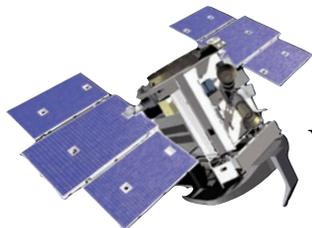




The CloudSat Downlink

CloudSat On The Road



The CEN Team is sharing CloudSat with the world, including science done with your observations!

We at the CloudSat Education Network bet that you didn't know that you presented a research poster that the American Geophysical Union meeting in December 2008. That's right. You were there. . . or at least your observations were there!

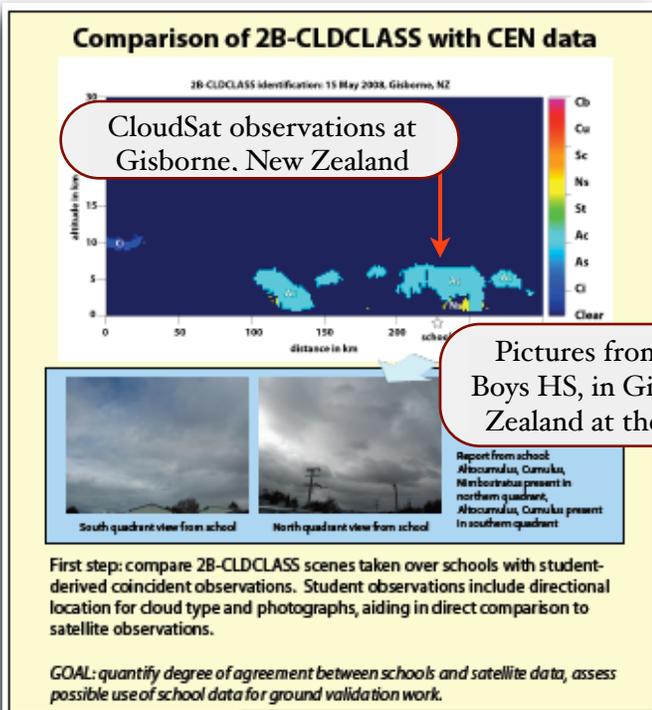
The AGU is a worldwide group of geoscientists, and every year, they have a meeting in San Francisco, California. Many thousands of scientists gather each year to discuss the latest in earth science. And this year, Dr. Matt Rogers, one of the scientists who works with the CEN, presented a research poster at the AGU meeting called "Comparison of CloudSat 2B-CLDCLASS (cloud type data) to CEN-trained Student Surface Observations".

In his poster, Dr. Rogers presented evidence that showed that your observations are as good as any other data out there for doing "validation", which is the scientific term for "is our data correct?". Lots of people came by to look at your data. We were all very proud - not just of Dr. Rogers' work, but of all of you for your excellent cloud observations. Keep it up!

We at the CEN have a busy few months ahead of us. We travel to lots of science gatherings to let people know about the great work you do and to encourage more people to observe the clouds. We're going to be at the Jet Propulsion Labs (JPL) Open House on May 2-3, 2009 in Pasadena, California. This is an event anyone can attend, and you get to learn about all of the NASA Space Missions. Last year there was a full-size model of the Mars Phoenix mission - the mission that discovered evidence of water on Mars! We can't wait to see what will be there this year. And we'll be talking about you to all of the visitors, encouraging them to observe the clouds and maybe join the CEN too.

Thank you to all of our schools who are so faithful in reporting their data. If you haven't done it in a while, now is a great time to get back into it. We're hoping to write an article for a scientific journal soon, and we want to use your data to do it. Remember, you're all scientists, and your questions about clouds and your data are important to us. If you keep up the great observations, then you too can be part of the research CloudSat scientists are doing to understand clouds!

-Todd Ellis



CloudSat observations at Gisborne, New Zealand

Pictures from Gisborne Boys HS, in Gisborne, New Zealand at the same time

Part of the presentation entitled Comparison of CloudSat 2B-CLDCLASS (cloud type data) to CEN-trained Student Surface Observations by M. Rogers and G. Stephens, presented at the 2008 American Geophysical Union Meeting, San Francisco, CA





CLLOUDS: BRIDGING THE GAPS BETWEEN ART AND SCIENCE

CloudSat Principal Investigator Dr. Graeme Stephens is a man of many talents. Not only is he the leader of the scientific mission behind CloudSat, but he is an excellent artist as well. And he has been very interested in the connections between art and science, especially when it comes to clouds.

Dr. Stephens has written about how in the early 1800s, clouds were “not only the subject of scientific pursuit, giving birth to the new science of meteorology, but there were also the keen subjects of study of the philosophical man, or artists, poets, and playwrights.” Out of this natural artistic curiosity came the naming system for clouds that we use today, developed by a citizen-scientist named Luke Howard in 1802. And the scientific study of clouds is thought to have inspired a very famous poem by Percy Bysshe Shelley, called *The Cloud*, part of which goes:

I am the daughter of Earth and Water,
And the nursling of the Sky;
I pass through the pores of the ocean and shores;
I change, but I cannot die.

So next time you take your cloud observation, take a moment and think about how beautiful the clouds are and be inspired to create your own artistic work. Read more at http://cloudsat.atmos.colostate.edu/cloud_art



Hot Towers and Cumulus Fields
by G. Stephens, 2003 Oil on Canvas

A CLOUD MOBILE FROM THE NASA SPACE PLACE

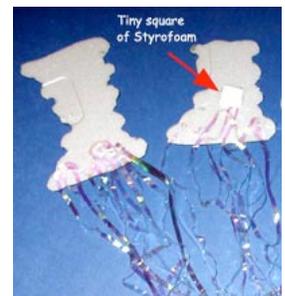
Are you interested in more connections between clouds and art? Then how about a project that uses both sets of skills to think about clouds.

What you need:

- 4-5 styrofoam sheets roughly 20 cm x 20 cm x 0.5 cm (2-3 large styrofoam take-out boxes from a restaurant would work if you can find them)
- 2 wooden skewers for grilling meat (or other thin sticks)
- white sewing thread or lightweight string
- scissors, pencil, glue
- mylar shred or tinsel (something that looks like rain)
- cloud patterns (make up your own, or download them from the website mentioned later)



clouds! If you think it’s a cloud that could be raining, cut out two identical pieces, so that you can glue them together with the mylar shred or tinsel in between like in the picture to the right (you’ll want to include a tiny square of styrofoam to add depth to your cloud)



Using your string, you can then hang your clouds from the skewers. As close to the balance point of each cloud, punch a hole with your pencil and tie the string through (make sure the cloud hangs level!). Leave about 25 cm of string so you have enough to tie your clouds to the mobile. Be sure to think about where in the sky your clouds would be found (you wouldn’t put a cirrus near the bottom, would you?) You can break up the skewers to make different levels.

For more information, go to <http://spaceplace.nasa.gov/en/kids/clouds/cloudmobile.shtml> where there are more pictures. But you don’t have to make their mobile - use your creativity and your knowledge of where clouds are in the sky.

What to do:

Cut out cloud shapes from the styrofoam. Use all different kinds of





A LETTER FROM ESTONIA: GLOBE AND CLOUDSAT IN ACTION

By Kristin Kikerpill, Paide, Estonia

I am a 13 year old schoolgirl and have been a member of the Globe project for three years since autumn 2006.

I have never doubted to started working with the project and I have never thought to leave it behind, neither. Vice versa, being a part of the project, it made me highly assess our nature and environment.

Actually, I am quite proud to be a part of the Globe, because when I was in form 5 and 6, I knew a lot about cloud terms in Latin and I knew what I was talking about.

It is difficult to explain how the activities work because to watch it from beyond, a lot could be missed.

Luckily, my form 5 headmaster Ester Koplimes was connected with Globe. She introduced us the project's basic idea so attractively that me and my three classmates keep working with it since.

First, we began to research clouds and take photographs. Girls from form 9 did all the writing work. We took and take pictures of clouds from the stadium next to our school.

A half a year later, our teacher introduced us rain observation.

Again, four of us began to working with it.

At the beginning of form 6, our teacher offered us an opportunity to start observing atmosphere and take water analysis.

We had help from girls in upper intermediate.

All four of us worked together with the four field of observation, we divided tasks and topics equally and got wonderful results.

When we reached to form 7, we could not cope with all our tasks then we started teaching younger students from form 4 and 5.

At first, it was a lot of interest among the new students but unfortunately, many of them gave up. It showed who was really interested and ready to co-operate. We are still working with the team.

At the moment, I am working on water analysis – taking them, sending away and teaching the main skills of all the process to younger students from form 5. Other 3 boys are taking the pictures of clouds and students from form 4 are observing the atmosphere.

In conclusion, I must say that thanks to the Globe, I really enjoy observing climate, nature and environment of Estonia. I have discovered that Estonia's weather is so variable and exciting.

Our school is proud of being a part of Globe and school appreciates what we have done and what we have still working on. This

encouragement only gives us the power and energy to work even harder. The project improves the sense of responsibility because the measurements must be taken every day in the right place and right time.



Students using GLOBE protocols to study their environment in Estonia!

See you at the next GLOBE Annual Conference

2-7 August 2009

13th Annual GLOBE Conference
Calgary, Alberta, Canada
Website: www.globe.gov

**Cancelled for 2009
Stay Tuned for Future
Announcements for
meeting where the CEN
will be attending!**

We will have other
use the CEN and
the classroom. We'll talk some
about best practices in taking cloud
observations and then how you can use
CEN and CloudSat data to foster
inquiry amongst your students.
Hope to see you there!!

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ASK-A-SCIENTIST

This issue's question is another from way back in our mailbag. From March 2008, here is Ramandeep Singh:

Respected Sir, I want to know what is the height of the CloudSat satellite when it overpasses from our area or otherwise also?

And the answer, first from Dr. Matt Rogers:

Hello Ramandeep, my name is Matt Rogers, and I'm one of the scientists on the CloudSat

mission. When CloudSat is flying over Mohali, it is typically at an altitude of 705 km above the surface, although the altitude can vary by a kilometer or so, depending on what's required to keep CloudSat in formation with the other satellites of the A-Train.

And from Dr. Todd Ellis:

Did you know that CloudSat flies in a constellation of satellites called the A-Train? There will soon be 6 satellites flying close together in space to understand Earth's

climate. They are the Aqua satellite to measure properties of land and the atmosphere, Aura to observe air-quality in the atmosphere and the ozone layer, CloudSat, CALIPSO to measure cloud and particle properties, PARASOL to measure the properties of clouds on the very small (micro) scale, and soon Glory to observe how clouds and carbon particles in the atmosphere affect climate change. CloudSat flies with the rest of its A-Train cousins and be able to take all of these measurements over the same part of the earth - all within about 15 minutes.

Don't forget to send in your questions for the next issue!

ASKSCIENTIST@ATMOS.COLOSTATE.EDU



The A-Train Constellation - monitoring clouds and particles in the atmosphere

BOOK REVIEW: WILD ABOUT WEATHER: 50 WET, WINDY & WONDERFUL ACTIVITIES

By Peter Falcon.

Ever wonder what's going on with the weather? Why do some clouds bring rain while others bring snow? What makes a bad hair day? And what's the deal with humidity anyway? Find the answers to these and many other wacky weather questions in "Wild About Weather".

Dr. Ed Brotak, a self-proclaimed weather fanatic and college professor, brings weather to the classroom with colorful pictures

of future weather forecasters and fun hands on activities for young readers everywhere.

The book is filled with features such as "Ask an Expert", "I didn't know That!", "True or False" and of course the great "Dr. Ed Activities". If you're an aspiring weather fanatic like Dr. Ed then this book is a must have for you.

"Wild About Weather" is available from Lark Books. It was published in 2004, and is available in Hardcover and Paperback. The

ISBN for the Paperback edition is 1-57990-749-0 and lists for US \$19.9

