**MEMS Contrast Requirement Telecon Summary**

June 25, 2001

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1. It was agreed that although the “10/10 rule” is arbitrary we must have something to start with. Note that the 10/10 rule is: “No more than 10% of possible targets will have any part of their spectrum contaminated by more than 10% by a spoiler. Or, 90% of the field of view will have contributions by spoilers that are less than 10% of the contribution from sources at the limiting sensitivity.”
   a. Ultimately this is a science and operational policy question that one would like resolved by the ISWG.

2. Gerry Kriss talked about STIS on Hubble and how to reach a contrast of $10^6$ requires you to go 10” from the spoiler. This is for a long-slit instrument that has been optimized for high contrast spectroscopy.

3. Mark McCaughrean asked that rather than stating the unrealistically high contrast requirements for galactic plane observations to reach the same sensitivity as we can at the Galactic poles we instead state the sensitivity limit that can be achieved if we use contrast values of 1000-3000.

4. Although, if we only get detectors that meet the minimum requirements (10 e⁻rms noise in 1000 sec integration) the required contrast is only 400, this would mean that any improvements in the detectors above the minimum would not give us a significant improvement in the sensitivity because the contrast would begin to dominate. **Therefore, we have adopted a tentative requirement for the whole instrument of 1000. We have also tentatively assigned a requirement on the MEMS devices of a contrast of 2000 to allow some reduction in the contrast due to other instrument and PSF effects. The goal contrast is as high as possible until PSF spillover from spoilers into the slit becomes dominate.**

5. Mark M. and Peter J. have taken an action item to investigate the loss in sensitivity in the galactic plane if we adopt this requirement. This analysis will involve not only the effect of spoilers leaking into the source spectrum through the aperture mask but the effect of the light from the wings of the PSF from spoilers spilling into the slit, and the effect of other sources within the slit itself. They plan to be done with two weeks.