

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

#93-14

HAYSTACK OBSERVATORY

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1 June 1993

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To: Holographers

From: Alan E.E. Rogers

AEEER

Subject: A cone design for suppression of reflections from the subreflector

As an alternative to the vertex plate (see memo dated 16 February 1993) I suggest a small cone with a base diameter of 4" so that it will fit into the existing hole in the center of the subreflector in place of the plug. Within the constraint of a 4" base diameter I found the best apex angle to be 177.25 degrees. The outer edge of the cone should be flush (within ± 3 mils - see below) and continuous with the subreflector surface. The cone performance (relative to doing nothing) is shown in the figure. The cone has a wider bandwidth than the vertex plate and should be aesthetically more acceptable. Both the cone and vertex plate alignment is quite critical and the discontinuity with the subreflector surface should be less than ± 3 mils.

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REFLECTION WITH CONE/WITHOUT CONE

