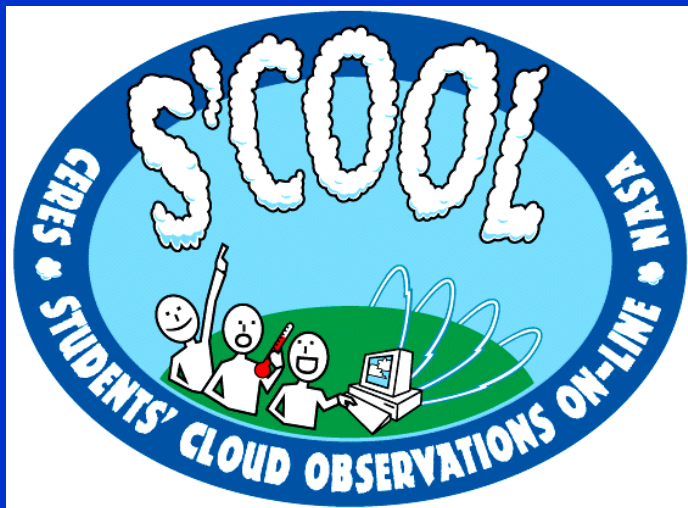


# The CERES S'COOL Project

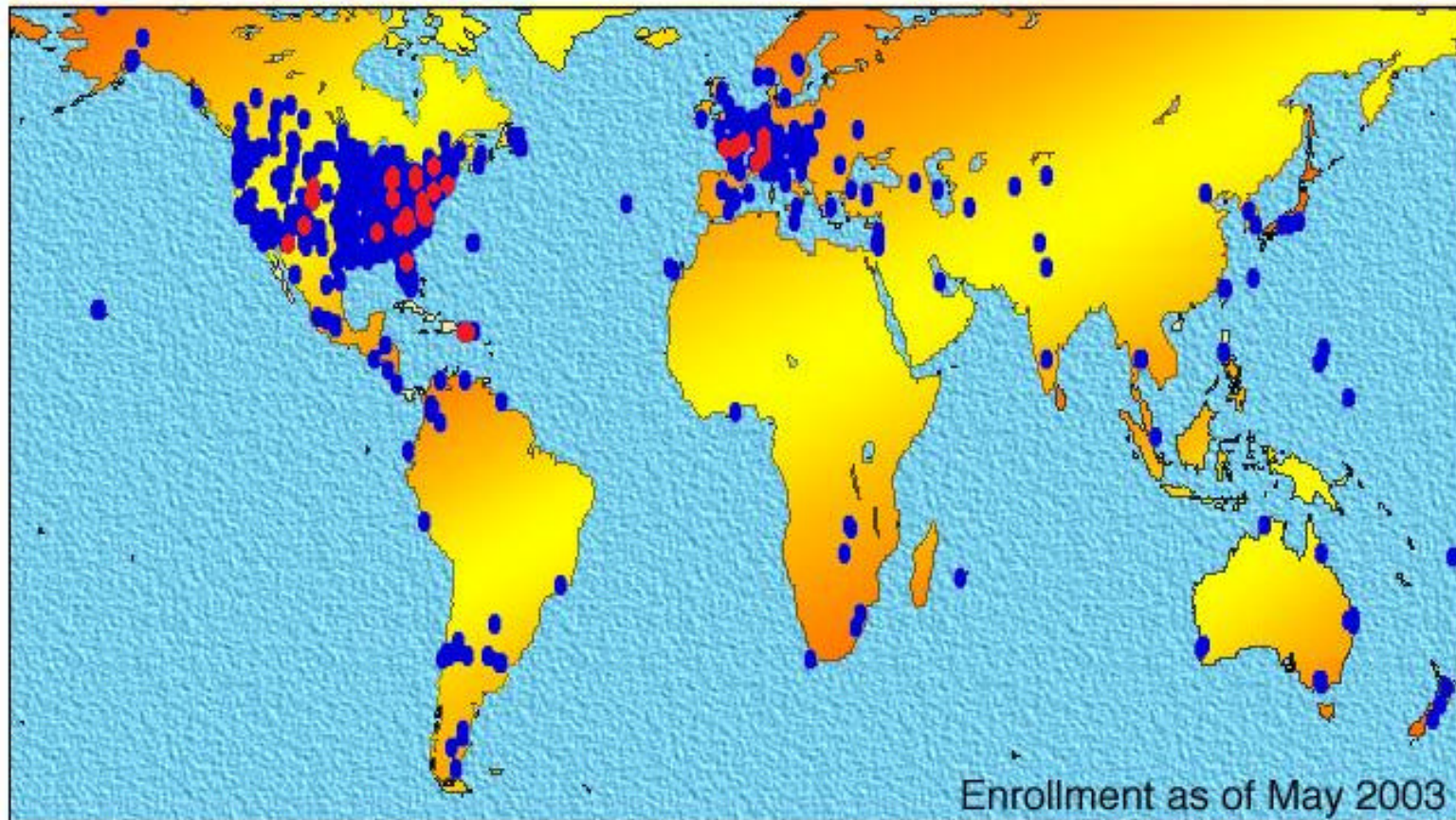
Lin Chambers, Kay Costulis and David Young  
NASA LaRC, Hampton, VA

Paula Detweiler (ASDC)  
Joyce Fischer and Roberto Sepulveda  
SAIC



28th CERES Science Team Meeting  
Norfolk, VA  
May 6-8, 2003

# Participating S'COOL Schools



- Over 1450 participating schools
- 72 schools visited by the S'COOL team (marked in red)
- Student observers in 62 countries
- More than 24,000 observations to date

# S'COOL Accomplishments Since Sept. 2002

## CERES Science Team Meeting

- Presented S'COOL at 15 conference venues
  - Several on reimbursable cost basis
- Planning for 5<sup>th</sup> annual teacher workshop
  - June 23-27, 2003
- Sent the Latest Newsletter in March 2003
  - English (1335)
  - French (48)
  - Spanish (195)
  - Color!
  - Next issue June 2003





# S'COOL In The News

- **Fayetteville Observer, 2/10/03**
- **Reading Eagle, 3/1/03**

“CLOUDY AND 'COOL' Seventh -graders in Bally enjoy NASA weather project”

- **Brainerd Daily Dispatch, 3/19/03**

“Real Science – Pequot fourth-graders helping out NASA”

- **Researcher News, 4/11/03**

– “Education is the Key”



**Key Young Scientist!**  
Do you know how CLOUDS form?

When cold water meets warm air, and either the water drops down or the air rises, **CONDENSATION** occurs and the water droplets form.

Visible water droplets usually form a cloud in the sky. When a current of air rises, it cools and the water droplets in the air condense into tiny particles in the air, forming water droplets.

Millions of tiny water droplets become visible **CLOUDS** you can see!

**S'COOL** is the S'COOL website at <http://www.nasa.gov>

**S'COOL** is a web-based tutorial.

Students all over the world are participating as Student Cloud Observers with the S'COOL Project. Students become part of the scientific team by recording cloud data to NASA, providing the NASA scientists with the experimental questions.

**What is the effect of CLOUDS on Earth's CLIMATE?**

The CERES instrument is a REMOTE SENSOR. It obtains information about clouds without being in contact with them, just like our eyes.

The CERES instrument, as a satellite, views the whole Earth daily.

NASA  
National Aeronautics and Space Administration  
Earth Science Division  
Lynette Roush, Series

# New Products

- Submitting to ESE Education Products Review
  - S'COOL Tutorial (Flash for Web/CD)
  - Already launched
  - Student bookmark
  - Cloud ID Chart

**The Cloud Cookery**

**How to Make a Cloud**

When you breathe out, you can see your breath. This is because the air you breathe out is warm and contains water vapor. When it meets the cold air outside, the water vapor condenses into tiny water droplets, which you can see as your breath.

**So what exactly happens?**

The warm liquid water from your body turns into tiny water droplets when it meets the cold air outside. The tiny water droplets are so small that you can't see them, but they are there. When you breathe out, you can see your breath because the tiny water droplets are big enough to scatter light.

**Cloud Observation Basics**

**Cloud Type:**

- ☐ Cirrus
- ☐ Cumulus
- ☐ Stratus
- ☐ Altostratus
- ☐ Nimbostratus
- ☐ Cumulonimbus
- ☐ Stratocumulus
- ☐ Mammatus
- ☐ Anvil

**Low Level Cloud Cover:**

- ☐ Clear
- ☐ Partly Cloudy
- ☐ Mostly Cloudy
- ☐ Overcast

**Cloud Top:**

Have you ever noticed how high clouds are? They can be very high in the sky. Clouds can be very high in the sky because the air is so thin up there that the water droplets don't fall.

**Cloud Cover:**

How much of the sky is covered by clouds? This is called cloud cover. Cloud cover is measured in tenths of the sky.

**Cloud Height:**

How high are the clouds? This is called cloud height. Clouds can be very high in the sky because the air is so thin up there that the water droplets don't fall.

**Cloud Quantity:**

The thickness of clouds is called cloud quantity. Clouds can be very thick or very thin. Clouds can be very high in the sky because the air is so thin up there that the water droplets don't fall.

**Ground Truth Data:**

Clouds are present 99% of the time. They are the most common feature in the sky. Clouds are made of tiny water droplets or ice crystals. Clouds are made of tiny water droplets or ice crystals. Clouds are made of tiny water droplets or ice crystals.

**Cloud ID Chart**

Clouds are present 99% of the time. They are the most common feature in the sky. Clouds are made of tiny water droplets or ice crystals. Clouds are made of tiny water droplets or ice crystals. Clouds are made of tiny water droplets or ice crystals.

<http://asd-www.larc.nasa.gov/SCOOL/tutorial.html>

# S'COOL Ambassadors

## S'COOL workshop alumni:

- Lorrie Shore and Donna Persinger – **WV-STA**
- Mollie Vann – **TN-STA**
- Linda Bryson – regional teacher conference, **NY**
- Stuart Sharack – **CT-STA**



## • S'COOL in Fiji!

- 2 workshops run by local scientists
  - 60+ attendees
  - goal to involve many schools in observations
- 
- Dr. Teresa Kennedy (U. Idaho) presented S'COOL to the National French Teachers Conference

# Looking Forward

- *Earth Science Week 2003: Monitoring our Changing World*
  - S'COOL will be offered as a science data collection activity for this week.
  - Mailings to 7000 teachers by AGI
  - <http://www.earthsciweek.org>



- Uncertainties with new NASA Code N

# Shirt order

- <http://store.shoppingnasa.com/merchant.ihtml>



Order by:

1 June 2003

See team for  
instructions.