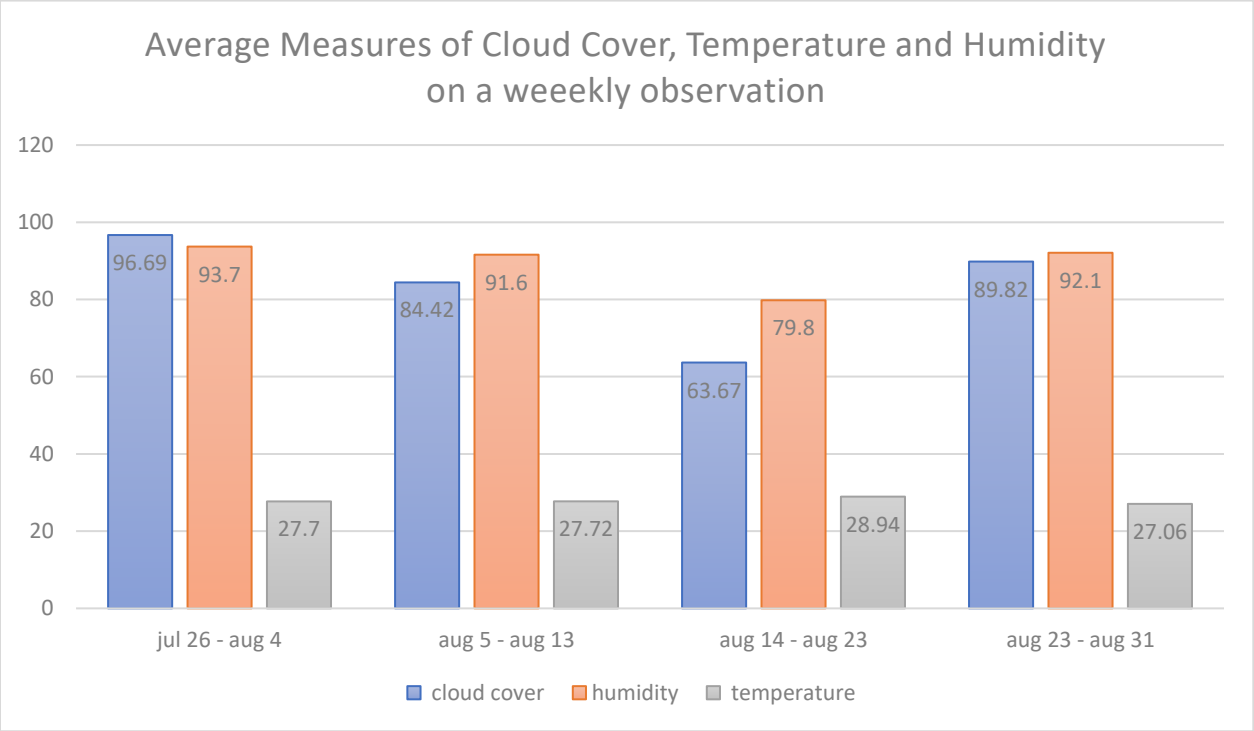
Results

Table 1: Summary of the Date, Temperature and Humidity Data Gathered from ADAT and DOST PAGASA

Date	Cloud Cover	Temperature		Humidity
		Maximum	Minimum	
July 26 2019	Overcast 94.27%	32	25	95
July 27 2019	Overcast 100%	31	25	95
July 28 2019	Overcast 100%	31	24	95
July 29 2019	Overcast 100%	32	24	94
July 30 2019	Overcast 100%	32	25	96
July 31 2019	Overcast 100%	32	24	95
August 1 2019	Overcast 100%	33	25	98
August 2 2019	Overcast 100%	30	25	93
August 3 2019	Overcast 100%	29	24	91
August 4 2019	Broken 72.58%	27	24	85
August 5 2019	Broken 70%	29	24	91
August 6 2019	Overcast 99.20%	29	24	91
August 7 2019	Overcast 100%	30	26	92

August 8 2019	Overcast 100%	29	26	92
August 9 2019	Overcast 100%	29	25	93
August 10 2019	Overcast 99.20%	28	26	92
August 11 2019	Overcast 100%	32	26	95
August 12 2019	Broken 75.83%	31	26	83
August 13 2019	Overcast 100%	31	28	96
August 14 2019	Broken 80.34%	31	27	90
August 15 2019	Overcast 100%	31	27	94
August 16 2019	Few 10.48%	31	27	50
August 17 2019	Broken 78.51%	32	27	68
August 18 2019	Isolated 13.22%	32	27	52
August 19 2019	Broken 60%	33	25	95
August 20 2019	Overcast 100%	32	26	96
August 21 2019	Overcast 100%	32	26	97
August 22 2019	Scattered 30.45%	31	24	76
August 23 2019	Overcast 100%	30	25	93
August 24 2019	Overcast 100%	29	24	92
August 25 2019	Overcast 100%	30	23	94
August 26 2019	Overcast 100%	30	23	91
August 27 2019	Overcast 99%	29	23	90
August 28 2019	Overcast 99.20%	30	25	89
August 29 2019	Overcast 100%	31	25	94
August 30 2019	Overcast 100%	30	25	93
August 31 2019	Overcast 100%	30	25	93

Graph that represents the gathered data



Discussion

Based on the results that was gathered from July 26, 2019 up to August 31, 2019, majority of the data in cloud covers was overcast because the month of August was usually the rainy season in the Philippines. That same goes to the temperature, the ground absorbs the rain that was pouring down that's why the temperature decreases. On these records humidity is high as a result of the percent of cloud cover in the sky. So in July 26 to August 4 the average cloud cover was up to 96% and is 93.7% like the temperature which is the average of 27°C.

In August 5-6 the cloud covers were not overcast. August 7-9 which is overcast. while on August 10 – 13 explains that a few rainfalls occur that why the 84.42%, the humidity was higher than the cloud cover that is 91.6% while its temperature was 27.72°C

while on August 14 – 19 the cloud covers where not overcast which means the weather was clear not like on August 20 – 23 that results the average cloud cover which is 63.67%, Humidity which is 79.8% and temperature 28.94°C. because of the rainfalls that occur it leaves many moisture which was the humidity resulting that high amount of humidity

on August 24- 31 two typhoons happened that outcomes the average cloud cover 89.82%, humidity 92.1% and temperature 27.06°C

Conclusion

The researchers concluded that cloud cover is directly proportional to humidity and inversely proportional to temperature. Meaning as cloud cover increases so its humidity and as cloud cover increases temperature decreases.

Recommendation

The researchers recommend to future researchers to continue collecting data to further support analysis and broadened new information. Also, follow correctly the protocol so the chance of making an error will be least possible. Lastly, use this study to be a guide in creating new concepts that can have a great impact on the environment.

Acknowledgement

The researchers would like to express there appreciation to the following persons who helped them through out this study. Without there active guidance, assistance, and encouragement they would not have made headway to this project.

To our Environmental Science Teacher and our Research Coach for this Project, **Mrs. Babie Noreen P. Clemente** thank you for your support and advices we couldn't accomplish this study without you

We send our gratitude to our beloved **parents and members of our family**, who is always there by our side to support us morally and economically

To **Dr. Proceso T. Lera**, we are sincerely thankful of you being our compassionate principal who supports us no matter what

We also acknowledge the help of our **classmates and friends**, who directly or indirectly help us to complete this study.

And most especially, to our **Almighty God** for his Eternal blessings for we can never do anything without his mercy and faithfulness to us. To each of everyone who is involved in this project, to God be all the glory!

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