

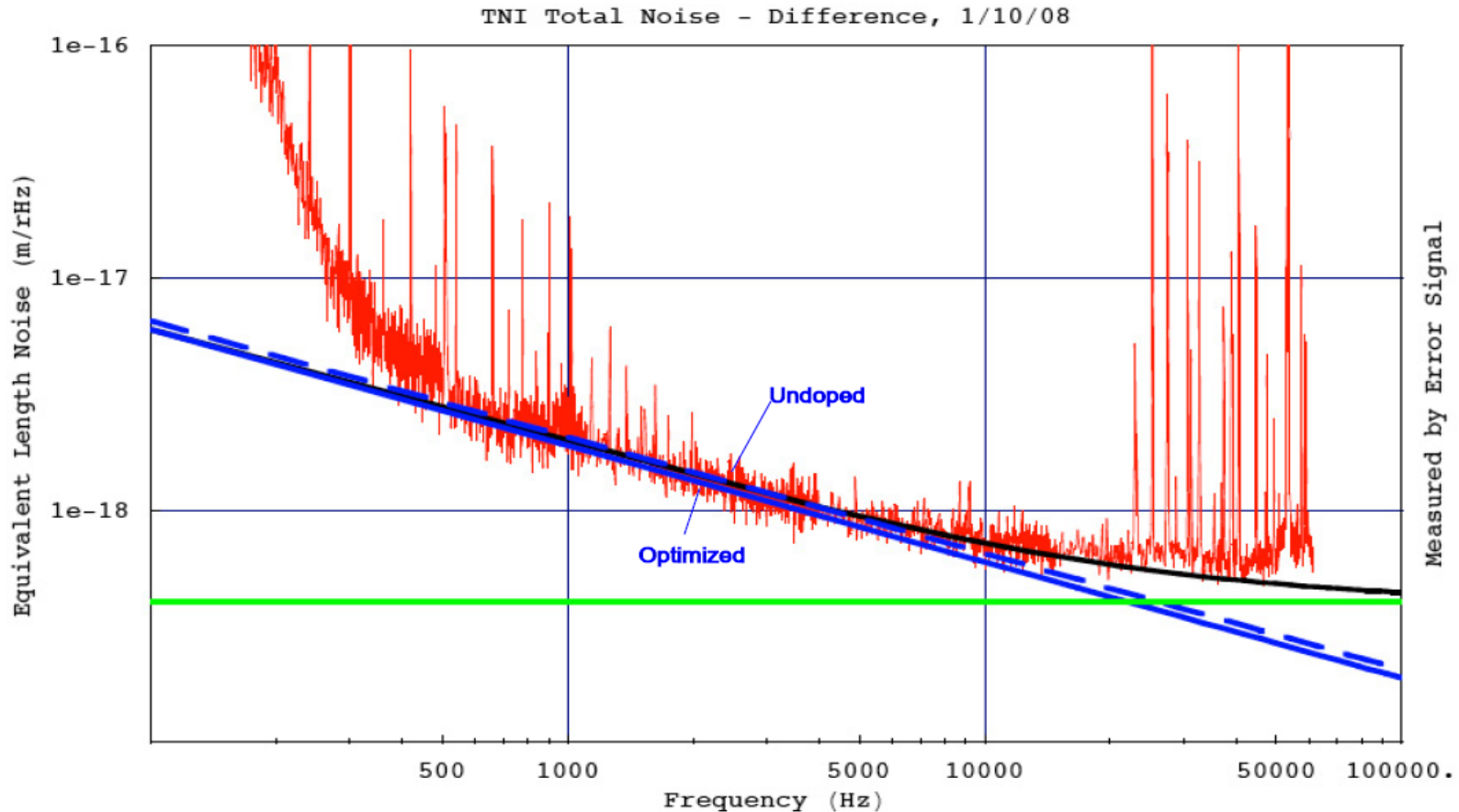
TNI Group Update

TNI

- Optimized coating measured last fall
- Have substrates for (doped & optimized) coating, waiting for coating fabrication
- Sent undoped optimized coating out for characterization
 - 6 ppm absorption, Liyuan Zhang
 - Scatter measurements, Ashot Markosyan
 - *Within error bars from non-optimized*

TNI Update

- Thermal noise in an undoped-optimized coating (solid blue fit), compared to undoped-unoptimized (dashed blue fit)



Optimization -> 16% reduction in loss angle

Photothermal

- Experiment constructed to verify relationship between thermo-elastic and thermo-refractive response of mirror

$$\frac{\partial \varphi_{overall}}{\partial T} = \frac{\partial \varphi_{refl}}{\partial T} - \frac{4\pi}{\lambda} \alpha_{eff} d$$

Reflection Phase Expansion

- Currently in shakedown and debugging phase

