

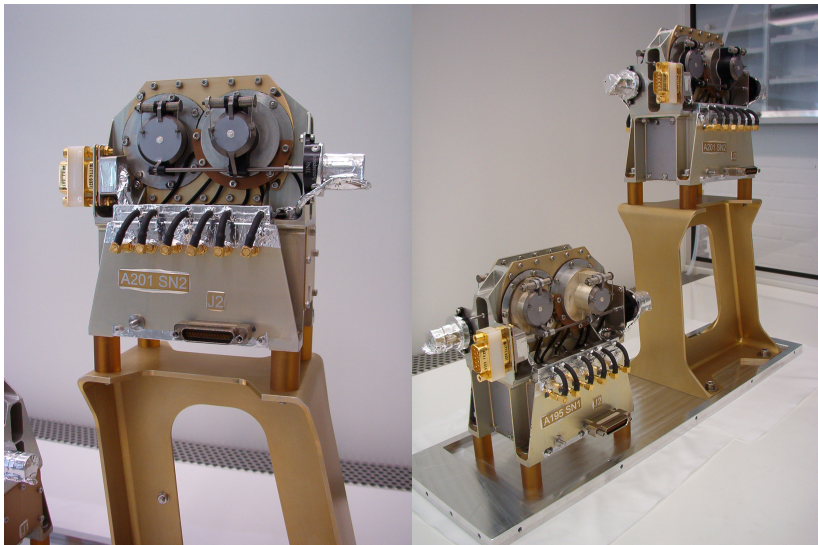
SEPT Heaters

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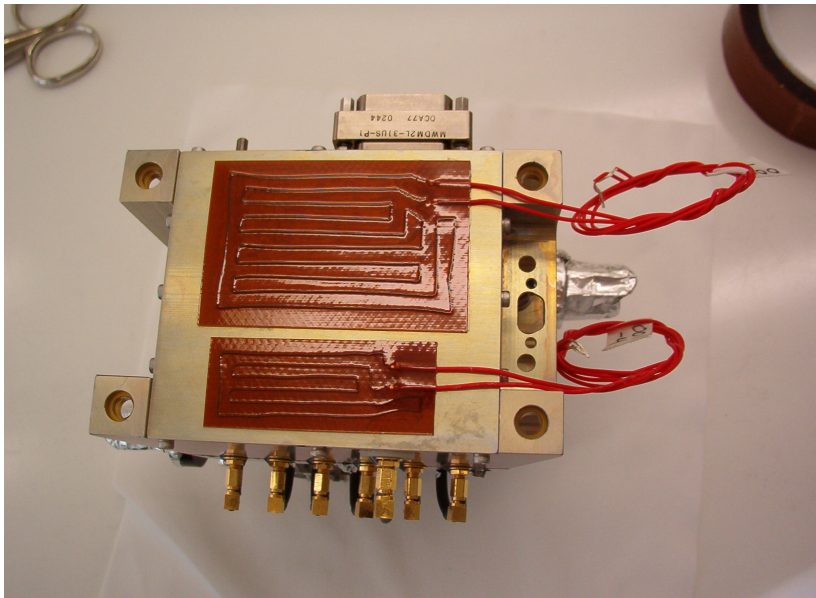
February 14, 2011

- ▶ SEPT
- ▶ Heaters
- ▶ Thermostats
- ▶ Heater operation.

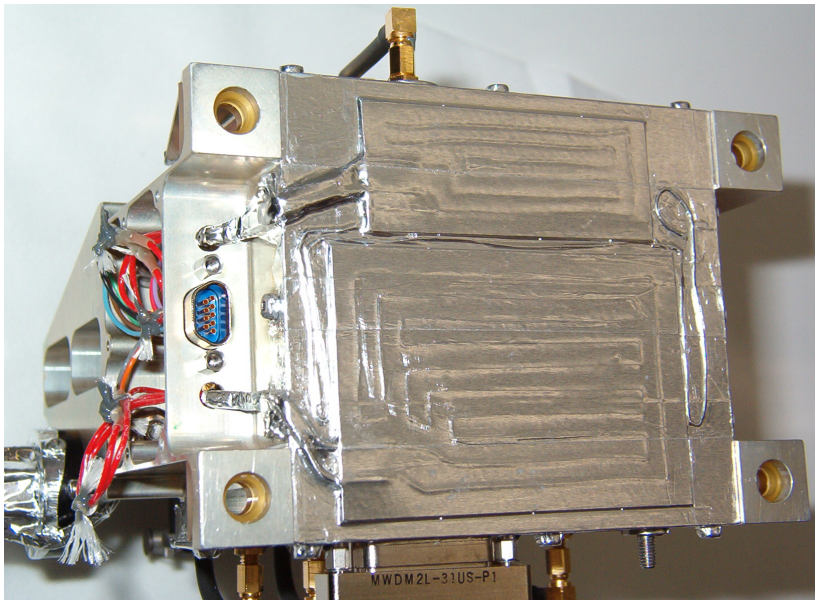


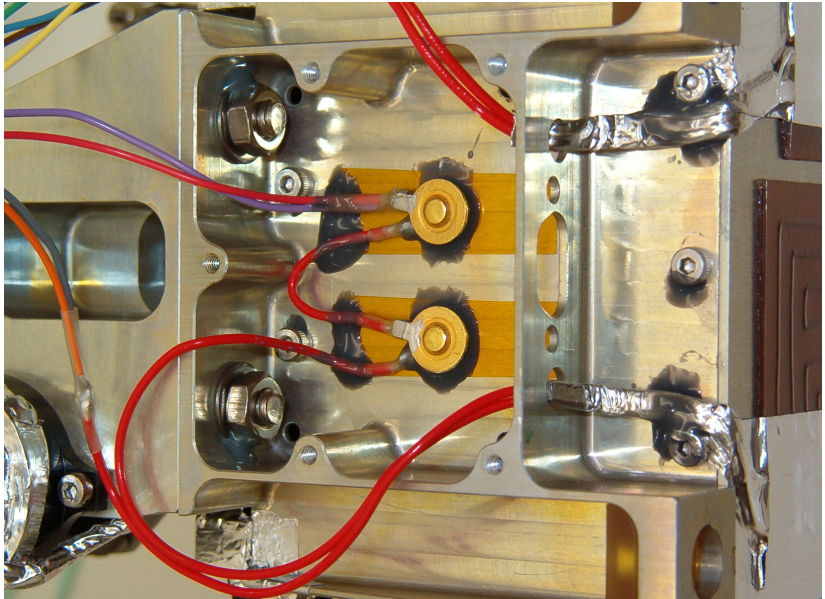


Ebox bottom cover

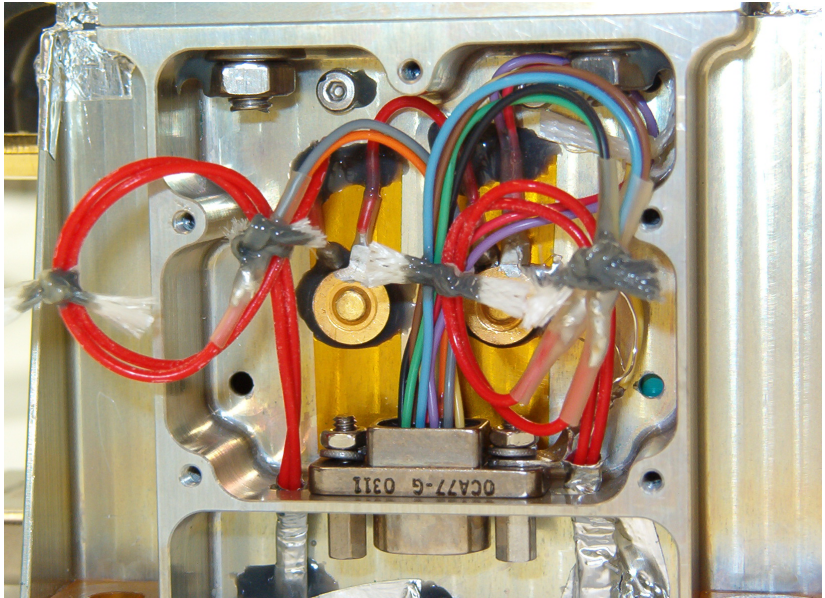


Aluminum tape

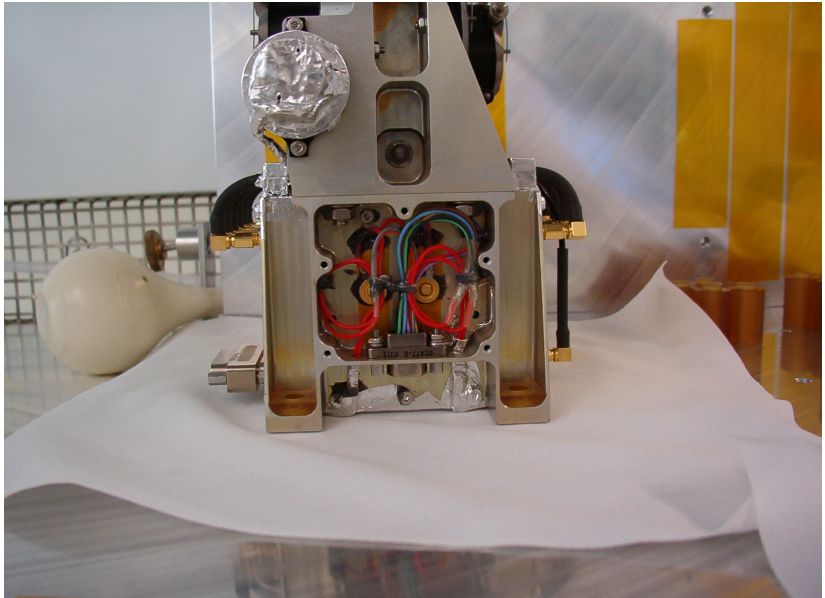




lacing tape, venting holes, grounding, ...



EMI, well ...



- ▶ Thermostats turn on below -25°C and turn off at -15°C .
- ▶ Two thermostats for redundancy, to protect against failure to switch off, not against failure to turn on.
- ▶ S/C turned on survival heater power before launch, because they did not want to bother with this first thing in orbit. We got a waiver to not need to vibe with 28V on.
- ▶ SEP-C gets either operational power or survival heater power, and forwards that to SEPT.

- ▶ SEPT is a dumb slave on a serial interface. SEP-Central starts an acquisition every minute and gets HK, including two Ebox temperatures, 1°C resolution.
- ▶ OP-heater is pulse width modulated at 0.1 Hz. For every $^{\circ}\text{C}$ below the temperature goal, the duty cycle is raised by 10 %, i.e., one second on. IOW, when the temperature is $n^{\circ}\text{C}$ below temp-goal, the heater is n seconds on, $10 - n$ seconds off.
- ▶ There is a S/C operated thermistor on the sensor head, to monitor our temperature that also works when we are powered off. We have never seen any data from that thermistor, probably ITAR.