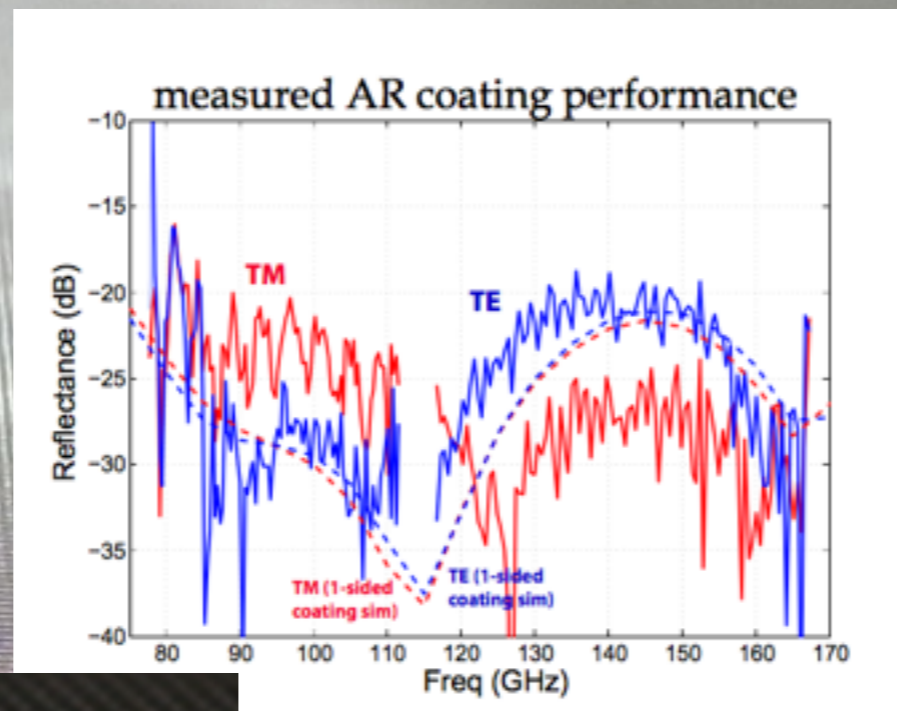


Metamaterial Silicon AR coatings

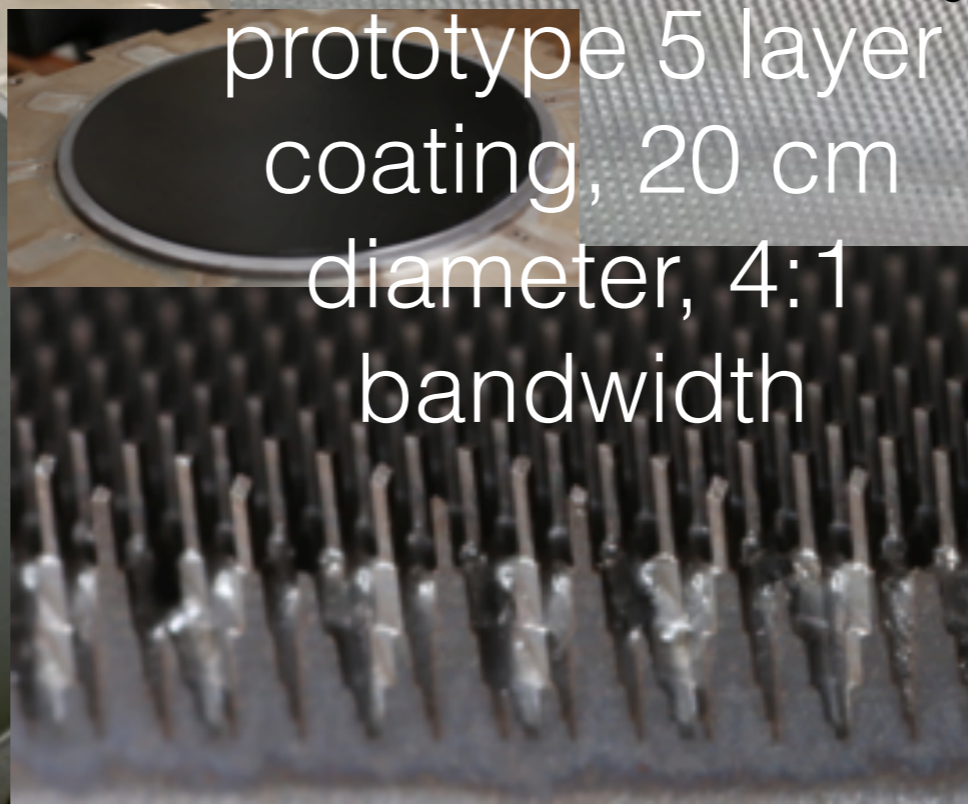
9 deployed lenses



150/220 lens, zero defects



prototype 5 layer coating, 20 cm diameter, 4:1 bandwidth



- demonstrated sub percent reflections over $> 2:1$ bandwidth on lenses up to 33 cm diameter
- fabricated 5 layer prototype which should achieve 4:1 bandwidth
- silicon available up to 46 cm
- key work for S4, figure out how to realize larger lenses if they are necessary
- currently takes ~ 2 weeks per lens for 3 layers, could be sped up by $\sim 7x$ with a new machine