



**Workshop Calisph'Air 2011**  
***Préparation de la Campagne Internationale de Mesures***  
***Preparation of the International Measurement Campaign***  
*Toulouse*  
*30/09-02/10*



## **1 - Introduction**

**General Program Presentation**  
**Objectives of the workshop**

## **2 – Calisph'Air**

**Calisph'Air Project**  
**Ongoing actions**  
**News of the A - train satellites**

## **3 - International Measurement Campaign (SRCC) and European organization**

## **4 - Saturday logistics**

## **5 - News on the aerosol Research (Black Carbon...)** **Discussion**

# 1- Introduction

# Workshop objectives

This is the Kick off of the International Measurement Campaign (SRCC)

To allow the teachers :

- To acquire or exchange on the *measurement protocols* and use of *measurement equipment*,
- To allow *teachers practise* between teachers, and *projects collaboration*,
- To prepare the *data processing* with the help of the *scientists*,
- To prepare a *Training kit*, to put on the website, for the newcomers

# Friday Program

Vendredi 30	
HORAIRE	Hotel (Kyriad)
19h	Accueil et repas (restaurant Le Si Bémol)
20h30-22h30	<p><b>Présentations</b></p> <p>INTRODUCTION: - Actions depuis le dernier séminaire. - Nouvelles sur l'état de santé des satellites (A-Train).</p> <p>INTRODUCTION : - Actions since the last workshop. - Update on the health conditions of the satellites (A-Train).</p> <p>CAMPAGNE : Présentation de la Campagne de Mesures Internationale GLOBE et de sa déclinaison européenne.</p> <p>CAMPAIGN : Presentation of the International Measurement Campaign GLOBE and the European one.</p> <p>PRESENTATION SCIENTIFIQUE : Etat d'avancement de la recherche sur les aérosols (black carbon ...).</p> <p>SCIENTIFIC PRESENTATION : news on the aerosols' research.</p> <p><b>Discussions</b></p>
	<p><b>La Campagne de Mesures Internationale</b> International Measurement Campaign</p>

# Saturday Program

Samedi 1er		
HORAIRE	"Cité de l'espace" (Avenue Jean Gonord - 31506 TOULOUSE)	
9h	Départ de l'hôtel	Covoiturage (organisé la veille) / Carpool (checked the day before)
9h30-12h	ATELIERS WORKSHOPS	<p>ATELIER A : Mesures au sol (photomètres, ozonomètres, observations des nuages...) et entrée des données sur Globe et Globe France.</p> <p>Par : Annie Carrasset, Eric Abgrall</p> <p>WORKSHOP A : Ground Measurements and data entry on Globe website.</p> <p>By : Annie Carrasset, Eric Abgrall</p>
		<p>ATELIER B : Calcul de l'AOT et exploitation des données niveau 1</p> <p>Par : Michel Pedurand</p> <p>WORKSHOP B : AOT calculation and data exploitation level 1</p> <p>By : Michel Pedurand</p>
12h-13h		Déjeuner/Lunch
13h-17h	ATELIERS WORKSHOPS	<p>ATELIER C : Utilisation des données satellites (Calipso, Modis...)</p> <p>niveau 2</p> <p>Par : Mehdi Rajade, Yves Darbarie</p> <p>WORKSHOP C : Satellites' data exploitation (Calipso, Modis...)</p> <p>level 2</p> <p>By : Mehdi Rajade, Yves Darbarie</p>
		<p>ATELIER D : Expérimentations simulant le comportement des aérosols, pouvant être reproduites en classe.</p> <p>Par : Paul Adams</p> <p>WORKSHOP D : Experimentations showing the aerosols behaviour, to do in class,</p> <p>By : Paul Adams</p>
17h-19h		<p>ATELIER E : Présentation du projet « Black Carbon », formation à l'utilisation du matériel et au traitement des données.</p> <p>Par : Karli Kütt</p> <p>WORKSHOP E : presentation of the Black Carbon measurements' campaign, training on the equipment, overview of data processing and collecting.</p> <p>By Par : Karli Kütt</p>
		Temps libre/Free time
19h		Repas/Diner (Restaurant Les Jardins de l'Ambassade)

(trois au choix / choose three items)

- **Démonstration de l'utilisation des nouveaux photomètres (CaliToo...)**
- **Demonstration « how to use new photometers (CaliToo...)**

# Sunday Program

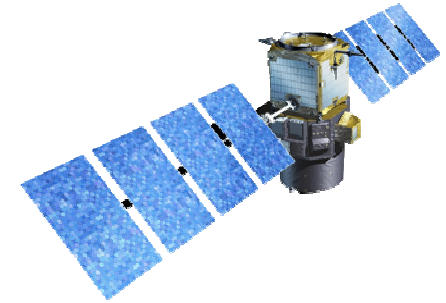
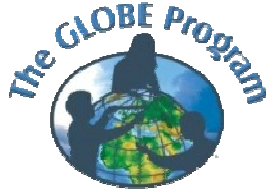
Dimanche 2		
HORAIRE		Hotel (Kyriad)
8h30-11h45	<b>Présentations de projets</b> <i>Projects presentations</i>	Courtes (5-10min) présentations de projets en collaboration en cours ou à venir.  <i>Shorts (5-10min) presentations of collaboration projects, already started or new ones.</i>
		Projet Comenius Black Carbon - Projet Comenius GLOBE Europe - Sahara's dust Guyane- Poussières du Sahara Caraïbes - MTO à l'Ecole - Chasseurs de nuages/S'COOL - Blog Climat - Exemple de PBL (Problem Base Learning)  <i>Comenius project : Black Carbon - GLOBE Europe Comenius project - Sahara's dust Guyana - Sahara's dust Caribbean - MTO at school - Clouds hunters/S'COOL - Blog Climat - Exemple of PBL (Problem Base Learning)</i>
11h45-12h	<b>Organisation</b>	Organisation de la campagne de mesure : - Ressources (en ligne, matériel) - Calendrier
		<i>Organisation of the measurement campain :</i> <i>- Ressources (on line, equipment)</i> <i>- Planning</i>
12h	Repas	

**Echanges et coopérations**  
*Exchanges and cooperation*

# 2 – Calisph'air



# Calisph'AIR

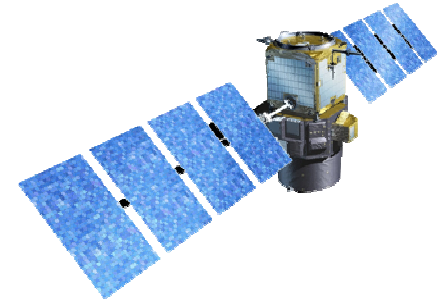


**Un projet éducatif, pour étudier le rôle des aérosols dans la qualité de l'air et le climat.**

**An educational project, to study the role of aerosols in air quality and climate.**



# Calisph'Air



## Why

- ❖ **CNES**: 40 years experience in **Education**
- ❖ **CNES** developed Earth Observation Satellites; PARASOL and **CALIPSO** to study Earth's atmosphere
- ❖ **GLOBE agreement** signed between NASA and CNES
- ❖ The development of **Calisph'Air** raises the awareness of local phenomena through an experimental approach, benefited by the global perspective of satellite systems :
  - to learn the **scientific approach**
  - to raise awareness of the **Environment**
  - to **exchange and engage** with classes and scientists worldwide

Using computers and **new technology**, tying in with **French school curriculum**



# Calisph'Air

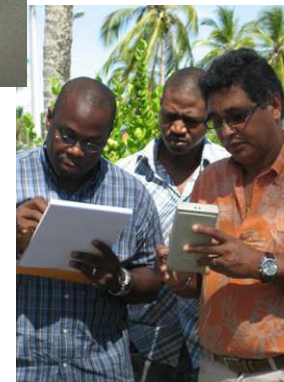
## HOW

CNES provides resources :

- ❖ Develops a hand held **sun photometer**
- ❖ Makes **satellite data accessible**
- ❖ Provide a **collaborative web site**

CNES organizes :

- ❖ Professional **development workshops for teachers**
- ❖ Get together for the students **to present their class projects**



# Calisph'Air

## What

Classes / Students :

- ❖ Measure aerosols and make cloud observations
- ❖ Report measurements in a data base
- ❖ Interact with scientists and other students through videocons, and web chats...
- ❖ Develop interdisciplinary class projects

To expand their knowledge about aerosols, clouds...  
atmosphere (pollution, climate change)



# Main Calisph'Air ONGOING ACTIONS

## 1 –Sun photometer protocol

Get a second aerosol protocol with AOT data insertion and not just voltage  
Have the sun photometer measurements *accepted* into the GLOBE data base

Enter *weather data* while waiting to enter the aerosol data.

## 2 –Entering MTO data (see Michel Pédurant's presentation) while waiting to enter the aerosol data.

Submit an article on the Globe France blog, at least once a year, after the Measurement Campaign at the latest.

## 3 – Participation in contests (Expo-sciences, C'génial, faites de la Science, etc.) .

## News of A train satellites



- **PARASOL** (aerosols, clouds) has been transferred below the constellation, but it will go on with its mission until February. It is still partially in connection with MODIS;
- **CloudSat** has had a battery problem on its radar since April 2011;
- The other satellites of the A-Train are currently performing well (**CALIPSO** launched in 2006);
- **GLORY** a new satellite to study aerosols and sun irradiance was lost on March 4, 2011;
- **GCOM-W1 (water cycle)** (JAXA) launch is planned for the end of 2011 or beginning of 2012;
- **OCO-2** (carbon dioxide) launch is planned for the beginning of 2013, but may it may be delayed. Following GLORY, NASA may change the launcher.

# **3 – International measurement Campaign**

## **Student Research Climate Campaign**

# GLOBE Student Climate Research Campaign (1)

The GLOBE Student Climate Research Campaign (SCRC) aims to **engage students in measuring, investigating, and understanding the climate system** in their local communities and around the world.

Drawing on GLOBE protocols and data, as well as other datasets, **students take climate-related measurements and investigate research questions about climate.**

# GLOBE Student Climate Research Campaign (2)

There are three linked components to the SCRC, and teachers can use any one or all of these to enhance teaching and understanding of climate issues.

## 1 - Climate Foundations

These introductory activities allow students to study real data and understand key concepts of weather and climate.

## 2 - Intensive Observing Periods

Students from around the world are encouraged to take themed measurements over a short period of time, and analyse their data.

## 3 - Research Investigations

Ultimately, students can carry out their own research projects, either alone, or with other schools in your country or around the world.

By participating in this campaign, **students will contribute to climate science studies**, will connect with other schools and classrooms around the globe, and **be inspired to explore and conduct science investigations** of their own as part of their increased awareness of **climate-related environmental issues and Earth as a system**.

# European Measurement Campaign

## Aerosol group <sup>(1)</sup>

**Countries** : Croatia, Estonia, France, Hungary, Israel, Italy, Netherlands, Norway, Poland, Russia, Belgium, Latvia, Germany, Spain..

**Age** : 15 to 18?

**Intensive Periods of Measurements** *Autumn* : 3rd October- October 31st  
*Spring* to be chosen

**Protocols** : temperature, pressure, hygrometry, cloud cover, type of clouds, aerosols...

### Study Themes of study

- Air quality
- Climate
- impact on Health

# European Measurement Campaign

## Aerosol group (2)

### Data processing :

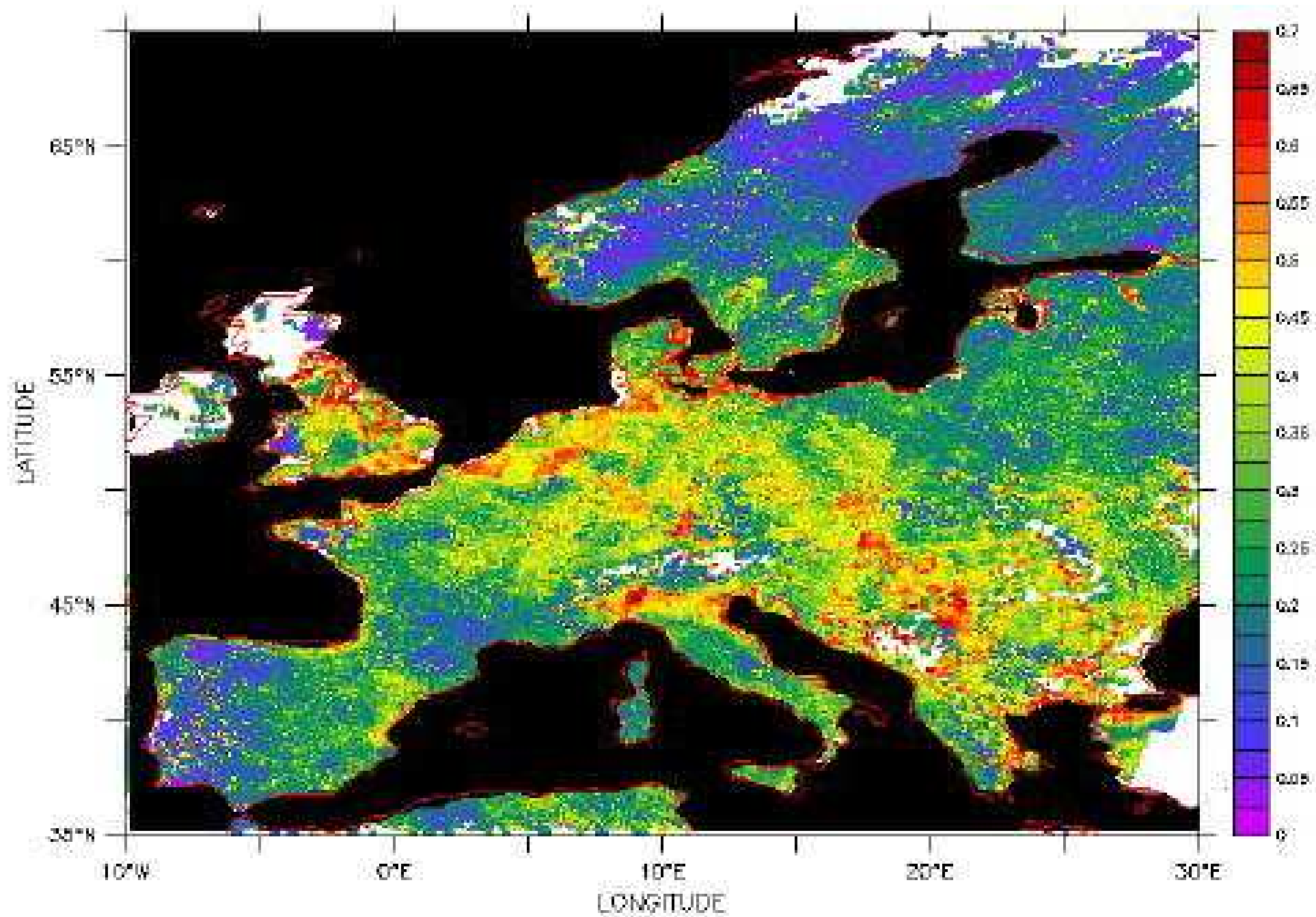
- Where the aerosols come from (link with atmospheric currents)?
- What is their effect on health?
- What are their components (natural, man made, pollutants...)?
- Comparison of data with others schools data
- Comparison with ground data (aeronet network...)
- Comparison with satellite data (MODIS, Calipso...)

### Resources to be developed :

Video (introduction to the project)

Tools to superimpose the ground measurements with satellite data

...



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# 4 – Saturday Logistics

# 5 - News on the aerosol Research