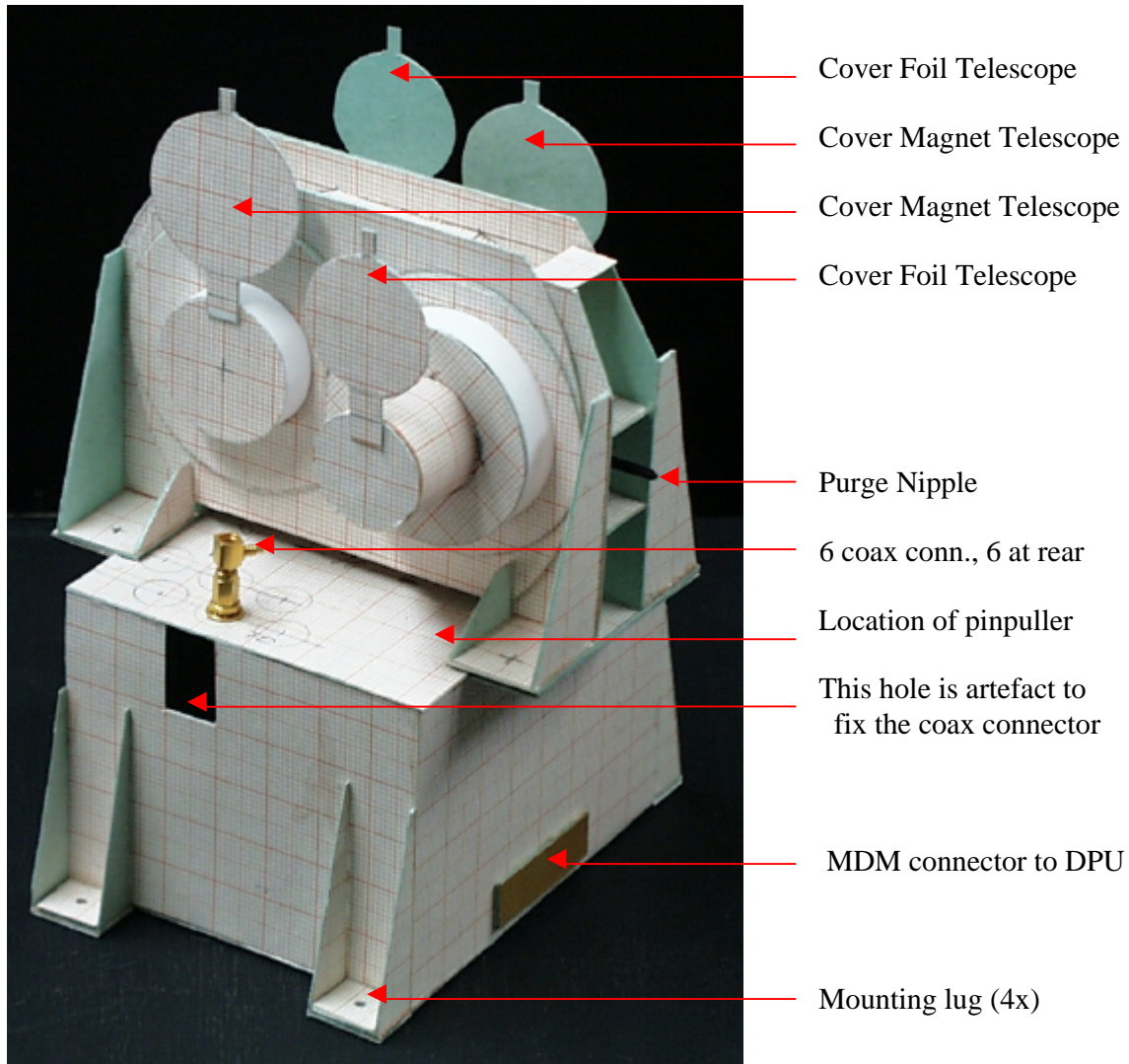


SEPT Envelope Drawing (26 – April – 2001, RM²)



Remarks

- A paper model with a mm grid is used as a proxy for the envelope drawing.
- The SEPT sensor is a mechanically separate item mounted on top of the SEPT electronics box. To this purpose, the electronics box top wall has two rectangular extensions to support the four sensor mounting lugs.
- The 12 coax connections between sensor and electronics box are pigtailed on the sensor side and use straight NanoHex connectors to mate with 12 right-angled bulkhead NanoHex connectors mounted in the top wall of the electronics box. This interface solution is used successfully on Ulysses and SOHO instruments, but is open for discussion. Simpler solutions which would reduce the total height of SEPT are preferred should they prove reliable.

- The four aperture covers are shown in open position. The detailed cover release mechanism is not yet modelled but the area is identified where the pinpuller will be mounted. The location for the rear side pinpuller will be point-symmetrical.
- The purge inlet for dry nitrogen gas (GN2) will be a nipple to be fitted with teflon tubing from the purge cart of the mechanical ground support equipment.
- The MDM connector to the DPU could carry the -80 V as a coax (MDM coaxial/power). Alternatively, a separate coax connector and coax cable can be used for the bias. A simple wire in the harness is only acceptable if ripple and spike requirements can be met.
- The four mounting lugs of the electronics box and their enforcement ribs can be moved around the bottom plate should other locations prove more suitable.

Conclusions

- The relative position of sensor and electronics box cannot be changed arbitrarily, as the interconnecting coax cables should be kept at a minimum. Tolerable length is up to 10 cm.
- The cover plate of the electronics box serves as the platform to hold the sensor housing. Size and shape of the cover plate will change as the sensor is rotated to fine tune its field of view.
- The current design does not yet reflect any thermal constraints, which might be pending. The preferred SEPT temperature range is around 0°C as opposed to ambient. Should the SEPT box be operated around ambient, SEPT would have either to tolerate this (with some penalty in increased noise) or SEPT needs to be thermally isolated.
- How to interconnect sensor and electronics box (12 coax cables) is still under discussion. The final method will have an impact on the location of the feedthrough connectors (top wall or even side walls) and consequently on the layout of the analog electronics board. A reduction in box height may also be possible.