
BOQUETEWEATHER.COM
QUICK BOQUETE WEATHER

Rain Rain Go Away

How to Cope with Weather

Lloyd Cripe

November 30, 2010

Rain, rain, go away
Come again some other day
We want to go outside and play
Come again some other day

Outline of Presentation

- Introduction
  - Predicting the Weather
  - Measuring & Monitoring Weather
- Rain
  - Causes
  - ENSO – El Niño Southern Oscillation
  - Boquete rain
- Coping
- Summary
- Closing Remarks

Introduction

Reasons why we are here?

- Economics
  - Reduced cost of living
  - Reduced taxes
- Natural Beauty
  - Tropical Highlands
  - Flora and Fauna
- Weather
- Adventure

Adventure

- Additional Life Experience
- Change versus Stagnation
- Broadening versus Narrowing
- Contact with Tropical Nature
- Contact with another Culture
- Learning another Language
- Experiencing different Weather and Climate
- Learning the great lessons of life

"Well, Helen, we traded city pollution for country bugs."

MCHUMOR.COM by T. McCracken

"Well Helen, we traded city pollution and high taxes for wind, dust, rain, mold, floods, landslides, earthquakes, volcanoes, snakes and coffee flies. We sure do get a lot more for our money!"

Predicting the Weather

- Major scientific enterprise
- Many observation stations
- Lots of reliable data
- Collection over long span of time
- Complex mathematical models
- Best models can only predict a few days
- Trends are really tricky!

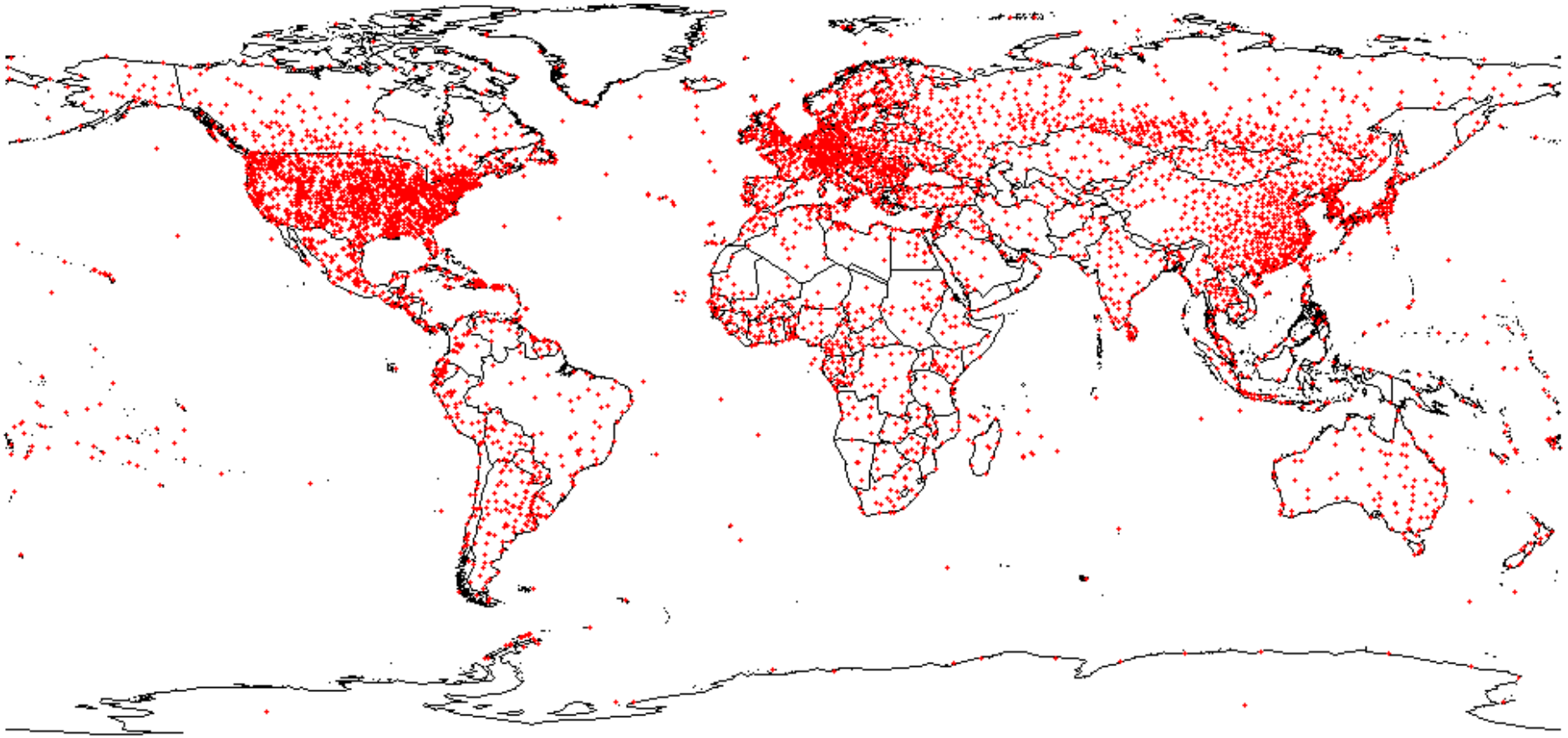
Manual Rain Gauge

Automated Weather Systems

- Sensors (data acquisition)
  - Air Temperature
  - Wind Speed
  - Solar Radiation
  - Relative Humidity
  - Wind Direction
  - Barometric Pressure
  - Rainfall
- Data Logger (data storage)
- Transmission to Computer (wired or wireless)
- Data processing Software (analysis/interpretation)
- Communication Network (Internet)
- Web Site Server (public access to the data)

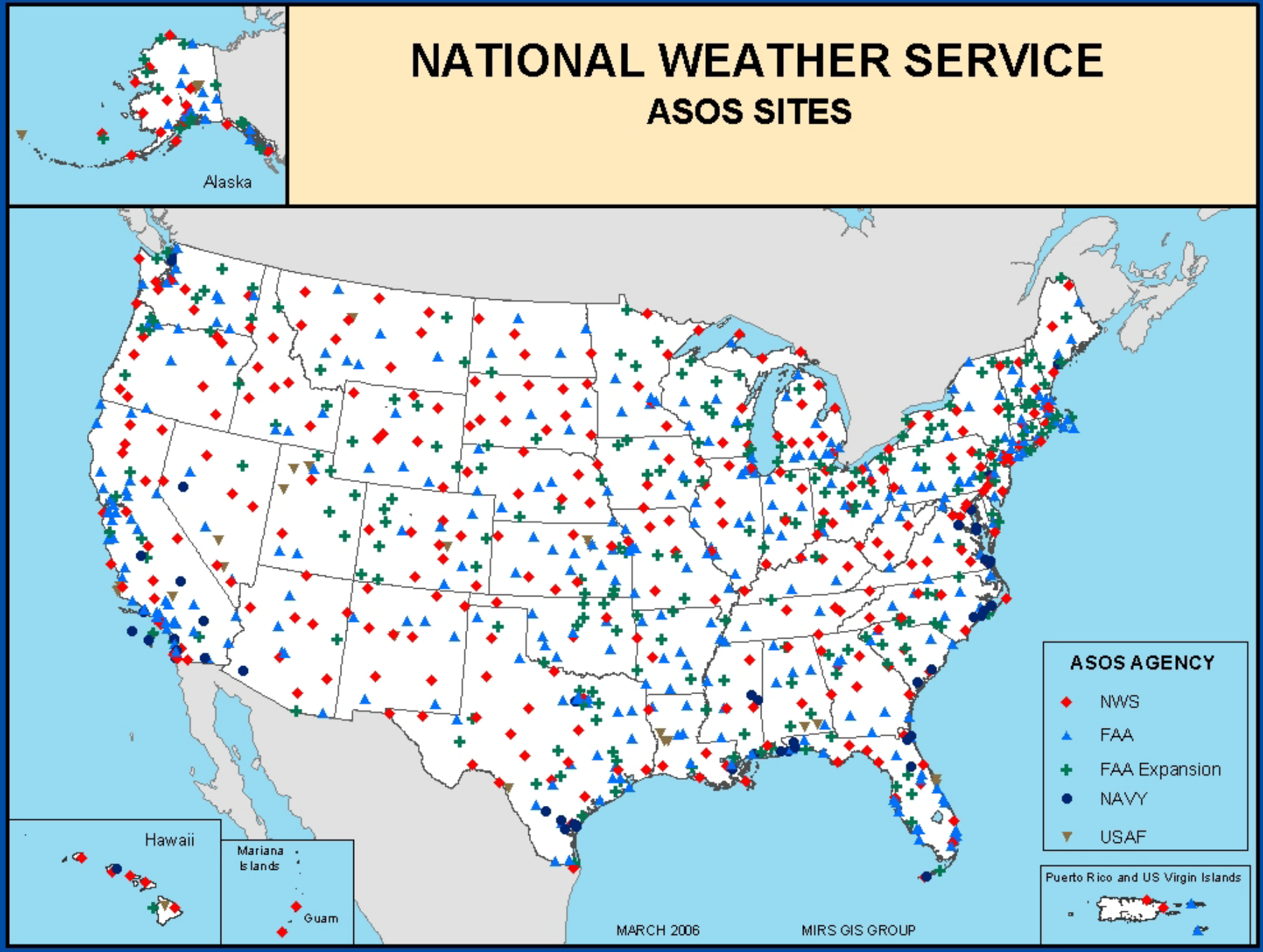
Land Stations

Stations Reporting Temperature



NATIONAL WEATHER SERVICE

ASOS SITES



AWOS

Automated Weather Observation Station

Panama Stations

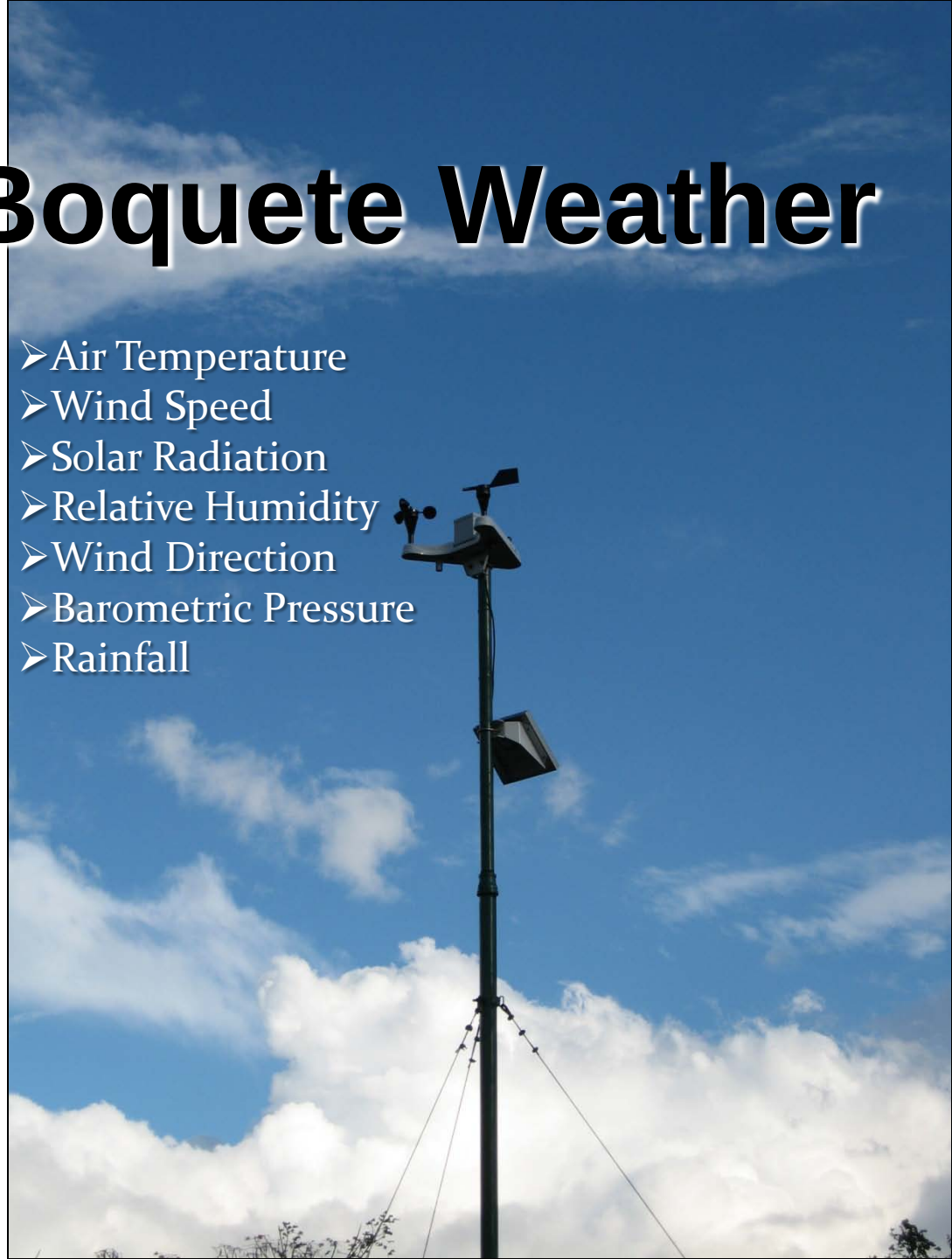
- ETESA – Empresa de Transmisión Eléctrica, S.A.
  - meterological stations
    - 95 conventional – attended daily
    - 43 onsite information
    - 13 automatic with satillite transmission
  - daily data 11 Stations (Clima ⇒ Datos Diarios)
- Airports – Aviation
  - David
  - Tocumen
- Private Stations (online)
  - Palmira
  - Portrerillos

ETESA

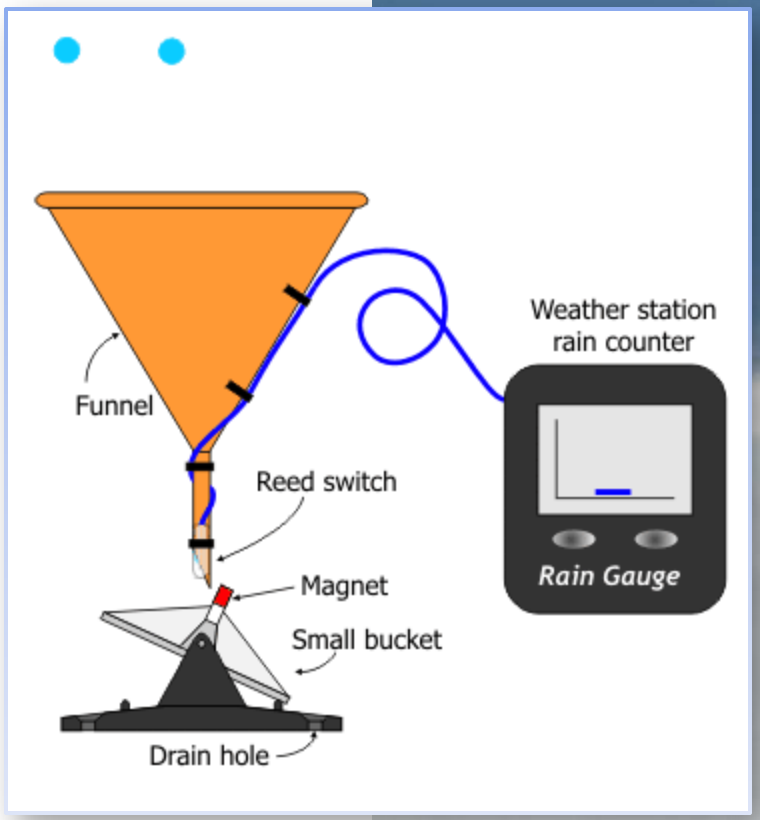

ETESA
Empresa de Transmisión Eléctrica, S.A.
Unimos Panamá con Energía
N
O
E
S
HIDROMETEOROLOGÍA
Etesa
English
Mapa del Sitio
:: Contactos
:: Inicio :: :: Noticias :: :: Quiénes Somos :: :: Servicios :: :: Tiempo :: :: Clima :: :: Hidrología :: :: Red de Estaciones :: :: SAT :: :: Documentos :: :: Enlaces :: :: Encuestas ::
: : Pronóstico Diario Completo : :
Buscar
Bajar en PDF
Pronóstico para el día 27 de Noviembre de 2010
Mar Caribe
Océano Pacífico
Mañana
Tarde
Noche
* Haga clic en una región para ver el detalle
Región de Panamá

Monitoring Boquete Weather

- Air Temperature
- Wind Speed
- Solar Radiation
- Relative Humidity
- Wind Direction
- Barometric Pressure
- Rainfall



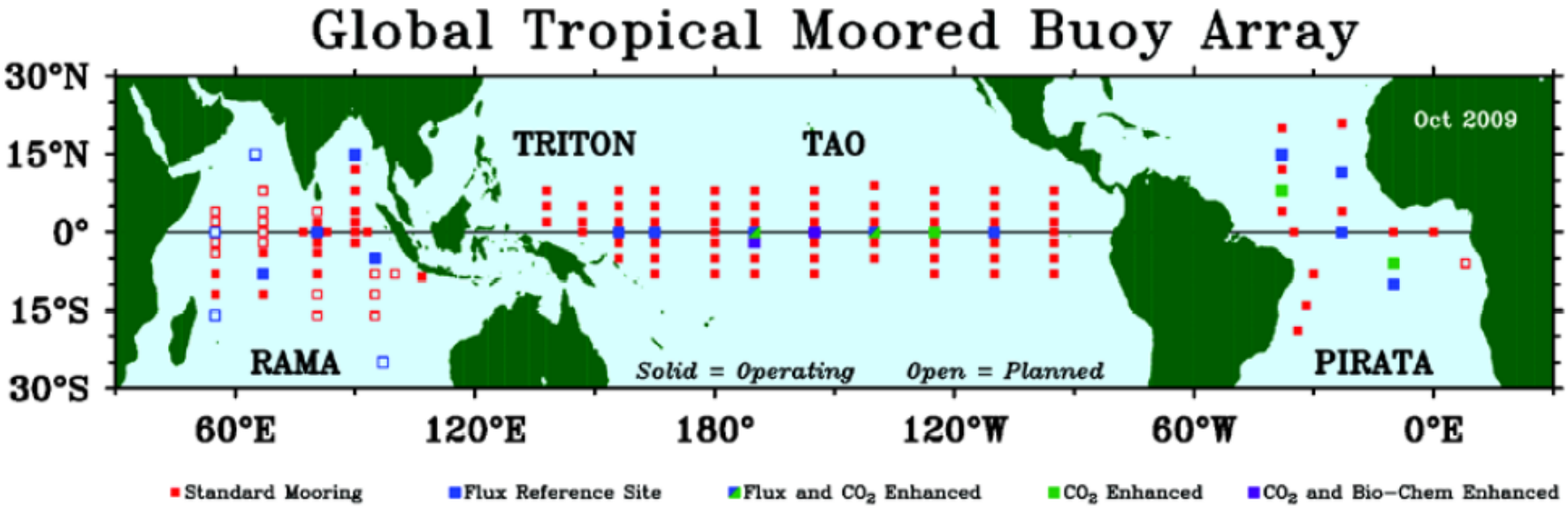
WeatherHawk Station




4
3
2
1
PRONAMIC

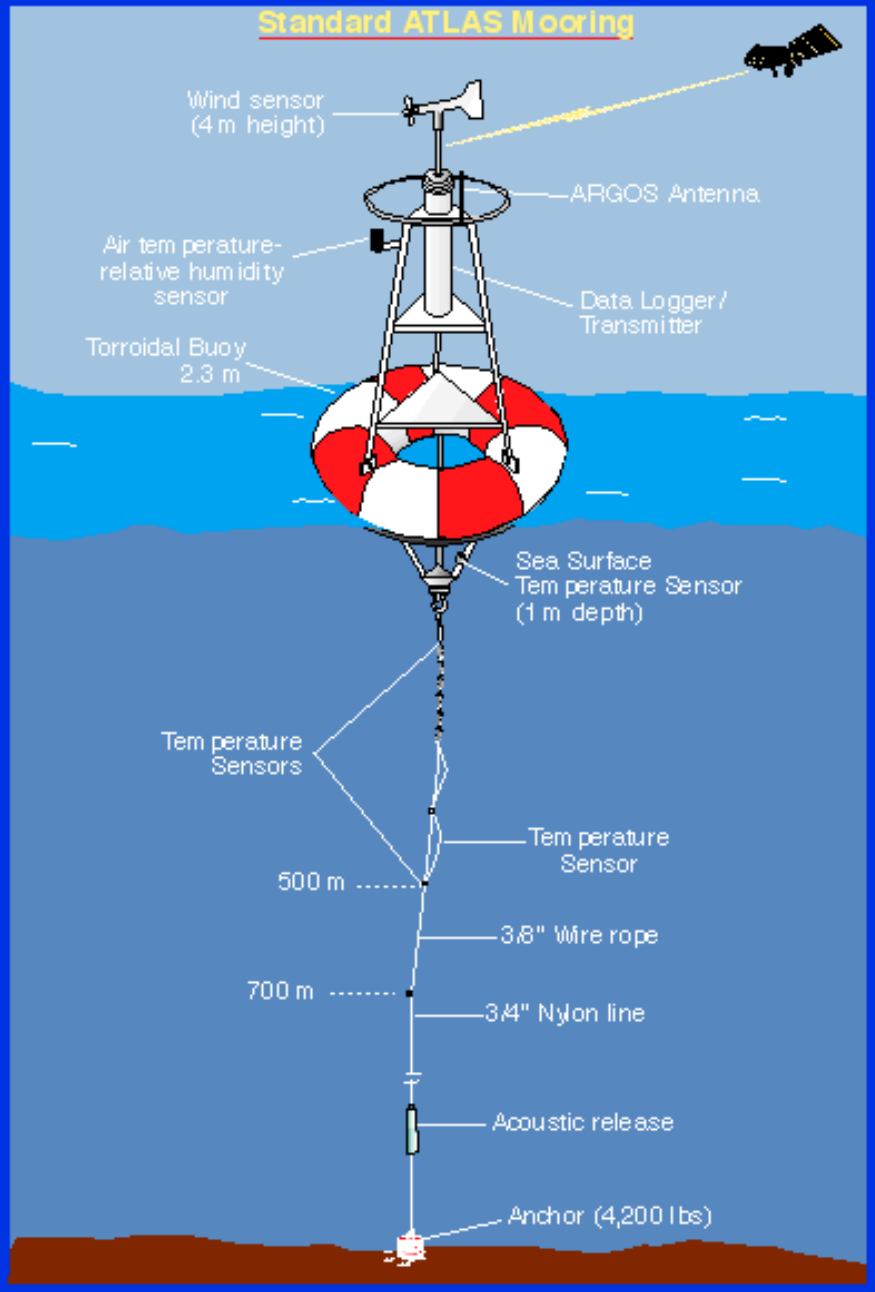
Sea Stations

Sea Stations



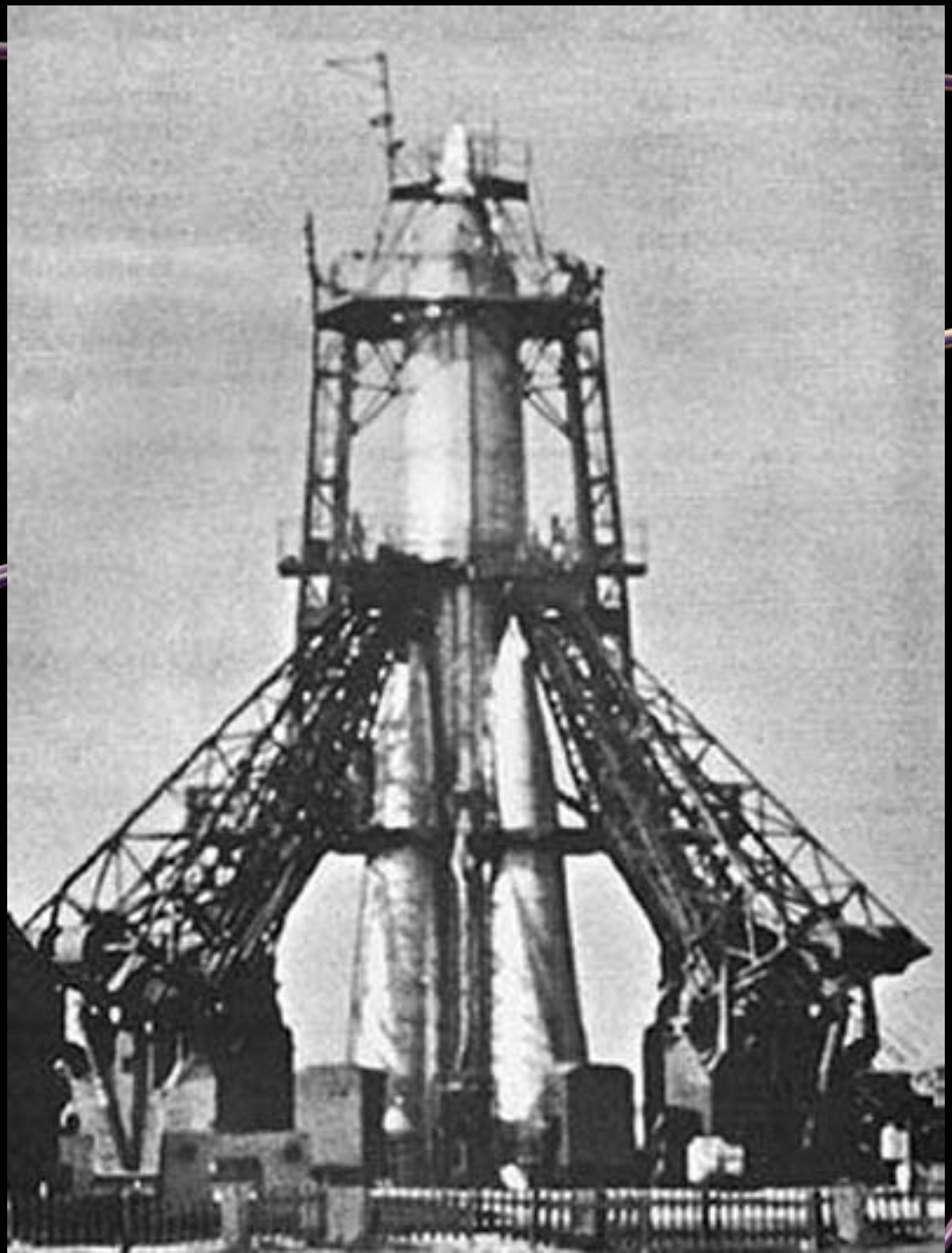
October 2009

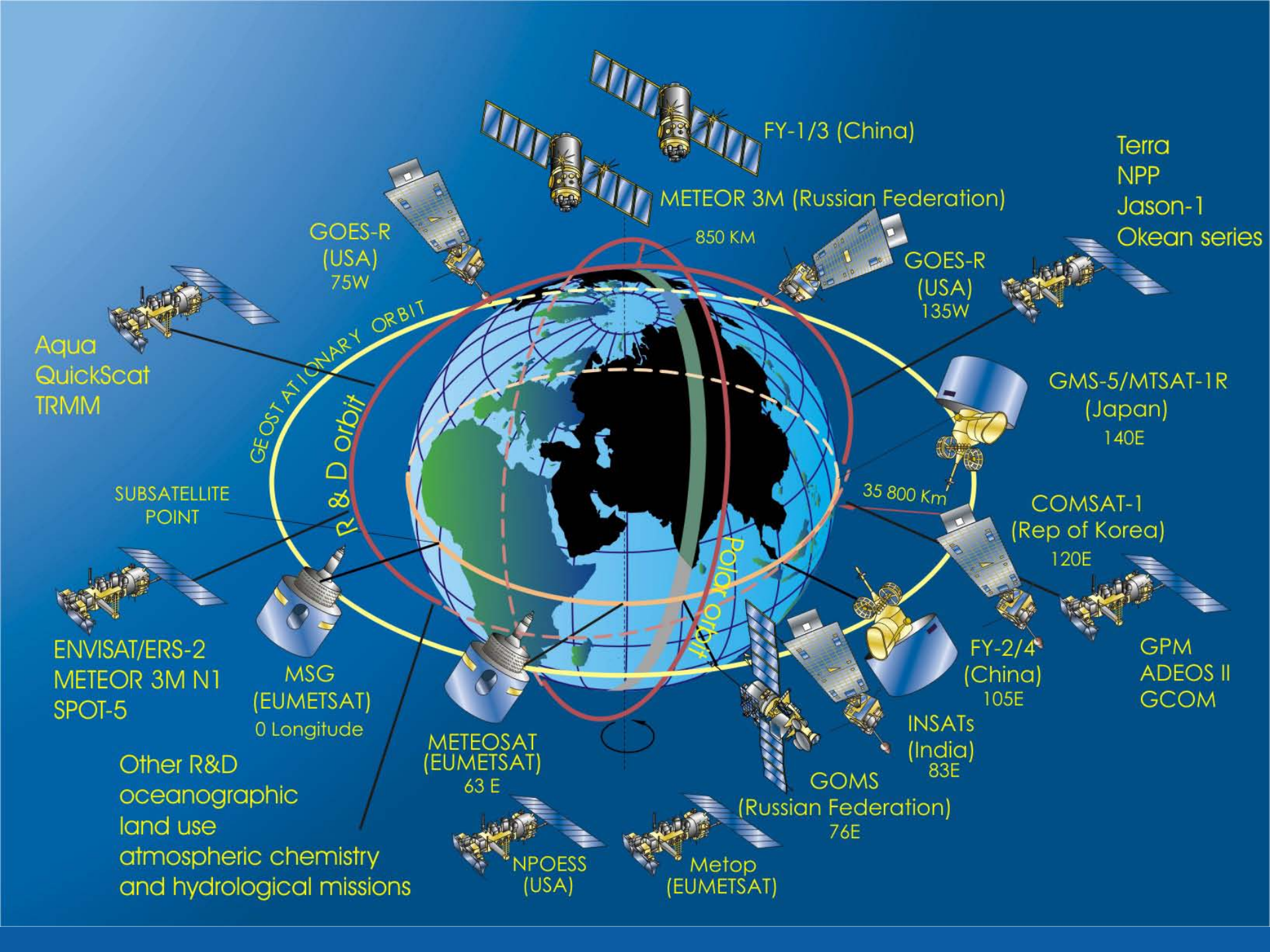
Sea Stations


Standard ATLAS Mooring
Wind sensor
(4 m height)
ARGOS Antenna
Air tem perature-
relative humidity
sensor
Data Logger/
Transmitter
Torroidal Buoy
2.3 m
Sea Surface
Tem perature Sensor
(1 m depth)
Tem perature
Sensors
Tem perature
Sensor
500 m
3/8" Wire rope
700 m
3/4" Nylon line
Acoustic release
Anchor (4,200 lbs)
6.00

Satellite Stations

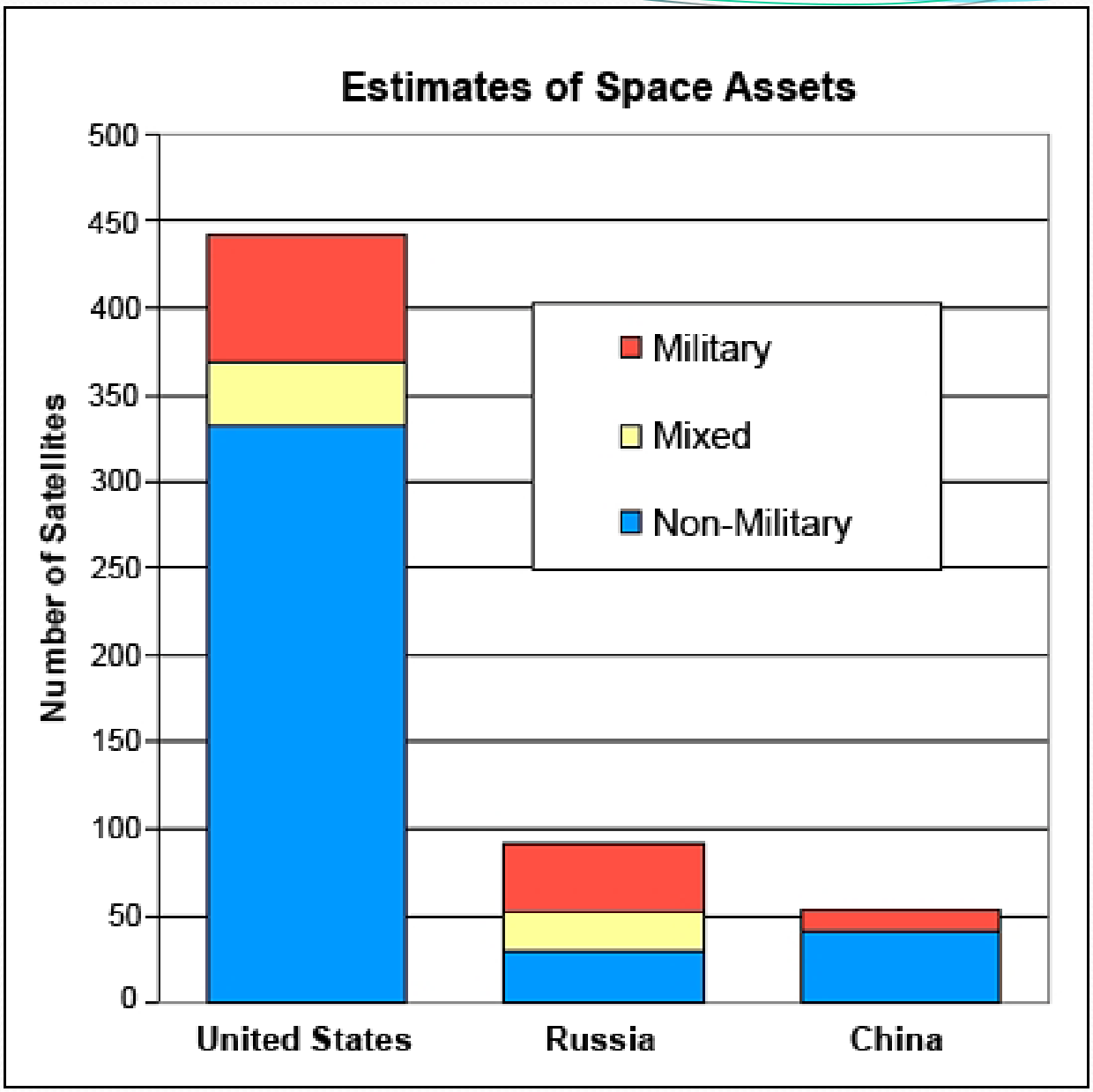
- Remote Sensors -



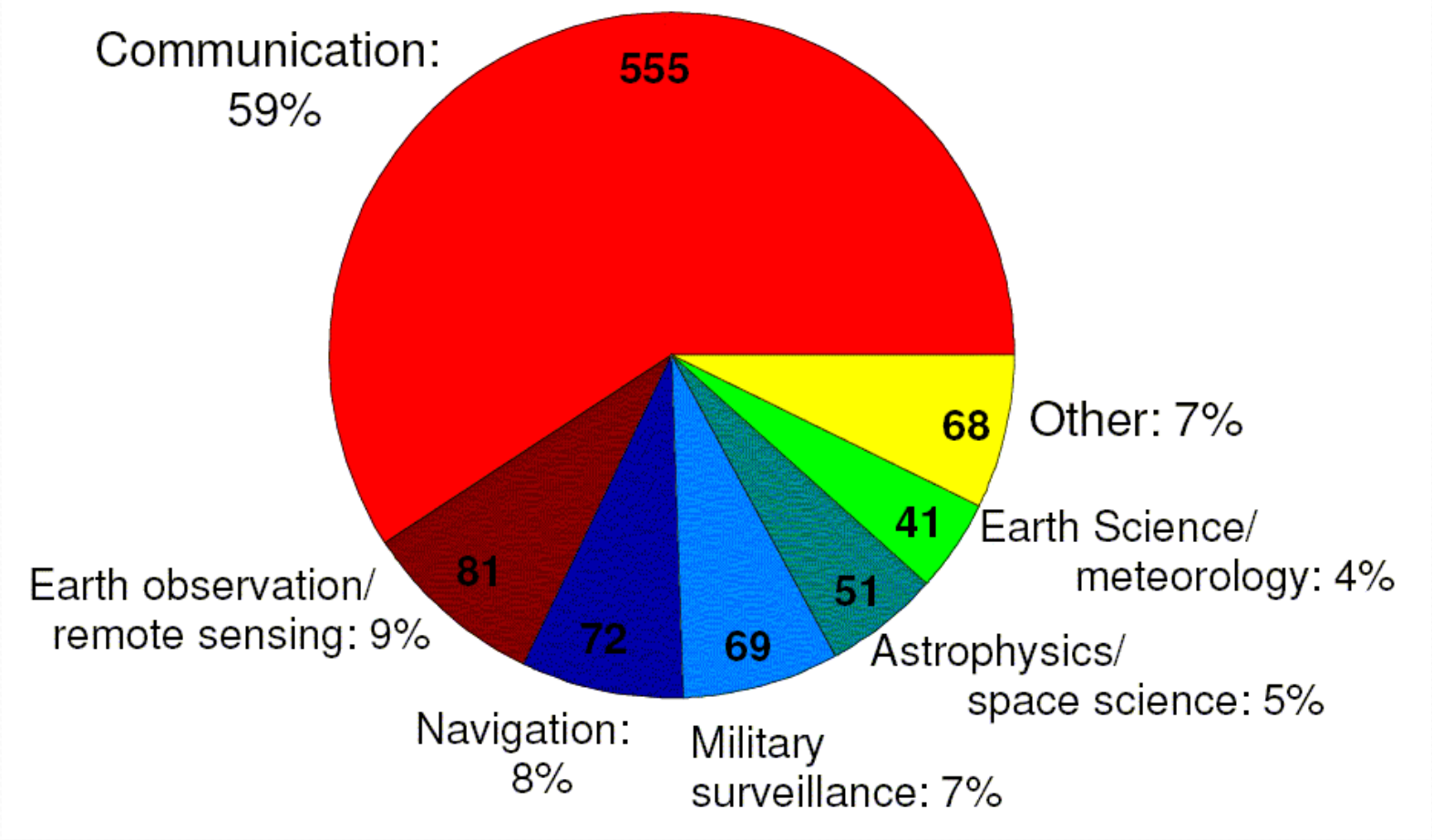

FY-1/3 (China)
METEOR 3M (Russian Federation)
850 KM
Terra
NPP
Jason-1
Okean series
GOES-R
(USA)
75W
GOES-R
(USA)
135W
Aqua
QuickScat
TRMM
GEOSTATIONARY ORBIT
R & D orbit
GMS-5/MTSAT-1R
(Japan)
140E
35 800 Km
SUBSATELLITE
POINT
COMSAT-1
(Rep of Korea)
120E
Polar orbit
ENVISAT/ERS-2
METEOR 3M N1
SPOT-5
MSG
(EUMETSAT)
0 Longitude
FY-2/4
(China)
105E
GPM
ADEOS II
GCOM
METEOSAT
(EUMETSAT)
63 E
INSATs
(India)
83E
GOMS
(Russian Federation)
76E
Other R&D
oceanographic
land use
atmospheric chemistry
and hydrological missions
NPOESS
(USA)
Metop
(EUMETSAT)

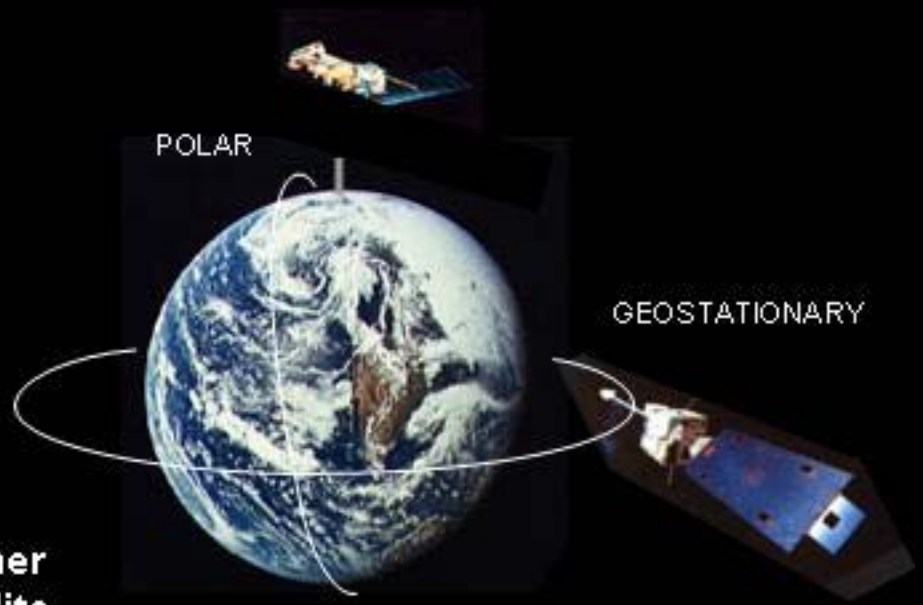
Satellite Quick Facts			
Total number of operating satellites: 943			
LEO: 459	MEO: 60	Elliptical: 39	GEO: 385
United States: 438	Russia: 97	China: 60	
Total number of U.S. Satellites: 438			
Civil: 6	Commercial: 193	Government: 124	Military: 115

includes launches through 7-1-10


Estimates of Space Assets
Number of Satellites
500
450
400
350
300
250
200
150
100
50
0
Military
Mixed
Non-Military
United States
Russia
China

Satellite Uses



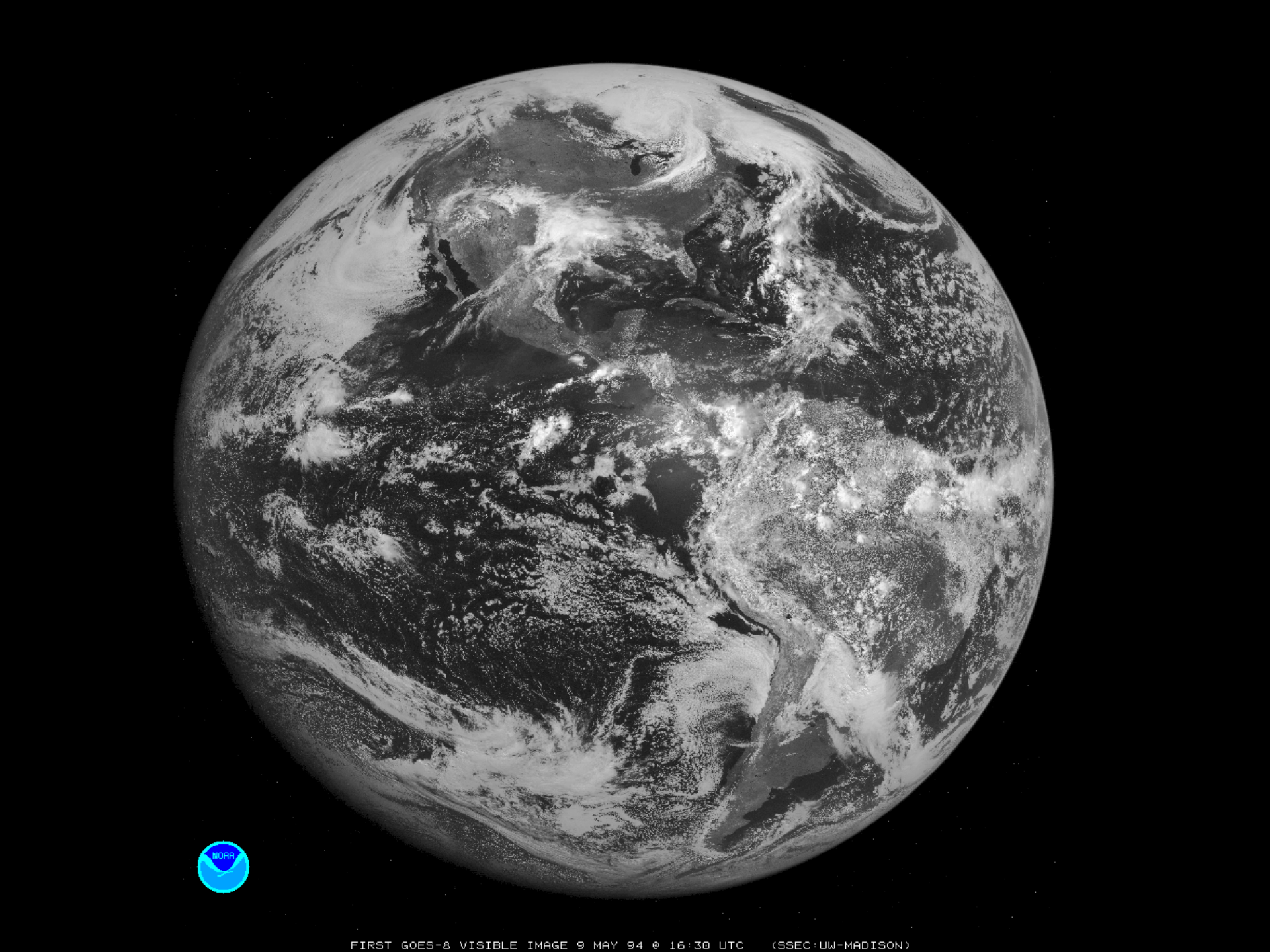


Weather Satellite Orbits

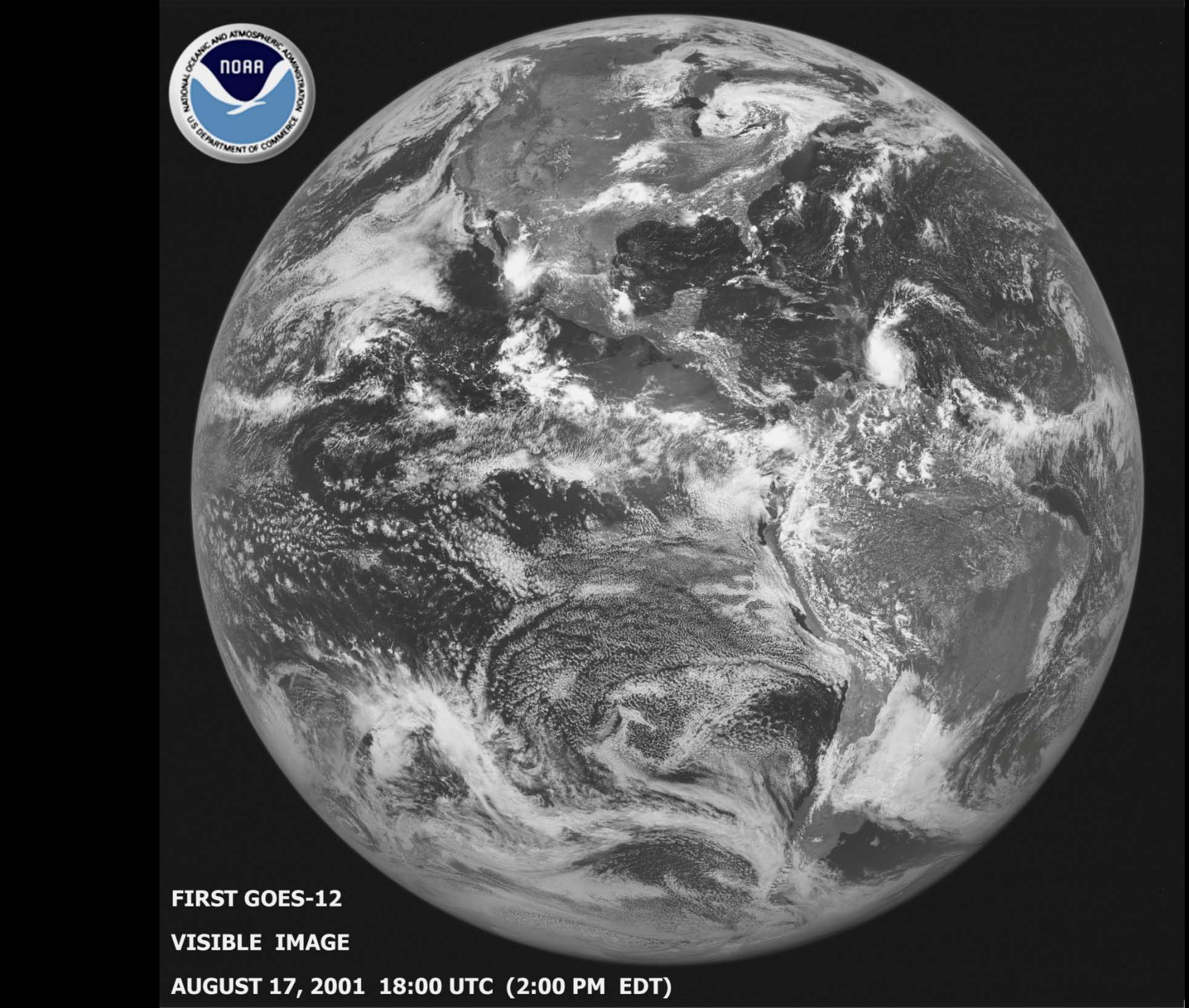
Geostationary satellites constantly monitor the Western H[illegible]sphere [illegible]round 22,[illegible]0 miles above the [illegible]arth, and pol[illegible]-orbiting sat[illegible]lites circle the Earth and provide global information from 540 miles above the Earth.

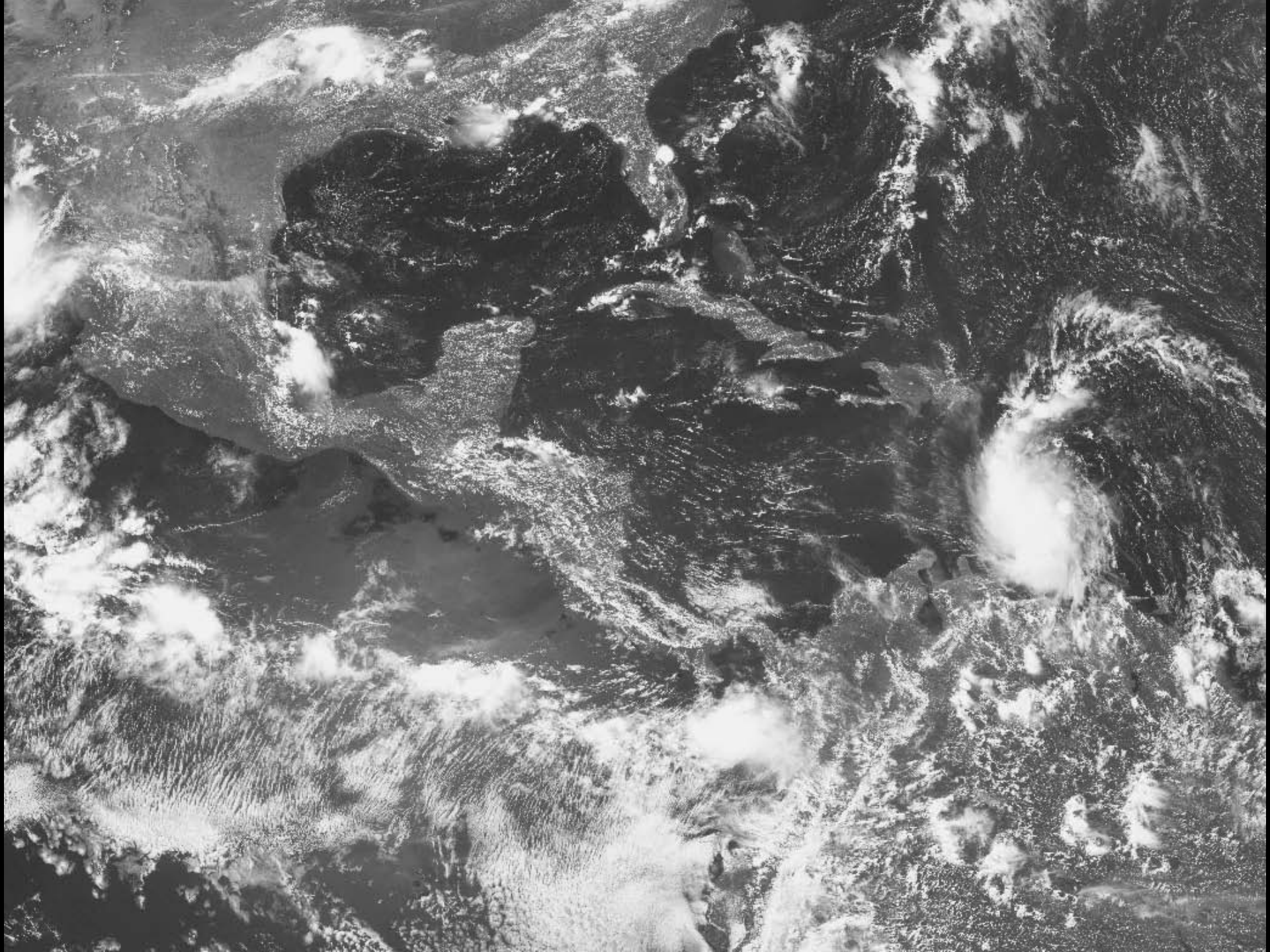
FIRST TELEVISION PICTURE FROM SPACE
TIROS I SATELLITE APRIL 1, 1960

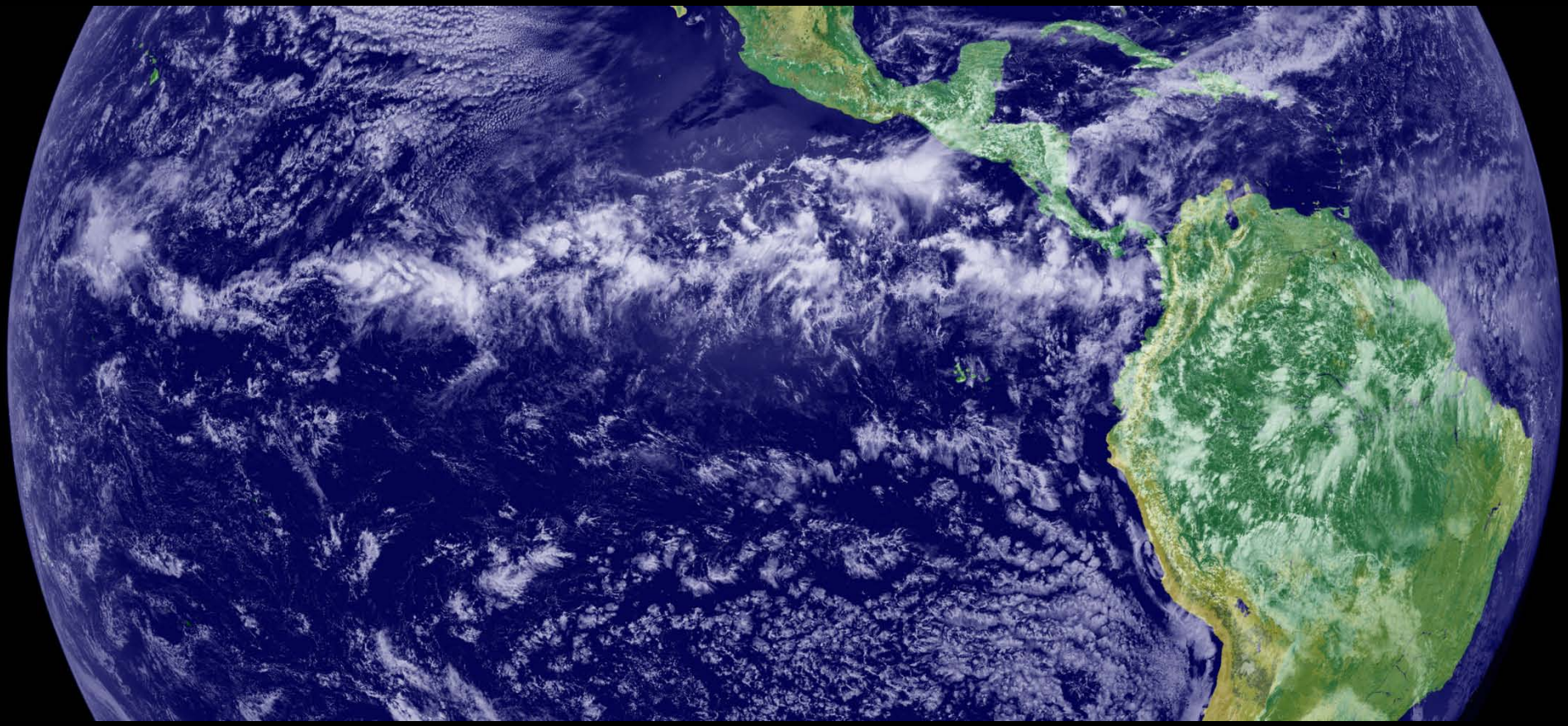
GOES 8 13 April 1994 (4,640 lb)

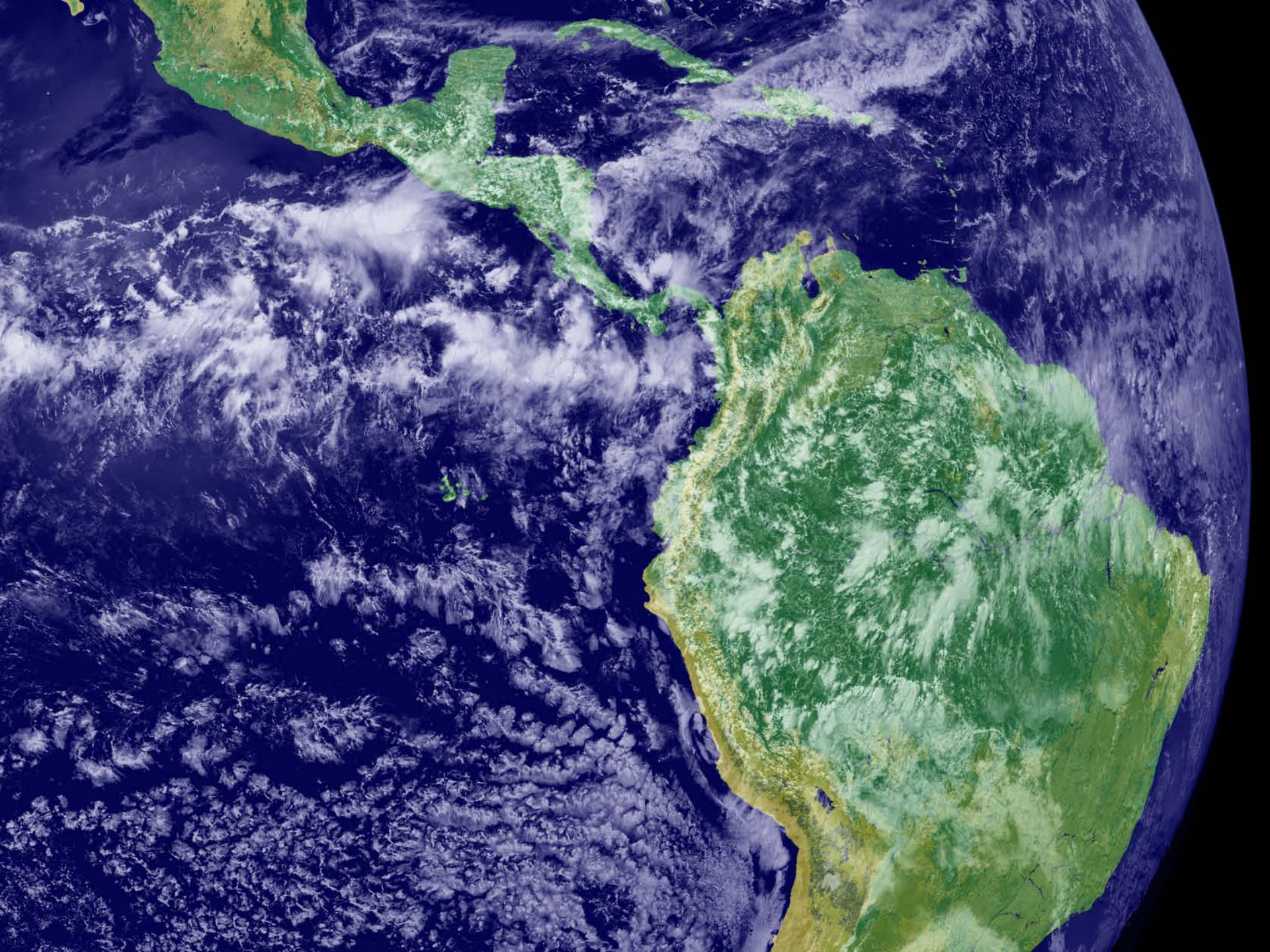

NOAA
FIRST GOES-8 VISIBLE IMAGE 9 MAY 94 @ 16:30 UTC (SSEC:UW-MADISON)

GOES 12 launched 23 July 2001 (5,020 lb)


NOAA
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
U.S. DEPARTMENT OF COMMERCE
FIRST GOES-12
VISIBLE IMAGE
AUGUST 17, 2001 18:00 UTC (2:00 PM EDT)







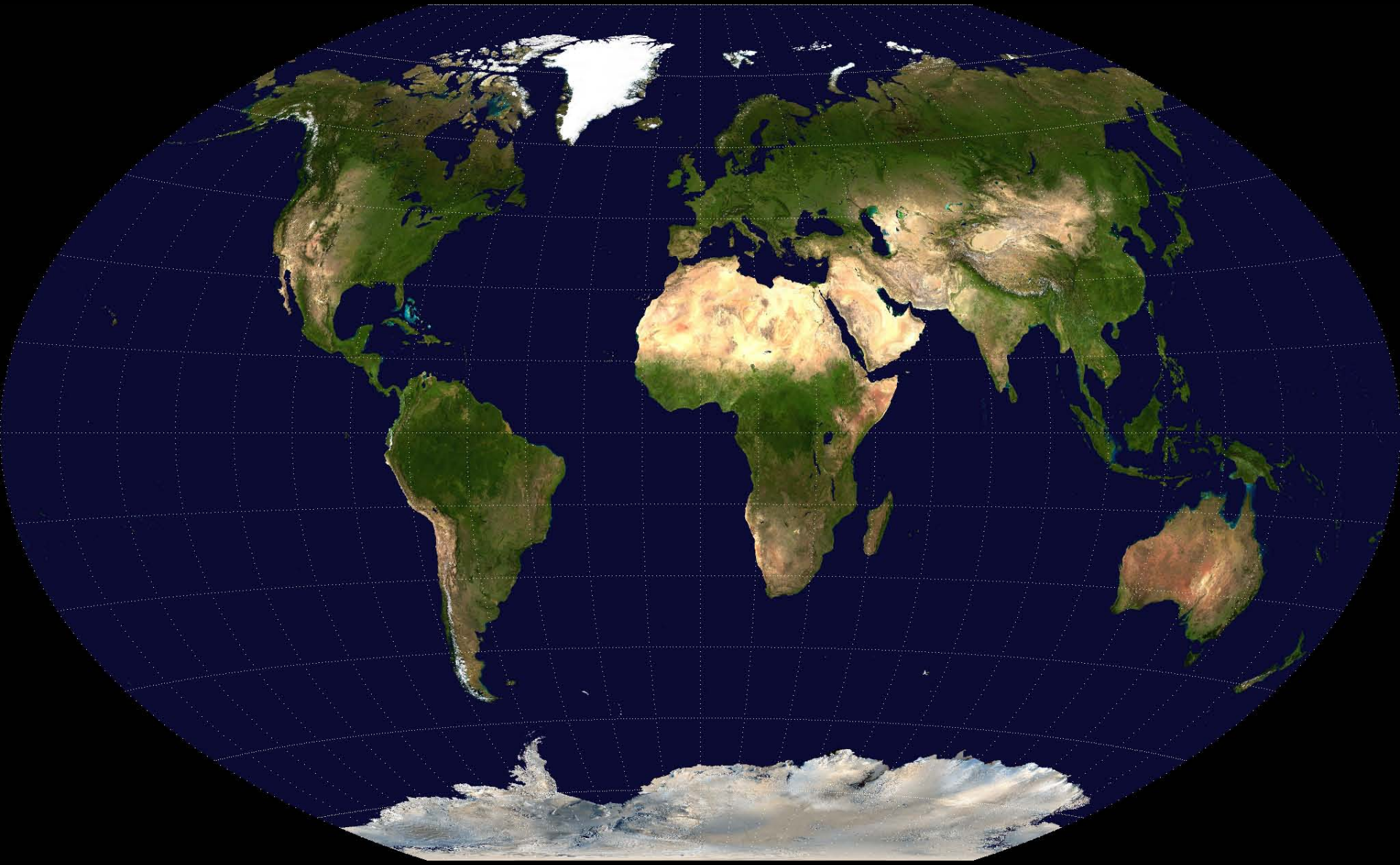

Inter-Tropical Convergence Zone
ITCZ

MODIS 2001

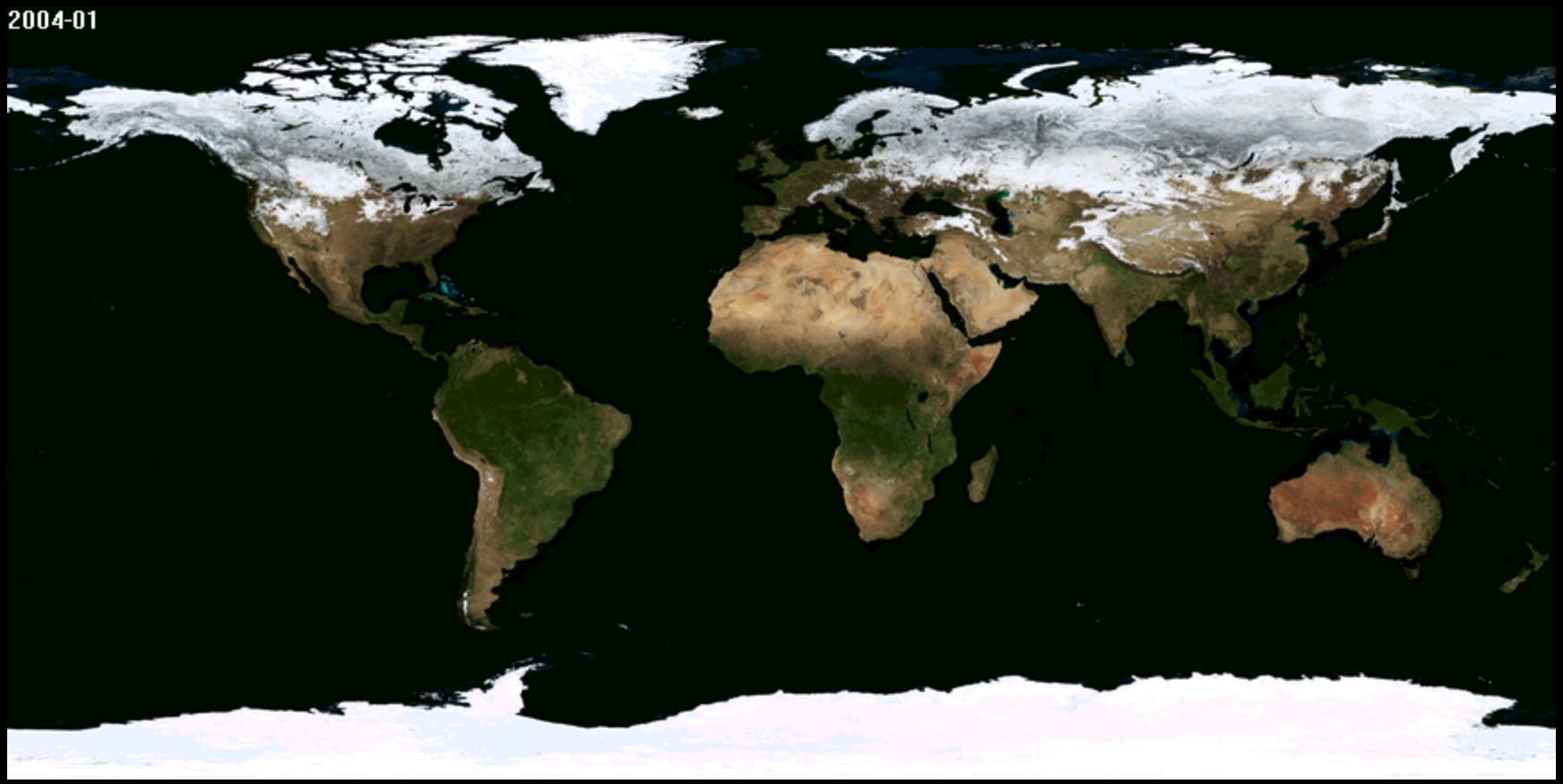
MODIS 2002

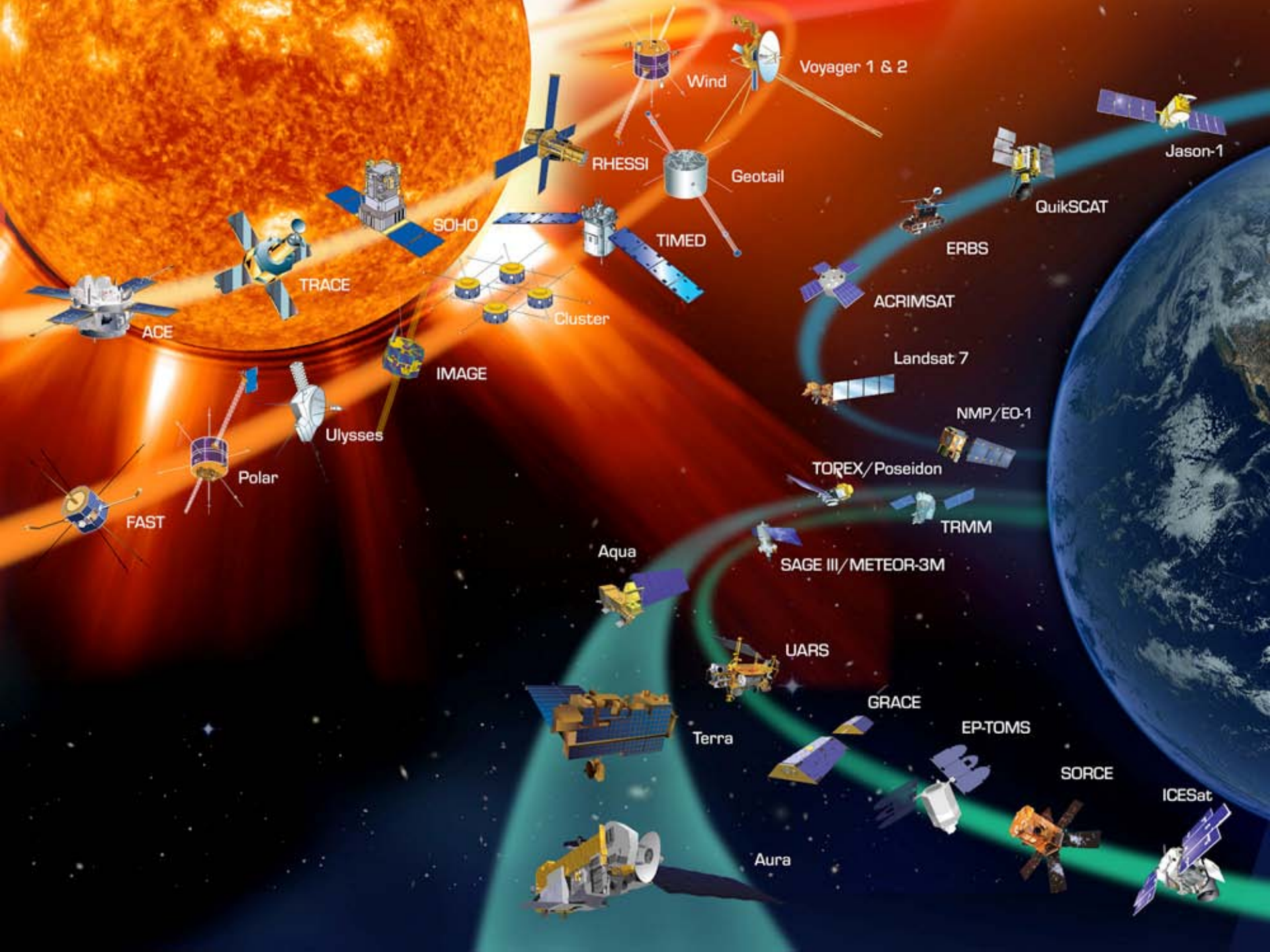
Moderate Resolution Imaging Spectroradiometer

Best Map of the World



Monthly Satellite Images

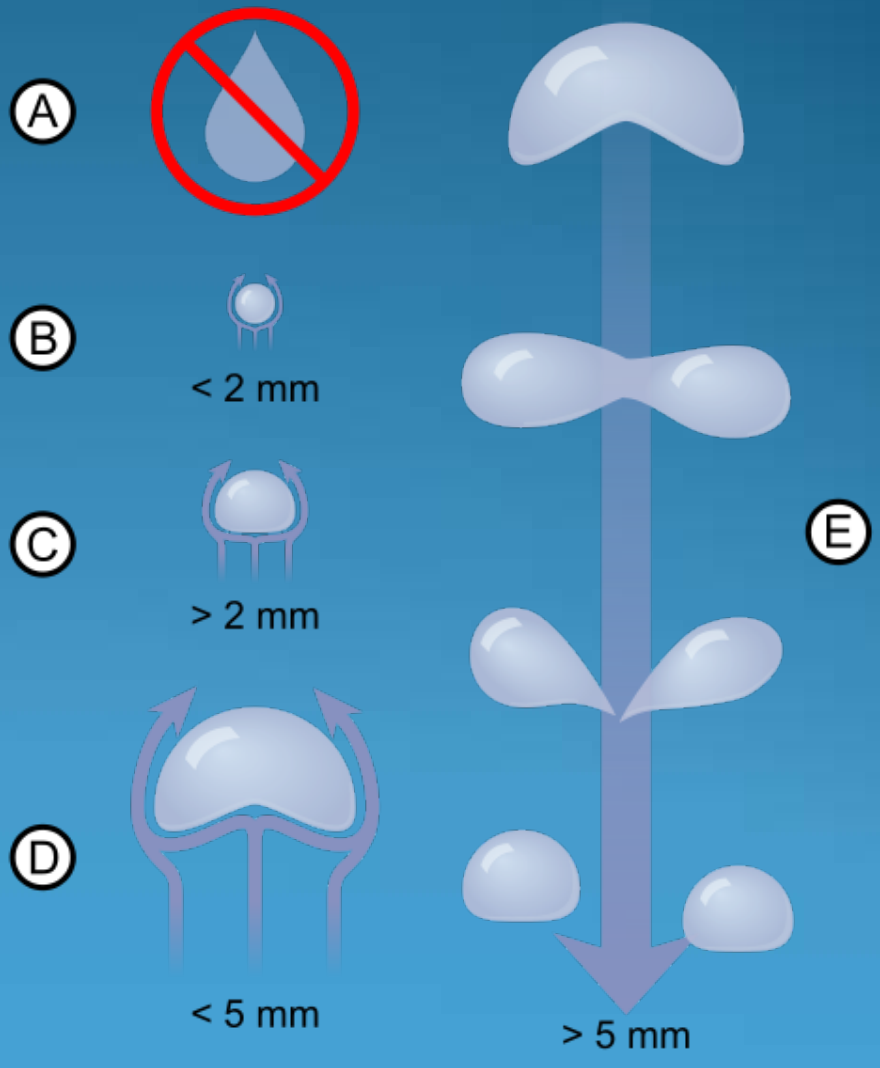



Wind
Voyager 1 & 2
RHESSI
Geotail
Jason-1
QuikSCAT
SOHO
TIMED
ERBS
TRACE
ACRIMSAT
ACE
Cluster
Landsat 7
IMAGE
NMP/EO-1
Ulysses
TOREX/Poseidon
Polar
TRMM
FAST
SAGE III/METEOR-3M
Aqua
UARS
GRACE
Terra
EP-TOMS
SORCE
ICESat
Aura

Rain


“Rain is grace;
rain is the sky condescending to the earth;
without rain, there would be no life.”
-
- John Updike -

Raindrops



What causes Rain?

Basic Elements of Weather and Climate

Weather (the day-by-day realities of our atmosphere), the seasons and climate (the overall trends and patterns of weather over the course of the years) are always the result of a complex dynamic interaction of factors that include:

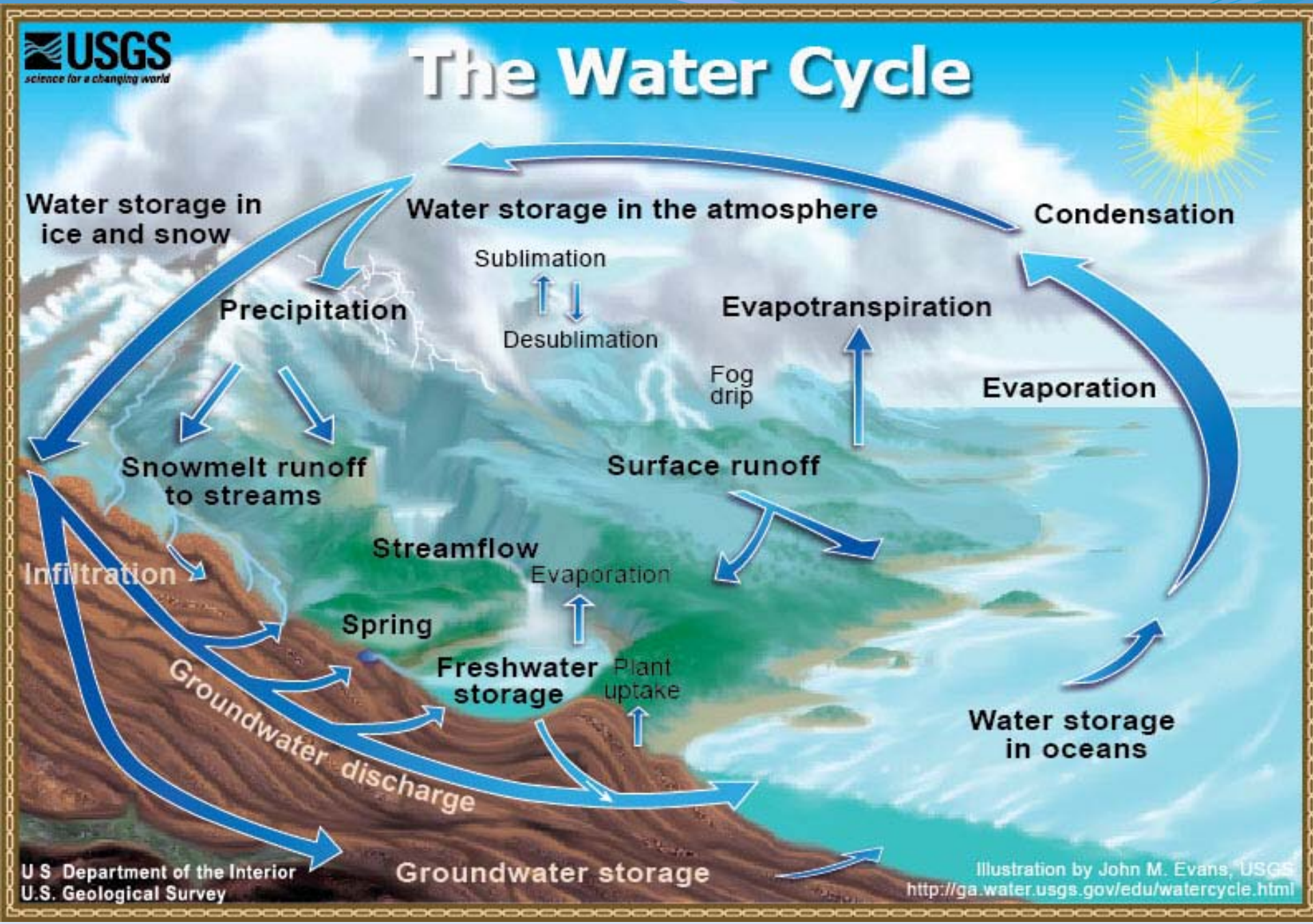
- The relative position of the sun
- Air temperature
- Sea temperature
- Air humidity
- Clouds
- Precipitation
- Air pressure
- Winds.

Basic causes of our weather

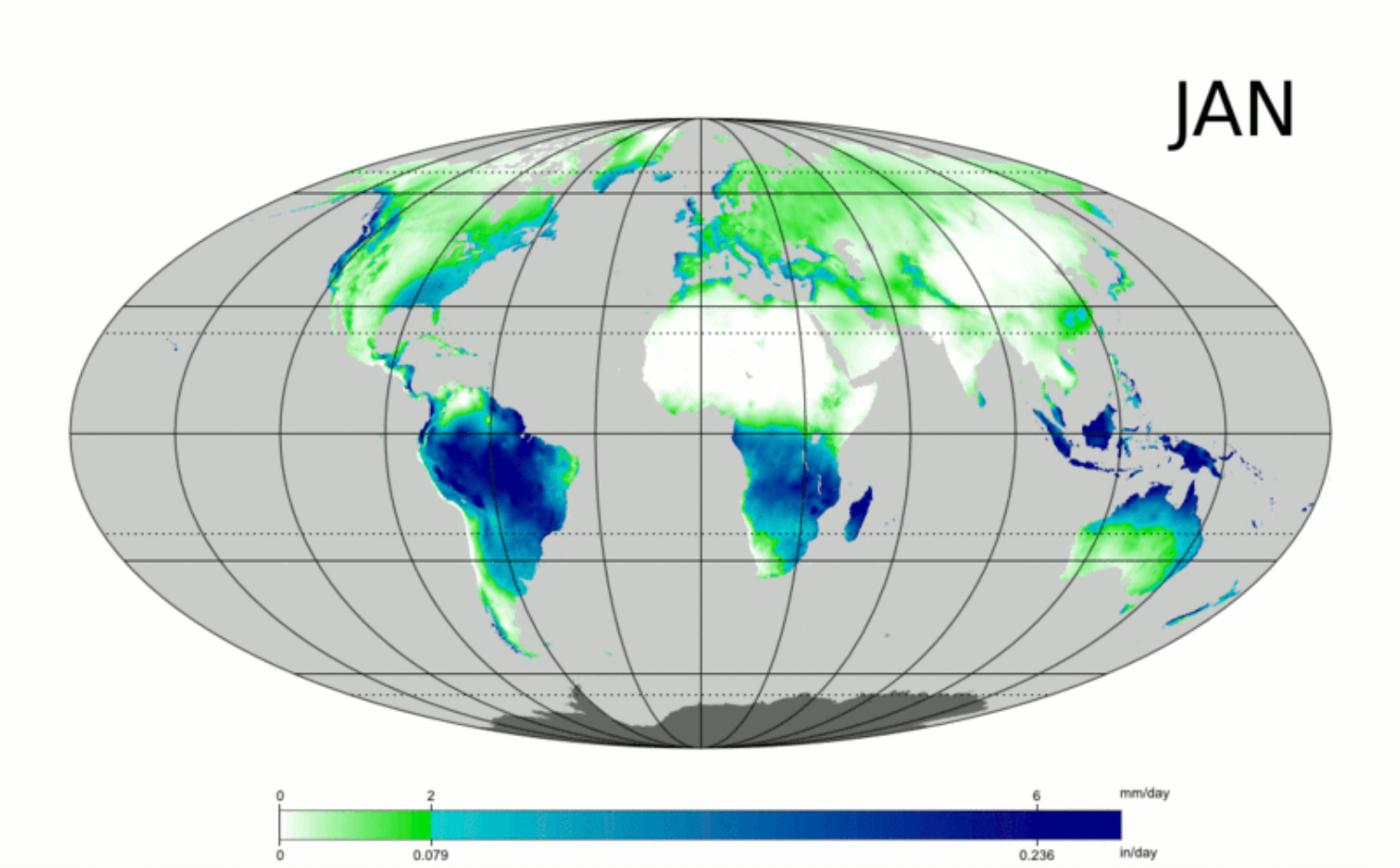
- **Location**
  - **Small land between seas**
  - **Near Equator**
- **ITCZ (Inter-Tropical Convergence Zone)**
- **Winds and Terrain**
- **Thunderstorms**
- **Struggle between Pacific and Caribbean Systems**
- **Tropical Storms around us**

Basic causes of Boquete Rain

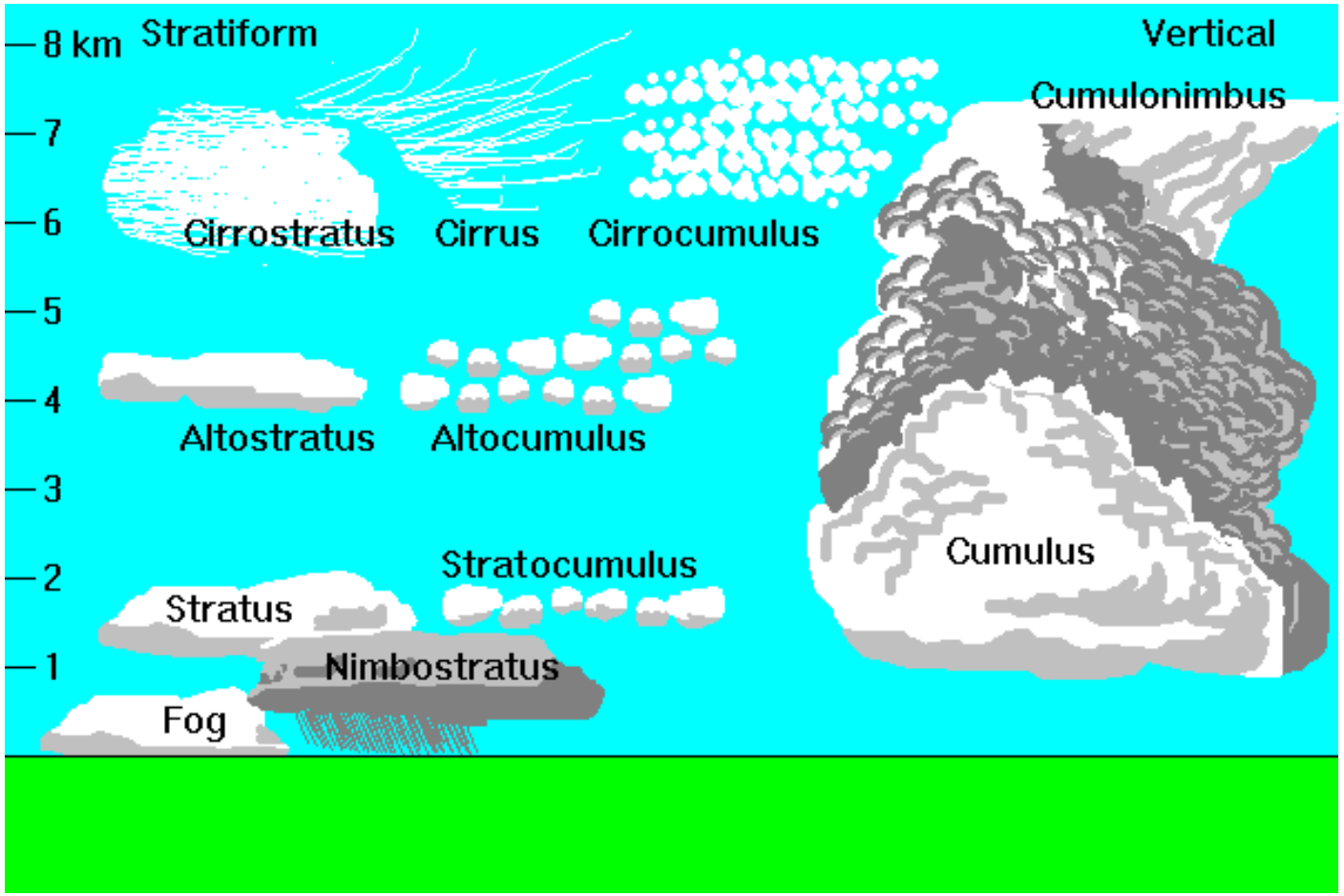
- **Thunderstorms**
  - Convection over the Pacific
  - Development of Cumulonimbus Clouds
  - Movement of clouds inland
  - Orographic lifting
- **Caribbean Spillover**
  - Debris Moisture(Bajareque)
- **Effects of Larger Systems**
  - Caribbean Storms
  - Pacific Storms
  - South America Systems
- **Effects of ENSO**


USGS
science for a changing world
The Water Cycle
Water storage in ice and snow
Water storage in the atmosphere
Condensation
Sublimation
Desublimation
Precipitation
Evapotranspiration
Fog drip
Evaporation
Snowmelt runoff to streams
Surface runoff
Streamflow
Infiltration
Evaporation
Spring
Freshwater storage
Plant uptake
Groundwater discharge
Water storage in oceans
Groundwater storage
U S Department of the Interior
U.S. Geological Survey
Illustration by John M. Evans, USGS
http://ga.water.usgs.gov/edu/watercycle.html

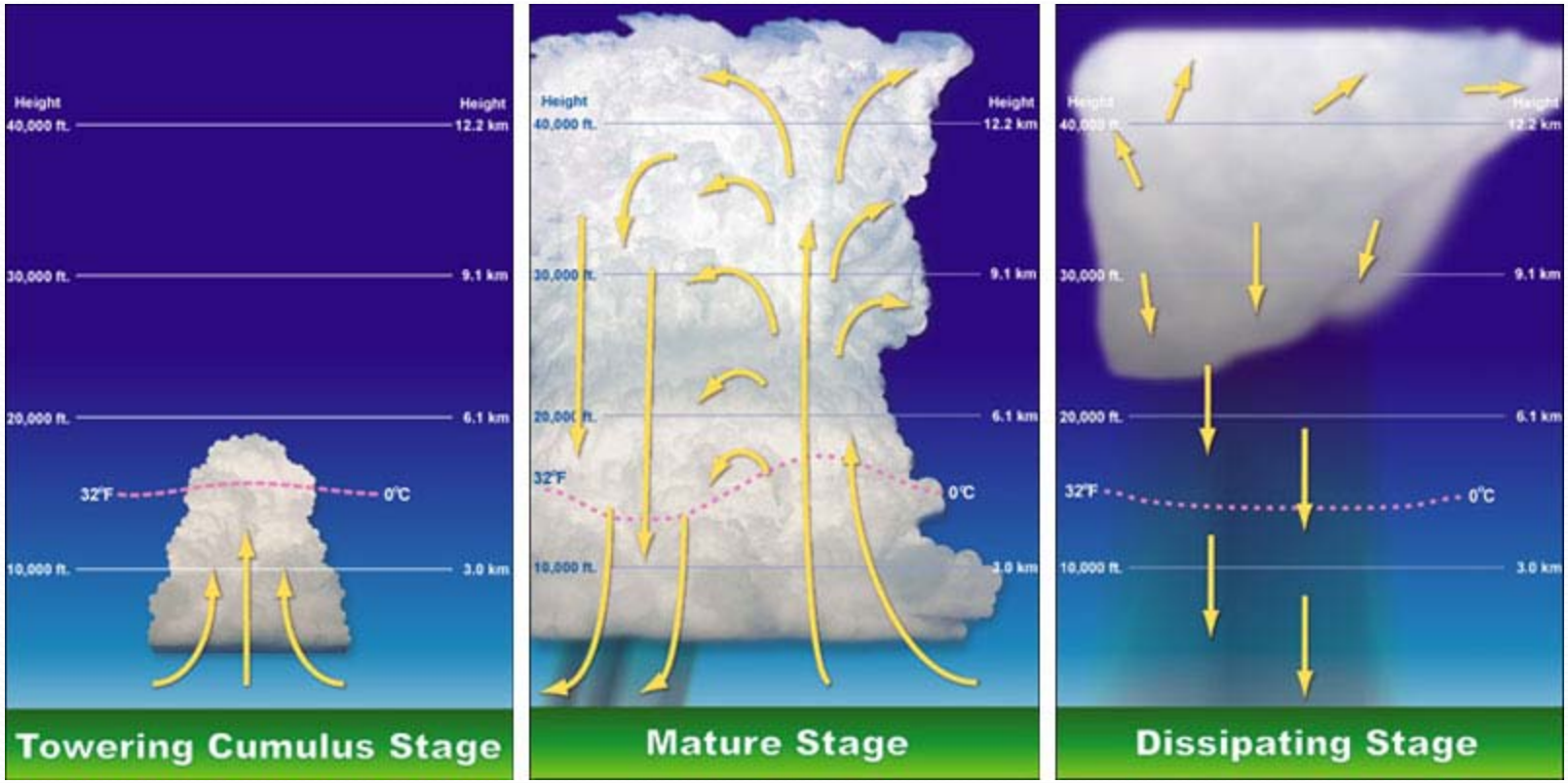
Monthly Global Precipitation

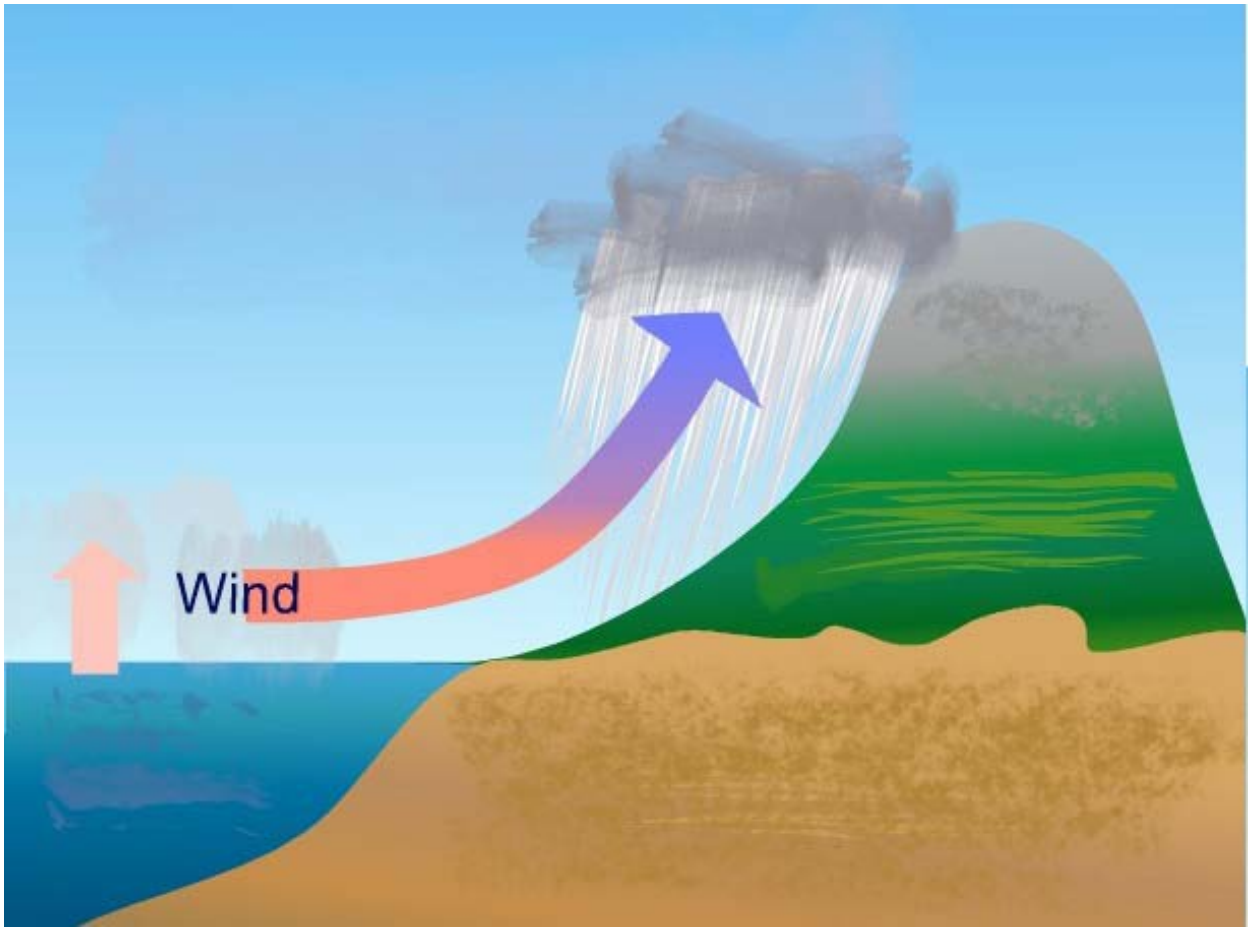


Thunderstorms

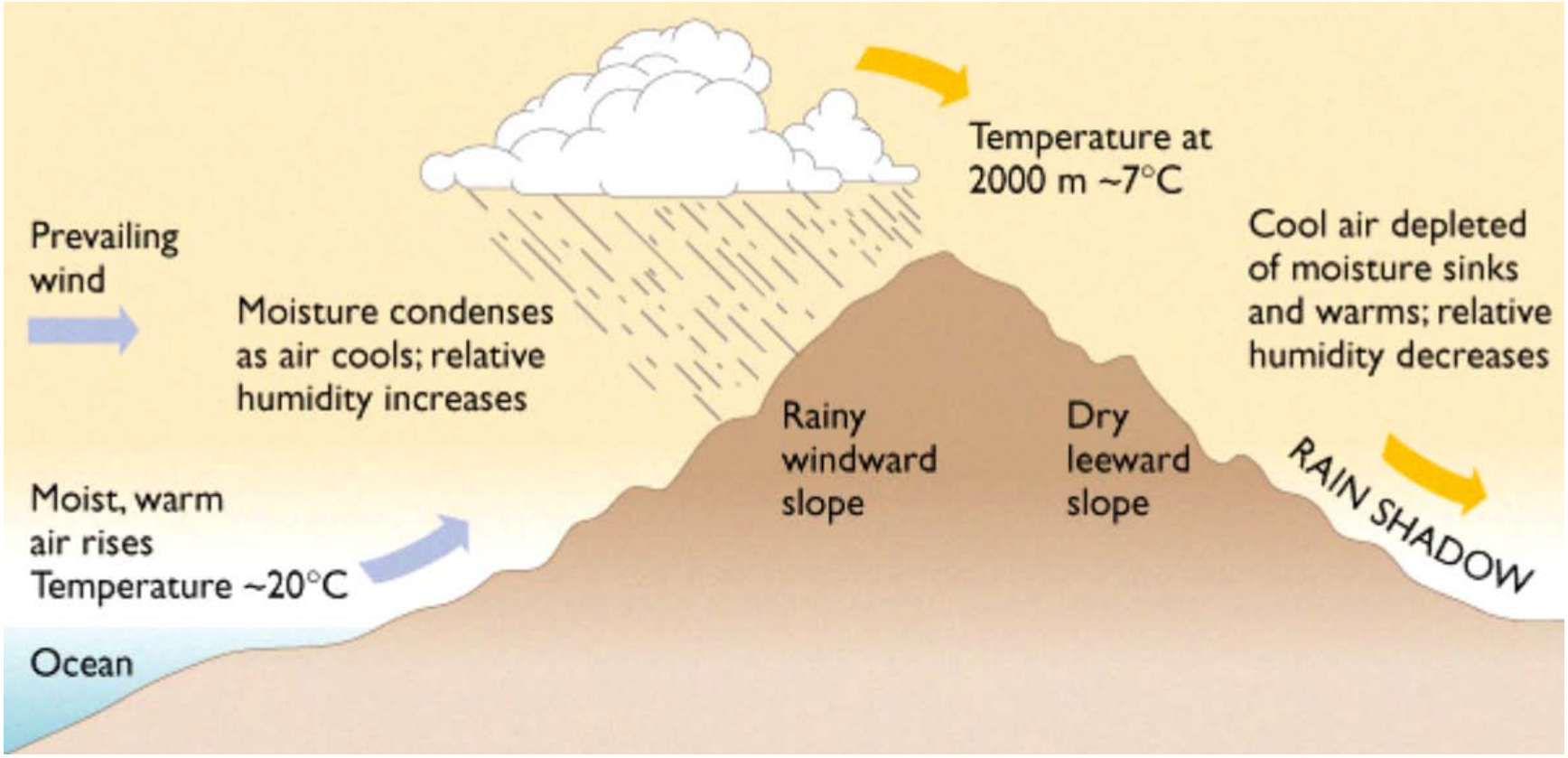

8 km
7
6
5
4
3
2
1
Stratiform
Vertical
Cumulonimbus
Cirrostratus
Cirrus
Cirrocumulus
Altostratus
Altocumulus
Cumulus
Stratocumulus
Stratus
Nimbostratus
Fog

Thunderstorms

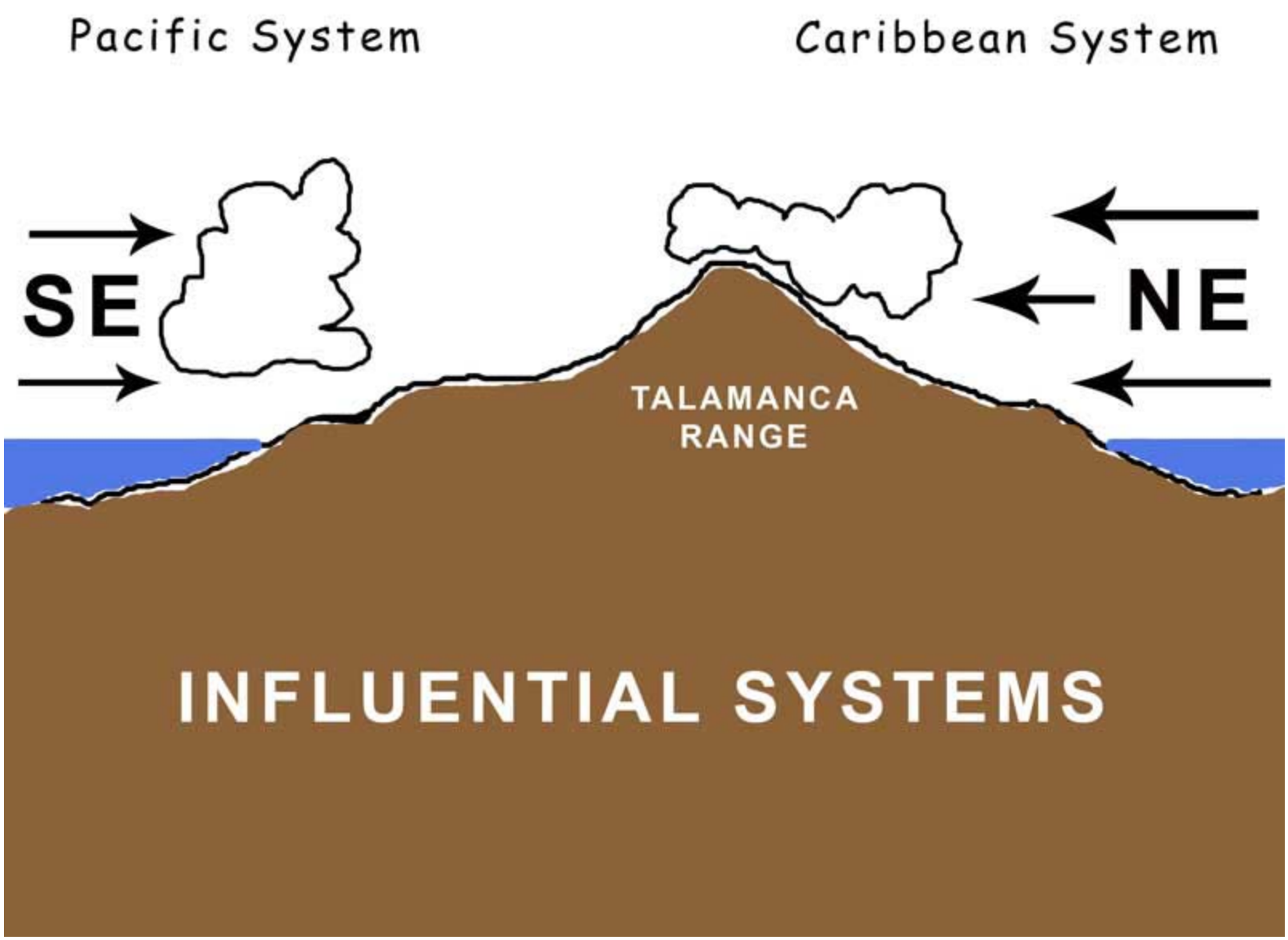



Wind

Orographic Lifting



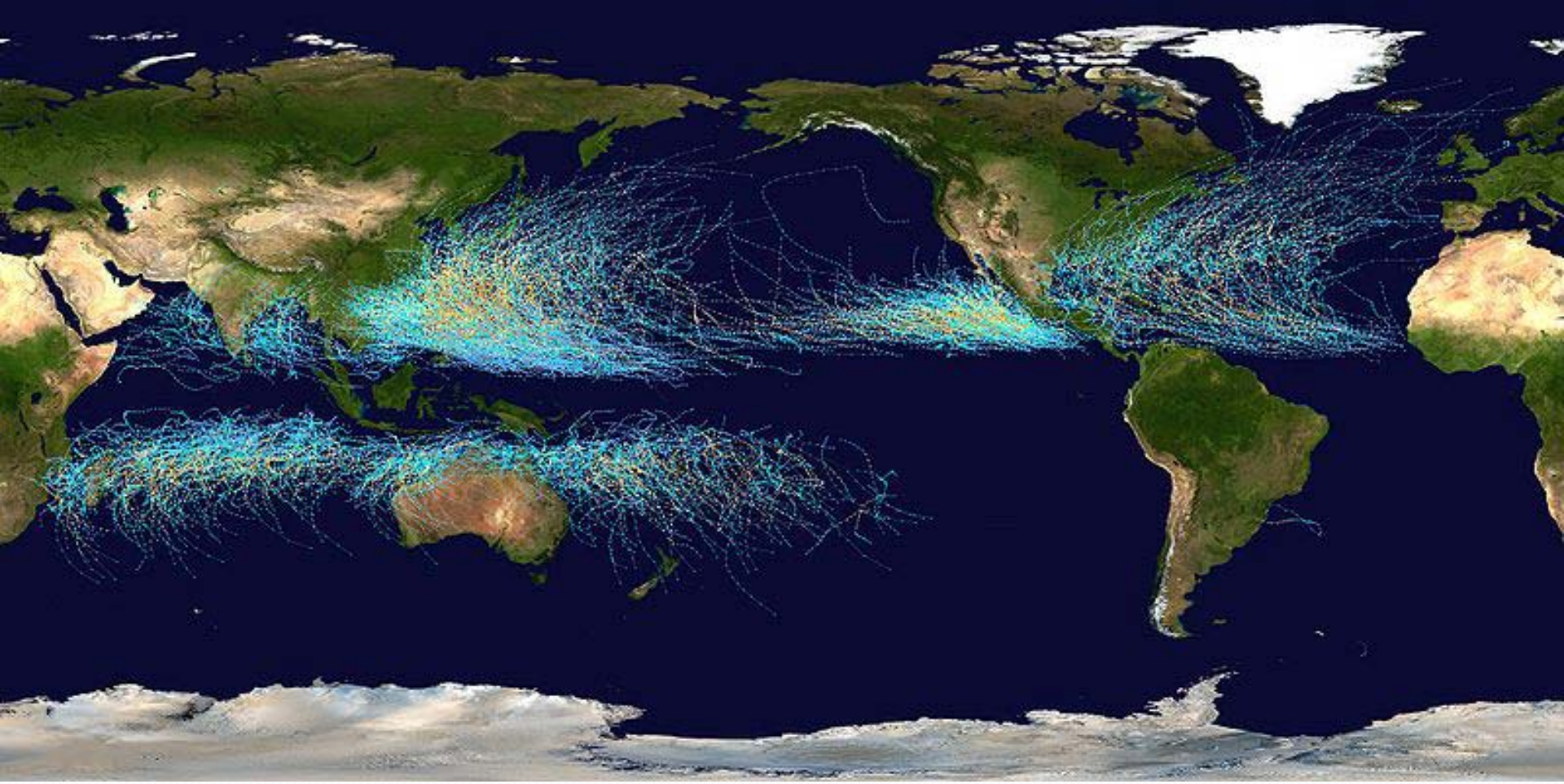
Caribbean Spillover


Pacific System
Caribbean System
SE
NE
TALAMANCA
RANGE
INFLUENTIAL SYSTEMS

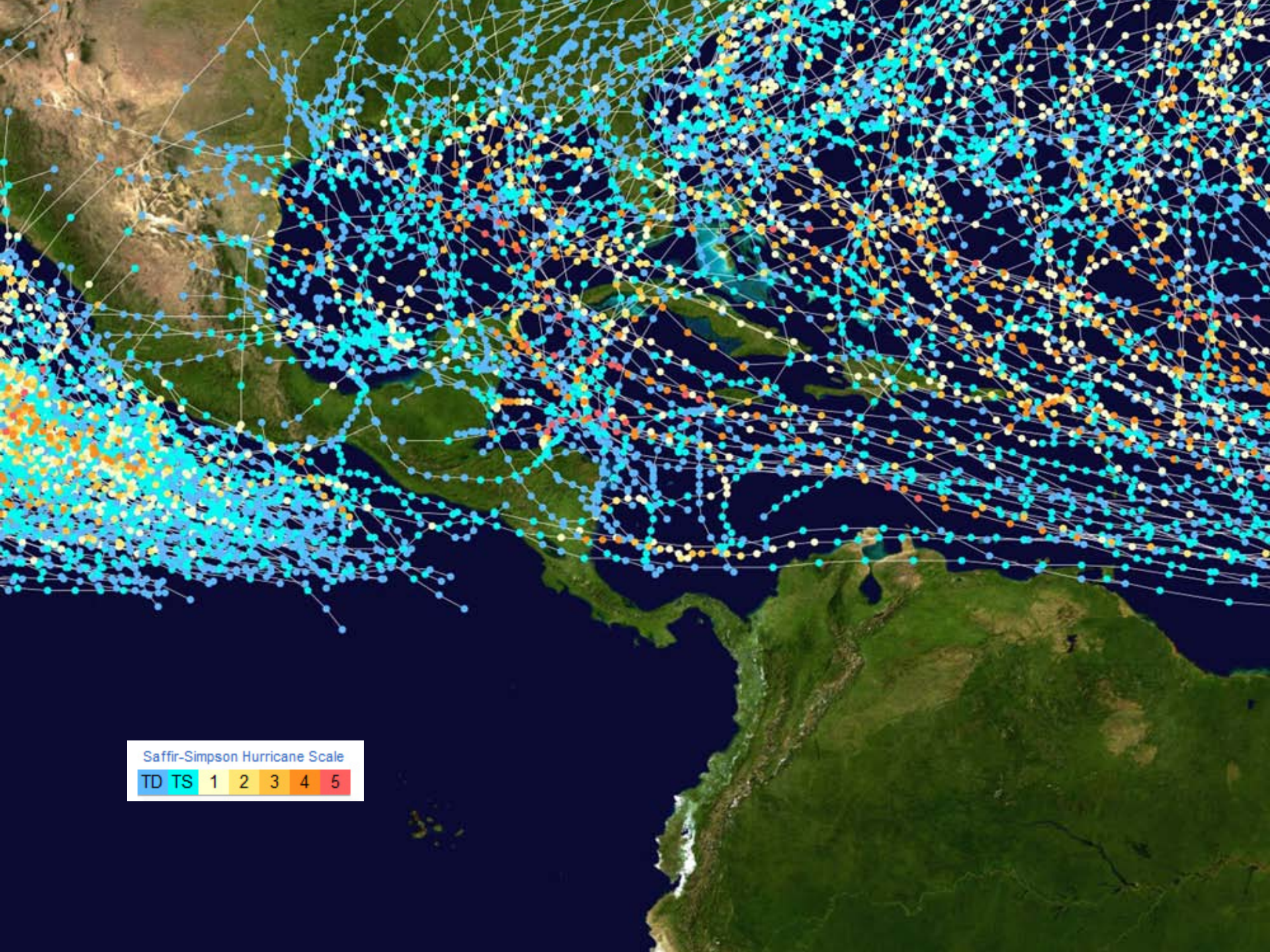

West
Caribbean
Caribbean
East

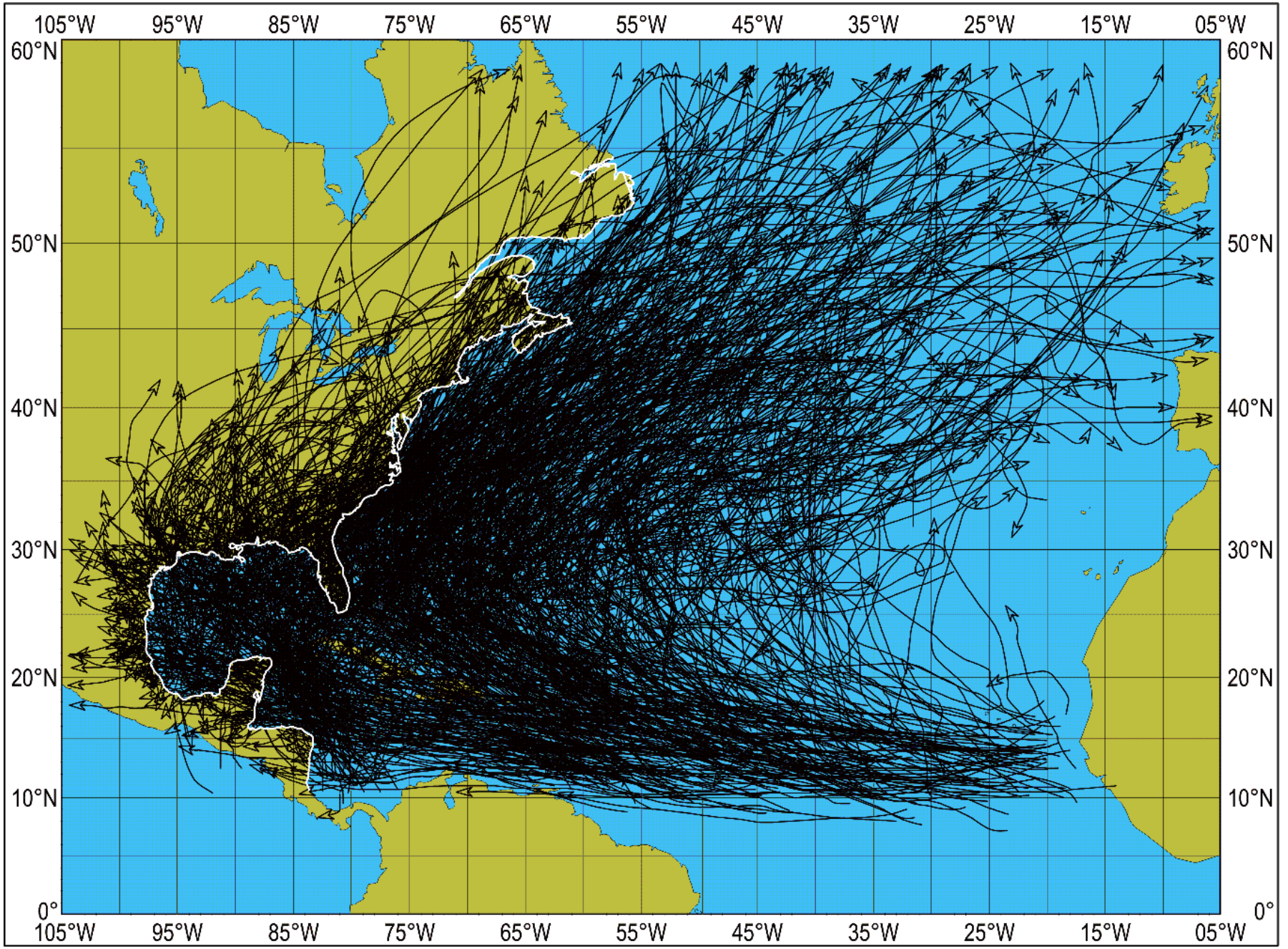
Effects of Large Systems

Atlantic Basin Storms



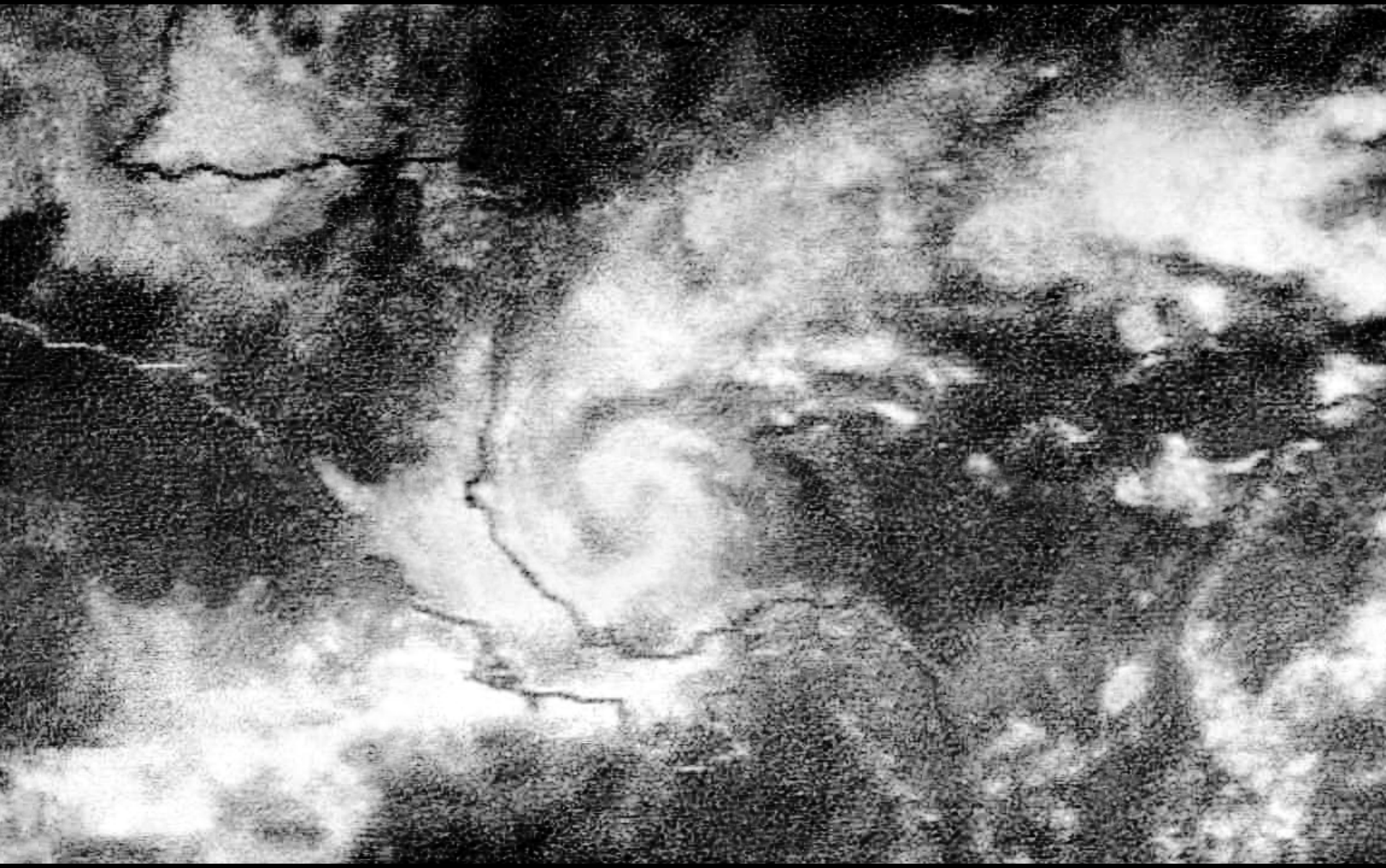
Cumulative Tracks of all Tropical Cyclones during 1985-2005


Saffir-Simpson Hurricane Scale
TD TS 1 2 3 4 5



NORTH ATLANTIC TROPICAL STORMS AND HURRICANES, 1851-2004 (1325 STORMS)

NOAA



U. S. DEPARTMENT OF COMMERCE, NATIONAL WEATHER SERVICE
NORTH ATLANTIC HURRICANE TRACKING CHART

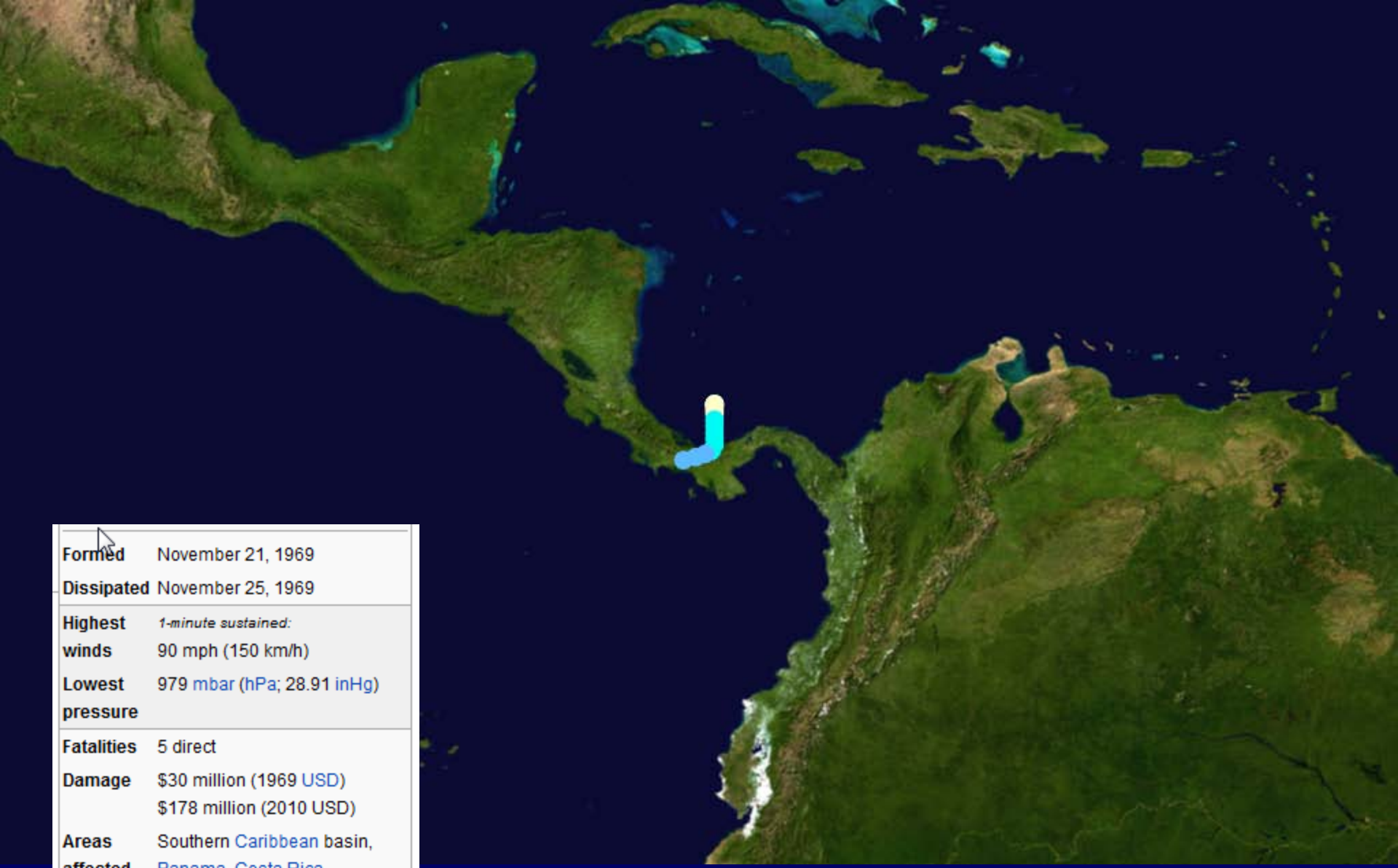
1969

NORTH ATLANTIC TROPICAL STORMS
ORIGINATING IN THE PERIOD
1969

NUMBER	TYPE	NAME	WIND (kt)	DATE (UTC)
1	T	ANNA	60	JUL 25 - AUG 5
2	H	BLANCHE	75	AUG 11 - AUG 13
3	MH	CAMILLE	165	AUG 14 - AUG 22
4	MH	DEBBIE	105	AUG 14 - AUG 25
5	T	EVE	50	AUG 25 - AUG 27
6	MH	FRANCELIA	100	AUG 29 - SEP 4
7	MH	GERDA	110	SEP 6 - SEP 10
8	H	HOLLY	75	SEP 14 - SEP 21
9	MH	INGA	100	SEP 20 - OCT 15
10	H	----	65	SEP 21 - SEP 26
11	T	----	60	SEP 24 - SEP 30
12	ST	----	50	SEP 29 - OCT 1
13	T	JENNY	40	OCT 1 - OCT 6
14	H	KARA	90	OCT 7 - OCT 19
15	H	LAURIE	90	OCT 17 - OCT 27
16	T	----	60	OCT 28 - OCT 31
17	H	----	65	OCT 30 - NOV 7
18	H	MARTHA	80	NOV 21 - NOV 25

Major Hurricane: Category 3 or higher.
Hurricane: Reached hurricane intensity.
Tropical Storm
Tropical Depression
Extratropical Stage
Wave
Subtropical Depression (winds less than 34 kt)
Subtropical Storm (winds 34 kt or higher)
5 Position/date at 7:00 am E.S.T.
4 Position at 7:00 pm E.S.T.
Tropical Cyclone Number

LAMBERT CONFORMAL CONIC PROJECTION
STANDARD PARALLELS AT 30° AND 60°
SCALE OF NAUTICAL MILES
0 250 500



Formed	November 21, 1969
Dissipated	November 25, 1969
Highest winds	*1-minute sustained:* 90 mph (150 km/h)
Lowest pressure	979 mbar (hPa; 28.91 inHg)
Fatalities	5 direct
Damage	$30 million (1969 USD) $178 million (2010 USD)
Areas affected	Southern Caribbean basin, Panama, Costa Rica

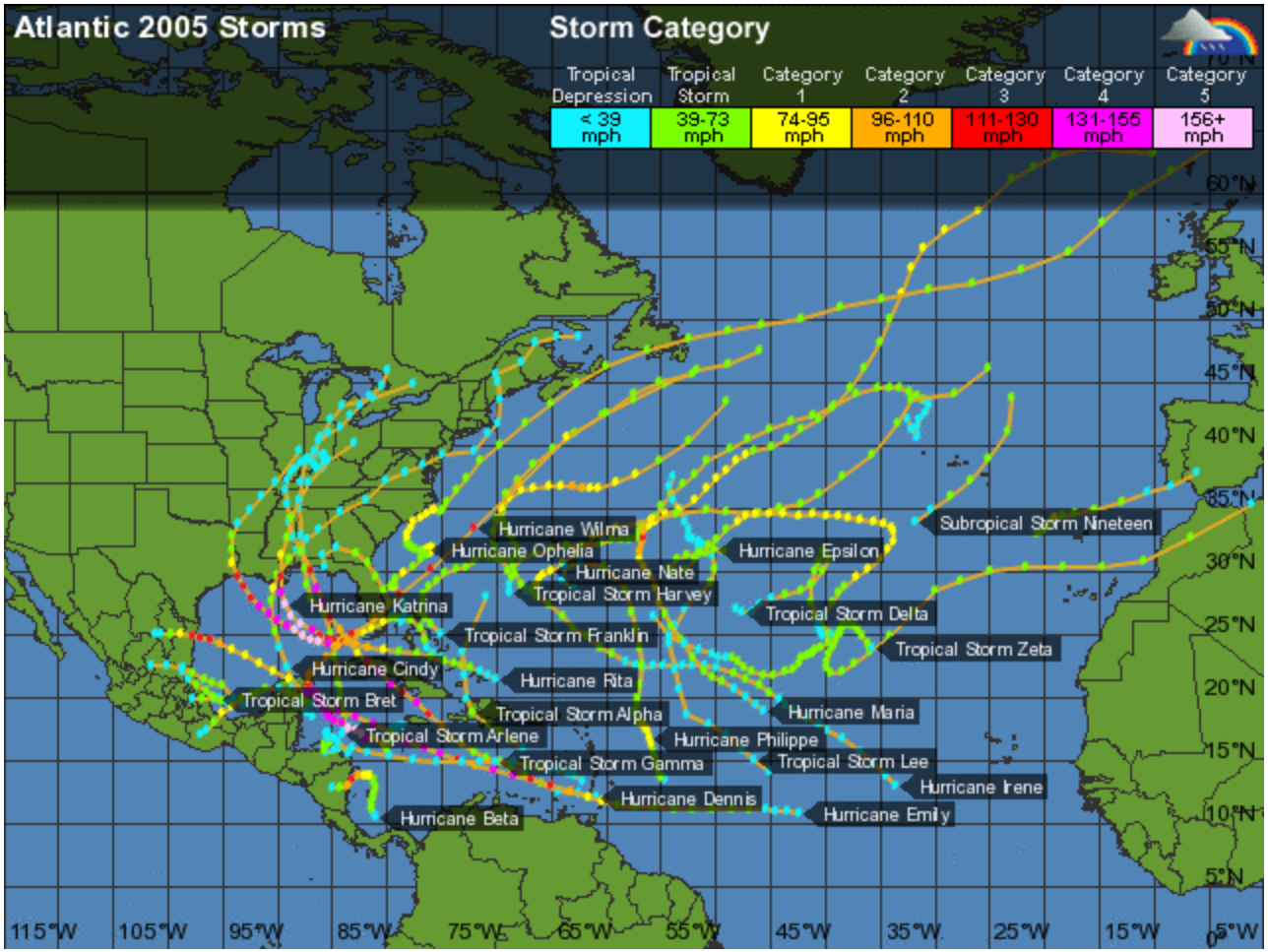
Part of the
1969 Atlantic hurricane season

Hurricane Martha

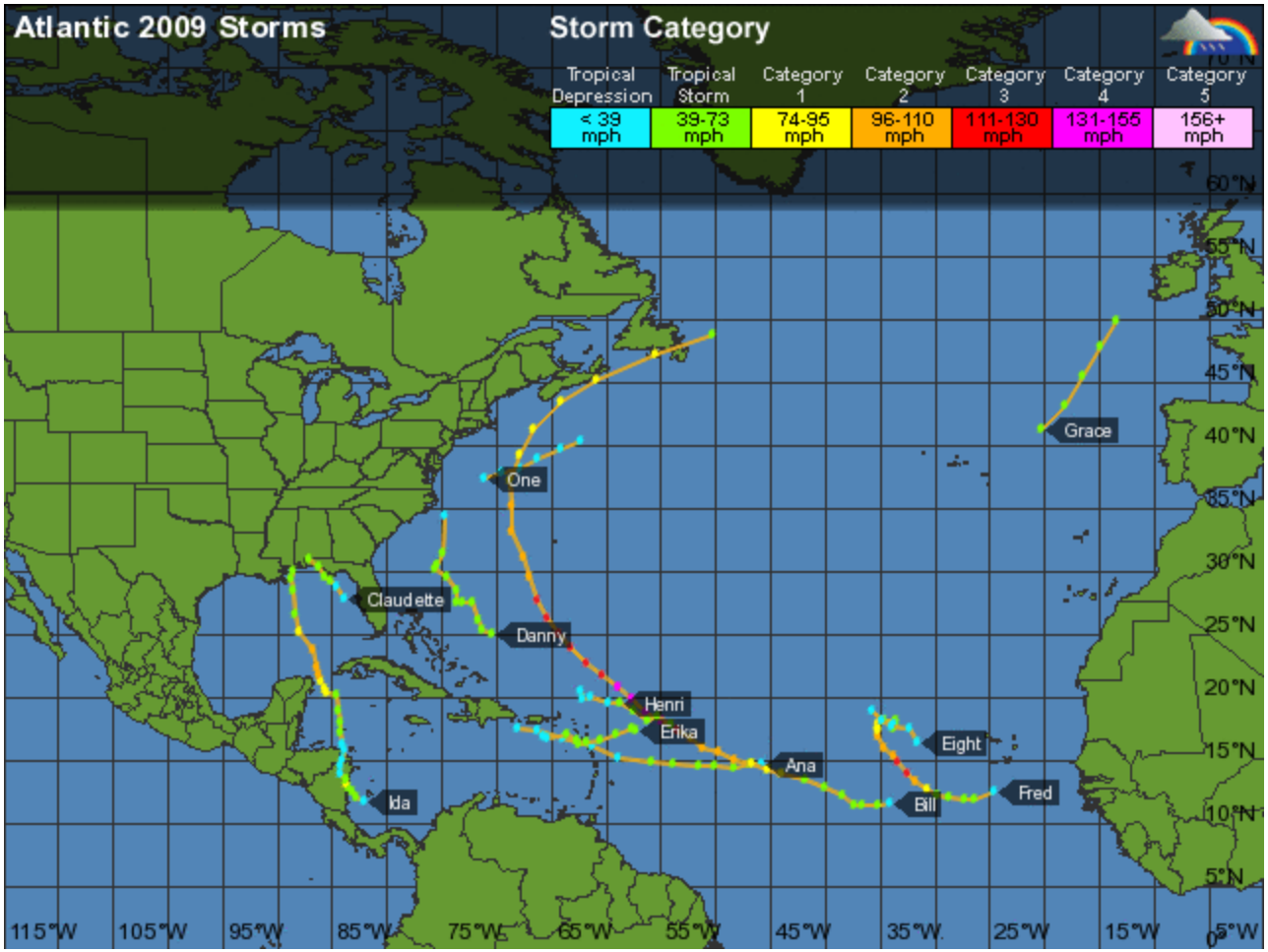
Only recorded Hurricane to make Landfall in Panama

Southernmost Tropical Cyclone landfall in the Atlantic Basin

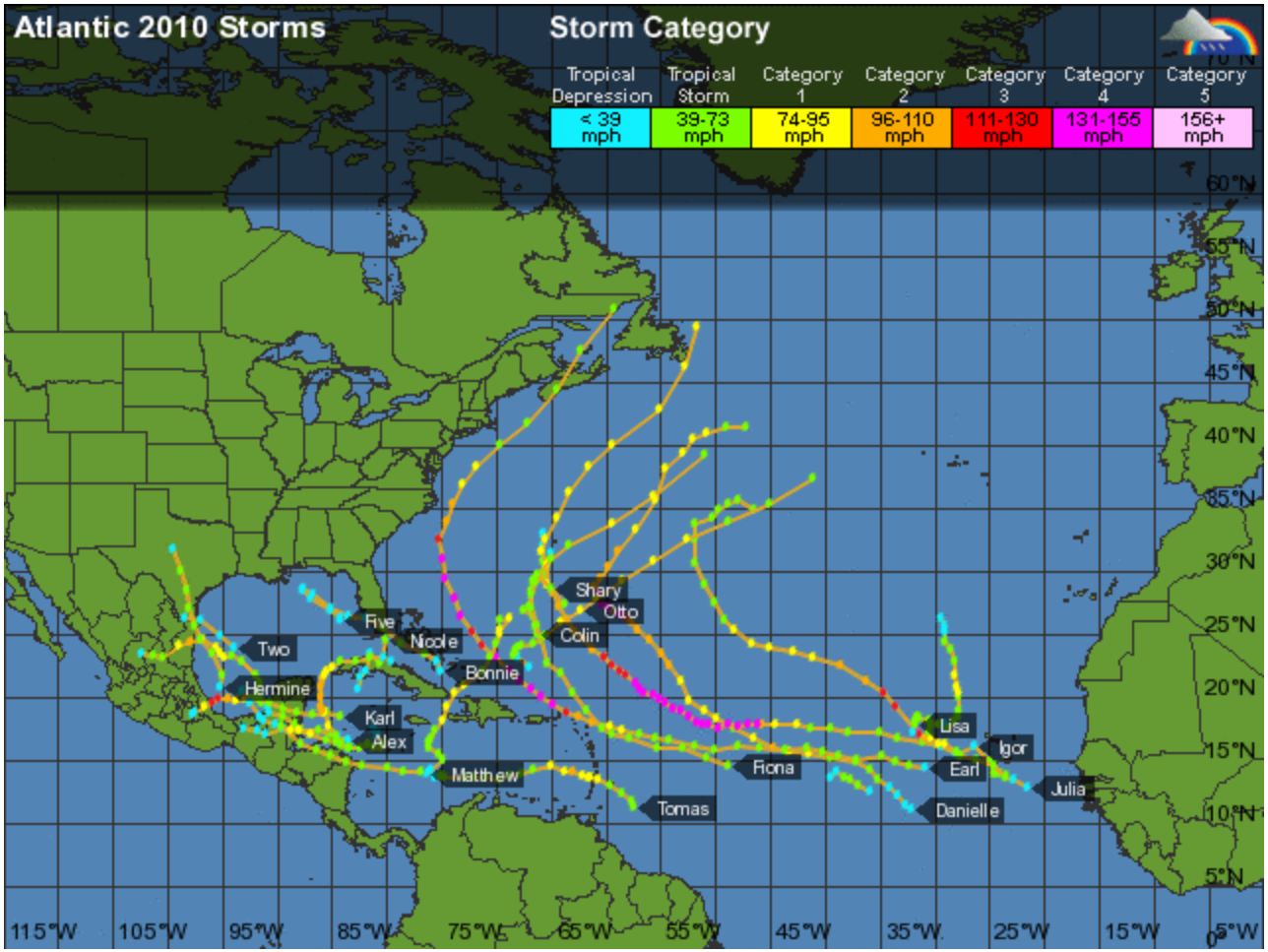
Atlantic Storms 2005



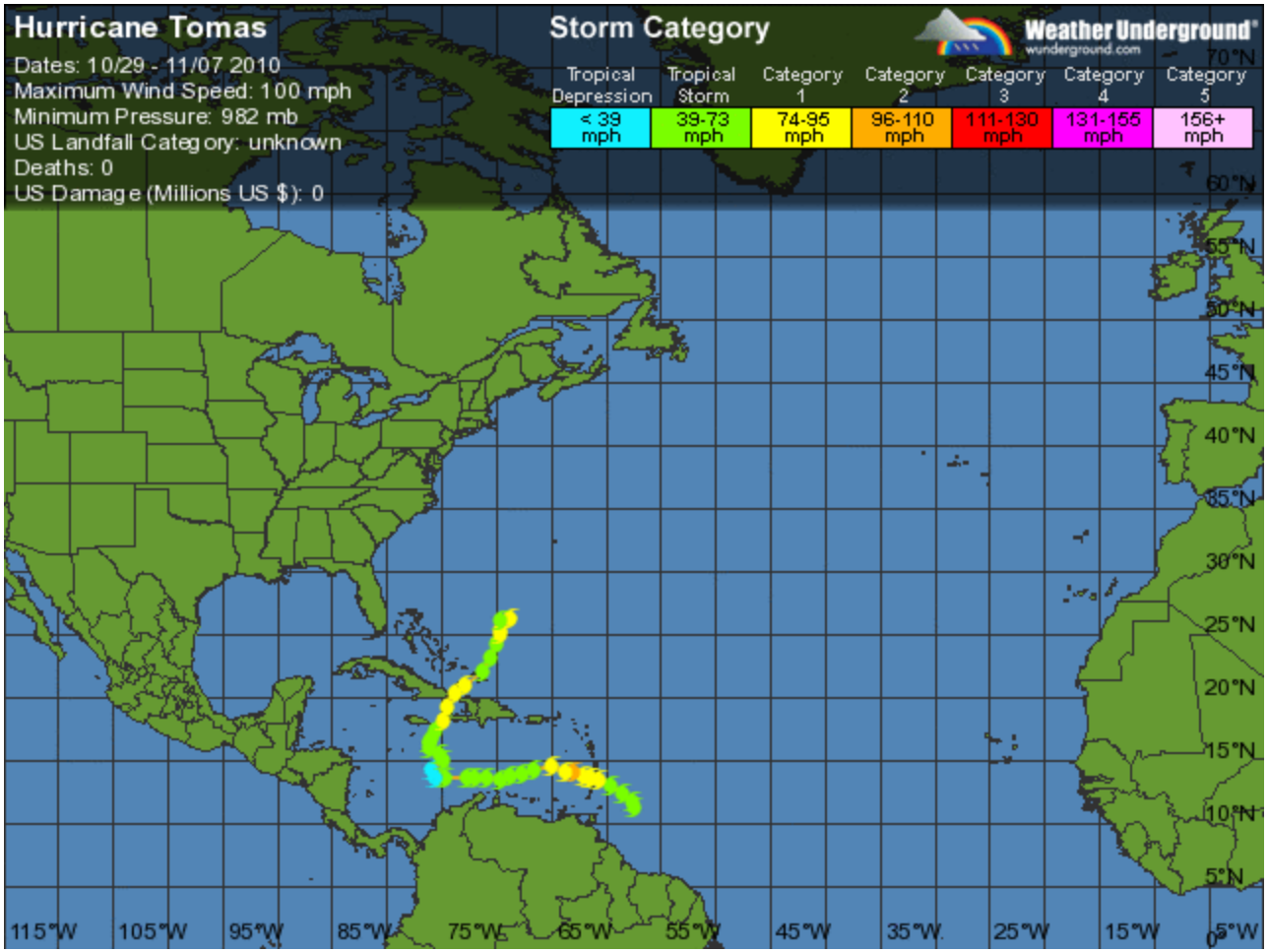
Atlantic Storms 2009



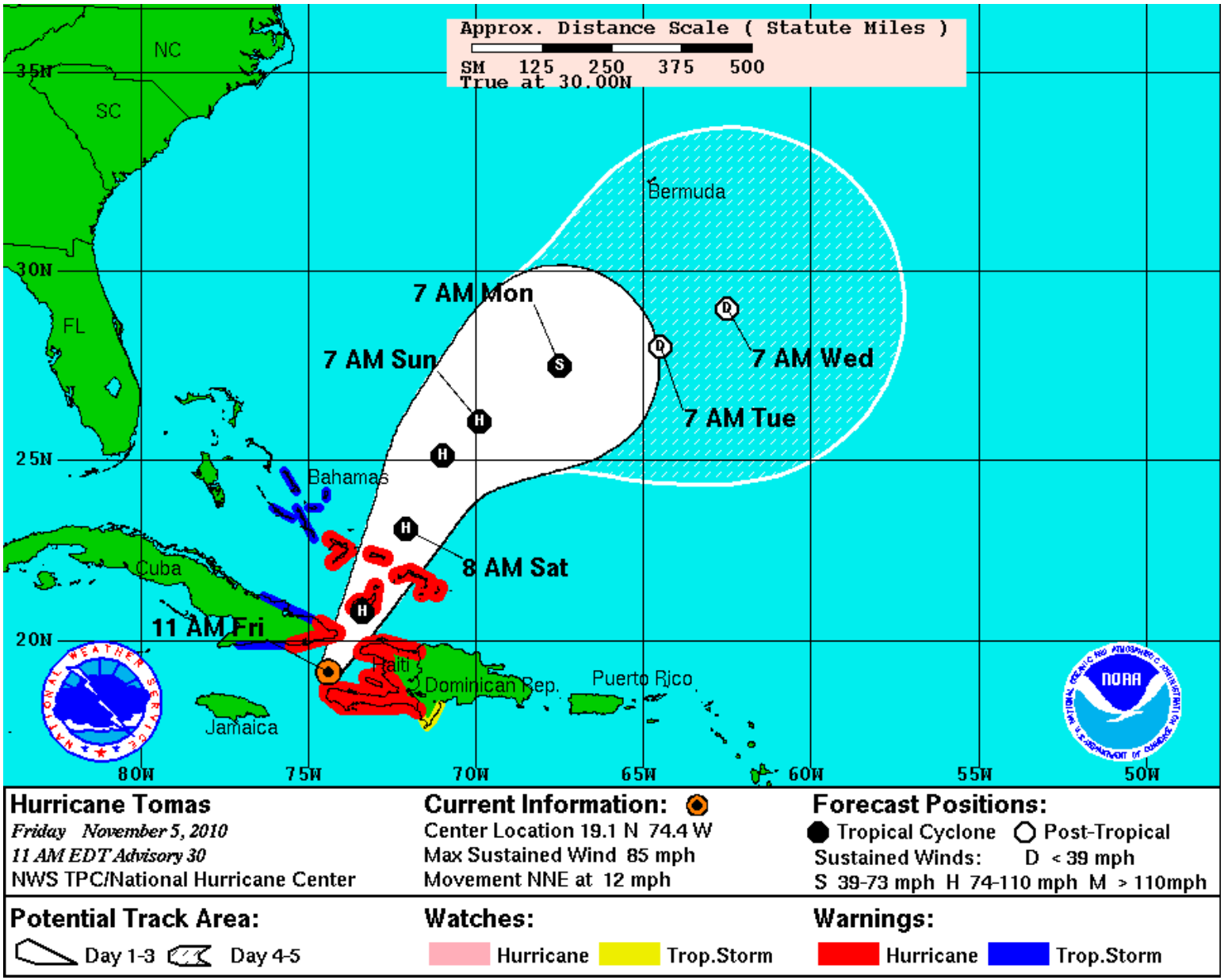
Atlantic Storms 2010



Tomas


Hurricane Tomas
Dates: 10/29 - 11/07 2010
Maximum Wind Speed: 100 mph
Minimum Pressure: 982 mb
US Landfall Category: unknown
Deaths: 0
US Damage (Millions US $): 0
Storm Category
Weather Underground
wunderground.com
Tropical Depression
< 39 mph
Tropical Storm
39-73 mph
Category 1
74-95 mph
Category 2
96-110 mph
Category 3
111-130 mph
Category 4
131-155 mph
Category 5
156+ mph
70°N
60°N
55°N
50°N
45°N
40°N
35°N
30°N
25°N
20°N
15°N
10°N
5°N
115°W
105°W
95°W
85°W
75°W
65°W
55°W
45°W
35°W
25°W
15°W
5°W
0°

Tomas November 5, 2010



Hurricane Tomas
Friday November 5, 2010
11 AM EDT Advisory 30
NWS TPC/National Hurricane Center

Current Information:
Center Location 19.1 N 74.4 W
Max Sustained Wind 85 mph
Movement NNE at 12 mph

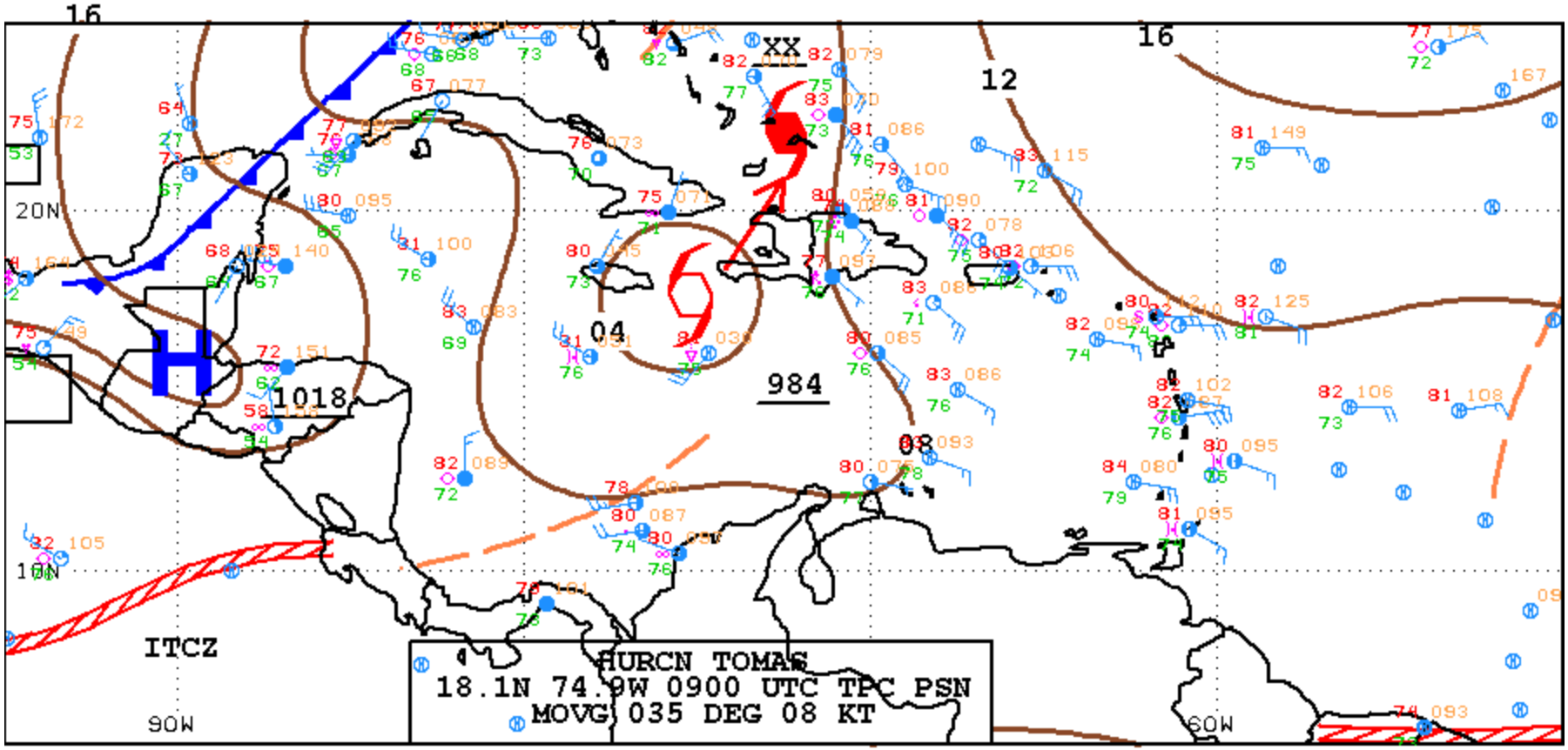
Forecast Positions:
Tropical Cyclone Post-Tropical
Sustained Winds: D < 39 mph
S 39-73 mph H 74-110 mph M > 110mph

Potential Track Area:
Day 1-3 Day 4-5

Watches:
Hurricane Trop.Storm

Warnings:
Hurricane Trop.Storm

Tomas November 5, 2010

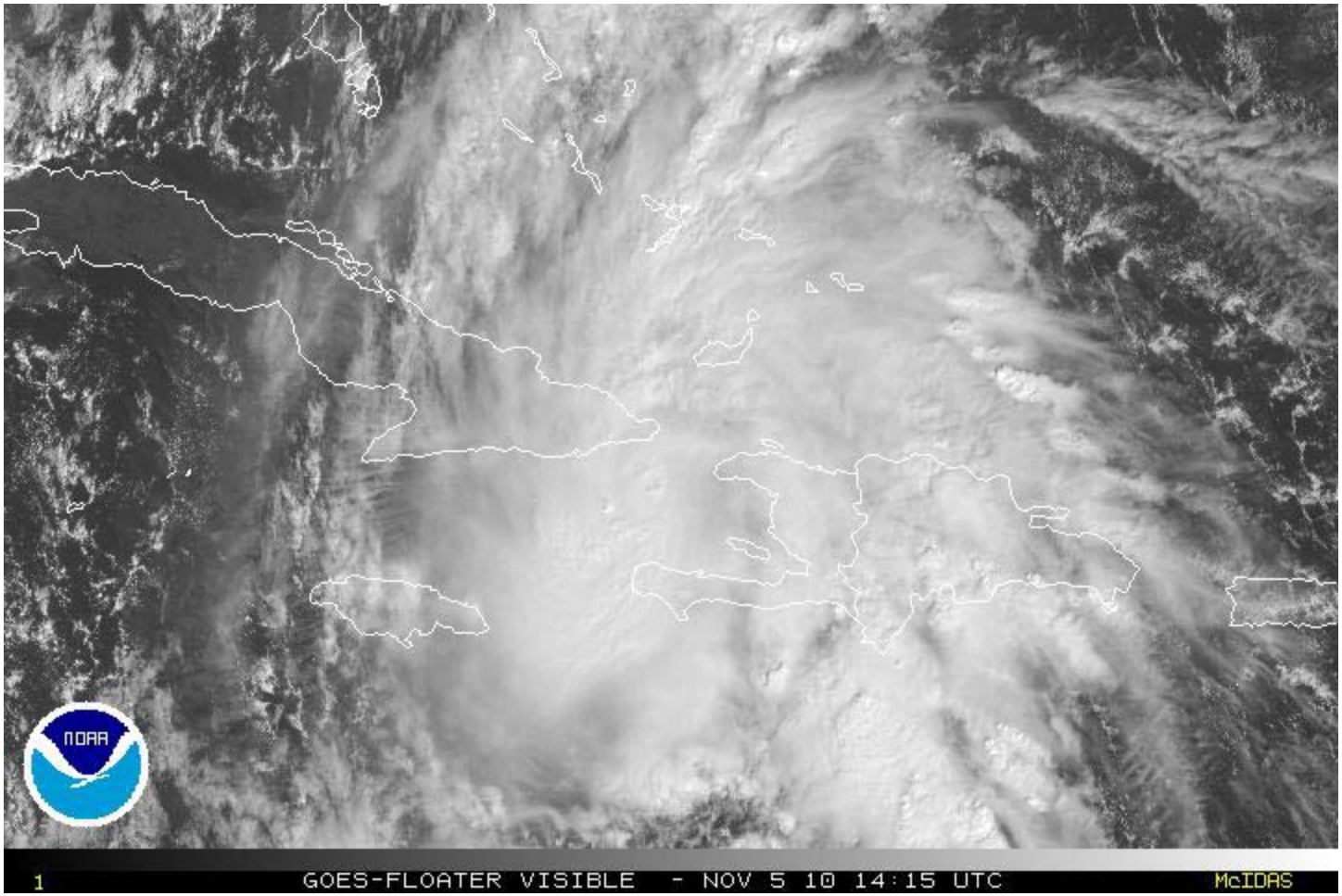


NOAA

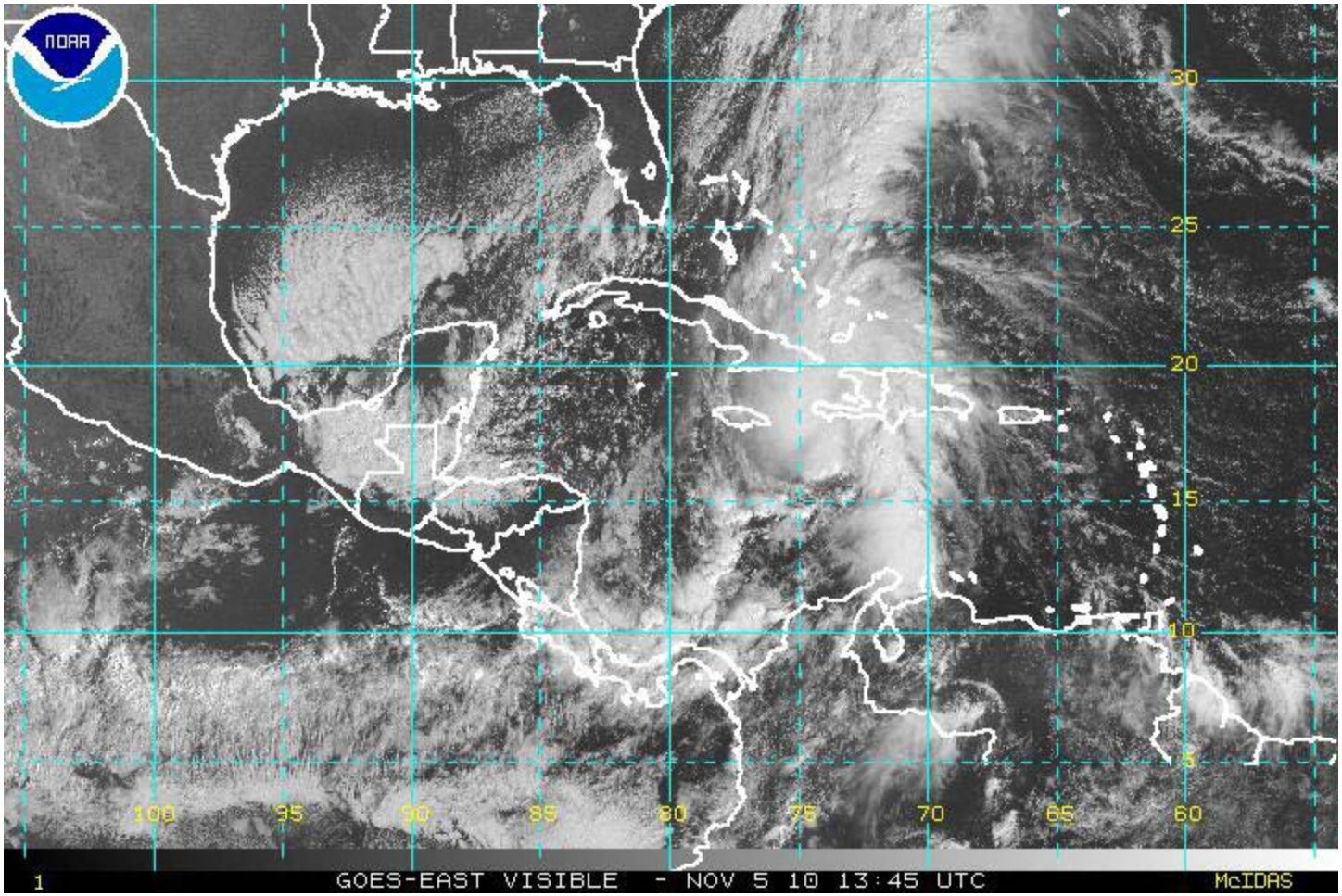
06Z CARIBBEAN SURFACE ANALYSIS
ISSUED: Fri Nov 5 08:40:25 UTC 2010

TROPICAL PREDICTION CENTER
MIAMI, FLORIDA
BY TAFB ANALYST: MKH
COLLABORATING CENTERS: TPC OPC HPC

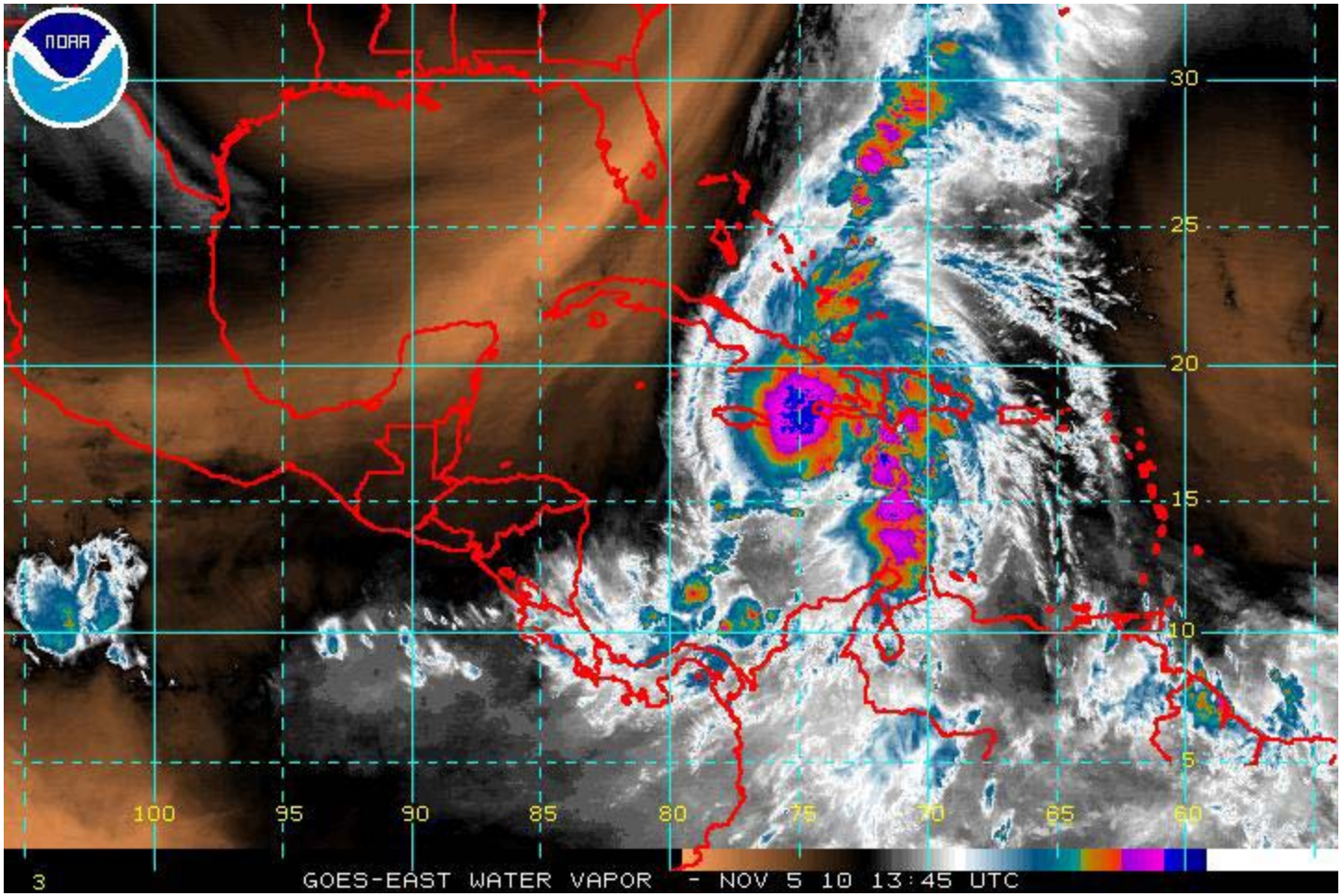
Tomas November 5, 2010



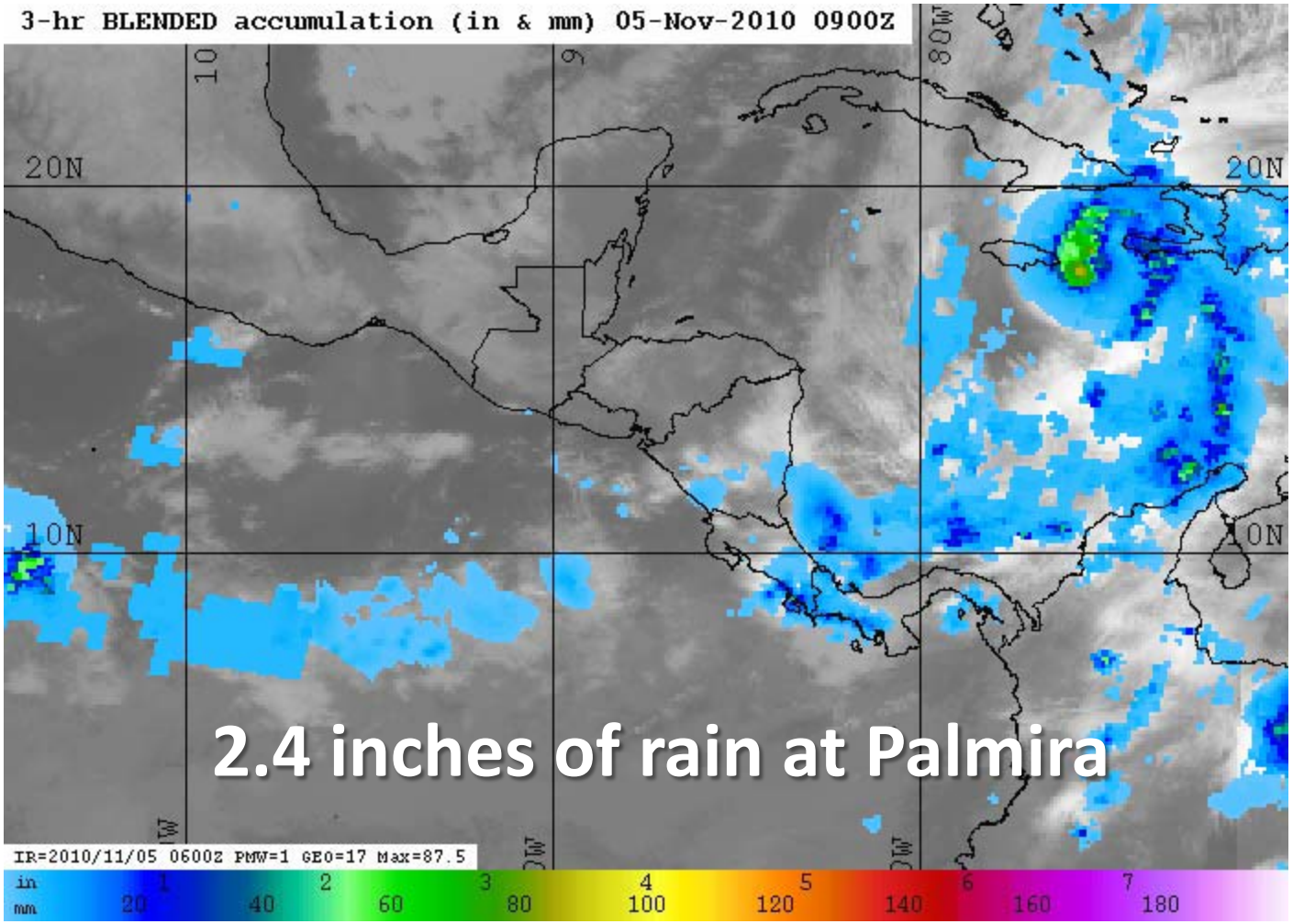
Tomas November 5, 2010



Tomas November 5, 2010

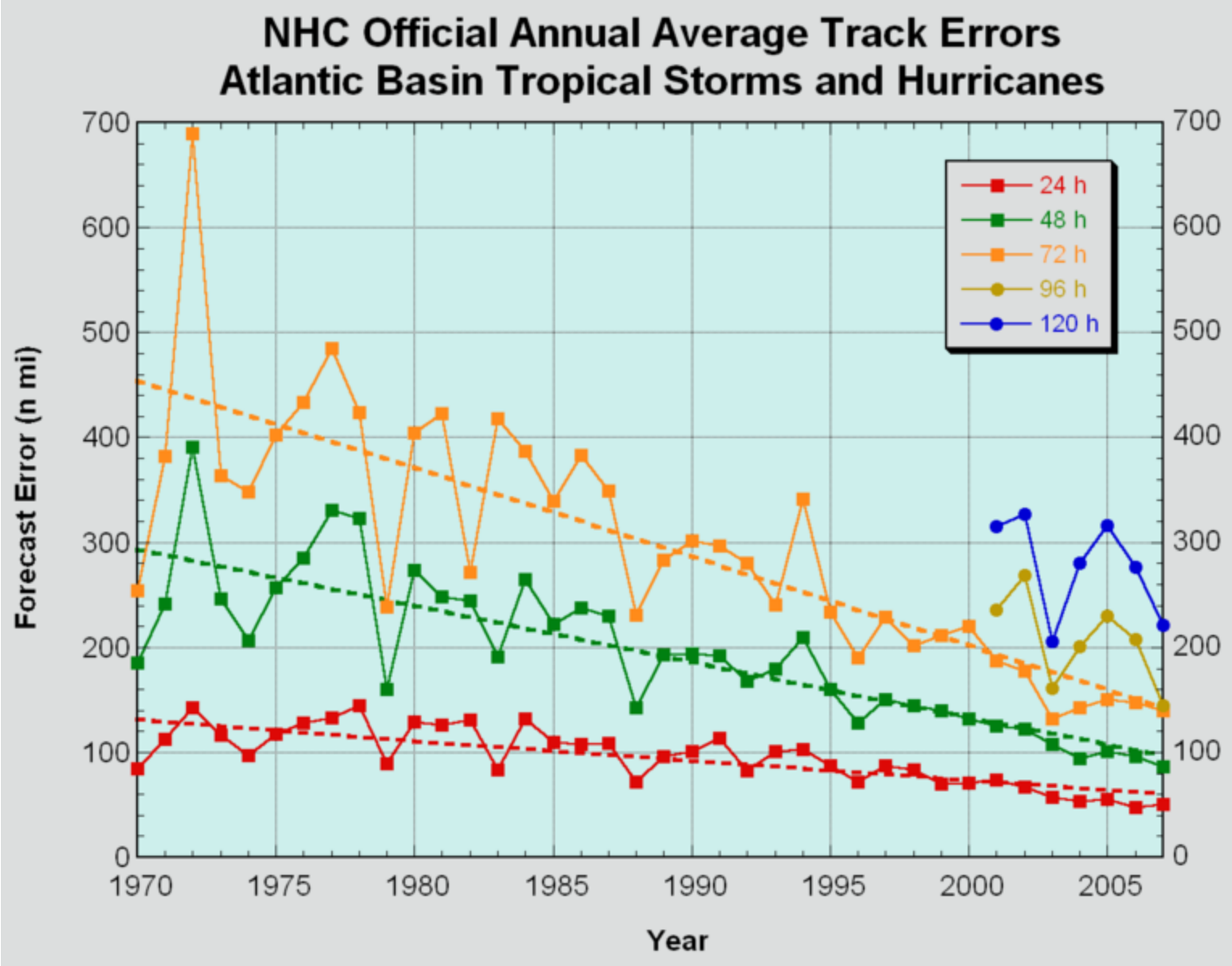


Tomas November 5, 2010



2.4 inches of rain at Palmira

Hurricane Prediction



Predicting Rain

Weather models are not good at predicting rain. Particularly in hilly terrain, this can lead to great damage arising from late warnings of floods, or even none at all.

Science Daily (June 6, 2007)

ENSO

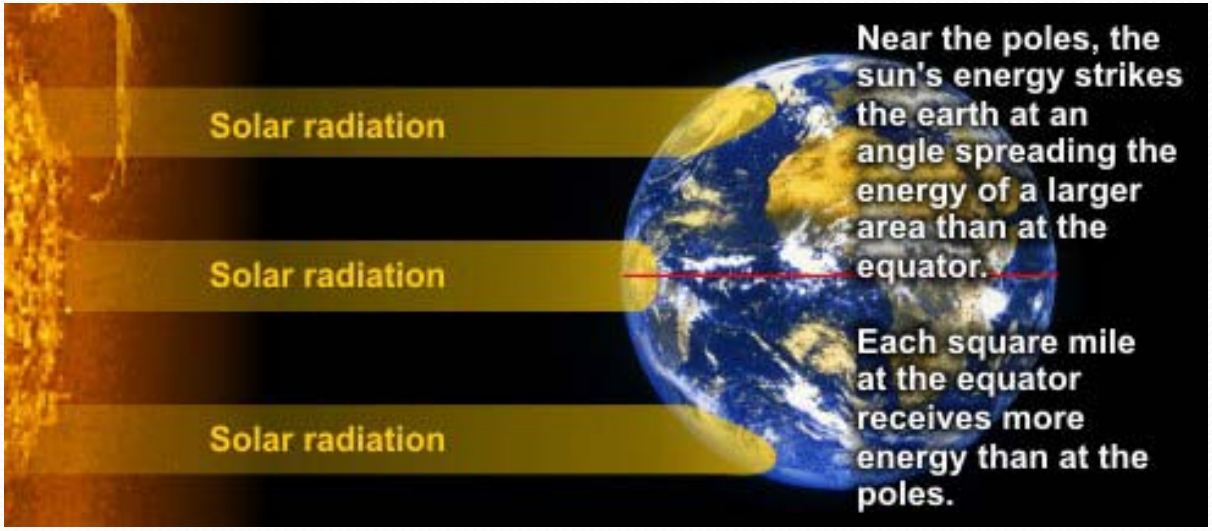
El Niño Southern Oscillation

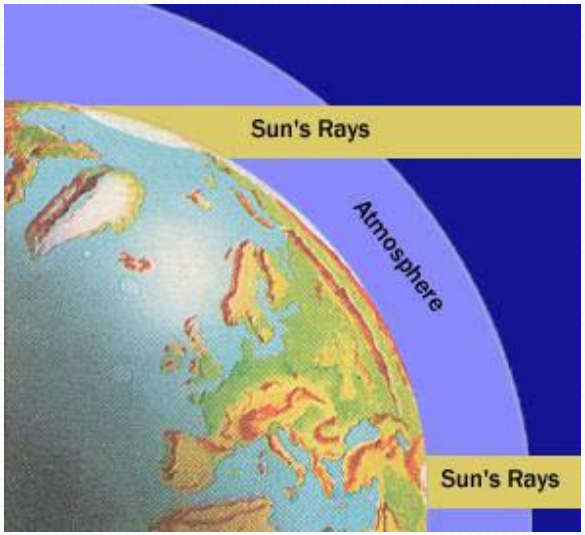
El Niño

LINT TRAP

M. WUERKER

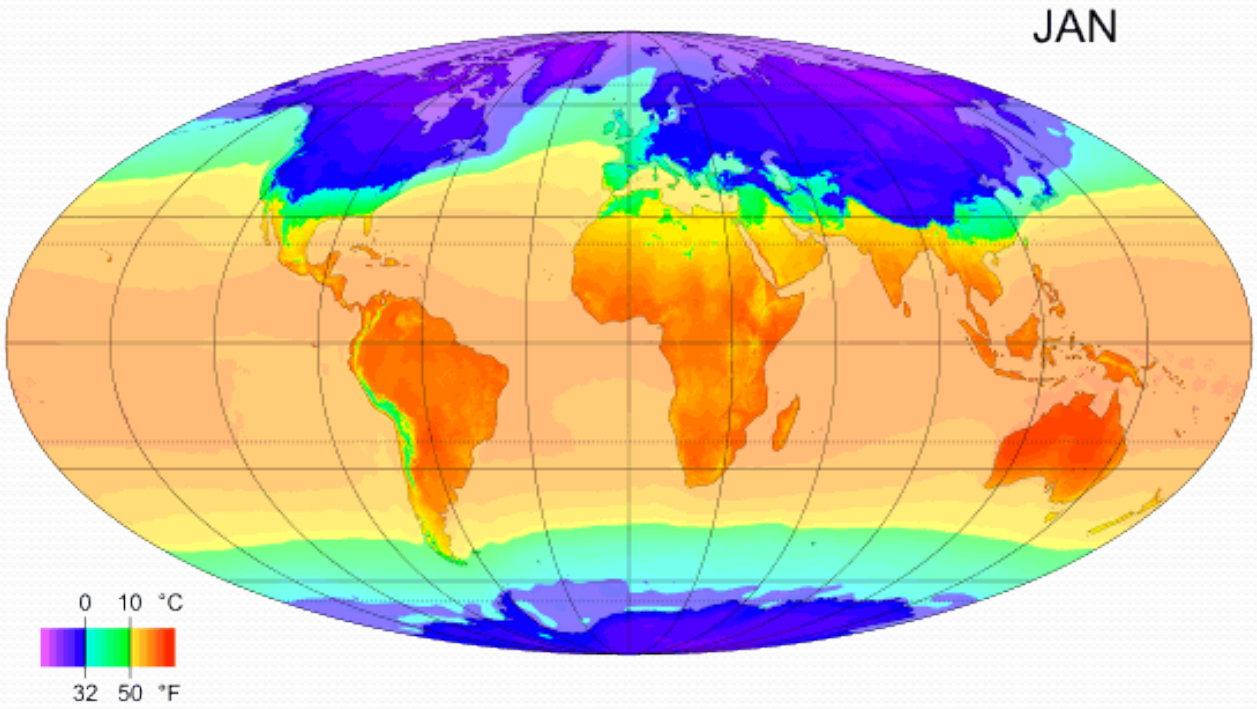
Some Basics



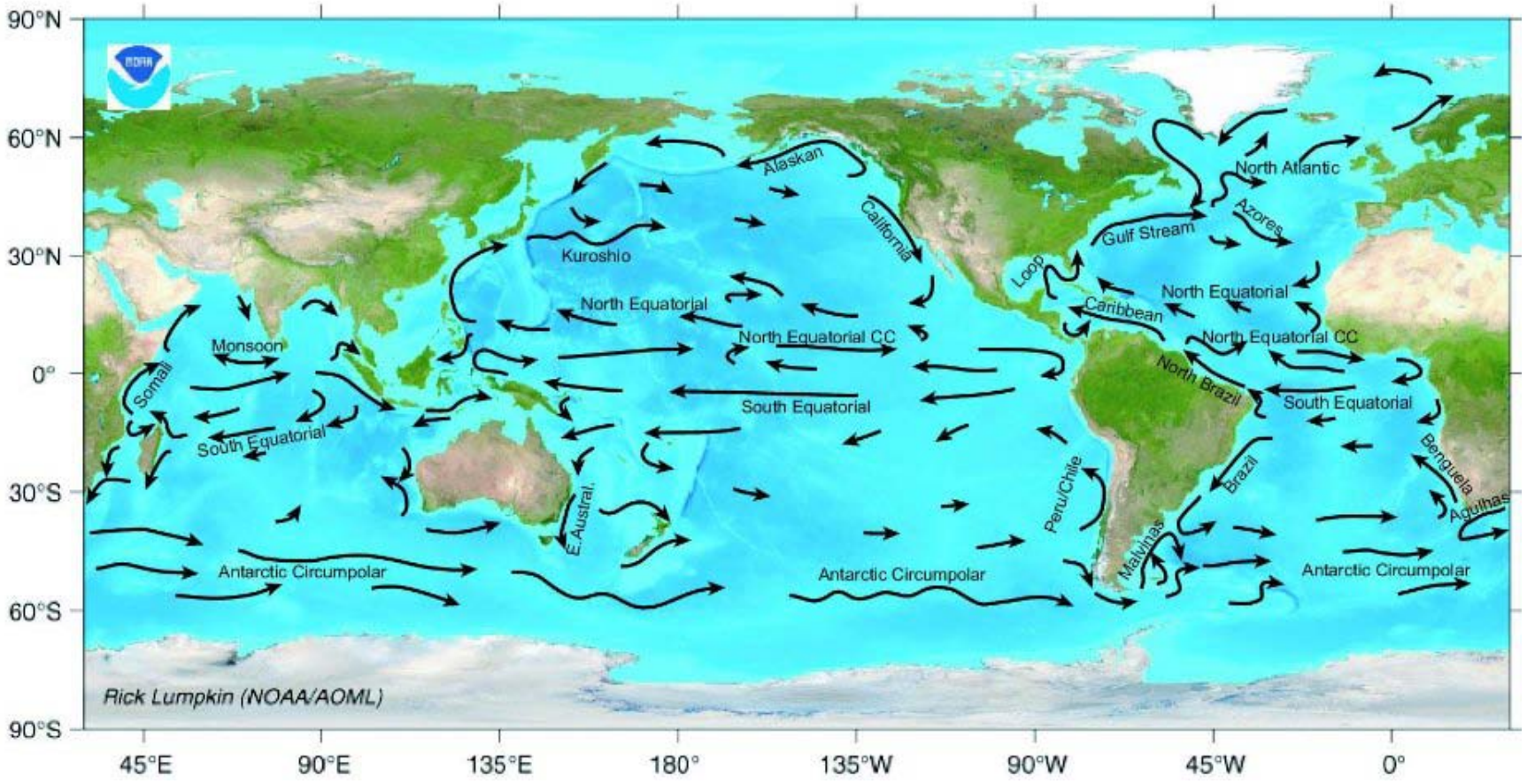


The Earth is warmer around the Equator!

Monthly Global Temperatures

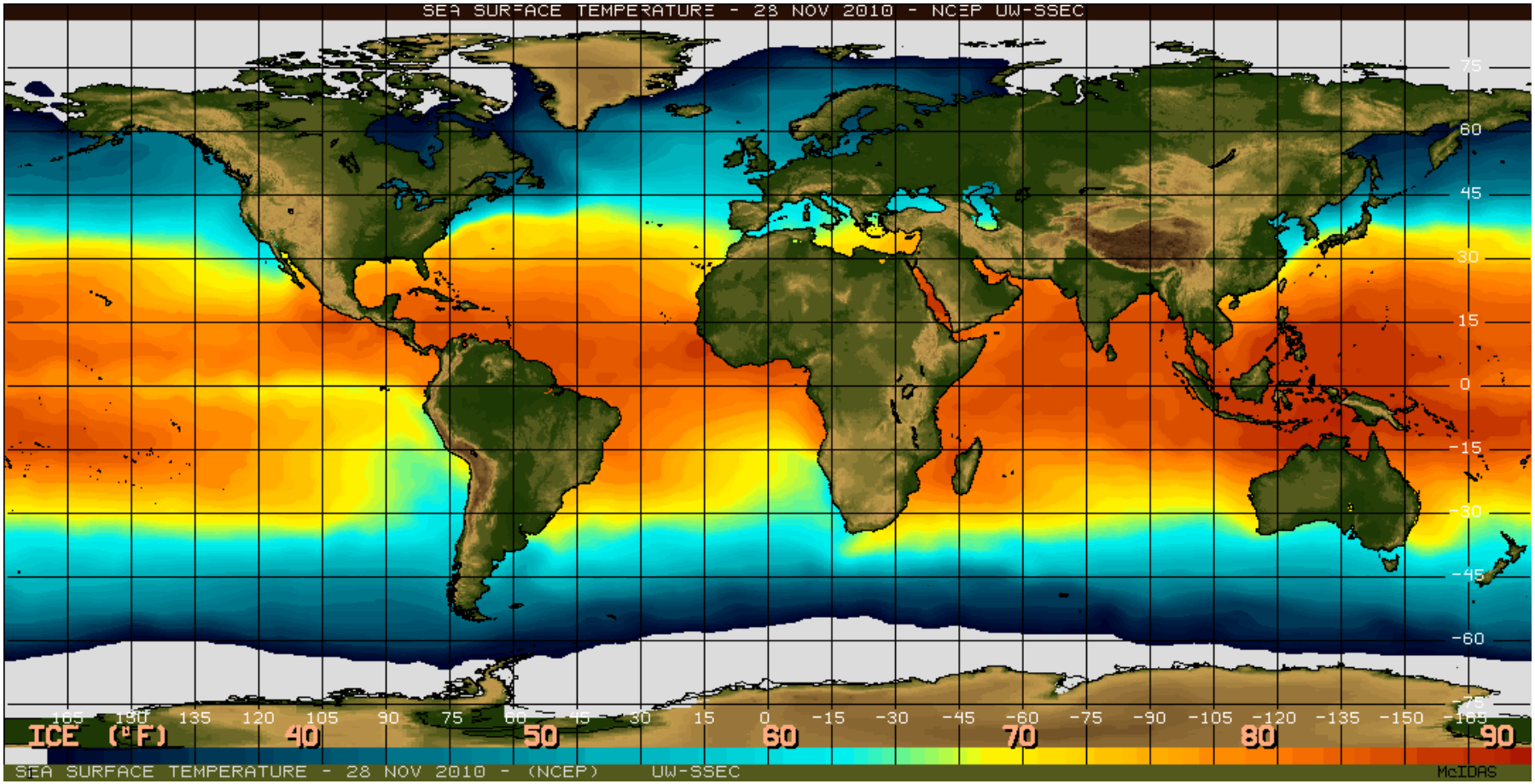


Ocean Currents

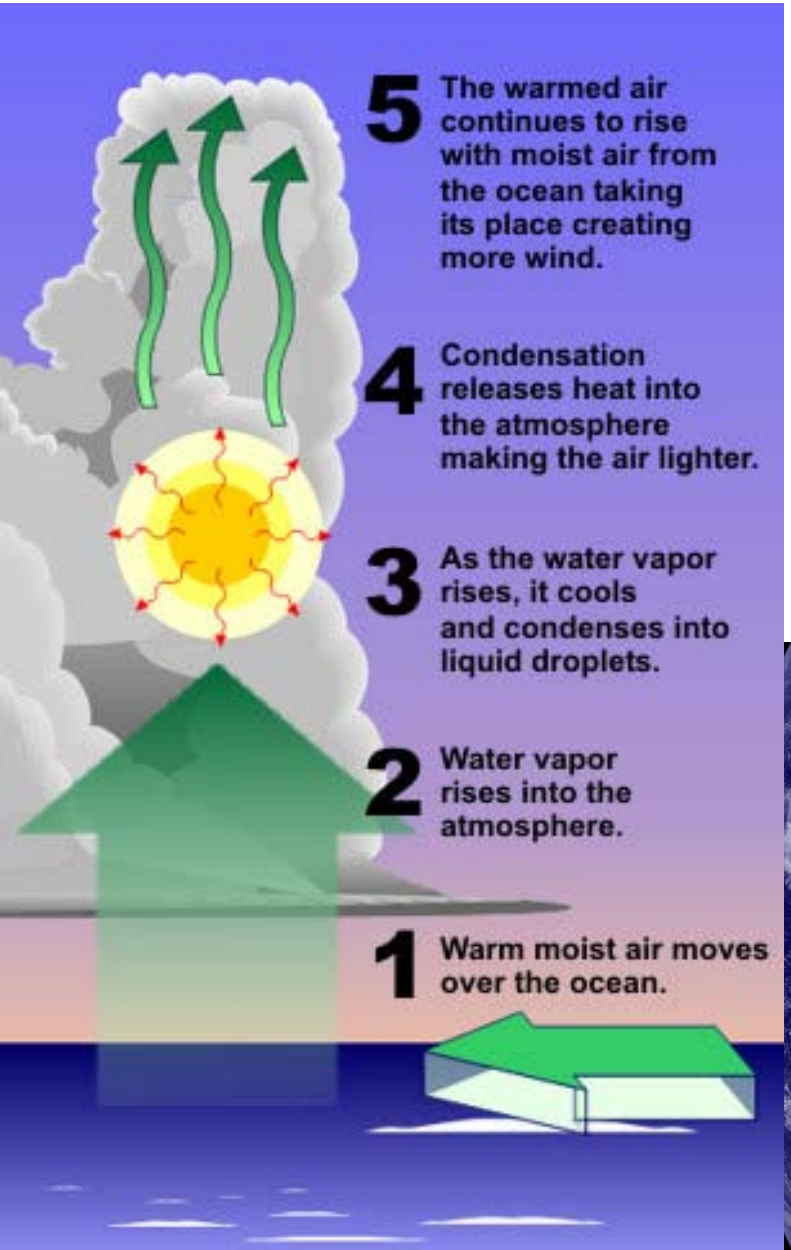


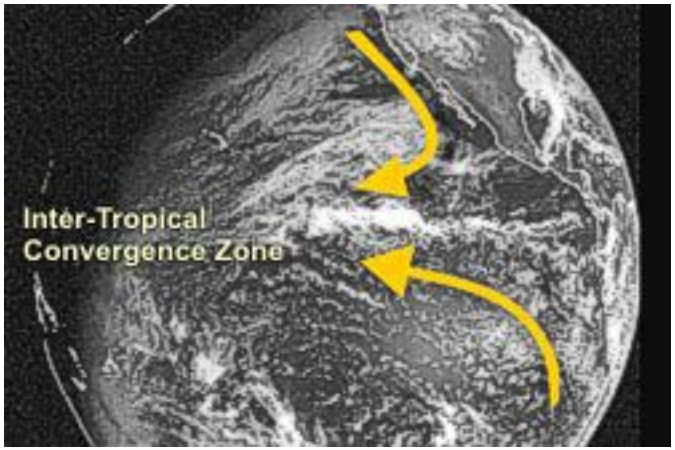
Pacific Ocean – largest ocean – 64.1 million square miles – 30% of Earth
Atlantic Ocean – second largest ocean – 41.1 million square miles – 22% of Earth
Indian Ocean – third largest ocean – 26.5 square miles - 20% of Earth

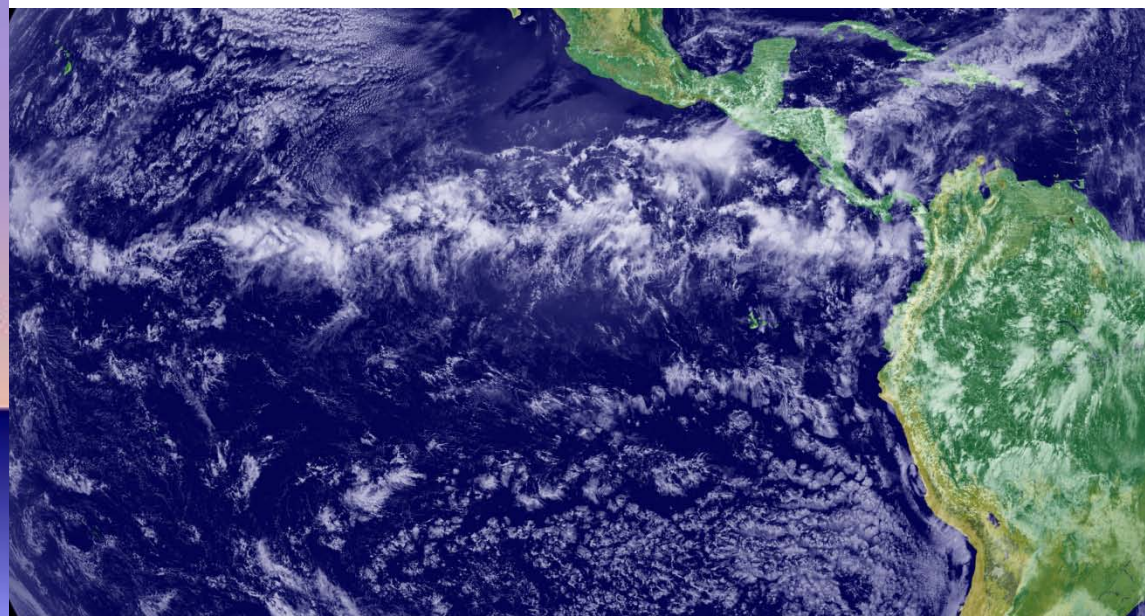
Sea Surface Temperatures



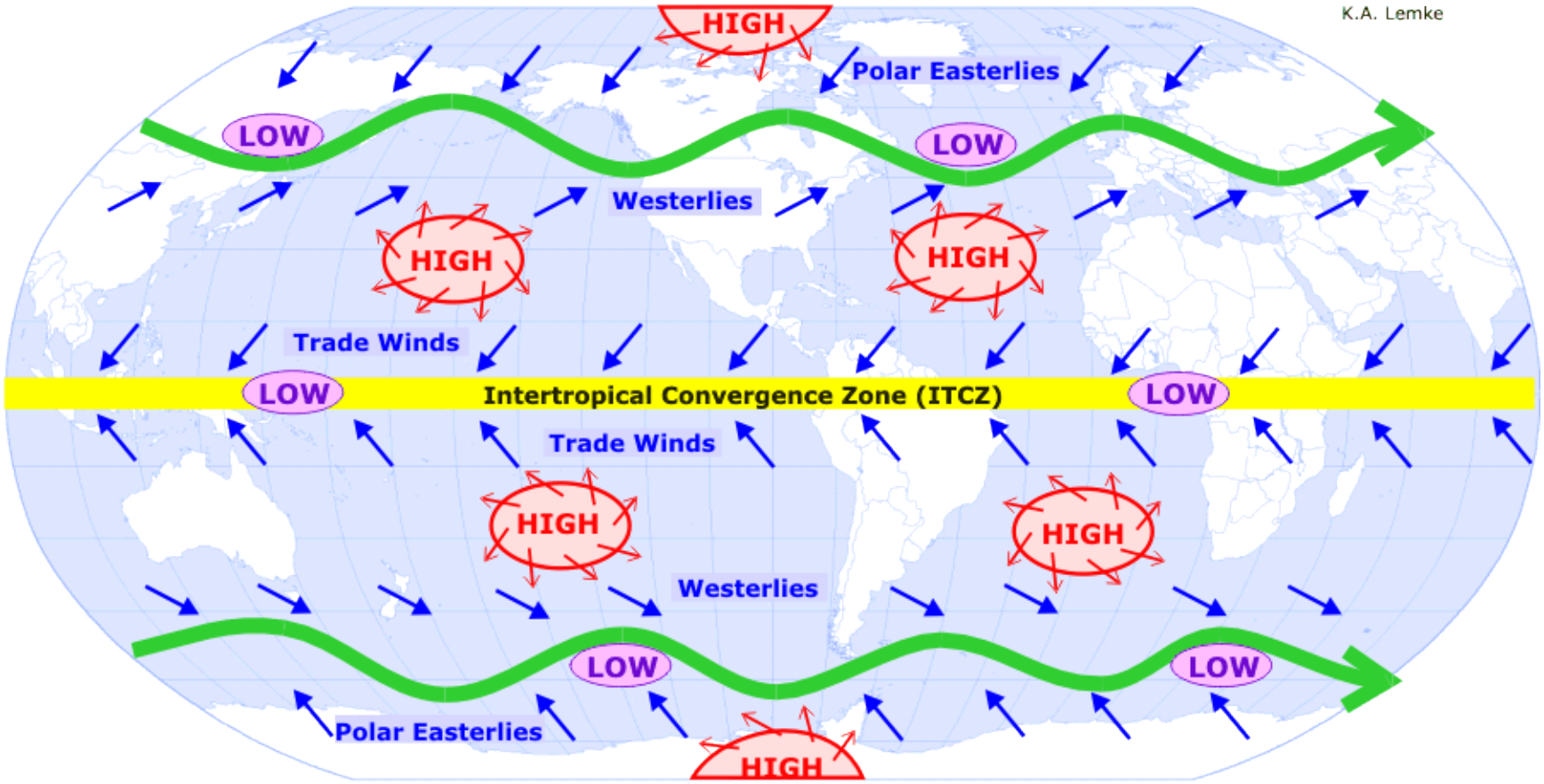
Warm Air and Moisture Rises



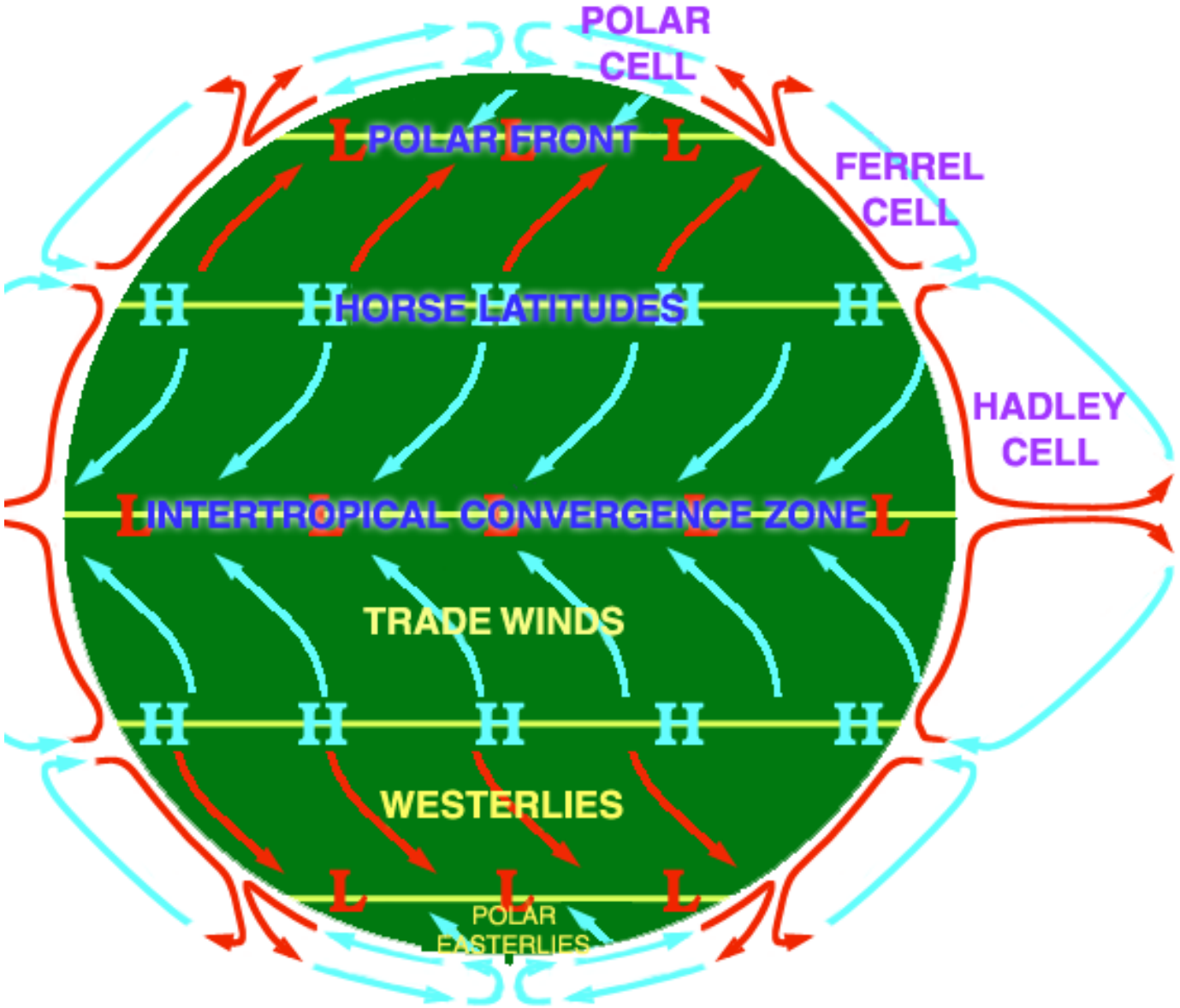




Air Movement - Winds



Air Movement - Winds

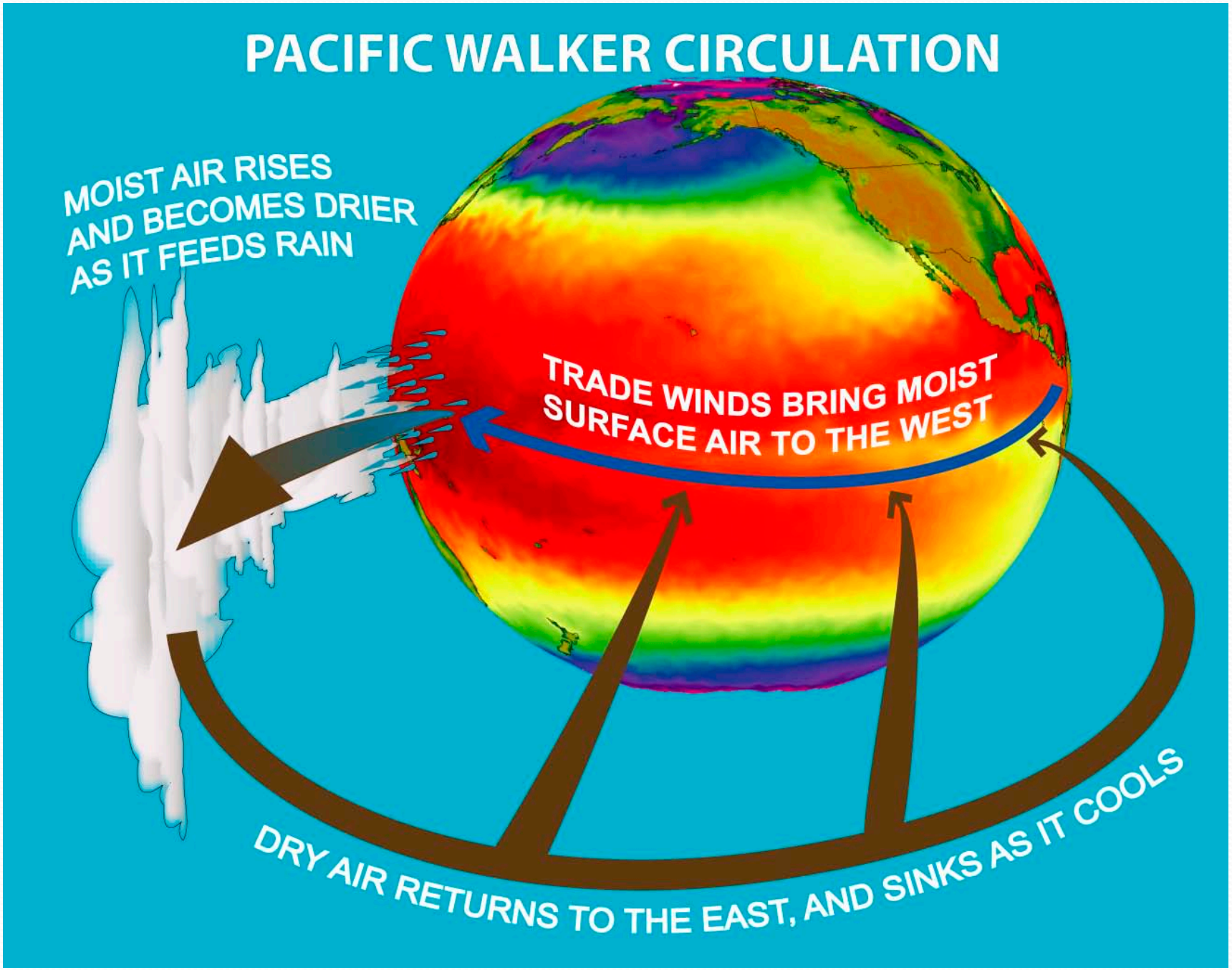


Southern Oscillation (El Niño)

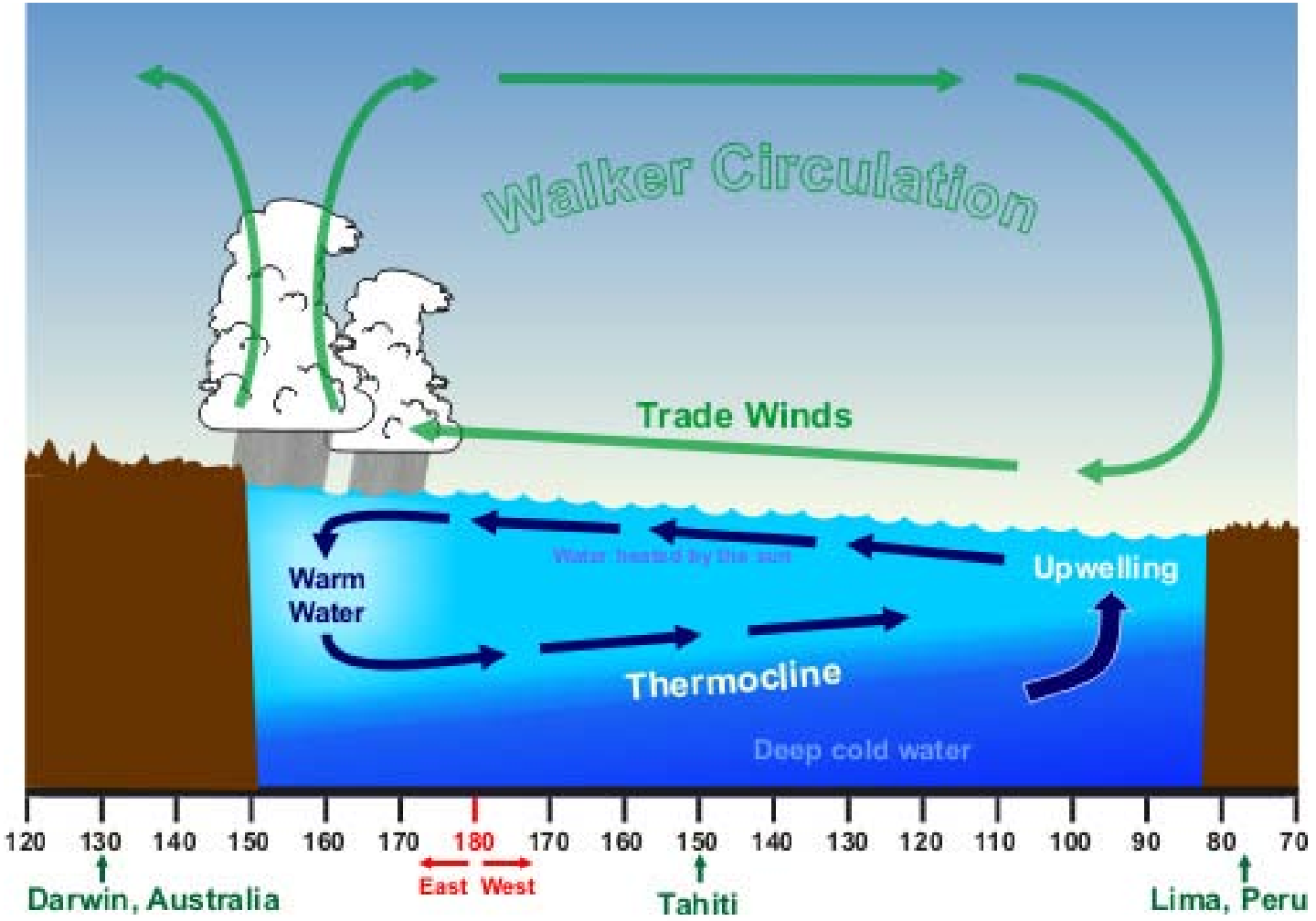
"By the Southern Oscillation is implied the tendency of pressure at stations in the Pacific … to increase, while pressure in the region of the Indian Ocean … decreases."

1924

Sir Gilbert Thomas Walker
1868-1958


PACIFIC WALKER CIRCULATION
MOIST AIR RISES
AND BECOMES DRIER
AS IT FEEDS RAIN
TRADE WINDS BRING MOIST
SURFACE AIR TO THE WEST
DRY AIR RETURNS TO THE EAST, AND SINKS AS IT COOLS

Normal Conditions

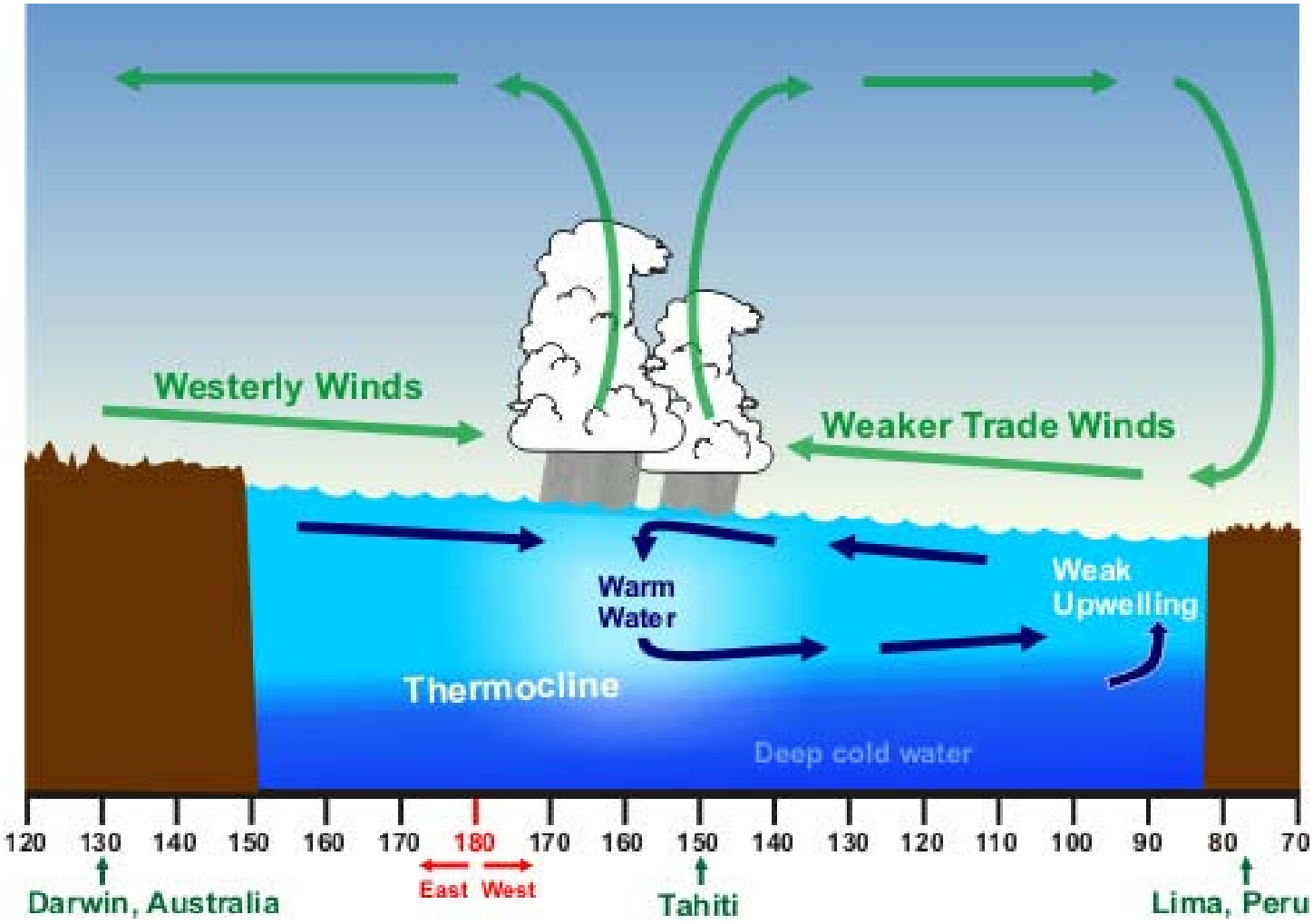


ENSO
El Niño-Southern Oscillation

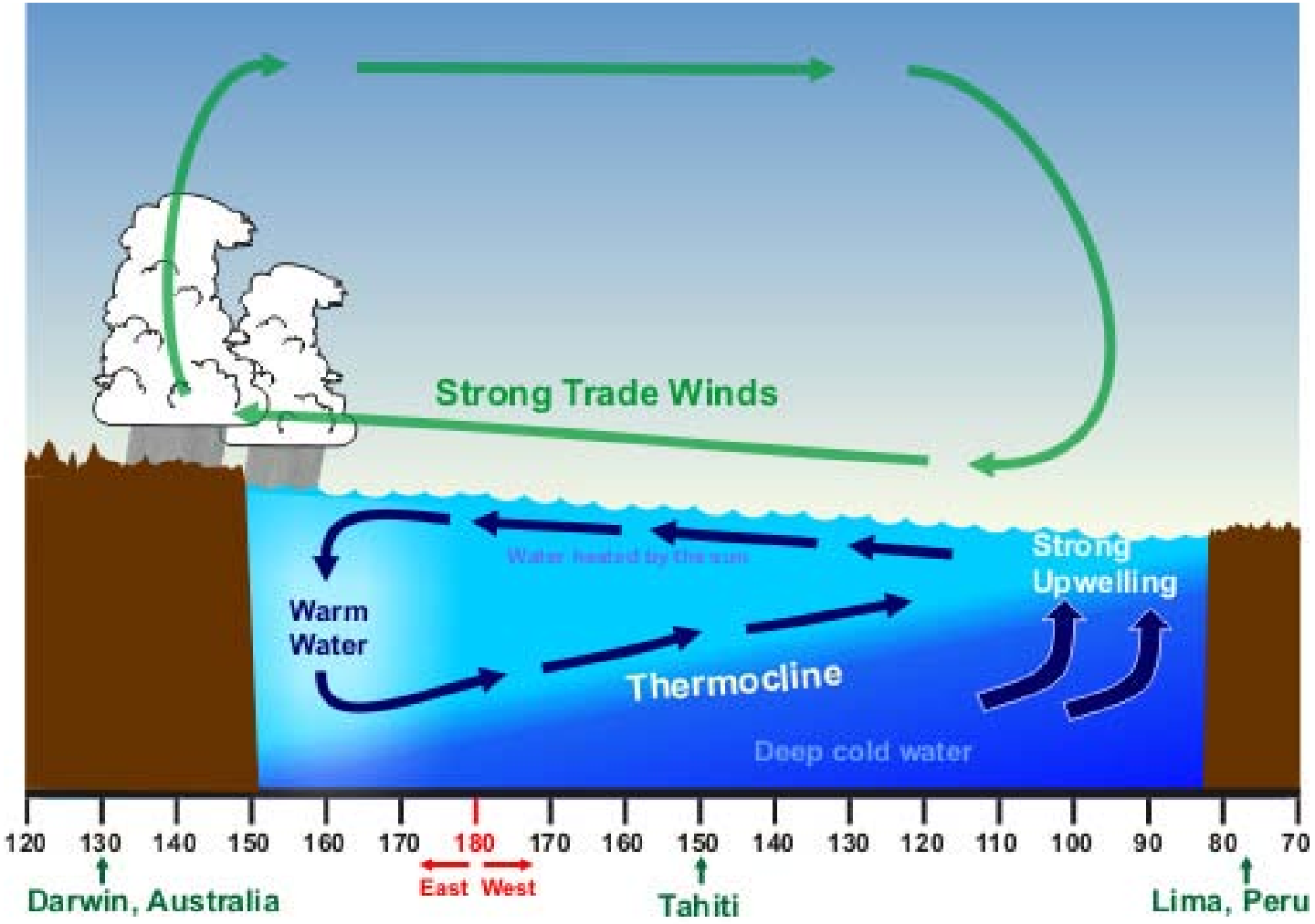
The ENSO cycle refers to the coherent and sometimes very strong year-to-year variations in sea-surface temperatures, convective rainfall, surface air pressure, and atmospheric circulation that occur across the equatorial Pacific Ocean.

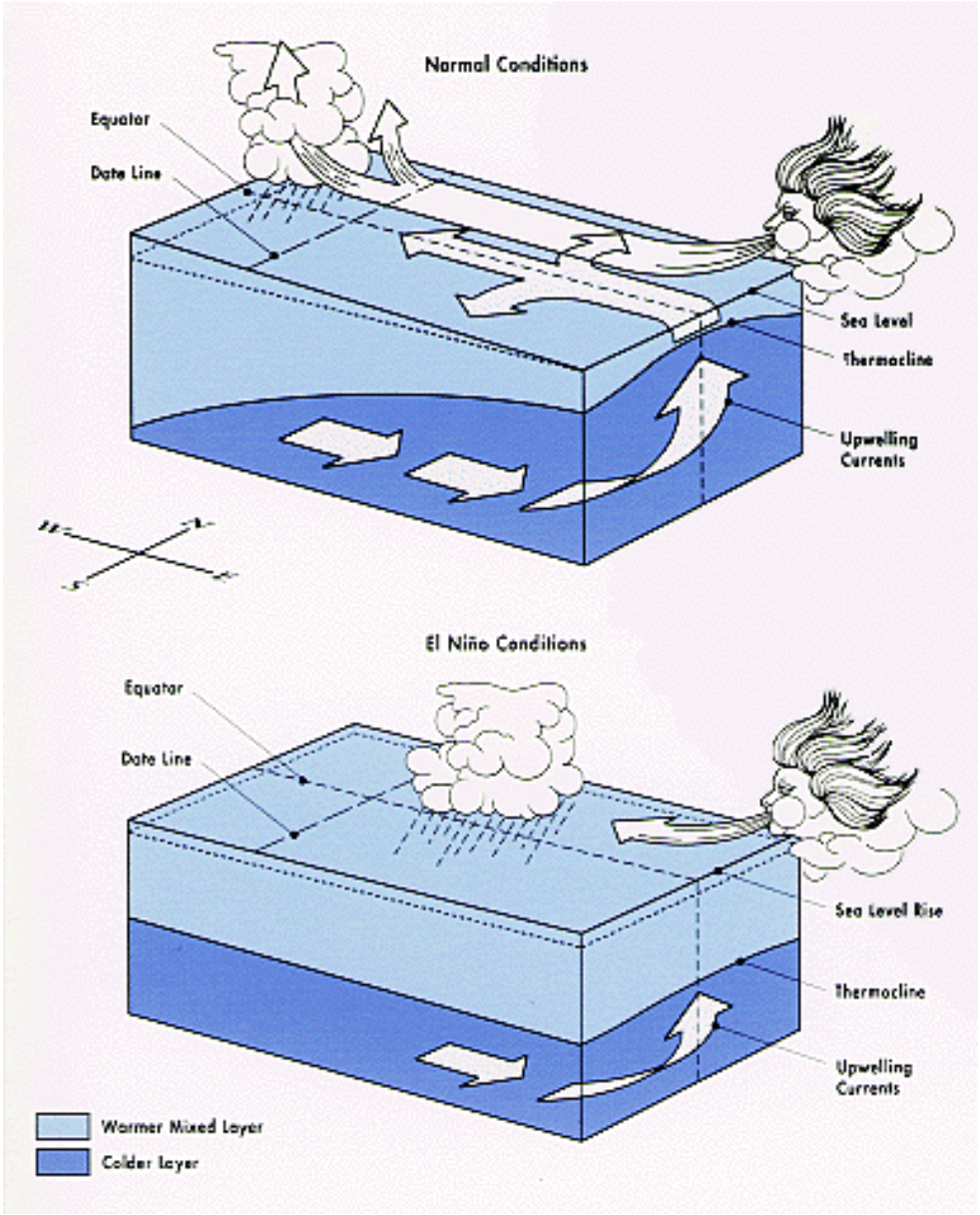
El Niño and La Niña represent opposite extremes in the ENSO cycle.

El Niño Conditions



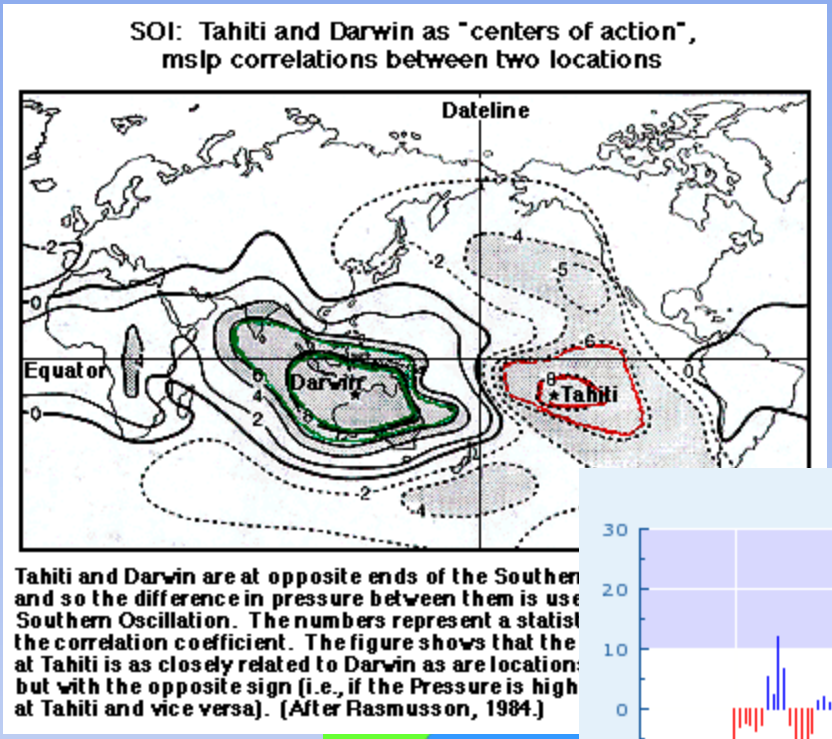
La Niña Conditions



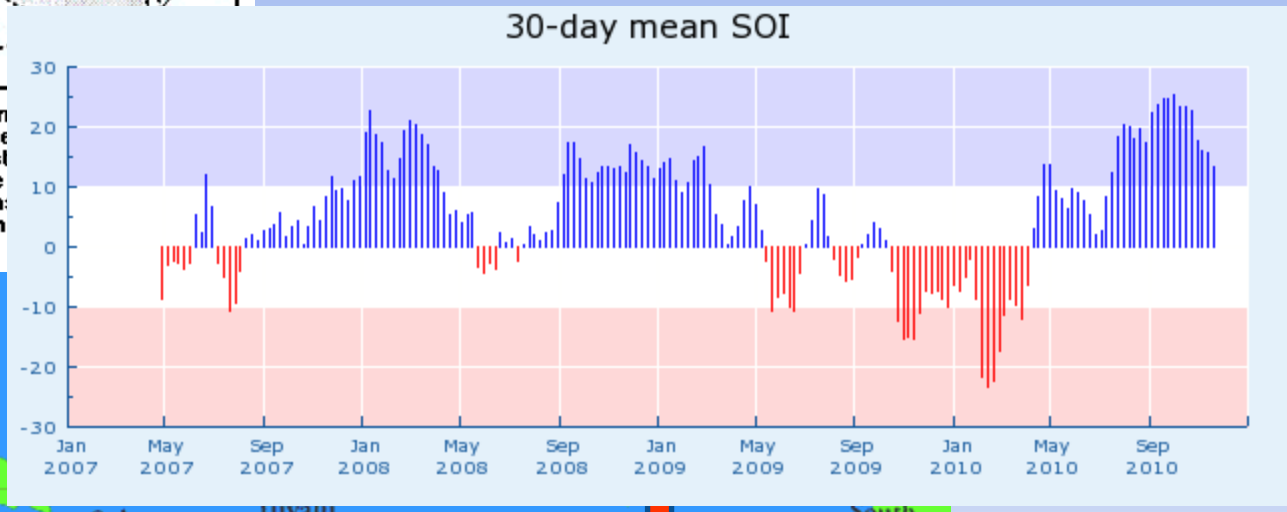

Normal Conditions
Equator
Date Line
Sea Level
Thermocline
Upwelling Currents
El Niño Conditions
Equator
Date Line
Sea Level Rise
Thermocline
Upwelling Currents
Warmer Mixed Layer
Colder Layer

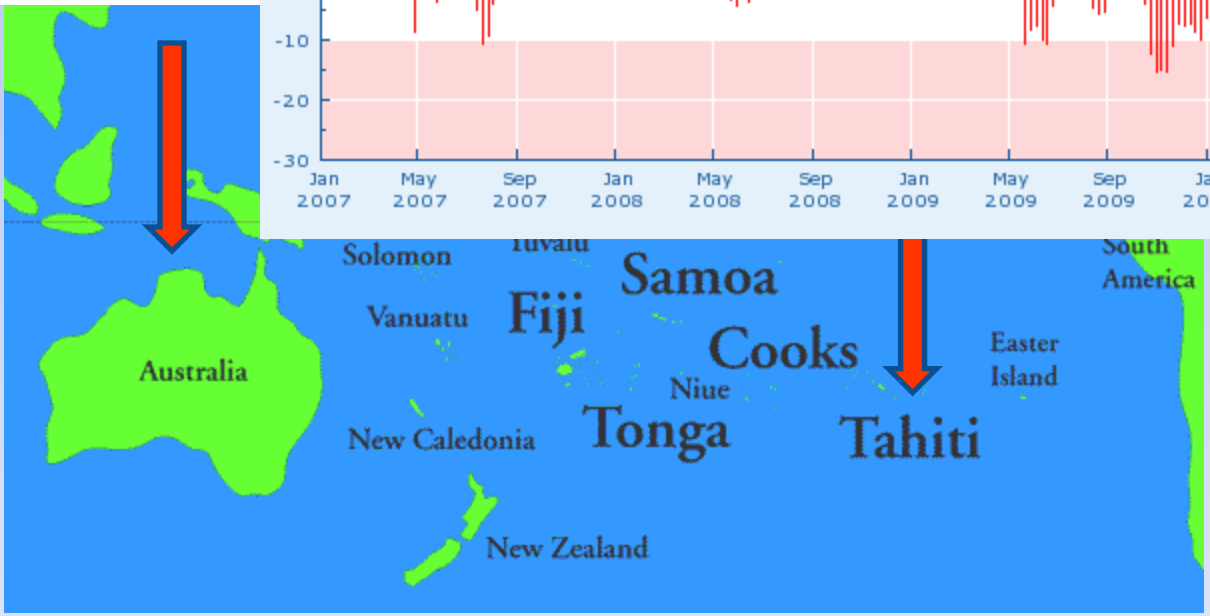
SOI

Southern Oscillation Index

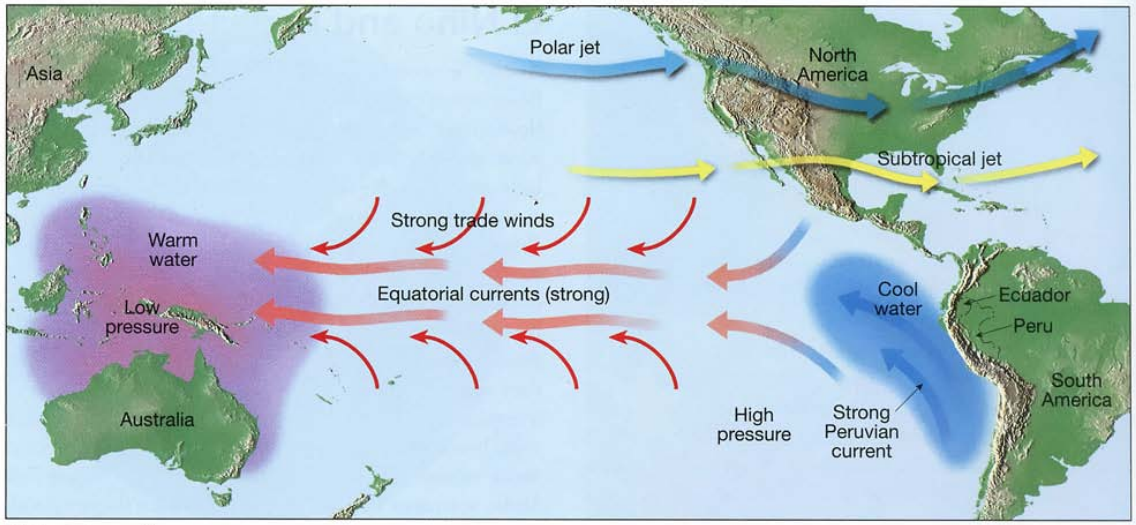


Tahiti and Darwin are at opposite ends of the Southern
and so the difference in pressure between them is use
Southern Oscillation. The numbers represent a statist
the correlation coefficient. The figure shows that the
at Tahiti is as closely related to Darwin as are location
but with the opposite sign (i.e., if the Pressure is high
at Tahiti and vice versa). (After Rasmusson, 1984.)

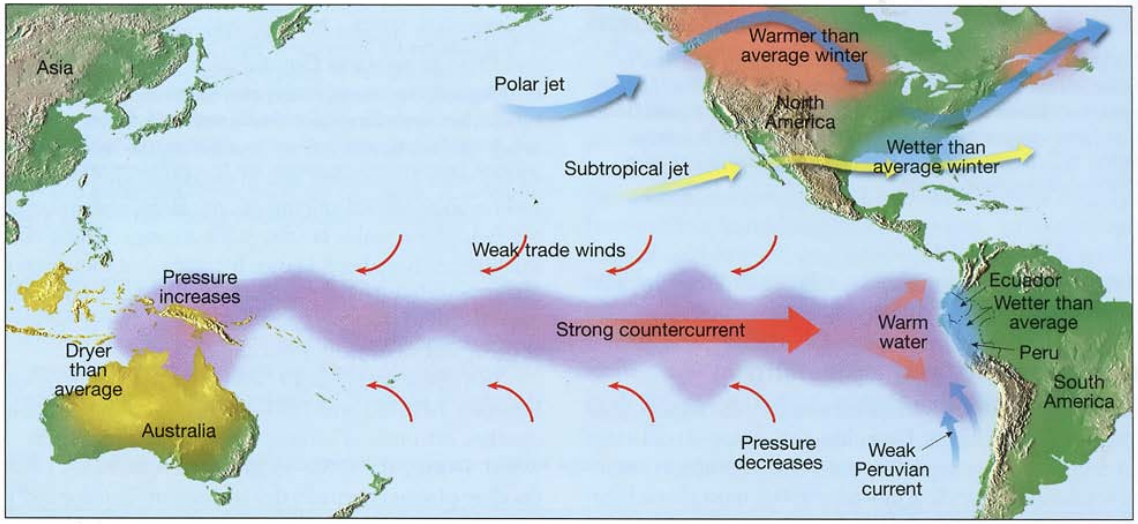




ENSO Climate Effects

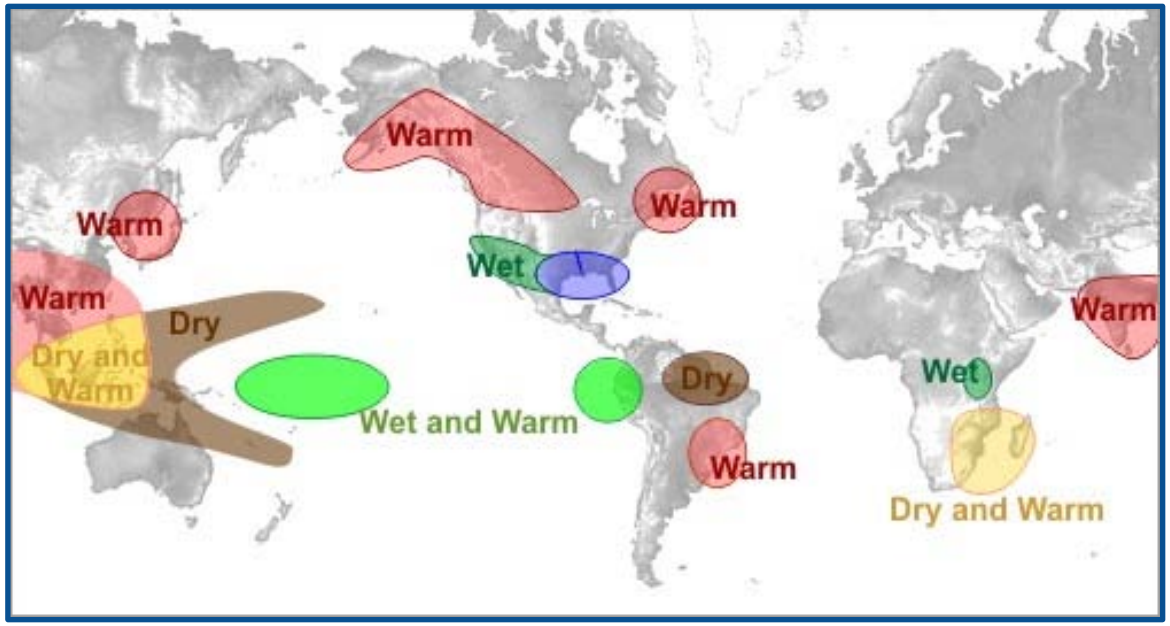


(a) Normal conditions



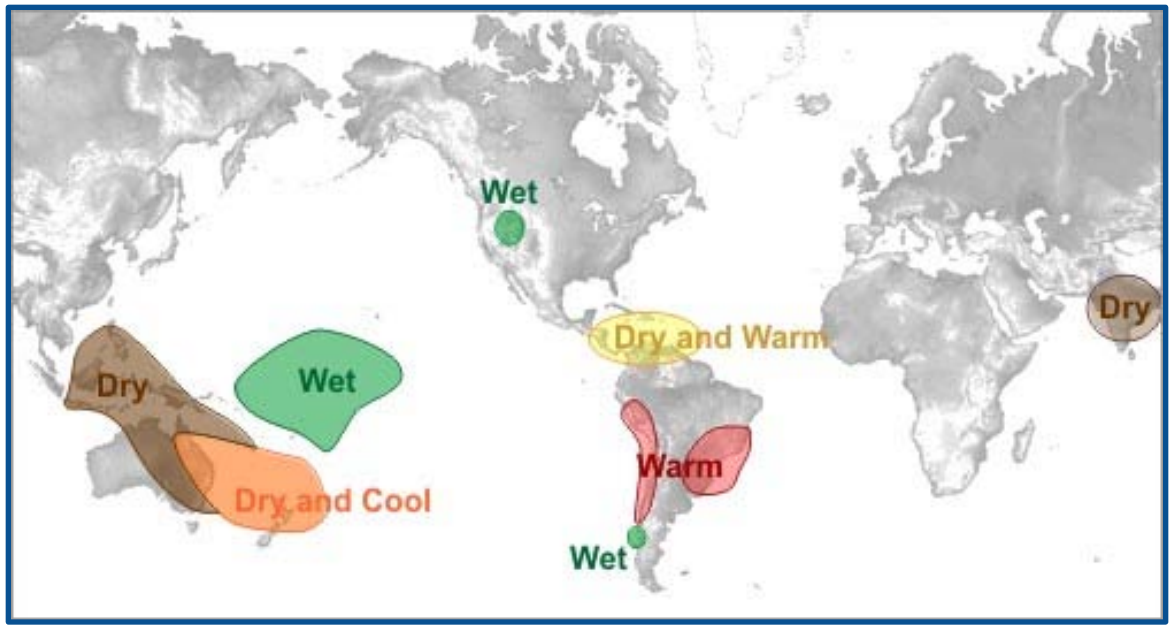
(b) El Niño

El Niño Regional Impacts

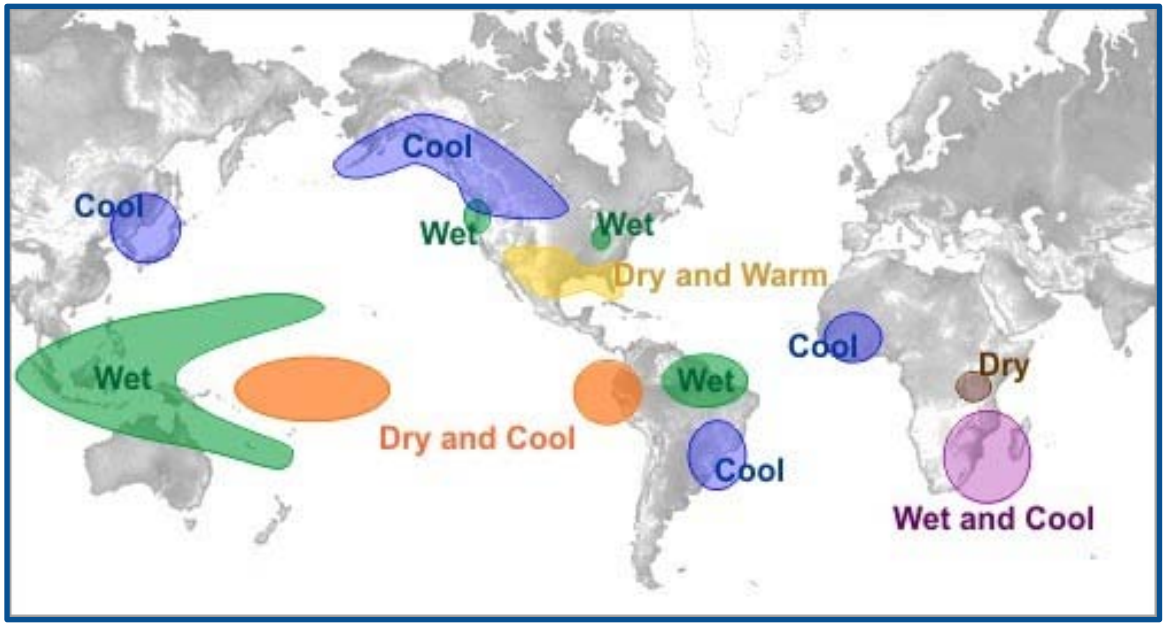


December - February

June - August

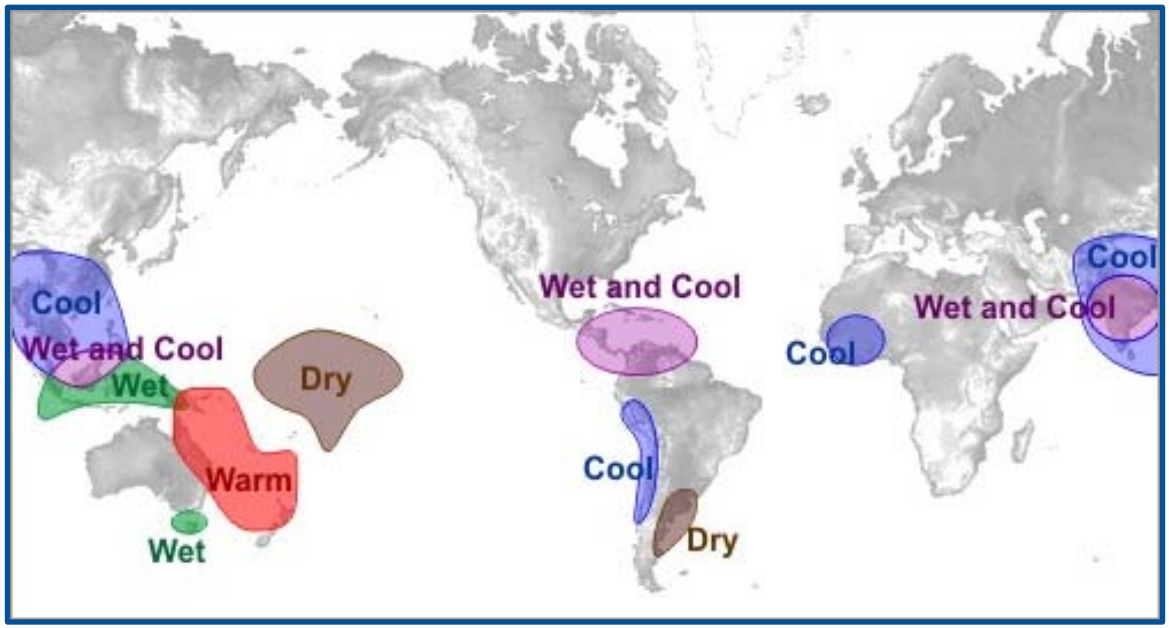


La Niña Regional Impacts



December - February

June - August



ENSO Tropical Cyclone Impact

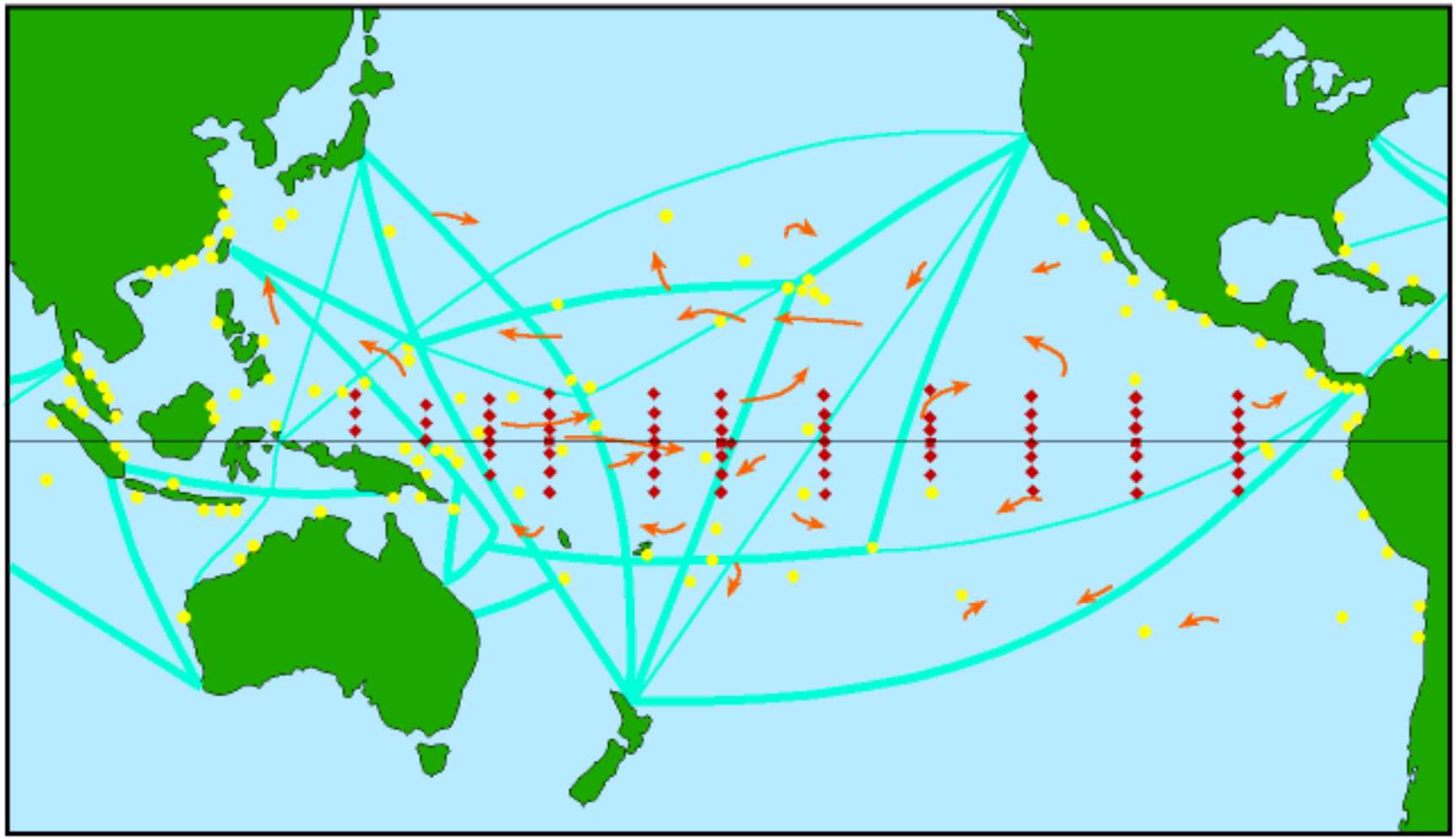
From Australia Bureau of Meteorology

Region		El Niño Years		Non-El Niño Years	
		Number of Storms	Intensity	Number of Storms	Intensity
North Atlantic		Large Decrease	Small Decrease	Small Increase	Small Increase
Eastern North Pacific		Slight Increase	Increase	Slight Decrease	Decrease
Western North Pacific	Eastern half	Increase	No Change	Decrease	No Change
	Western half	Decrease	No Change	Increase	No Change
Indian Ocean (North / South)		No Change	No Change	No Change	No Change
Australian Region	Western	Slight Decrease	No Change	Slight Increas	No Change
	Central and East	Decrease	Slight Decrease	Increase	Slight Increase
South / Central Pacific (>160°E)		Increase	Increase	Decrease	Slight Decrease

Northern Atlantic

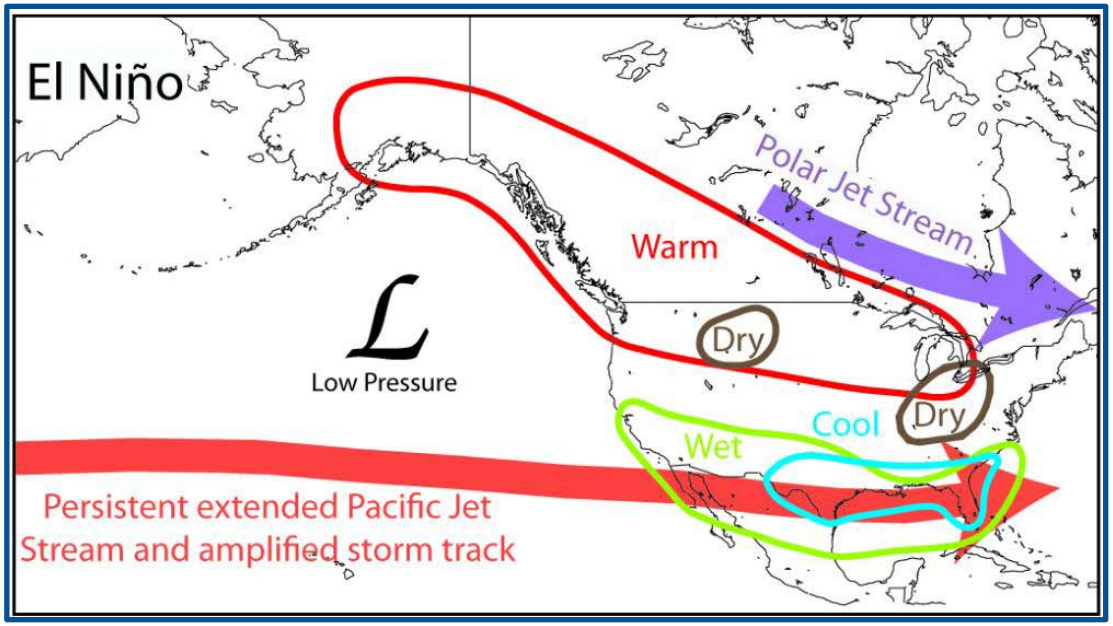
Substantial reduction in cyclone numbers and system intensity

ENSO Observing System

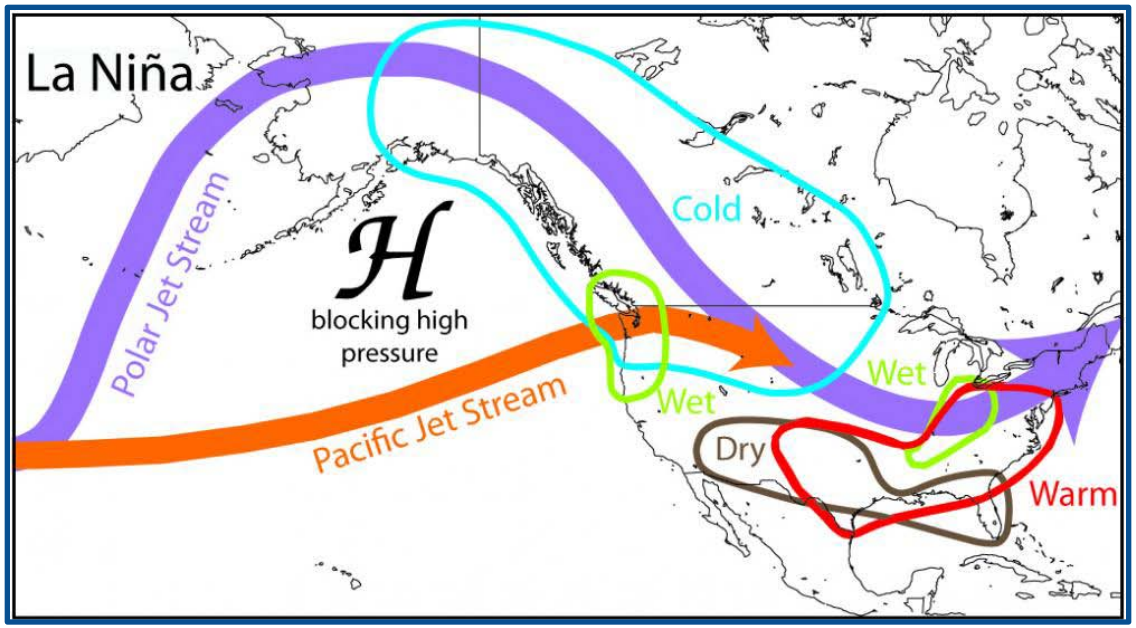


Effects of La Niña United States

U.S. Impact when moderate to strong



Winter



Winter

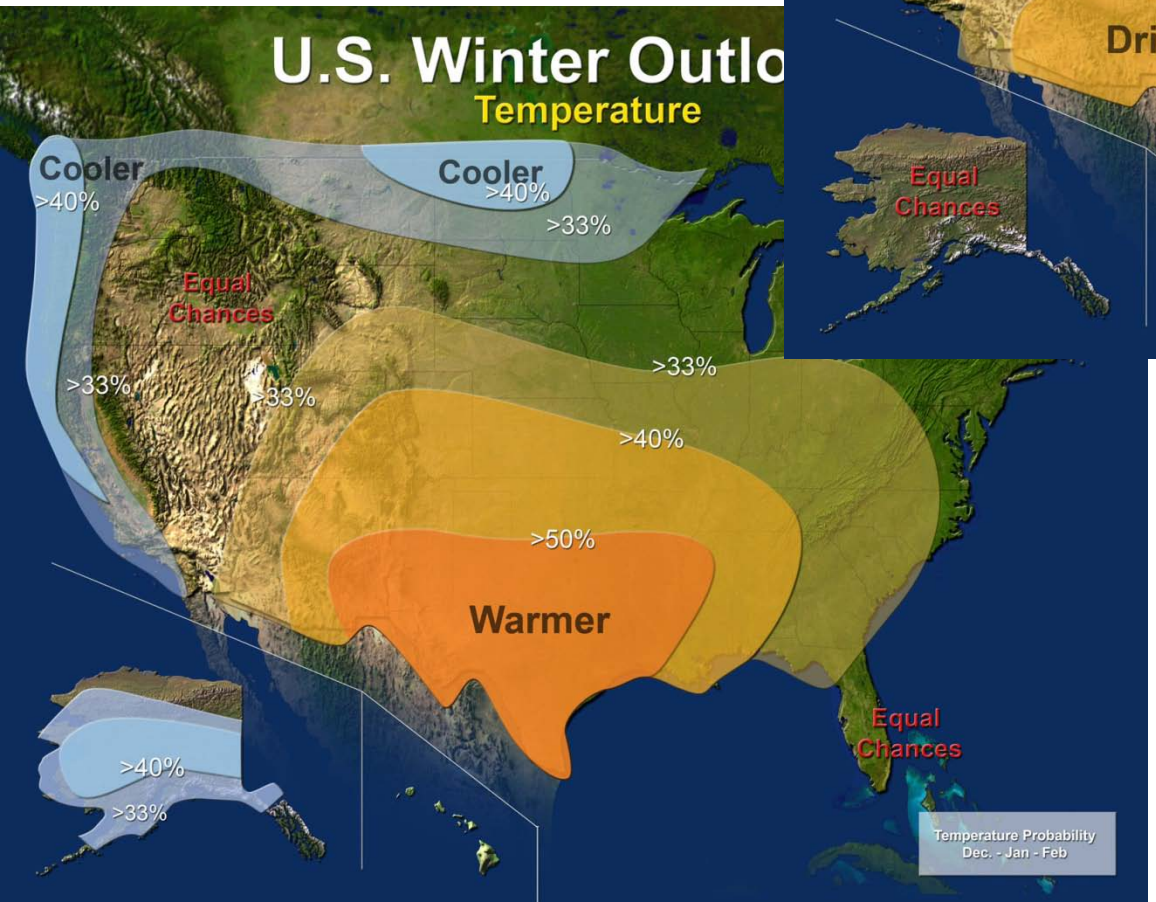
Current Conditions
El Niño-Southern Oscillation

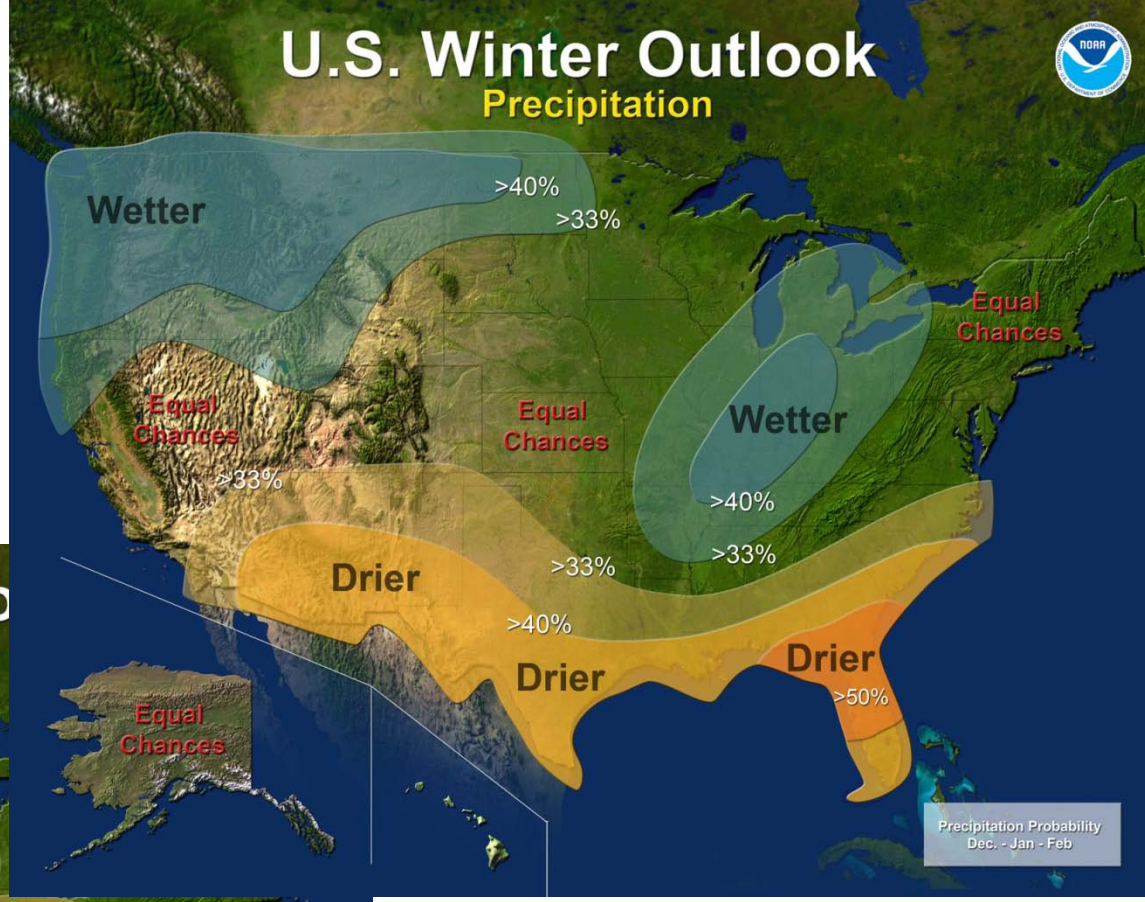
Update 21 October 2010

Summary

Weak La Niña conditions emerged in mid-June 2010, increased to moderate strength by mid-July, and have been at moderate to strong levels since mid-August. For the October-December season currently in progress, there is an approximately 99% probability for continuing La Niña conditions, and a 1% probability for returning to neutral ENSO conditions. Probabilities for La Niña conditions continue at 95% or more through the December-February season of 2010/11, and do not drop to below 50% until the April-June season.

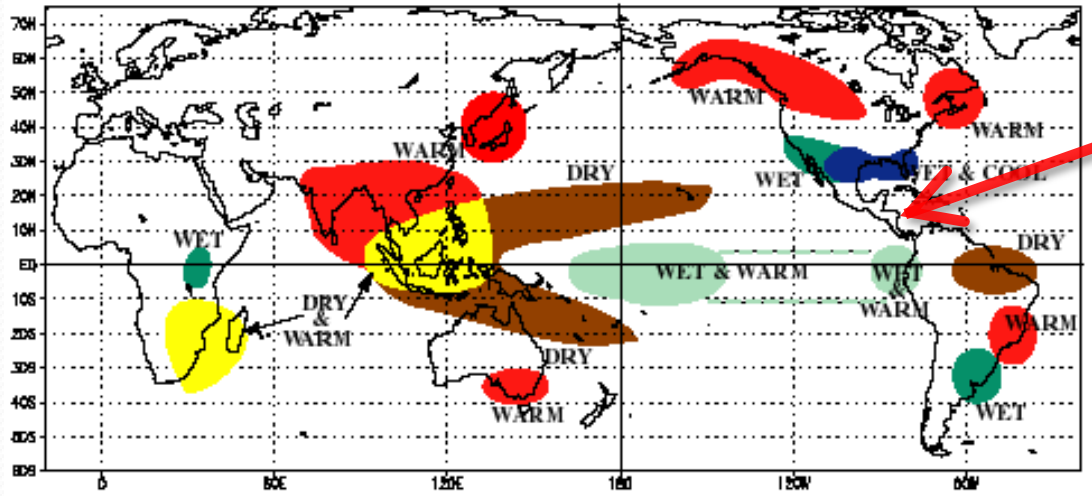
Predicted U.S. La Niña Effects 2010



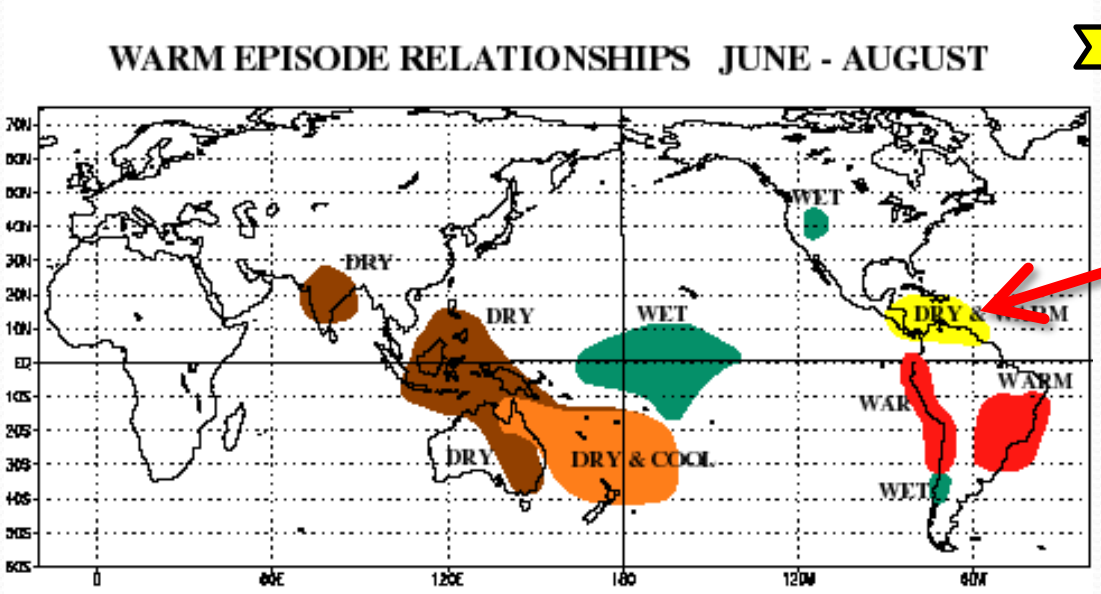


Effects of La Niña Panama

El Niño Regional Impacts

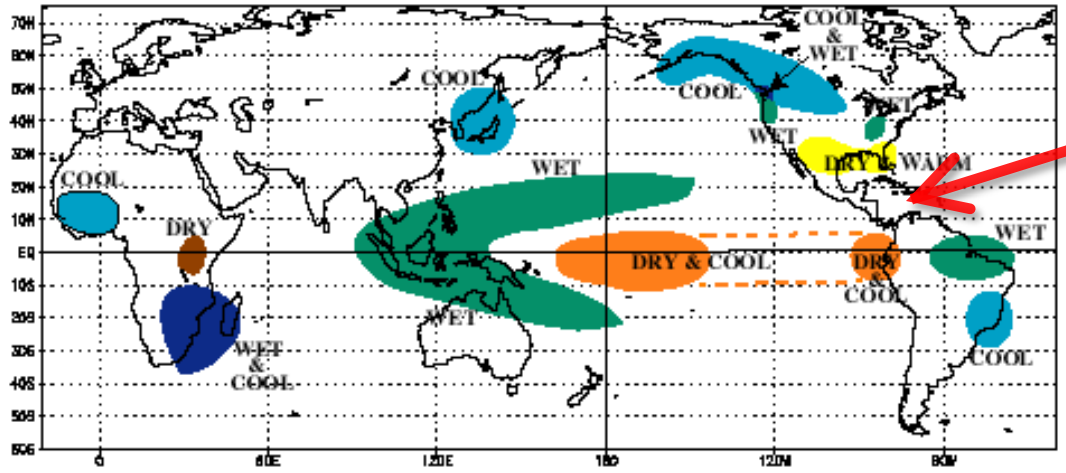


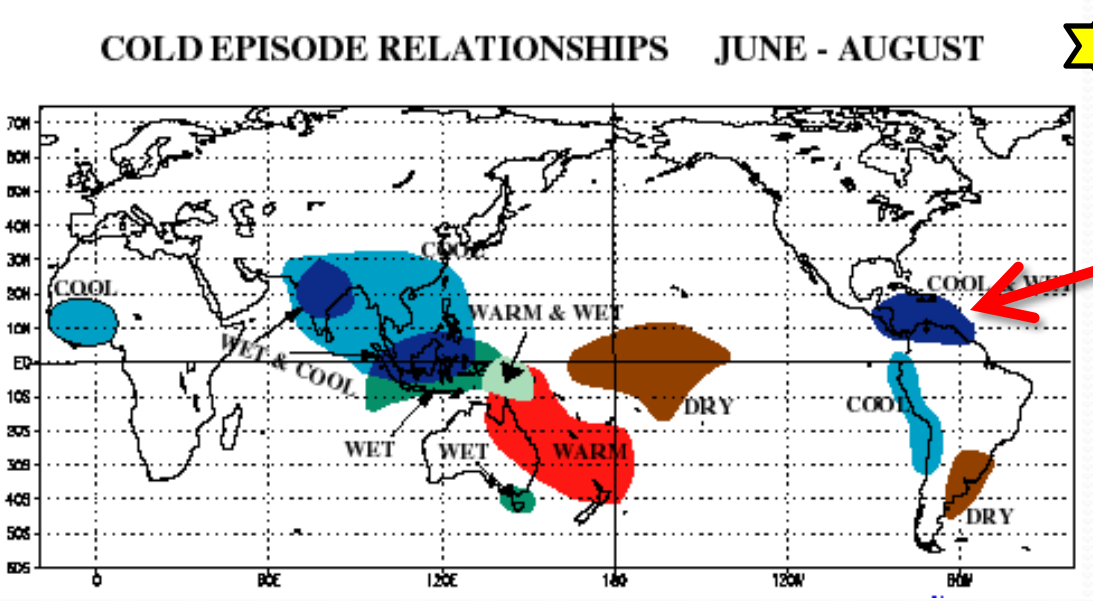
Normal



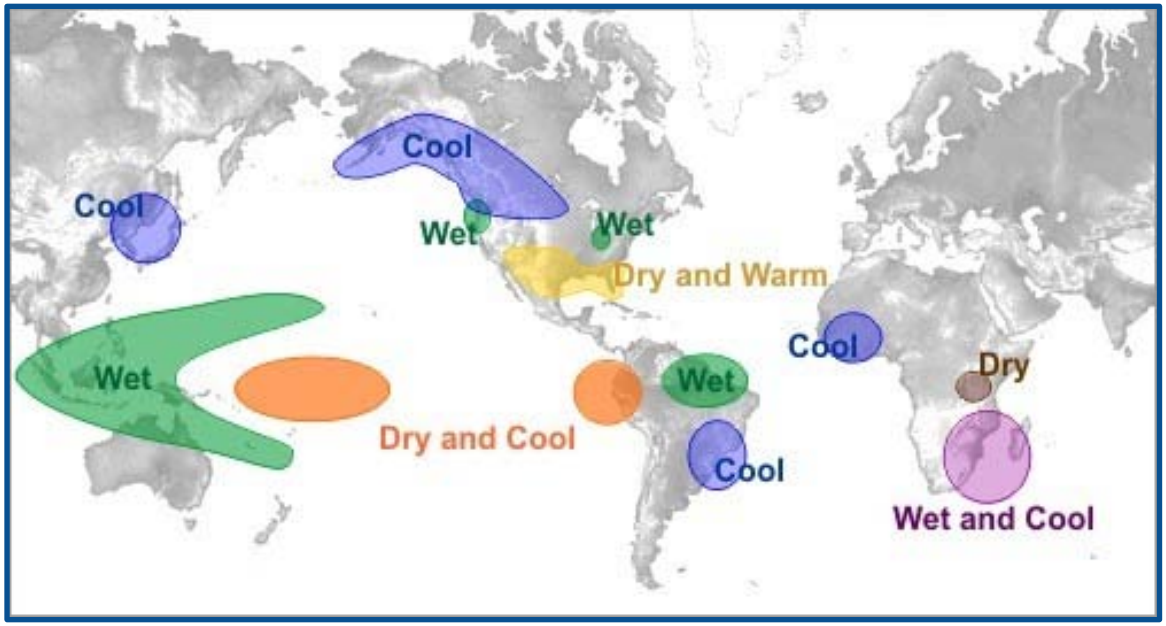
Dry
Warm

La Niña Regional Impacts



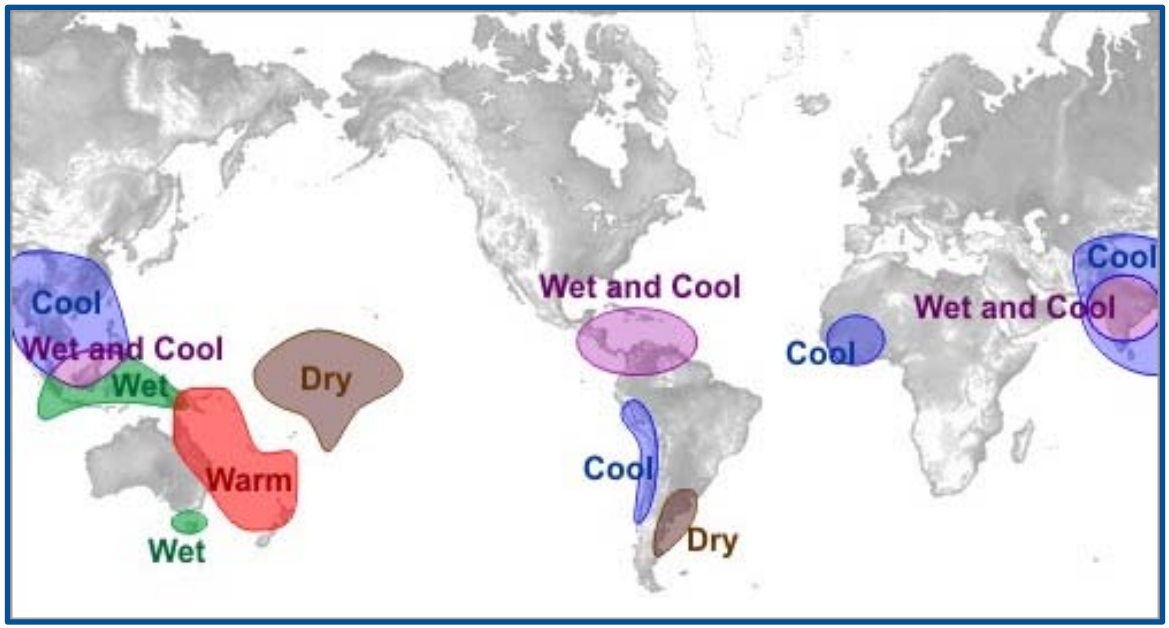


La Niña Regional Impacts

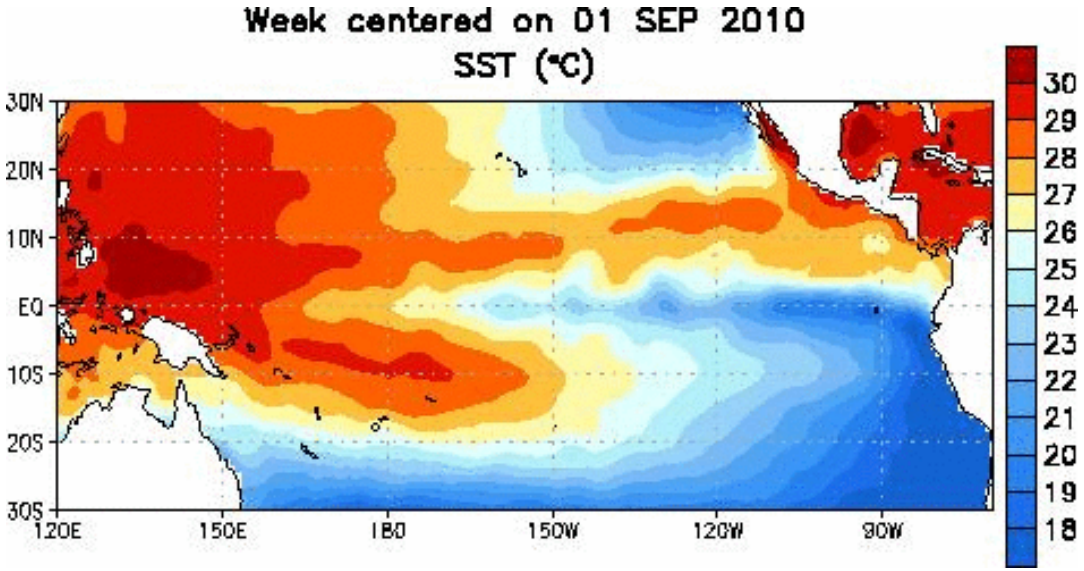


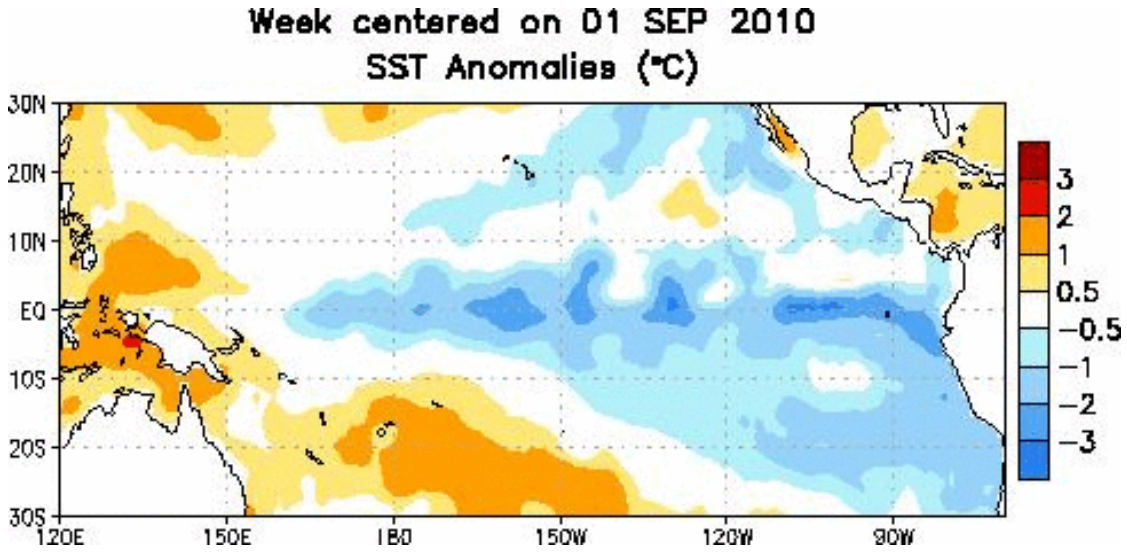
December - February

June - August



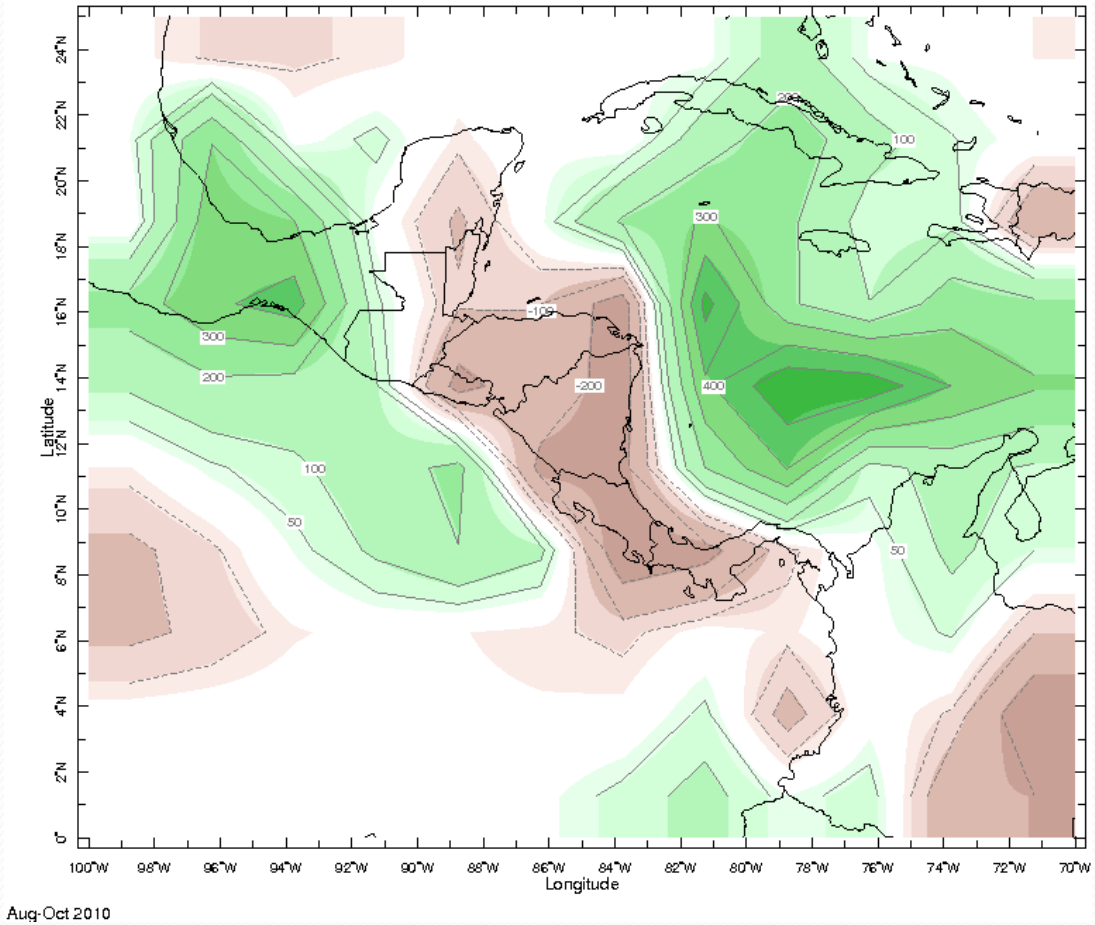
Surface Sea Temperatures



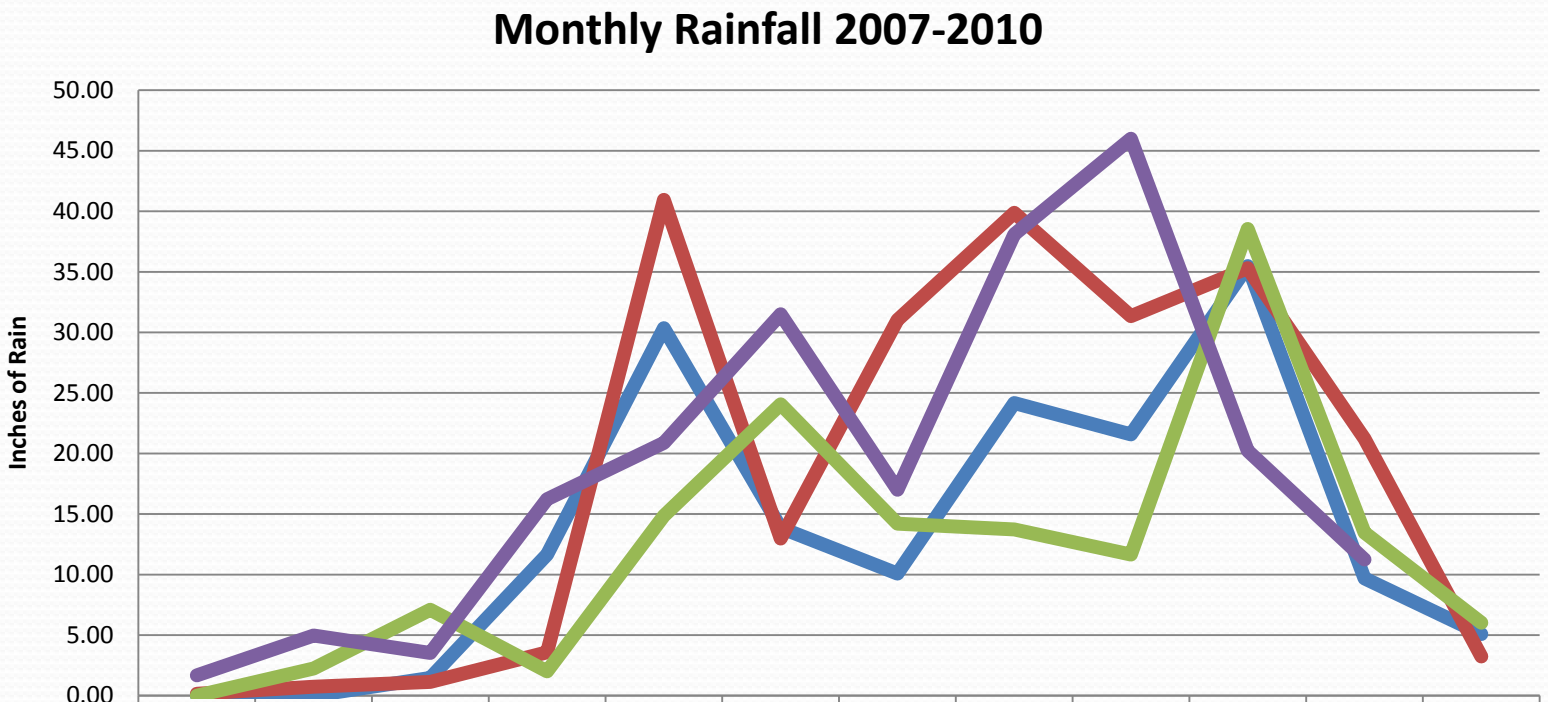


Precipitation Anomaly Aug – Oct 2010

(1979-2000 Basline)



Rainfall Palmira Station



	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec
2007	0.00	0.00	1.46	11.65	30.35	13.86	10.08	24.17	21.58	35.47	9.69	5.08
2008	0.16	0.74	1.14	3.58	40.94	12.97	31.02	39.88	31.34	35.31	21.22	3.23
2009	0.00	2.24	7.09	2.01	14.85	24.06	14.20	13.73	11.65	38.54	13.46	6.03
2010	1.68	4.96	3.52	16.23	20.87	31.50	17.00	38.09	46.00	20.23	11.24	

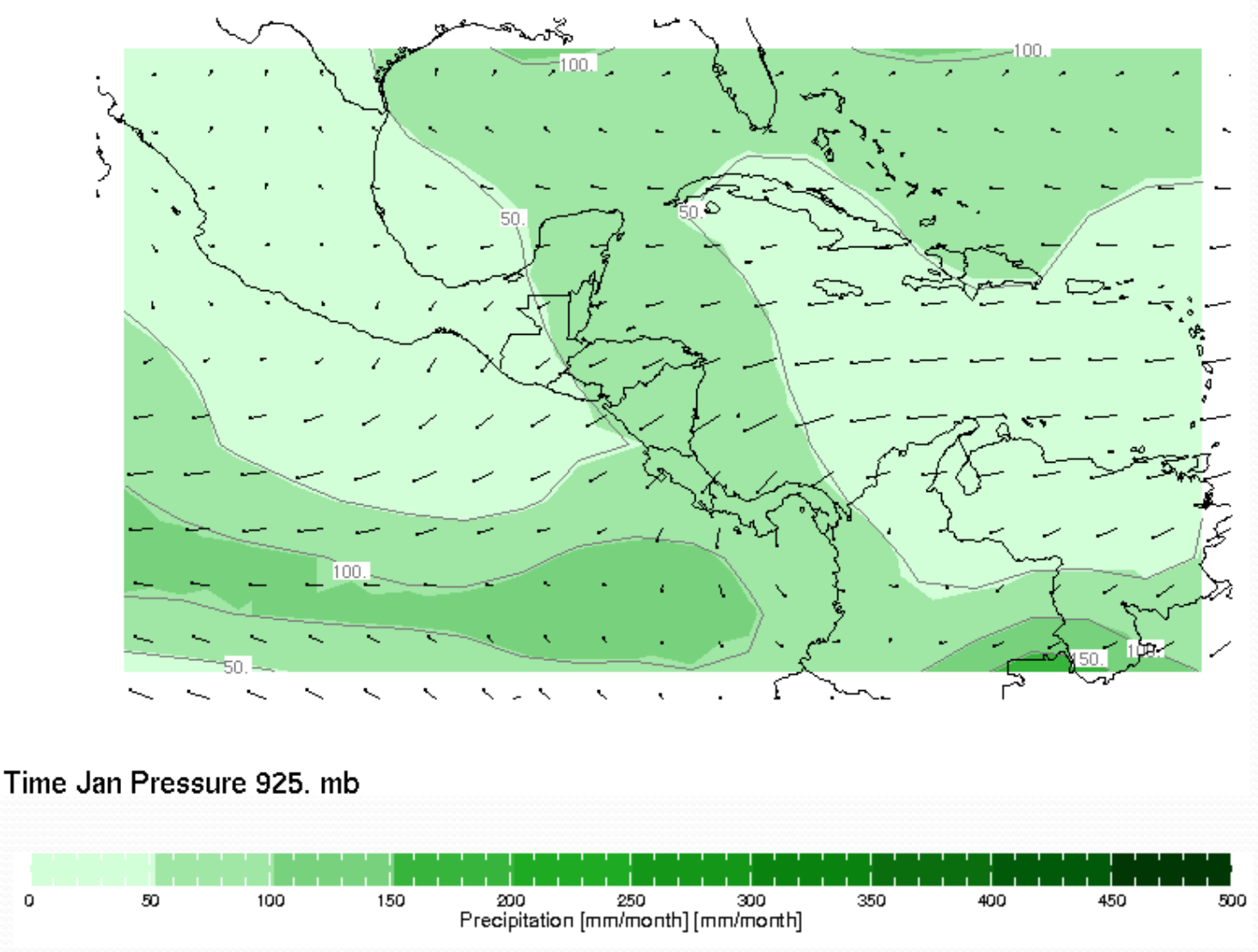
Boquete District Annual Climate Data

Weather Data 2010

Data from Palmira Arriba WeatherHawk Weather Station - Copyright 2010 by Lloyd Cripe

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Avg Temp	66.0	67.2	67.0	66.8	66.0	64.3	63.1	63.3	62.0	62.4		
Min Temp	55.9	60.3	55.6	58.3	55.6	56.1	55.9	56.8	54.9	55.6		
Max Temp	82.9	83.8	86.7	83.1	80.1	78.4	78.8	74.3	78.3	79.0		
Avg Humid	47.0	54.6	53.3	60.6	69.1	73.8	76.1	77.4	81.5	76.3		
Avg Wind	10.4	8.2	7.7	4.3	3.8	1.7	1.3	1.0	1.0	1.3		
Max Wind	34.3	34.3	32.8	25.3	31.2	26.1	20.1	17.4	18.6	23.7		
Rainfall	1.68	4.96	3.52	16.23	20.87	31.50	17.0	38.09	46.0	20.23	11.24	
Days no Rain	28	20	24	19	12	6	5	1	2	3		
Days with Rain	3	8	7	11	19	24	26	30	28	28		
Total Rain Year	1.65	6.54	10.0	26.02	46.89	78.39	95.39	133.46	179.6	199.8	211.04	

Monthly Climatological Precipitation
925 hPa Wind Vector

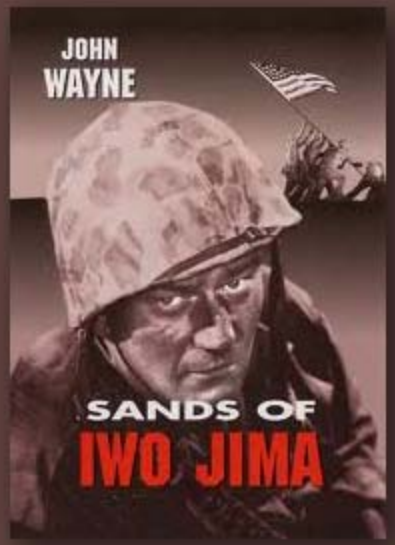


"Do you think we can blame it on El Nino?"

Coping

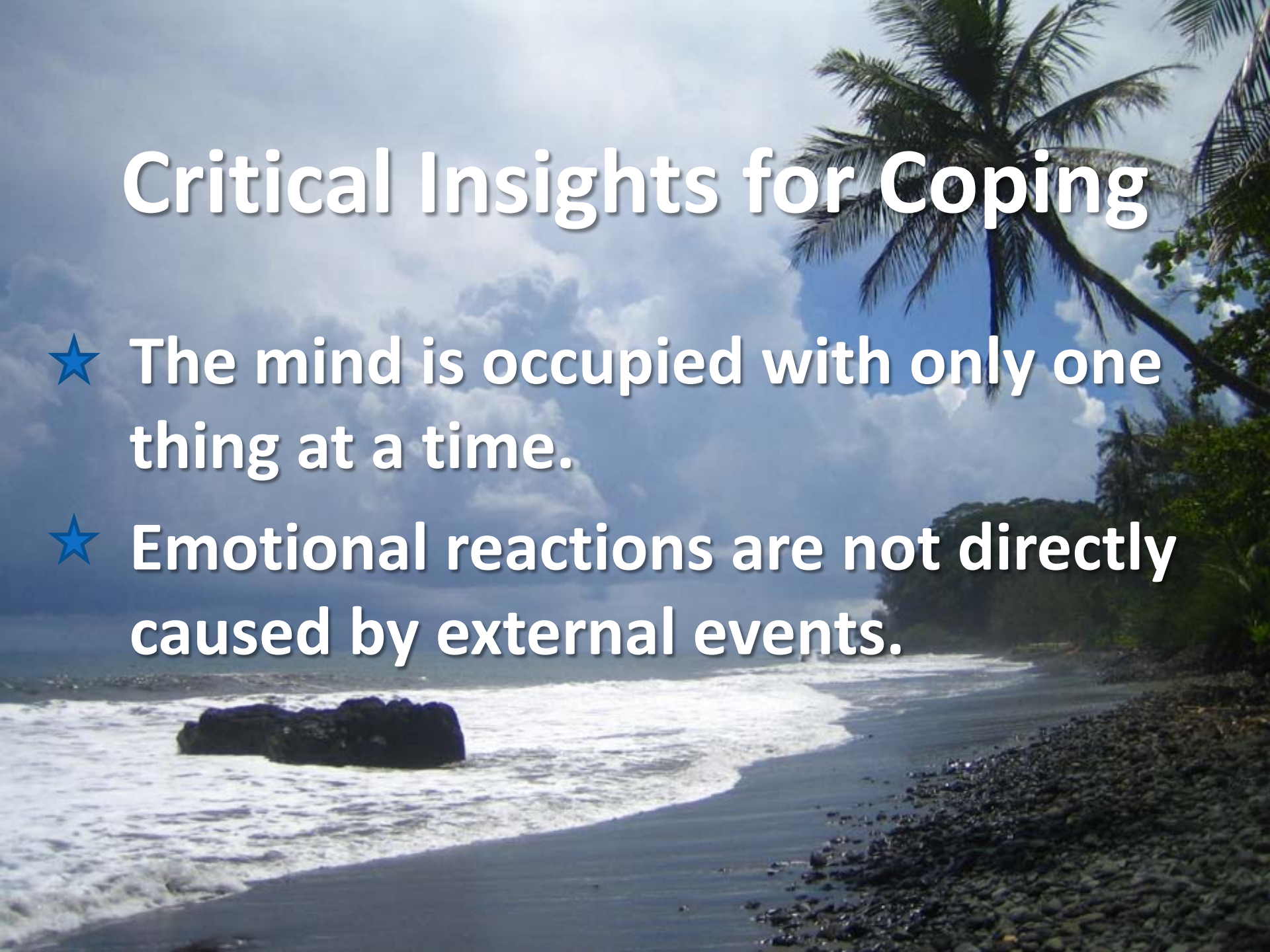
Adapting and Enjoying

As a rule man is a fool,
When it's hot he wants it cool,
When it's cool he wants it hot,
Always wanting what is not.



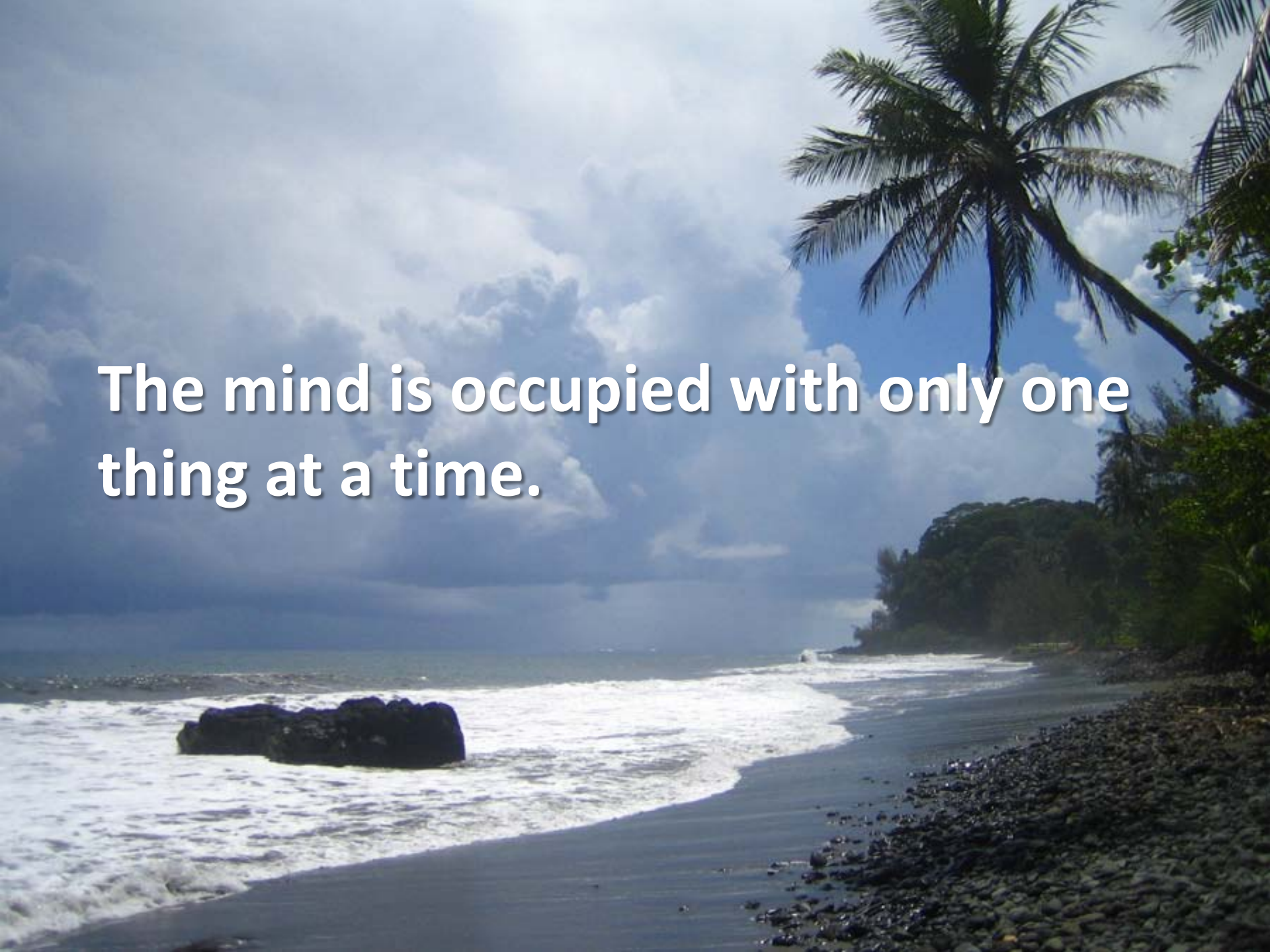
Life is tough
but it's even tougher
if you're stupid.

Life is tough
but it's very tough
when you're poor.



Critical Insights for Coping

- The mind is occupied with only one thing at a time.
- Emotional reactions are not directly caused by external events.


The mind is occupied with only one thing at a time.

Distraction Hypothesis

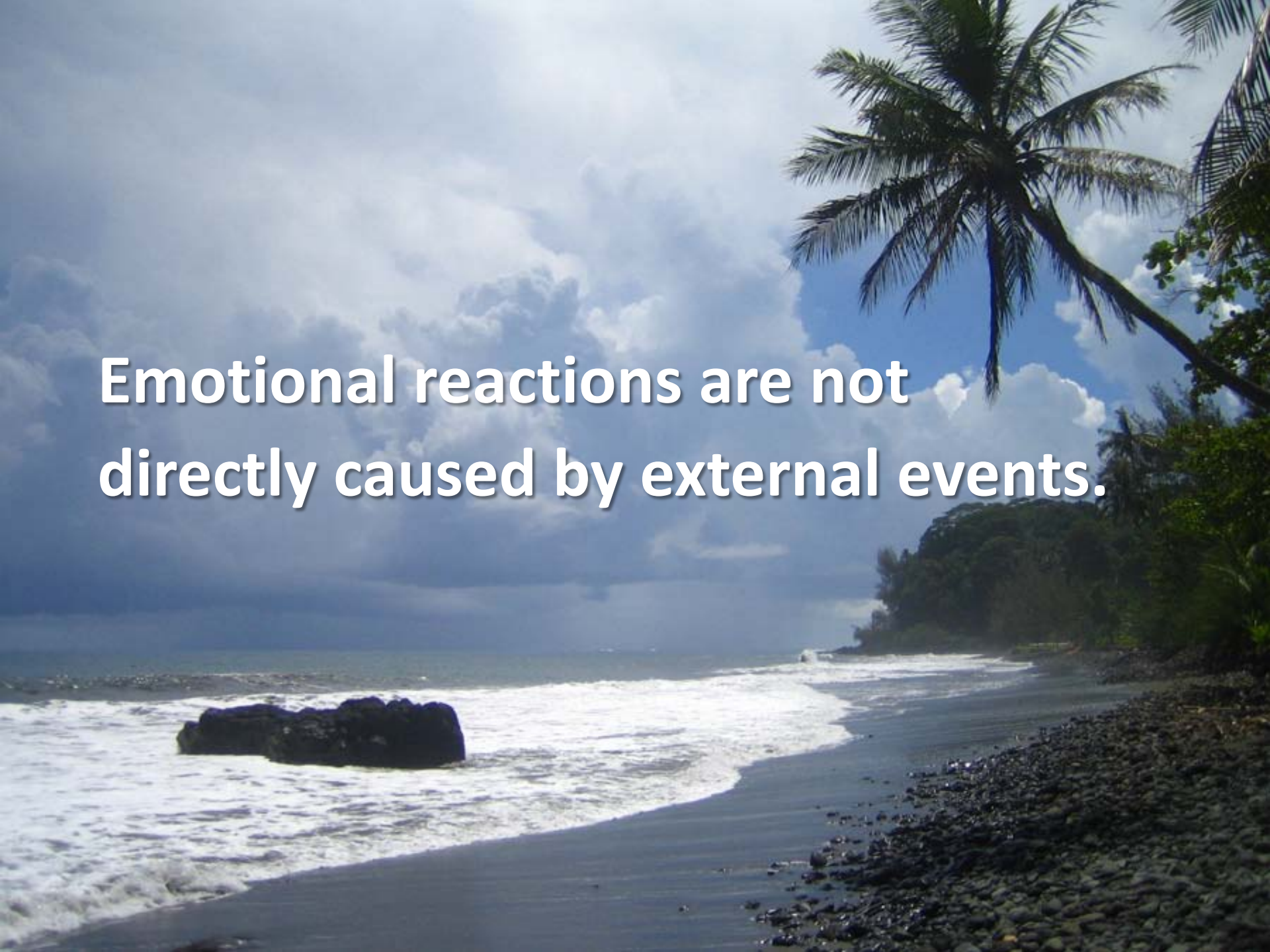
If you busy your mind with an enjoyable activity it is improbable that you will at the same time be discontent.

People who are active and engaged in meaningful activities are happier.

Distraction Hypothesis

Useful Distraction Activities

- Working
- Giving - Volunteering
- Exercising
- Hobbying (creating)
- Playing – games, sports, children
- Reading
- Learning
- Music – performing or listening
- Movies
- Television
- Socializing
- Eating
- Shopping
- Traveling
- Vacationing
- Resting – Sleeping
- Meditating
- Anything else that occupies your time and mind


Emotional reactions are not
directly caused by external events.

ABC Model

- **Emotions are caused by what we tell ourselves and believe not by events per se.**

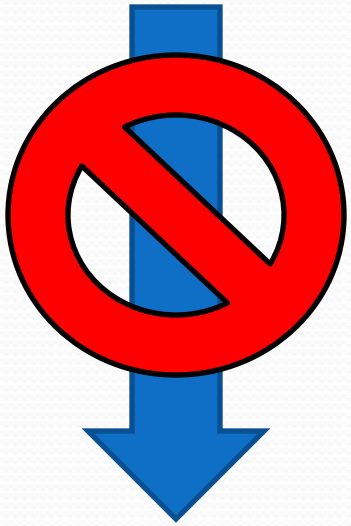
- **You can change your emotions and mood by examining your thinking, challenging irrational thoughts and learning to think differently.**

ABC Model

A

Activating Event

B



C

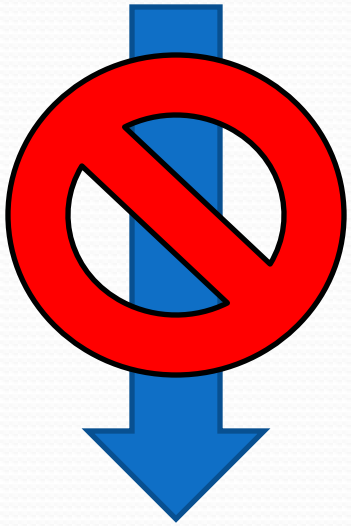
Emotional Response

ABC Model

A

Rainy Weather

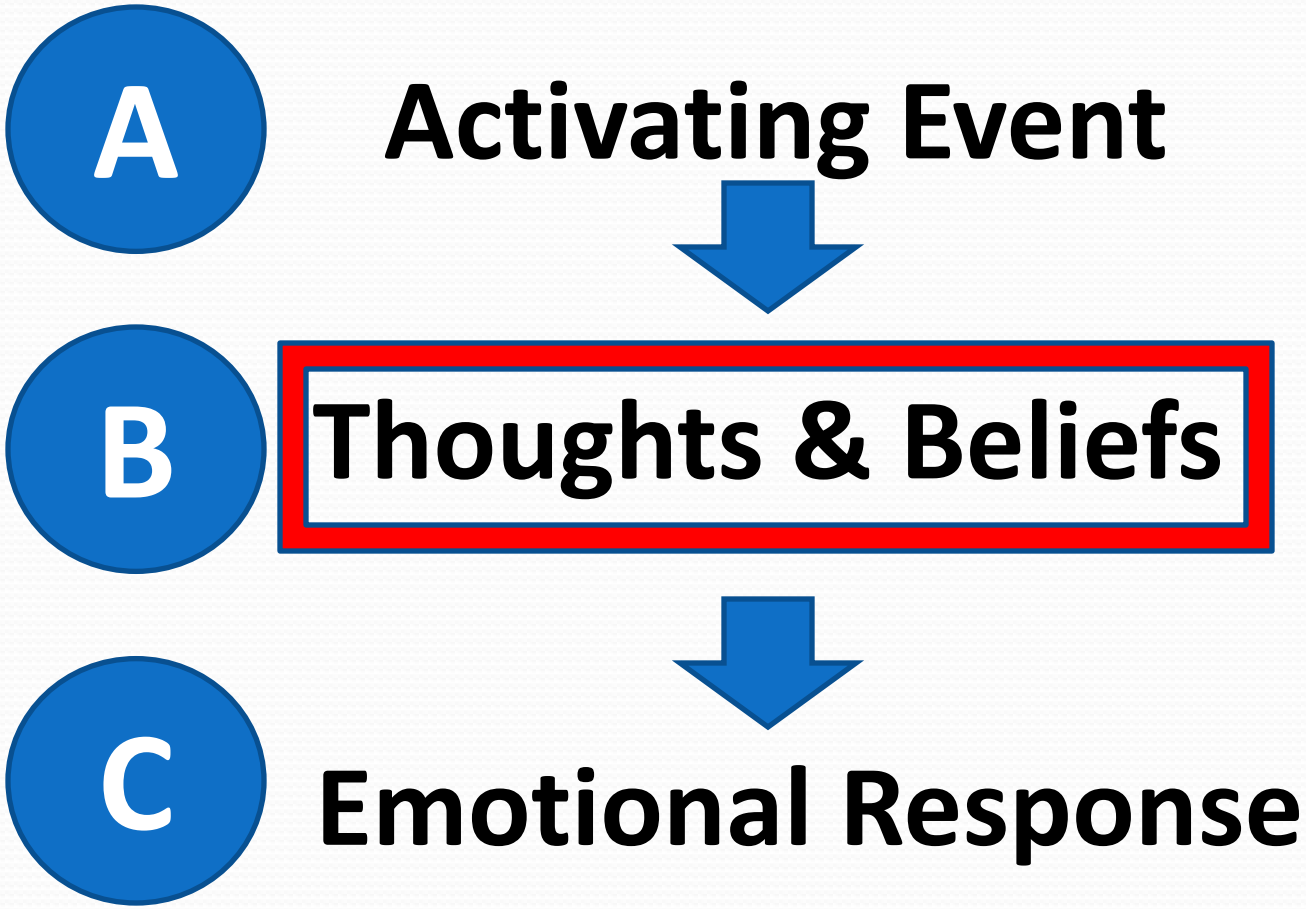
B



C

Gloom & Blues

ABC Model


A
Activating Event
B
Thoughts & Beliefs
C
Emotional Response

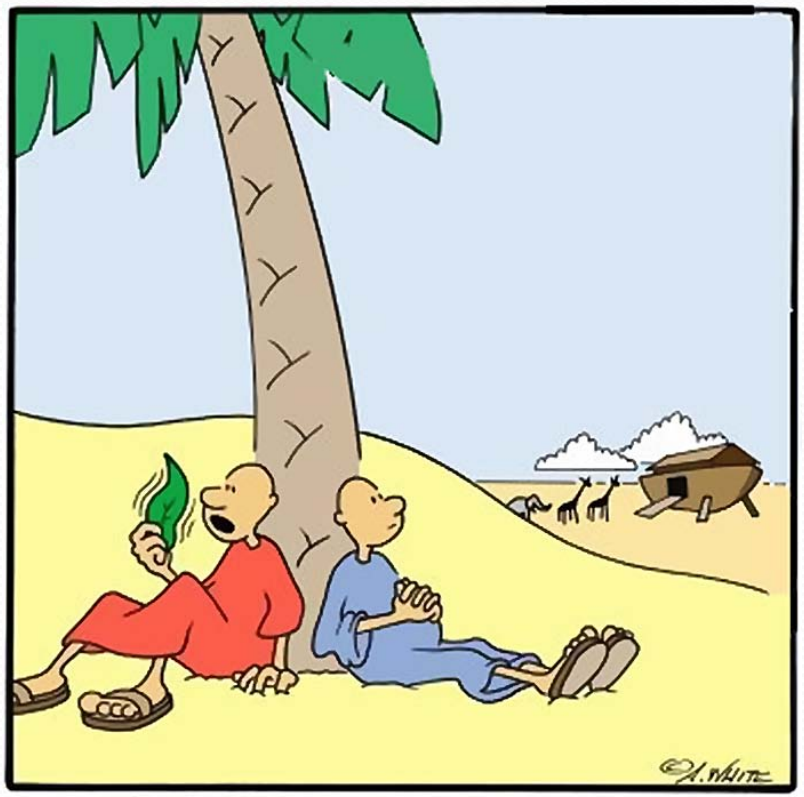
ABC Model

Rainy Weather

“Will this ever stop?”
“This is horrible.”
“I can’t stand another drop!”

Gloom & Blues

Different Thoughts Different Reaction



"Boy, will this drought *ever* end?"

ABC Model

Rainy Weather

“This is inconvenient.”
“It won’t last forever!”
“This is an opportunity to ….”
“I’m glad I’m not living in the Chocó.”

Equanimity

“It could be worse!”

Lloró a town situated in Chocó, Colombia, is probably the place with the largest measured rainfall in the world, averaging 13,300 mm (520 in) per year.

Rational Thoughts & Beliefs about Weather

- The weather is what it is and you cannot change it.
- You can however protect yourself from the weather.
- You can learn more about it and appreciate it.
- The weather changes frequently and is not forever.
- There any many climates in the world.
- If you can't adjust to the climate you are in try finding another.

You can change yourself
but you can't change the weather!

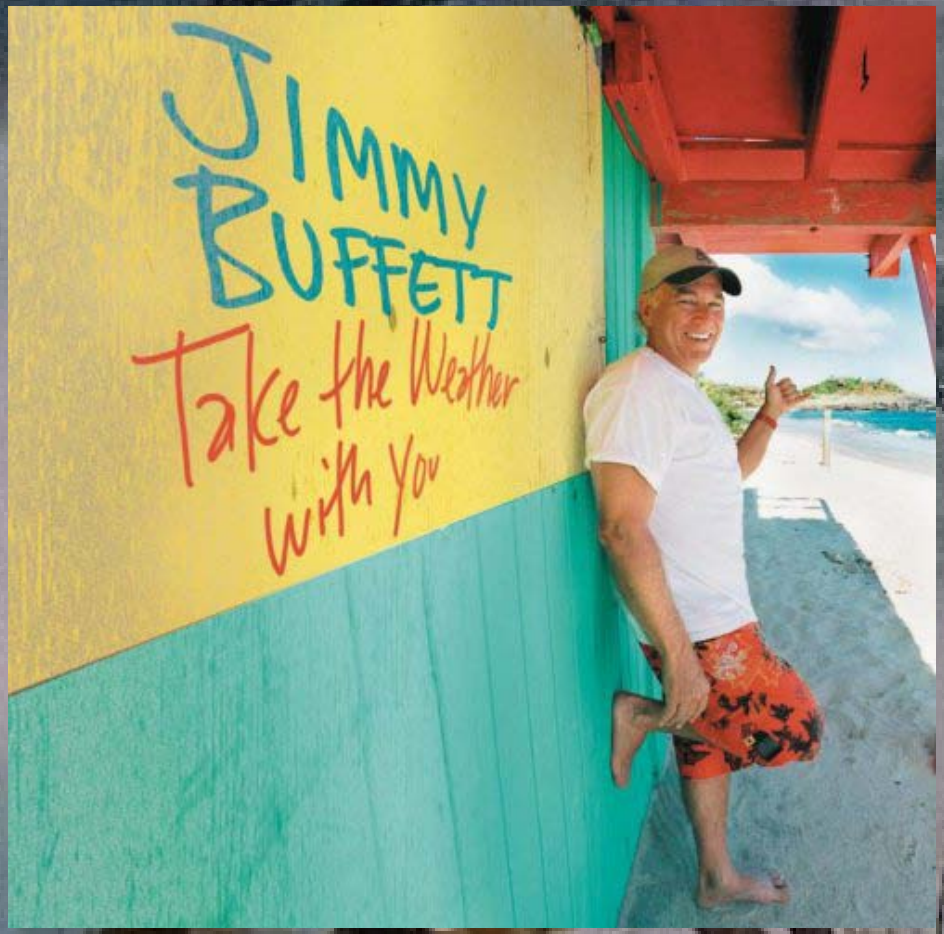
The weather is what it is and you cannot change it. You can however protect yourself from it.

You are what you are and cannot change that but with deliberate effort you can change what you think and believe.

You can learn to be aware of yourself and protect yourself from your thoughts and with hard work even change them but you cannot get away from yourself.

You can distract yourself by engaging in a variety of activities that keep your mind focused on other things.

Wherever you go there you are and there is weather!



Everywhere you go
You always take the weather with you
Everywhere you go
You always take the weather with you

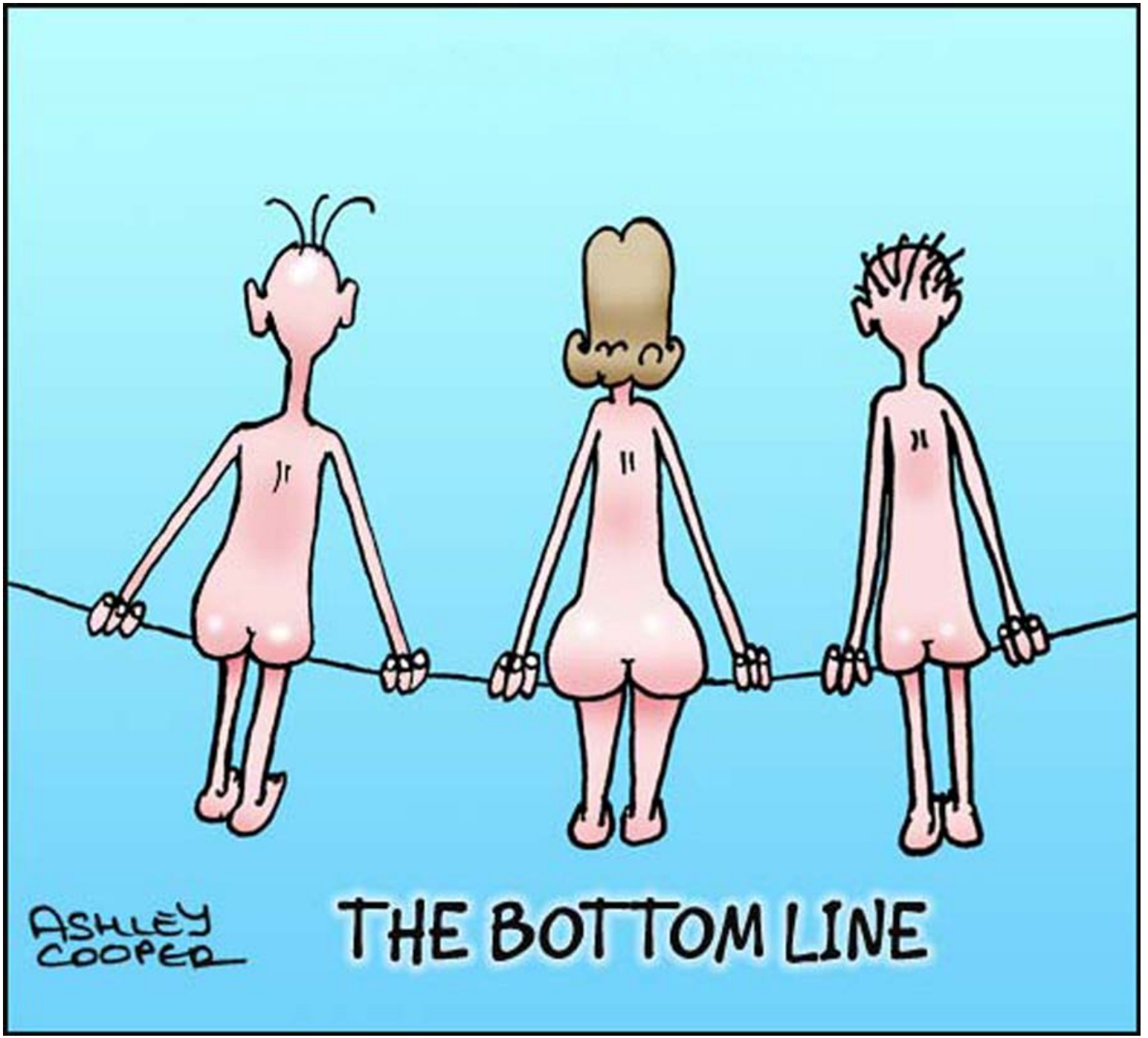
You can get away from the weather but you can't get away from yourself!

Serenity Prayer

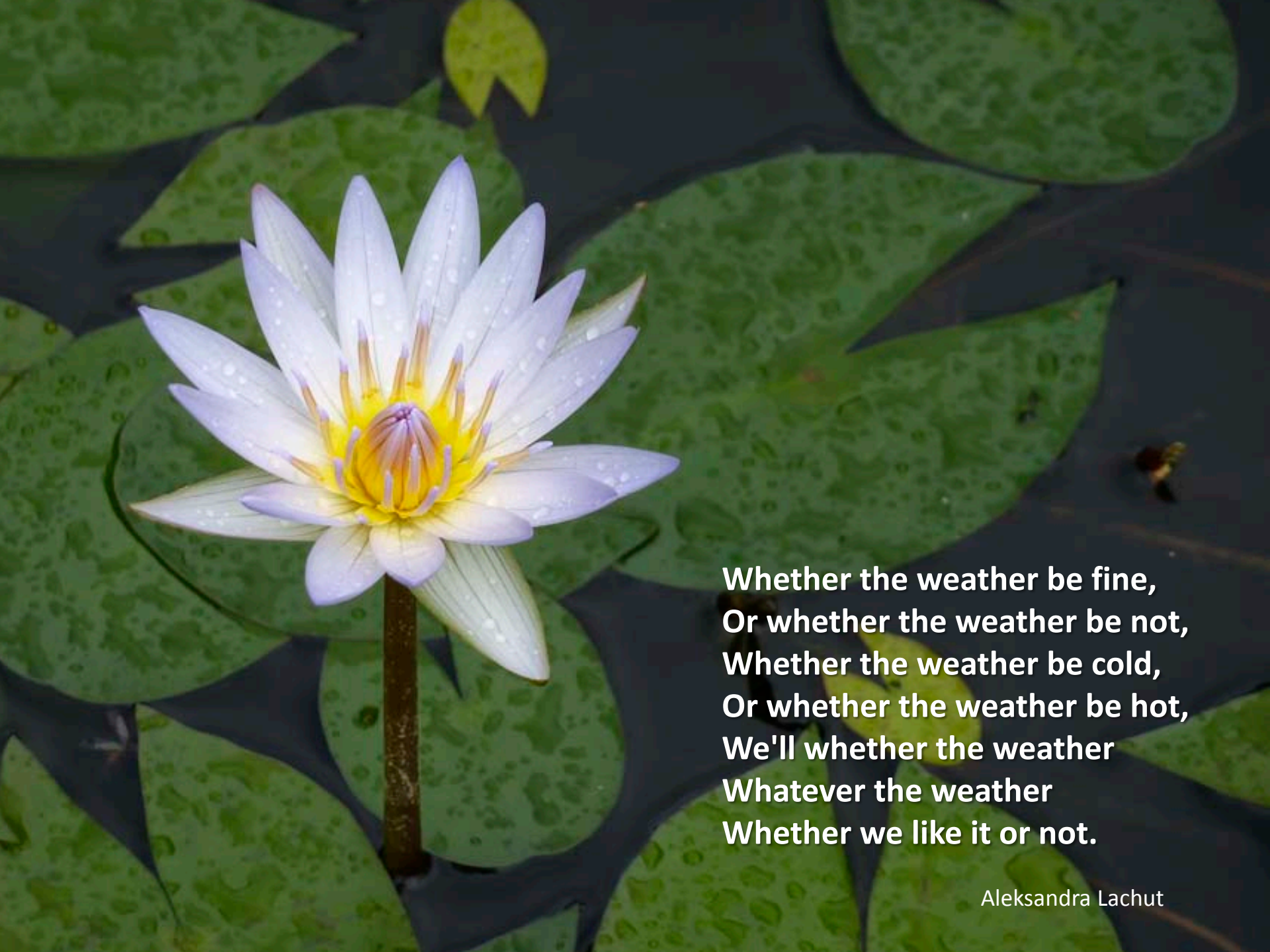
God grant me the serenity
to accept the things I cannot change;
courage to change the things I can;
and wisdom to know the difference.

Secular Version

For every problem under the Sun,
there is a solution or there is none.
If there is one find it.
If there is none,
never mind it!


ASHLEY COOPER
THE BOTTOM LINE

The weather will change before you do!


Whether the weather be fine,
Or whether the weather be not,
Whether the weather be cold,
Or whether the weather be hot,
We'll whether the weather
Whatever the weather
Whether we like it or not.
Aleksandra Lachut

Summary

- Introduction
  - Predicting the Weather
  - Measuring & Monitoring Weather
- Rain
  - Causes
  - ENSO – El Niño Southern Oscillation
  - Boquete rain
- Coping
  - Distraction Hypothesis
  - ABC Model

Closing Remarks

Weather is a great metaphor for life - sometimes it's good, sometimes it's bad, and there's nothing much you can do about it but carry an umbrella.

- Terri Guillemets -

Raindrops Keep Falling on My Head

Hal David

Raindrops keep fallin' on my head
And just like the guy whose feet are too big for his bed
Nothin' seems to fit
Those raindrops are fallin' on my head, they keep fallin'

So I just did me some talkin' to the sun
And I said I didn't like the way he got things done
Sleepin' on the job
Those raindrops are fallin' on my head, they keep fallin'

But there's one thing I know
The blues they send to meet me won't defeat me
It won't be long till happiness steps up to greet me

Raindrops keep fallin' on my head
But that doesn't mean my eyes will soon be turnin' red
Cryin's not for me
'Cause I'm never gonna stop the rain by complainin'
Because I'm free
Nothin's worryin' me

It won't be long till happiness steps up to greet me

Raindrops keep fallin' on my head
But that doesn't mean my eyes will soon be turnin' red
Cryin's not for me
'Cause I'm never gonna stop the rain by complainin'
Because I'm free
Nothin's worryin' me


And when it rains on your parade, look up rather than down.
Without the rain, there would be no rainbow.
- Gilbert K. Chesterton -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