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To: Holographers

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Subject: More quantitative measure of scalloping

When the holographic maps are analyzed for circular spatial frequencies as follows:

$$S(n) = \int_{r_1}^{r_2} \int_{0}^{2\pi} M(r,\theta)\, e^{in\theta}\, dr\, d\theta$$

where $M(r,\theta)$ = holographic map element in polar coordinates

i.e., r = $(x^2 + y^2)^{1/2}$

θ = $\tan^{-1}(y/x)$

n = spatial frequency in cycles/rotation

the panel periods are clearly visible. The attached plot shows the circular spatial spectrum for the inner and outer panels from which it is evident that there is still a bias in curvature of the panels. The scalloping is larger for the outer panels for which the bias is about 3 mils rms.

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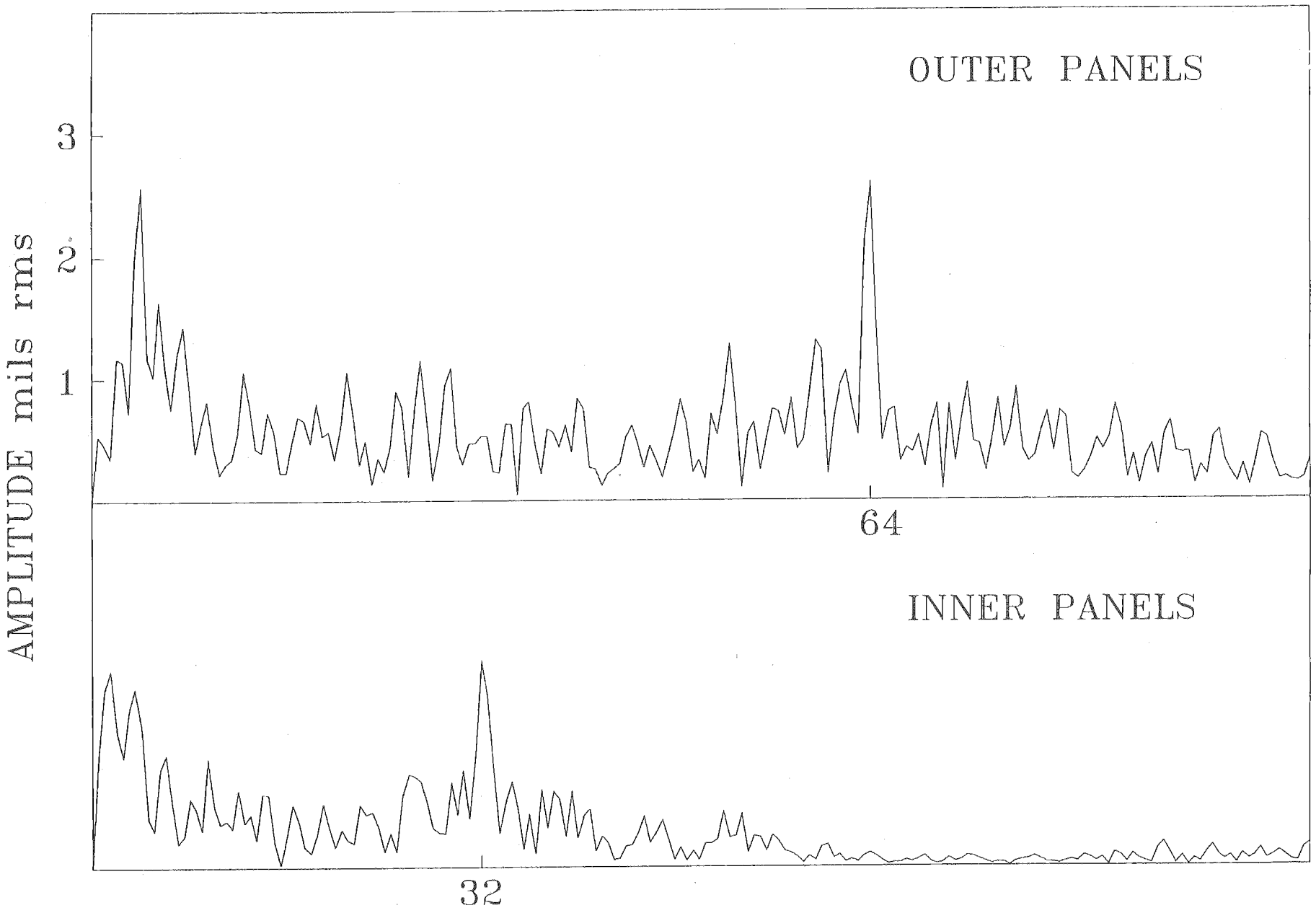

Fig. Circular spatial spectrum for map 272 (91x91)