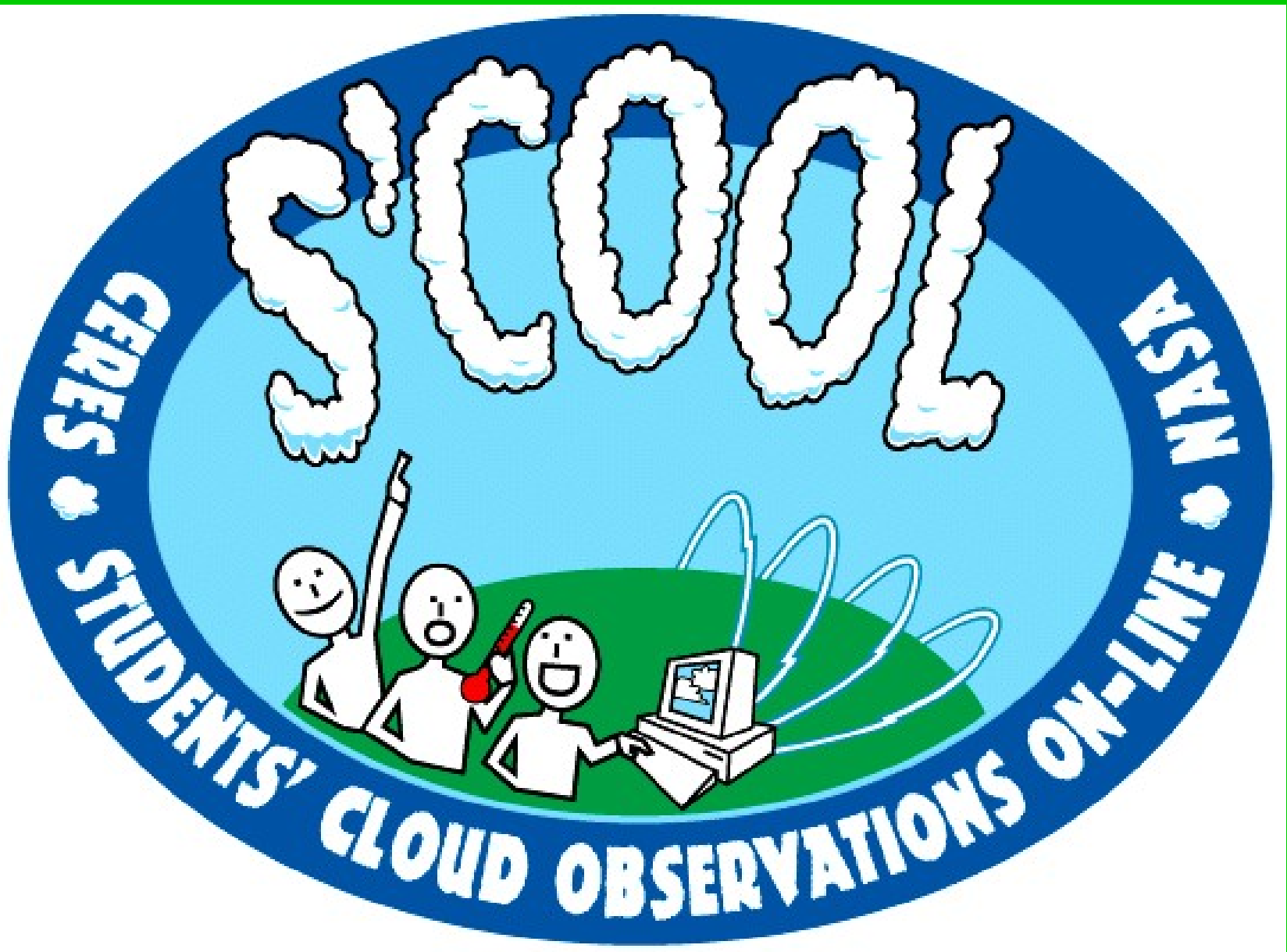
Rural Training Center – Thailand (RTC-TH)

REEEPP

FOCUS

An innovative, non-traditional community-based environmental education program integrating math, science, geography, English language, and technology lessons for environmental stewardship using interactive experiential learning in outdoor settings at Ban Na Fa Elementary School, Nan Province, Thailand.



This lesson was originally created when the RTC-TH was a program of ESSI (Earth Systems Science, Inc.), a California educational non-profit organization co-founded by Gregory Lee. In 2006, the RTC-TH was co-founded by Gregory and Saifon Lee as a separate organization.

This is an English Language Training module of

REEEPP

Rural Environmental Education Enhancement Pilot Program

presented by

The Rural Training Center-Thailand

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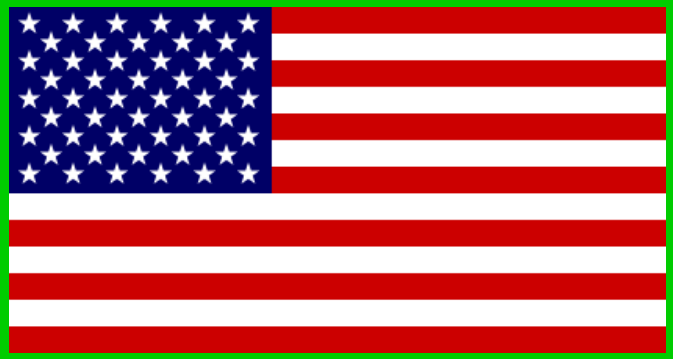
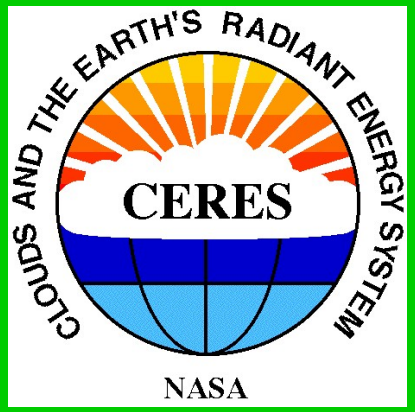
www.neighborhoodlink.com/org/rtcth

NASA



The National Aeronautics and Space Administration: the space agency of the United States of America



CERES

Clouds and the Earth's Radiant Energy System: an international project to study the effects of clouds on the Earth's radiation balance.

Na Fa Elementary School

is the first school in Nan Province to participate in S'COOL

Basic Observations

- Cloud Height & Type
- Visual Opacity
- Cloud Cover
- Surface Cover

Cloud Height & Type

Clouds are classified by their height above the ground and by their basic shape.

Cloud Height

Cloud height is measured above the surface.

- High = 6,000 to 12,000 m
- Middle = 2,000 to 6,000 m
- Low = 0 to 2,000 m

Cloud Height

Vertically developed clouds don't fit the normal height groups.

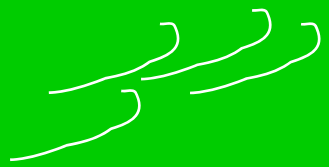
They extend from 500 to 12,000 m

Cloud Height

High	12,000 m 6,000 m	Vertically Developed Clouds 12,000 m 500 m
Middle	6,000 m 2,000 m	
Low	2,000 surface	

Basic Cloud Shapes

- Cirroform (feathery)



- Stratiform (flat)

- Cumuloform (puffy)

- Fog (no shape)

Cloud Heights & Types

High	Cirrus	Vertically Developed Clouds
Middle	Altostratus Altocumulus	
Low	Stratus Cumulus	Cumulonimbus Nimbostratus

Cloud Heights & Types

Cloud Type Prefixes

Basic Prefixes

- Alto (tall or high)
- Strato (layered)
- Nimbo (rain)

High Cloud Names

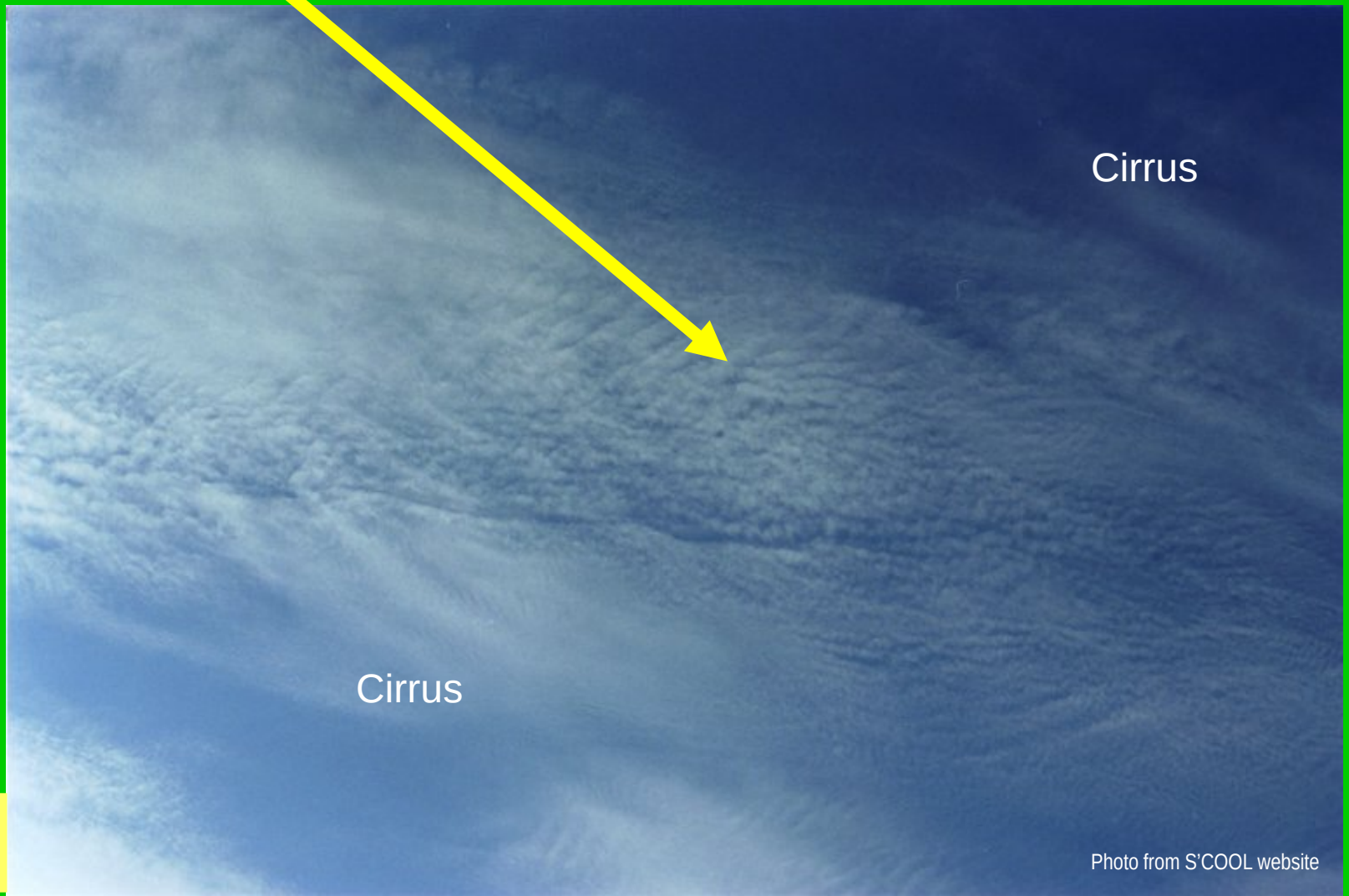
Cirrus = high feathery clouds

Cirro cumulus = puffy high clouds

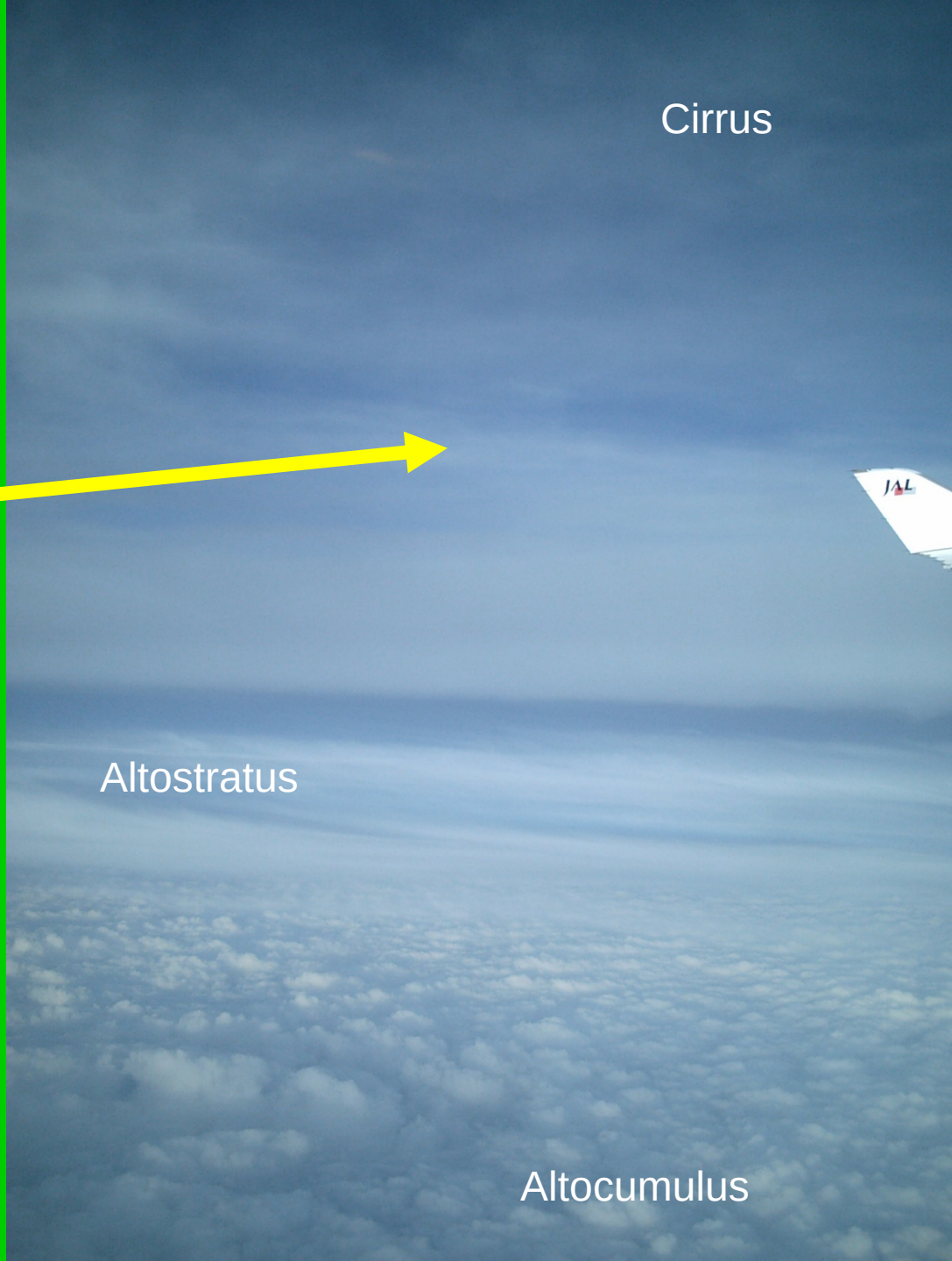
Cirro stratus = flat high clouds

Cirrus = high feathery clouds

Cirrocumulus = puffy high clouds



Cirrostratus = flat high clouds



Middle Cloud Names

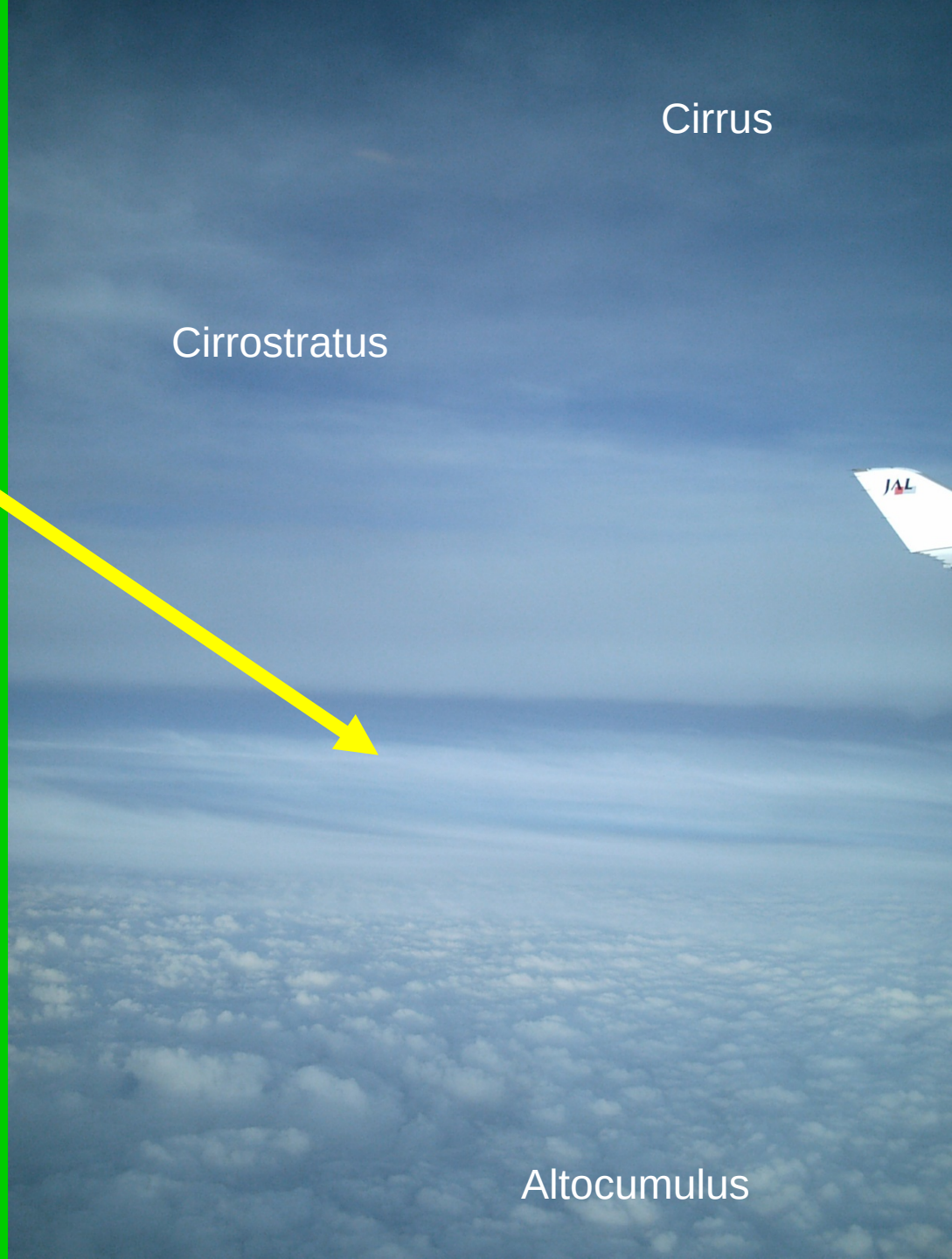
Altocumulus = middle puffy clouds

Altostratus = middle flat clouds

Altocumulus = middle puffy clouds

Altocumulus = middle puffy clouds

Altostratus = middle flat clouds



Low Cloud Names

Cumulus = puffy clouds

Stratus = flat clouds

Stratocumulus = flat clouds withsome lumps

Nimbostratus = flat clouds with rain

Cumulus = puffy clouds

Stratus = flat clouds

Nimbostratus = flat clouds with rain

Photo by Pequot Lakes Elementary School; from S'COOL website

Vertically Developed Cloud Names

Cumulonimbus = towering puffy clouds with heavy rain

Cumulus = towering puffy clouds

Cumulonimbus = towering puffy clouds; heavy rain

Photo by T. O'Leary from S'COOL website

Cumulus = towering puffy clouds

Cloud Types & Weather

- Cumulus = fair weather
- Stratus = bad weather approaching
- Cirrus = a storm is approaching
- Nimbus = rain is coming

Visual Opacity

Transparent = You can see through it clearly

Translucent = You can see light coming through, but can't see clearly

Opaque = no light comes through

Cloud Cover

Overcast = 95 – 100%

Mostly Cloudy = 50 – 95%

Partly Cloudy = 5 – 50%

Clear = 0 – 5%

Overcast 95 – 100%

Mostly Cloudy 50 – 95%

Partly Cloudy 5 – 50%

Clear = 0 – 5%

Surface Cover

- Snow / ice
- Standing water
- Muddy
- Dry ground
- Leaves on trees

Snow / ice is very unlikely for Na Fa. But hail (a form of ice) is possible in severe thunderstorms.

Standing water may exist if flooding occurs.

Muddy: This can happen with bare soil and rain.

Dry ground: This may happen especially during the dry season.

Leaves on trees. This is the normal condition in Na Fa.

When to make the observations?

- Check the satellite schedule to see the day / hour it will be overhead
- Check the Station Clocks
- Get outdoors +/- 15 min of a satellite passing over Na Fa

Where are we?

Na Fa Elementary School

Ban Na Fa, Jompra, Thawangpha City

Nan Province, Thailand

19.07586º N, 100.8637º E

~257 m above sea level

GMT +7 hours

RTC-TH

Rural Training Center-Thailand

is dedicated to providing community-based environmental education for the self-sufficiency and sustainability of small rural family farms

The RTC-TH was created to honor the memory of Mr. Tang Suttisan, a father, a farmer, and a man who valued education and used it in starting his family farm

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The End