

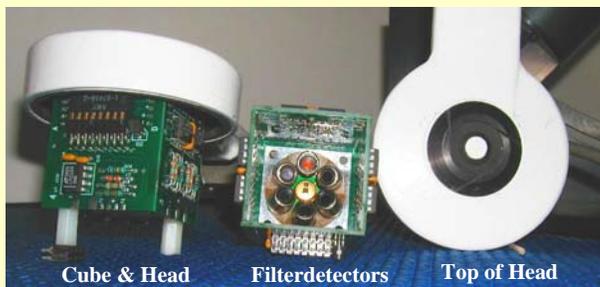
# MFRSR Head Refurbishment, Data Logger Upgrade and Calibration Improvements

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## Head Refurbishment



Cube & Head

Filterdetectors

Top of Head

### The Process Includes:

- New filter detectors
- Relocate internal thermistors
- New connectors
- Gain resistors moved to head
- Improved insulation

### The Finished Heads:

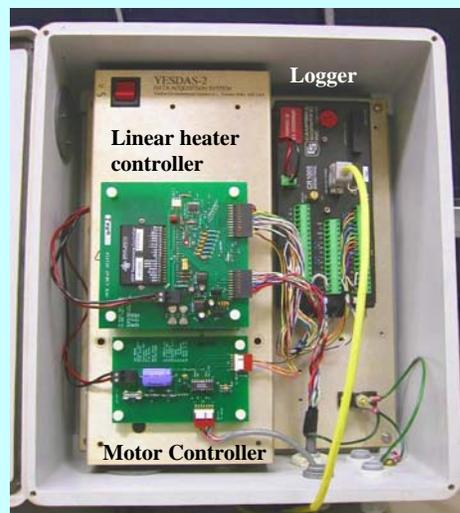
- Are lamp calibrated
- Have filter profiles measured
- Cosine characterized
- Are out-of-band tested



6 narrowband & 1  
broadband detectors

**Bonus:** When the head refurbishment is completed, ARM will have enough spare heads to keep the MFRSR network at full capacity for many years.

## New Logging System



Linear heater  
controller

Logger

Motor Controller

### The logging system consists of:

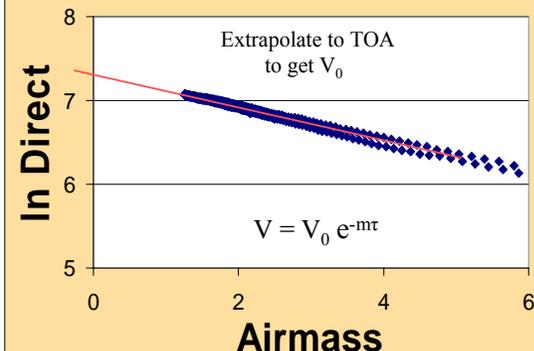
- Campbell Scientific CR1000 logger
- Linear heater controller replaces bang on/off
- Motor controller board
- Designed to support existing cables
- Installs in existing enclosure

### Additional benefits:

The new logging system provides programming flexibility that was not possible in the past. For example, the instrument could be programmed with additional steps to improve the band correction algorithm.

## Calibration Improvements

Data will now be calibrated by the Langley method



### Benefits of Langley vs. Lamp calibrations:

- Calibrated on a continuous basis
- Reduces calibration drift
- Calibrated in place
- No calibration related data gaps

**IMPORTANT:** Langley calibrated data will be available at the c1 data level on an approximately month-delayed basis.

## What Does This Mean For Data Users?

- Fewer data gaps
- Fewer DQRs
- Confidence in the data
- Well calibrated data