

# DiHedron

## Status

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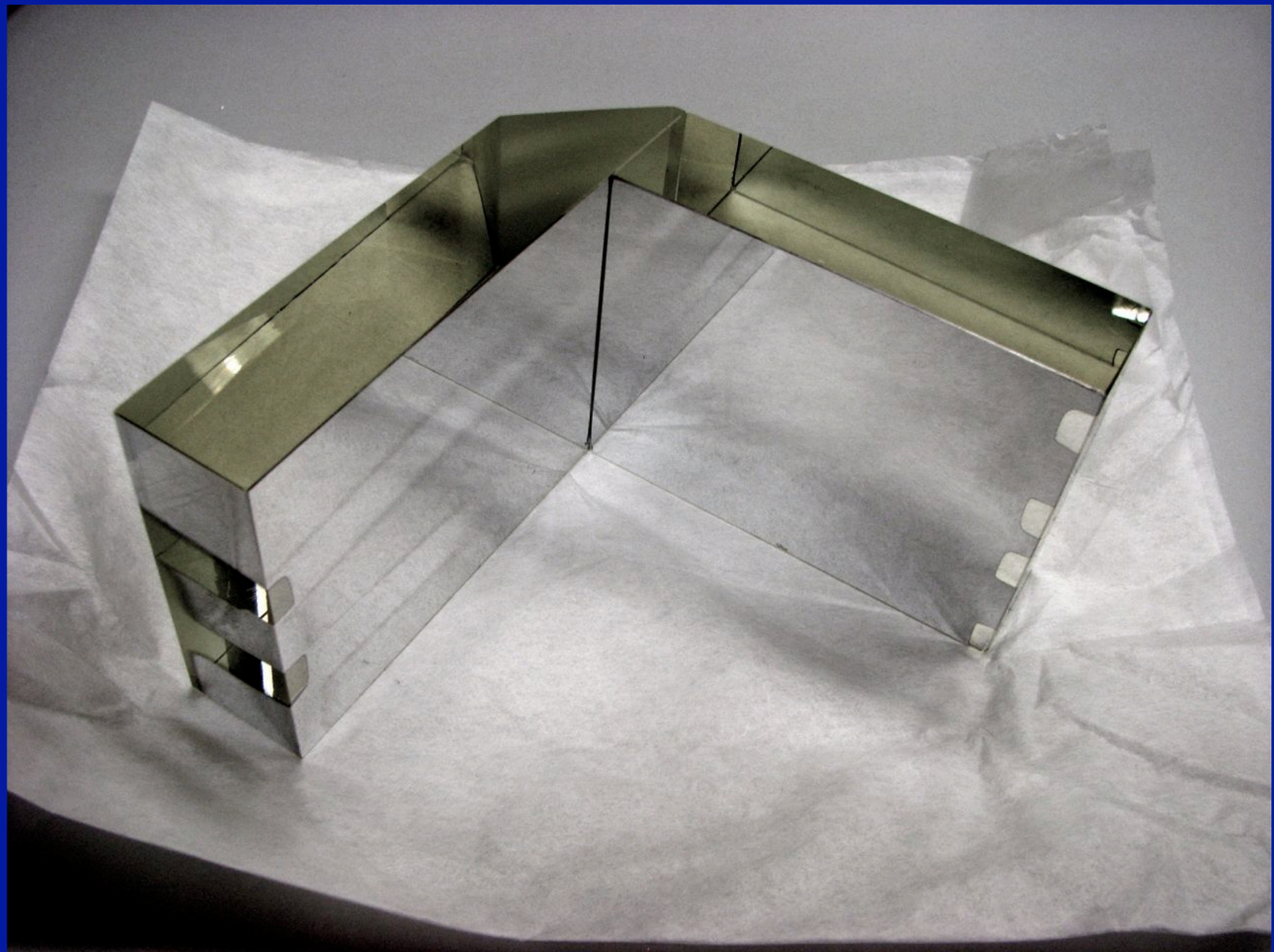
# Dihedron - Status

1. Prototype has been produced;
2. Angle between mirrors measured:  $89^\circ 58' 58.30 \pm 0.15''$   
(requirement:  $\pm 2''$ )
3. 3 mountings have been produced; goal: test optimal contact surface.
4. 2 mirror substrates Homosil 101 are being polished;
5. ongoing: surface definition (together with EGO optics group);
6. 2<sup>nd</sup> method for angle under development;
7. transport box being designed.

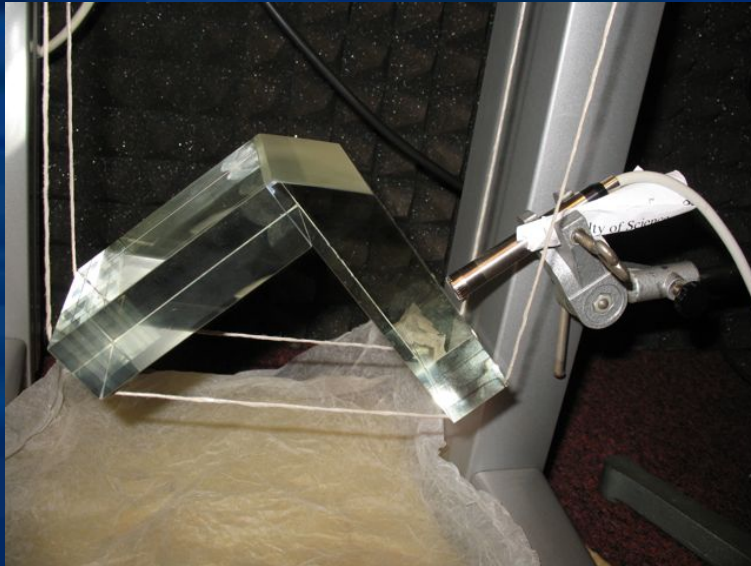
to be done

1. finish polishing;
2. verify surfaces comply with specs;
3. prepare coating (holder, ...)

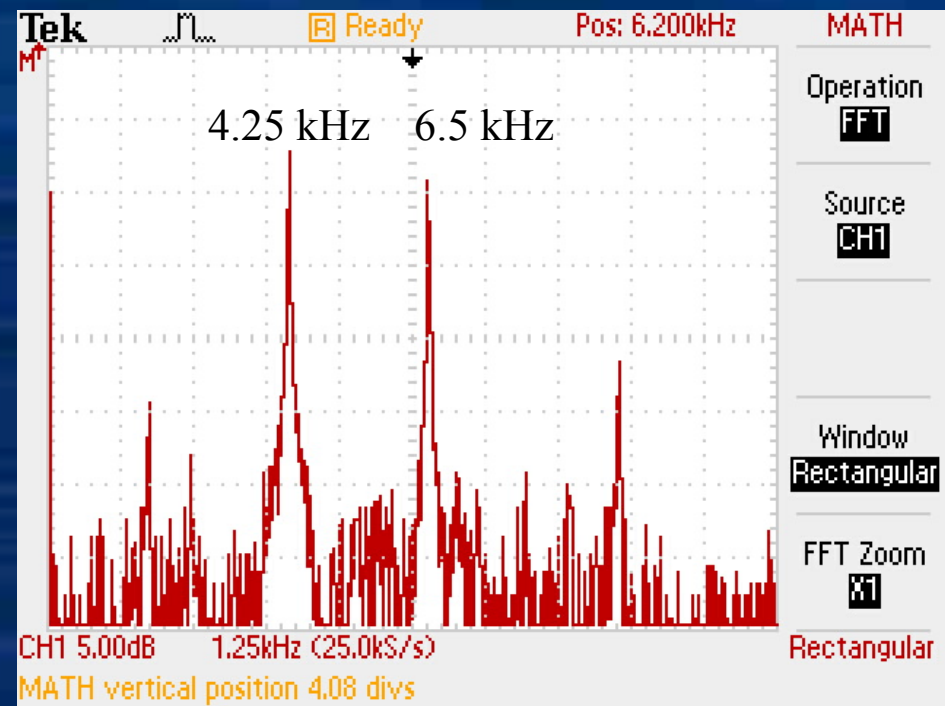
# Prototype mirrors (duran 50 – alu coating)



# Prototype mirrors - first tests

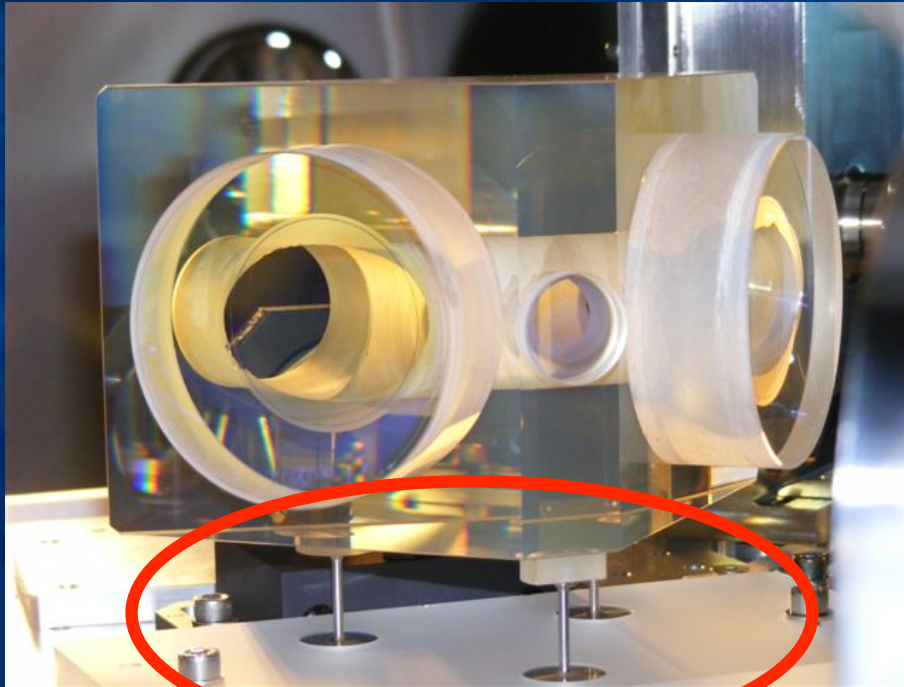


1.25 kHz/div



# Support

actual



# Support

actual



for new dihedron

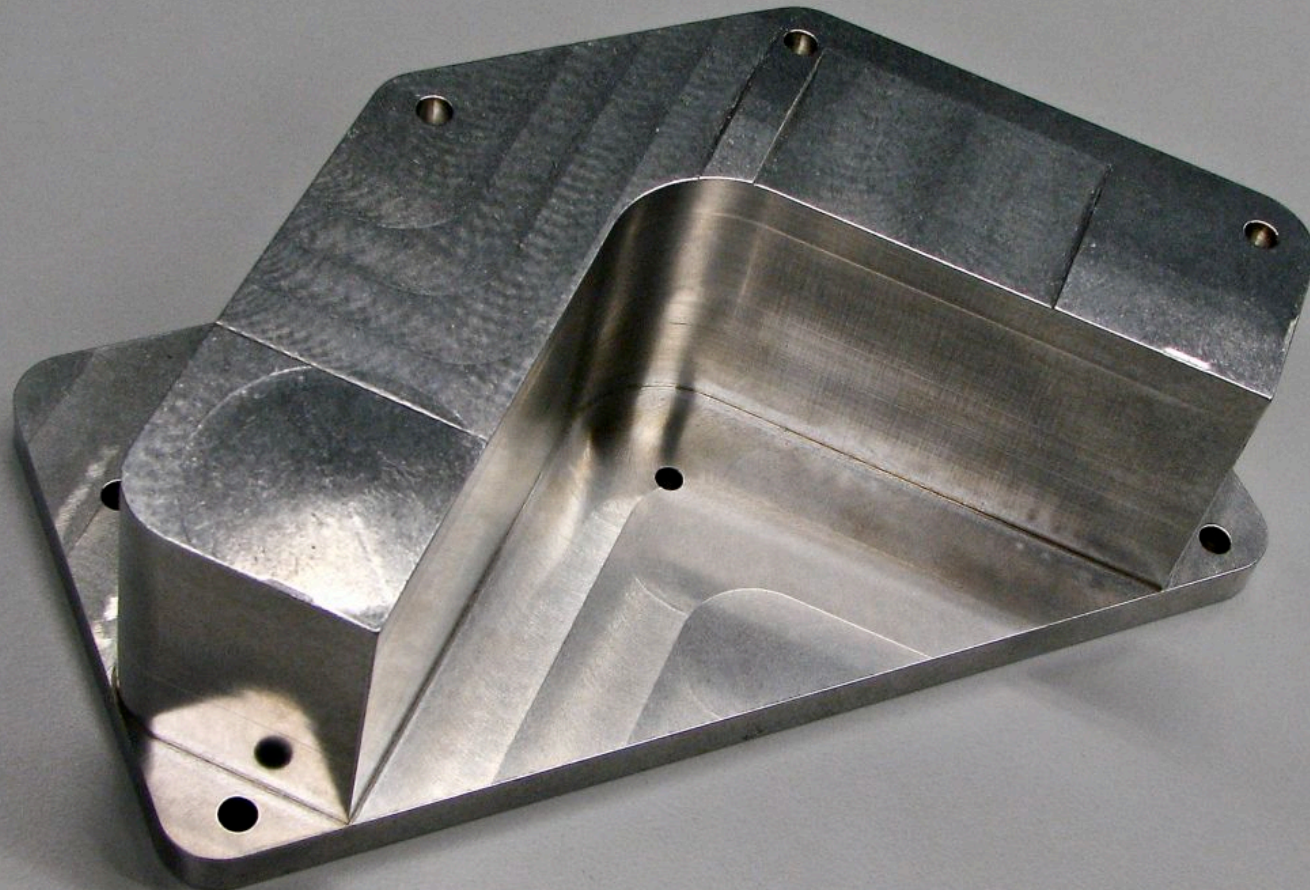
## Requirements:

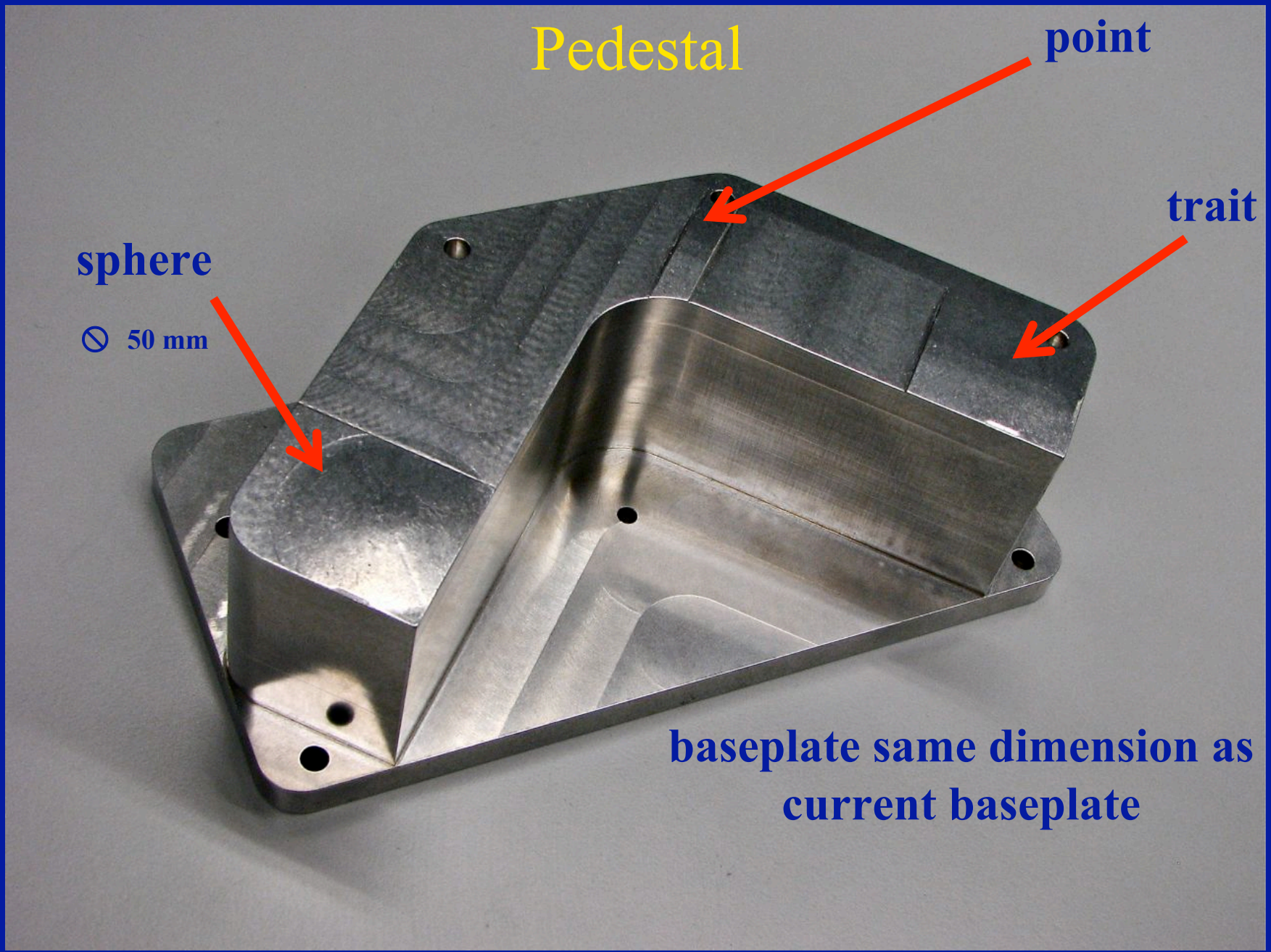
- 3 points;
- high intrinsic frequency;
- optimal contact points.

## Approach:

- solid block : “pedestal”;
- provide 3 point contact-surface;
- optimize contact points:
  - 3 little contact areas of different surface quality
  - sphere – 2 cylinder-sections

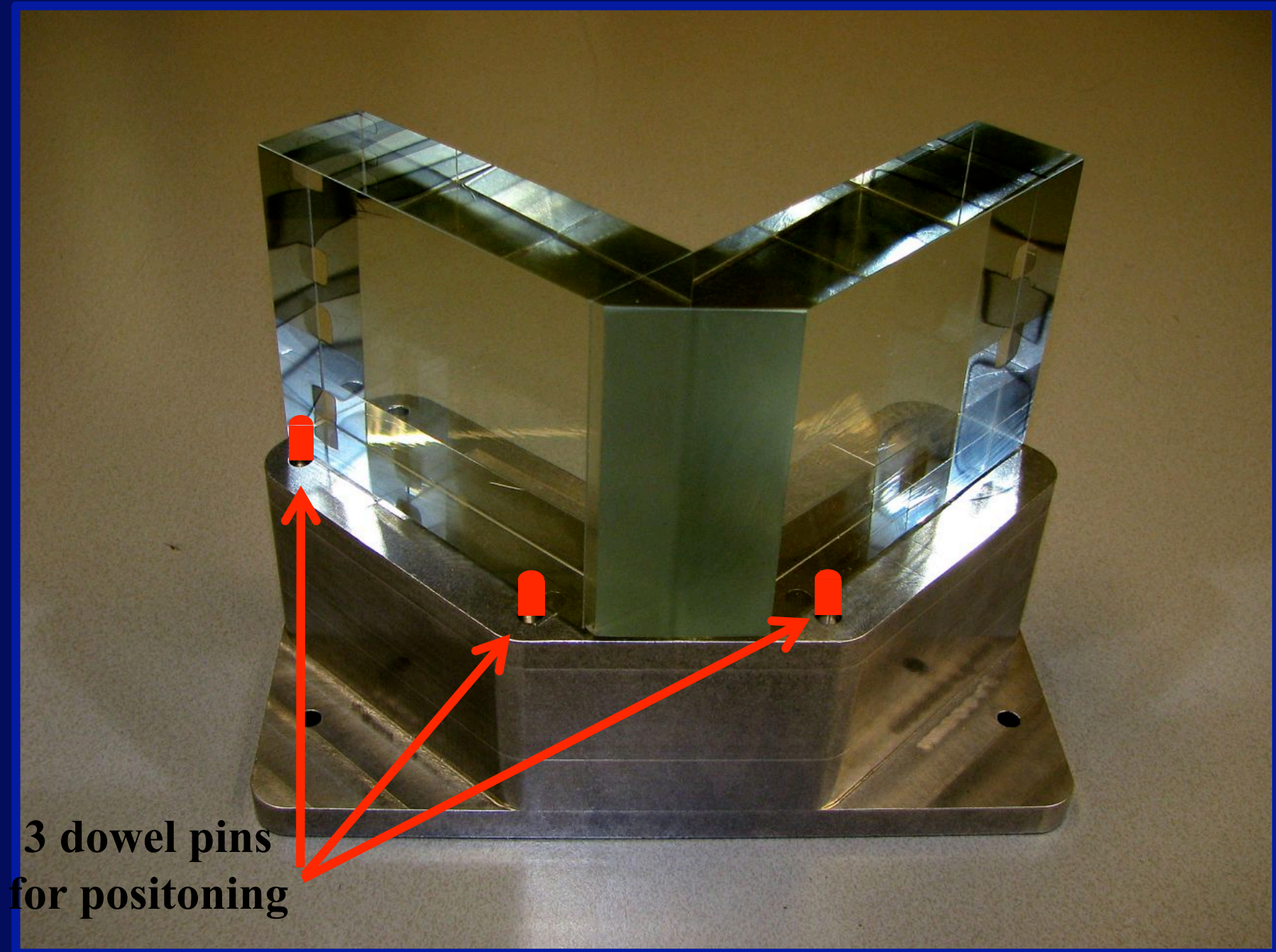
# Pedestal



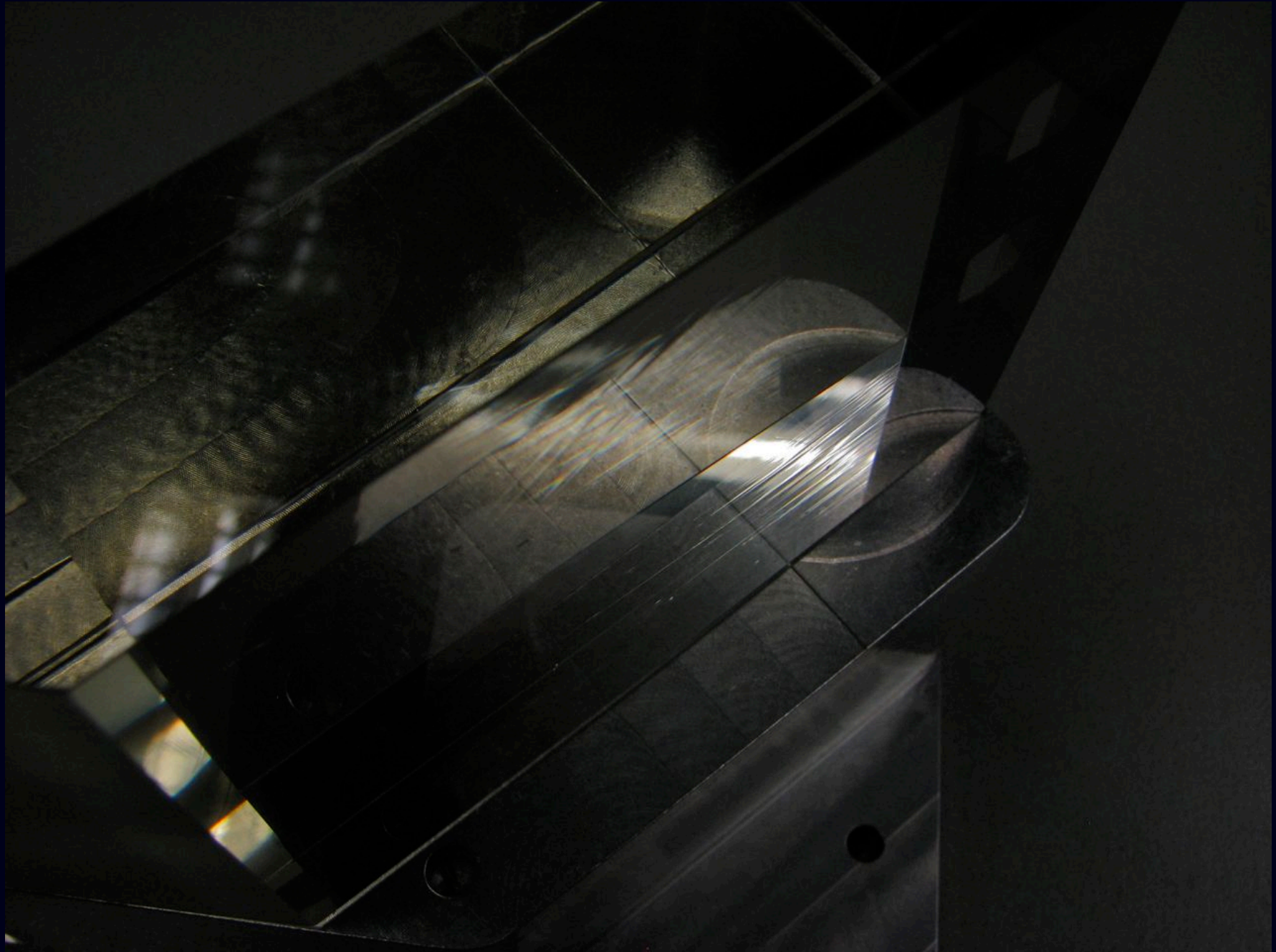


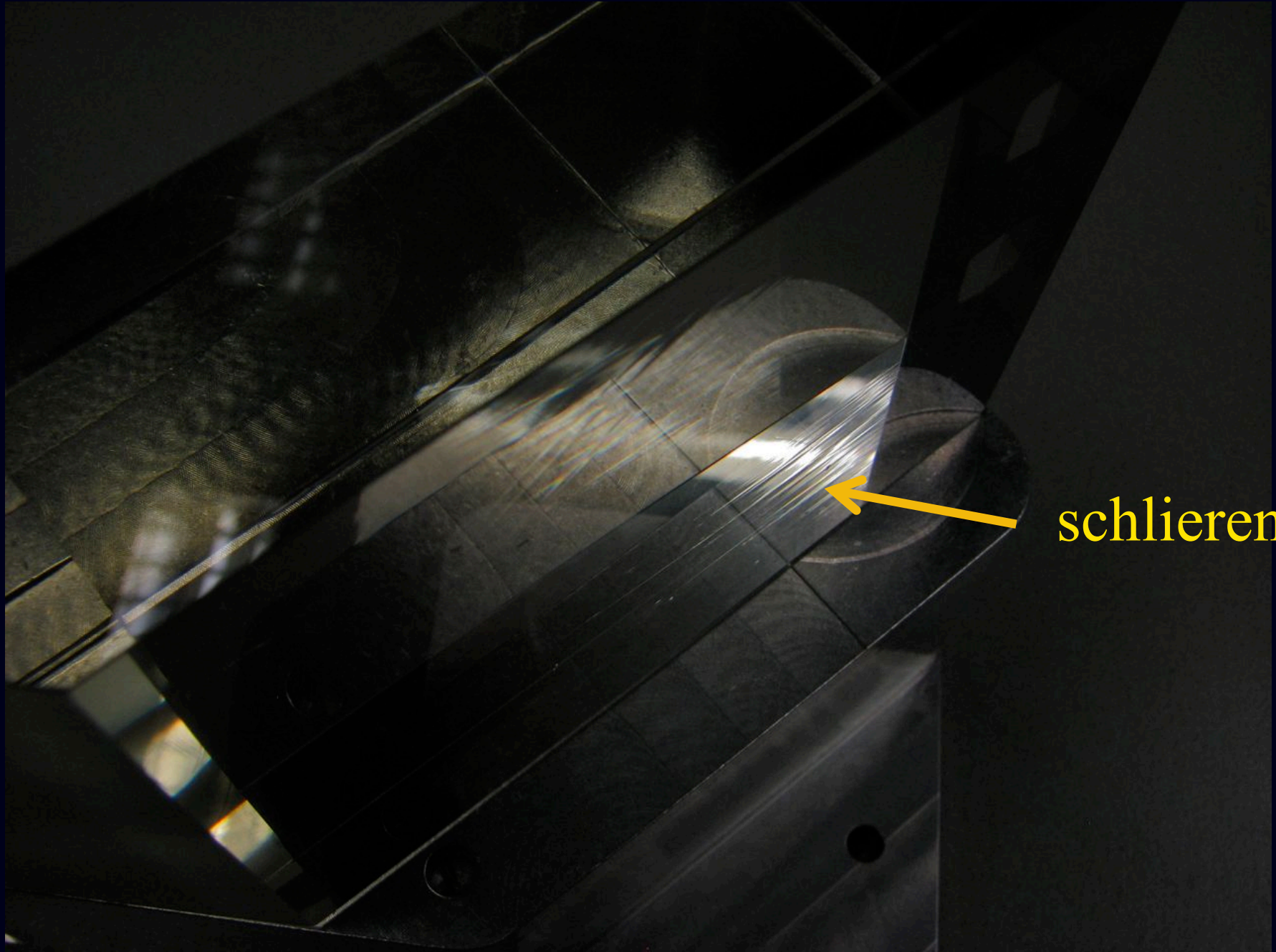






**3 dowel pins  
for positoning**





schlieren

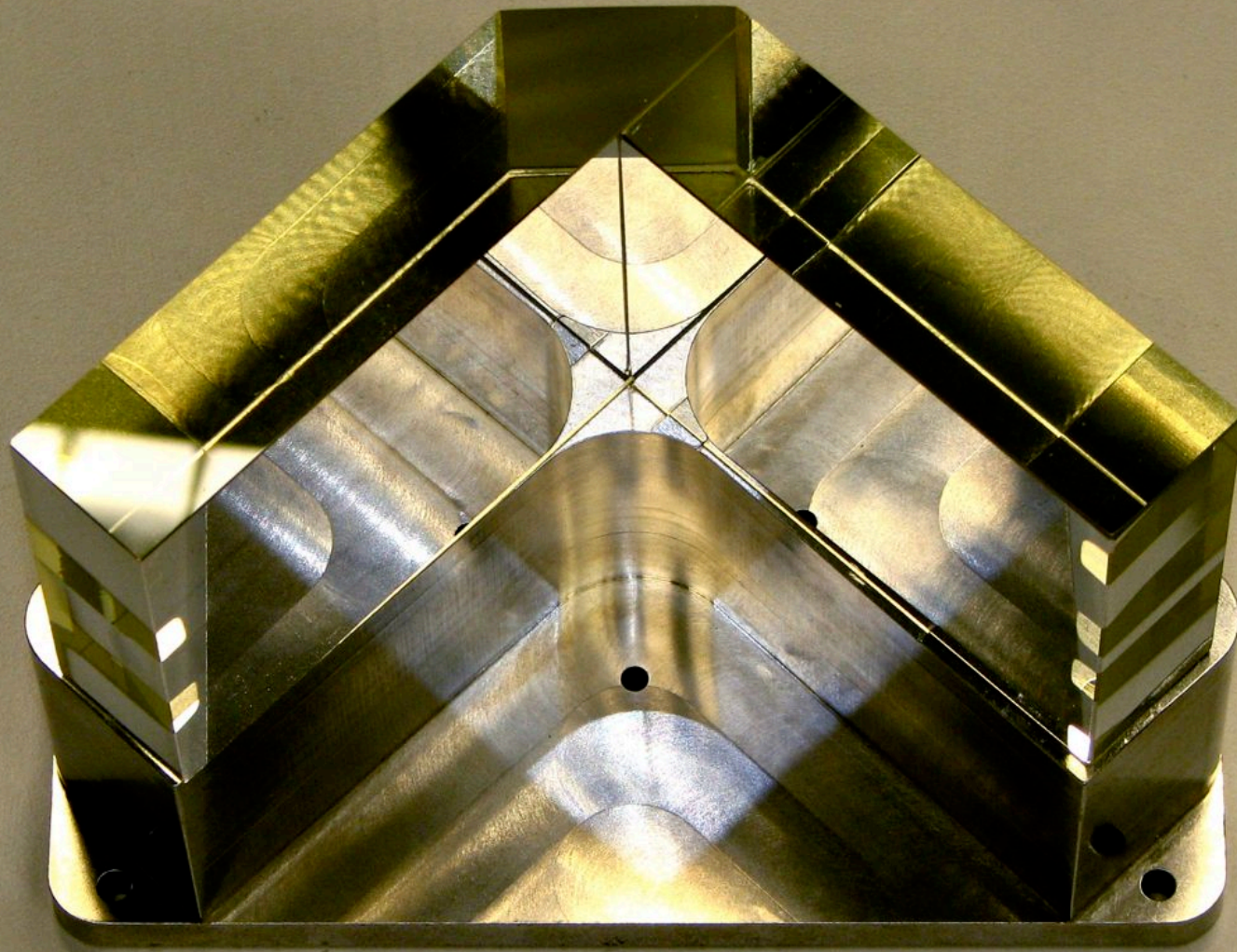
## Summary

- **Dihedron advances -- slowly, but it progresses;**
- **new (solid) support available;**
  - **3 versions, to test optimal contact surface**
- **prototype (Duran 50) ready.**
- **angle measured (autocollimator), uncertainty  $< 0.3$  “**
- **to be done**
  - **surface characterization (next week)**
  - **final polishing**
  - **transportbox**
  - **coating**

# Planning

## Planning - to be updated

Implementation Plan	2009			2010		
	Oct	Nov	Dec	Jan	Feb	Mar
Tasks and Deliverables						
<b>Tasks</b>						
FEA analysis						
Mirror Production (test)						
Mirror Production (real)						
Coating						
Assembly						
Mounting Support						
Installation						



**The End.**



