Moving the TAL-1 Mirror Up

This shows the old collimation screw with the new incl. nuts and washers. The new screws are 80mmx4mmx0.7mm. The head of the old screw was just over 6mm wide so I put the new screw into a power drill and ground the head down against a file.

Cheap washers like these have a sharp face and a rounded over face. I put the two rounded over faces together.

The new screw is in place. The screw goes up through the base plate. The spring goes on next followed by two washers and the nut and lock nut. I tightened the nut down to load the spring sufficiently, that is until the screw stayed firmly upright and it felt that 3 of them would take the weight of the mirror cell. Don’t forget to lock the nuts together otherwise they will unscrew as the collimation screw is adjusted and the spring pre-load will vary. I set the spring heights on all 3 screws the same to make sure that the pre-loads were all the same. Incidentally, you can see the old lock screw to the left of the new collimation screw. I replaced these all round with new lock screws, which are the same length and thread as the collimation screws.
This height was set to about 26mm all the way around and was calculated at that to bring a modern 32mm eyepiece to focus. It doesn’t have to be exactly that but be sure to make it the same at each of the 3 screws.

By the way, the primary isn’t gold plated. It’s the reflection of a yellow glass bowl just out of shot.

The light cone still stays within the secondary mirror.

This mod was undertaken to enable the use of new, modern eyepieces, which otherwise can’t be brought to focus.