

# Field Spectroscopy Demonstrations @ RSPSoc 2008, 15<sup>th</sup> to 17<sup>th</sup> September



## New portable FSF FTIR instrument demonstration Monday 15<sup>th</sup> September, 11:00 to 12:30

FSF has developed a field portable, high resolution Fourier Transform Infrared (FTIR) instrument. It is a quarter of the weight of existing FTIR units and incorporates a high resolution, rugged interferometer measuring over 2 – 15  $\mu\text{m}$ . The FTIR will be available for loan with a range of attachments, including compact telescopes, field sources and a scanner, to suit a range of applications. In addition to a demonstration of the FTIR, data post processing and retrieval routines will be demonstrated.

*The new  
FTIR  
instrument  
with 10"  
telescope  
during  
acceptance  
testing*



Applications include:

- Atmospheric gas analysis from volcanic plumes
- Influence of biomass fires on the atmosphere
- Measurement of industrial emissions
- Emission fluxes from non-point sources
- Ground radiance and emissivity measurements

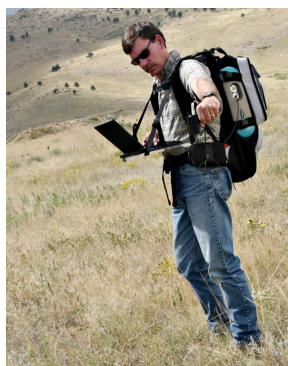
*The FTIR with  
3" telescope  
measuring  
gaseous  
emissions from a  
forest fire*



## ASD FieldSpec3 with Ambient Light Detector Technical Presentation, Demonstration and Discussion Tuesday 16<sup>th</sup> September, 9:00 to 10:40

The FSF have recently purchased ASD's latest full wavelength field spectroradiometer a FieldSpec3 Hi-Res. In consultation with FSF, ASD has developed an additional interface for the FieldSpec3 to enable a calibrated Optronics Laboratories OL731sSmart broad band external 400 – 1100 nm detector, to be attached. This configuration enables ambient light to be measured simultaneous to target or reference measurements and the values stored in the spectrum's file header. ASD will give a presentation on their approach to field spectroscopy and light measurements then demonstrate field measurement techniques in the grounds of the conference centre (weather permitting) using the new kit.

Representatives of ASD and FSF will then welcome an open discussion on ASD's suite of field spectroscopy instruments and on spectroscopy in general.



*FieldSpec3 in operation*

## Headwall Photonics Technical Presentation, Demonstration and Discussion Tuesday 16<sup>th</sup> September, 11:10 to 12:30

Headwall Photonics, from Fitchburg, Massachusetts, USA, will have their two latest hyperspectral imaging systems on display at RSPSoc 2008. Headwall will give a technical presentation on their suite of hyperspectral imaging systems and instruments. This will be followed by a demonstration of their Micro-Hyperspec 400nm to 1100nm imaging system. The Micro-Hyperspec will be mounted on either Headwall's 'Starter-kit', with a moving stage/fixed illumination set up, or on their scanning head system which is currently under development.

Representatives from Headwall and FSF will then lead an open discussion on Headwall's approach to imaging spectroscopy followed by a question and answer session.



*Headwall Starter-kit*



*Headwall MicroHyperspec*

**The Facility welcomes applications for loans of field spectroradiometers and sun photometers. For information how to apply for a loan, visit our website at:**  
<http://fsf.nerc.ac.uk>.



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## SVC HR-1024 with External Sensor Suite Technical Presentation, Demonstration and Discussion Tuesday 16th September, 16:00 to 17:30

The FSF have recently purchased an SVC HR-1024, SVC's latest full wavelength (400nm to 2500nm) field spectroradiometer. In consultation with FSF, SVC has developed an additional interface on the instrument which enables data from 8 external channels to be recorded simultaneously with spectral measurements and the data stored in the spectrum's file header. An external sensor suite is currently being developed by FSF and MACAM Photometrics. This suite will consist of a Delta-T pyranometer, measuring total and diffuse irradiance from 400nm to 2500nm, and a number of narrow band sensors with interchangeable filters, enabling illumination conditions to be characterised. SVC will give a technical presentation followed by a practical field spectroscopy demonstration and a question and answer session.



SVC HR-1024 with external sensor suite

## STOP PRESS. Wetlabs will demonstrate their latest AC-9/AC-S control software GUI for the 1st time at RSPSoc 2008 on Tuesday at 10:20 in the Marine Applications Session.



## Wetlabs AC-S and Satlantic HyperOCR's Dockside Demonstration and Discussion Wednesday 17<sup>th</sup> September, 09:00 to 12:30

This field trip will demonstrate the use of the FSF's aquatic spectroscopy field equipment and discuss data post-processing. The FSF equipment consists of a combination of sensors for measuring water column profiles of *inherent optical properties* (IOPs) and for estimating *apparent optical properties* (AOPs). Sensors include a WETLabs AC-S for measuring absorption and beam attenuation coefficients over 400nm to 700nm (and

so by difference obtaining scattering), an ECO-BB3 117° backscatter meter, two Satlantic underwater HyperOCR radiance and irradiance sensors, a Satatlantic HyperOCR above-water irradiance sensor and a CTD for depth, temperature and salinity. John Hedley, with staff from WETLabs and FSF will give an overview of the equipment, its maintenance and operation. In addition, data post-processing and freely available software tools for modelling light fields and water column reflectance from IOP data will be discussed. A minibus will take attendees to the data acquisition site, which is likely to be Stithians Lake, 15 minutes drive from the Tremough campus. The number of places is capped at 10 so interested persons should contact John Hedley, [j.d.hedley@exeter.ac.uk](mailto:j.d.hedley@exeter.ac.uk), to reserve a place as soon as possible.



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