

Basics of Grenada Monsoon Time Scale : A review and revisit

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Abstract: Monsoon means a periodic seasonal reversing winds patterns in atmospheric circulation accompanied by climate and weather changes according to the year-to-year changes of movement of the Earth on its axial tilt (obliquity) between approximately 22.1 and 24.5 degrees to its path and revolves around the Sun in accordance with the Milankovitch cycles. Therefore, not only the countries in the tropical and subtropical regions, but also those wind patterns blowing in the countries in the polar regions should be considered monsoons. I proposed and designed the Basics of Monsoon Time Scales for all global, regional, local monsoon systems along with every country of the world for unraveling the mysteries; studying the characteristics of dynamics mechanisms and exercising the benefits of mankind and development. According to the researches and studies on the Monsoon Time Scales, it is come to know that there will be severe climate changes and natural calamities in the coming years "i.e" heavy rains, floods and storms etc. will occur until about 2075 and there will be droughts and famines etc. until about 2150. Through the establishment of Monsoon Time Scales, we can know the future consequences of climate changes and natural calamities. Plans can be made accordingly. As a part of them, the Grenada Monsoon Time Scale was proposed and designed by me in 1991 to study climate changes and natural calamities in advance. I call on world scientists to establish the Grenada Monsoon Time Scale following the Basics of Monsoon Time Scales outlined below, based on the India Monsoon Time Scale which is successfully proved out in practice and break down the mysteries of the Grenada monsoon.

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Introduction:

After much research, I have proposed some basics regarding the method and design of the Monsoon Time Scales for studying the global monsoon systems. Monsoon Time Scale is a chronological sequence of events arranged in between the Time and climate with the help of a scale for studying the past's, present and future of monsoon systems and its relationship with rainfall and other weather conditions & natural calamities.

Basics of Global Monsoon Time Scales:

After much research, I have proposed some basics regarding the method and design of the Monsoon Time Scales for studying the global monsoon systems. Monsoon Time Scale is a chronological sequence of events arranged in between the Time and climate with the help of a scale for studying the past's, present and future of monsoon systems and its relationship with rainfall and other weather conditions & natural calamities.

Method and design:

Design: Prepare a Monsoon Time Scale having 365 horizontal days from April 1st to next year March

31st (or January 1st to December 31st or March 21st to next year March 20th or according to the chronology of a country's Time and Climate) of 139 year from 1880 to 2027 comprising of a large Time and Climate should be taken and framed into a square graphic scale. This scale should be designed in three ways i.e Basic scale, Filled scale, Analyzed scale;

Basic Scale: The first one is preliminary basic scale, it explains the structure of the scale.

Filled Scale: This is the second scale that is filled with data and explains how to fill or manage the scale.

Analyzed Scale: And the third one scientifically analyzed the filled scale by data, it explains monsoon patterns and weather conditions of the scale.

Method: There are two methods in formation and process of the Monsoon Time Scales. The first one is in the single form and the next one is designed in four parts.

One-line method:

A one-line method Scale in the design of monsoon Time Scales is very useful for observation of monsoons without confusion. This can be designed on tables or walls or on paper according to one's convenience.

Prepare the Monsoon Time Scale having 365 horizontal days from April 1st to next year March 31st (or January 1st to December 31st or March 21st to next year March 20th or according to the chronology of a country's Time and Climate) of 178 years from 1880 to 2058 comprising a large Time and Climate should be taken and framed in a one line and full-length type square graphic scale on a Paper or a Wall or a Table.

Assembly-line method:

The single and full length square graphic scale is to be long. It is not convenient to take it away, to preserve it, to take it to the demonstration or to publish it in the journals. So that it is divided into four parts easy to carry and keep and suitable for publication. I designed it into 4 parts and then pasted it into one scale.

Prepare the Monsoon Time Scale having 365 horizontal days from April 1st to next year March 31st (or January 1st to December 31st or March 21st to next year March 20th or according to the chronology of a country's Time and Climate) of 139 year from 1880 to 2027 comprising of a large time and climate should be taken and framed in an one and full length type square graphic scale. But it is divided into four parts as given below

The first part is from 1st April to July 12th.

The second part is from 13 July to October 23rd.

The third part is from 24th October to February 3rd.

And the fourth part is from the 4th of February to the 31st of March.

These separate scales can be pasted into one scale as explained below.

Cut along the edges of dates on the right side of the first part and paste it along the edges of the date of 13th July on the left side of the second part.

Cut along the edges of dates on the right side of the second part and paste it along the edges of the date of 24th October on the left side of the third part.

Cut along the edges of dates on the right side of the third part and paste it along the edges of the date of 4th February on the left side of the fourth part.

When paste in this manner, we get a long full-length Monsoon Time Scale.

Concised (Monsoon Season) method:

The Monsoon Time Scale is too long with 12 months, various seasons. So, Monsoon Time Scales (monsoon Season) is designed for the crucial monsoon season. This is very useful for observing

the monsoon without confusion. This can be designed on a table or wall or on paper according to one's convenience.

Computerization method:

Monsoon Time Scales can also be computerized. I created the devices manually. If these are developed in the computerization method then the monsoons can be studied more accurately. Besides rather than in manual type scales, if we are able to create a computer model scale which to be the most obvious. I tried to computerize these Global Monsoon Time Scales but could not do it due to lack of money.

Materials and Method:

Construction of the Monsoon Time Scales requires enormous data of low pressure systems, depressions, tropical cyclones/storms, snowfall and sand storms etc. that formed over and affecting a region should be taken as data to prepare the Monsoon Time Scale. An accurate scale is available if we can collect and analyze the exact climate data.

What should the data be taken?

For example, countries where monsoon occur should take low pressure systems as data.

Countries where storms occur can take storms as data.

European countries can take Westerlies as data.

Snowy countries of polar climate can take snowfall, snowy rains, graupel, snow pellets as data

Desert or hot climate countries can take sand or dust storm incidents as data.

Scientists can also take yearly climate changes as a key data as every year occurs routinely in their countries.

Management:

The main weather events such as monsoon pulses in the form of low pressure systems if any of a monsoon region formed over a region or country have been entering on the scale in stages by 1 for low, 2 for depression, 3 for storm, 4 for severe storm and 5 for severe storm with core of hurricane winds should be entered on the Monsoon Time Scale as per date and month of each and every year. If we can manage the scale in this manner continuously, we can study the past, present and future movements of monsoons of a region or country. I took the numbers to analyze the variations in data. Researchers have to decide what kind of data to take and how to analyze the data.

Results and Analysis:

The research and study should be done in the same way as described below in the Indian Monsoon Time Scale and the results should be obtained.

Study and Discussion:

The obtained results should be studied and analyzed in the same way as described below in the Indian Monsoon Time Scale.

Indian Monsoon Time Scale:

Above are the Basics of Monsoon Time Scales. We can make many more changes and further adjustments thus bringing many more developments in the Monsoon Time Scales. I have made many efforts to develop the Monsoon Time Scales for all world countries, global, regional, local monsoon systems, but I am unable to compete due to lack of data and health issues. But I completed the Indian Monsoon Time Scale by providing data from India Meteorological Department and Indian institute of tropical Meteorology etc. I have undertaken the Indian Monsoon Time Scale as a model research project following all the rules of Basics of Monsoon Time Scales. The reason I took the Indian Monsoon Time Scale as the model research was because I was in the Indian monsoon region. I know the information about the Indian monsoon very well. But if we develop a computerized India Monsoon Time Scale with accurate data, the mysteries of the India monsoon will be revealed. Another important is that, the India Monsoon Time Scale is related to the entire subcontinent. This includes South West monsoon, North East monsoon, Arabian monsoon, Bay of Bengal Monsoon etc. Thus, the Monsoon patterns of the entire region can be prepared and studied. Otherwise, only Regional Monsoon Time Scales can be developed as Indian Monsoon Time Scale (abridged) as described below. If not, then local Monsoon Time Scales can be developed just like Arabian Monsoon Time Scale and Arizona Monsoon Time Scale etc.

The Indian Monsoon Time Scale is a chronological sequence of events arranged in between time and weather with the help of a scale for studying past, present and future movements of the monsoon of India and its relationship with rainfall and other weather problems and natural calamities. From where to wherever to take the time and weather data to analyze, the researcher can decide on his discretion according to available weather data. The Indian Monsoon Time Scale can be modeled as One-line method(full-length Scale, Assembly-line method (parts and paste scale), Concise scale just like as mentioned below Indian Monsoon Time Scale (June July August September) and Concised Scale.

Method and Design:

Design: For this, I took a period of 365 horizontal days from April 1st to next year March 31st (or January 1st to December 31st or March 21st to next

year March 20th or according to the chronology of India's as the time and the data of monsoonal low pressure systems, depressions and storms of 178 years from 1880 to 2058 that were formed over the Indian region taken as the climate, on the whole comprising of a large time and climate took and framed into a square graphic scale. I designed this scale in three ways i.e Basic scale, Filled scale, Analyzed scale as described below.

Basic Scale: The first one is preliminary basic scale, it explains the structure of the scale.

Filled Scale: The second one is filled by data scale, it explains how to fill or manage the scale.

Analyzed Scale: And the third one is filled and analyzed by data, it explains monsoon patterns of the scale.

Method: There are four methods in formation and process of the Indian Monsoon Time Scale. The first one is in the single form and next one is the assembly-line form, third one is the Concise form and final one is the Computerization form.

One-line method:

A one-line method Scale in the design of Indian Monsoon Time Scales is very useful for observation of monsoons without confusion. This can be designed on tables or walls or on paper according to one's convenience.

I prepared the Indian Monsoon Time Scale having 365 horizontal days from April 1st to next year March 31st (or January 1st to December 31st or March 21st to next year March 20th or according to the chronology of India's time and climate) of 178 year from 1880 to 2058 or a required period, comprising of a large time and climate was taken and framed in a single and full length type square graphic scale. It can be formed on a paper, board, wall or table.

Prepare this Indian Monsoon Time Scale having 365 horizontal days from April 1st to next year March 31st (or January 1st to December 31st or March 21st to next year March 20th or according to the chronology of a country's Time and Climate) of 178 years from 1880 to 2058 comprising a large Time and Climate should be taken and framed in a one line and full-length type square graphic scale on a Paper or a Wall or a Table.

Assembly-line method:

The single and full length square graphic scale is to be long. It is not convenient to take it away, to preserve it, to take it to the demonstration or to publish it in the journals. So that it is divided into four parts easy to carry and keep and suitable for

publication. I designed it into 4 parts and then pasted it into one scale.

The first part is from 1st April to July 12th.

The second part is from 13 July to October 23rd.

The third part is from 24th October to February 3rd.

And the fourth part is from the 4th of February to March 31st ending.

These separate scales are pasted into one scale as described below below.

Cut along the edges of dates on the right side of the first part and paste it along the edges of the date of 13th July on the left side of the second part.

Cut along the edges of dates on the right side of the second part and paste it along the edges of the date of 24th October on the left side of the third part.

Cut along the edges of dates on the right side of the third part and paste it along the edges of the date of 4th February on the left side of the fourth part.

When pasted in this manner, we get a long full length Indian Monsoon Time Scale.

Concised (Monsoon Season) method:

The Indian Monsoon Time Scale is too long with 12 months, 5 seasons. So, Indian Monsoon Time Scale (Monsoon Season) is designed for the crucial monsoon season for June, July, August and September from 1888 to till date. This is very useful for observation of the Indian monsoon season confusion. This can be designed on a table or wall or on paper according to one's convenience.

Computerization method:

Besides these above three manual scales, I have prepared a computer Indian Monsoon Time Scale generated by the computer system from the year 1888 to 1983 for the period of 1st June to September 30th. It is partially computerization. Later the computerization of the Indian Monsoon Scale was stopped due to the lack of money. Later in 2018, I tried computerization again but stopped due to declining health.

If we are able to create a computer model scale which would be the most obvious.

Materials and Method: The monsoon pulses in the form of low pressure systems over the Indian region have been taken as the data to the construction of this scale. For this, a lot of enormous data of low pressure systems, depressions and cyclones that formed over the Indian region were taken as the climate from many resources just like Mooley DA, Shukla J (1987); characteristics of the westward-moving summer monsoon low pressure systems over the Indian region and their relationship with the monsoon rainfall. Centre for Ocean-land Atmosphere interactions, University of Maryland, college park, MD., and from many other resources

and from many other resources just like The world's 7 Tropical Cyclone seasons around the world etc.

Management:

The monsoon pulses in the form of low pressure systems over the Indian region are taken and entered on the scale in stages by 1 for low, 2 for depression, 3 for storm, 4 for severe storm and 5 for severe storm with core of hurricane winds pertaining to the date and month of the each and every year. How the Indian monsoons have been travelling since 1880 onwards are recorded on the Indian Monsoon Time Scale. I took the numerical/statistical method to analyze the variations in data. If we have been managing the scale in this manner continuously, we can study the past, present and future movements of the monsoon of India. Researchers have to decide what kind of data to take and how to analyze the data.

Complete investigations of the Indian Monsoon Time Scale "I.e." Results and Analysis and Study and discussion are described in the following paragraphs on a sample-by-sample basis in detail.

Basics of Grenada Monsoon Time Scale:

Now let's learn about the process of making the Grenada Monsoon Time Scale. Studying the Grenada monsoon and establishing the Grenada Monsoon Time Scale is crucial for Grenada weather patterns, predicting extreme events, and managing resources, particularly in regions heavily reliant on monsoon rainfall for agriculture and water supplies. The Grenada Monsoon Time Scale helps track rainfall patterns. They allow for assessing past trends, understanding present conditions, and forecasting future changes, which is vital for effective resource management and disaster preparedness.

Importance of Grenada Monsoon Study:

Agriculture and Water Resources: Grenada monsoon rainfall is the lifeblood of agriculture in many regions, including India, and is essential for filling reservoirs and aquifers. The World Climate Research Programme (WCRP) states. The National Geographic Society notes. Accurate monsoon predictions are critical for crop planning, irrigation management, and food security.

Extreme Event Prediction: Grenada monsoon can bring intense rainfall leading to floods and droughts, and understanding monsoon variability is crucial for predicting these events. The Royal Meteorological Society highlights.

Climate Change Impact Assessment: Climate change is altering monsoon patterns, and studying these changes is essential for understanding their

impact on regional economies, ecosystems, and human populations.

Societal and Economic Impact: Australian monsoon rainfall impacts diverse sectors, including agriculture, infrastructure, transportation, and tourism, highlighting the need for comprehensive understanding and management of monsoon-related risks.

Need for Grenada Monsoon Time Scale:

Historical Context: Grenada Monsoon Time Scale provides a framework for studying past monsoon variability and their impacts on societies and civilizations.

Present Conditions: They help in monitoring and analyzing current monsoon patterns, including their spatial and temporal variations.

Future Projections: Grenada Monsoon Time Scale allows for developing predictive models for monsoon behavior, helping to anticipate potential droughts, floods, and other extreme events.

Enhanced Resource Management: By understanding monsoon dynamics, resources like water and land can be managed more effectively, reducing risks associated with droughts and floods and promoting sustainable agriculture.

Disaster Preparedness: Grenada Monsoon Time Scale enables early warning systems for potential disasters, allowing for timely evacuations and disaster relief efforts.

Chronological Sequence: The Grenada Monsoon Time Scale is a chronological sequence of events related to the monsoon's movement and its impact on weather and rainfall.

Past, Present, and Future: It helps analyze past, present, and future trends in Grenada including its relationship with rainfall patterns and natural calamities.

Weather Prediction: By understanding the Grenada monsoon's timing and intensity, the Grenada Monsoon Time Scale aids in predicting weather conditions and potential natural disasters like floods and droughts.

In essence, the study of the Grenada monsoon and the establishment of an Australian Monsoon Time Scale is essential for understanding the complex climate system of Australia and its vulnerability to climate change and extreme events.

Now let's know how to create the Grenada Monsoon Time Scale based on the Indian Monsoon Time Scale. Therefore, I call on world scientists along with Grenada scientists to establish the Grenada Monsoon Time Scale, have thoroughly studied and understood by following the Basics of Monsoon Time Scales outlined as above, based on the India

Monsoon Time Scale which is successfully proved out in practice, and break down the mysteries of the Grenada monsoon..

The Grenada Monsoon Time Scales is a chronological sequence of events arranged in between Time and Climate with the help of a scale for studying the past's, present and future movements of the Grenada monsoon regions and its relationship with rainfall and other weather problems and natural calamities.

Prepare the Grenada Monsoon Time Scale having 365 horizontal days from March 21st to next year March 20th or a required period consisting of a large time and climate have been taken and framed into a square graphic scale.

The main weather events of any of the Grenada monsoon regions such as low pressure systems, depressions and storms/cyclones etc have been entering on the Grenada Monsoon Time Scale as per date and month of each and every year.

If we have been managing the Grenada Monsoon Time Scale in this manner continuously, we can see the image and its past, present and future movements of the Grenada monsoon and study its originals, climatic changes and futuristic dimensions.

By establishing the Grenada Monsoon Time Scale which can help to study the movements of the Grenada monsoon.

Method and Design:

Design: Prepare a Grenada Monsoon Time Scale having 365 horizontal days from April 1st to next year March 31st (or January 1st to December 31st or March 21st to next year March 20th or according to the chronology of Grenada Time and Climate) of 139 year from 1880 to 2027 comprising of a large Time and Climate should be taken and framed into a square graphic scale.

(Here Grenada scientists should note a very important observation. From where to wherever to take the time and weather data to analyze, the researcher can decide on his discretion according to their country's weather and data. I designed the Indian Monsoon Time Scale based on the seasons and weather data of India. I have taken the time from April to next March, and taken low pressure systems, depressions and storms as data.

This scale should be designed in three ways i.e Basic scale, Filled scale, Analyzed scale;

Basic Scale: The first one is preliminary basic scale, it explains the structure of the scale.

Filled Scale: This is the second scale that is filled with data and explains how to fill or manage the scale.

Analyzed Scale: And the third one scientifically analyzed the filled scale by data, it explains monsoon patterns and weather conditions of the scale.

Method: There are two methods in formation and process of the Grenada Monsoon Time Scale. The first one is in the single form and the next one is designed in four parts.

Single & Full length Scale: Prepare the Grenada Monsoon Time Scale having 365 horizontal days from April 1st to the next year March 31st (or January 1st to December 31st or March 21st to next year March 20th or according to the chronology of Grenada Time and Climate) of 139 year from 1880 to 2027 comprising of a large Time and Climate should be taken and framed in a single and full length type square graphic scale. It can be formed on a Paper or a Wall or a Table.

Parts & paste Scale: The single and full length square graphic scale is to be long. So that it is divided into four parts easy to carry and keep and suitable for publication. I designed it into 4 parts and then pasted it into one scale.

The first part is from 1st April to July 12th.

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And the fourth part is from the 4th February to the 31st of March.

These separate scales can be pasted into one scale as explained below.

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Cut along the edges of dates on the right side of the third part and paste it along the edges of the date of 4th February on the left side of the fourth part.

When paste in this manner, we get a long full-scale Indian Monsoon Time Scale.

Computer Model:

Grenada Monsoon Time Scales can also be established as a computer model. Besides rather than in manual type scale, If we are able to create a computer model scale which would be the most obvious.

Material and Data:

Construction of the Grenada Monsoon Time Scales requires enormous data of low pressure systems, depressions, tropical storms, sand storms etc that

affecting a region and formed over a region should be taken as data to prepare the Grenada Monsoon Time Scale. An accurate scale is available if we can collect and analyze the exact climate data.

Management: The main weather events if any of Grenada such as monsoon pulses in the form of low pressure systems if any of a monsoon region formed over the Grenada monsoon have been entering on the Grenada Monsoon Time Scale in stages by 1 for low, 2 for depression, 3 for storm, 4 for severe storm and 5 for severe storm with core of hurricane winds as per date and month of each and every year. If we can manage the scale in this manner continuously, we can study the past, present and future movements of the Grenada monsoon. I took the numbers to analyze the variations in data. Researchers have to decide what kind of data to take and how to analyze the data.

Researches and Results:

The study of the Grenada Monsoon Time Scale should be done in the same way as described in the Indian Monsoon Time Scale and the results should be obtained.

Study & discussion:

The obtained results of the Grenada Monsoon Time Scale should be studied and analyzed in the same way as described below in the Indian Monsoon Time Scale and climate conditions in that region should be assessed.

Results and Analysis:

Let us know in detail below the results and analysis, study and discussion of the Indian Monsoon Time Scale. Investigations of the above Monsoon Time Scale should be carried out on the basis of the results and analysis and study and discussion of this Indian Monsoon Time Scale.

I did many comprehensive analyzes on the results of research and studies of monsoons and found out many mysteries and its relationship with the movement of the axis of the Earth around the Sun in the universe & its influences on the Earth's atmosphere. Let's study these results and analyze them briefly and in detail.

When examining the Indian Monsoon Scales, I noticed that in several passages path-ways of monsoon pulses there have been some cut-edge paths and splits passing through travelling zigzag cycles systematically in parallel and stacked next to each other in ascending and descending order clearly seen. If the thin arrows along the passages identified on the Indian Monsoon Time Scale are drawn from 1880 to the current year, then the monsoon paths appear. Many other methods can analyze the Indian Monsoon Time Scale. In my research, I have

noticed that depending on the incidence of heavy rains & floods in some years and droughts & famines in other years, they happened according to the travel of the monsoon path. The path of monsoons when travelling over four months from June to September, good rainfall and floods occurred. And the path when travelling over last months, i.e. July or August or September, low rainfall and droughts occurred. In Particular, there are two main passages. The first one is the main path or passage of the South West monsoon of the Indian monsoon and the second one is the path or passage of the North-East monsoon. The first one is on the left side over the months of June, July, August, September, and the second path on the right side over the months of October, November, December are visible in the Indian Monsoon Time Scale.

Keep track of the Indian Monsoon Time Scale carefully. When we look at the Indian Monsoon Time Scale, several paths appear. Two of these are important. The right sided second one can be called as the main path of the monsoon and the left side first one can be called as the pre-path of the main passage of the Indian monsoon. The main path appears clear and its pre-path appears unclear. Due to unavailability of data, it is not known how the pre-path of the Indian monsoon traveled before 1888. But according to the research and studies it is guessed that -

Brief analysis:

Keep track of the Indian Monsoon Time Scale carefully. Briefly describe the travel patterns of the monsoon-by 1888, the monsoons expanded over 3 months of June, July, August until June 1 and brought heavy rains and floods in most of the country in more years. During the 1896-1935's, falling increased over June, July until July 25th and brought low rainfall and droughts in most of the country in more years. During 1935-1990's, it was rising again and expanded over the June, July, August, September until 10th June caused h5.St6.Siains and floods in most of the country in many years. During 1990-2015s, it was again falling over June July until 25th July. From 2015, it is now rising, expanding upwards and estimated traveling over the months of June, July, August by 2040 to its peak and will be expanding all over the 4 months June, July, August and September and causing heavy rains and floods most of the country in more years around 2060.

Detailed analysis:

Due to unavailability of data, it is not known how the main path of the Indian monsoon traveled before 1888. But according to the studies, it

is known that between 1865-1897, it traveled in the shape of a convex direction and caused good rainfall in many years. During this 4-month period of (June, July, August, September) of Indian monsoon season, the line of path of the monsoon was traveled over all these four months. As a result, there were heavy rains and floods most years.

From 1898 to 1920, the line of path of the Indian monsoon was traveled over the months of August and September in the shape of concave direction. In this 4 month monsoon season, the line traveled just over two months only. As a result, it rained only two months instead of four months monsoon season and caused low rainfall in most of the country in many years,

From 1920 to 1965, the line of path of the Indian monsoon was traveled over the months of July, August, and September in the shape of convex direction. In this 4 month monsoon season, the line traveled over three months. As a result, it rained only three months instead of the four month monsoon season and resulted in good rainfall in most of the country for more years.

From 1965 to 2015, the passage of the Indian monsoon was traveled over the months of August to mid-August in the shape of a deep sloping direction In this 4 month monsoon season, the line traveled just over two months for a short period only. As a result, it rained only two months instead of the four month monsoon season and caused low rainfall and droughts in most of the country in many years.

From 2015, the line of path of the Indian monsoon seems likely to rise over the months of July and to June in future in the shape of upper ascending direction and will be causing heavy rains & floods in most of the country in coming years until around 2060. This is an assessment based on the study of situations from 1888.

Deep analysis:

As of 1888, the monsoons traveled at their peak, the pre-path monsoons on June 1 and the main-path of monsoons on July 9 and caused good rainfall in many years.

From about 1891, they traveled steeply downwards, reaching a low peak by 1918.

Between about 1910 and 1927, the Monsoons advanced in the concave direction during the months of August and September at their trough and caused low rainfall and droughts in most of the country in many years.

From about 1918, the monsoon traveled steeply upwards, reaching its peak by 1960.

Between about 1935 and 1985, the monsoons advanced in a convex direction during the

months of June and July and caused good rainfall in many years.

From about 1960, the pre-path monsoons travel obliquely downstream, through July 25 and the main-path monsoon through August 18.

Around 1985-2010 during the low state, pre-path of monsoons in July and main-path of monsoons in August moved forward in concave direction and caused low rainfall and droughts in most of the country in many years.

From 2010, the monsoon is expected to move steeply upwards and reach a peak in intensity by 2040.

Around 2040-2065, the monsoons are expected to move forward in a convex direction, causing heavy rains and floods in most of the country in more years.

Concised (Monsoon Season) Scale Analysis:

Now carefully observe the various stages of the concised scale.

From 1895 to 1935, the line of path of the Indian monsoon was traveled over the months of August and September in the shape of concave direction. In this 4 month season, the line traveled just over the two months only. At that time, statistics show that less rains and droughts have occurred. Only some seasons had good rains.

From 1935 to 1985, the line of path of the Indian Monsoon Time Scale was traveled over all the four months of June, July, August and September in the shape of a convex direction. At that time, statistics indicate that good rains, sometimes heavy rains and floods have occurred.

From 1935 to 2010, the line of path of the Indian monsoon was traveled over the months of August and September in the shape of concave direction. In this 4 month season, the line traveled just over the two months only. At that time, statistics show that less rains and droughts have occurred. Only some seasons had good rains.

Now carefully observe the India Monsoon Time Scale, from 2010 the path of the Indian monsoon began to travel upwards in the direction of upper ascending convex similar as the period 1985 to 1935. As a result there are chances of good rains until 2060 in the upcoming seasons full months of June, July, August and September. By 2040, these will be full in the four month monsoon season. Heavy rains and floods are likely to occur in some seasons in some areas. No rains and droughts are less frequent.

Study and Discussion:

The results obtained as above are studied and discussed as follows.

The Indian Monsoon Time Scale reveals many other secrets of the monsoon & its relationship with rainfall & other weather problems and natural calamities. Some bands, clusters and paths of low pressure systems clearly seen in the Indian Monsoon Time Scale, it have been some cut-edge paths passing through its systematic zigzag cycles in ascending and ascending orders which causes heavy rains & floods in some years and droughts & famines in another years according to their travel. And also we can find out many more secrets of the Indian monsoon such as droughts, famines, cyclones, heavy rains, floods, onset & withdrawal of monsoon etc. by keen study of the Indian Monsoon Time Scale. The passages clearly seen in the Indian Monsoon Time Scale are sources of monsoon pulses. The tracking date of main path & other various paths of monsoon etc., of the Indian Monsoon denotes the onset of the monsoon, monsoon pulses or low pressure systems. These observations can mean that pulses of the monsoon are repeatedly determined by the number of repeats.

Furthermore, the main passage of the line of monsoon travel from June to September and September to June are also signs to impending weather conditions of a country. For example, during 1865-1895's, the main path-way of the Indian monsoon was rising over June, July, August. During the 1896-1920's, it was falling over August, September. During 1920-1965's, it was rising again over July, August, September. During the 1965-2020s, it was falling over September. From 2020, it is now rising upwards and estimated traveling over the months of June, July, August by 2066.

(There may be a difference of 5 to 10 or more years between those periods. This is because currently it can not be estimated with certainty that the respective period will start or end in the ruling period.)

The tracking date of the main path & other various paths of the Indian Monsoon denote the onset of the monsoon, monsoon pulses or low pressure systems, storms and its consequent secondary hazards and storms etc.. And also we can find out many more secrets of the Indian monsoon such as droughts, famines, cyclones, heavy rains, floods, real images of the Indian Monsoon, and onset & withdrawals of the monsoon etc. by keen study of the Indian Monsoon Time Scale.

For example, the date of tracking ridge of path is the sign to the impending cyclone and its secondary consequent hazard floods, storm surges etc.,

Another example, the thin and thick markers on the upper border line of the Indian Monsoon Time Scale are the signs to the impending heavy rains & floods and droughts & floods. The thick marking of clusters of low pressure systems on the Indian Monsoon Time Scale is the sign to the impending heavy rains and floods and the thin marking of clusters of low pressure systems on the Indian monsoon time scale is the sign to the impending droughts and famines.

These are just some studies of the Indian monsoon. There are many more secrets in the Indian monsoon. Indian scientists should get rid of them. We can find out many more secrets of weather conditions by keen study of the Indian Monsoon Time Scale.

1:Historical evidences:

Many historical texts in the scriptures such as the Bible and the Quran's also reinforce the Indian Monsoon Time Scale. For example, the text in the Genesis, chapter 41 similar to that on the Global Monsoon Time Scales it was reported that in the past centuries, the monsoons have been going up and down (Rise and Fall) in ordinary English "there comes seven years of great heavy rains and floods throughout the land of Egypt. And there shall arise after them seven years droughts and famines ". These scriptures reinforce the basic principle of Global Monsoon Time Scales.

2:The IITs Study and Discussion of 100 years the Indian Monsoon:

Deficient rainfall led to the collapse of the Mansabdari system, started by Mughal emperor Akbar, in the late 17th century. Similarly, drought interspersed with violent monsoon rains sounded the death knell for the Khmer empire of south-east Asia in the 15th century. A recent study by researchers at Indian Institute of Technology, Kharagpur(IIT-KGP) has revealed that abrupt changes in the Indian monsoon strengthen during last 900 years and their linkages to socio-economic conditions in the Indian subcontinent by nil K. Gupta, Professor at the geology and geophysics, Department of IIT-KGP, highlights that decline of Indian dynasties was linked to weak monsoon and reduced food production.

Rise and fall: Several dynasties, such as the Sena in Bengal, Solanki in Gujarat in the mid-13th century and Paramara and Yadav in the early to mid-14th century-all of which flourished during the dry phases of Indian summer monsoon suggesting role of the climate in the sociopolitical crisis, the study revealed.

The paper published in international journal PALEO 3 highlights three phases in the 900 years stretch-Medieval climate from 950 CE to 1350

CE, Little Ice Age from 1350 CE to 1800 CE and Current Warm Period and phases from 1800 CE until today. The paper highlights strong monsoon during the Medieval Climate Anomaly and Current Warm Period and phases of weak monsoon. There can be no doubting the profound impact of the abrupt shifts of rainfall on human history-a fact we need to constantly remind ourselves of in this day and age of irretrievable climate change. Abrupt shifts in the ISM precipitation has similarly impacted history in India, Prof. Gupta said.

For the study on long-term spatio-temporal variability of the ISM, a group of researchers, which also included experts from Wadia Institute of Himalayan Geology, looked at paleoclimate records using oxygen isotope proxy record from speleothems(a structure formed in a cave by deposition of minerals from water) at the Wah Shikar cave Meghalaya.

We took samples from every half millimeter or sometimes even one-third of a mm, and we dated using uranium-thorium time series. Such time sampling of less time intervals means we were covering data at two-three years' intervals, while most research collects data at 20-30 years' intervals. We even captured the drought events of last few centuries, Prof. Gupta said. The results showed abrupt shifts in the ISM, he added.

For more recent phases of human history the study suggests that from the beginning of the 19th century, the changes in the ISM became more abrupt with a rise in atmospheric temperature that coincided with the dawn of the Industrial Revolution.

An increase in the frequency of abrupt shifts in the ISM during the last centuries, coincidental with a rise in atmospheric temperature, suggests occurrence of more climatic surprises in future consequent to future rise in the global temperature and subsequently more precipitation in the form of rain at higher altitudes." the paper said. Prof. Gupta said that they were doing similar work extending their paleoclimate study to 6000 years ago to see the impact of climatic change on Indus Valley civilization and on population migrations.

3:Studies of the IITM, Pune:

Studies of the Indian Institute of Tropical Meteorology, Pune that strengthened the Indian Monsoon Time Scale. Studies of long time series of the Index of All India area-weighted mean summer monsoon rainfall anomalies during the period 1871-2017 based on IITM Homogeneous Indian Monthly Rainfall Data Set have revealed the several interesting aspects of the inter-annual and decade-

scale variations in the monsoon that strengthened the Global Monsoon Time Scales.

FLOOD YEARS: During the period of 1871-2015, there were 19 major flood years: 1874, 1878, 1892, 1893, 1894, 1910, 1916, 1917, 1933, 1942, 1947, 1956, 1959, 1961, 1970, 1975, 1983, 1988, 1994.

DROUGHT YEARS: And in the same period of 1871-2015, there were 26 major drought years: 1873, 1877, 1899, 1901, 1904, 1905, 1911, 1918, 1920, 1941, 1951, 1965, 1966, 1968, 1972, 1974, 1979, 1982, 1985, 1986, 1987, 2002, 2004, 2009, 2014, 2015.

Depending on the data mentioned above, it is interesting to note that there have been alternating periods extending to 3–4 decades with less and more frequent weak monsoons over India.

For example, the 44-year period 1921-64 witnessed just three drought years and good rainfall in many years. This is the reason that when looking at the Indian Monsoon Time Scale you may note that during 1920-1965's, the passage of the Indian monsoon had been rising over July, August, September in the shape of concave direction and resulting in good rainfall in more years.

During the other periods like that of 1965-87 which had as many as 10 drought years out of 23, This is the reason that when looking at the Indian Monsoon Time Scale you may note that during 1965-2004's the path of the Indian monsoon had been falling over the September in the shape of convex direction and causing low rainfall and droughts in many years.

4: Studies by the Massachusetts Institute of Technology, Cambridge, National Research Foundation, Singapore, Singapore-MIT Alliance for Research and Technology (SMART):

A study of the Massachusetts Institute of Technology, Cambridge supported and in part by the National Science Foundation, the National Research Foundation of Singapore, and the Singapore-MIT Alliance for Research and Technology (SMART) founds that the Indian monsoon, which bring rainfall to the country each year between June and September, have strengthened since 2002. Between 1950 and 2002, they found that north central India experienced a decrease in daily rainfall during the monsoon season. To their surprise, they discovered that since 2002, precipitation in the region has revived, increasing daily rainfall. That heightened monsoon activity has reversed a 50-year drying period during which the monsoon season brought relatively little rain to northern and central India. Since 2002, the researchers have found, this drying trend has given way to a much wetter pattern, with stronger monsoons supplying much-needed rain,

along with powerful, damaging floods, to the populous north central region of India.

A shift in Indian Monsoon Time Scale may explain this increase in monsoon. Consistent with the studies of the above research institutions, this is the reason that when looking at the Indian Monsoon Time Scale you may note that between 1950-2002, the path of the Indian monsoon had been falling over the July and August in the shape of convex direction and decreasing rainfall and since 2002, the Indian monsoon has been rising over July, August, September in the shape of concave direction and precipitation in the region has revived, increasing daily rainfall.

5. Studies on the Milankovitch cycles:

Another great source of evidence for the determination of the Indian Monsoon Time Scale is the Milankovitch scales. Earth has seasons because its axis of rotation is tilted at an angle of 23.5 degrees relative to our orbital plane-the plane of Earth's orbit around the sun. The collective effects of changes in the Earth's rotation around its axis and revolution around the Sun such as axial tilt etc. may influence climatic patterns on the earth. When examining the Indian Monsoon Time Scale closely from 1880 to the present, there are many ups and downs in the monsoon cycles. This is the reason for the ups and downs with the monsoons is that the climate changes on the earth forms along the Earth's spin on its axial tilts around the sun. When the Indian Monsoon Time Scale is being examined it is known that there are many unknown mysteries in the Earth's spin on its axial tilts around the Sun. Astrophysicists discover the mysteries of the Earth's spin on its axial tilts around the Sun based on the Indian Monsoon Time Scale. Global researches around the world such as Milankovitch cycles etc. strengthened that the Earth's spin on its axis around the Sun is the root cause of the variations in the monsoons.

Another great source of evidence for the determination of the Indian Monsoon Time Scale is the Milankovitch scales. Milankovitch cycles are a series of periodic changes in the Earth's orbit around the Sun that affect the amount of solar radiation the Earth receives, which in turn influences climate change: These cycles are named after Serbian scientist Milutin Milankovitch, who hypothesized that they are a major driver of long-term climate change. Milankovitch cycles are believed to have caused Earth to swing between ice ages and warmer periods for millions of years. Scientists can model these cycles and compare their calculations to evidence found in geological sediments.

Milankovitch cycles are a series of periodic changes in the Earth's orbit around the Sun that impact the amount of solar radiation the Earth receives, which in turn influences climate change:

Eccentricity: The shape of the Earth's orbit around the Sun. The Earth's orbit is elliptical, but its shape varies over time. When the orbit is more elliptical, the Earth moves closer and further from the Sun, which impacts the climate.

Obliquity: The angle of the Earth's axis in relation to its orbital plane. The tilt of the Earth's axis changes over time, moving from 22.1° to 24.5° and back again over about 41,000 years. When the tilt increases, summers are warmer and winters are colder.

Precession: The direction Earth's axis of rotation points. The Earth's axis completes a full cycle of precession every about 26,000 years.

Milankovitch cycles are believed to have caused Earth to swing between ice ages and warmer periods for millions of years. Scientists can model these cycles and compare their calculations to evidence found in geological sediments.

According to the Milankovitch cycle, the angle of the Earth's axial tilt (obliquity) regarding the orbital plane (the obliquity of the ecliptic) varies between 22.1° and 24.5°, over a cycle of about 41,000 years. The current tilt is 23.44°, roughly halfway between its extreme values. Milankovitch cycles are a series of periodic changes in the Earth's orbit around the Sun that affect the amount of solar radiation the Earth receives, which in turn influences climate change.

These cyclical orbital movements, which became known as the Milankovitch cycles, cause variations of up to 25 percent in the amount of incoming insolation at Earth's mid-latitudes (the areas of our planet located between about 30 and 60 degrees north and south of the equator). Milankovitch cycles are a series of orbital changes that impact the Earth's climate over thousands to hundreds of thousands of years. These cycles are caused by variations in three factors:

Milankovitch cycles impact the Earth's climate by: Changing the distribution of solar radiation. The amount of solar radiation that reaches the Earth's surface varies seasonally and annually based on latitude. Influencing the average surface temperature. This can cause exchanges of volatiles between the atmosphere and surface reservoirs. Triggering the beginning and end of glaciation periods. Milankovitch cycles are thought to be a major driver of the Earth's long-term climate. For example, when the Earth's axis is tilted more, the

seasons become more extreme, with warmer summers and colder winters. The Earth's axis is currently tilted at 23.5 degrees.

The Earth revolves around the Sun and the Sun revolves around the Milky Way. If you think closely, the reflections of the movements of the Earth and Sun “I.e” the Earth rotates (spins) on its axis once every 24 hours and revolves around (orbits) the Sun once every 365 days. The sun rotates (spins) on its axis once every ~27 days and revolves around (orbits) the center of the Milky Way once every 225–250 million years and other mysteries are clearly reflected on the Indian Monsoon Time Scale. Think carefully. Milankovitch cycles are directly related to current climate changes, they are a natural process that has shaped Earth's climate from an 85 year cycle to millions of years.

According to my research and studies, this tilt does not remain constant at 23.44°. It oscillates up and down and slowly moves to 24.5°. These oscillations of up and down will be about 85 years, according to the Indian Monsoon Time Scale. That is about a 60 years upwards journey and about 25 years downward in total oscillating once every about 85 years, the latter taking place a little further. In this every oscillation, when it's oscillating towards 22.1° that is descending order low rainfall (droughts and famines) occurs and when it's oscillating towards 24.5°, heavy rainfall (heavy and floods) occurs. Oscillating in this way, it slowly moves forward. All this can be clearly observed in the Indian Monsoon Time Scale. If this is true, then we are close to reaching 24.5°, So are there going to be more climate changes in the coming future.

6.Studies on the recent patterns of the heavy rains and floods worldwide:

According to the Indian Monsoon Time Scale, it is known that there will be major global climate changes in the coming years “i.e” heavy rains, floods, and storms etc. will occur until about 2075. As mentioned above, heavy rains and floods are going to occur all over the world in the upcoming seasons. Confirming this, heavy rains and floods will occur all over the world. Examples are mentioned below.

Persian Gulf: Flash flooding in April 2024 affected Oman, the United Arab Emirates, Yemen, Bahrain, Qatar, and Saudi Arabia. Heavy rain caused nearly a year's worth of rain in some states in a single day. At least 46 people died, including 20 in Oman and 18 in Iran.

East Africa: Flooding and cyclones in 2024 affected Kenya, Tanzania, Uganda, Ethiopia, Burundi, and Somalia. As of May 17, 2025, at least 473 people

died, and an estimated 1.6 million people were impacted.

West and Central Africa: As of August 15, 2025, Chad, the Democratic Republic of the Congo, and Nigeria were the most affected countries.

Brazil: Torrential rains in Rio Grande do Sul caused flooding that displaced 160,000 people and killed 100.

Southern Germany: Heavy rain caused deadly flooding in Bavaria and Baden-Württemberg, forcing thousands of people to evacuate.

Afghanistan: Flash floods in northern Afghanistan killed hundreds of people and destroyed homes and livestock.

Oman: Heavy rainfall caused flash flooding in parts of Oman, killing at least 12 people.

Uruguay: Thousands of people evacuated as a river reached record high levels in the Florida Department.

Argentina: Flood chaos in Buenos Aires after 130 mm of rain in 24 hours.

Indonesia: Deadly floods and landslides in West Sumatra after 300 mm of rain in 6 hours.

Central Europe: A weather map from Geosphere Austria shows a large band of rain across Central Europe, with Austria bracing for heavy rains and a cold front.

Poland: Four southern provinces in Poland are at the highest risk of flooding.

Nigeria: Floods in northeastern Nigeria have affected one million people, with the collapse of a major dam causing the state's worst flooding in decades.

Vietnam: Typhoon Yagi made landfall in northern Vietnam, causing landslides and floods, and killing more than a dozen people.

India: Monsoon floods have killed dozens in India, with thousands in relief camps.

Other countries: Floods and landslides affected Kyrgyzstan in April 2024, and floods affected Rwanda, Somalia, and Tanzania in April 2024. Flash floods affected Iraq in March 2024, and floods affected Kazakhstan in March 2024.

7.Studies on the Deserts pouring rains and turning green:

Rains and green plants in deserts in recent times are another example for supporting the Global Monsoon Time Scales. Recently, a rare deluge left parts of the Sahara desert flooded, with dramatic visuals showing palm trees and sand dunes inundated. These were the first floods in the Sahara in half a century.

According to the Indian Monsoon Time Scale, it is known that there will be major global climate changes in the coming years “i.e” heavy rains and

floods will occur until about 2075. As mentioned above, heavy rains and floods are going to occur all over the world in the upcoming seasons. As a result, multiple deserts around the world are turning green, including the Sahara Desert and the Thar Desert:

The Sahara Desert in West Africa has been turning green as a result of the climate/monsoon cycle traveling towards its peak state. In September 2024, NASA captured images of the Sahara's transformation into a verdant landscape with increased water levels and vegetation growth. The images showed that some areas of the Sahara received five times their usual monthly rainfall, and one of the desert's normally dry lakes filled with water.

A study suggests that the Thar Desert may turn green as a result of the climate/monsoon cycle traveling towards its peak state by the end of the century. The study's authors analyzed weather data from South Asia over the past 50 years and predicted future changes under various greenhouse gas scenarios. The study's results indicate that the Indian monsoon is expanding westward, which could lead to significant agricultural and socio-economic changes in the region.

The arid landscape of the Saudi desert is turning green as a result of the climate/monsoon cycle traveling towards its peak state.

Scotland's deserts are turning green as a result of the climate/monsoon cycle traveling towards its peak state

China's deserts are turning green as a result of the climate/monsoon cycle traveling towards its peak state.

The UAE deserts, including parts of Dubai, have become greener due to increased rainfall in recent years. This has led to more vegetation, changing some areas from desert to shrubland.”

In this way, the reason why the deserts become green is that the monsoon line is traveling to a higher position. In such situations, it is very important to study the travel patterns of these climates and monsoons. So scientists can set up the Indian Monsoon Time Scale and sense the upcoming climate changes in advance.

8:Studies on the presence of Indian monsoon advancing towards from the Bay of Bengal to the Arabian sea and from the September to June during journey of Indian monsoon season in recent decades:

Keep track of the Indian Monsoon Time Scale carefully. From 2000, it is going to travel upwards in the shape of a convex direction. According to it, it is known that there will be major global climate

changes in the coming years “i.e” heavy rains, floods, and storms etc. will occur until about 2075. Ensuring this journey of monsoons in the Global Monsoon Time Scales it is known in the studies of the researchers is that the sea surface temperatures (SSTs) in the Arabian Sea that lead to cyclogenesis have increased by 1.2 -- 1.4 °C in recent decades. These studies provide great evidence for the determination of monsoon time scales. Sea surface temperatures (SSTs) leading to cyclogenesis in the Arabian Sea are 1.2 -- 1.4 °C higher in recent decades, compared to SSTs four decades ago. The intensity of cyclones has increased in the Arabian Sea by 20–40%. During the past four decades, the maximum intensity of cyclones has increased by 40% (from 100 km/hr to 140 km/hr), in the Arabian Sea, during the pre-monsoon season (April–May). The Arabian Sea during the post-monsoon season (October–December) has witnessed a 20% increase in the intensity (from 100 km/hr to 120 km/hr). As a result, the total energy used up by a tropical cyclone during its lifetime (known as the accumulated cyclone energy) has also gone up. The changes in the Bay of Bengal are not significantly large. Lifetime maximum intensity of cyclones (knots) and accumulated cyclone energy (knots²) during the period 1980–1999 and 2000–2019 in the Arabian Sea and the Bay of Bengal basin during the pre-monsoon (April–May) and post-monsoon (October–December) seasons. The data shows that the intensity of cyclones in the Arabian Sea increased by 20% (post-monsoon) to 40% (pre-monsoon). The north Indian Ocean is rapidly warming and has contributed to more than a quarter of the total increase in the ocean heat content globally in the past two decades. In a global warming scenario, an increase in ocean temperatures at a faster rate in the Arabian Sea as compared to the Bay of Bengal is one of the major thermodynamic parameters due to which models are projecting an increase in the frequency of the cyclones in the Arabian Sea. All the studies, described above, determine Indian Monsoon Time Scale.

Future:

As discussed above, the convex period of pre-path of the Indian monsoon which traveled between 1918-1981 will be traveled between 2010-2060 and the convex period of the main-path of the Indian monsoon which traveled between 1926-1981 will be traveled between 2020-2075.

As a result, heavy rains and floods are going to occur all over India in the coming years. And also future climate changes are expected to include a warmer atmosphere, a warmer and more

acidic ocean, higher sea levels, flooding, storms and more large changes in precipitation patterns. Therefore, precipitation including heavy rains, snow, and floods will occur. Many cities, Islands, and villages situated on the shore of rivers and seas will get absorbed in the water. Heavy rains, floods, cyclones can lead to disease spread and damage to ecosystems and infrastructures. Human health issues can increase mortality etc. According to an estimate, rivers, lakes, reservoirs, barrages, and dams etc. may be full of water in the coming years.

Scientific theorem:

The cause is unknown. But the year-to-year changes of movement of the earth rotates on its axis, inclined at 23 1/2 degrees from vertical to its path and revolves around the sun in accordance with the Milankovitch cycles, does play a significant role in the formation of the monsoons, including the Indian monsoon and stimulates the climate changes and natural calamities on the Earth.

The intertropical convergence zone at the equator follows the movement of the sun and shifts north of the equator merges with the heat low-pressure zone created by the rising heat of the subcontinent due to direct and converging rays of the summer sun on the Indian Sub-Continent and develops into the Indian monsoon trough and maintain Indian monsoon circulation.

Conclusion:

I have designed the Grenada Monsoon Time Scale to predict the climate change and natural disasters in Grenada along with unraveling the mysteries and studying the dynamics/mechanism of climate of Grenada and also exercising the benefits to the people in Grenada. We can make many more modifications, thus bringing many more developments in the Grenada Monsoon Time Scale, and it should be computerized for accurate predictions.

Here is an important point to be grasped by the world's scientists. That is, according to the researches and studies on the Global Monsoon Time Scales, it is come to known that there will be climate changes and natural calamities in the coming years “i.e” heavy rains, floods, and storms and other catastrophic conditions will occur until about the 2075 and then, there will be droughts, famines and other catastrophic conditions until about the 2150. Through the establishment of the Grenada Monsoon Time Scale, we can know the future consequences of climate changes and natural calamities in the region of the Grenada monsoon. Therefore, prevention and mitigation plans can be made accordingly. So, I call on the world scientists to

design and establish the Grenada Monsoon Time Scale, by following the Basics of Monsoon Time Scales, based on the Indian Monsoon Time Scale which is successfully proved out in practice as outlined above. There we can predict what is going to happen in the coming years.

Acknowledgements:

In this research, many consultations were made with professors and scientists for their valuable suggestions and advice. The India Meteorological Department, Indian Institute of Tropical Meteorology and Indian Institute of Science etc. provided a lot of valuable information and data to this research and in making these Monsoon Time Scales. There was also some information taken from Wikipedia. I am grateful and sincere thanks to all of them.

Invention history:

Many researches are being conducted by me on the global monsoon systems from 1980 to till date with an ideal to invent the mysteries of monsoon systems. In 1991, I submitted a research report to Sri G.M.C. Balayogi, Member of Parliament (Lok Sabha) on the importance and necessity of establishing the Monsoon Time Scales for studying the monsoon systems. Sri G.M.C. Balayogi recommended the research proposals to the India Meteorological Department for implementation in the services of the people. In 1994, The Cabinet Secretariat of India recommended this Monsoon Time Scale proposal to the Ministry of Science & Technology, Govt of India for further research and implementation. In 1996, many consultations were made with the Parliament House, President of India and other VVIPs. In 2005, consultations were made with the India Meteorological Department about the Monsoon Time Scale for further research and development in the services of the people. In 2009, The Secretary, Minister of Science and Technology also recommended these Monsoon Time Scales to the Indian Institute of Tropical Meteorology for further research and development. In 2008, Dr.T.Subbarami Reddy, Hon'ble Union Minister of State for India made a recommendation to the India Meteorological Department for further research and development of the Global Monsoon Time Scales/ Indian Monsoon Time Scale in the services of welfare of the people. In 2008, I sent a representation to the Government of India, India Meteorological Department about the correspondence for further research and development. In 2009, I made a representation to the Government of India, India Meteorological Department about the correspondence for further

research and development of the Global Monsoon Time Scales/ Indian Monsoon Time Scale. In 2009, the Secretary, Minister of Science and Technology sent a letter to the Indian Institute of Tropical Meteorology for further research and development of the Global Monsoon Time Scales/ Indian Monsoon Time Scale. In 2010, a representation was sent to the India Meteorological Department about the correspondence for further research and development of the Global Monsoon Time Scales/ Indian Monsoon Time Scale. Despite much pleading, Global Monsoon Time Scales were pushed into the dark, unable to be recognized. But nobody provides me with research opportunities. At last, I built a small lab at my house with home-made apparatus, books and other research materials and conducted research on global monsoon systems. I have proposed and designed Basics of Monsoon Time Scales including other Global Monsoon Time Scales for all the monsoon regions of the world to study the past, present and future movements of the monsoons and predict its related weather conditions and natural calamities in advance.

Author bio:

I'm a science enthusiast and experimenter with an ambition to serve humanity. Governments did not support my research, provide opportunities and give recognition, moreover I was ridiculed, humiliated and pushed out to the gate when I met to provide research opportunities. Eventually, I built a small lab in my house and conducted research and studies on the Earth sciences since my childhood in 1969 to till date, and introduced numerous unique ideas and doctrines and tried unsuccessfully to fulfill them.

Among them, Ecological Forecasting Time Scales(1965-70) for studying the inextricable relationship between living things and natural disasters, A New Model of Cosmology (1970-80) for breaking the mysteries of the cosmos, Basics of Geoscope (1980-87) for unlocking the geophysical mysteries and creating innovative missions, Basics of Monsoon Time Scales (1987-91) for studying and predicting climate changes and natural calamities, Astro-Climatic Numerical Periodic Tables (1991-2000) for studying the inextricable relationship between the planetary movements in the space and climate changes on the earth, Designs of Geoscope(2000-2015) for all world countries including all seismic zones, faults, belts, tectonic plates, Designs of Global Monsoon Time Scales (2015-still) for all world countries including all global, regional and local monsoon systems were successfully completed.

I have proposed numerous unique ideas and doctrines futuristic and prepared some basic clues and notes for this, but they are incomplete due to lack of support and opportunities. World scientists can do more research on these numerous unique ideas and contribute to scientific development for humanity. I'm not saying it will happen now, but will be created someday. May my ideas and doctrines inspire future generations scientists and future generations for further research and scientific development and public welfare. Some of the important ones are- Artificial Rains Vision and Mission for creating artificial rains, Artificial Storms Vision and Mission for pouring heavy rains and floods over the reservoirs, dams and other projects; Artificial Underground Waters Vision and Mission for increasing ground waters rain fed areas, drought zones; Invention of Life Vision and Mission to revive living beings; Biogenetic Engineering Superhuman Creation Vision and Mission to create super humans; Re-creation of Humans of Past Vision and Mission for restoring and re-creating people in the past by images that are preserved in the earth's magnetic field by new technologies; Bio-Machine Vision and Mission for recreating humans of past; Geo-machine for re-creating humans of past; Time-Travel Machine Project Vision and Mission; Past-Travel Geo-Machine Project Vision and Mission for traveling into the past, present future; Another New Earth-2 in the Space Vision and Mission for re-creating the another earth in the space; Microcosm Vision and Mission for connecting the worlds of micro organs, atomic-worlds; Macrocosm Vision and Mission for connecting the worlds of space and outer space worlds, Descending inter-universal travel connecting with the atomic worlds, Ascending inter-universal travel above worlds of us etc.

All the Numerous Unique Ideas that came to my mind and all the Numerous Unique Doctrines that I formulated were published in the name of Irlapatism-Irlapati Theory of Universe in 1977. All matters pertaining to the cosmos, including the doctrines about creation, the existence of god, the theory of evolution and my numerous ideas and doctrines were widely discussed and incorporated in this book. These doctrines, exposed to the anger of fundamentalists and superstitious, subsequently got into violent altercations. As a result, my lab was destroyed and copies of research notes were burned. I reported these repressions to The Revenue Divisional Officer. Amalapuram in July 1977. The Revenue Divisional Officer conducted an inquiry about this matter. While returning from the inquiry,

I was attacked by a mob, and they took me to the village Chavadi, Ryali, where fundamentalists and superstitious people were met and where I was beaten up. Followed by altercations about my thoughts in the book, they have beaten and forced me to put signatures on some prepared documents, and an offense falsely framed and foisted against me. After many tortures, I was sent to the Taluk Magistrate, Kothapeta. There the casteists and sectarians colluded with the Taluk Magistrate and succeeded me in sentencing. The Taluk Magistrate declared me as a "Dangerous boy and up to anything" and issued a sentence to punish and handed over to the Police Station, Ravulapalem. I was arrested on July 21, 1977. A case was registered against, and I was kept on remand in Sub-jail. I handcuffed and led through streets during the inquiries and court trials/hearings, and was imprisoned. The trials were done from April 2, 1979, to November 20, 1979. After many trials, The Hon'ble Additional Judicial First Class Magistrate Court found me not guilty and acquitted on November 27, 1979.

Even then, from 1980, I built a small laboratory at home and did research, on the other hand, I consulted eminent individuals and research organizations and institutes and requested that research opportunities should be provided. No one helped me in this endeavor right, Moreover, I was insulted, mocked, scolded and beaten many times. Meanwhile, after finding a job, I spent some money from our salary for research. But my wife and children did not encourage my research and moreover ridiculed me in different ways.

However, despite many efforts and sacrifices I made, I could not get government recognition and social support. My research and studies were ignored and darkened. I am a victim of casteism and untouchability, discrimination and negligence and conspiracies of superstitious fanatics. I was insulted by my caste, abused, humiliated, beaten and pushed out to the gate when I asked to provide research opportunities. Furthermore, I was tied to a pole and beaten. My ideas and doctrines were subjected to the wrath of racists, casteists and fanatics as well as fellow scientists and resulted into oppression of me. My lab was invaded. Illegal cases were framed and foisted against me. I faced trials, handcuffed and led through streets, police inquiries and court trials/hearings, and was imprisoned. Political recommendations and official support, cash and caste, region and religion may play a key role in giving support and opportunities, awards and rewards, respect and recognition to depressed communities. But I have none of them.

Appeal to the world scientists:

I have introduced numerous unique ideas and doctrines that conquer the creation and tried unsuccessfully to fulfill them, but scientists will conquer them someday in the future as all these have scientific possibilities. I request world scientists to do research in that direction.

Time goes by, old age and health problems surround me. I am now making my life's last journey to the worlds of no return in disregard and despair, poverty and illness with Severe Bronchial Asthma and its associated issues. Breathing becomes difficult, illness weakening my health, my mind slows down, losses of balance and forgetfulness are coming. It is not known how long I will live and when I will die, However, I know that my time is near and someday I will die suddenly without you knowing. Under the aforementioned circumstances, I am making this humble appeal to the world scientists that if world scientists have invented any technology in the future that re-create humans of the past, Kindly remember and re-create me to share your successes Wish me goodbye.

GANGADHARA RAO IRLAPATI

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IFSC Code No. KKBK 000 7453
(Honorarium may be given by the publishers if they wish)

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1.Mooley DA, Shukla J(1987); Characteristics of the westward-moving summer monsoon low pressure systems over the Indian region and their relationship with the monsoon rainfall. Centre for ocean-land atmosphere interactions, university of Maryland, College park, MD.

2.All india monthly and seasonal rainfall series, 1871-1993, B.Parthasarathy, A.AMunot, D.R.Kothawale, Theoretical and applied climatology, 1994, Springer.

3.Wiki:

<https://en.wikipedia.org>

5. The world's 7 Tropical Cyclone seasons around the world.

6.Wiki:Indian monsoon (n.d.). Retrieved from

http://en.wikipedia.org/wiki/.com/wiki/Indian_Monsoon_Current..

7.Indian monsoon (n.d.). Retrieved from

http://www.britanica.com/science/Indian_Monsoon

8.Indian monsoon has strengthened over the past 15 years (n.d.). Retrieved from

<http://news.mit.edu- Jennifer chu-mit net news>

9.Interannual variations of Indian summer monsoon (n.d.). Retrieved from

<http://tropmet.res.in/>

Time-line(only important ones are mentioned):

In 1965, I started my earlier experiments at the age of 7th year, with home-made apparatus, mathematical box and pencils etc and invented the Lisposcope(1965) . .

In 1966, Discovered some bubble-like objects later named as Biolumucelles (Bioluminescent micelles(1966)).

In 1969, I found the relationship between the weather changes and the number of micelles. Later it was named as Bio-forecast effect(1969).

From 1970 to 1977, I collected a number of books related to the origin, structure, nature and evolution of the Universe along with a little Telescope and did immense chapters on the origin, structure. nature and evolution of the Universe. Discussed the same with professors and lecturers and took their views. Finally, I proposed a hypothesis with several postulations and proposals. In 1977 on 1st july, A book was published in the name of **Irlapatism-Irlapati Theory of Universe(A.1)**.The proposals in the book were instantly repulsed by the superstitious. As a result I was subjected to the anger of fanatic people and officials. My lab was destroyed and copies of books of my theory were burned.

In 1977 6th july, I reported these torments to the Revenue Divisional Officer. Amalapuram.

In 1977, While returning from the enquiry, I was attacked by a mob and they had taken me forcibly to the Village Chavadi, Ryali, where superstitious people were met and where I was beaten up. Followed by an altercation about the ideas of my hypothesis, they beat and forced me to put signs on some prepared documents, and an offence falsely framed and foisted against me.

In july 21st A.N 1977, After torture I was sent to the Taluk Magistrate, Kothapeta.. The superstitious succeeded me in sentencing. The Taluk Magistrate declared me as **A Dangerous Boy and Upto Anything** and issued a sentence to punish me and handed over to the police station.

On July, 22nd, F.N 1977., A case was registered. I was kept in sub-jail. (A.4) I had been driving with chains through the streets of Kothapeta from Sub-Jail to Court during the timings of presenting to court.

Between 1977-79, I was interrogated periodically. In 1979, The trials were done from April 2, 1979 to November 20, 1979.

On 27th, November 1979, The Hon'ble Additional Judicial First Class Magistrate Court found me not guilty and acquitted.

Between 1980-82 years, I suffered serious financial problems; I did not have food to eat, fabrics to put on. However I started many studies and experiments on the Geoscope project (1987) and introduced numerous unique ideas in Geophysics.

In 1982, I joined the Gram Panchayat Forest Scheme (1982-87) to contend financial difficulties. I made that opportunity favorable to researches and played active role in the fields of social forest schemes, environmental protection programmes, urban forestry and other awareness programmes of environmental protection under the Gram Panchayat, Merlapalem and made many studies in the fields of Agricultural meteorology, climate and crops, farming systems, weather & its effects on environment, interactions of weather with grasses, trees, agro-ecosystems, yield forecasting, disaster management, environmental pollutions, climate change etc that concerned greater good of the nature and environment.

In 1987, Sri A.J.V.B.M. Rao Hon'ble Member of Parliament recommended the Geoscope proposals to Sri K.R.Narayanan, Union Minister of Science & Technology, New Delhi. (became the then President of India) for further research and development in the services country

In 1988, Sri K.R.Narayanan recommended the Geoscope project proposals to the Council of Scientific & Industrial Research in the capacity of Vice-President, Council of Scientific & Industrial Research for further research and implementation.

In 1989, As per the directions of the Council of Scientific & Industrial Research, a detailed report on the Geoscope project was submitted to the National Geophysical Research Institute for further research and implementation.

In 1989, The Hon'ble High-Court of Andhra Pradesh also issued orders to the Government of India, Council of Scientific & Industrial Research, New Delhi, National Geophysical Research Institute, Hyderabad for provision of research facilities to carry out scientific investigations on the Geoscope Project Proposals. When I met the N.G.R.I, they

were insulted, refused to provide research facilities and pushed out to the gate.

In 1988, Gram Panchayat, Merlapalem Village sent a resolution to the Government to approve his inventions and discoveries just like Indian Monsoons Time Scale.

In 1988, Shri G. Surya Rao, Hon'ble M.L.A was forwarded the Indian Monsoons Time Scale projects to the Chief Minister of Andhra Pradesh for implementation in the welfare of the people.

In 1989, Sri N.T.Rama Rao, The Chief Minister of Andhra Pradesh was issued orders for implementation of the Indian Monsoons Time Scales in the welfare of the people.

In 1989, I went to Coconut Research Institute as per orders of the A.P. Agricultural University to conduct of fundamental experiments on a research project by which attracting the sea waters to the underground areas of deserts through the layers by electro-ionization; attracting the vaporized sea waters to the desert areas through the sky by electrically geo-magnified atmosphere when the weather is surrounded by water molecules during the trough of low pressure areas. During this research, I was man-handled.

From 1989-90, I conducted some experiments on magnetic water and a research project that attract the vaporized sea waters to the desert plains through the sky by geo-magnetizing atmosphere when the atmosphere is surrounded by the water molecules during the low pressure areas at Central Tobacco Research Institute, Rajahmundry.

In 1991, A detailed report on the Global Monsoon Time Scales (Indian Monsoon Time Scale) was submitted to the Director General of Meteorology, India Meteorological Department for further research and implementation.

In 1991, Shri G.M.C. Balayogi, Hon'ble Member of Parliament was forwarded the Global Monsoons Time Scales (Indian Monsoon Time Scale) to the Indian Meteorological Department for implementation in welfare of the nation.

In 1991, A Project was jointly had been organized by Andhra Pradesh State Council Science & Technology, Andhra Pradesh State Remote Sensing Applications Centre and Andhra Pradesh Science Centre on the inter-connection of Earth's Geomagnetic field with natural calamities and their effect on human impulse and also to prepare a project that attract the vaporized Sea waters to the desert plains through the sky of geo-electromagnetizing atmosphere when the atmosphere is surrounding by the water molecules during the low pressure times and attracts the

sea/underground waters to the desert underground areas through the layers by electro-ionization; During that research, The Director shouted biggerly and insulted among the staff for asking some money for food at that time I had no food to eat and no fabrics to put on.

From 1988-93, I joined the Peoples Action for Rural Awakening. I played active role in remedial and rationalize programmes and general taking an active part in issues such as literacy programme, science popularization programmes, remedial programmes, rationalize programmes, modern scientific ideas, ideas of hierarchical, infinite and innumerable universes, mysteries and rational thoughts of the cosmos etc that concerned greater good of the community associated with the organization of Peoples Action for Rural Awakening, Ravulapalem. In 1993, I joined as a junior Assistant in A.P.P.S.C, Hyderabad. Financially convenient.

In 1994, Consultations were made with The Cabinet Secretary of India for implementation of the Indian Monsoons Time Scale.

In 1996, Consultations were made with the President of India and other VVIP through the Lok Sabha Secretariat for further research and implementation of the Indian Monsoon Time Scale (Global Monsoons Time Scales)

In 2008, Consultations were made with the Commissioner for Disaster Management for implementation of a disaster management project., In 2000, Many Universities had sent their complements on the Irlapatism-A New Hypothetical Model of Cosmology.

In 2003, The Secretary, Andhra Pradesh Public Service Commission was forwarded a research project to the Chief Ministers Office for implementation of a drought combat project.

In 2004, Consultations were made with the Directorate of Statistics and Economics regarding implementation of the Astro-Climatic Weather Time Scales.

In 2008, Consultations were made with the Commissioner for Disaster Management for implementation of a disaster management project.,

In 2005, Consultations were made with the Secretary, Ministry of Science & Technology for further research and implementation of Geoscope and Indian Monsoon Time Scale.

By 2005, I was proposing a project which could help to forecast the cyclones in advance. The A.P. State Legal Services Authority was forwarded that project proposals to the Chief Minister of Andhra Pradesh for implementation through the Disaster Management Department.

In 2005, Consultations were made with the Indian Meteorological Department for implementation of the Weather Time Scales and Indian Monsoons Time Scales.

In 2006, Consultations were made with the Hon'ble Supreme Court Legal Services Committee to implement the Geoscope in the services of welfare of the people

In 2006, Negotiations were made with the A.P State Council of Science & Technology for implementation of a research project to recreate artificial rains and cyclones.

In 2006, Sri D. Sambaiah, Hon'ble M.L.A was forwarded the Indian Monsoons Time Scales and Weather Time Scales to the Chief Minister of Andhra Pradesh for implementation in the welfare of the people.

In 2008, Consultations were made with the Commissioner for Disaster Management for implementation of a disaster management project.,

In 2009, The Secretary, Ministry of Science & Technology forwarded the Indian Monsoon Time Scale (Global Monsoons Time Scales) to the Indian Institute of Tropical Meteorology for implementation.

In 2008, Consultations were made with the Indian Meteorological Department for implementation of the Indian Monsoon Time Scale/Global Monsoons Time Scales. .

In 2008, I presented preliminary findings from my study about the world global monsoon systems and its effects on the Indian monsoon to Sri Dr.P.Subbarami Reddy. Sri Dr.P.Subbarami Reddy, Hon'ble Minister of State forwarded these project proposals to the Indian Meteorological Department for implementation.

In 2009, Consultations were made with the Addl. Commissioner for Disaster Management for implementation of a project.

In 2009, The Secretary, Andhra Pradesh Public Service Commission was forwarded a research project to the Commissioner for Disaster Management for implementation.

In 2009, A detailed research project on the Indian Monsoon Time Scale was submitted to the Indian Meteorological Department for further research and development.

In 2009, A detailed research project on the Geoscope was submitted to the Indian Meteorological Department for further research and development.

In 2010, A detailed research project on the Indian Weather Time Scale was submitted to the Indian

Meteorological Department for further research and development.

In 2010, Negotiations with the A.P State Council of Science & Technology are conducted related to implementation of the A.P State Weather Time Scale.

In 2018, I retired from the job. Again there were financial difficulties..

Until date, more than 5000 research papers have been published. At present I am bedridden with severe asthma related diseases. However, many researches are being conducted on the global monsoon systems with an ideal to invent the mysteries of the world global monsoon systems and formulating the Basics of the Global Monsoons, Regional Monsoons, Sub-Regional Monsoons and Country-wise local Monsoons, Northern, Southern, Summer and Winter wise Monsoons to predict the weather changes and natural calamities in advance and to take mitigation measures..

Reference(only important ones are mentioned):

1. Cover page of the book Irlapatism, -Irlapati Theory of Universe was published on 1st July, 1977 by the supporters.
2. Report to the Revenue Divisional Officer, Amalapuram on 6-7-1977 about persecutions and torments of the fanatic people.
3. Orders of the Taluk Magistrate, Kothapeta A-2-5873/77 Dt. 21-07-77 Taluk Office, Kothapeta declared him as a dangerous boy and up to anything and issued sentence to punish him and handed over to the police station, Ravulapalem.
4. Arrested by the police on July 21, 1977. A case was registered C.No.53/77 and he was remanded.
5. The Judgment of the Hon'ble Additional Judicial First Class Magistrate Court, Kothapeta C.C.No. 13/79 in which he was found not guilty and acquitted on November 27, 1979.
6. Calendar and Judgment C.C.No. 13/79 of the Court of the Judicial Magistrate of the 1 Class, Kothapeta.
7. Aithabathula Jogeswara Venkata Buchi Maheswara Rao, Member of Parliament (Loksabha), Amalapuram letter dt:08/12/1987. In 1987, Sri A.J.V.B.M. Rao Hon'ble Member of Parliament recommended the Geoscope proposals to Sri K.R.Narayanan, Union Minister of Science & Technology, New Delhi. (became the then President of India) for further research and development in the services country.
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11. G.S.Rao, MLA letter dt:1988.

12. N.T. Rama Rao, Chief Minister of Andhra Pradesh, letter dt:30/01/1989.

13. Order, Hon'ble High Court of Andhra Pradesh W.P. No.12355/1989, dt:06/09/1989.

14. Supreme Court Legal Services Committee dt:02/01/2006.

15. India Meteorological Department, letter No.S-01416/ prediction dt:11/12/200

16. Letter No. NA-153 Date. October 21, 1991 of the Shri G.M.C. Balayogi Member of Parliament to the India Meteorological Department for further research and development of the Global Monsoon Time Scales/ Indian Monsoon Time Scale in the services of welfare of the people

17. D.O. No. NMRP/SKM/30/94 Dated; 17-08-1994 of the Government of India, Ministry of Science & Technology, Department of Science & Technology, New Delhi Cabinet Secretary correspondences about further research and development of the Global Monsoon Time Scales/ Indian Monsoon Time Scale in the services of welfare of the people.

18. Letter No. NA-153 Dated; 28-11-1996 of the Government of India, India Meteorological Department about the correspondence with the Parliament, President of India and other VVIPs of India pertaining to further research and development of the Global Monsoon Time Scales/ Indian Monsoon Time Scale in the services of welfare of the people.

19. Letter No. NA-49106/537 Dated; 25-07-2005 of the Government of India, India Meteorological Department about the correspondence about further research and development of the Global Monsoon Time Scales/ Indian Monsoon Time Scale in the services of welfare of the people.

20. Letter D.O.No. 209/MOS(M)/PS/2008 Date. October 21,1991 of the Shri Dr.T.Subbarami Reddy

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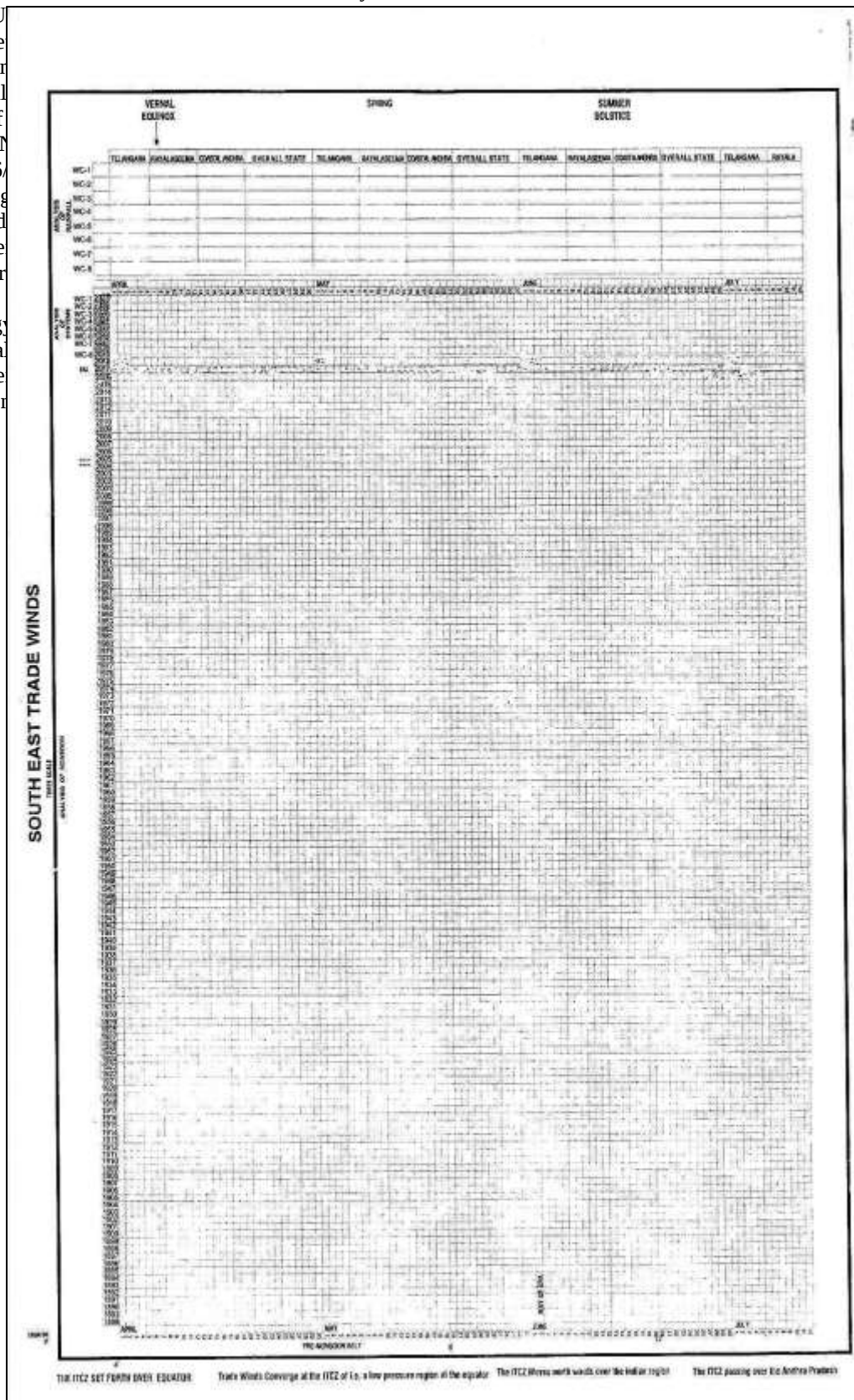
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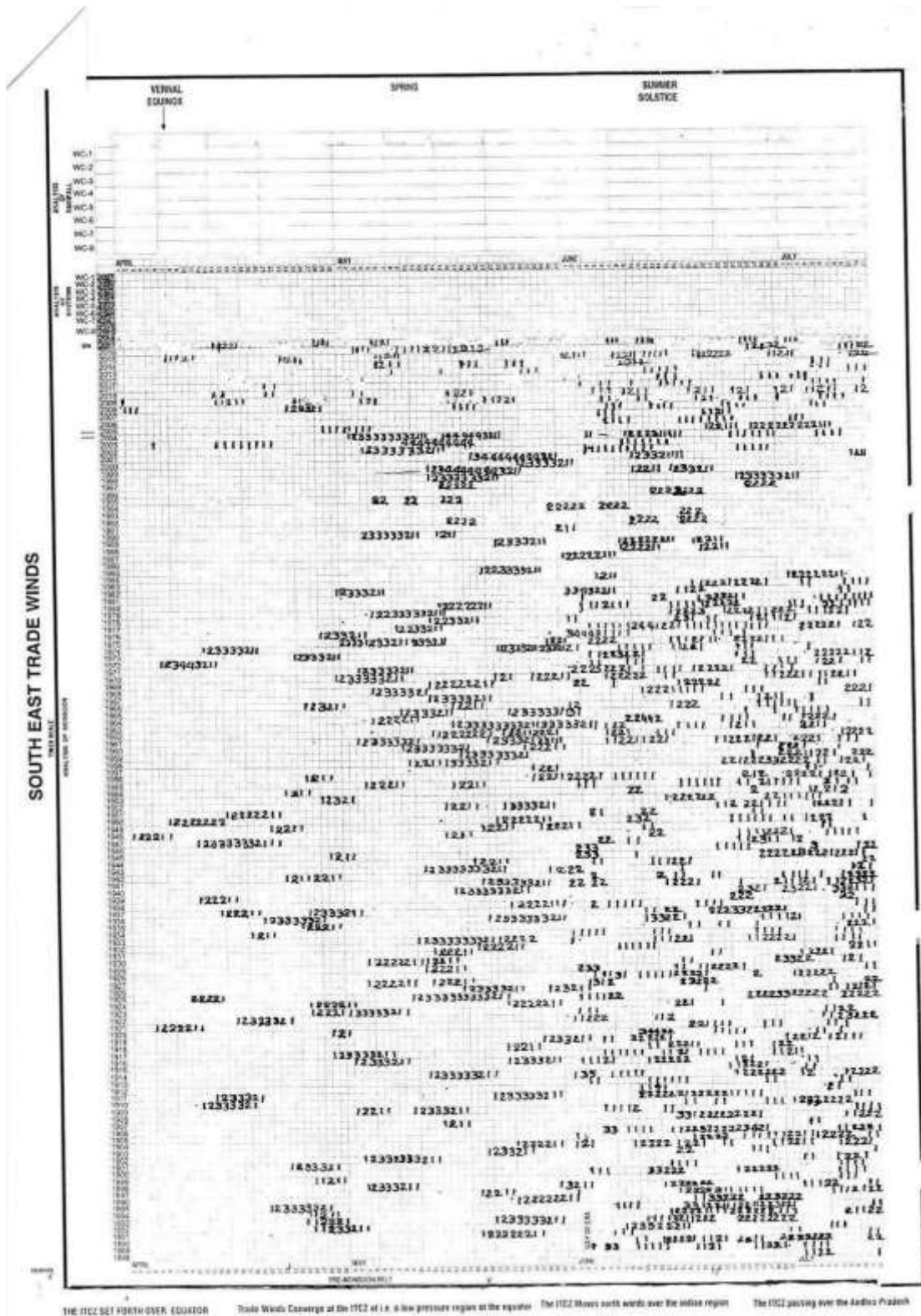
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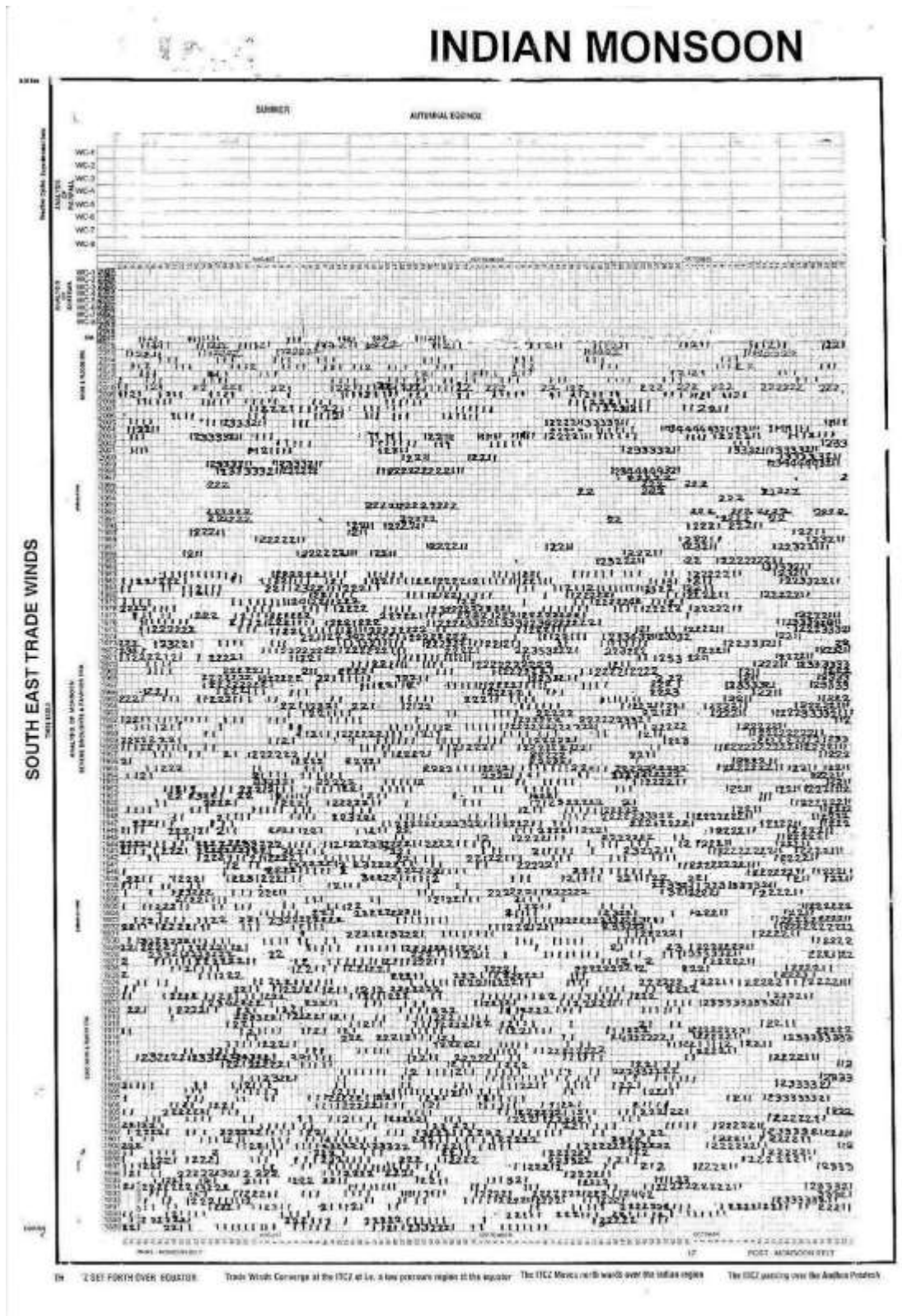


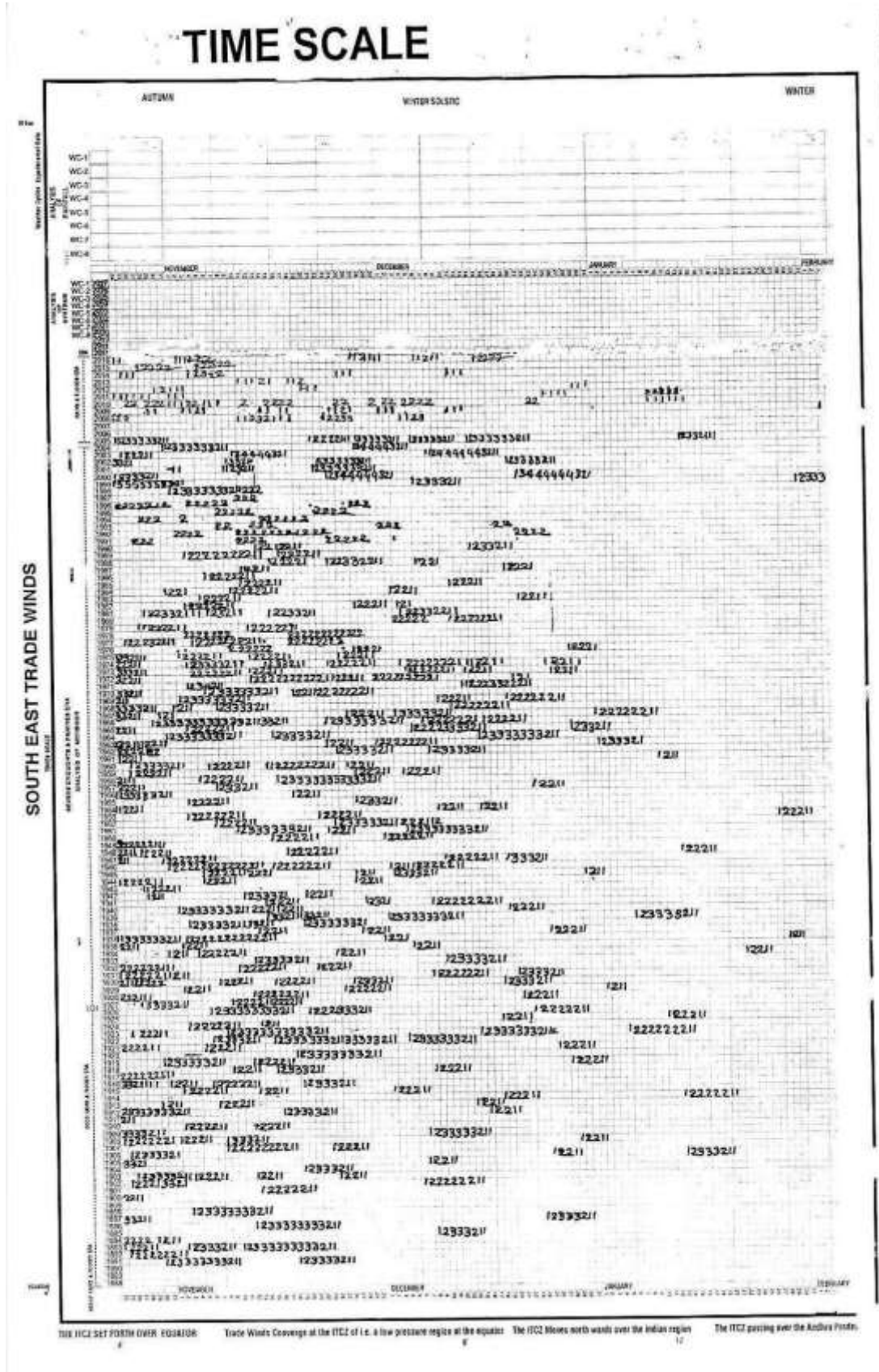




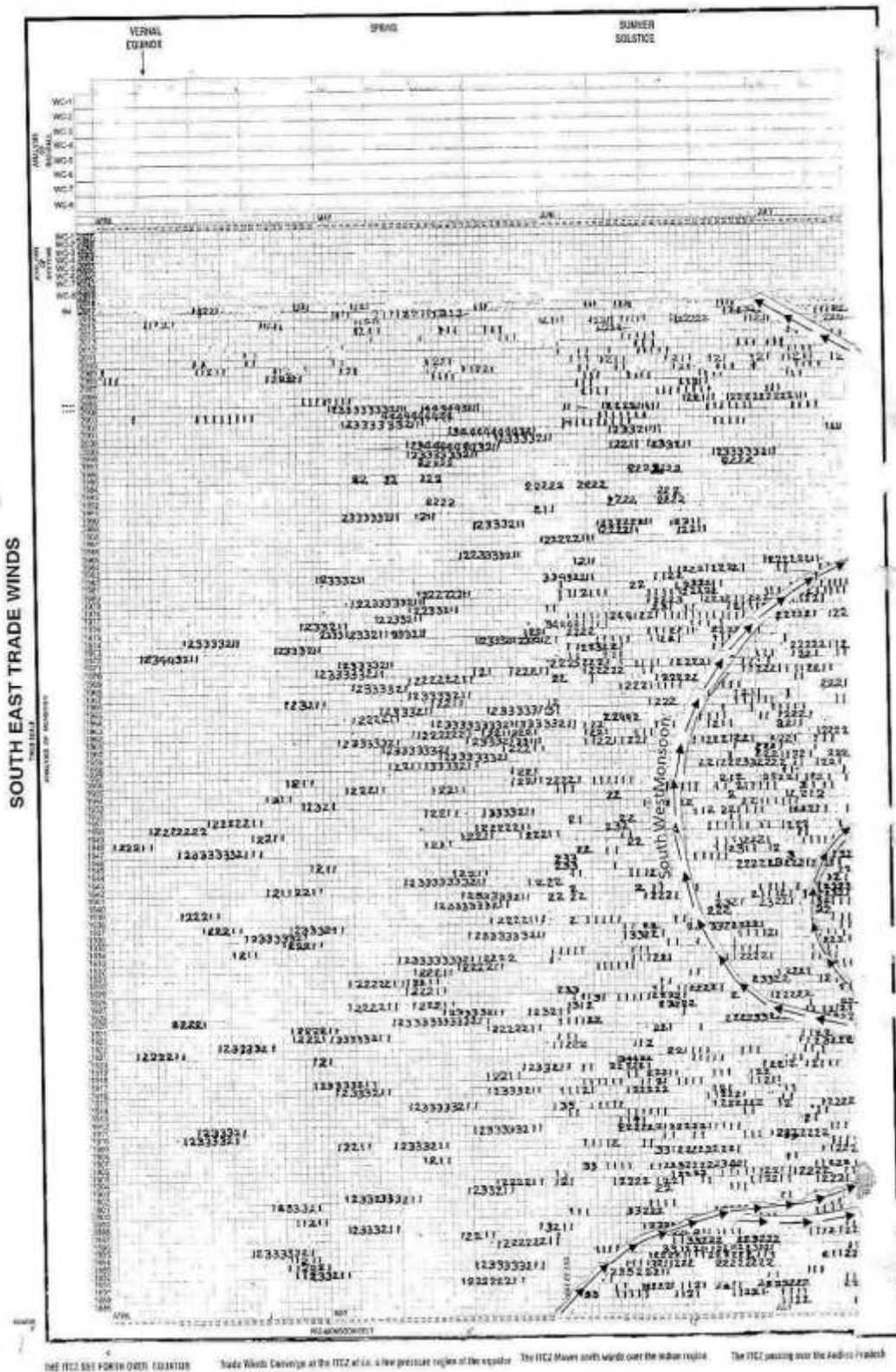


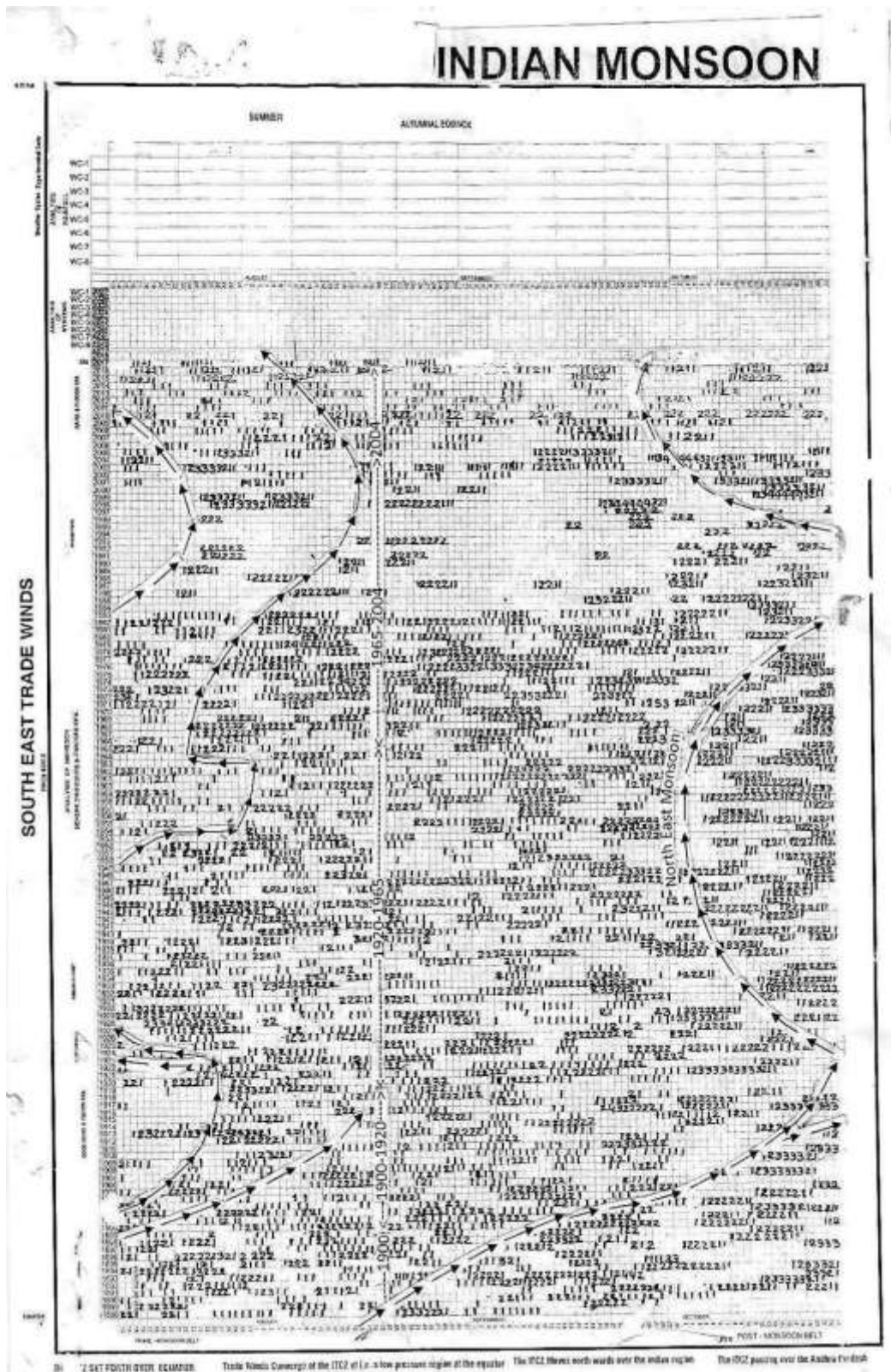


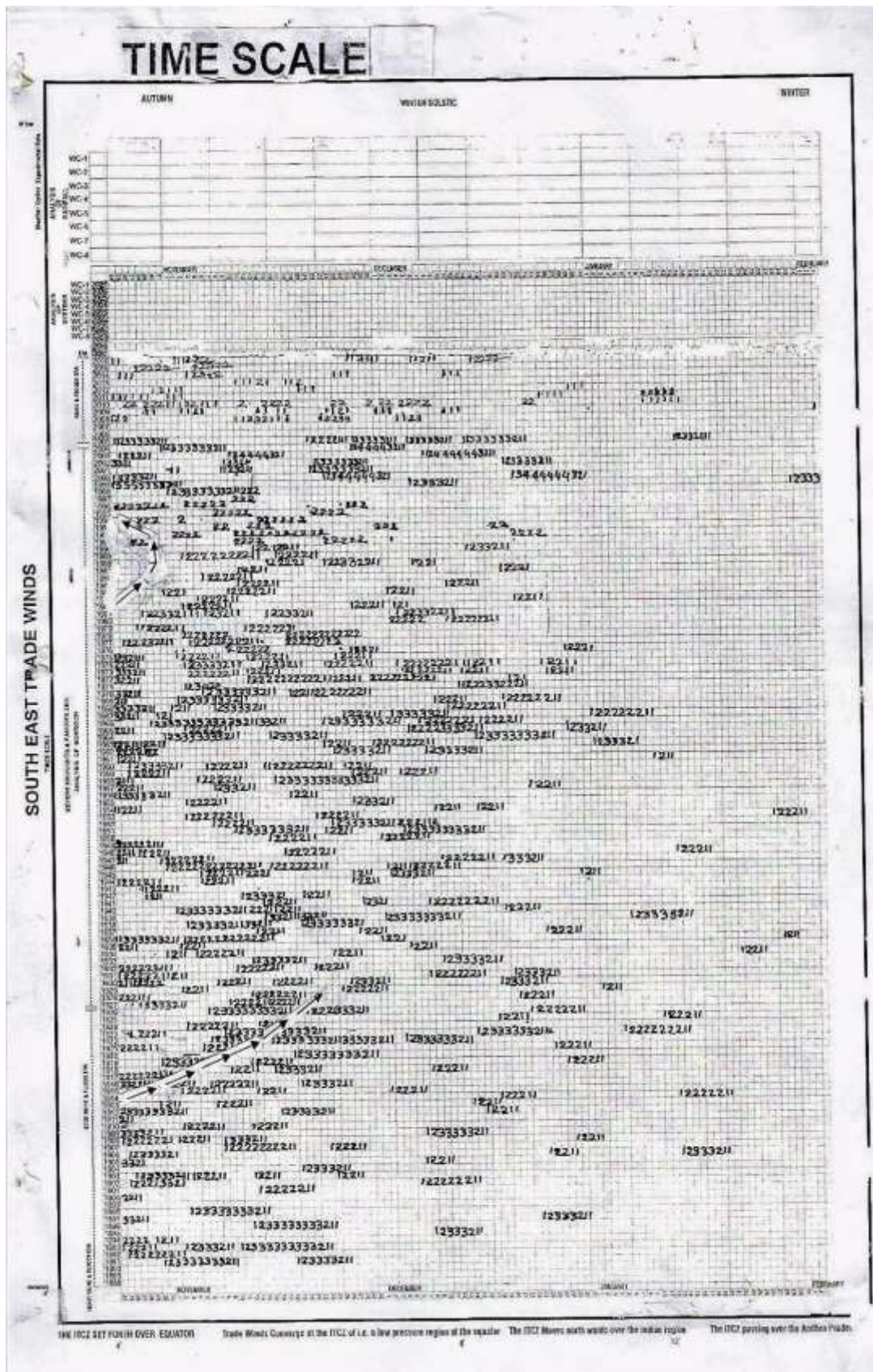




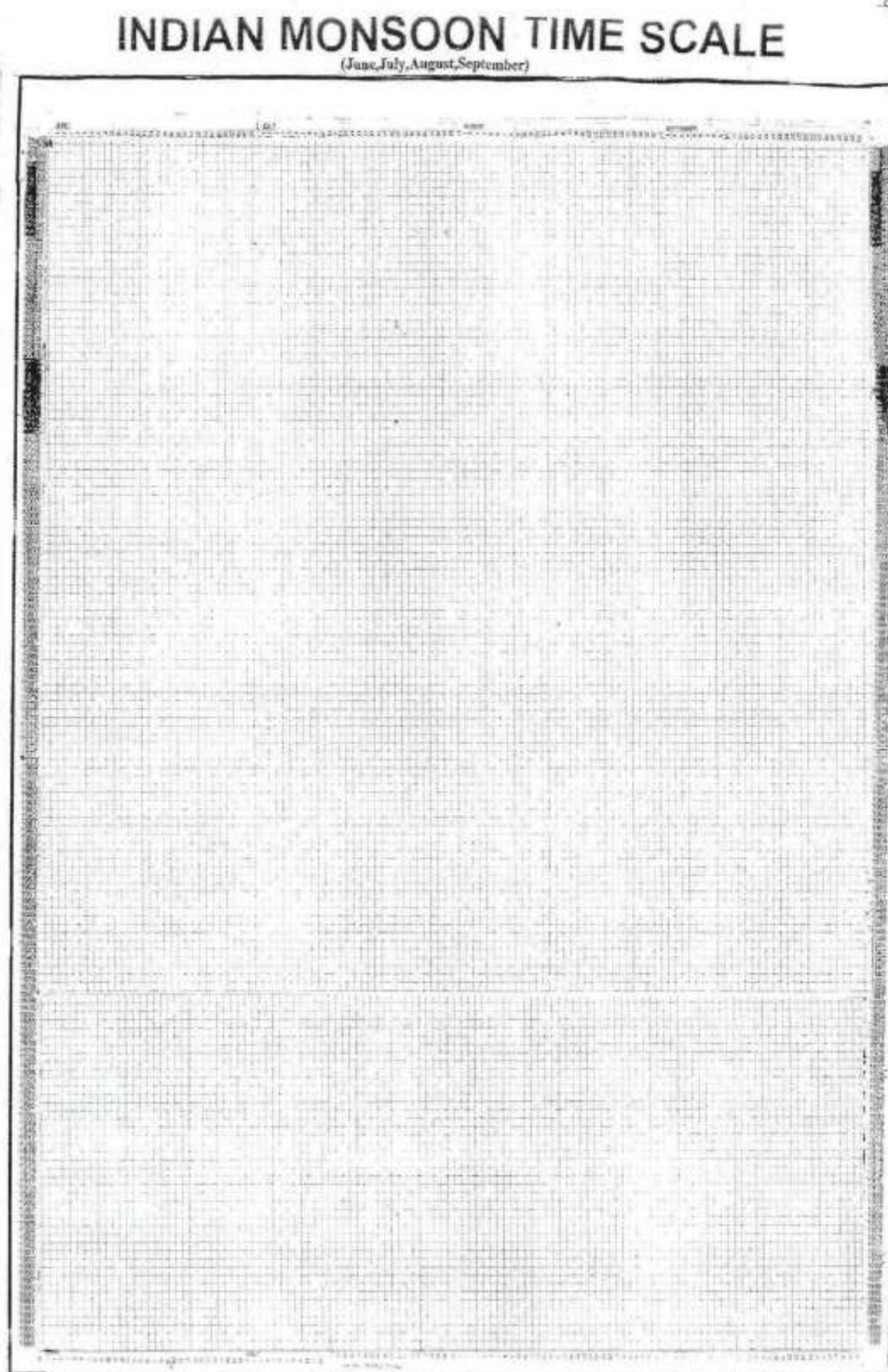




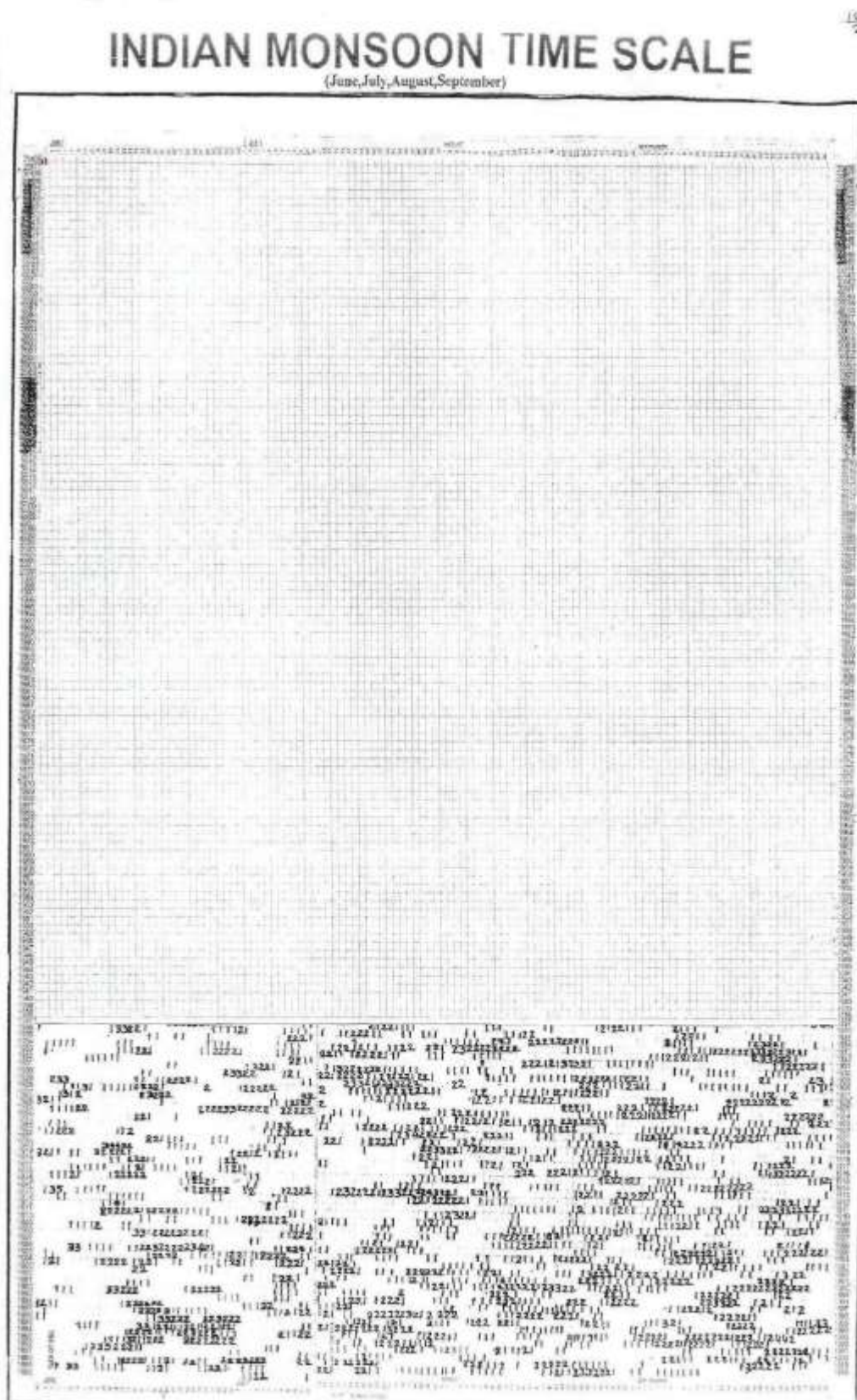




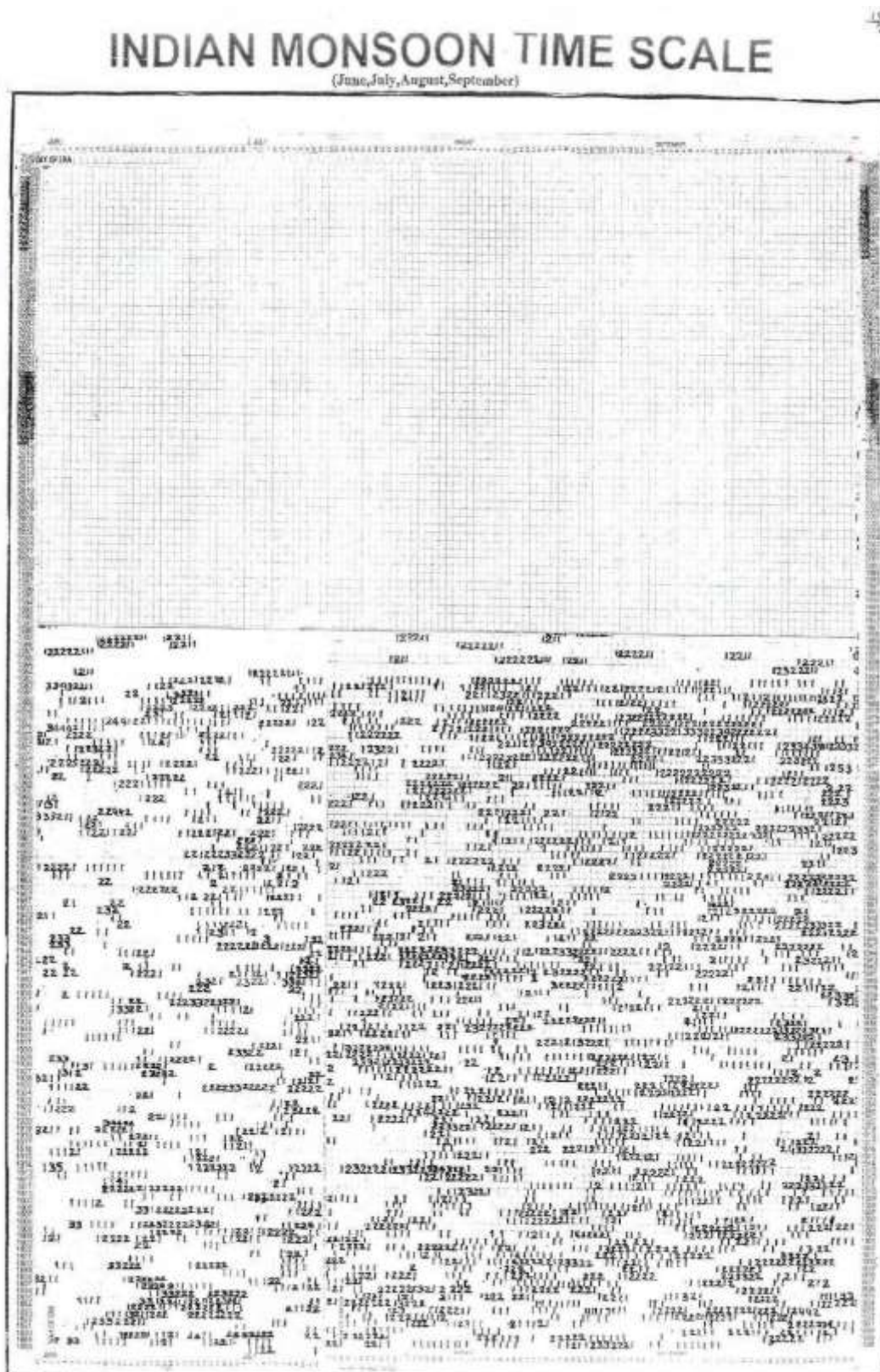




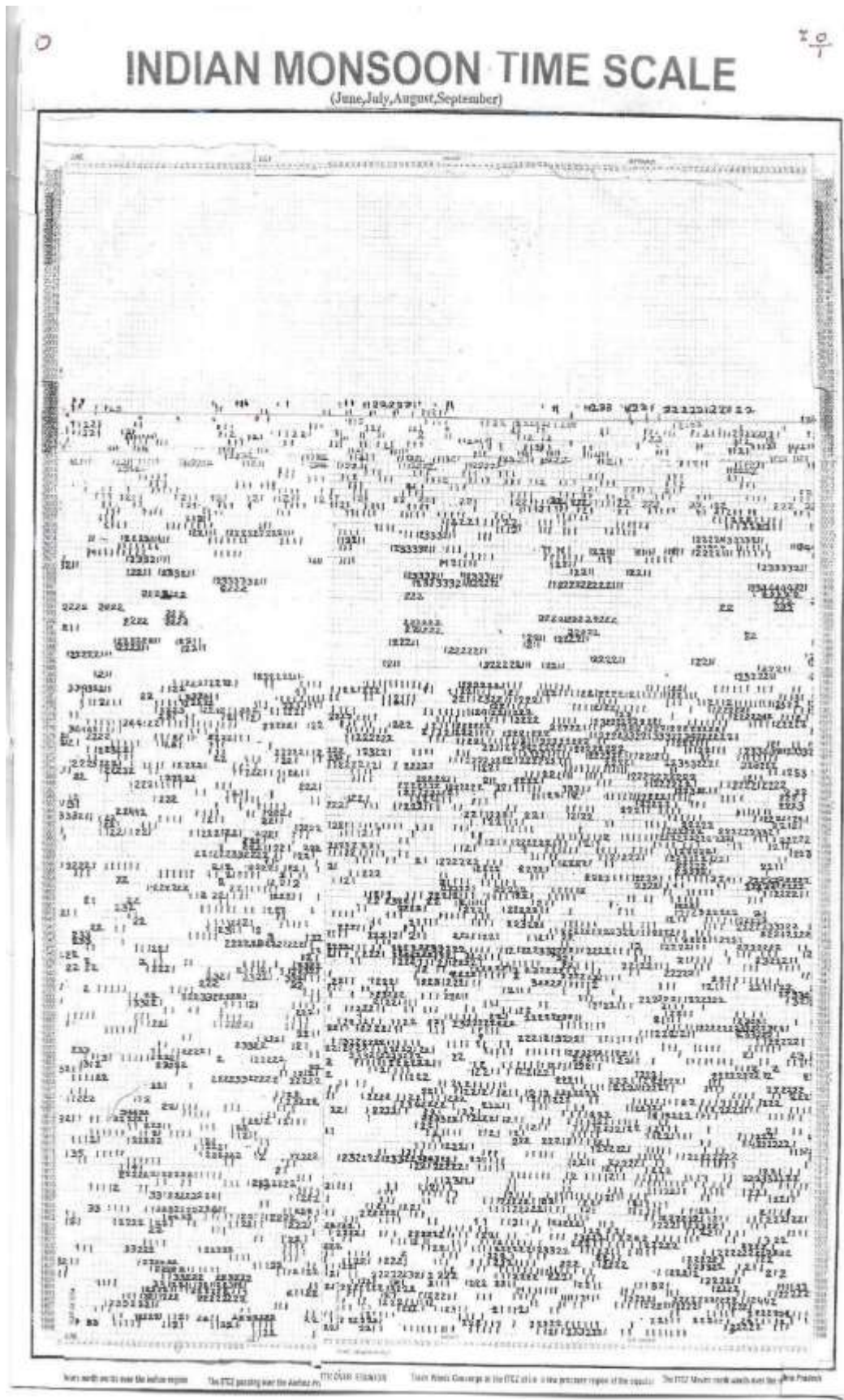
This is the Base Indian Monsoon Time Scale. Since, Indian Monsoon Time Scale is too long with 12 months, 5 seasons, So, Indian Monsoon Time Scale (monsoon season is designed for the crucial monsoon season. In this, monsoons are analyzed by filling the data from 1898 onwards.



From 1895 to 1935, the line of path of the Indian monsoon was traveled over the months of August and September in the shape of concave direction. In this 4 month monsoon season, the line was traveled just over two months only. At that time, statistics show that less rains and droughts have occurred. Only a few seasons had good rains.



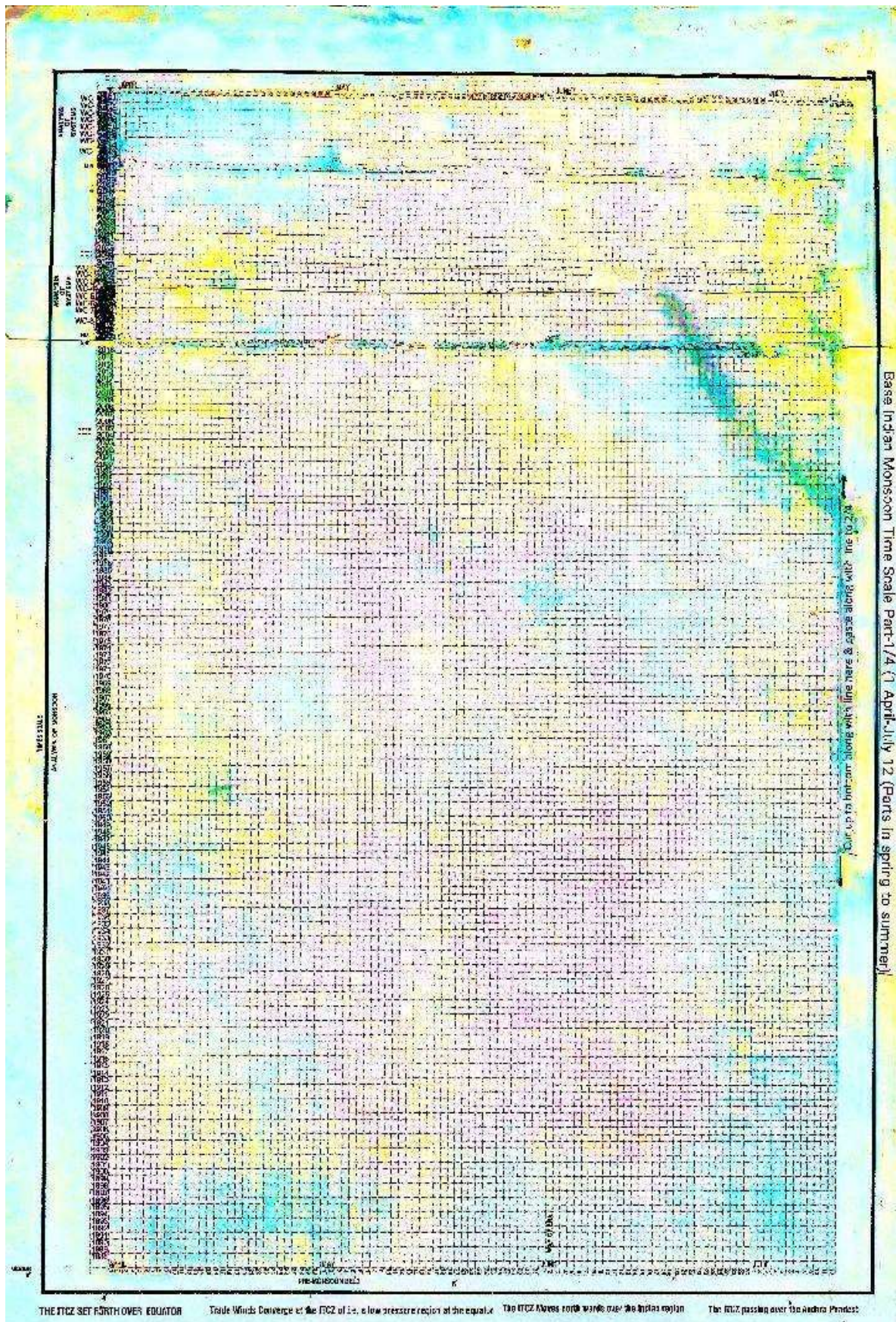
From 1935 to 1980, the line of path of the Indian monsoon was traveled over all the 4 months of June, July, August, and September in the shape of convex direction. At that time, statistics indicate that good rains, sometimes heavy rains and floods have occurred

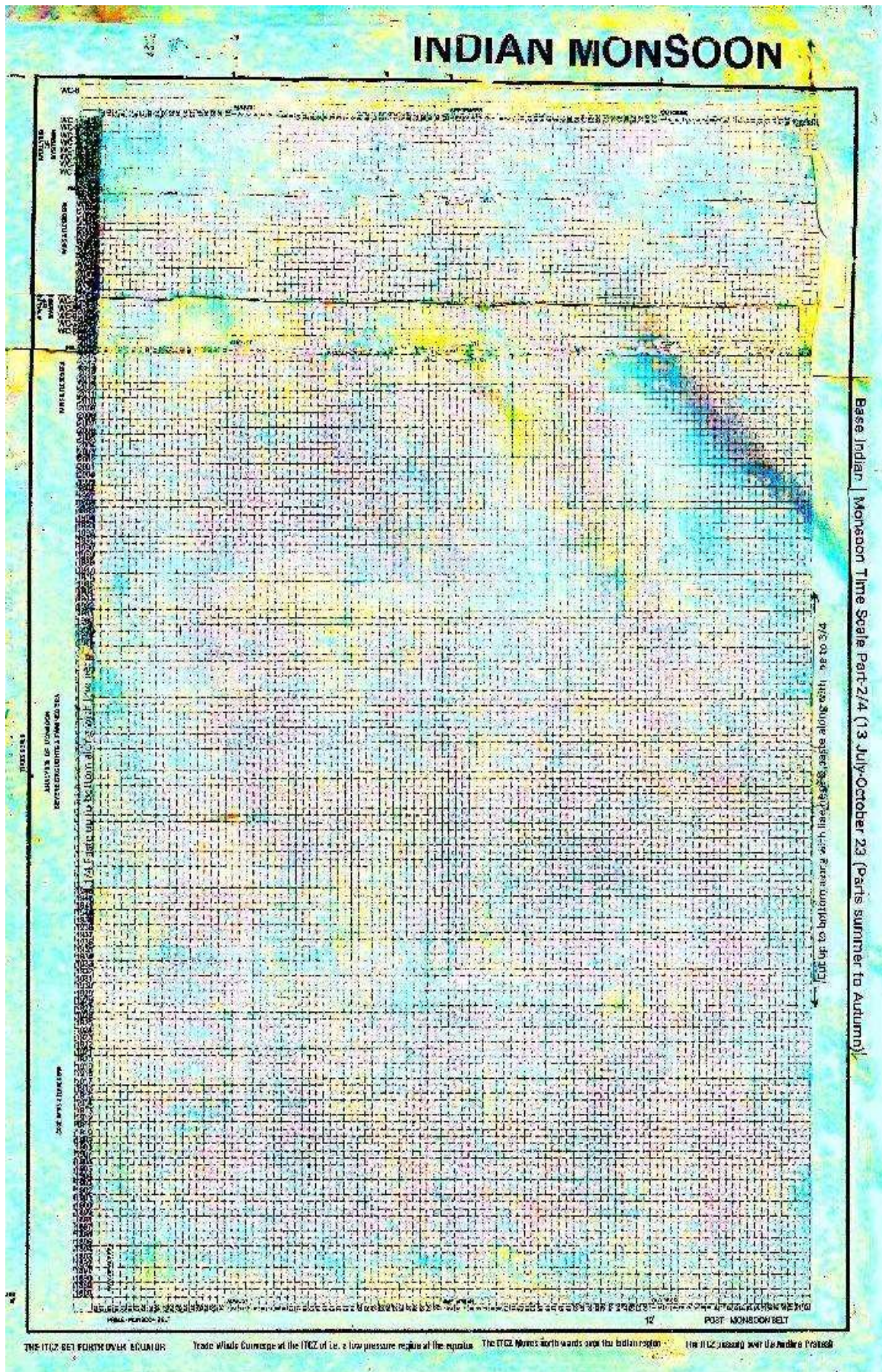


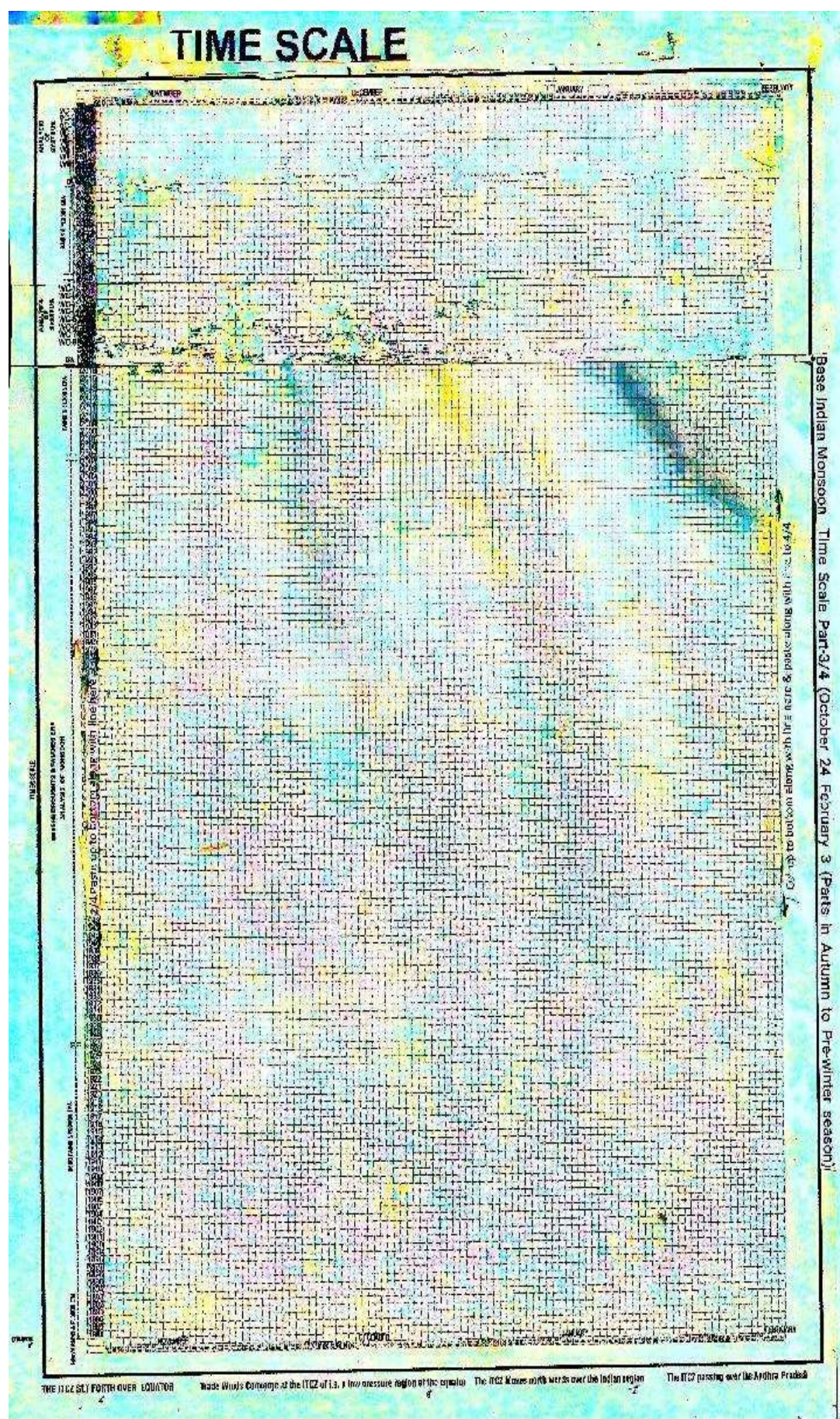
INDIAN MONSOON TIME SCALE

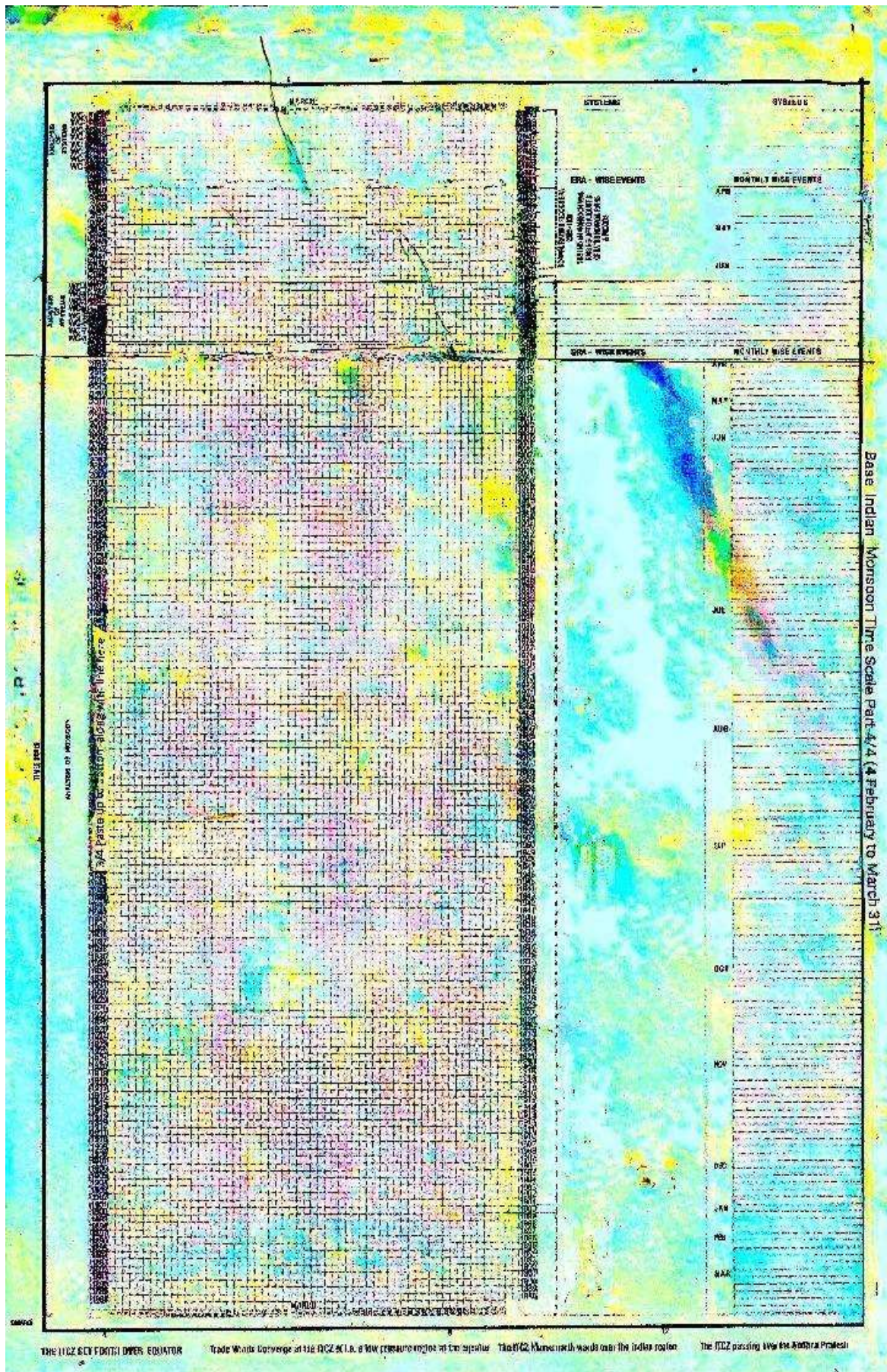
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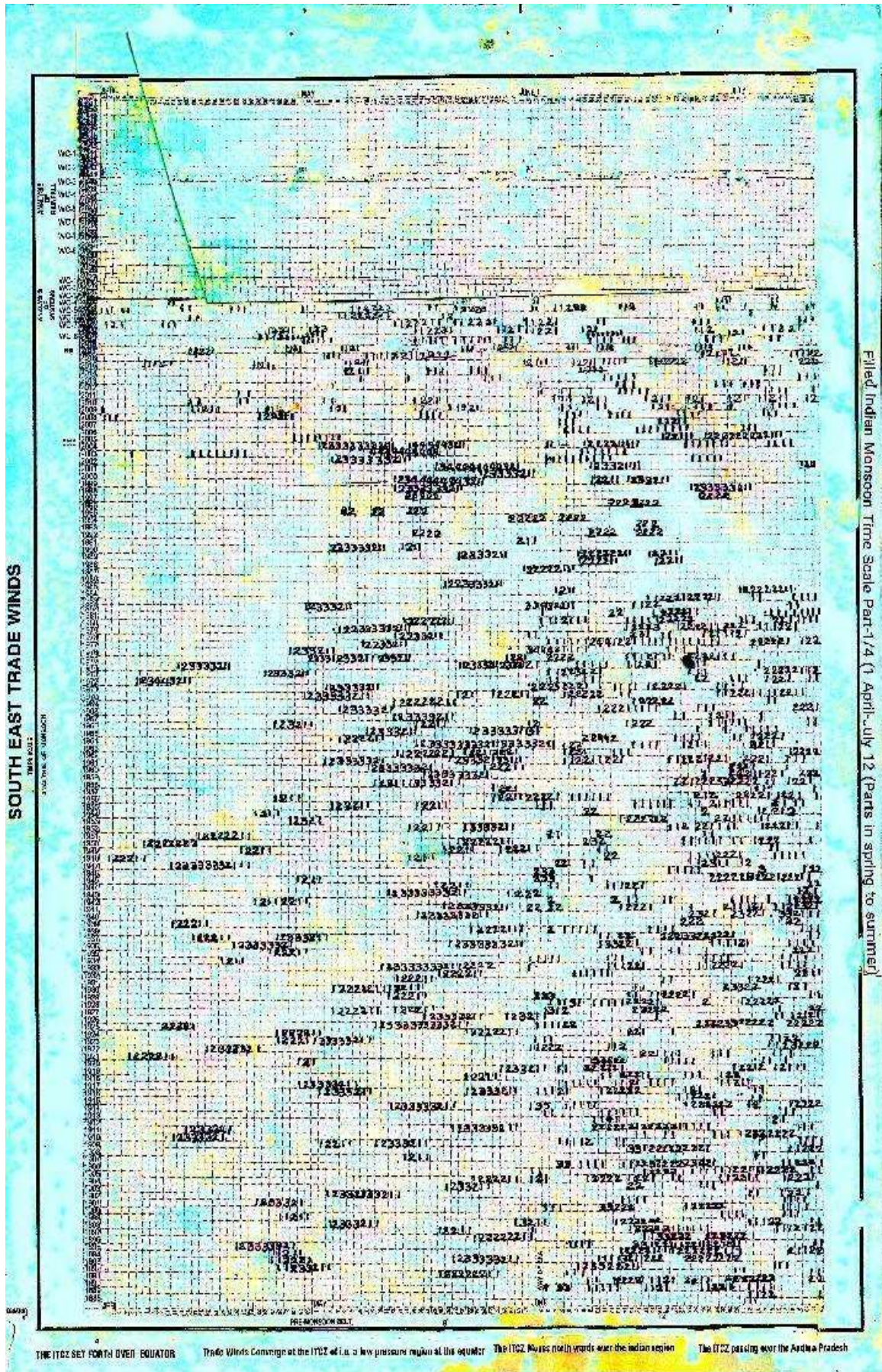
It is a partially computerized Indian monsoon time scale for the monsoon season from 1888 to 1983. Later, the computerization of the Indian Monsoon Time Scale was stopped due to extreme poverty and no support and opportunities.



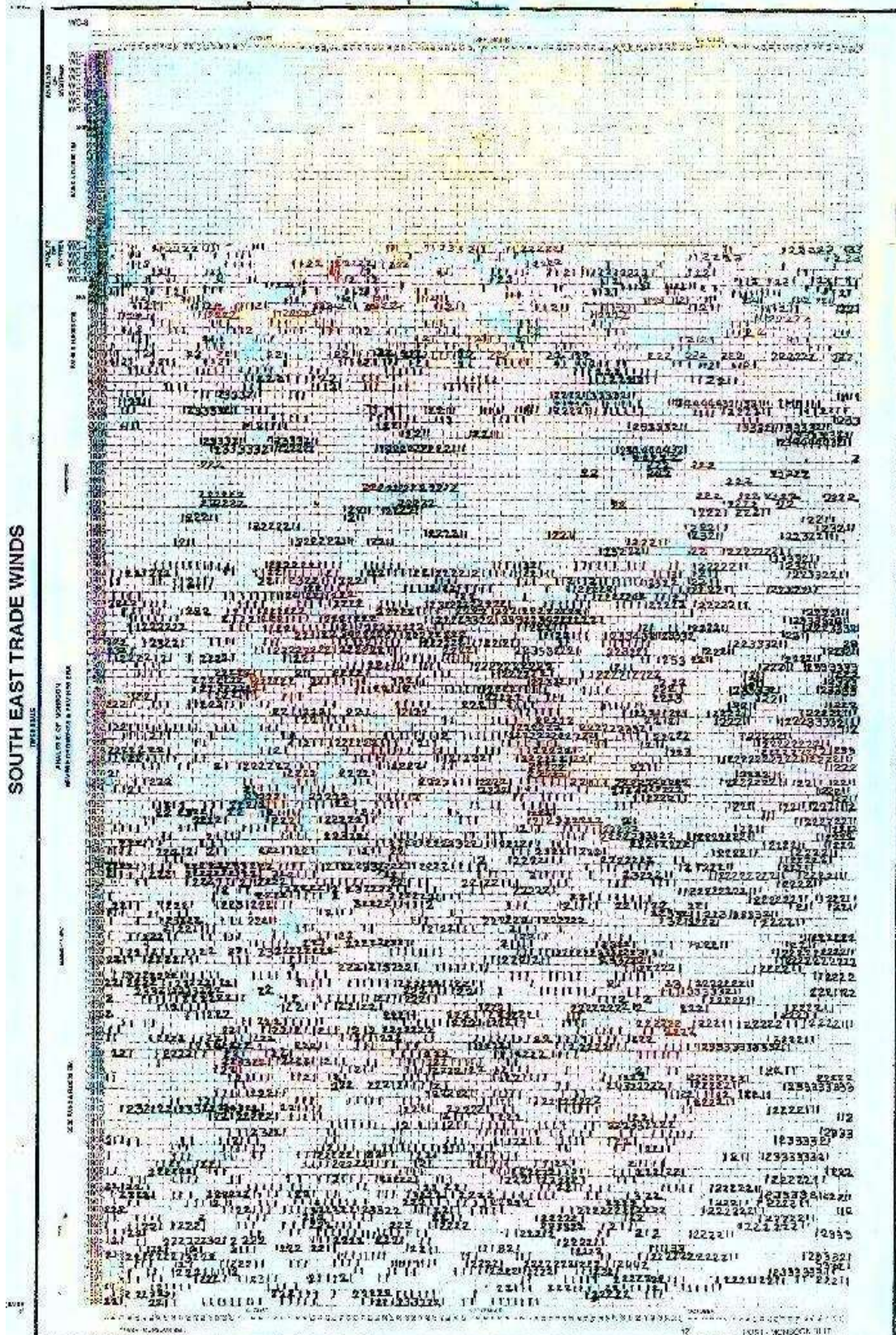




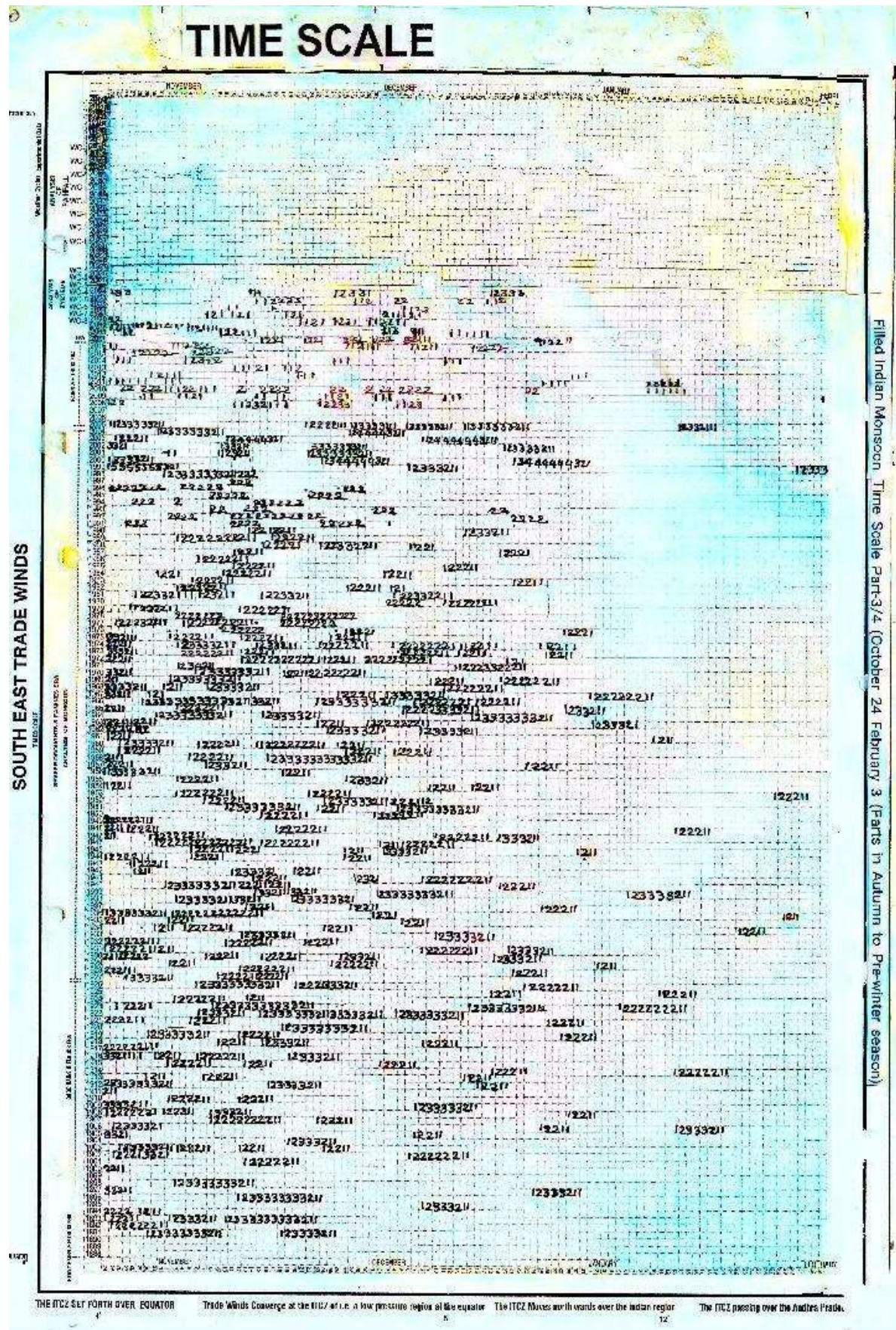




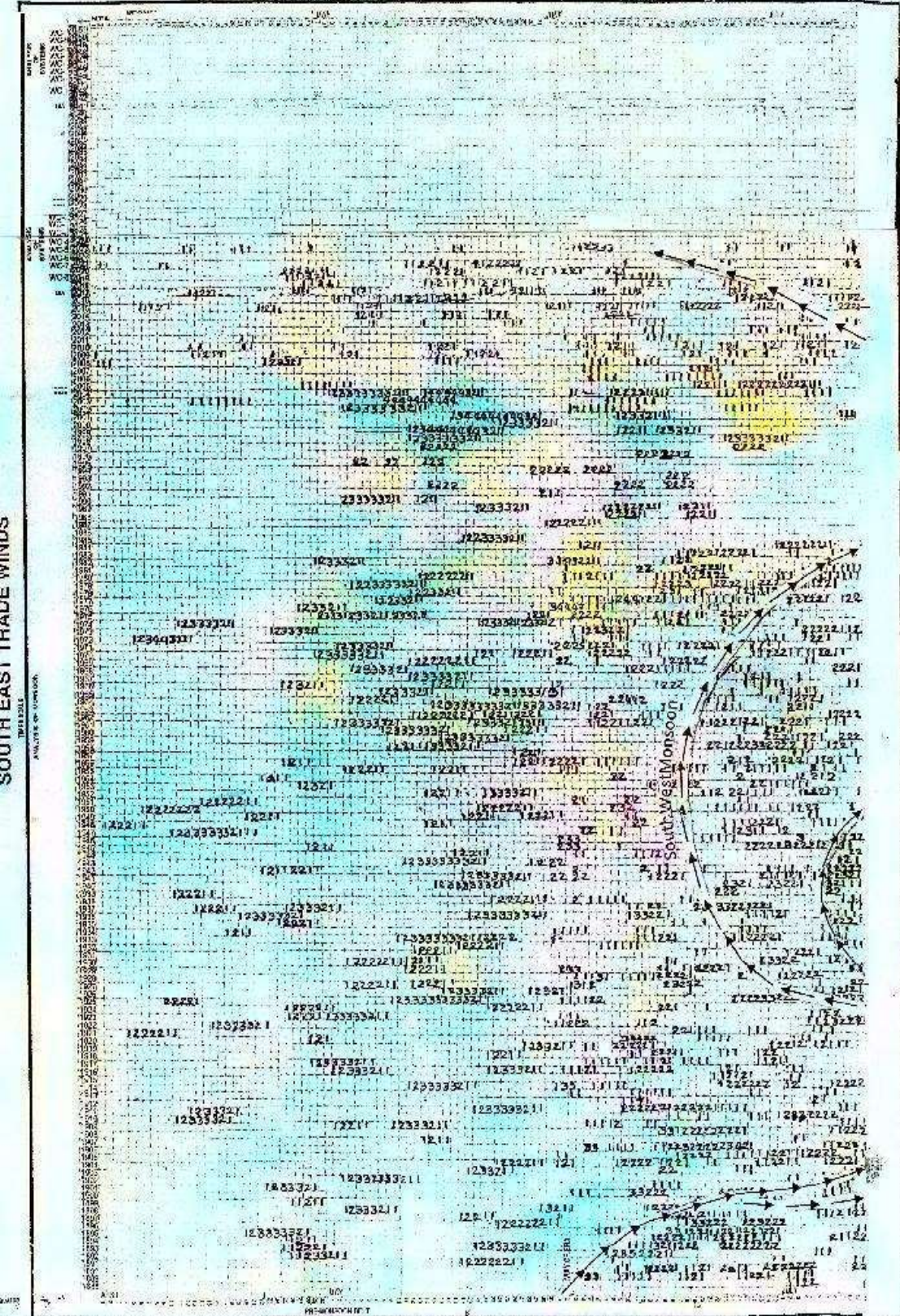
INDIAN MONSOON



Filled Indian Monsoon Time Scale Part-2/4 (13 July-October 23 (Parts summer to Autumn))



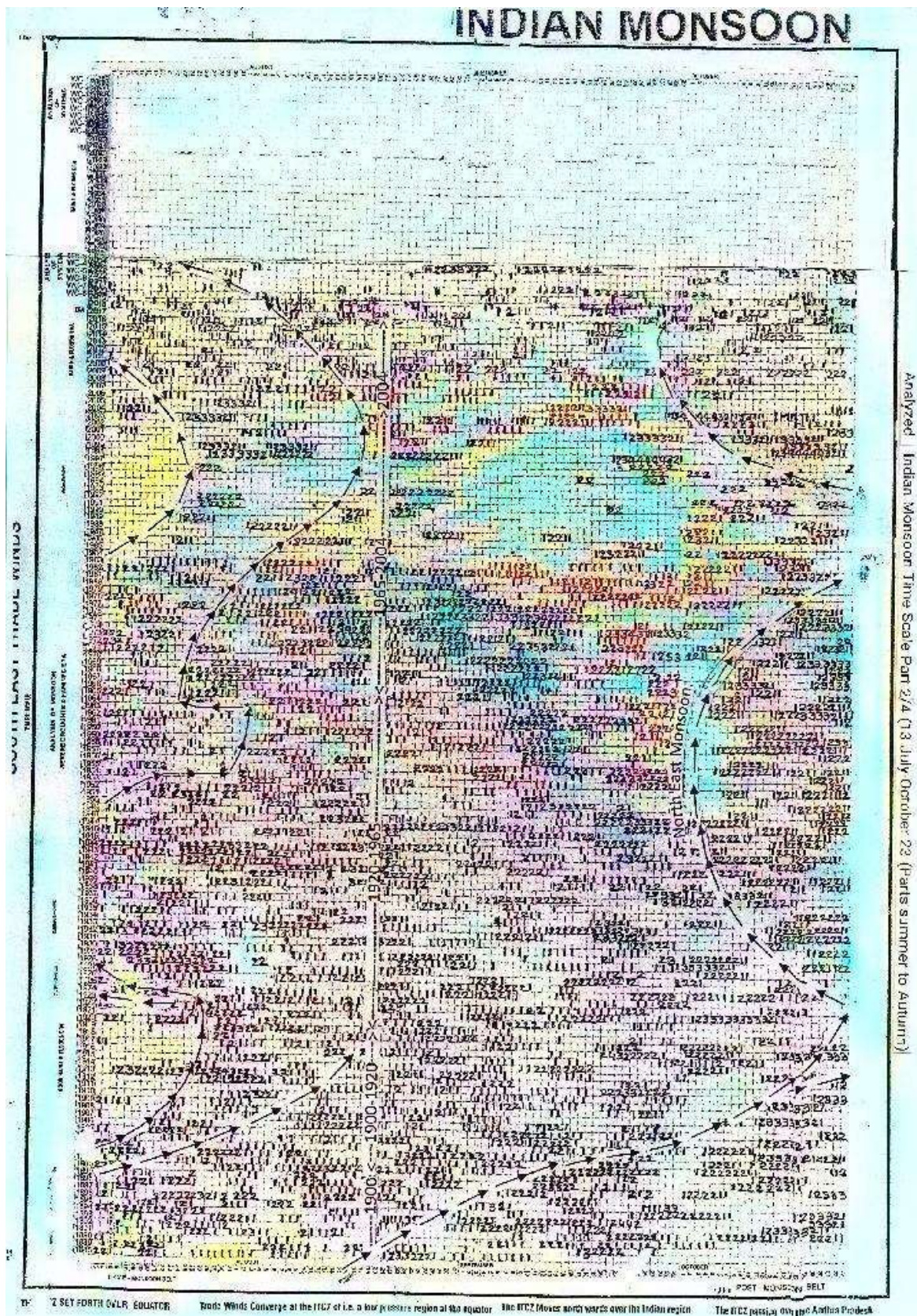
SOUTH EAST TRADE WINDS



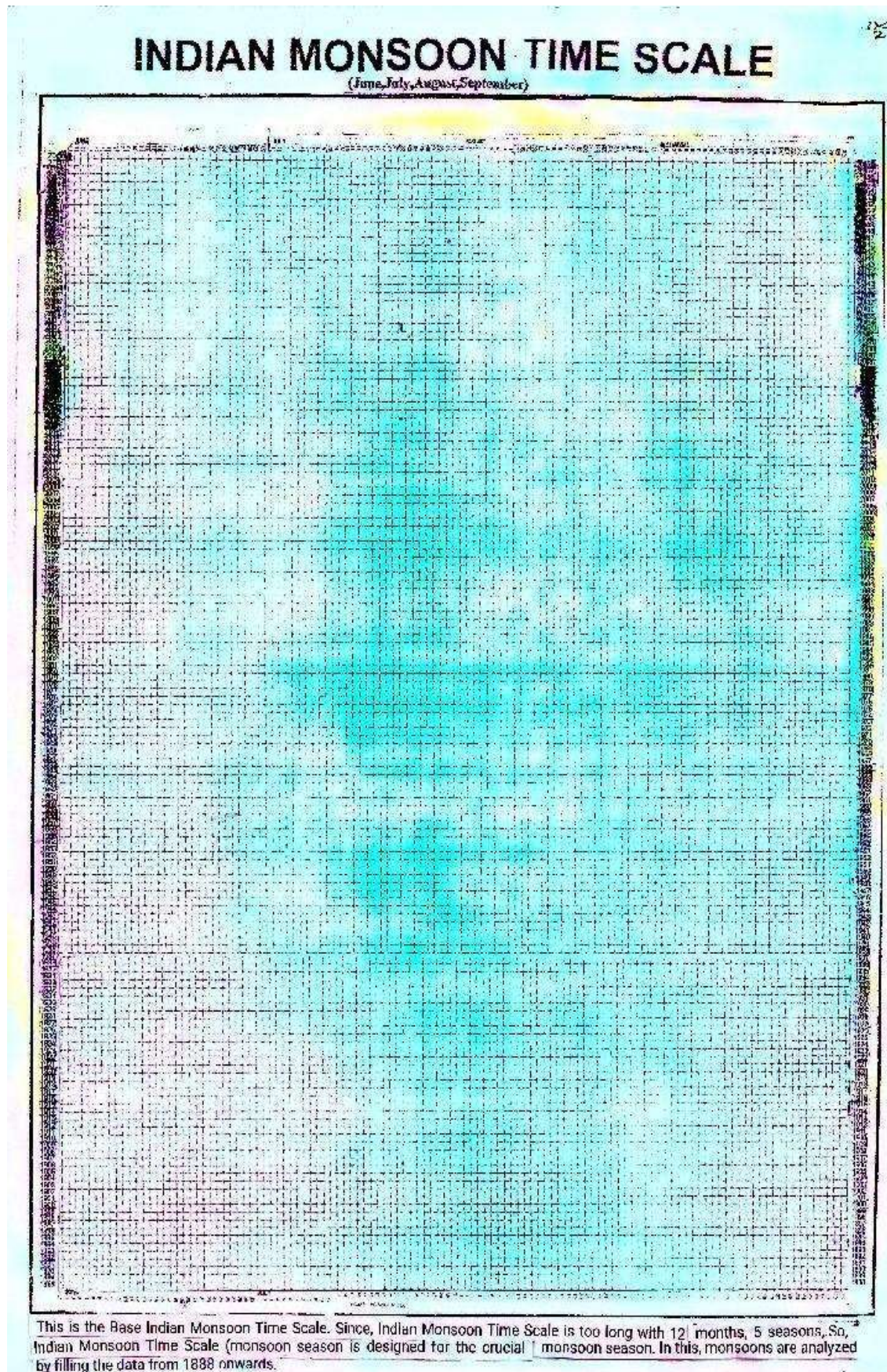
Analyzed Indian Monsoon Time Scale Part-1/4 (1 April-July 12 (Parts in spring to summer))

Analyzed Indian Monsoon Time Scale Part-4/4 (4 February to March 31 (Parts in winter season to summer))

THE ITCZ AT EQUATOR Trade Winds Converge at the ITCZ of a low pressure region at the equator. The ITCZ moves northwards over the Indian region. The ITCZ moving over the Indian sub-continent

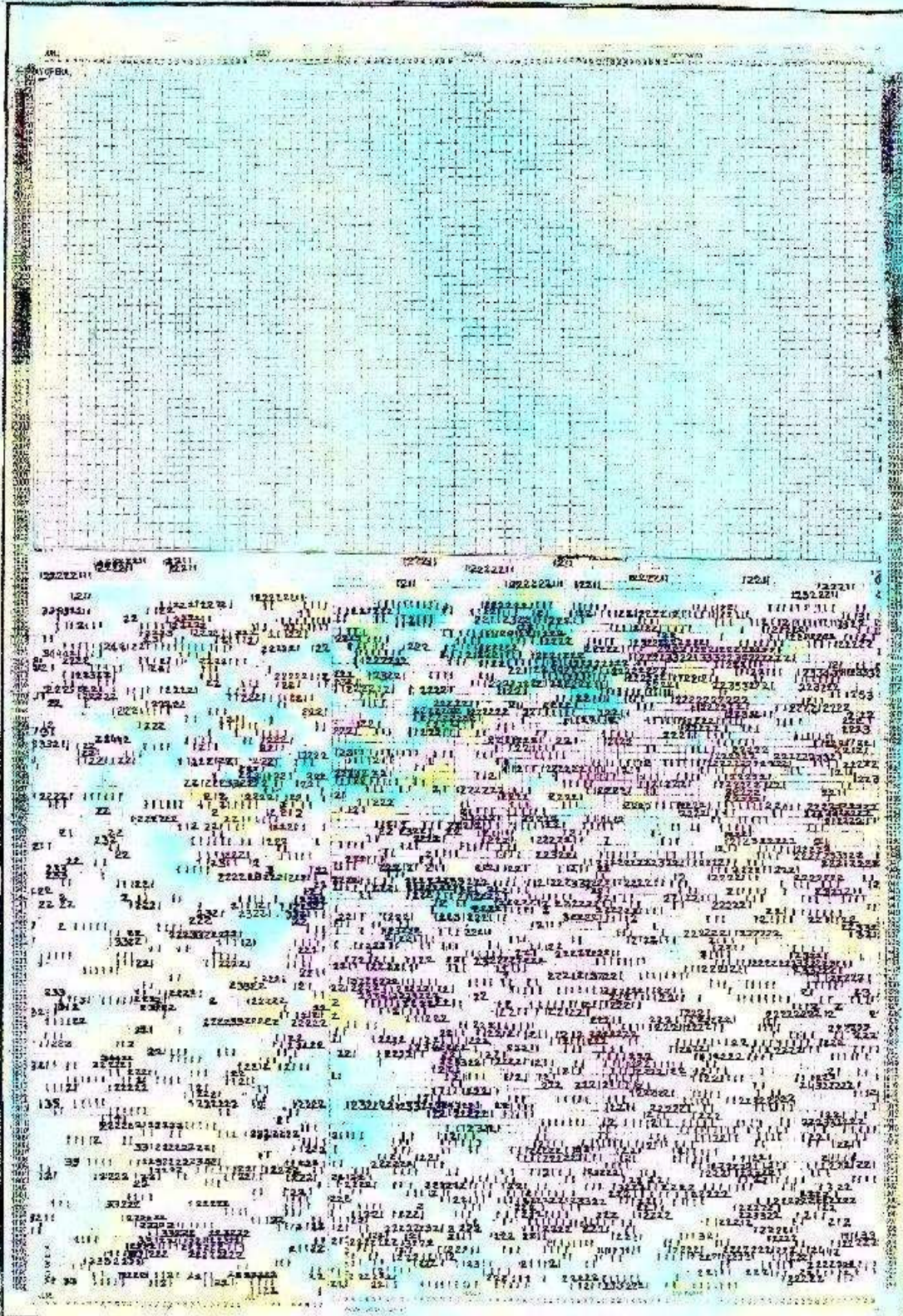




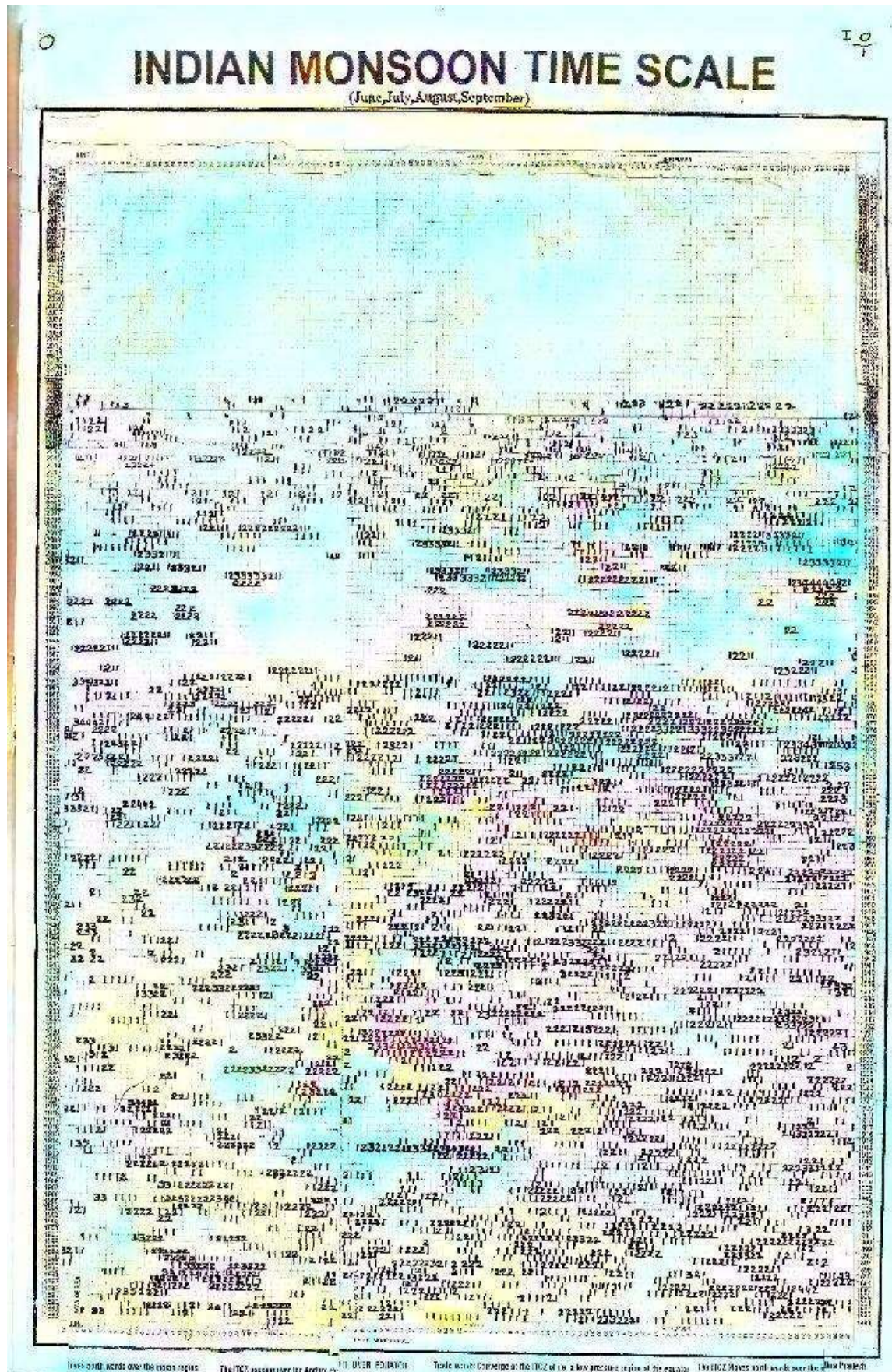


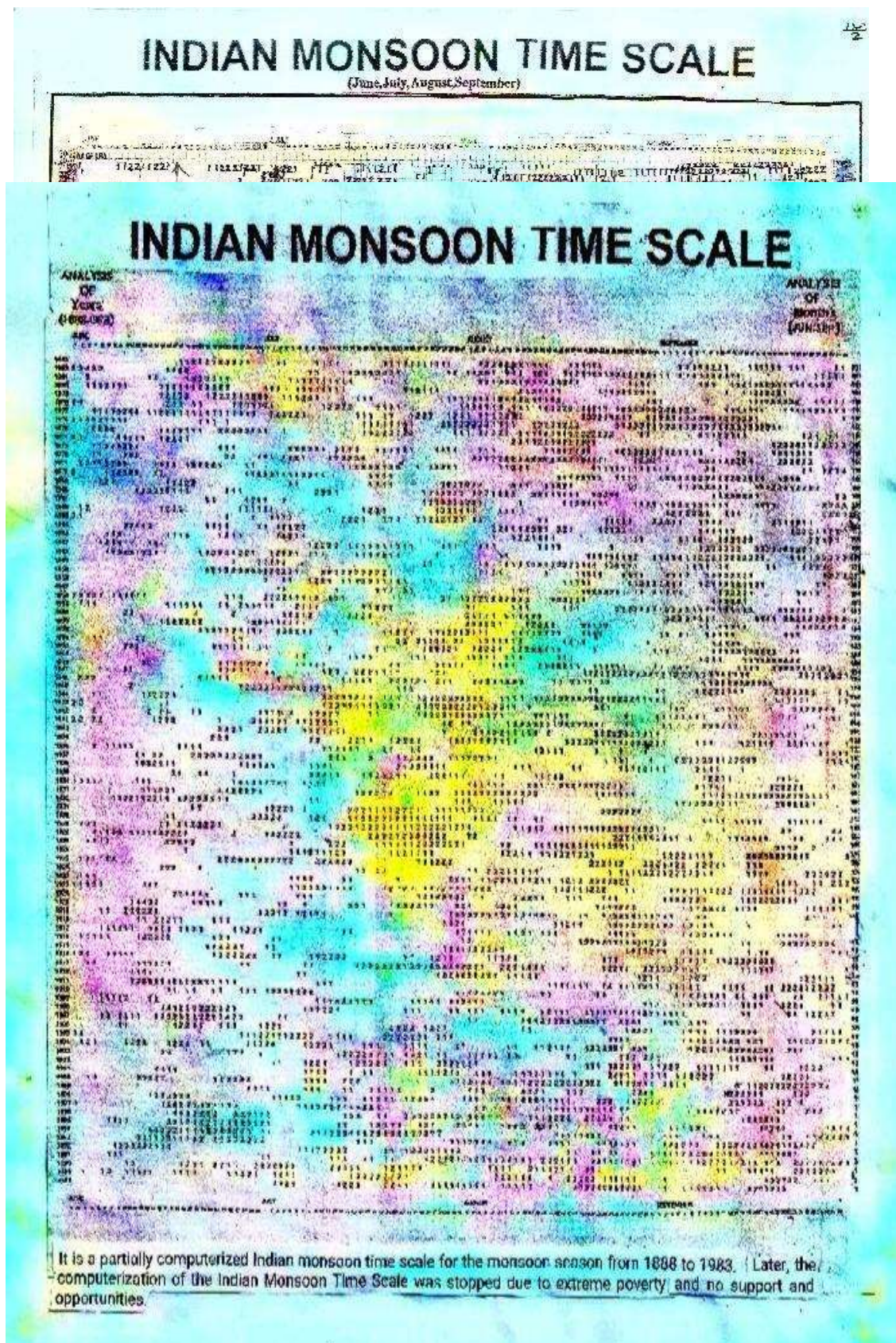
INDIAN MONSOON TIME SCALE

(June, July, August, September)

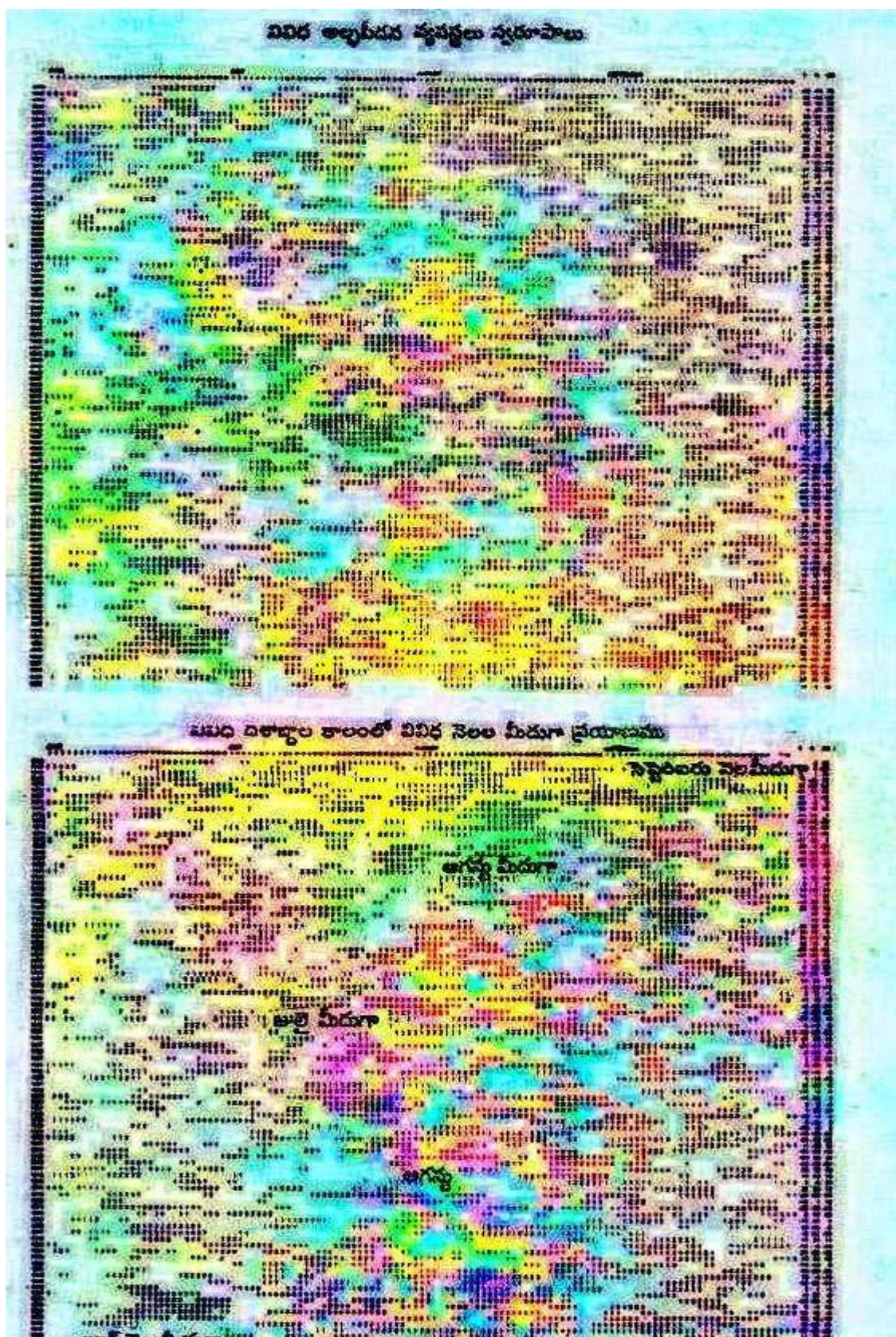


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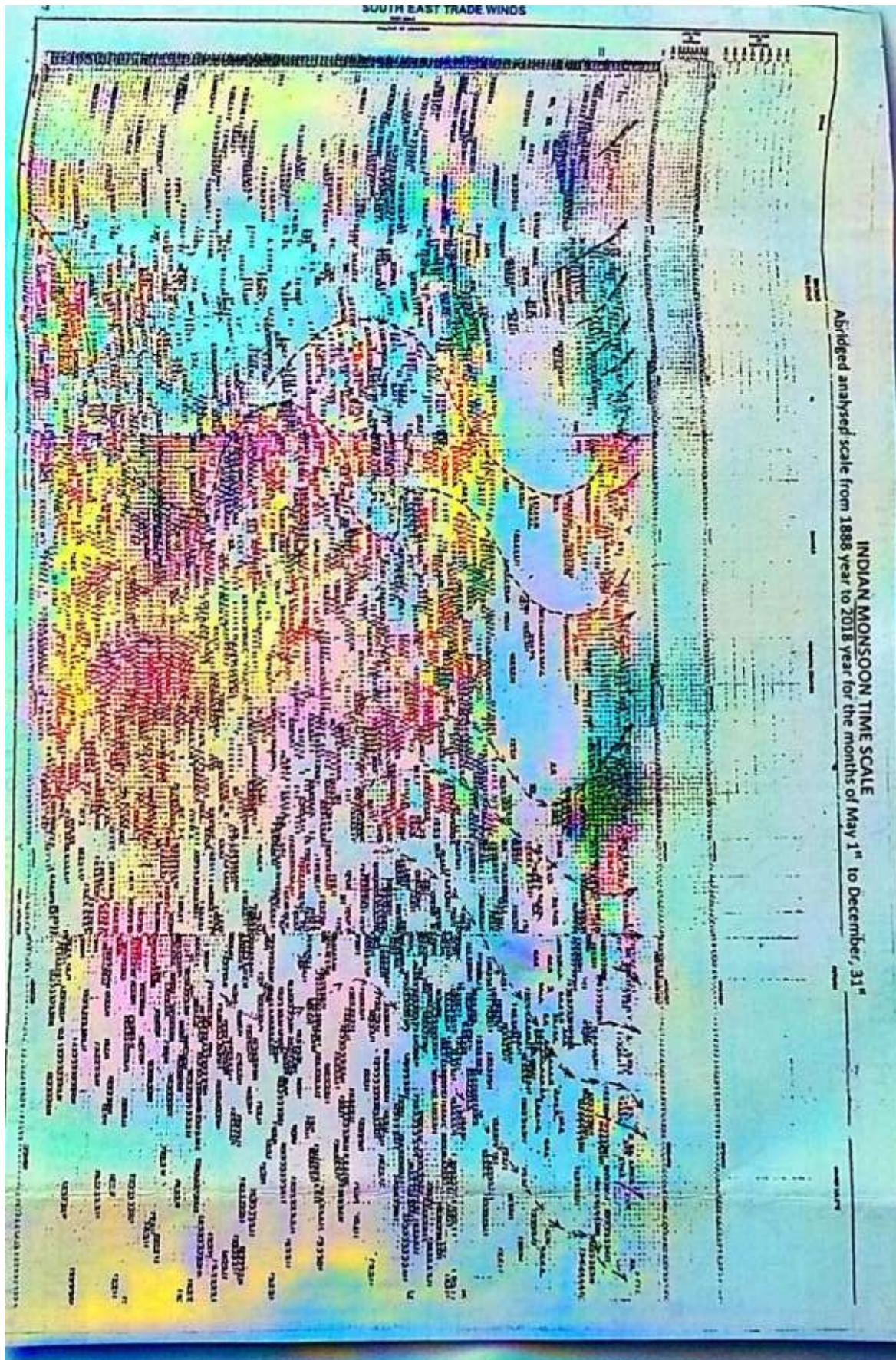


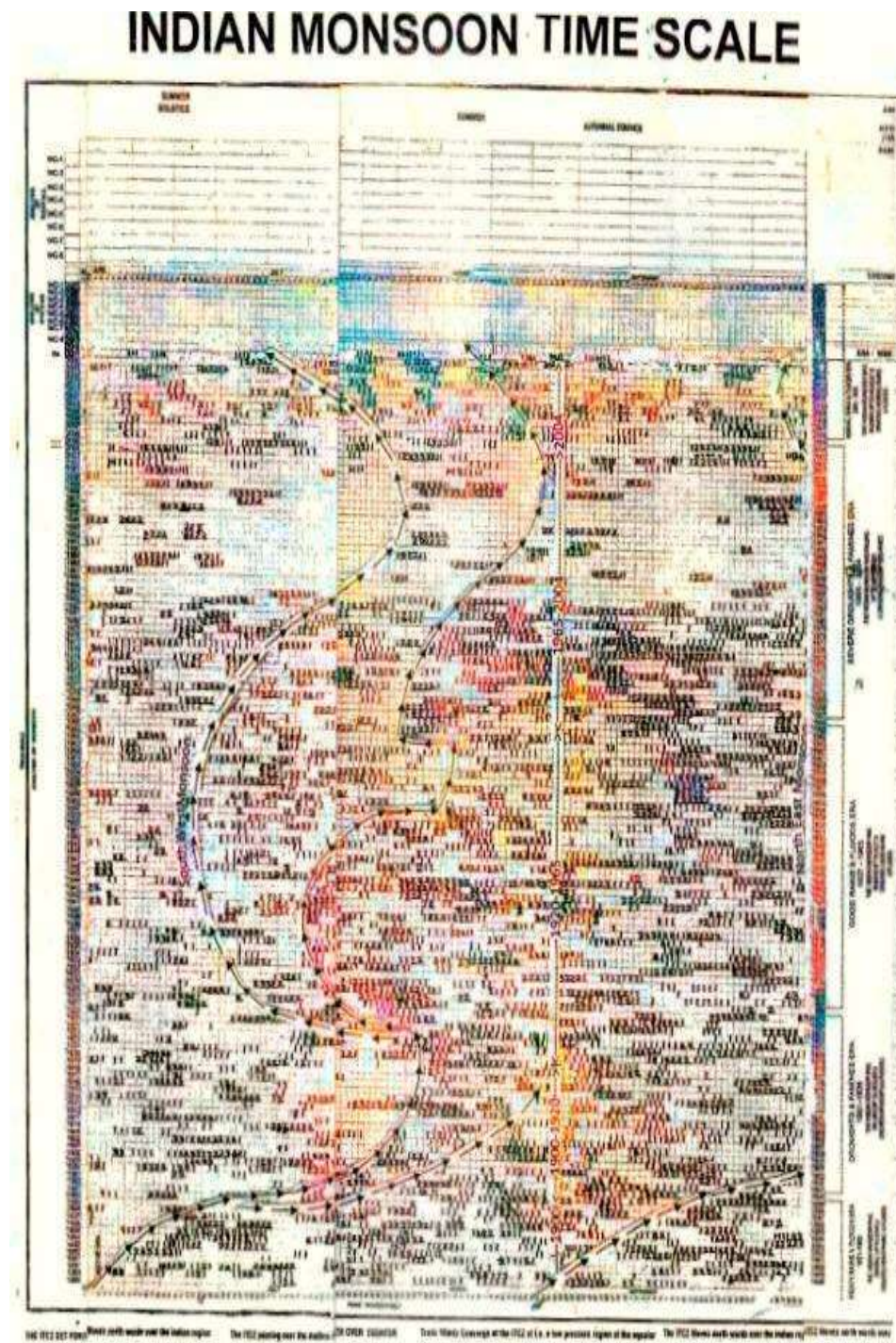












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