

MM-VLBI MEMO #005
 MASSACHUSETTS INSTITUTE OF TECHNOLOGY

HAYSTACK OBSERVATORY
 WESTFORD, MASSACHUSETTS 01886

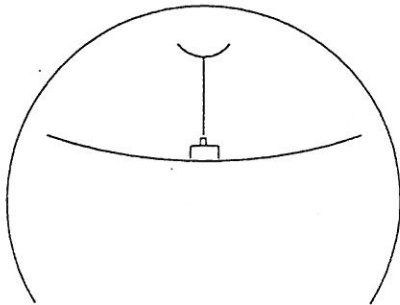
19 May 1993

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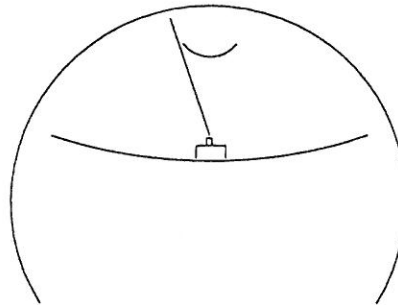
To: Millimeter-wave VLBI Group
 From: Alan E.E. Rogers *A.E.E.R.*
 Subject: Baseline ripple mechanisms and periods

TYPE	PATH	DISTANCE FEET	RIPPLE PERIOD MHz	FIX	Notes
Standing Wave	Feed - subreflector	38.4 x 2	12.8	Sub. vertex spoiler	1,2
Standing Wave	Feed - radome	~55 x 2	9	Underilluminate	1,2
Multi-path	Region shadowed by subref.	~44 x 2	11	Large annula spoiler	3
Multi-path	"Gregorian" radome reflection	~16.5 x 2	30	Underilluminate	3,4

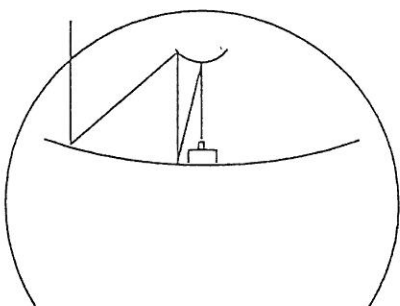
Notes:
 1] Reflections from feed are assumed to occur from aperture, but can occur deeper in the feed thereby increasing distance.
 2] Standing waves produce ripple on cold sky via the "Weinreb" effect. Circular polarization will normally reduce these standing waves.
 3] Multi-path produces ripple which increases with the continuum. Circular polarization is not expected to reduce these effects.
 4] "Gregorian" reflection mode is described in memo of 16 April 1991.



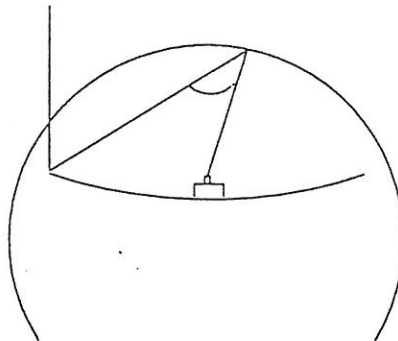
STANDING WAVE FROM
 FEED TO SUBREFLECTOR



STANDING WAVE FROM
 FEED TO RADOME



MULTI-PATH FROM
 REGION SHADOWED BY
 SUBREFLECTOR



MULTI-PATH FROM
 "GREGORIAN" REFLECTION
 FROM RADOME