

BSM Optics & Optical Interfaces

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Optical specification

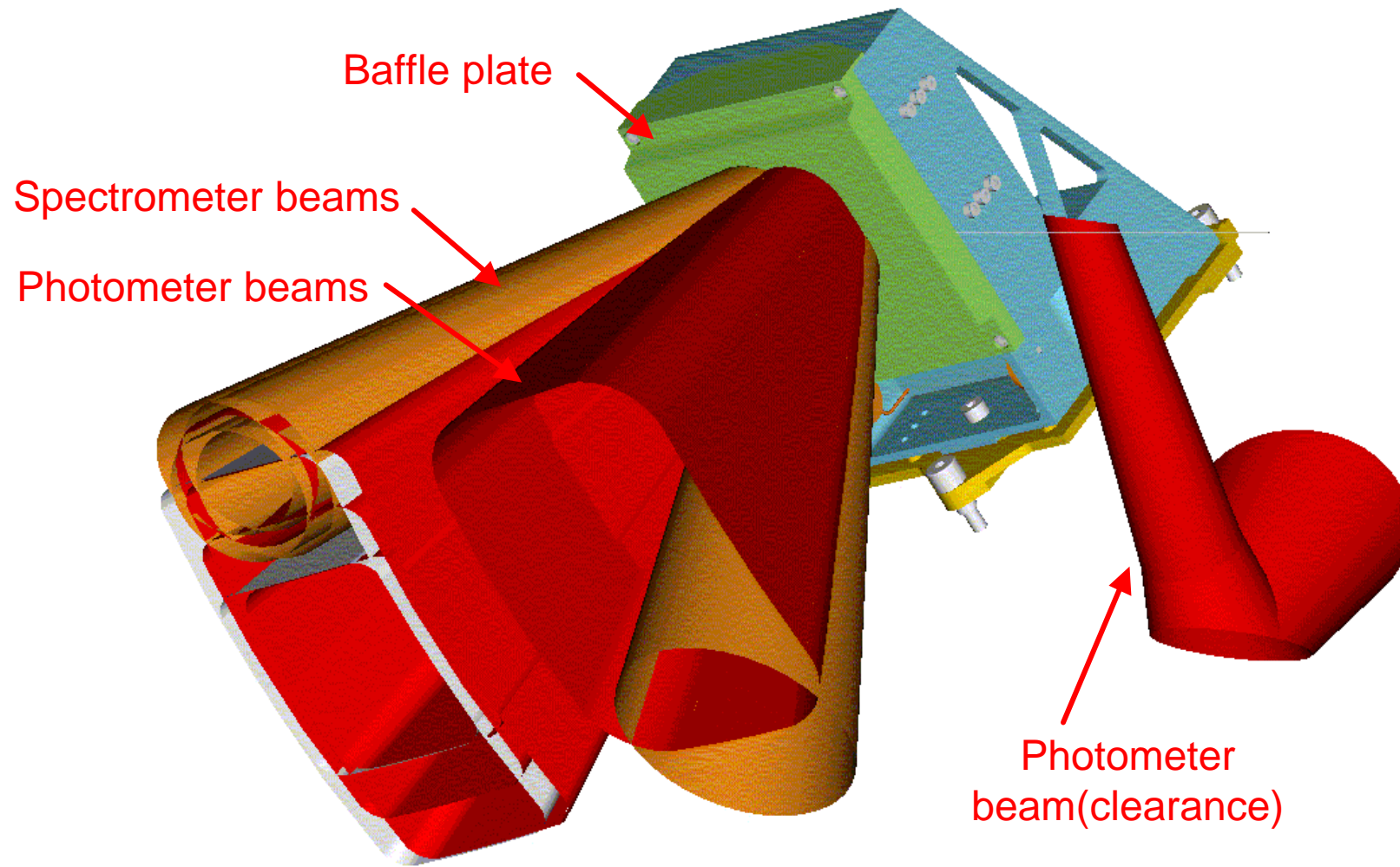
- **Flat mirror with form error $< 1.0 \mu\text{m}$ rms. ($4 \mu\text{m}$ P-V) is required for science.**
- **The micro-roughness will be $< 100 \text{ nm}$ rms. solely for the purposes of alignment.**
- **The roughness and form specifications will be met by diamond turning.**

- **The reflectivity of the mirror will be assumed to be $>99\%$ over $200 - 670 \mu\text{m}$. No attempt will be made to verify this.**
- **It will also be assumed that the reflectivity of the mirror at 632.8 nm will be $> 80\%$. It has been found with the first prototype that the reflectivity is adequate for visual alignment.**

Baffles

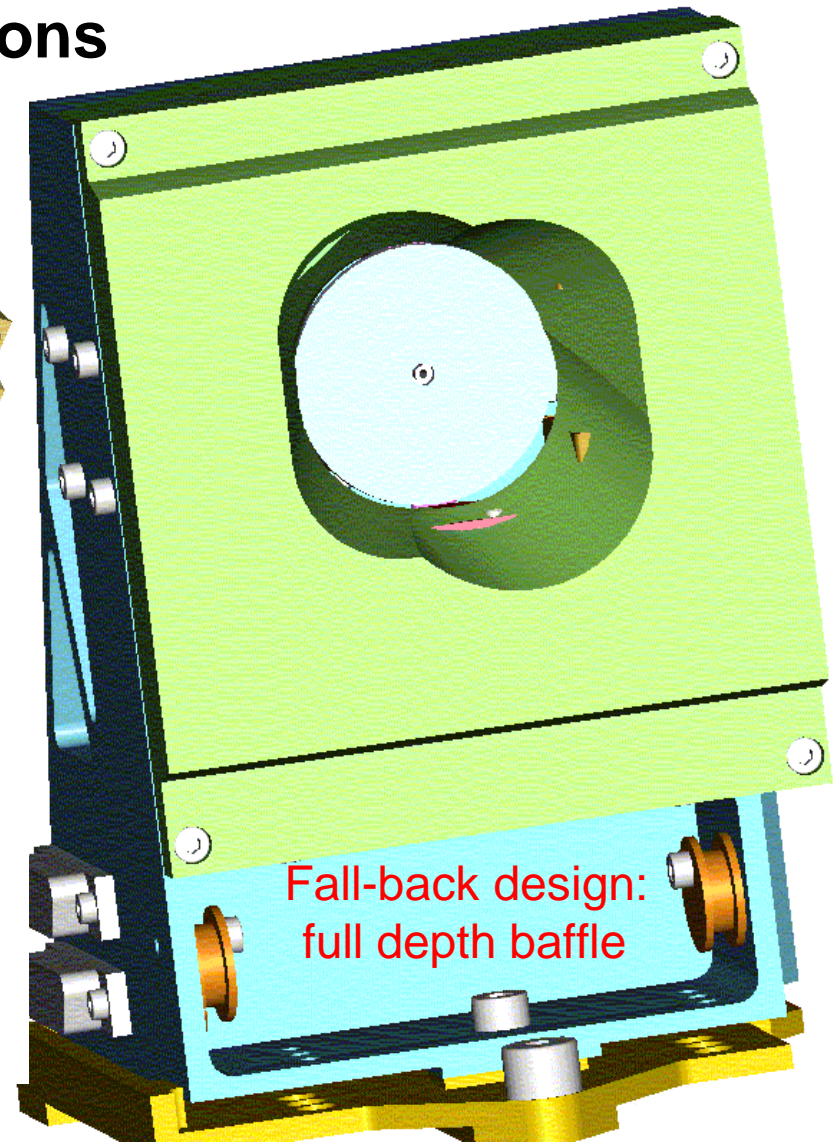
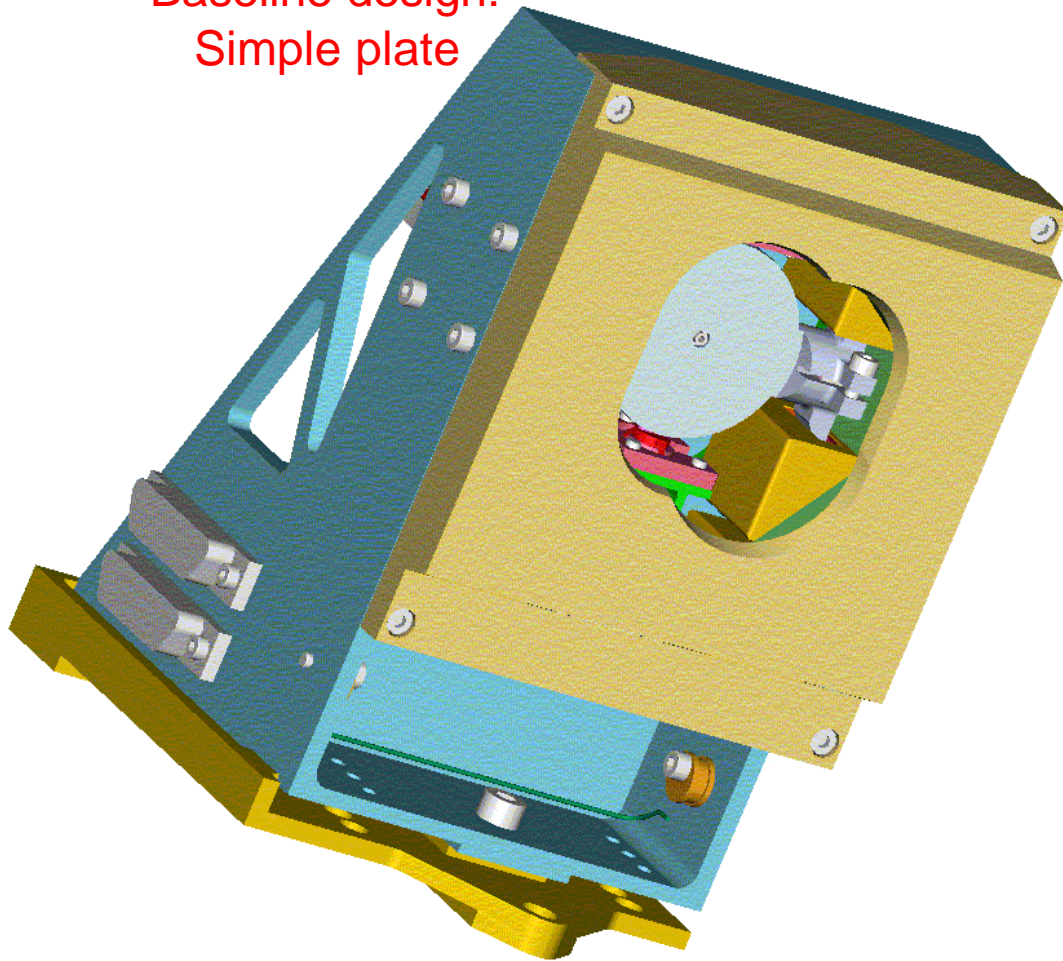
- **The baseline design has no true baffle, simply a pierced plate over the BSM assembly that does more to protect the mechanism during integration and testing than provide stray light control.**
- **For this to be acceptable thermal modelling of the motors must demonstrate that they will not rise to a temperature of more than 1K above that of the surrounding structure.**
- **The fall-back option is to produce a design with a full depth baffle as illustrated in the next slide. This would involve further design modifications to the structure of the BSM.**

BSM Optics Interface



Baffle Options

Baseline design:
Simple plate



Fall-back design:
full depth baffle