

5. Slit viewer

Reducing the field of view of the slit viewer could possibly make things easier, but does it mean another re-design? We need to solidify soon.

6. Collimated beam size

I'm not sure about this one, but if it eases some of the tolerances it would probably be a good idea. Does it affect throughput?

7. Folding or not?

Let's go for it! If we fold with two flats and the collimator in a <W' formation does that mean the collimator is no longer off-axis? Will that help performance or make it cheaper/easier to manufacture? If so that's a bonus, but I see the main benefits as reducing risk and cost in the fabrication of the vacuum chamber, and easing cryogenic problems. Folding will mean a rework of the electronics packaging, but I think the overall benefits are well worth it.

8. Gratings

Using just one grating plus the mirror will obviously save money, and it's clear that we just can't afford two. However it leaves us with the question of whether we design the mechanism to hold another grating to be acquired later, or stick to a simpler 1-axis setup with the mirror on the back of the grating. Doing the latter gives us a clear benefit from the descope, as I think the 2-axis mechanism could have turned out to be a real nightmare.

It is well worth pushing to reduce footprints where we can. The point about reducing the spread of angles into the TMA is a good one. Everything we can do to reduce the demands on the specification of the TMA is worthwhile.

9. TMA

Since it's becoming apparent the TMA is going to run off with a whole chunk of the money for optics, we should try everything we can to make it easier to make. It may be hard however to get a handle on where the breakpoints come in on difficulty/pricing *vs* performance. That's why a visit to these guys is genuinely essential.

10. Mechanical design

We definitely need to spread our effort (which is why I've been trying to get into this stuff lately). We should definitely get some of the really hard stuff done by e.g. SSG. I would be a little concerned if we were to get too much done by outside vendors, in case that used up too much of our money. We should try to get as much advice out of them as we can (for free if possible).