

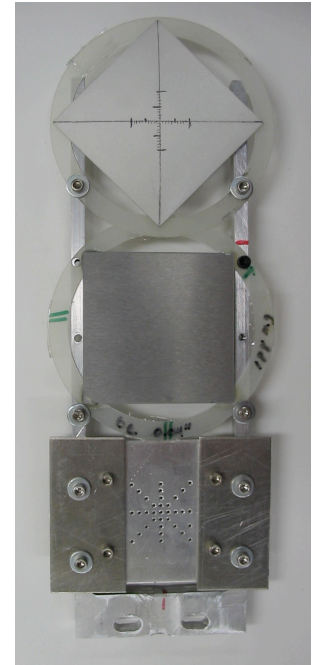
# Setup information for experiment 05038

## Scattering chamber target ladder

- location

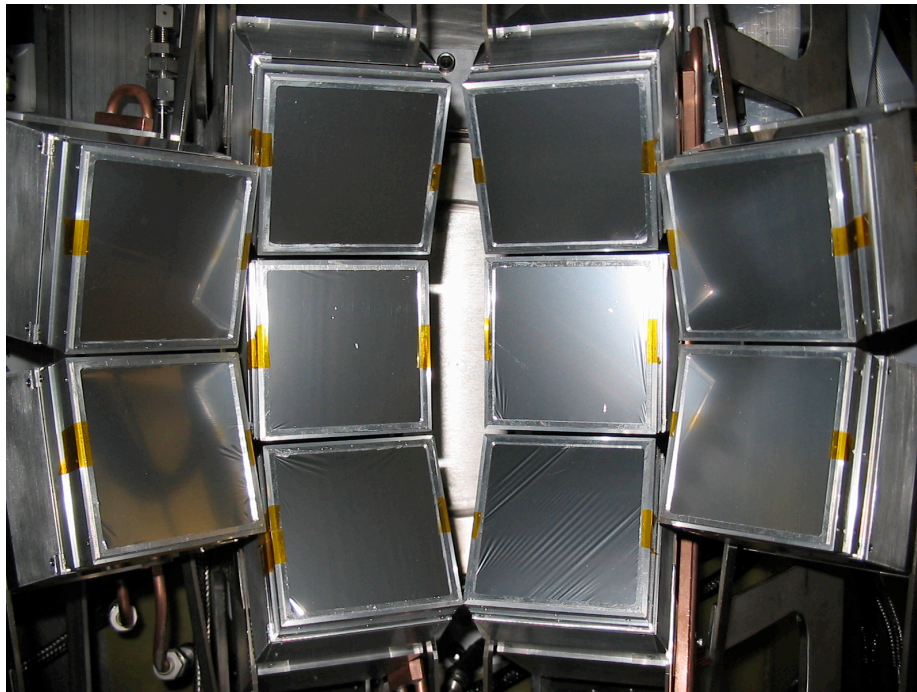
The target ladder is located 7" (178 mm) upstream of the S800 pivot point.

- ladder composition (drive I250X-R)
  - viewer: drive at 0.0
  - $^9\text{Be}$  target 188 mg/cm<sup>2</sup>: drive at 69.5
  - mask (distance between holes: 2.5 mm): drive at 132.4
  - No target: drive at -70.0
  - **Do Not go below -100.0!**



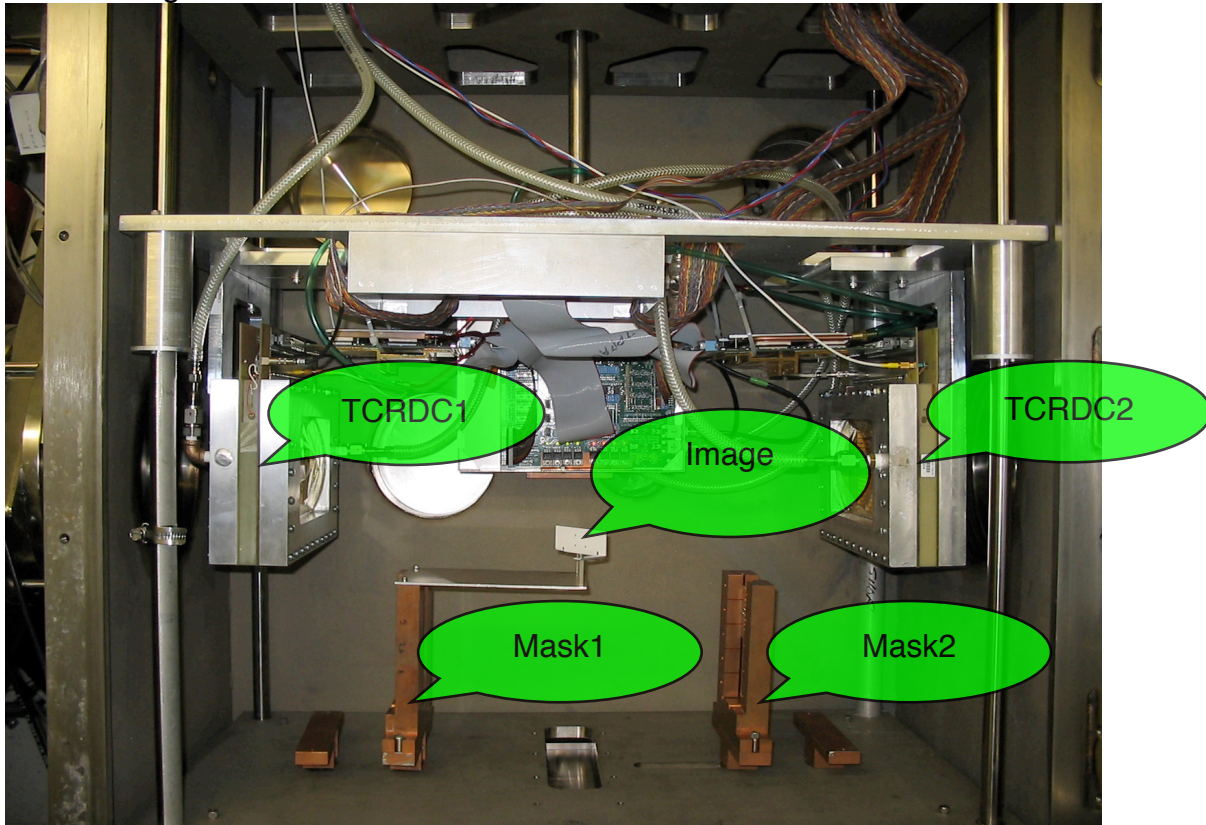
## HiRA

The distance between the target location and the HiRA detector is about 17 cm. The picture below shows the array in position.

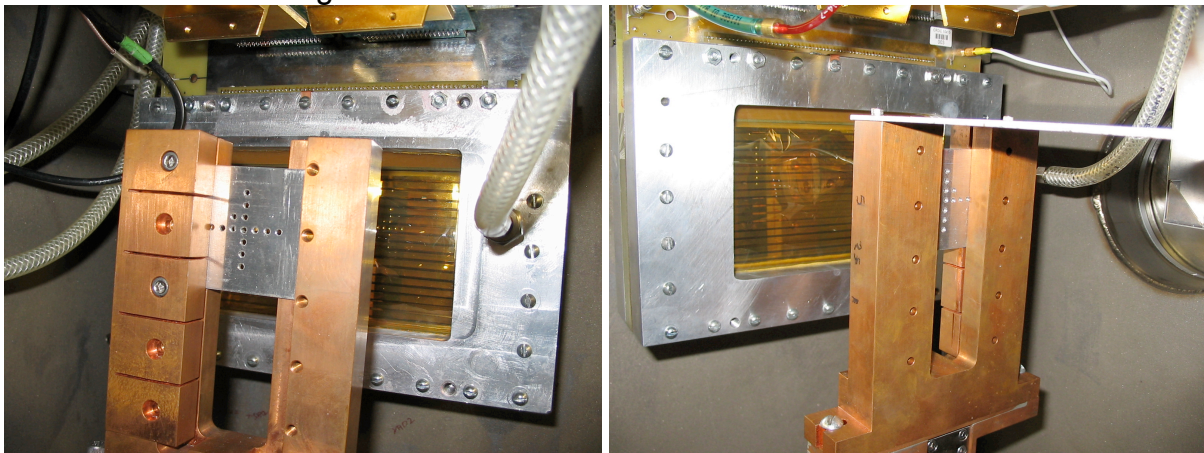


## Intermediate image

- Tracking CRDC detectors



- Distances:
  - TCRDC1 to TCRDC2: 605 mm
  - Mask1 to Mask2: 337 mm
  - TCRDC1 to Image: 300 mm
  - Mask1 to Image: 168 mm



These two photos show the mask in front (for TCRDC2) and behind (for TCRDC1) the detectors. The distance between adjacent holes is 5 mm. The asymmetric hole is located on the top left corner when traveling with the beam. The TCRDC1 mask is in-

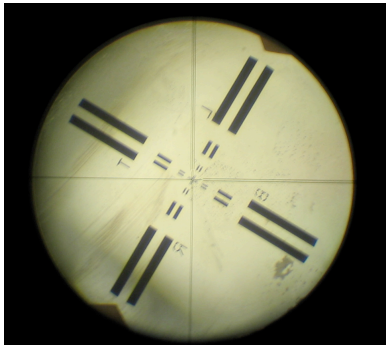


serted using drive I214TL at 6" position and the TCRDC2 mask is inserted using the drive I215TL at 6" position. The image viewer is inserted via the drive I214TL at the 3" position.

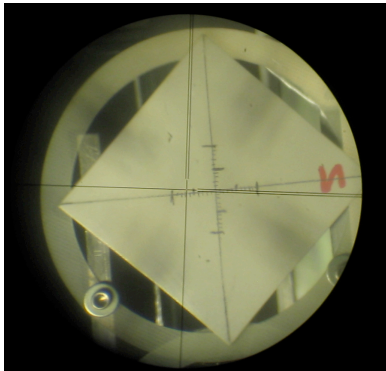
**Alignment of target and HiRA on beam axis**

The following pictures were taken through the optical telescope aligned on the T5 triplet of the S800 analysis line. We suspect the optical axis of the S800 spectrograph is shifted horizontally from that of the analysis line by 7 mm to the North. The table supporting the target drive and the HiRA detector array were therefore shifted by that amount relative to the axis pointed by the optical telescope.

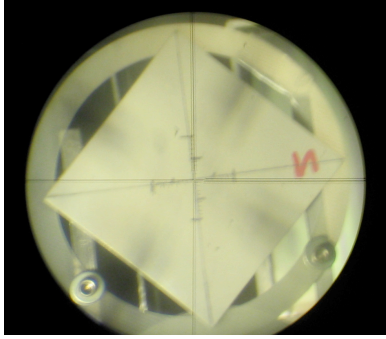
Picture of telescope cross hair centered on target at T5 exit flange:



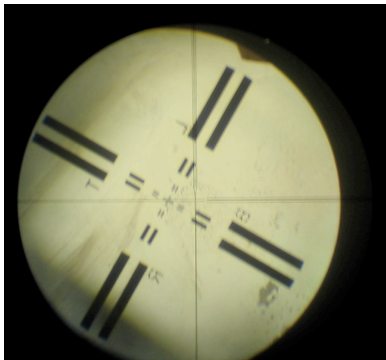
Corresponding position on target viewer: viewer center 7 mm North of beam axis



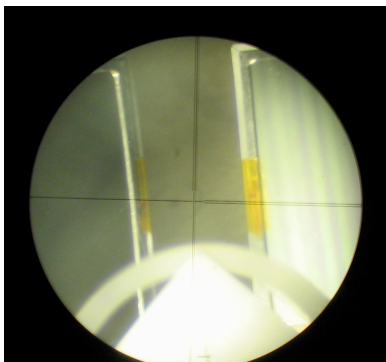
Cross hair of telescope moved North to center it on target viewer



Corresponding position on T5 exit flange target



Corresponding position at the HiRA location. This picture shows the edges of the two HiRA telescopes closest to the beam. The gap between the frames is about 2 cm.



Corresponding position of the target mask. Center hole off by about 1 mm to the North.

