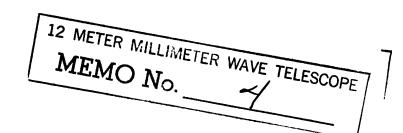
NATIONAL RADIO ASTRONOMY OBSERVATORY TUCSON, ARIZONA

February 4, 1976

To: J. Payne

From: B. L. Ulich

Subject: Antenna Efficiency Tests



The following is a summary of 90GHz Cassegrain efficiency measurements made in the total power mode:

Date	<t> (°C)</t>	η ± 1σ (%)	Foi1
8/26/75	20	30.5 ± 2.3	None
8/27/75	20	28.8 ± 2.3	None
2/3/76	9	30.0 ± 2.0	None
8/28/75	16	34.6 ± 1.2	One layer thick ring of 0.2 mm foil
8/28/75	16	33.2 ± 1.2	11
8/31/75	20	30.9 ± 2.0	Ħ
8/21/75	20	32.9 ± 2.0	11
8/31/75	20	31.9 ± 2.0	11

The weighted average of the clean dish data is $29.8 \pm 1.3\%$, and that of the foiled dish is $33.2 \pm 0.7\%$. Thus we have improved the efficiency at 3 mm by a factor of 1.11 ± 0.05 . This appears to be a significant increase, and the improvement at higher frequencies should be even greater.

c: J. M. Hollis

M. A. Gordon