

# VLBA ACQUISITION MEMO #296

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To: VLBA Data Acquisition Group

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Subject: Summary of results of thin tape inspections

The thin tape inspection routine has now been running for eight weeks and this is a summary of the results to date.

Mfg.	Type	Date Rec'd.	Qty. Rec'd.	# Disqualified	Comments
SONY	D1K (VLBA + USNO)	9/90	84	6	Original VLBA and USNO order
SONY	D1K (NASA)	10/91	20	3	NASA order
AMPEX	16 $\mu$ m-Original	9/90	5	5	Original VLBA order
AMPEX	16 $\mu$ m-New	9/91 12/91	4 6	0 0	Improved tapes delivered as replacements.
MAXELL	SVHS	3/91	13	9	A few were obviously defective when received. Most damaged by melt-down in shuttle tests prior to understanding that problem.

NOTE: Number still in use = Qty Rec'd. - # Disqualified

## Wind Margin Test

When a tape is wound at high tension (15" H<sub>2</sub>O of vacuum) and low speed (67.5") it is most susceptible to becoming bumpy because the low speed and high tension reduces air entrapment and increases the effective elastic modulus in the thickness direction. See VLBA Acquisition memos, 228, 236, and 263 for theory. Tapes that fail to pack perfectly at 15" have been tested at successively lower tensions. The following statistics have now been accumulated:

Tape Type	# Tested	# Failed	Comments
Sony D1K-(VLBA + USNO)	20	6	Some new tapes are poorly slit and fail.
Sony D1K-(NASA)	18	3	
Ampex 16 $\mu$ m-Original	0	0	All obviously bad before wind testing started.
Ampex 16 $\mu$ m-New-12/91	8	0	2 have been shuttled for 2 weeks without reduction in margin.