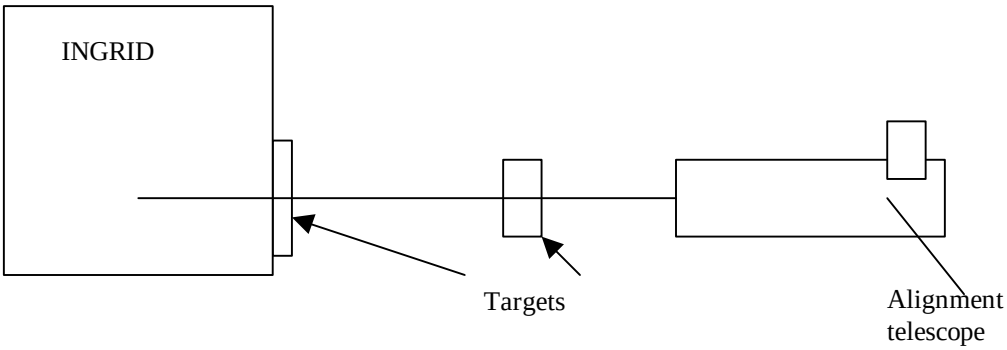
Pupil stop and filterwheel alignment. KMDee 19/11/99

Using a clear target on the vacuum window flange and an optical target. The mechanical centre axis of the instrument was aligned to the axis of the alignment telescope. Test done at 77k.



1. Define rotation axis of wheels. To be perpendicular with mech axis.

Using cross hairs step pupil stop until centre "pip" is at lowest point. Measure difference between mechanical axis and centre of pip.
Result.
Pupil stop number 5 is 2.4 mm to the right and 1.1mm low.
Therefore the casting needs to be lowered to the lid by 1.1mm.
The casting also need shifting to the left with respect to the lid by 2.4mm.
Ie with CCC up right and casting hanging from lid. Looking towards the array through the front window.

2. Repeatability of pupil stop is currently no better than 100 microns. (Step counts being lost).
3. Backlash in worm and wheel on pupil stop is 200 microns.
4. Repeatability of Filterwheel one is still good and better than 20 microns.
5. Back lash in worm and wheel on filter wheel 1is 100 microns. Measured away from datum plate.
6. Filterwheel two was not tested and is noisy.

Conclusions and recommendations
Motors need to be rebuilt with properly fitted bearings maintaining magnetic flux. Movement of the casting will give a reasonable alignment to carryout fine alignment.
Align pupil stops radially to pupil stop 5 at room temperature.

Kevin Dee