

WEATHER SONGS

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TOM GLAZER and The Weathervanes

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Tom Glazer Weather Songs

from Ballads For The Age Of Science by Hy Zaret and Lou Singer



WHAT MAKES THE WEATHER

What makes the lightning

What makes the thunder

What makes the rain and sleet and snow

What makes the weather — what makes the weather

What makes the weather come and go?

Weather is made by the action of heat on water and on air.

WHAT IS THE ATMOSPHERE

We live at the bottom of an ocean of air

An ocean of air, an ocean of air

We live at the bottom of an ocean of air

That's called the Atmosphere

The atmosphere is made of

Dust and water vapor

And different kinds of gases

Like Nitrogen and Oxygen

The Oxygen we're breathing in
(*Breathing, in and out*)

The atmosphere protects us

From the burning sunlight

It also makes the weather

The Snow and Sleet and Hail and Rain

Are caused by air, as I'll explain... *later*

We live at the bottom of an ocean of air

That ocean of air has a motion of air

A motion of air in the ocean of air

We call the Atmosphere

WHAT IS THE CLIMATE? IT'S THE AVERAGE WEATHER
IN A PARTICULAR AREA

WHAT IS THE CLIMATE? IT'S THE AVERAGE WEATHER
OVER A PERIOD OF TIME

Averages of temperatures and rain occurrence

Calculated scientifically

Things like that determine what we call the climate

Determine what the climate of a place will be

WHAT IS THE CLIMATE? IT'S THE AVERAGE WEATHER
IN A PARTICULAR AREA

WHAT IS THE CLIMATE? IT'S THE AVERAGE WEATHER
OVER A PERIOD OF TIME

WHAT MAKES WEATHER (REPRISE)

All over the earth today there are thousands of co-operating weather stations. Using barometers, hygrometers, anemometers, thermometers, rain gauges and other instruments, they gather valuable weather information.

Scientists are cooling clouds to produce rain and using various methods to try to stop hurricanes. They are also obtaining valuable information from earth satellites. Meteorology, the science of weather, is opening new frontiers in weather prediction and control, and every day we are learning more and more about...

What makes the lightning

What makes the thunder

What makes the rain and sleet and snow

What makes the weather, what makes the weather

What makes the weather come and go

WARM UP THE HOUSE ON COLD, COLD DAYS!
STAY! STAY! YOU LONG HEAT RAYS
WARM UP THE HOUSE ON COLD... COLD... DAYS!

The atmosphere is like a greenhouse too
It lets most of the solar rays through
The surface of the earth absorbs these rays
And re-radiates them as long heat rays
There's vapor in the air — what does it do
It doesn't let the long heat rays pass through
Trapped by the vapor they bounce back and forth
Re-radiated and re-absorbed

STAY! STAY! YOU LONG HEAT RAYS
WARM UP THE HOUSE ON COLD... COLD... DAYS!
STAY! STAY! YOU LONG HEAT RAYS
WARM UP THE EARTH ON COLD, COLD DAYS!

WHAT IS "CLIMATE"

What causes a desert climate? Hot, dry air. What causes the hot dry air? Here is one way: ... Air goes up a mountain range, cools as it rises; the moisture condenses and precipitates. As the air goes down the other side of the mountain, it is drier because most of the water has left it. The air heats up as it descends and water droplets tend to evaporate. The combination of hot, dry air creates a desert. This is the way deserts are made in the western part of the United States.

Latitude, prevailing winds and ocean currents
Mountains and the nearness to the sea
Things like that determine what we call the climate
Determine what the climate of the place will be

WHERE IS THE STRATOSPHERE

The atmosphere has several layers. Changes in weather occur in the lowest layer, the Troposphere. Above that is the Stratosphere, which is relatively weather free, then the Ionosphere, which contains electrified layers of air that reflect radio waves and make round-the-world communication possible. Beyond that is the mysterious, rarified Exosphere, now being explored by Earth satellites.

Where is the Stratosphere
Just above the Troposphere.
Where is the Tropopause
It is in-between

Where is the stratosphere
Under the Ionosphere
Where is the Exosphere
Highest on the scene

All together, all together
They make up the atmosphere

ALL TOGETHER, ALL TOGETHER
THAT'S THE ATMOSPHERE
TROPOSPHERE AND STRATOSPHERE
IONOSPHERE AND EXOSPHERE
ALL TOGETHER, ALL TOGETHER
THAT'S THE ATMOSPHERE

Where is the weather made
Where is all the weather made
Where is the weather made
In the troposphere

THE WATER CYCLE SONG

Heating by sunlight is the source of energy for all changes in the weather. This heat evaporates water from oceans, lakes and earth and changes it into water vapor.

The sun heats the earth and the oceans and lakes

And it causes the vapor to rise

As it rises it cools and condenses and makes

All the clouds that we see in the skies

All the clouds have been formed

Cause the land and sea were warmed

And the vapor goes up with the air

And you know that water evaporates

When you see those clouds up there

Evaporation and Condensation.

(The water cycle, the water cycle)

Followed by Precipitation.

(The water cycle, the water cycle)

The never... ending... cycle is taking place

All the time and every where

The rain and the hail and the sleet and the snow

Falling down on the land and the sea

Fill the lakes and the ponds and the rivers that flow

To the oceans continually

And the heat-giving sun just repeats what it has done

And the vapor goes up with the air

And you know that water can circulate

When you see those clouds up there

Evaporation and Condensation.

Snowflake, snowflake what are you

A star shaped crystal, how-de-do

Snowflake how'd'ya get that way

It happened on a wint'ry day

Some water vapor in the air

Discovered it was freezing there

Found a tiny bit of dust

And froze around that nucleus

Moving through the air it grew

Its molecules were added to

That six point crystal fell below

And here I am, a flake of snow —

Thank you, snowflake, now I see

How and why you came to be

WHAT DOES THE GLASS OF A GREENHOUSE DO

What does the glass of a greenhouse do?

It lets the short solar rays pass through

The objects in the house absorbs these rays

And re-radiate them as long heat rays

What does the glass of a greenhouse do?

It doesn't let the long heat rays pass through

Trapped by the glass they bounce back and forth

Re-radiated and re-absorbed

STAY! STAY! YOU LONG HEAT RAYS

STRATUS AND CUMULUS

STRATUS AND CUMULUS
ARE TWO BASIC CLASSIFICATIONS.
STRATUS AND CUMULUS
ARE CLASSIFIED BY THEIR FORMATIONS

Clouds that are formed when the air current rises

Piled-up and puffy-flated.

They are called “cumulus”, cumulus means

Piled up or accumulated

REPEAT REFRAIN

Clouds that are formed without up and down movement —

This information’s the latest —

Cooled without rising and sheet-like or layered —

Sheet-like or layered, they’re Stratus

REPEAT REFRAIN

Two other cloud forms are “cirrus” clouds, which are very high and thin, and “nimbus”, which are heavy rain clouds. The prefix “alto”, meaning high, is also used to describe clouds, as for example “altocumulus” and “altostratus” Still other cloud forms that you can see in the sky are “cumulonimbus”, “nimbostratus”, “cirrocumulus” and “cirrostratus”.

REPEAT REFRAIN

SNOWFLAKE, SNOWFLAKE

Looking at a snowflake with a magnifier we see a beautiful six sided flat crystal, often star shaped, with many branches. This happens because the tiny molecules of which water is composed have a characteristic shape. When the molecules join one by one in below-freezing air, they line up in regular order, following their shapes, and form a hexagonal crystal.

(The water cycle, the water cycle)

Followed by Precipitation

(The water cycle, the water cycle)

The never... ending... cycle is taking place

All the time and every where

WHY DOES THE WIND BLOW

Cold, heavy air at the poles tends to fall and slide along the earth’s surface to lift up the warm, light air at the equator. Such a motion of air, caused by heat, is called a “convection current”. But this basic wind pattern is disrupted by the spinning of the earth, which causes all winds in the northern hemisphere to veer to the right, and all winds in the southern hemisphere to the left.

Why does the wind blow oo-oo

Why does the wind blow shhh

Why does the wind blow oo-ee

Why does the wind blow pffff

The sun-heated earth makes the air get warmer

Makes air lighter and as it does

The cool air pushes the warm air up

Now the cool air is where the warm air was

That moving air is called a “wind”

And everybody knows

What the wind is called depends upon

The speed at which it blows

That’s why the wind blows. oo-oo

That’s why the wind blows shhh

That’s why the wind blows oo-ee

That’s why the wind blows pffff

At eight miles an hour, it's just a breeze. Above 25 miles an hour it's a gale. Above 64 miles an hour, it's "blowing up a storm". Above 75 miles an hour that wind is a hurricane.

That's why the wind blows. oo-oo
That's why the wind blows shhh
That's why the wind blows oo-ee
That's why the wind blows

HOW ARE CLOUDS FORMED

When air is cool below its saturation point
The water vapor in the air condenses
When the vapor in the air condenses
Then clouds are formed
Saturation... Condensation
Bring about the cloud formation
Stratus or Cumulus, that's how the clouds are formed
When air is cool below its saturation point
The water vapor in the air condenses
When the vapor in the air condenses
Then clouds are formed

WARM FRONTS, COLD FRONTS

A "front" is the boundary between two masses of different kinds of air. Such air masses extend over distances of thousands of miles and determine the weather in a region for several days.

The weather changes, I've been told
(Hi, ho, the weather, o)

Shifting masses of the air
Whirling, twirling, swirling by
Make the pressure cells up there
Pressure cells both low and high

WHAT MAKES LIGHTNING

What makes the lightning? — It's a story in rhyme
Where the negatives and the positives make the heavens shine
They were separated, then when they accumulated
Got together and created... Lightning.
Now, every little raindrop has some electricity
Both negative and positive electricity
And when the little drops get tossed through the air
The negatives and positives separate there
The negatives and positives separate
Go off to different places and accumulate
The bunches get bigger, the attraction gets stronger...
'Till you just can't hold them back any longer

Flash! A bunch of charges are off! And as they streak through the air a mighty electric current sweeps through the air. There's a heat and a flash as the charges dash between the clouds or the clouds and the earth to join the opposite charges there. Flash! Crash! That's lightning, brother, and that's positive.

What makes the lightning? — It's a story in rhyme
Where the negatives and the positives make the heavens shine
They were separated, then when they accumulated
Got together and created... Lightning!

What can the reason be

The days, in the Winter

The days are much shorter

The rays are more slanted

And shine less directly down on the Earth

What Rays??? *The Sun's Rays!*

The days, in the Summer

The days are much longer.

The rays are much stronger

And shine more directly down on the Earth

The days, in the Winter

The days are much shorter

The rays are more slanted

And shine less directly down on the Earth

What Rays??? *The Sun's Rays!*

HIGHS AND LOWS

High pressure cells, called "highs", are areas of heavier air which are cold, or dry, or both. Such air, passing over warmer ground, brings clear weather because water droplets tend to evaporate.

Low pressure cells, called "lows", are areas of air which are warm, or moist, or both. Such air, passing over cooled ground, condenses from below to form "overcasts" or steady rains.

Unequal heating of the Earth

Causes winds to circulate

The direction of the winds

Changes as the Earth rotates

The weather changes, I've been told

(It changes day by day)

The weather changes, I've been told

Are caused by fronts both warm and cold

They cause the weather changes

From day to day

The warm fronts, the cold fronts

A-pushin' and a-wanderin'

They cause the weather changes

From day to day

A warm front will occur they say

(Hi, ho, the weather, o)

When warm air pushes cold away

(It changes day by day)

When warm air pushes cold away

A warm front's here but not to stay

Because the weather changes

From day to day.

REPEAT REFRAIN

Barometer shows pressure's down

(Hi, ho, the weather, o)

A warm air mass has come to town

(It changes day by day)

A warm air mass has come to town

And rainy weather hangs around

Until the weather changes

Some other day

REPEAT REFRAIN

When cold air rides beneath the warm.

(Hi, ho, the weather, o)

The warm air cools and clouds will form

(It changes day by day!)

The warm air cools and clouds will form

And that can cause some thunderstorms

That's how the weather changes from day to day.

The warm fronts the cold fronts a push'n and a wander'n.

They cause the weather changes

From day to day

WHAT IS HUMIDITY

Humidity is relative, but relative to what

If I were quizzed on what it is, then I'd be on the spot

So, just in case, to save my face, I'll look it up today

And then if someone brings it up, I'll casually say:

Humidity is the amount of moisture in the air. Relative humidity is the percentage of water vapor actually in the air compared to the most the air could hold at each temperature.

Now when they say "it's not the heat but the humidity"

I won't be quite as hot and bothered as I used to be

THE HURRICANE SONG

A hurricane by any name / Still remains a hurricane

Betty, Cora, Esther, Jane / It's the same old hurricane

They get started in the tropics / In the ocean far from land

Through the summer, tropic sunlight / Heats the water, there's no breeze
Air and water both get warmer / They get warmer day by day

Then the cool air starts a breeze there / Hurricane is on its way

Warm air funnels inward, upward / Moving at increasing speed

Vapor cools and condenses / And the heavy clouds are formed

Clouds condensing heats the air and / Makes the air rise higher still

Wind increases, spirals inward / And the rain comes pouring down

Winds are raging as the air mass / Slowly moves across the sea

Edges towards the coastal regions / Whipping waves up crazily

Though its eye is calm and gentle / It's as wild as it can be

Hurricane hits farm and city. / In its wake is tragedy...

A hurricane by any name / Still remains a hurricane

Betty, Cora, Esther, Jane — / It's still the same old hurricane

WHY IS IT HOT IN THE SUMMER

Why is it hot in the Summer

Why is it cold in the Winter

Why do we have the Seasons

What can the reason be

The days, in the Summer

The days are much longer

The rays are much stronger

And shine more directly down on the Earth

What Rays??? The Sun's Rays!

Why is it hot in the Summer

Why is it cold in the Winter

Why do we have the Seasons