Epic 2001 cruise on R/V Ronald H. Brown
C. Fairall 3/29/00
chris.fairall@.noaa.gov

The ETL radar group operated a microwave radiometer (MWR) manufactured by Radiometrics Inc. (Boulder) for this cruise. Contact Duane Hazen (ETL) for details on the instrument. Duane used sondes and tipcals to 'calibrate' the system. A matlab program is used to read hourly .raw files, strip out selected information, and write new files with the raw 21-s time resolution (micro_s.txt) and hourly time resolution (micro_h.txt). The data on the files are as follows:

micro_s.txt
:,1 decimal julian date
:,2 IWV, integrated atmospheric water vapor (column precipitable water), cm
:,3 IWL, integrated cloud liquid content, cm
:,4 tau 20, optical thickness at 23 GHZ
:,5 tb 20, brightness temperature at 23 GHZ
:,6 tau 30, optical thickness at 31 GHZ
:,7 tb 30, brightness temperature at 31 GHZ
:,8 mode, instrument mode 00 is fix angle pointing 10 is tip curve calibration
:,9 tilt angle, for tip cal
:,10 cf20, calibration coefficient 23 GHz
:,11 cf30, calibration coefficient 31 GHz
:,12 sky20, detector voltage 23 Ghz pointing
:,13 nsky20, detector voltage 31 Ghz pointing + noise diode
:,14 bb20, detector voltage 23 Ghz black body
:,15 nbb20, detector voltage 23 Ghz black body + noise diode
:,16 tbb20, temperature of black body (K)
:,17 sky30, detector voltage 31 Ghz pointing
:,16 nsky30, detector voltage 31 Ghz pointing + noise diode
:,19 bb30, detector voltage 31 Ghz black body
:,20 nbb30, detector voltage 31 Ghz black body + noise diode
:,21 tbb30, temperature of black body (K)
:,22 pitch, deg
:,23 roll, deg
see below for a description of these variables

micro_hr.txt and micro_min.txt
:,1 decimal julian date
:,2 IWC, integrated atmospheric water vapor (column precipitable water), cm
:,3 IWL, integrated cloud liquid content, cm
:,4 number of 21-s values in hourly median
:,5 standard deviation of IWV, cm
:,6 standard deviation of IWL, cm