

VLBA ACQUISITION MEMO #200

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

HAYSTACK OBSERVATORY

WESTFORD, MASSACHUSETTS 01886

12 March 1990

Area Code 508

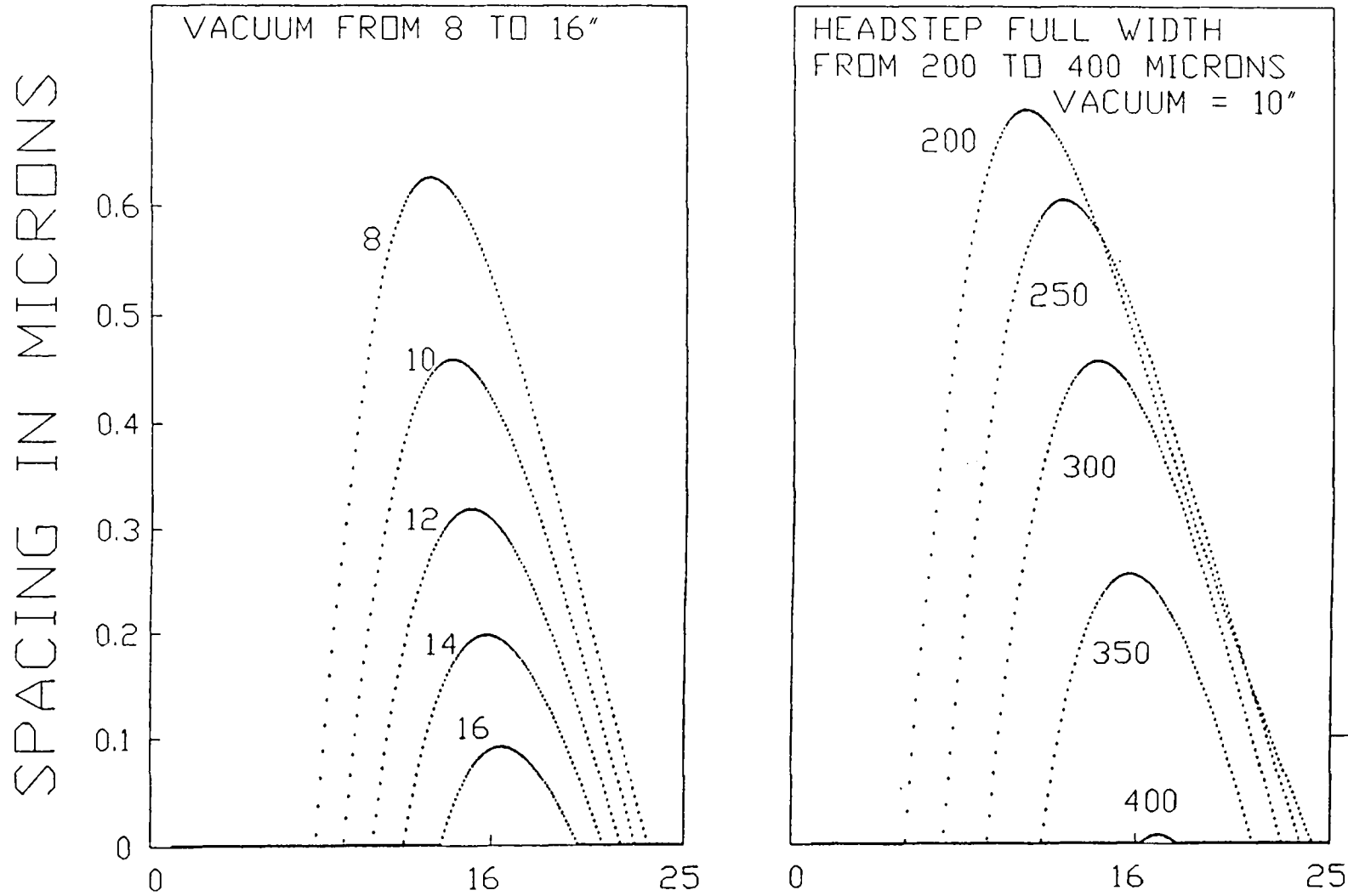
692-4764

To: VLBA Data Acquisition Group
From: Alan E.E. Rogers
Subject: Parameterized spacing loss curves for the transition from thick to thin tape

The curves given in VLBA Acquisition Memo #168 have been parameterized for operating vacuum levels and headstep width. These curves show that it is possible to go immediately from 25-micron tape to a very thin tape (this has recently been confirmed using a sample of 6-micron tape). The transition from 25- to 16-microns (which may be the thickness of the first VLBA procurement) is in the worst range but might be possible by increasing the operating vacuum for those playback transports which need to handle a mixture of tape. The use of a wider headstep is also advantageous and some headstacks with a wider headstep already exist and will be tested. While it looks like it should be possible with high enough operating vacuum and/or a wider headstep to mix tape thicknesses, it is still not clear whether the reduced head-to-tape pressure at the gap will still require a head conditioning period when making the transition from thick to thin [going from thin to thick will always be fine].

Atch: 1. Drawing

MODULUS OF ELASTICITY = $8E05$ LBS/SQ"
 WRAP ANGLE = 10 DEG (FULL ANGLE)
 HEADS CONDITIONED WITH 25 MICRON THICK TAPE



SPACING OF 0.1 μ M = 5.5 DB LOSS AT 1 μ M WAVELENGTH

TAPE THICKNESS IN MICRONS
 TRANSITION FROM THICK TO THIN TAPE