



# Assembly of Visar and 1DConA ESPADA targets for the HED ESPADA Campaign

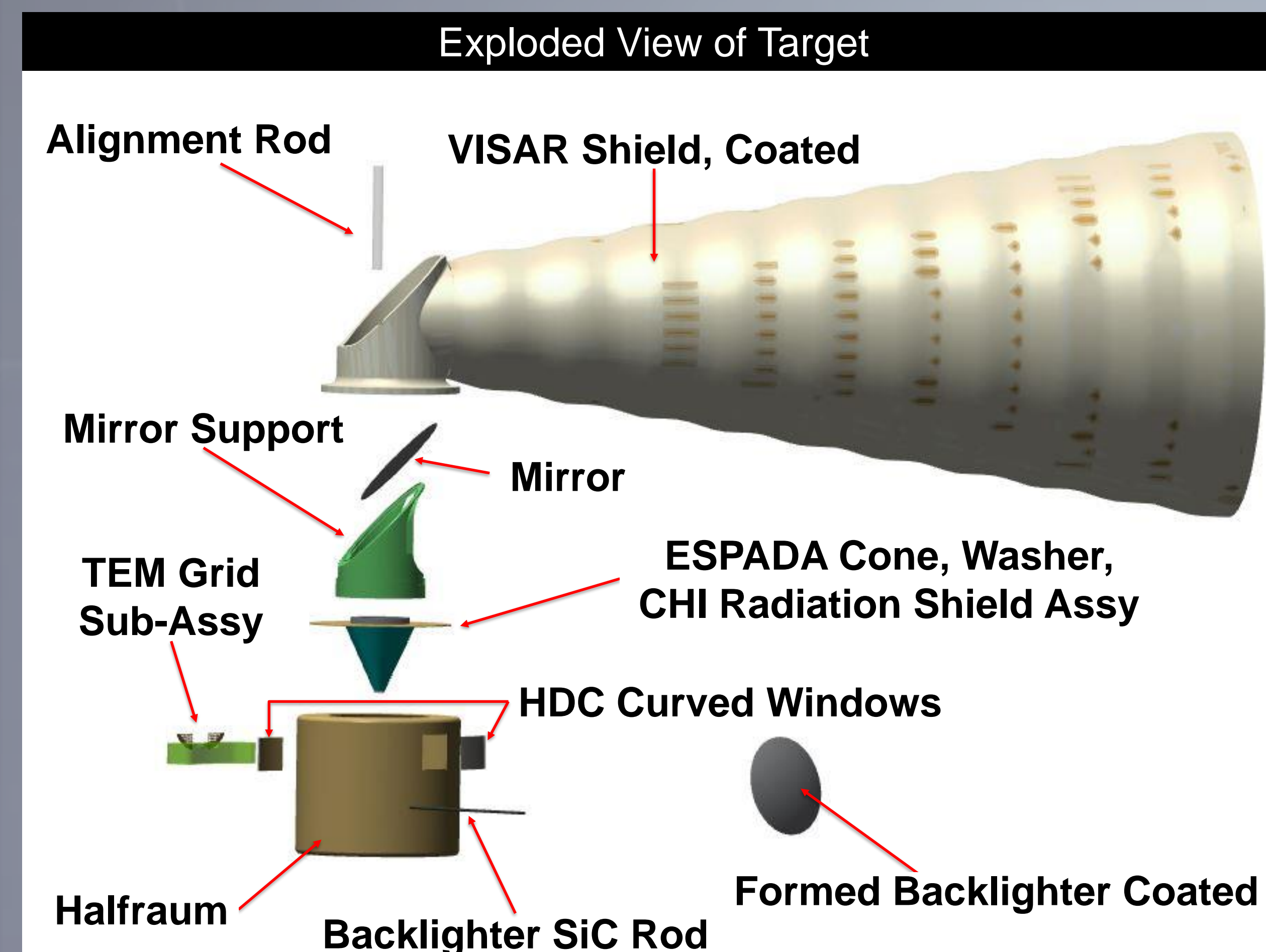
<sup>1</sup>D.Ponce, <sup>1</sup>J.Jensen, <sup>2</sup>S.Stadermann, <sup>2</sup>C.Henning, <sup>2</sup>A.Gallira, <sup>2</sup>R.Vargas, <sup>2</sup>T.Baumann

<sup>1</sup>General Atomics, P.O. Box 85608, San Diego, California 92186 <sup>2</sup>Lawrence Livermore National Laboratory, Livermore, CA 94550



## INTRODUCTION & BACKGROUND

In 2023 the target fabrication assembly team began fielding target requests for a new high energy density (HED) campaign, delivering precisely built target assemblies for demonstrating and measuring confined plasma jets to validate code predictions.

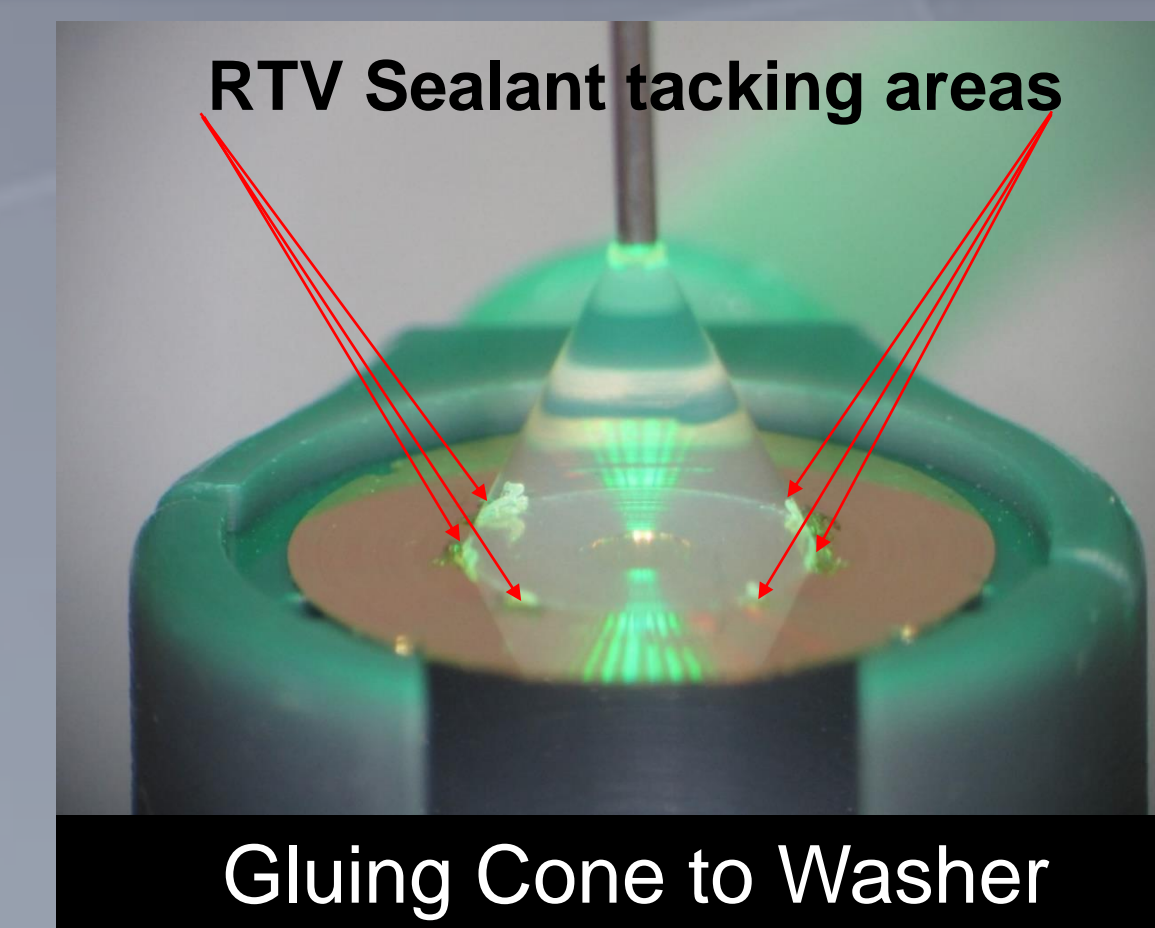
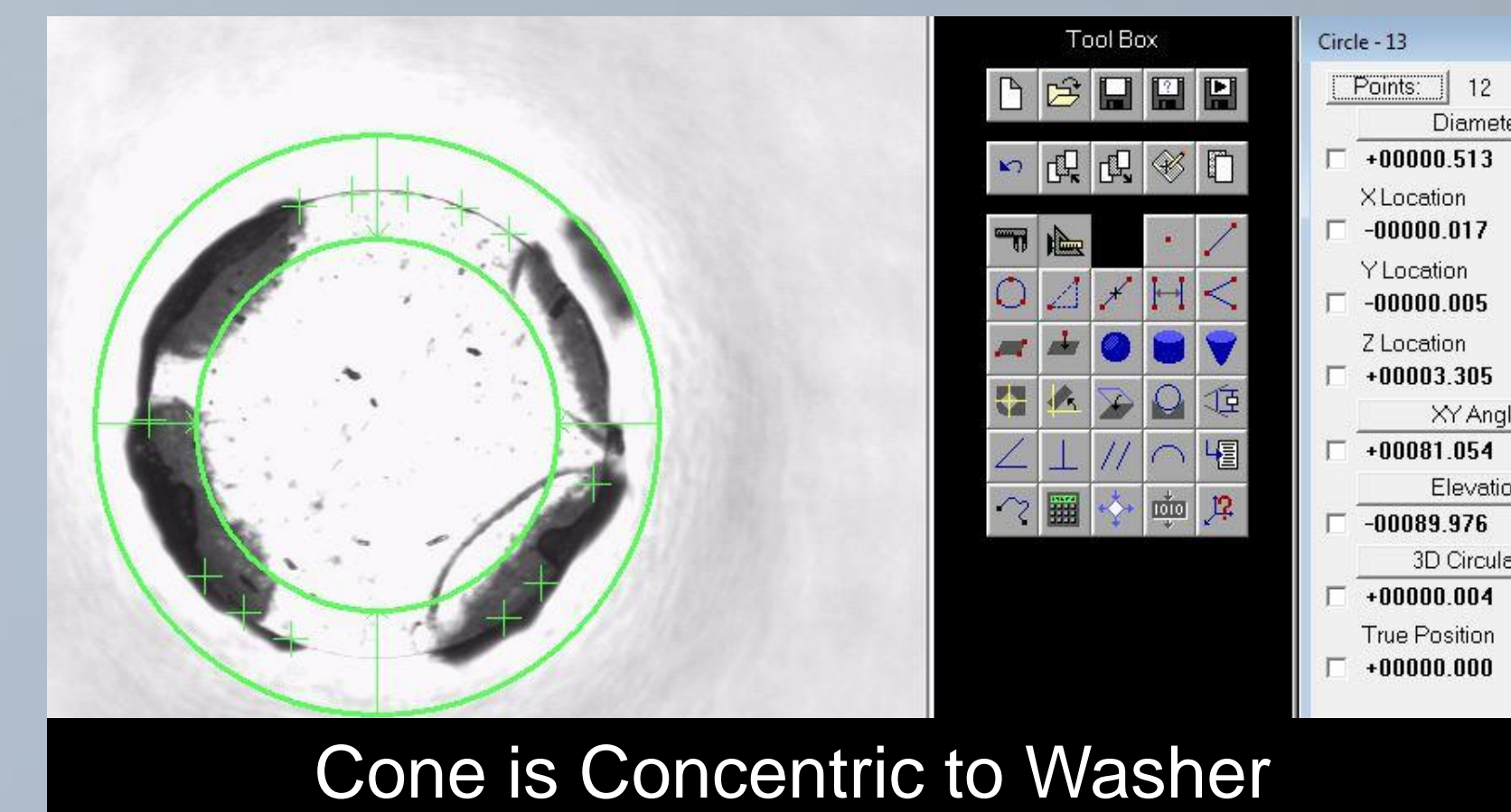


## CONE SUB-ASSEMBLY



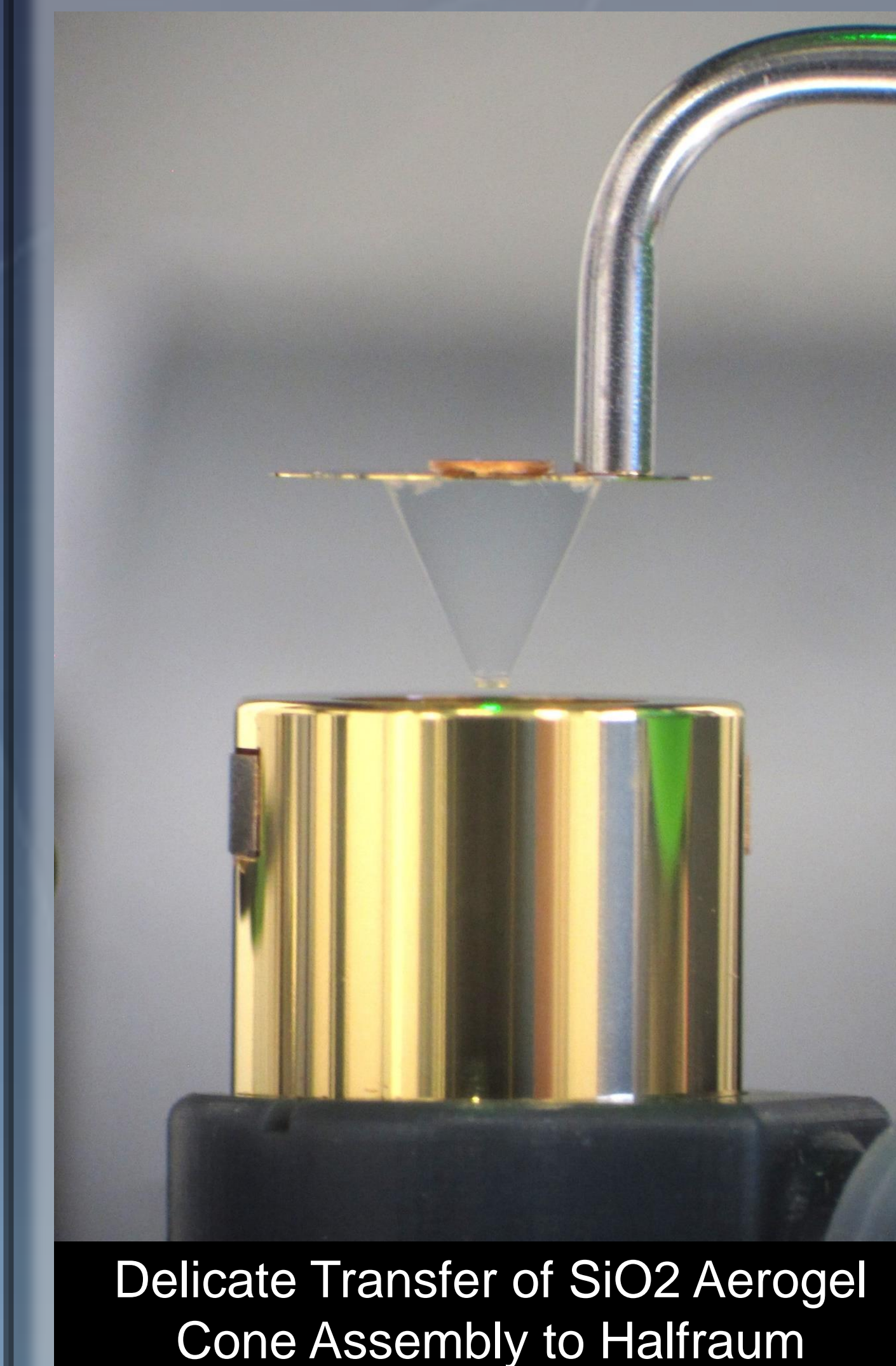
### Assembly Challenges:

- SiO2 Aerogel Cone is fragile and can't be handled directly.
- The SiO2 Aerogel Cone must be transferred by using a vacuum tip and held by the CHI shield.
- SiO2 Aerogel Cone must be leveled carefully to avoid damage to the cone.
- The SiO2 Aerogel Cone must be precisely centered to the washer O.D.
- RTV Sealant when tacked should not run up the cone
- The SiO2 Aerogel Cones used have ranged from 60-100 mg/cc.

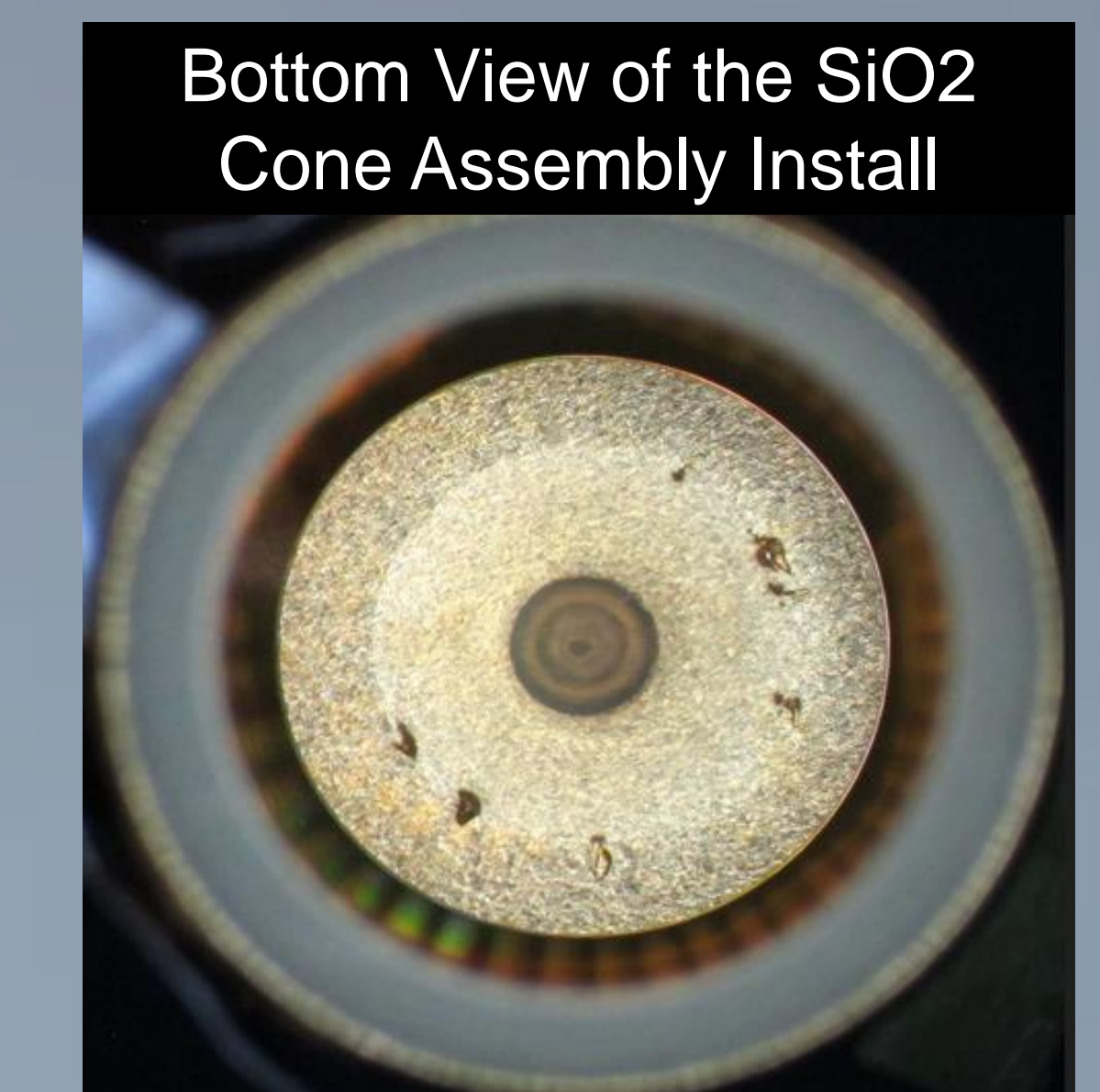
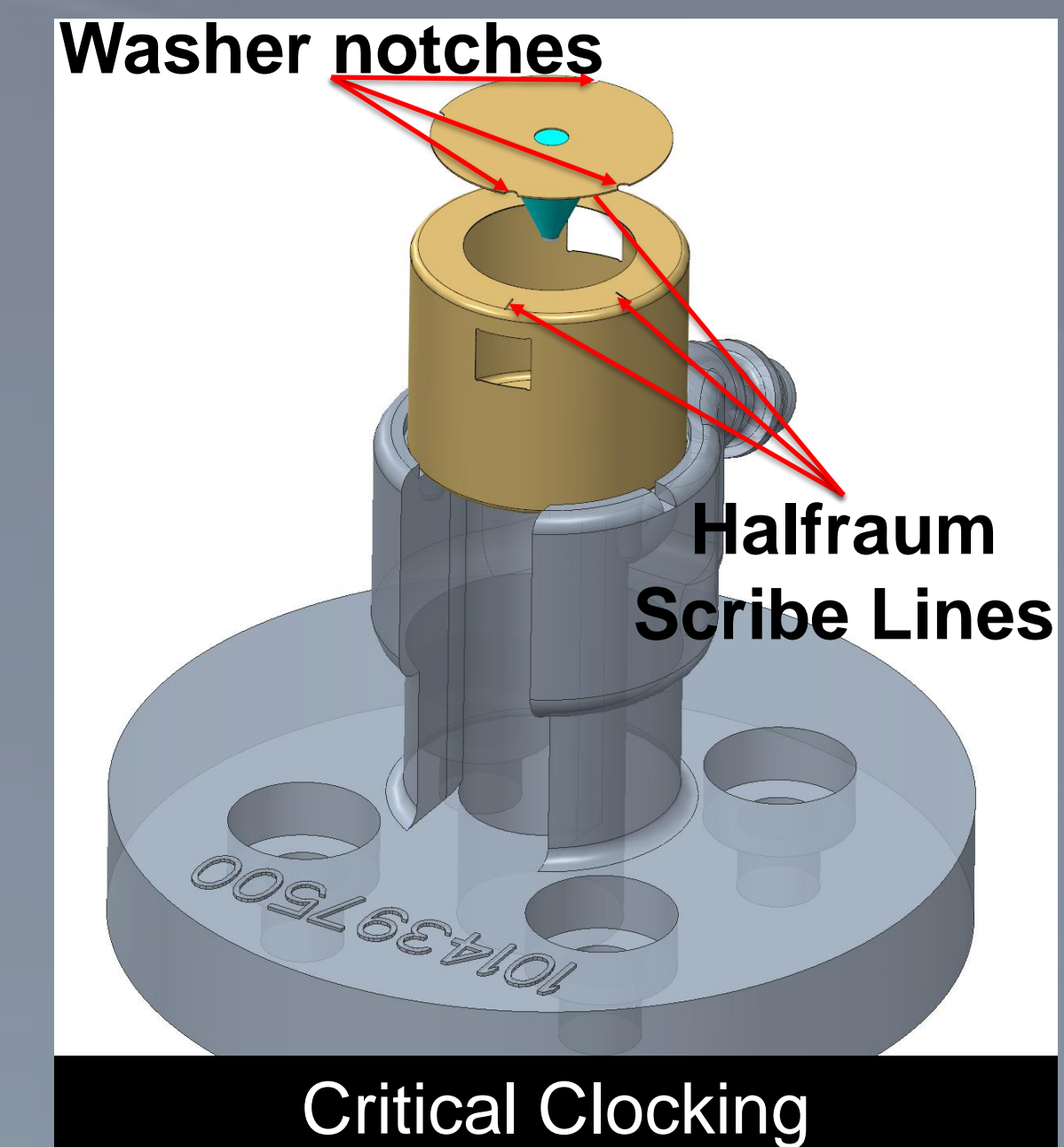


The first Espada SiO2 Aerogel Cone Assembly, was glued directly to the Halfraum.

## CONE TO HALFRAUM SUB-ASSEMBLY

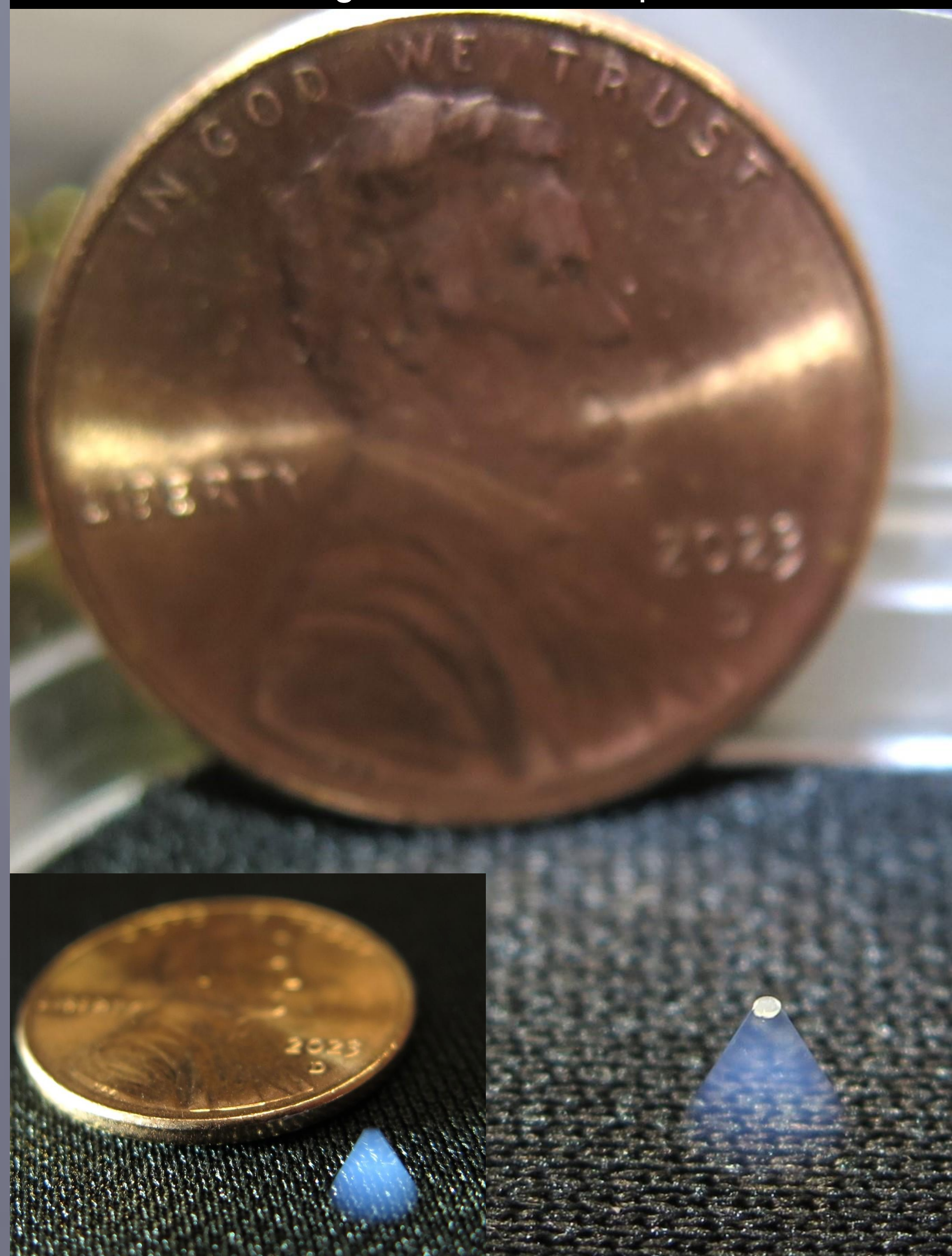


- The Au Washer Notches on the SiO2 Aerogel Cone assembly must be lined up with the scribe lines on the Halfraum.

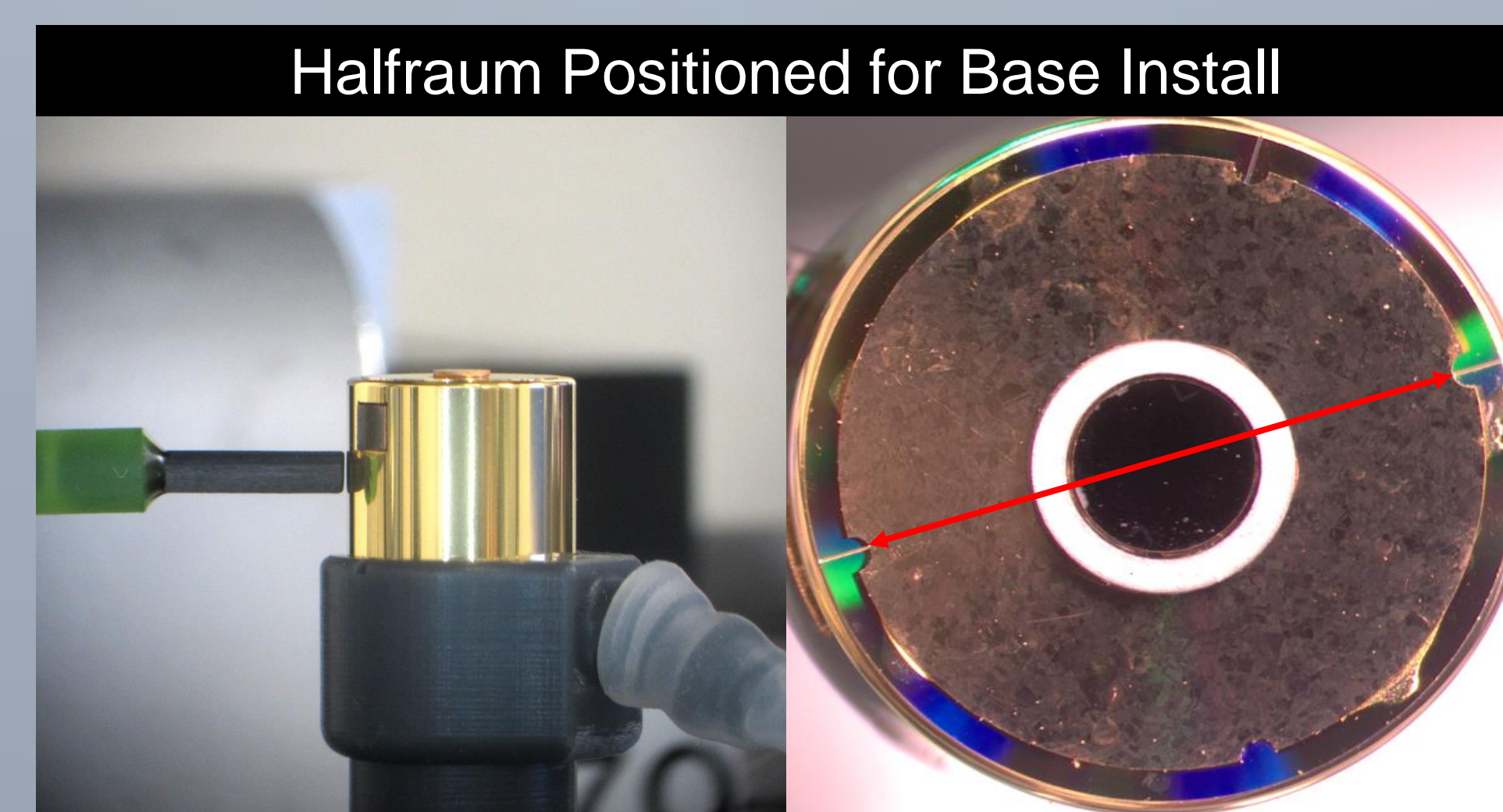


## CONE SIZE COMPARISON

### SiO2 Aerogel Cone Close-up & Profile



## HALFRAUM TO BASE INSTALL

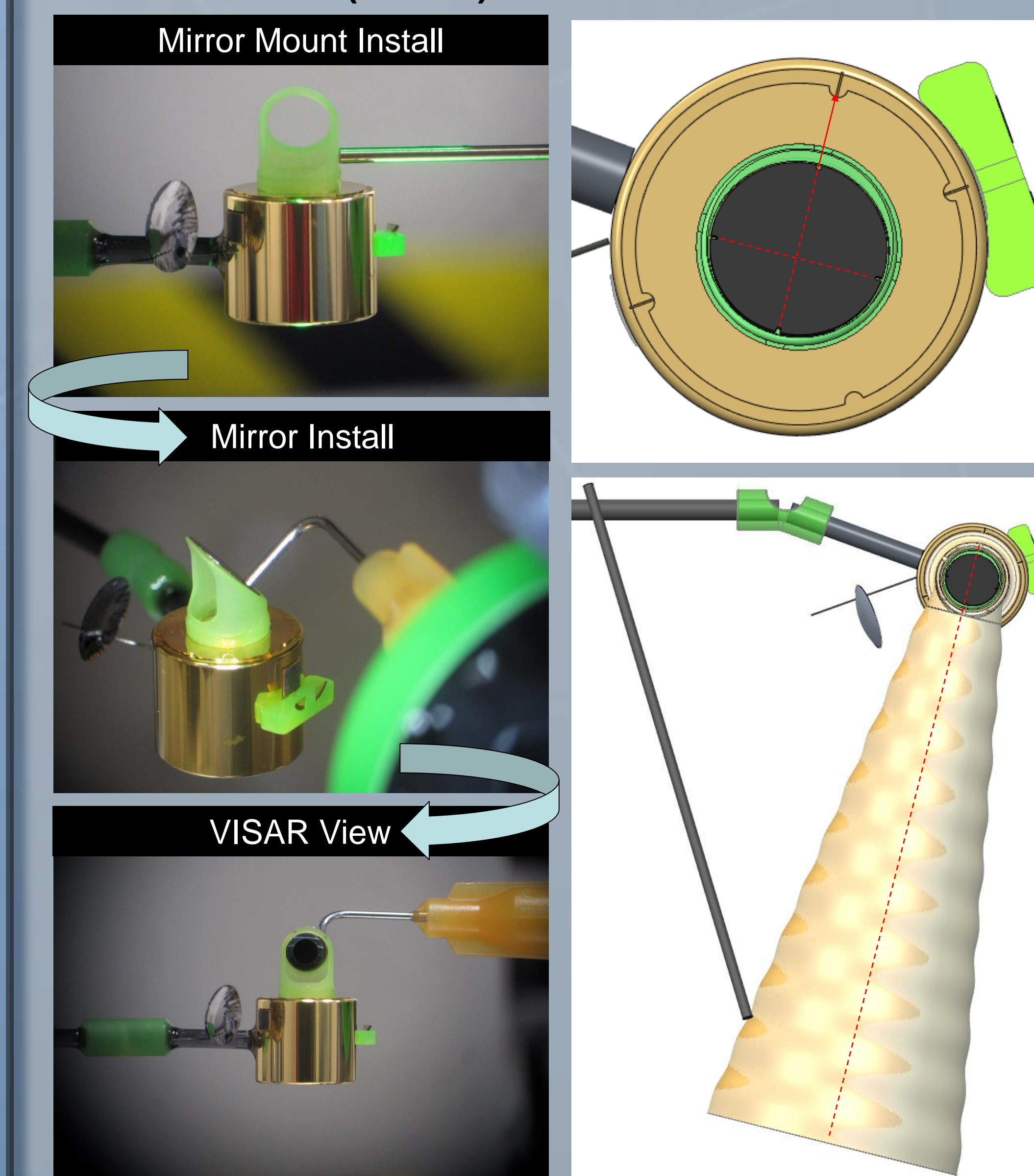


- Halfraum Scribe Lines clocked with respect to the Target Base.



## VISAR COMPONENTS

- Component install accuracy is critical to retain Velocity Interferometer System for Any Reflector(VISAR) data.



## COMPLETED TARGET

