Cleaning and greasing of Olympus U-TRSW trinocular

My Olympus U-TRSW super widefield trinocular (s. fig. 1) is in constant use, as I do a lot of photography and therefore often use the slider for the beam splitter. Due to the frequent use, it becomes increasingly difficult to operate the lateral push rod and dust particles get into the housing and the beam path over time.

Fig. 1: The Olympus super widefield trinocular tubus U-TRSW.

I therefore clean the trinocular tube every 10–15 years. To disassemble it, the trinocular has to be place carefully on the table with the base plate facing upwards (s. fig. 2). Care must be taken to ensure that the eyepieces do not accidentally fall out, but I always leave them in to avoid any dust ingress. First, the 5 Allen screws of the base plate must be loosened (s. fig 2).

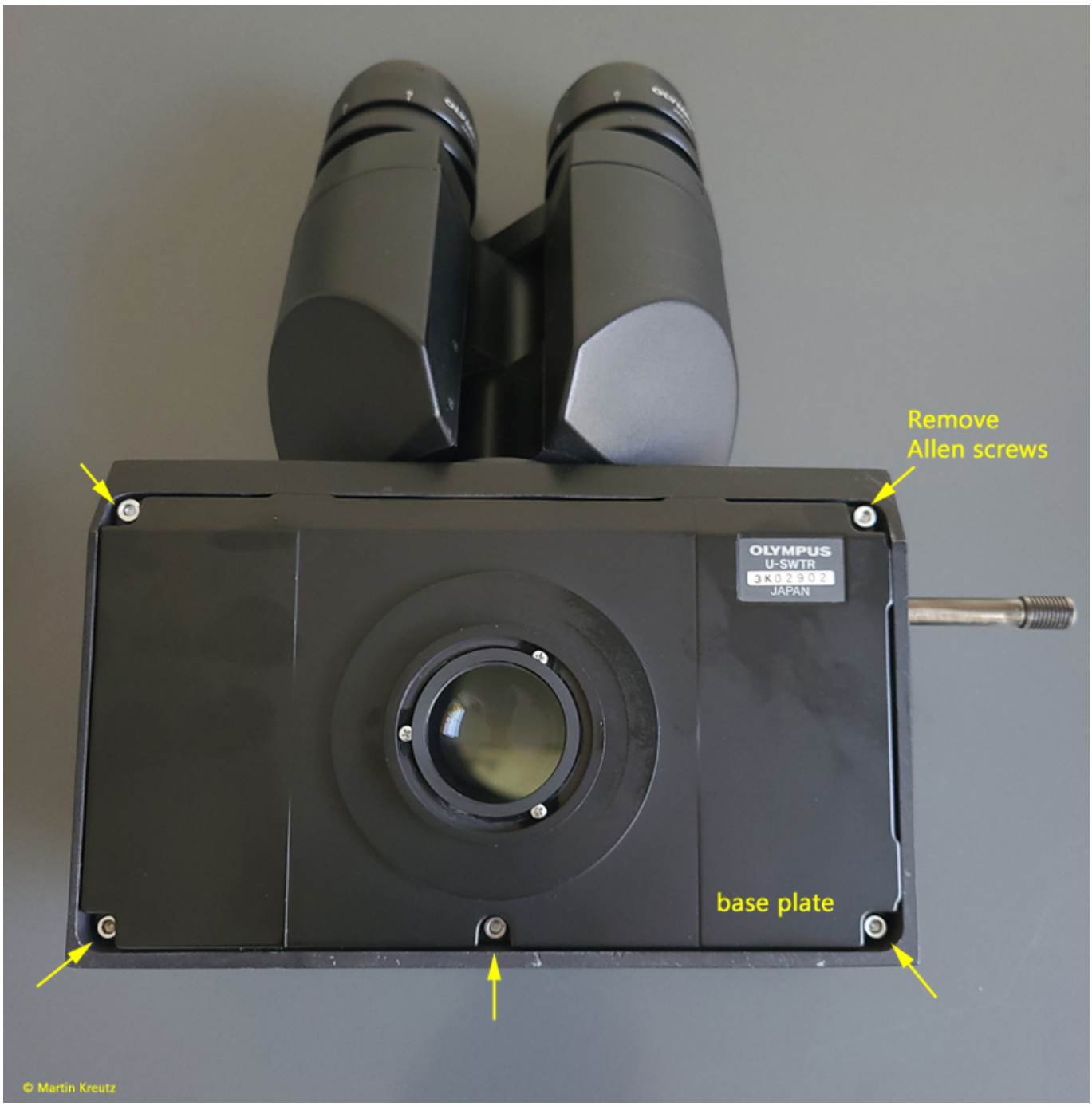

Fig. 2: The 5 Allen screws (arrows) has to be removed.

The handle must now be unscrewed from the side push rod (s. fig. 3 a-c).

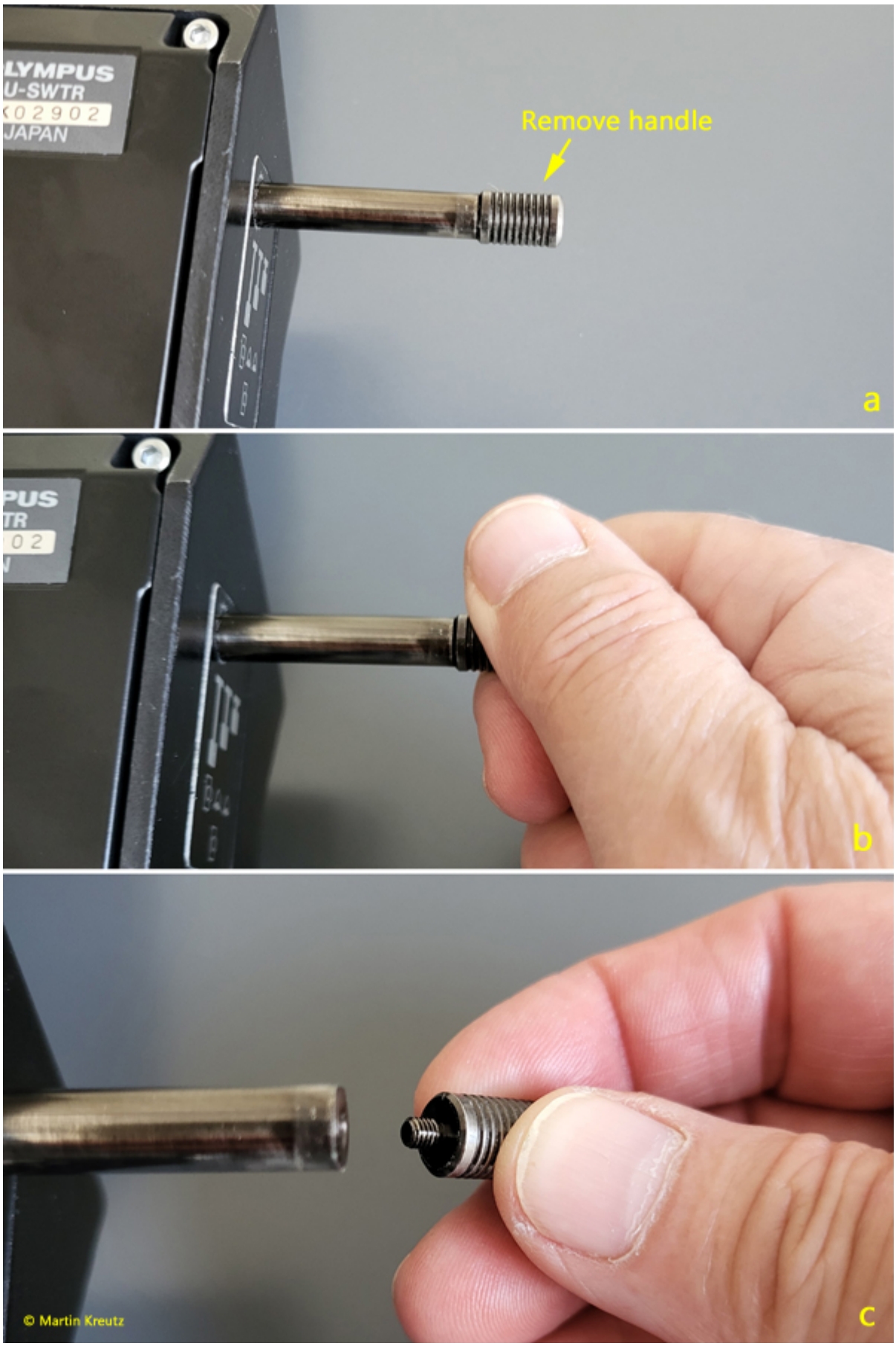

Fig. 3 a-c: Remove the handle from the push rod.

The push rod is then pushed all the way in to the 100% position (s. fig. 4). This is the only way to guide it through the hole in the housing.

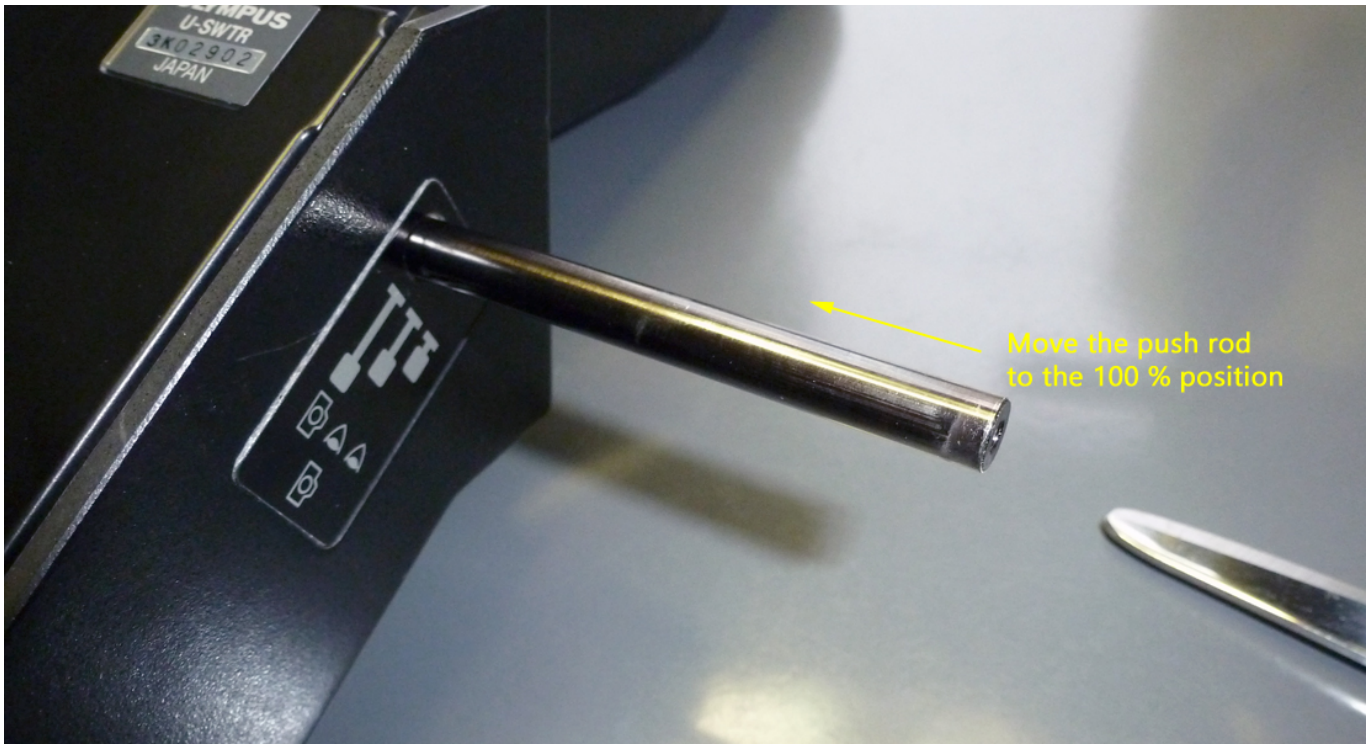

Fig. 4: Move the push rod to the 100% position.

The base plate with the beam splitters attached to it can now be very carefully removed from the tube housing. The base plate is fitted very precisely. You have to be very careful and should not allow the half-removed base plate to fall back into place. The base plate and optics can then be lifted out of the housing in one piece (s. fig. 5).

Fig. 5: The base plate with the beam splitter.

The yellow anodized slide rails on which the beam splitter moves can be seen clearly. These must be taken out in order to completely remove the old grease. To do this, loosen the 4 screws with which two fixing brackets are screwed onto the base plate (s. fig. 6 and 7).

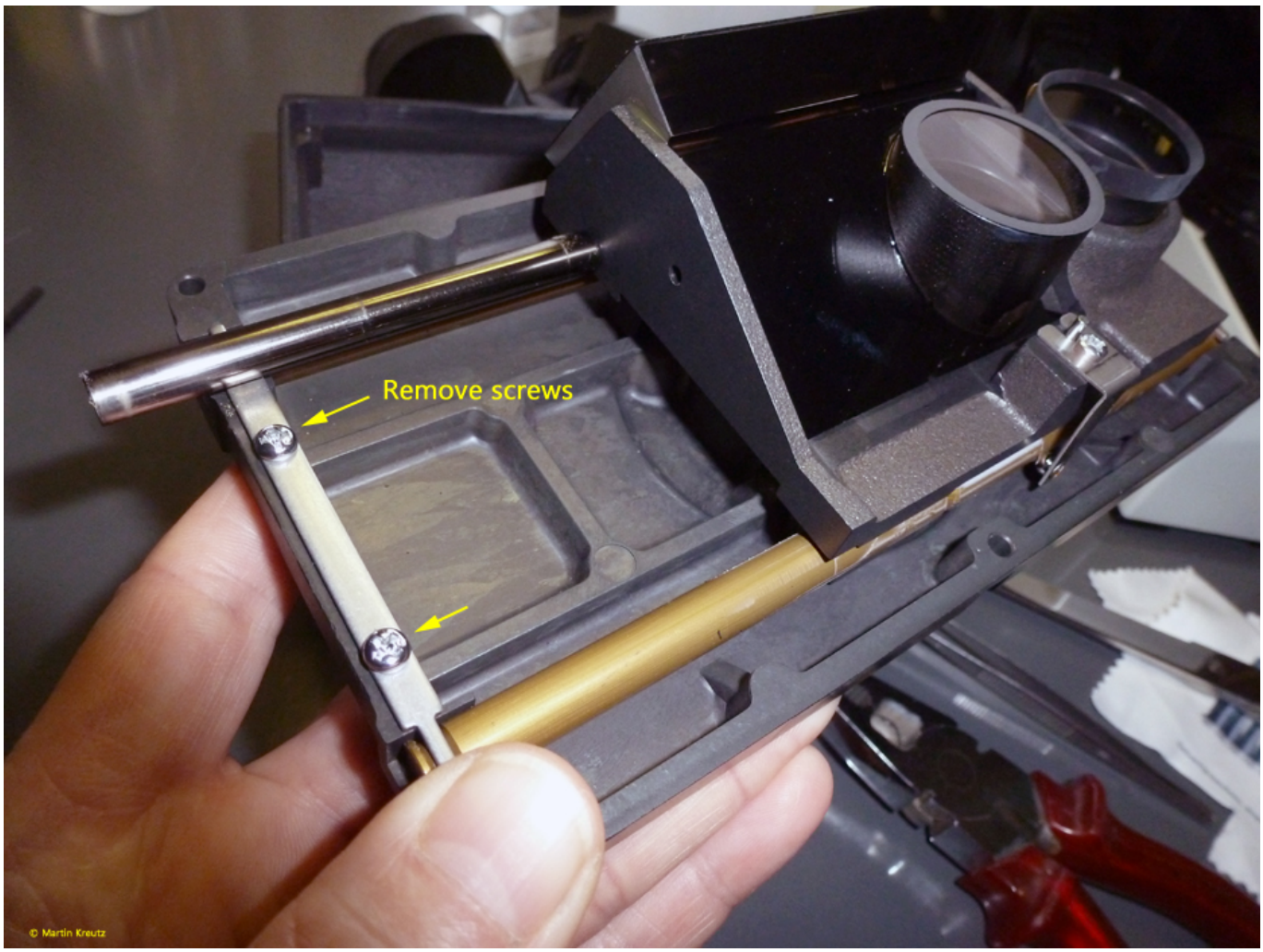

Fig. 6: Remove the screws of the fixing bracket on the left side.

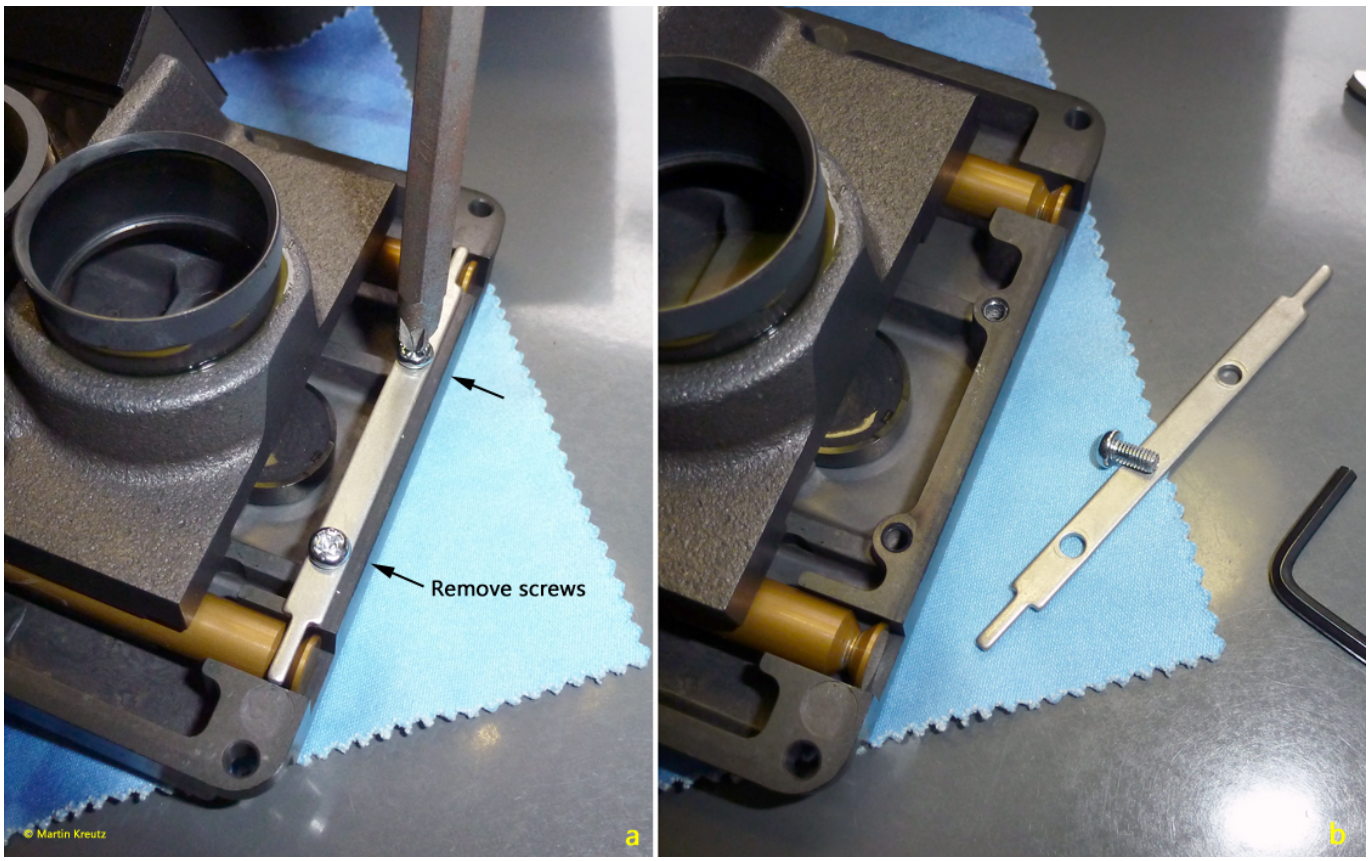

Fig. 7: Remove the screws of the fixing bracket on the rigth side.

Now the beam splitter together with the slide rails can be detached from the base plate (s. fig. 8).

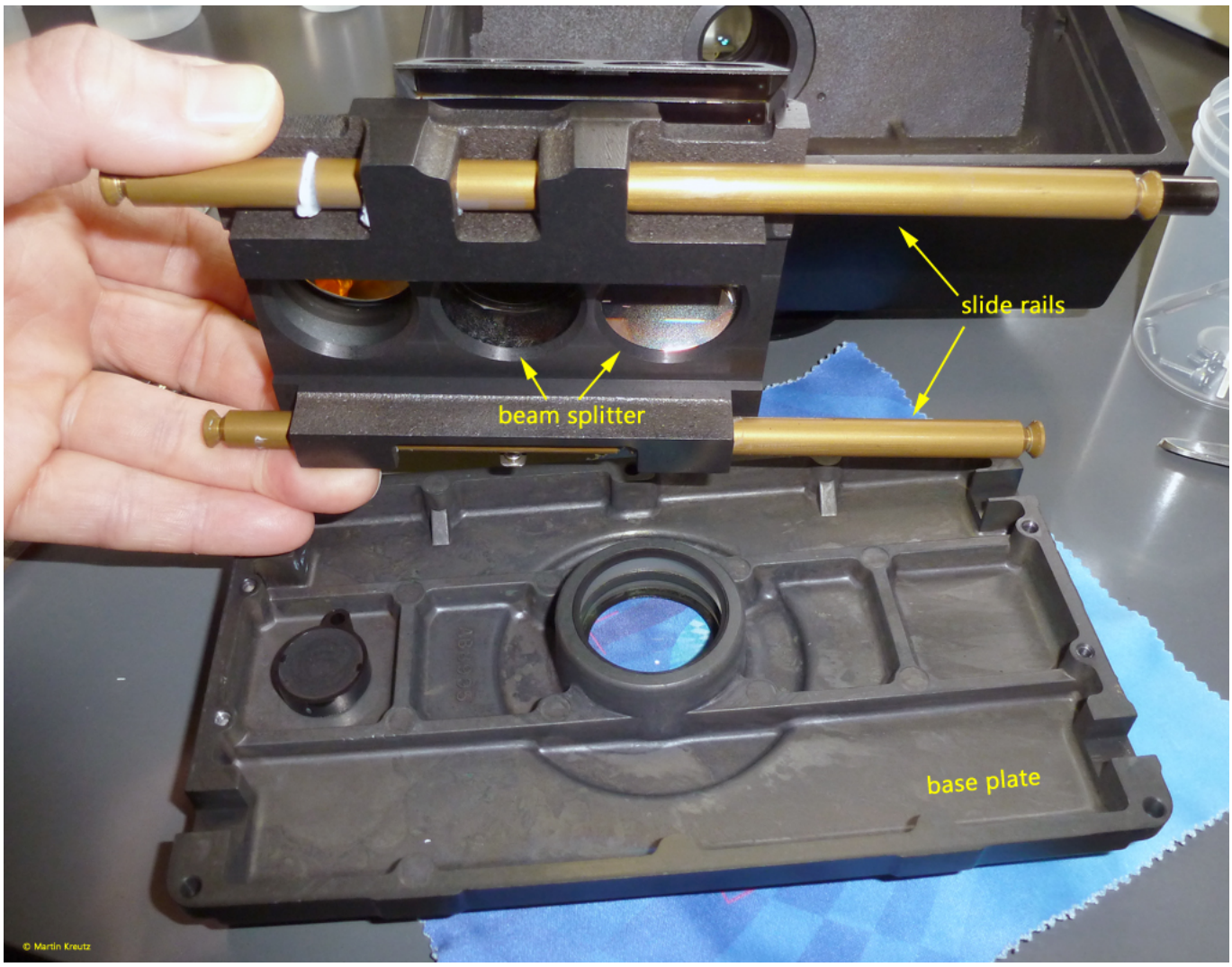

Fig. 8: The detached beam splitter from the base plate.

After removing it from the base plate, I thoroughly degreased the slide rails with isopropanol and then applied new grease with a toothpick (s. fig. 9). I used a perfluoropolyethers grease (PFPE) for the slide rails.

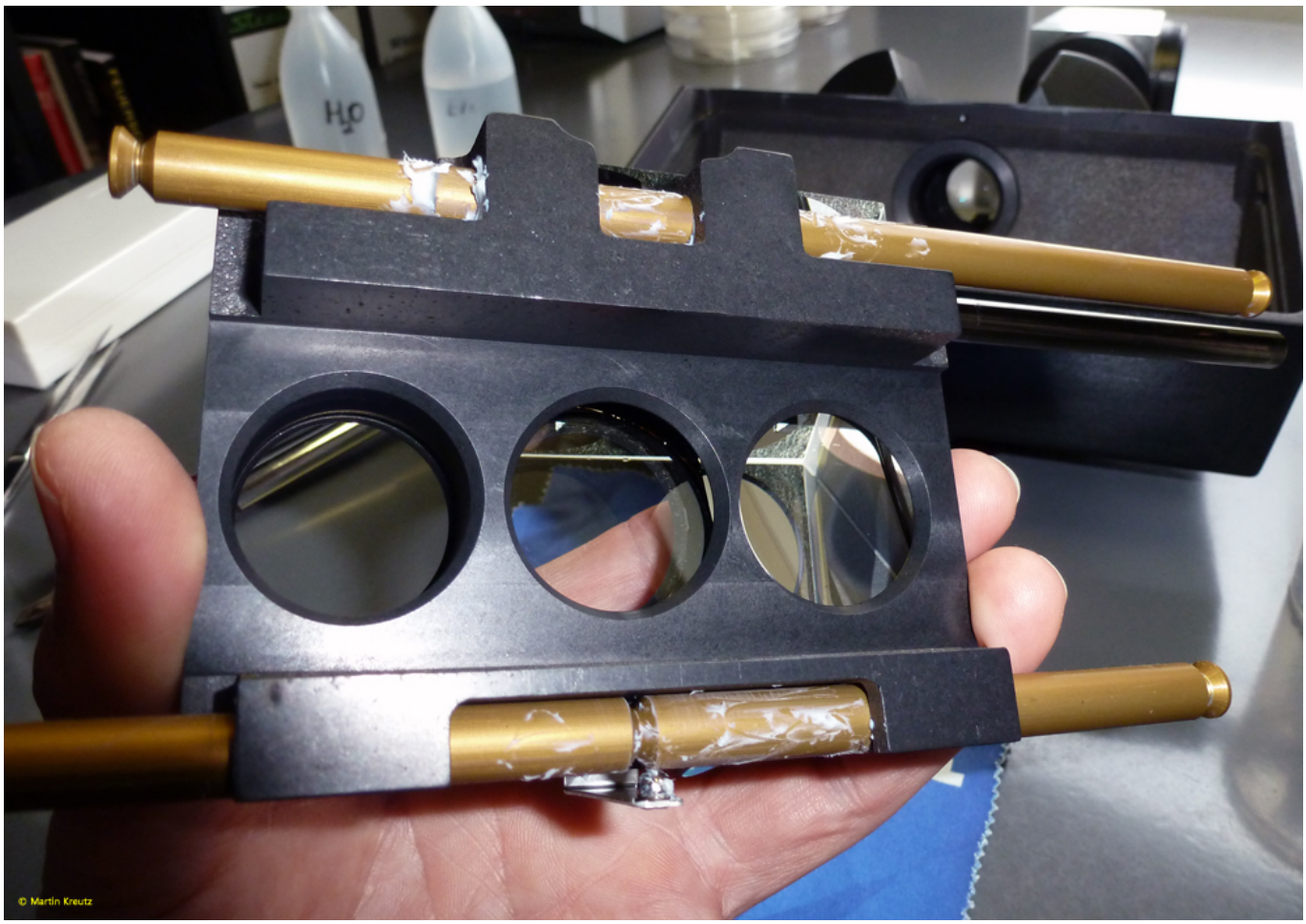

Fig. 9: The slide rails with new grease.

A lens is embedded in the base plate, which I cleaned with a microfiber cloth and some glass cleaner (s. fig. 10).

Fig. 10: The lens embedded in the base plate after cleaning with glass cleaner.

After greasing and cleaning, everything is put back together and reinserted into the tube housing. This works just as “tightly” as taking it out and perhaps requires a little patience. The beam splitter of the trinocular tube then works smoothly and precisely.