

Silica TM blanks

–issues relating to prompt
procurement of at least one
blank

Motivation

- reported from COC telecon last week
- advantageous to be able to study
 - full scale substrates
 - prepared as per final ones
 - Q measurements before/after coating
- early experience in handling full scale, expensive, masses

Money and options

- UK project has money, is in place, for 4 sapphire TM blanks (unpolished)
 - silica could be cheaper or dearer depending on grade
 - could purchase 1 now 3 later, 2 + 2 or 4 + 0 (or 0 + 4)
 - cannot assume that there is money for a spare at this early stage in the project
 - although planned as 2 ETM + 2 ITM this should not be regarded as an absolute constraint, provided that we supply at least 4 TMs
- Any option within our funding envelope and profile merits serious consideration
 - earliest delivery date, unpolished, to **Caltech** is almost certainly decision date + time to place order + lead time + shipping time (no cashflow constraint)
 - minor point: you might want to sort out import duty issues before the delivery (VAT/export end is OK)

Issues and questions

- Material choice
 - ETMs - assume 312 is fine
 - ITMs
 - how sure are we that 312 is or is not good enough?
 - when will we know for sure (to buy)?
- Should we buy at least one piece sufficiently over-size (several mm all round) to permit two cycles of polishing?
 - “test” or “early” coating can be removed
 - reduces the risk of minor handling damage during tests
 - reduces the requirement for ultra-low dust handling or extra cleaning of “test” optic - increases test site options
 - concern that if we do not do this we guarantee the optic will never be installed in Advanced LIGO
 - (if yes) should the piece have/ not have flats for Q tests?