THE CERES S'COOL PROJECT

STUDENTS' CLOUD OBSERVATIONS ON-LINE

Francais | Español | Deutsch | Italiano | 中文 | Thai

Lin Chambers

NASA LaRC, Hampton, VA

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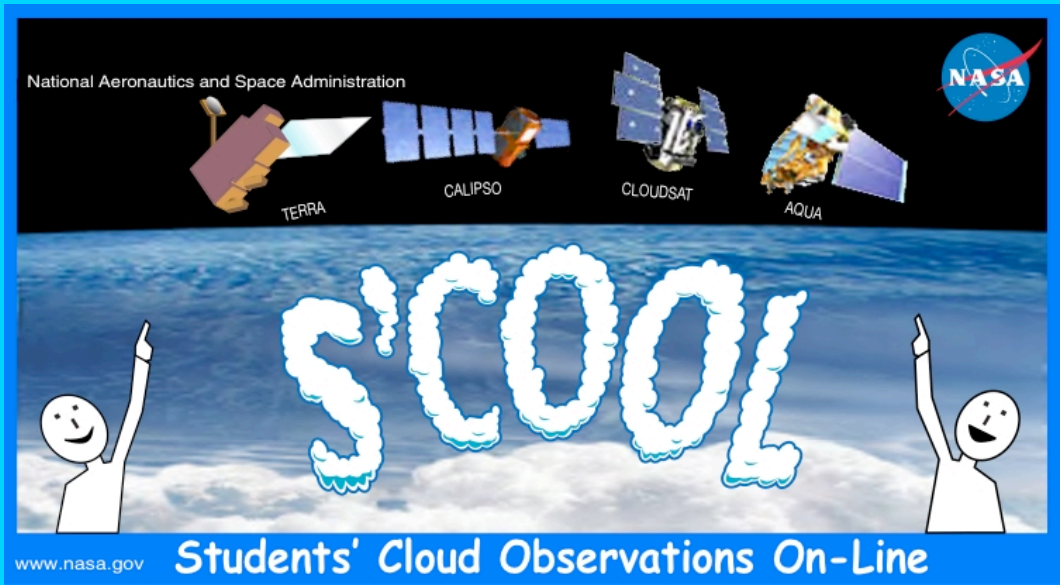
SSAI

CERES Science Team Meeting
New York, NY
October, 2008

What is S'COOL?

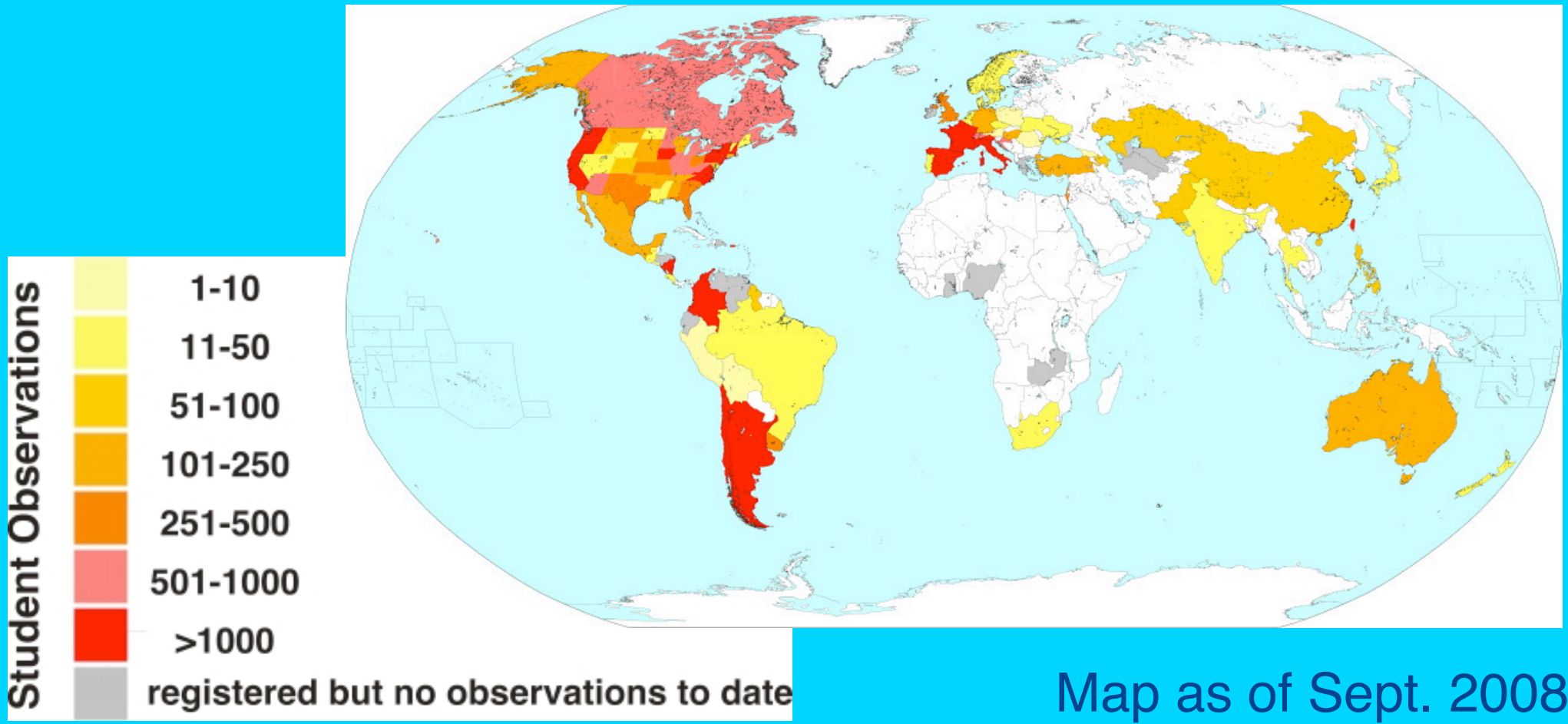
- Education and Public Outreach arm of CERES
- Backbone of Terra/Aqua formal education effort
- A simple way to involve K-12 students in authentic science
- A source of validation data for the CERES cloud retrievals

http://scool.larc.nasa.gov



S'COOL Project

- > 72,000 observations from 53 countries and all 50 states
- 45 % from outside the US (77% US participants)
- > 2,570 registered participants from 75 countries



Map as of Sept. 2008

Impact Measures

- ~80 requests for S'COOL materials since May 2008

No Changes

States "Top Five"

▪PA	21%
▪VA	10%
▪PR	6%
▪CA	5%
▪NH	5%

States "Bottom Five"

▪DC	12
▪Virgin Islands	9
▪Guam	6
▪Delaware	4
▪Northern Marianas	0

Countries "Top Five"

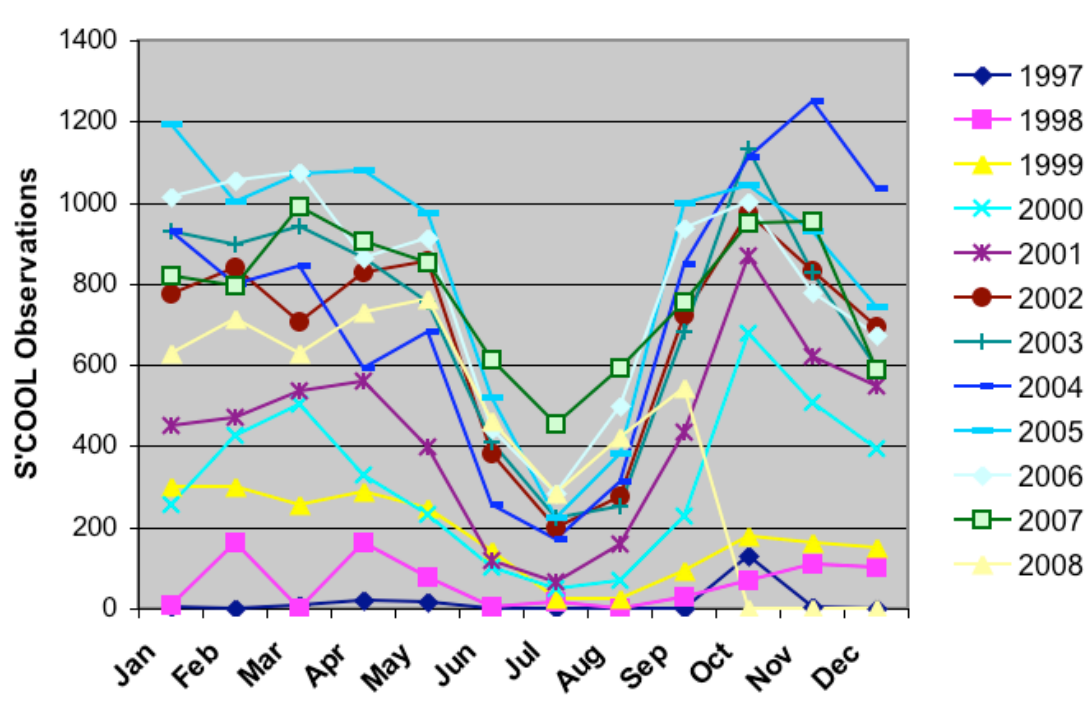
▪US	55%	↓
▪Colombia	12%	↑
▪Argentina	6%	
▪France	6%	↓
▪Taiwan	4%	

Small Changes

Impact Measures (cont'd)

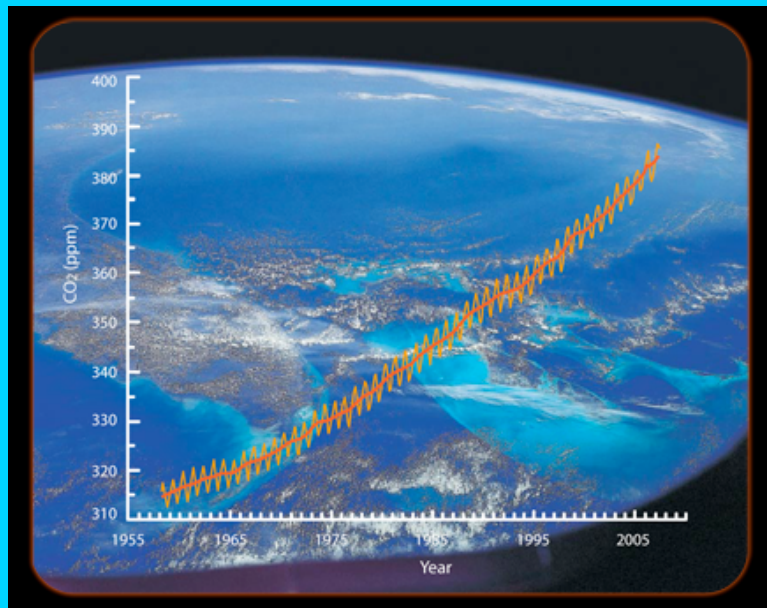
Database of observations - as of Sept. 30, 2008

- > 41,500 satellite correspondences (667 match both)
  - For 57% of ground observations ↑
- >2,570 registered participants
  - 38% submitted data
- 75 countries
  - data from 53 countries (71%)

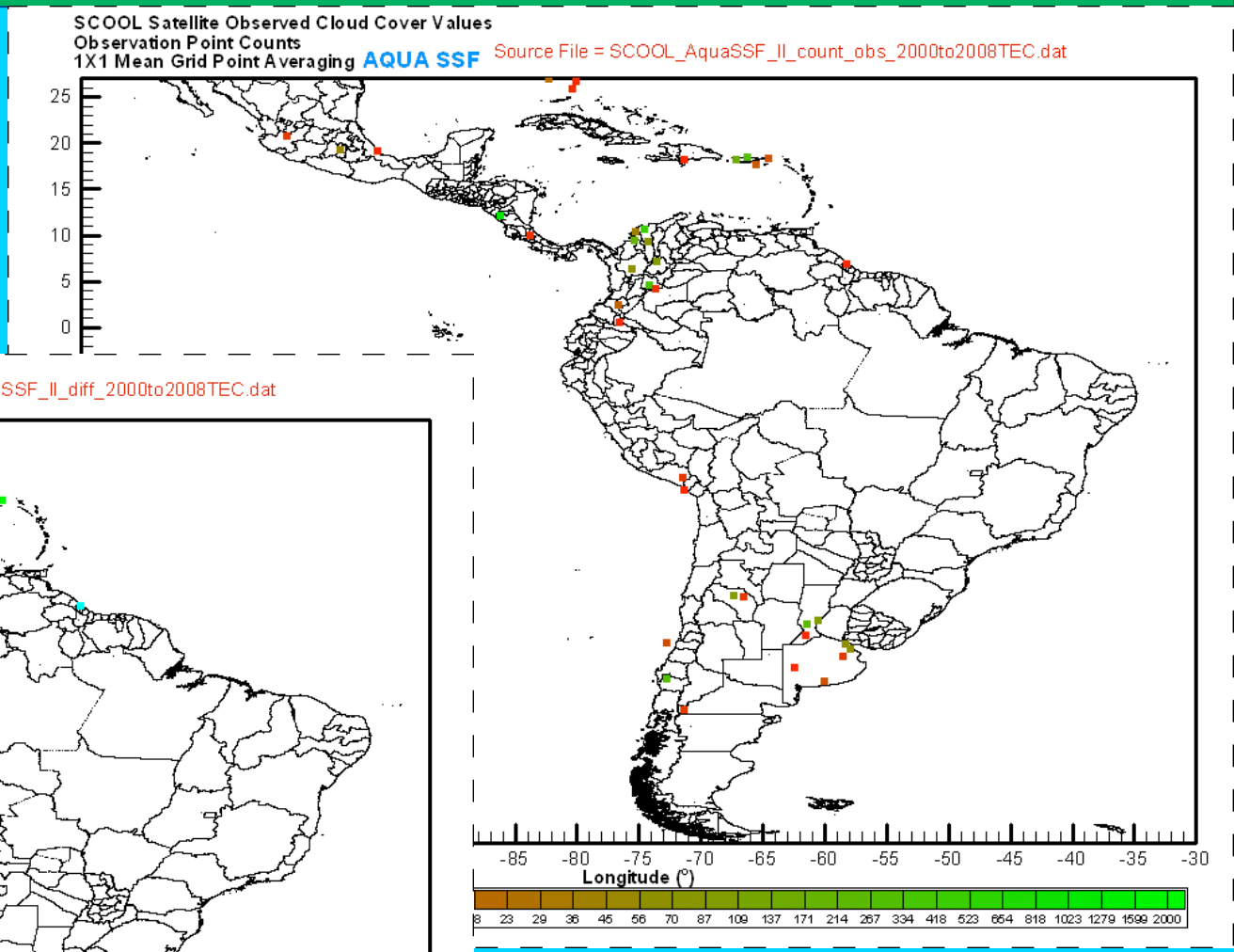


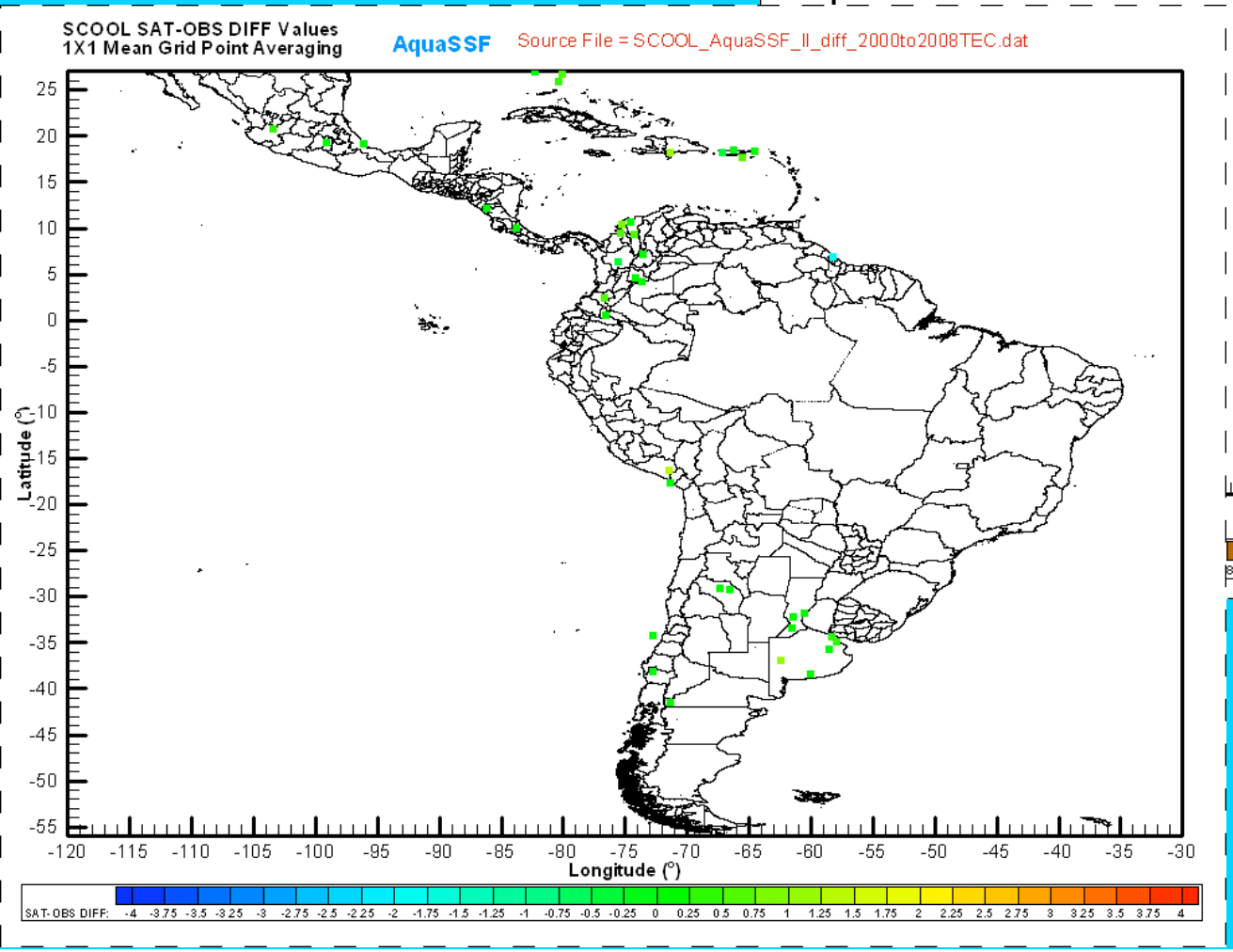
S'COOL Presentations Since May 2008

- CHROME Meeting, Smithfield, VA
- Fun in Math and Science, NASA GSFC
- Sally Ride Educator's Conference, Silver Springs, MD
- VASC Educator Open House
- VASC Homeschool Day
- Norfolk Public Schools
- NSTA Regional Conference, Charlotte, NC



S'COOL Data Analysis - S. Houser, J. Madigan





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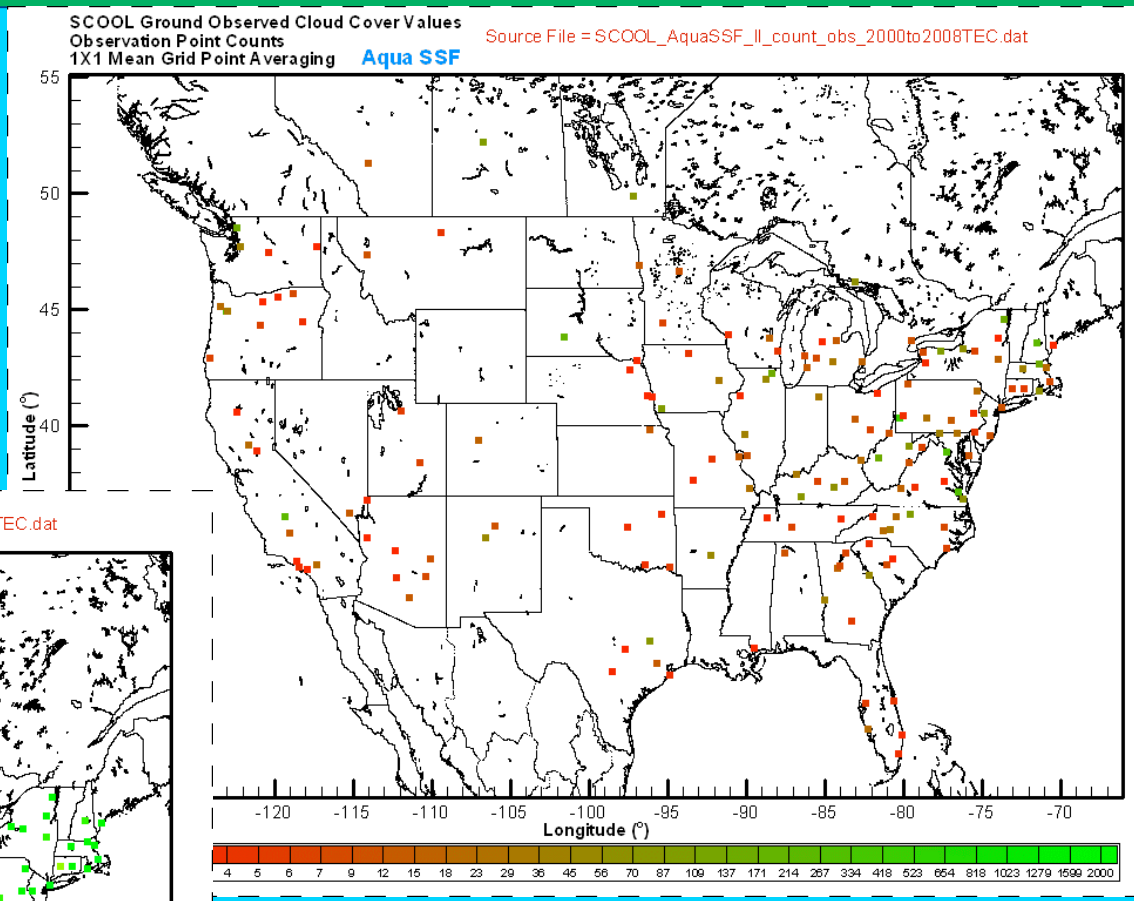

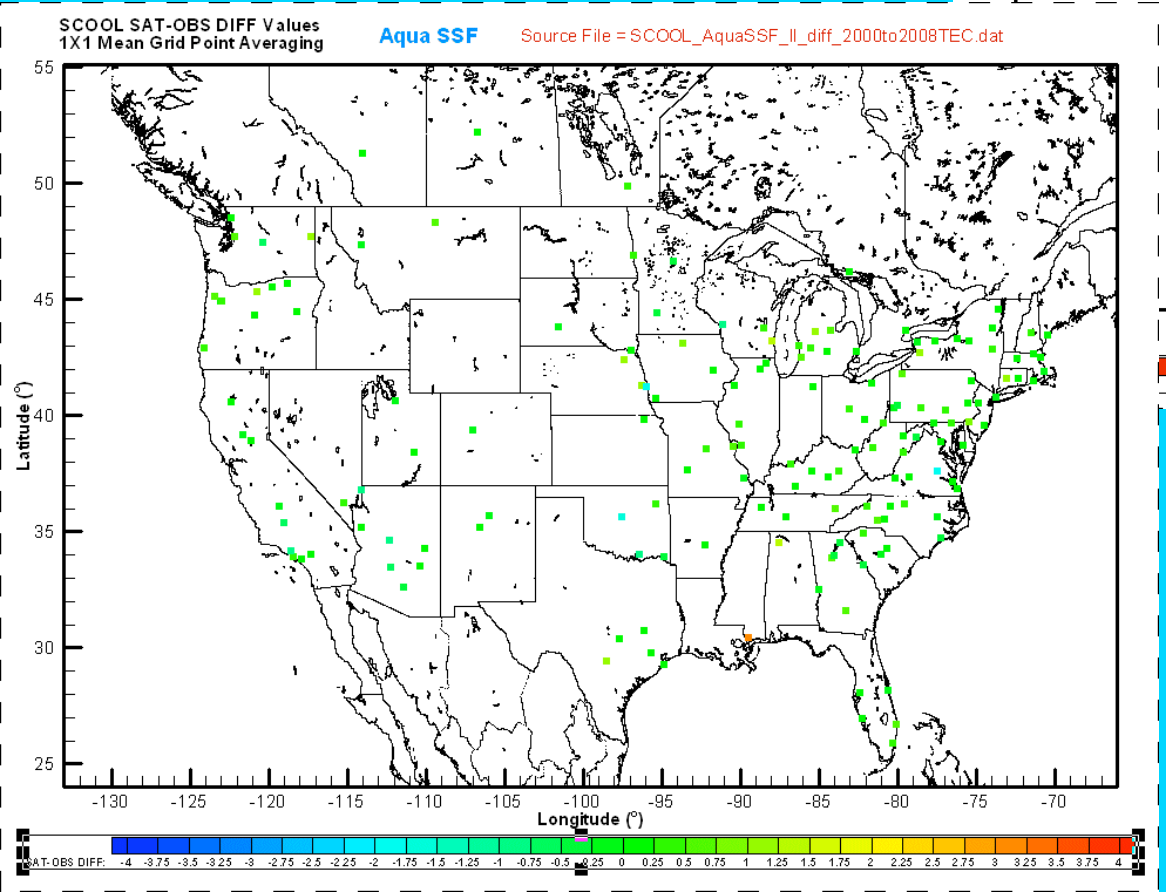

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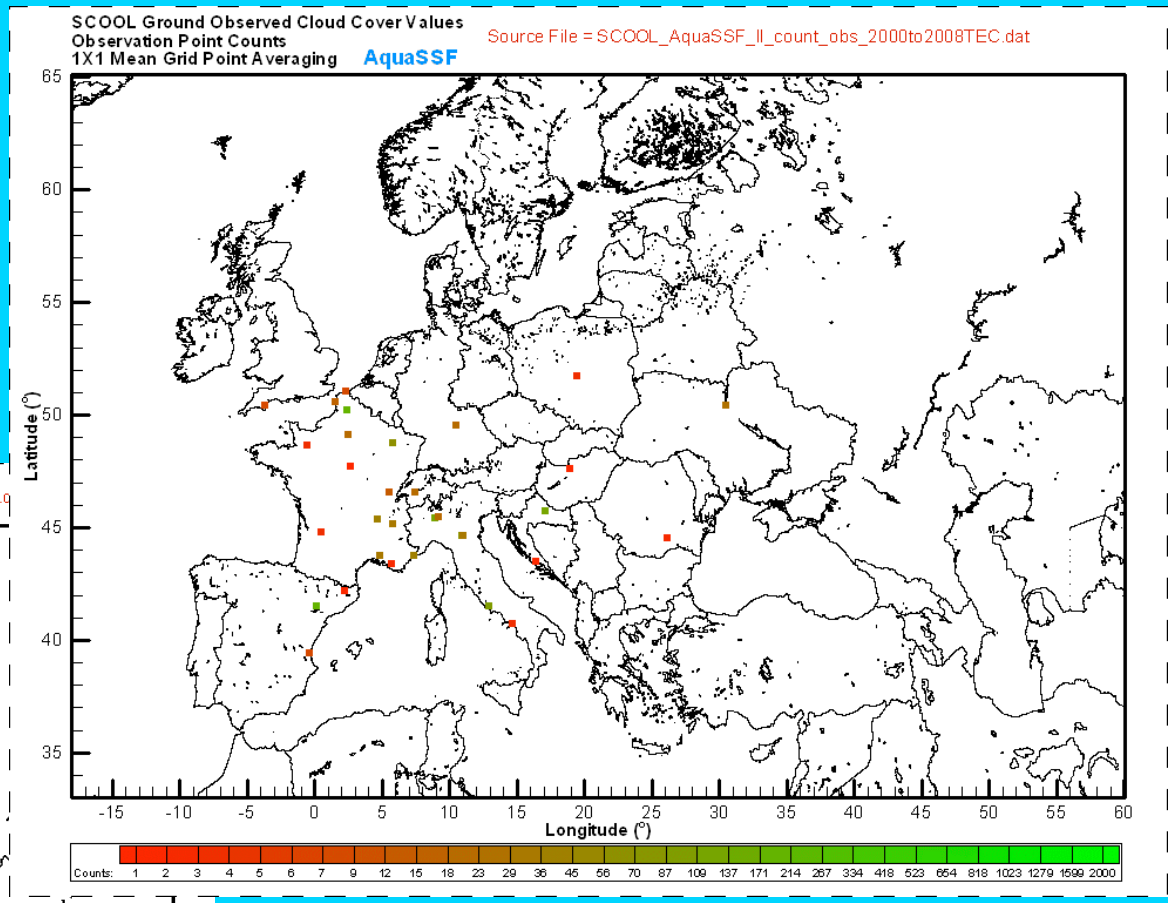

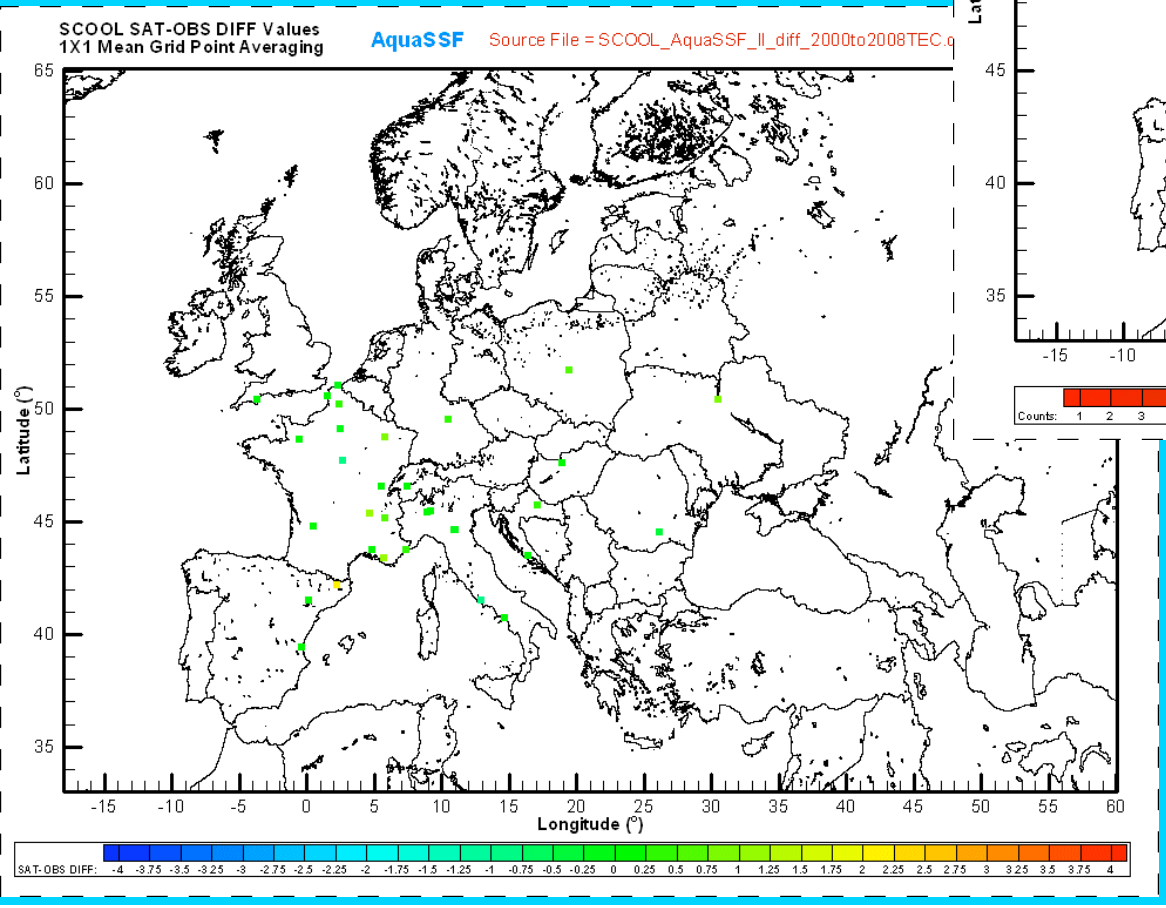

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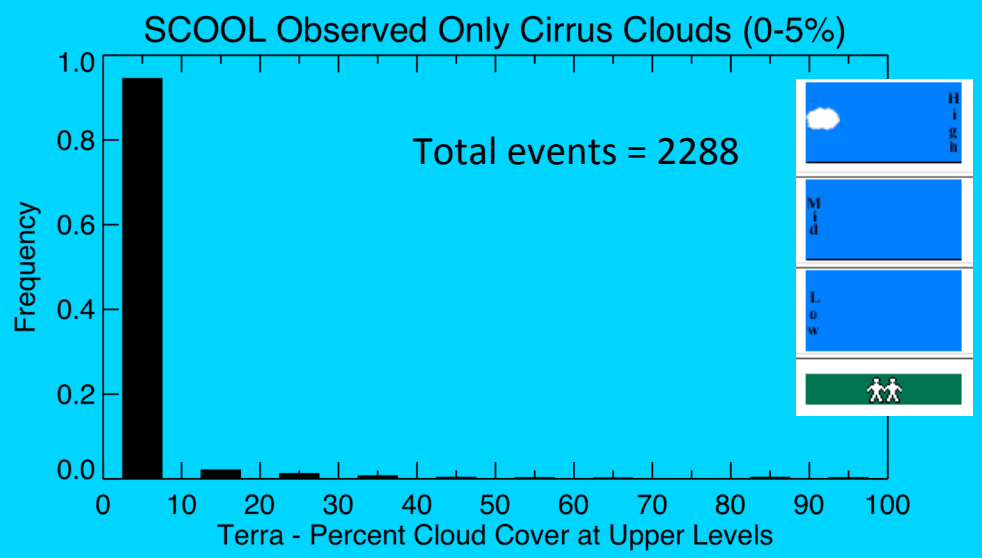
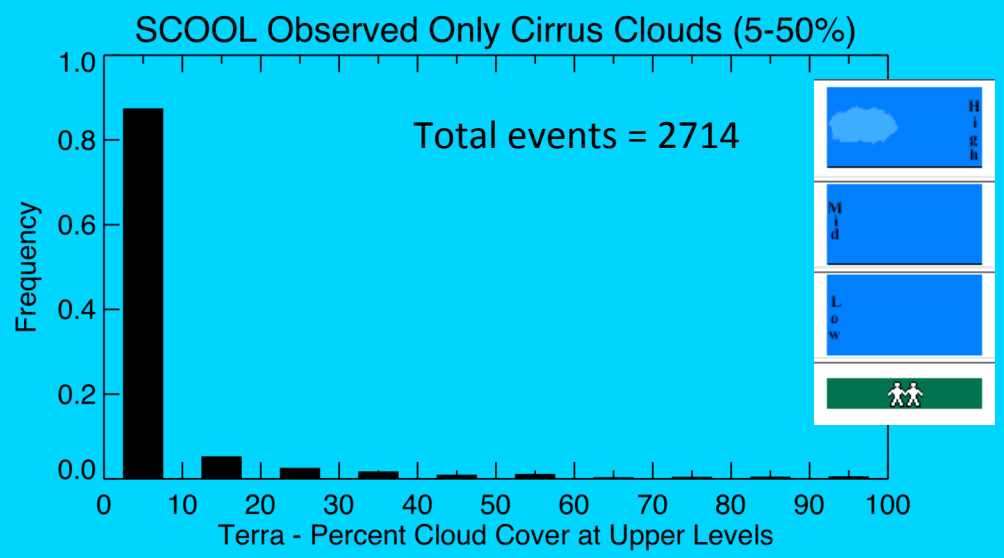
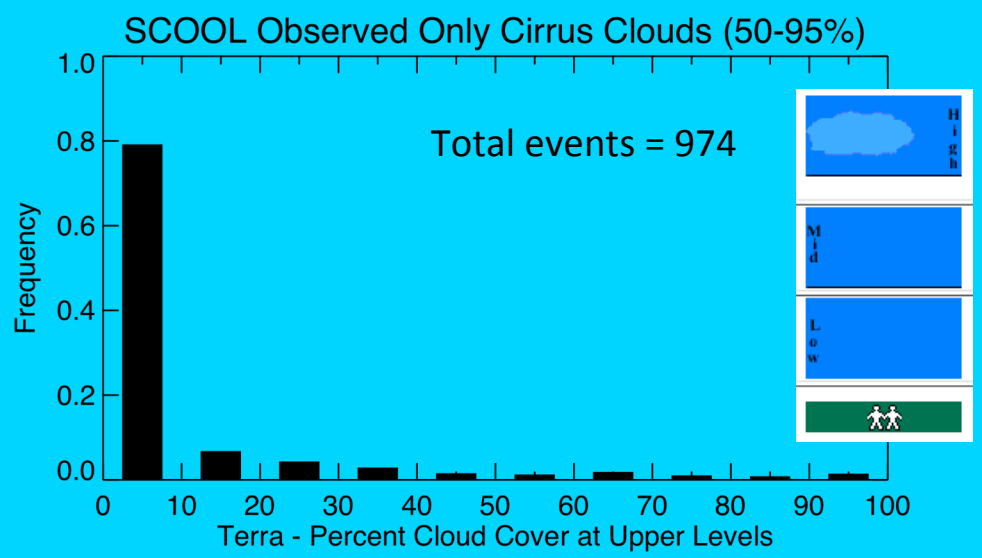
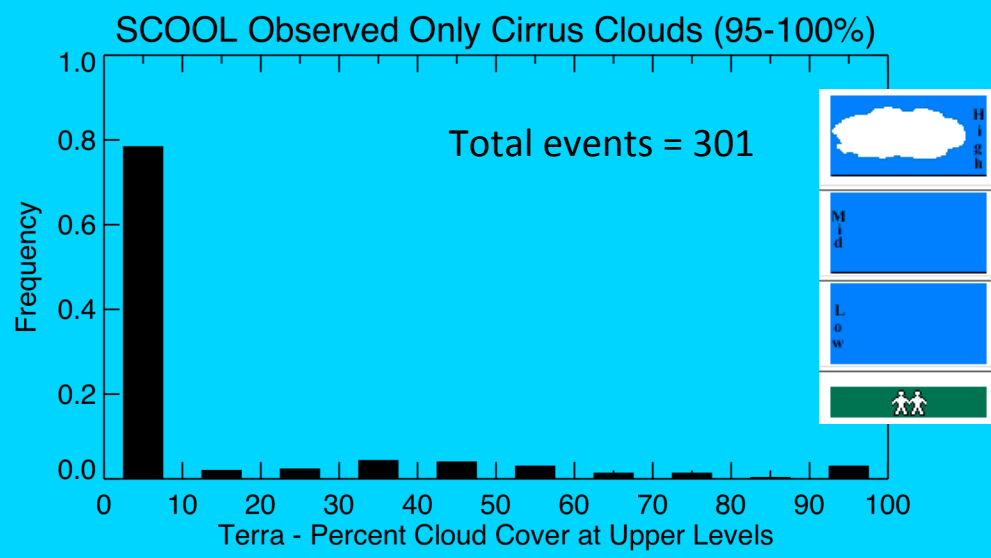
Terra-SSF Percent Cloud Cover at Upper Levels



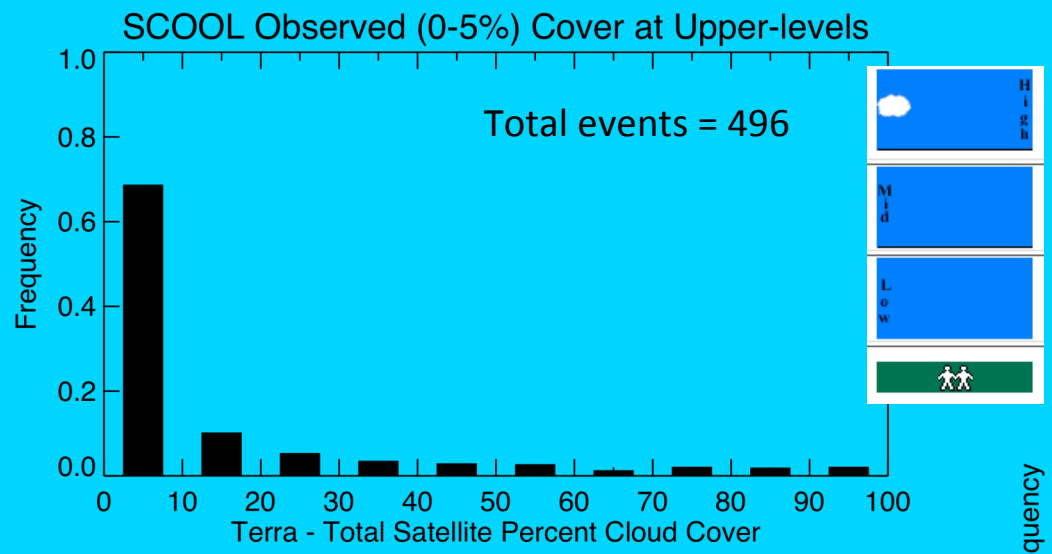


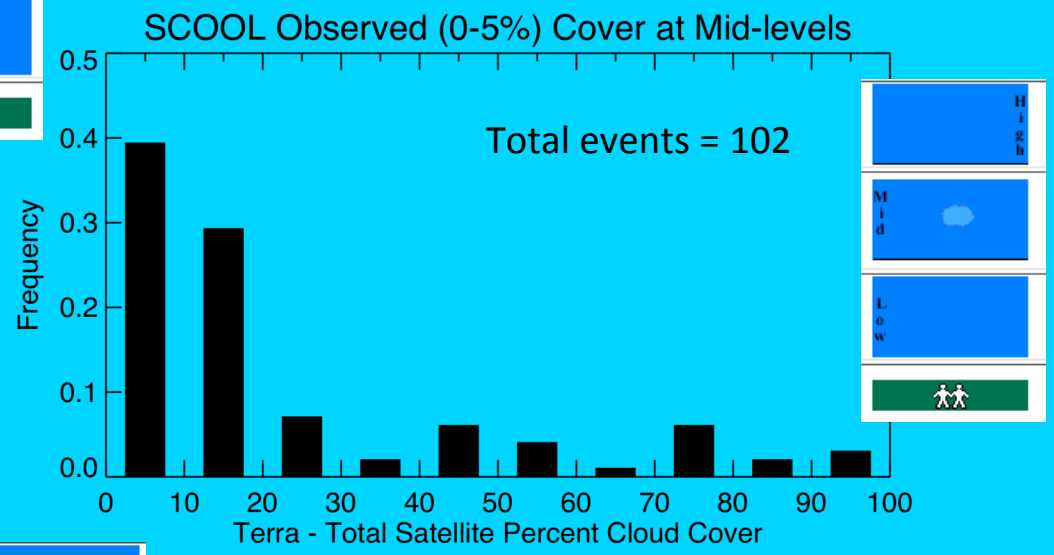


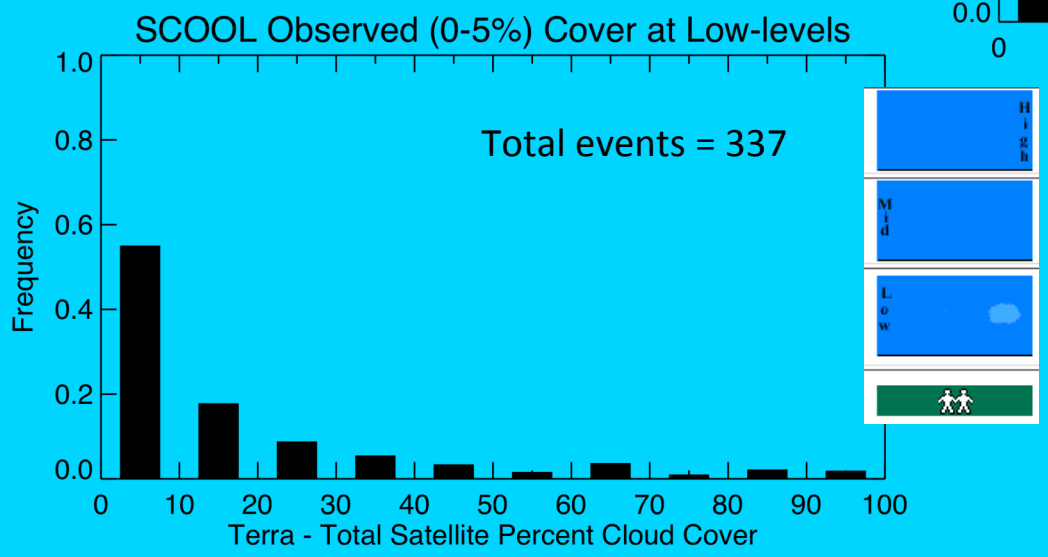


S'COOL Data Analysis - S. Houser, J. Madigan

Terra - SSF







High Level Clouds

S'COOL Obs for Aqua – SSF Matches (total=11347)	
Persistent Contrails Reported	1124
Only Contrails (no cirrus)	338
Only Cirrus (no contrails)	6384
Either Contrails or Cirrus Reported	7519

S'COOL Obs for Terra – SSF Matches (total=11611)	
Persistent Contrails Reported	859
Only Contrails (no cirrus)	310
Only Cirrus (no contrails)	5474
Either Contrails or Cirrus Reported	6333

New to S'COOL: Roving Observations

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

FIND IT @ S'COOL + GO

Home | When to Observe | What to Observe | Report Form | Database

Satellite Overpass Schedule

Latitude:	**40.8054**
Longitude:	**-73.9655**
Time Zone:	**-5**
Daylight Saving Time:	**Observed**
CERES Spacecraft:	**TERRA**
Start Date (month-day-year):	**10–26–2008**
End Date (month-day-year):	**10–29–2008**
E-mail Address:	**lin.h.chambers@nasa.gov**

NOTE: An Overpass Schedule is being sent to you via e-mail. The Satellite Position Information will also appear in this e-mail. Review the e-mail address identified above. If the address is not correct, you will need to request a new satellite overpass schedule.

Daytime Passes:

Month	Day	Year	Local Time	UT
10	26	2008	11:51	15:51
10	27	2008	10:56	14:56
10	27	2008	12:34	16:34
10	28	2008	11:39	15:39
10	29	2008	12:21	16:21

(UT = Universal Time)
Local Time = UT + (-4)

Tues. 11:39 am

Nighttime Passes:

Month	Day	Year	Local Time	UT
10	25	2008	22:14	2:14
10	26	2008	22:56	2:56
10	27	2008	22:02	2:02
10	27	2008	23:39	3:39
10	28	2008	22:44	2:44

(UT = Universal Time)
Local Time = UT + (-4)

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

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Satellite Overpass Schedule

Latitude:	**40.8054**
Longitude:	**-73.9655**
Time Zone:	**-5**
Daylight Saving Time:	**Observed**
CERES Spacecraft:	**AQUA**
Start Date (month-day-year):	**10–26–2008**
End Date (month-day-year):	**10–29–2008**
E-mail Address:	**lin.h.chambers@nasa.gov**

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Daytime Passes:

Month	Day	Year	Local Time	UT
10	26	2008	13:32	17:32
10	27	2008	14:15	18:15
10	28	2008	13:20	17:20
10	29	2008	14:03	18:03

(UT = Universal Time)
Local Time = UT + (-4)

Tues. 1:20 pm

Nighttime Passes:

Month	Day	Year	Local Time	UT
10	26	2008	2:27	6:27
10	27	2008	3:10	7:10
10	28	2008	2:15	6:15
10	28	2008	3:52	7:52
10	29	2008	2:57	6:57

(UT = Universal Time)
Local Time = UT + (-4)

http://asd-www.larc.nasa.gov/Rover

New to S'COOL: Roving Observations

User Nickname	Latitude	Longitude	City	State	Country
CERES_Meeting	40.81	-73.97	New York	NY	USA

Ground Observation				No Satellite Information Available
Date: 2008-10-27		Local Time: 12:44:00	Universal Time: 16:44:00	
Opacity	**Cloud Cover**	**Type**	**Visualization**	
Translucent	Partly Cloudy (5% to 50%)	Cirrostratus		
				
				
Contrails:	Persistent - 00 Short-Lived - 00			
Surface Observations:	Snow/Ice: No Standing Water: No Muddy: No Dry Ground: Yes Leaves on Trees: Yes			
Temperature: C Barometric Pressure: hPa Relative Humidity:				
Comments: Clouds thickening to the East				

A True S'COOL Rover

The Around the Americas Project:
An Educational Adventure to Protect Our Ocean Home

June 2009
To
June 2010

http://www.aroundtheamericas.com

S'COOL Needs YOU!

- **Participants in every state and >70 countries**
  - Offer to serve as a **resource to a local teacher**
  - Arrange a **S'COOL visit when traveling**
  - Provide **S'COOL info to teachers you know**
- **Presentation materials available**, with script suggestions
- **Help with translation of materials**
- **Serve as resource for scientific content questions sent in by participants**
- **Analyze some data!**