

Results of Wed 15/4/2009 inspection of the 74" Kottamia Telescope M1 support system

We describe here the results of inspecting KT M1 support system according to the recommendations of Dr. Fisher outlined in his report based on focus test observations taken by KT.

Before dismounting the cell, the Axial Support System (ASS) was checked from the back of the cell.

- The back side of M1 was settled on all of the ASS points **except the free points No. 8 and No. 9. It is possible to insert 2 thin paper sheets and one paper between the mirror back and the floating disks No. 8 and No. 9 respectively. It was possible to rotate the floating pads of No. 8.**

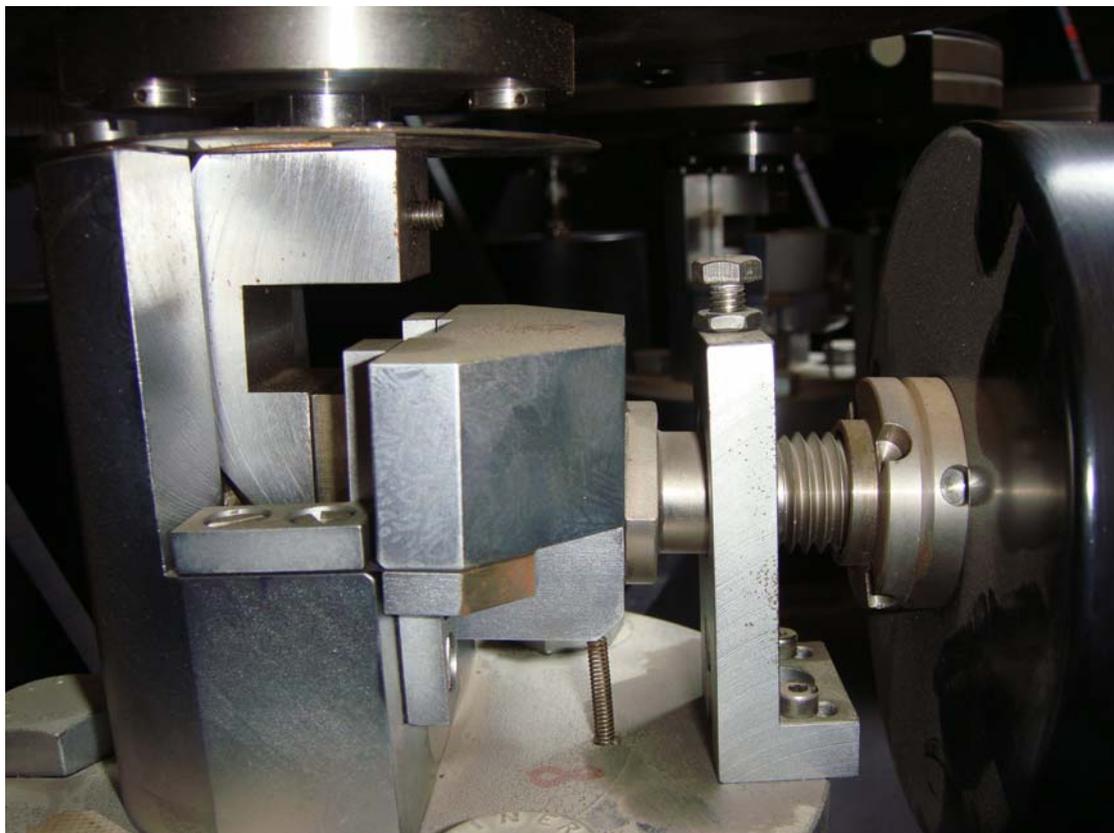


Fig. 1 – Mechanism of Free ASS point No. 8.

After dismounting the cell, we inspected the Radial Support System (RSS):

- **The 2 fixed radial points (Hard) are found with clearness of about 4 papers between each of them and the mirror edge.**
- The flexible radial point was found stacked to the mirror edge.
- The links of the free 16 points of the RSS are found correctly connected to the mirror and there was a small amount of movement at the contour weight of each one.

Then the mirror is lifted up from the cell.

- It was possible to move up and down the counter weights of the 15 free points of the ASS. When moving a counterweight up and down a voice is heard when

reaching the movement limits. The tone of this voice is similar for all counterweights except for No.8 (Fig.1) where a different (damped) tone is noticed when reaching its upper limit. It is difficult to notice anything different for the mechanism of the free point No. 8 except the voice mentioned above.

- All of the counterweights are started to move up when applying 80 kg weight to the support pad of each one except No. 2, 7, 8 and 9 whose counterweights are started to move up by applying 85, 90, 85, and 85 kg respectively.
- The 3 fixed axial points are found stable.
- The counterweights of the RSS are found moving freely.
- The collars are found secure. For all free ASS points, it is noticed that the outer collars are not at the same distance from the end of the counter arms on the same ring (Fig. 2). This probably means that the weights are not equidistance from their pivots. This is for both inner and outer rings.



Fig.2 – Outer collars are not equidistance from the counter arm.

The mirror is properly put back again in the cell. After about an hour we test the clearness issue and found no clearness between mirror back and any of the floating pads of ASS. After mounting the cell to the telescope the clearness issue is retested and the 2 papers clearness is found again between mirror back and the floating pad of the free axial point No. 8!!!

NOTE:

About 7 months ago the mirror is dismounted from the cell for re-coating. After coating, the mirror is installed properly in its cell and mounted to the telescope. Then we tested the clearness between the mirror back and the floating disks of the ASS. We did not find any clearness except for the axial fixed point AF3 on the East. This point is then adjusted such that there is no clearness.