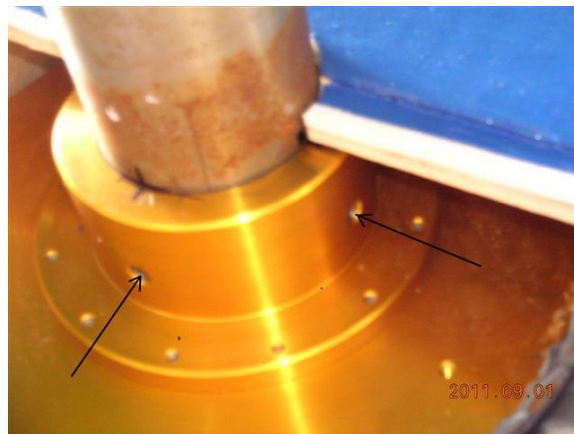
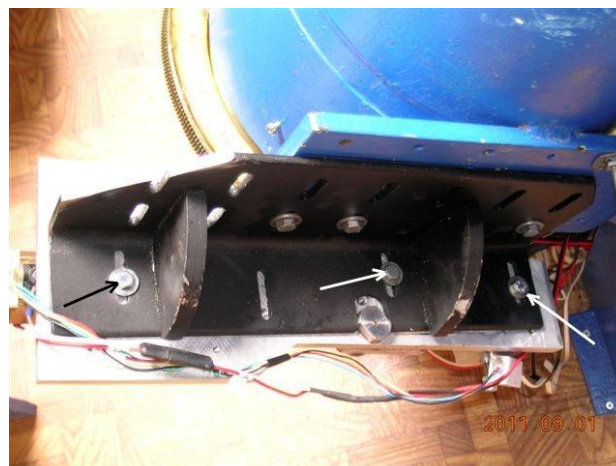


## BALANCING THE 0.61M TELESCOPE

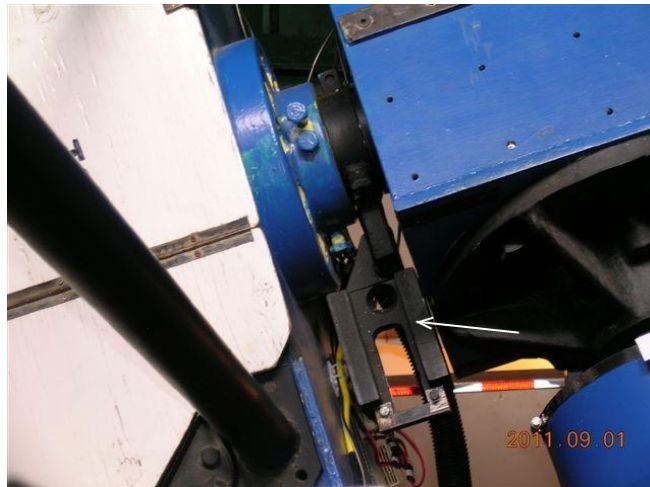
1. Remove all covers from the telescope; place an eyepiece in the focuser. If you are setting the balance for use with specific equipment (i.e. you are hanging a camera off the scope), attach the equipment in the position you will be using it prior to balancing the scope.
2. Before disengaging the Declination gear plate from the Declination shaft, familiarize yourself with the alignment reference marks. This will make gear re-engagement much simpler. Disengage the declination gear by loosening the Allen screws in the gear plate. It may be necessary to slide the Declination shaft counterweight away from the Declination gear enclosure to allow the access door to open.



3. Before disengaging the RA motor from the RA gear plate, familiarize yourself with the alignment reference marks. This will make gear re-engagement much simpler. Loosen the RA motor bracket bolts shown below and slide the bracket away from the RA gear plate.



3. Point the telescope in different directions and altitudes. Observe if any movement occurs in any of the positions.
4. For greater accuracy in observing possible movement, turn on the Telrad finder. Point the telescope at a reference point (the rivets in the dome work well). If the telescope moves, the red targets of the Telrad finder will move relative to the reference point.
5. If the telescope is spinning along the RA axis (east and west movement) then move the big weight on the center shaft closer to or farther away from the center of the telescope to stop the spin. This weight is held in place by a couple of hose clamps and requires either a slot screwdriver or a 5/16" wrench to adjust.
6. If the telescope is moving in Declination (the front is lifting or falling) then move the "3-D" shaft weight. The 3-D weight is located above rail car wheel on the side opposite the mirror box. It is clamped to the shaft. Use a 3/4" wrench to loosen the big bolt on the clamp. It may also be necessary to loosen the two smaller bolts on the clamp (in recessed housings) using a pair of needle nose pliers.
7. If fine Declination balance still can't be achieved, it may be necessary to adjust the weight between the Axis box and the telescope mirror box.



8. Once RA balance has been achieved, re-engage the RA motor by sliding the motor bracket back to the reference marks and tightening the bolts.
9. Manually move the telescope in declination until the reference marks on the Declination shaft and Declination gear are lined up and then retighten the Allen screws. Keeping the hose clamp closest to the Declination gear enclosure in place, slide the counterweight away from the enclosure so the access door can be closed. Reposition the counterweight and tighten the loose hose clamp.

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