



**National Centre for
Earth Observation**

NATURAL ENVIRONMENT RESEARCH COUNCIL

NCEO Capital Items

Below is a list of NCEO Instruments available for use with potential collaborators. If you have a proposal, we would be delighted to hear from you. Please get in touch with the relevant contact by e-mail.

ASD FieldSpec Pro

Contact: Dr. Andrew Gray

E-mail: fsf@nerc.ac.uk

Description:

The FieldSpec Pro has both exceptional portability and high resolution, with a 350-2500 nm spectral range. Designed to collect solar reflectance, radiance and irradiance measurements, these instruments are ideal for applications in mining, optical remote sensing, oceanography, forestry, plant physiology and geology.



Credits:

http://fsf.nerc.ac.uk/instruments/asd_fieldspec.shtml



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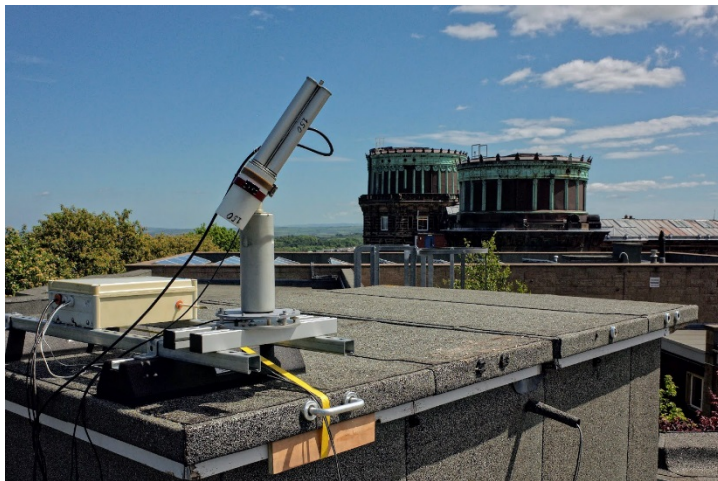
Cimel CE-318N-EBS9 Sunphotometer

Contact: Dr. Andrew Gray

E-mail: fsf@nerc.ac.uk

Description:

The Cimel CE 318-2 is a portable automatic tracking sun photometer measuring sun and sky luminances in 8 filters over visible to near infrared wavelengths. The instrument automatically computes the position of the sun and tracks its movement. It can be programmed to collect data in manual or automated sequences of measurements, which include almucantar and principal plane scenarios.



Credits: <http://fsf.nerc.ac.uk/instruments/cimel.shtml>



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Bruker EM27/SUN with Weather Cover

Contact: Prof. Hartmut Boesch

E-mail: hb100@leicester.ac.uk

Description:

The EM27/SUN is a portable, robust Fourier transform spectrometer which has been developed by Bruker for use in the field to measure total columns of CO₂, CH₄ and CO. An automated solar tracker with a camera-based feedback system is used to guide solar radiation into the spectrometer.



Credit: <https://www.bruker.com/products/infrared-near-infrared-and-raman-spectroscopy/remote-sensing/em27sun/overview.html>

Multi-processor, large storage computing system

Contact: Dr. Liang Feng

E-mail: lfeng@staffmail.ed.ac.uk

Description:

Rack-mounted multi-processor, large storage computing system: two 24 core CPUs with hyperthreading, giving a total of 96 execution threads, 256 GB RAM and 10Tb of storage.



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PICUS 3 Sonic Tomography System

Contact: Dr. Mat Disney

E-mail: Mat.disney@ucl.ac.uk

Description:

A sonic instrument for measuring the internal structure of trees. It allows the structure of the tree, particularly any gaps, holes and rotten parts, to be quantified through the tree, without having to drill or cut it. Already widely used in commercial forestry for assessing timber quality, this type of measurement has the potential to be hugely useful in ecology.



Credit: argus-electronic.de

Drone Imaging System for Earth Observation

Contact: Professor Mat Williams

E-mail: mat.williams@ed.ac.uk

Description:

This rotary-wing UAV system combines optical, multi-spectral and thermal imaging all on the same heavy lift platform (max TOW 15kg). The sensors are a SAL Engineering (Italy) MAIA multi-spectral sensor with 9 Sentinel-2 filter set (bands S1-S9 - note S8a is omitted); a Sony A7 MkII r full frame RGB camera with 35mm F2.8 Sonnar lens and Seagull GPS logging system for cameras; and a Micro Epsilon TIM640LW thermal imager (7.5 to 13 μ m) with a 60deg FOV lens. The UAV platform is a DJI-M600 with Ronin-MX gimbal and DJI RTK GPS. Use of the system is primarily focused on data collection over vegetated areas (crops and forests) to support analyses of plant stress, states and management options, but can also be deployed over other targets.



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Kipp & Zonen CMA 11 albedometer x 3

Contact: Dr. Tristan Quaife

E-mail: t.l.quaife@reading.ac.uk

Description:

An albedometer calculates the albedo of a surface, or the extent to which a surface diffusely reflects short-wave radiation from the sun. The Kipp & Zonen CMA 11 is a double CMP 11 pyranometer that complies with the highest level of ISO classification, and functions to the highest standards of accuracy, with a spectral range of 285 to 2800 nm.



Credit: <http://www.kippzonen.com/Product/23/CMA11-Albedometer#.WxklOE2ouUl>



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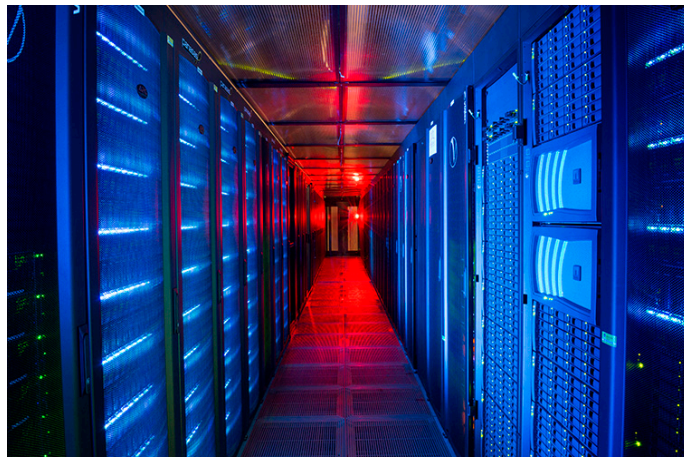
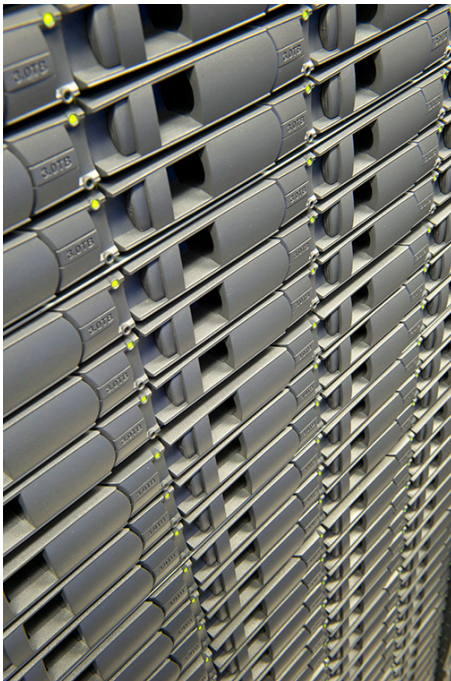
RAL Data Storage hardware for UK CDS Zone project

Contact: Dr. Victoria Bennett

E-mail: Victoria.bennett@stfc.ac.uk

Description:

The UK CDS Zone hardware consists of 400 TB storage and 200 computer cores, funded by NCEO and UKSA, to support UK based teams developing operational processing systems to derive climate data from satellite observations. The hardware is integrated with JASMIN (<http://jasmin.ac.uk/>) and has direct read access to EO datasets held in the CEDA Archive (www.ceda.ac.uk).



Credit: STFC