

VLBA ACQUISITION MEMO #147

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

HAYSTACK OBSERVATORY

WESTFORD, MASSACHUSETTS 01886

16 May 1989

Area Code 508

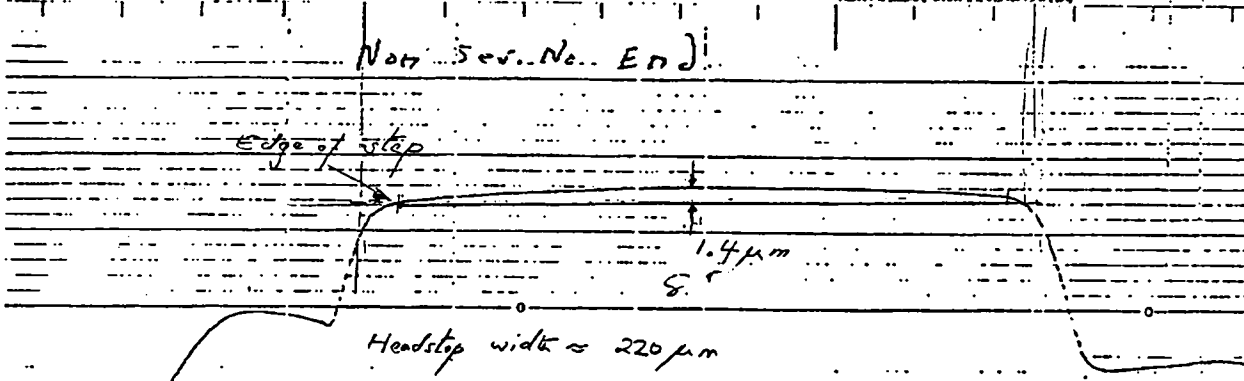
692-4764

To: VLBA Data Recording Group

From: Alan E.E. Rogers

Subject: Measured Head Profiles

Hans had the profiles of worn headstacks measured at Honeywell (see Figure 1) and the height of the profile at the gap is about 1.4 microns for one headstack and 1.8 microns for another, which is somewhat less than the predicted height (for heads worn with 25 μm tape) of 2.3 microns given in Acquisition Memo #141. The difference is probably due to the elastic modulus of the tape being higher than that assumed in Acquisition Memo #141 and an average operating tension being lower. If we assume a modulus of 10^6 lbs/sq" and a vacuum of 9" rather than 7×10^5 and 10" assumed, the predicted height drops from 2.3 to 1.9 microns. Also, one of the headstacks measured had a narrower headstep and when the 1.4 microns measured for this headstack is scaled, it becomes 1.9 microns. Thus the theory is in reasonably good agreement with the measured profiles.



INCH CUTOFF: .003 .030 .300 TOTAL WAVINESS

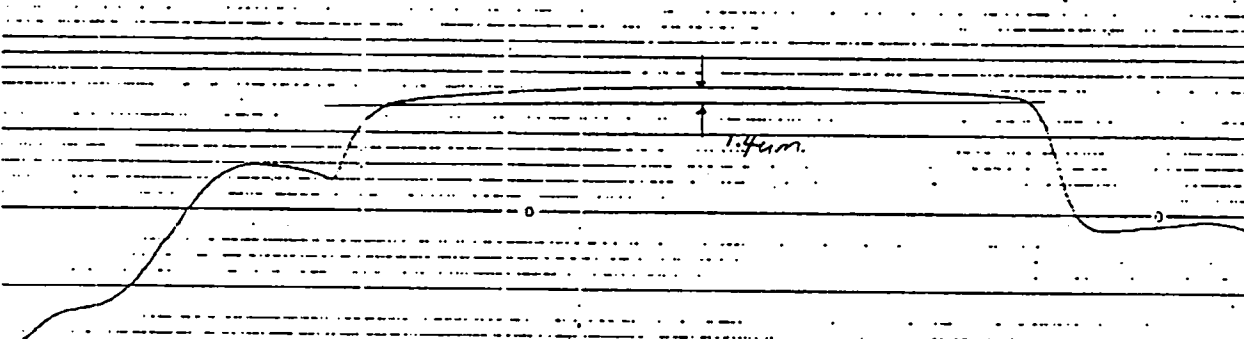
RECORD: ROUGHNESS AVERAGE (RANGE = 10)

RANGE: DIVISION .000050

STYLUS RADIUS

0.001"

1/3 of way from Non Serial No. End



INCH CUTOFF: .003 .030 .300 TOTAL WAVINESS

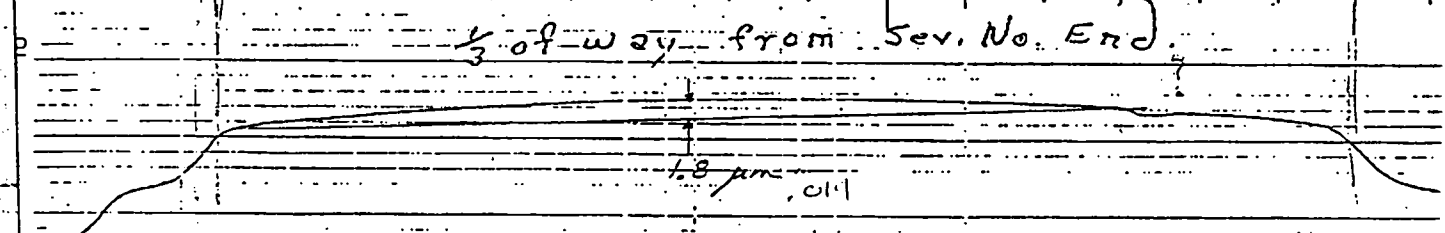
RECORD: ROUGHNESS AVERAGE (RANGE = 10)

RANGE: DIVISION .000050

STYLUS RADIUS

DATE 4-20-89

PART NO. 25A



INCH CUTOFF: .003 .030 .300 TOTAL WAVINESS

RECORD: ROUGHNESS AVERAGE (RANGE = 10)

RANGE: DIVISION .000050

STYLUS RADIUS

DATE 4-20-89

PART NO. 25A

Ser. No. End

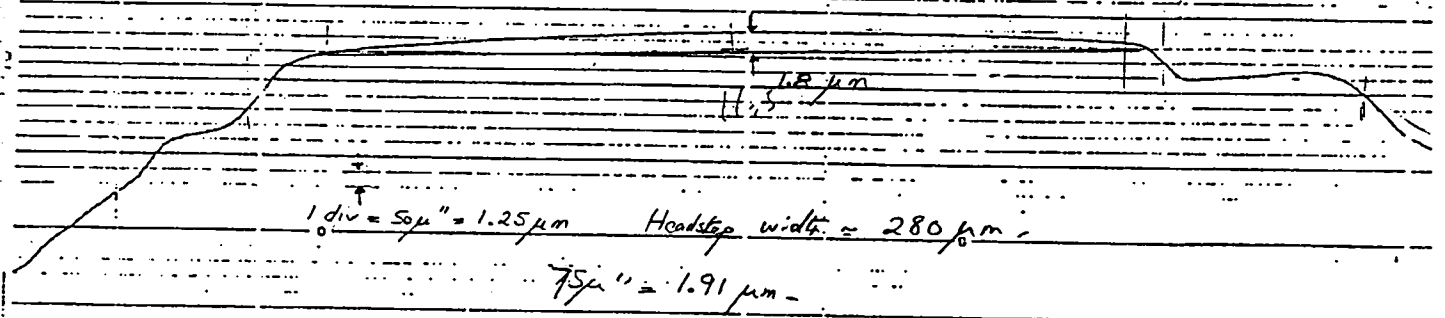


Fig. Some headstack profiles measured by Honeywell