

ARM Darwin Research Station  
Site Visit 0508D Report

Visit Duration: 02 August to 12 August 2005

Darwin, Australia

### SV 0508D (Calibration)

**Site:** Darwin                      **Proposed Dates on Site:** 2 Aug to 12 Aug 2005

**Team Members:**

Mike Alsop - Gary Eckert

Rex Pearson - Bill Porch

Priority	System	Date Completed (dd/Month)	Service Time in Hours	Tasks/Description of Work/Process For each priority item insert new line(row) for each date/time entry
1	CAL			Create and document new calibration procedures for use with the Cambell Logger System and RSU units
		2-Aug-05		8/02 Planning meeting in AM to discuss how best to modify calibration procedure for Campbell loggers. Found out that we have to work out a different way to get data from r1 or use the collector to get comparison data.
		6-Aug-05		Unpacked RSU units.
		8-Aug-05		Attached RSU unit to channels of Skyrad from 03:00 to 04:00 GMT rewrote RSU cal form and procedure and sent to Peter Gotseff for comments.
2	CAL			Record configurations before and after cals
		2-Aug-05		Collected configuration files for original Skyrad, Gndrad, and Smet loggers. Created and collected configuration files for the calloggers 1 & 2 from Campbell .csi files.
		4-Aug-05		Collected configuration files for mfrsr and MWR
		5-Aug-05		Changed cal coefficients for skyrad gndrad and cal loggers to reflect instrument switch at about 03:30 GMT
		8-Aug-05		Put new Gndrad PSP, spare 8-48 and NIP on CAL1 Logger and recorded new configuration.
3	CAL			Provide Cal Kit inventory list
		12-Aug-05		Done as part of audit-out
4	DAQ			Calibrate all Instrument loggers and Spares
		2-Aug-05		Decided not to electronically calibrate the loggers as the factory calibrations are still fresh. Worked on procedure development described above.
		08-Aug-05		RSU comparison performed as above.
5	CAL			Calibration/comparison skyrad radiometers
		2-Aug-05		Radiometers installed on stand and preliminary data from Callogger 1 and 2 established at about 01:30 GMT. Preliminary comparison looks good except for one PIR (31300) that reads a little lower (about 5 w/m2) than the rest in the early AM and late PM.
		4-Aug-05		Data collected from radiometers on the skyrad and comparison instruments and sent the comparison results to Peter Gotseff with configurations.
		5-Aug-05		Switched skyrad and cal logger radiometers including gndrad PIR and updated cal logger and skyrad configurations with new cal coefficients.
		6-Aug-05		Completed CAL(RAD) forms for before and after radiometers were replaced.

		8-Aug-05		Replced former PSP, 8-48, and NIP with new PSPgnd, spare 8-48, and NIP at 23:30 updated CAL1 configuration and performed comparison.
		10-Aug-05		Radiometer Comparison Complete.
6	CAL			<b>Install Cavity Radiometer for Comparision</b>
		3-Aug-05		Cavity radiometer installed and aligned at about 01:00 GMT (10:30 LDT).
		4-Aug-05		Cavity stored for night and reactivated this morning.
		5-Aug-05		Cavity activated this morning and stored for upcoming weekend.
		8-Aug-05		Cavity activated at 23:30 GMT 7 Aug. and data downloaded at end of day.
		9-Aug-05		Cavity activated at about 23:00 7 Aug. Final day for comparisons.
7	CAL			<b>Calibration/comparison grnrad radiometers</b>
		4-Aug-05		Discussed arrangement to compare IRT with PIR temperatures with Rex. Downloaded Gndrad data and sent email to Jim Mather and Peter Gotseff regarding data retrieval with 2 and 4 component cal factors.
		5-Aug-05		Performed comparison test with Portable Blackbody on the GNDRAD IRT and put it over the PIR before and after PIR was replaced with new PIR (decided making a plywood target was too difficult. Got interesting results but PIR and IRT brightness temperatures are not much improved with new PIR.
		9-Aug-05		Replaced Gndrad PSP with newly calibrated and compared PSP. Put spare PSP on CAL1 at about 23:30 7 Aug. Measured distances to vegetation from Gndrad PIR at Jim Mather's request.
		10-Aug-05		Photographed region around Gndrad tower for Jim Mather so he could tell what I meant by "geen vegetation" versus "dead vegetation long grass".
8	SMET			<b>Calibration/comparison smet instruments and logger</b>
		9-Aug-05		Calibrated SMET anemometers while replacing Gndrad PSP at about 01:00 GMT 8 Aug. Installed chilled mirror comparison system at about 06:30 GMT on the tower. Will make comparison measurements through the night.
		10-Aug-05		Ran chilled-mirror over night and got agreement to better than 5% with RH probe.
		11-Aug-05		Completed SMET calibration (ORG, and T/RH).
9	IRT			<b>Calibration/comparison IRT grnrad</b>
		5-Aug-05		Gndrad IRT and Portable Black Body agreed within 0.1oC
10	IRT			<b>Calibration/comparison IRT skyrad</b>
		9-Aug-05		Skyrad IRT and portable Black Body agree within about 0.3 oC (0.5 oC if mirror added).
11	CEIL			<b>Calibration Ceilometer</b>

		10-Aug-05		Downloaded raw data from 2-5 Aug.when data quality assessment said missing about 3 min. of data almost everyday. Raw data seems complete. Mike is checking possibility that the ceilometer computer time is drifting and there is a conflict with time server.
12	CAL			Place Cal/replacement records on Ftp Site.
		5-Aug-05		Sent configurations and site pictures to FTP site
		6-Aug-05		Sent updated configuration and Cal records
13	OTHER			Complete and Submit Audit out
		12-Aug-05		Completed Audit-out
15	Future Needs			
16	Shipping			
		11-Aug-05		Removed radiometers from comparison stand and separated into groups to be sent back to SGP and boxes and radiometers that remain with recent calibration dates. Removed Chilled-Mirror, Logger, and control box and separated in groups to be sent back to TWPPPO, Nauru, and Manus.