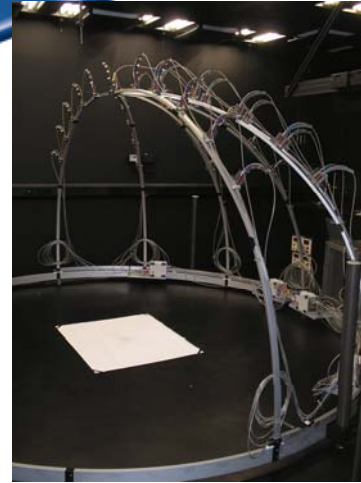


NPL/UK activities relevant to CEOS

Nigel Fox
Quality of Life Division

Oct/Nov 06

Working with local school to build a remote controlled helicopter to fly a small spectrometer for EO cal/val



GRASS

Assembly ~30 mins



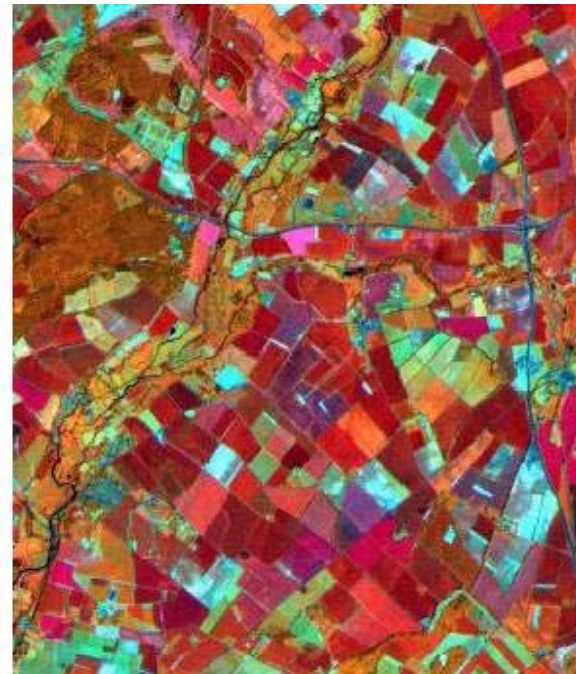
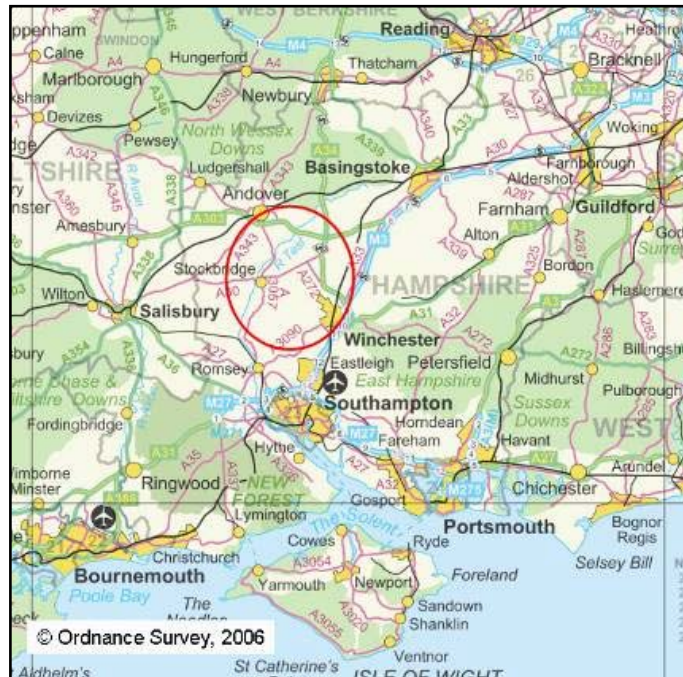
Surface characteristics are angular dependent (viewing and Illumination)

– GRASS (Goniometric RAdiometric Spectrometer System) 35 individually selectable “cameras” linked by fibre to spectroradiometer

Plans for next 3 yrs

- Establish reference data sets/protocols for surface BRDF
- Further Studies on optical QA data needs
 - accuracy
 - priorities
- Automated instrumentation
- Engineering model of TRUTHS calibration system & TSI
- Continuum Absorption in the Visible and Infrared and its Atmospheric Relevance (CAVIAR) (water vapour) with Met office, RAL, Univ of Reading UCL, IC, Camb, Leic

Chilbolton Cal/Val experiment 2006



NCAVEO

Chilbolton Cal/Val experiment 2006

Timetable

- Decision to hold the experiment : Nov 2005
- Identified suitable site : Dec 2005 / Jan 2006
- NCAVEO staff recce of area : Feb/March 2006
- Planning meeting : April 2006
- Field recce for participants : May 2006
- Field campaign : June 2006
- Data delivered : June – October 2006

Aims of the Chilbolton Cal/Val experiment

- Bring together a group of people from academia, industry and government, all interested in cal/val.
- Investigate the practicalities of establishing a RS validation site in the UK.
- Create a large multi-sensor, inter-calibrated dataset, including high quality ground data.



RS data successfully acquired



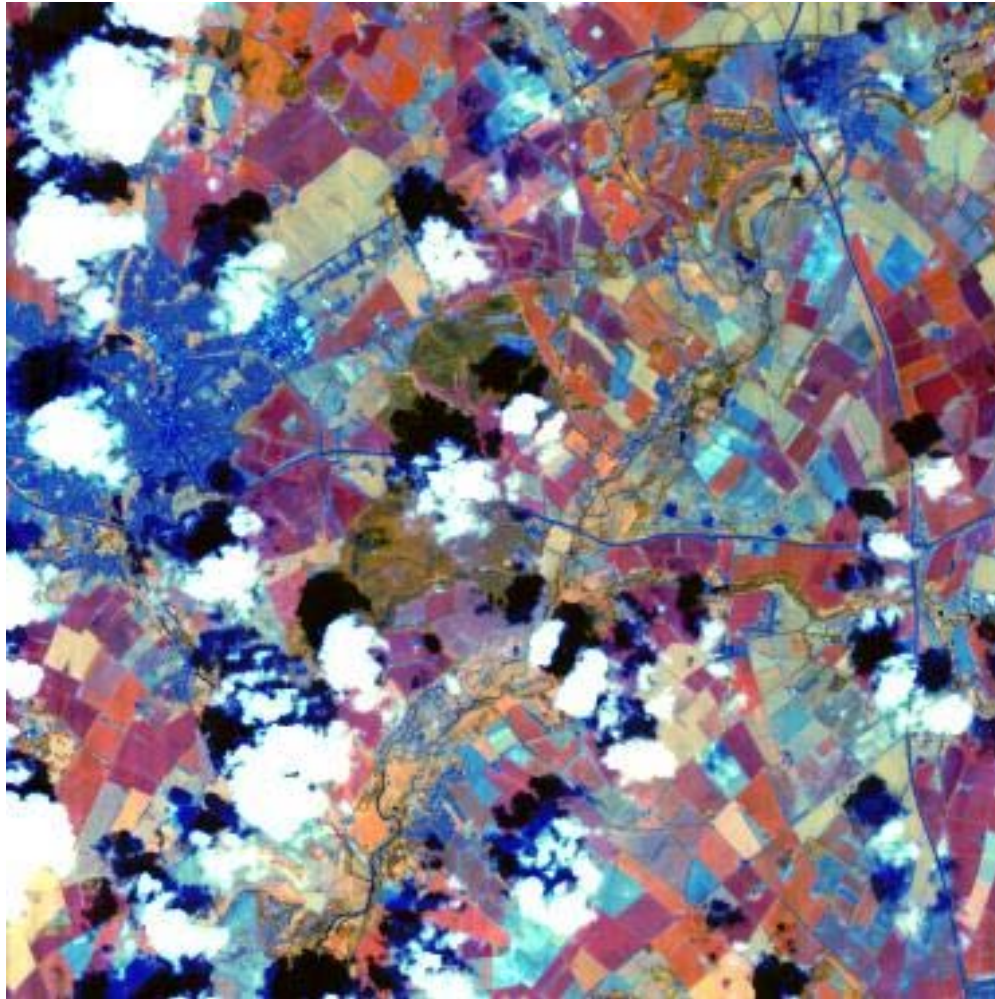
Date	Sensor/Platform
9 th June	Digital multispectral air photography (Ordnance Survey)
10 th Jun	SPOT-5 HRG
17 th June	<ul style="list-style-type: none">• CASI• LiDAR• Digital air photos• Aisa Hawk• CHRIS/PROBA
Multiple	DMC UK, Beijing-1, AISat, Nigeria-1

Clear UK SKIES!!!

Chilbolton site 17th June 2006

CHRIS/PROBA

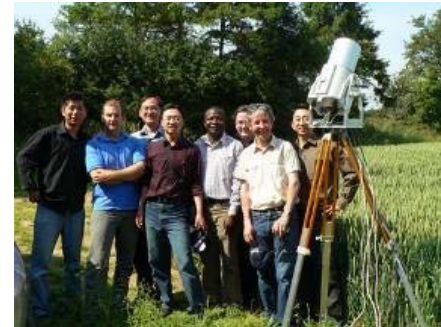
NCAVEO



Examples of ground data successfully acquired



Parameter	Method
Land cover	Field survey
Radiance calibration of seven spectroradiometers	NPL TSARS
Intercalibration of Spectralon reference panels	Field expt
Reflectance of tarps and VC targets	ASD FieldSpec and goniometer
LAI of wheat, barley, oats and oilseed rape	LAI-2000 and SunScan
Soil moisture	Dielectric properties
Site location	DGPS
Canopy gap fraction	Hemi photos and Laser profiler
Atmospheric data	Sunphotometry (AERONET site)



Accessing data from the experiment

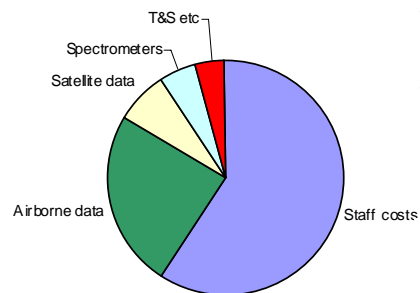


NEODC :
NERC
Earth
Observation
Data
Centre

NCAVEO

Financial out-turn of the experiment

NCAVEO Cal/Val Experiment 2006



- Staff costs over 50% of total
- Partners met 95% of total cost (NERC < 5%)

