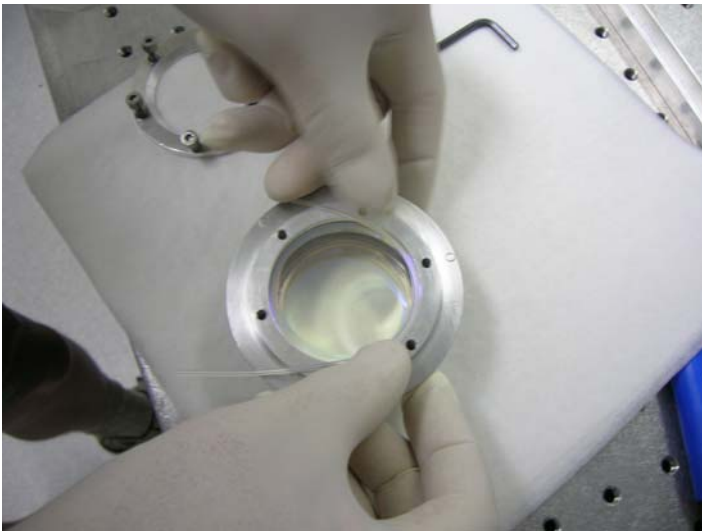
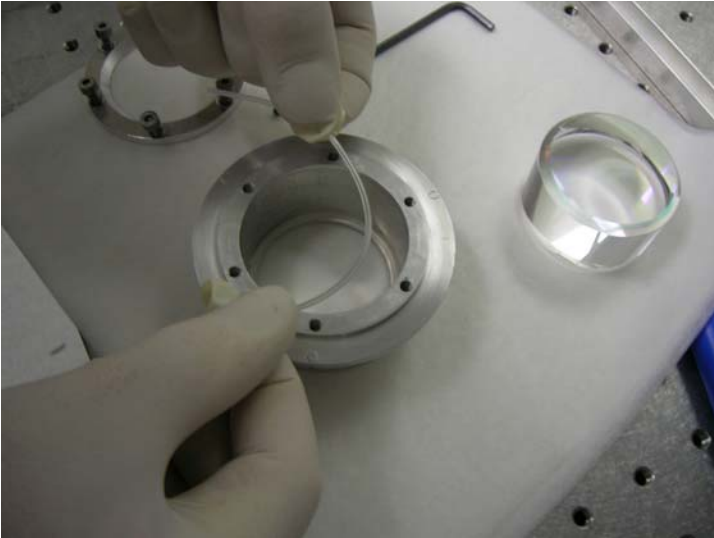


LIGO – T070184-00-R

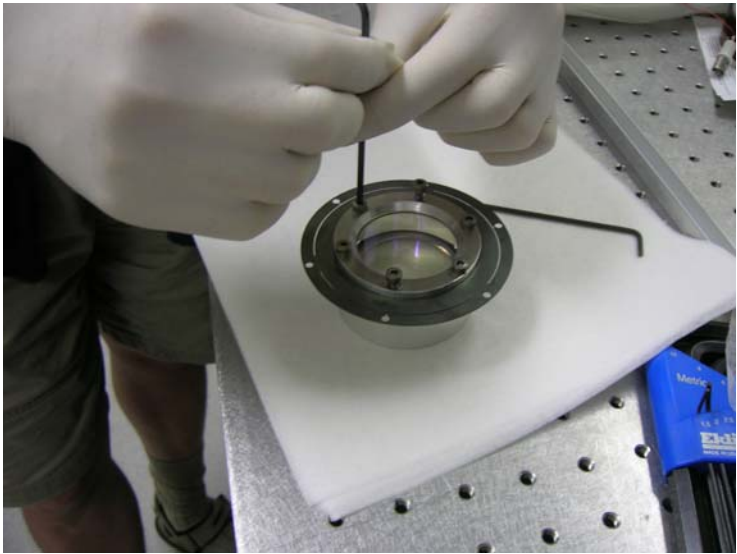
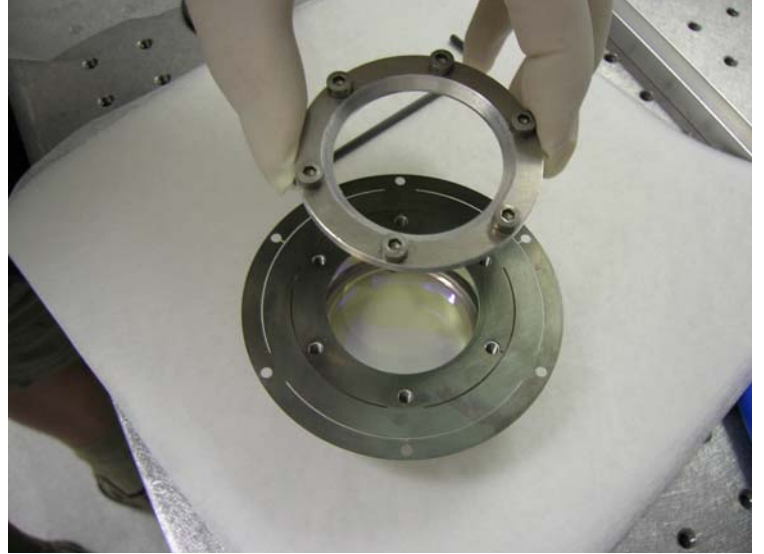
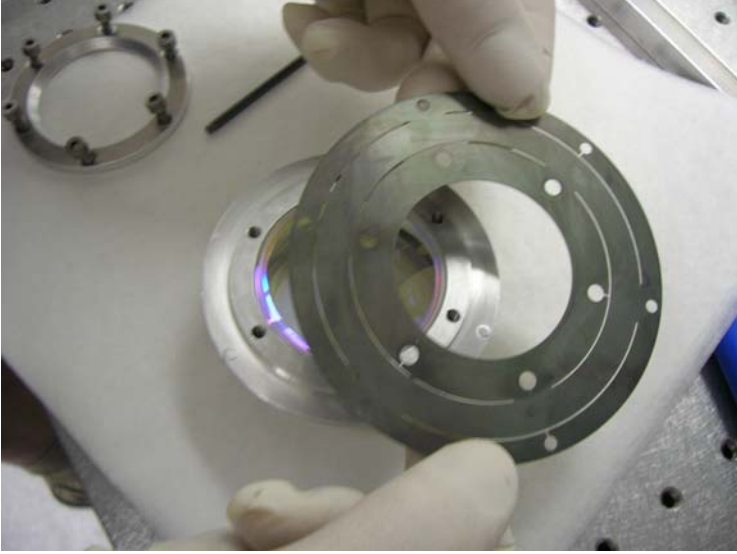
Improved mirror mounts for Caltech mesa beam experiment

J.Miller 8/8/07

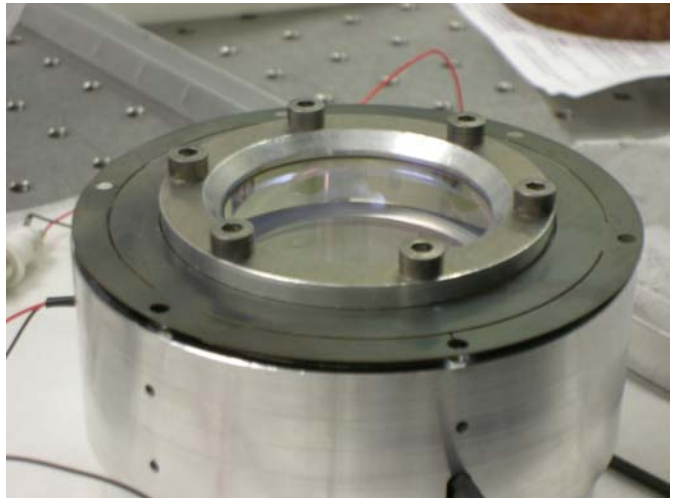
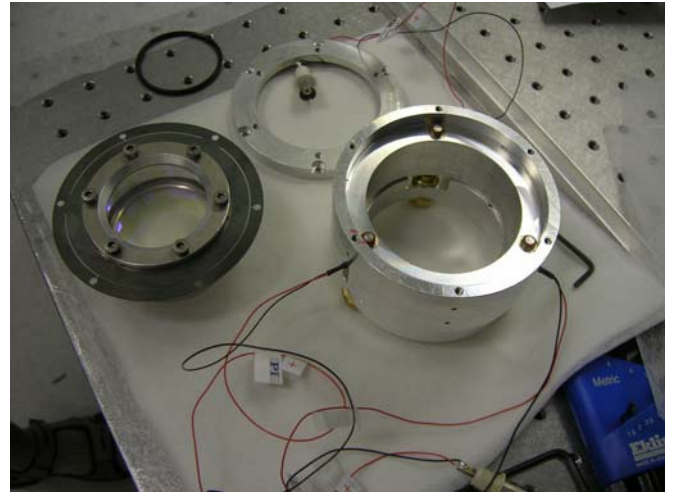
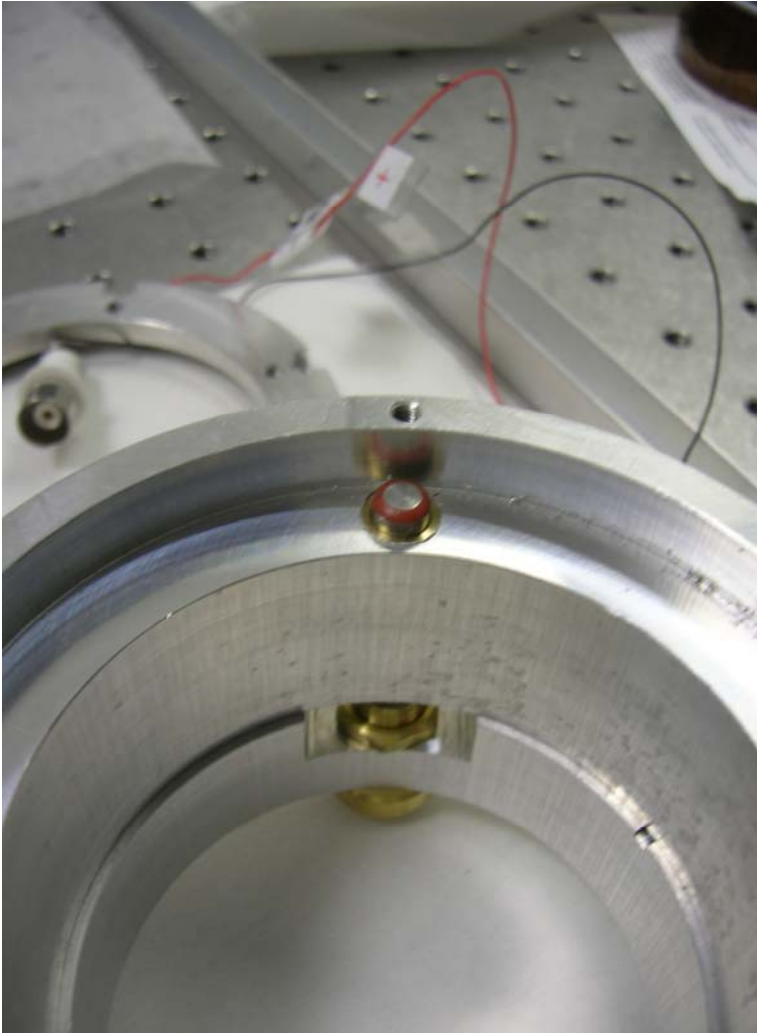
Previously it had been found that our existing mirror mounts were exerting a stress on the optics causing them to become deformed. We designed and constructed new mounts. The following photos detail the assembly of these new mounts.



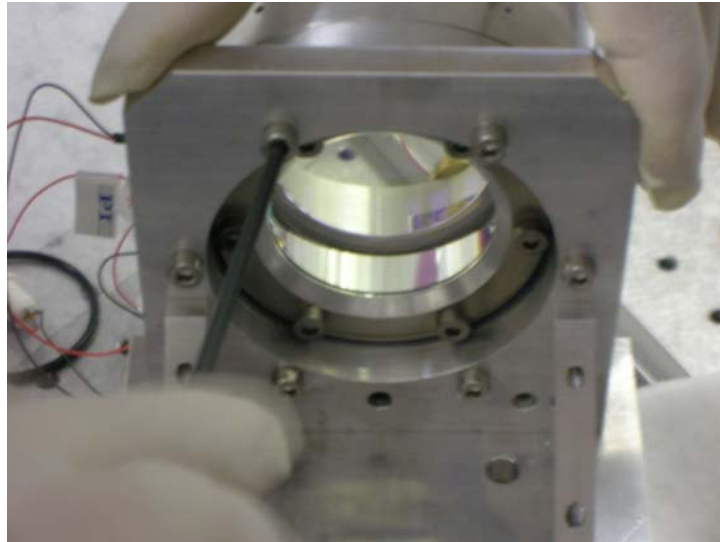
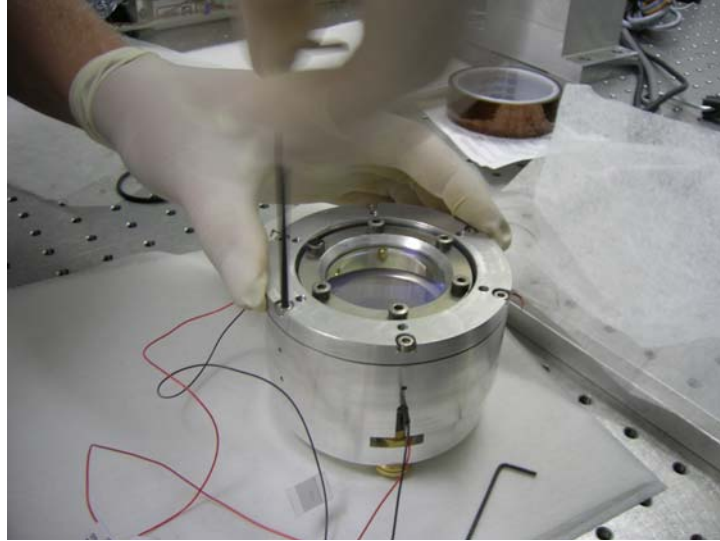
The mirror is mounted in a cylindrical receptacle. O-rings support the optic on its bevelled surfaces so that it does not contact the metal. The O-rings being installed in these images are hollow silicon tubes with an outer diameter of 0.1738 mm (McMaster-Carr 51845K512). Care was taken to note the orientation of the mirror relative to the mount so that the measured phase map could be implemented correctly in any future simulation work.



An annular spring is then mounted to the mirror cylinder.



Mirror alignment is controlled by a triplet of PZTs which act on the inner ring of the springs.



The mirror-spring assembly is then secured in the outer support. For testing and mapping purposes the mount is attached to a solid base.