

L1300071

Creep in Blades-GEO Experience

From **Norna Robertson**★

Subject **Fwd: creep in blades**

To **Mike Smith**★

Message ID 51435F8D.10203@ligo.caltech.edu

Date **Fri, 15 Mar 2013 10:51:09 -0700**

User-Agent **Mozilla/5.0 (Windows; U; Windows NT 6.1; en-US; rv:1.9.2.28) Gecko/20120306 Thunderbird/3.1.20**

MIME-Version **1.0**

10:51 AM

[Reply](#) [Reply All](#) [Forward](#) [Archive](#) [Junk](#) [Delete](#)

Mike, Dennis

Further to our discussions about potential creep in blades over long timescales if not creep baked, I asked the GEO team about their observations on this. The GEO blades, made from maraging steel, were not creep baked. GEO has been in operation for ~ 12 years.

I quote part of an email from Harald Lueck. The sensors he refers to are the vertical shadow sensors which would be sensitive to creep in blades and wires and decaying LEDS.

All we can say that there has definitely not been creep over mm as the overall range of the shadow sensors is only 3mm. We know that for years the gap underneath MCN is very small (I think I remember 200µm) and has at least not changed over the last say five years.

I think that the comments on potentially large (many mm) creep discussed on page 458 of the Beccaria et al paper refer to what they might see if they had continued to use AISI 1070 blades which they had used in their prototype.

Norna

--

Dr Norna A Robertson
LIGO Laboratory
California Institute of Technology
Mail Stop #100-36
Pasadena, CA 91125
USA
nroberts@ligo.caltech.edu
Tel: 626 395 2130