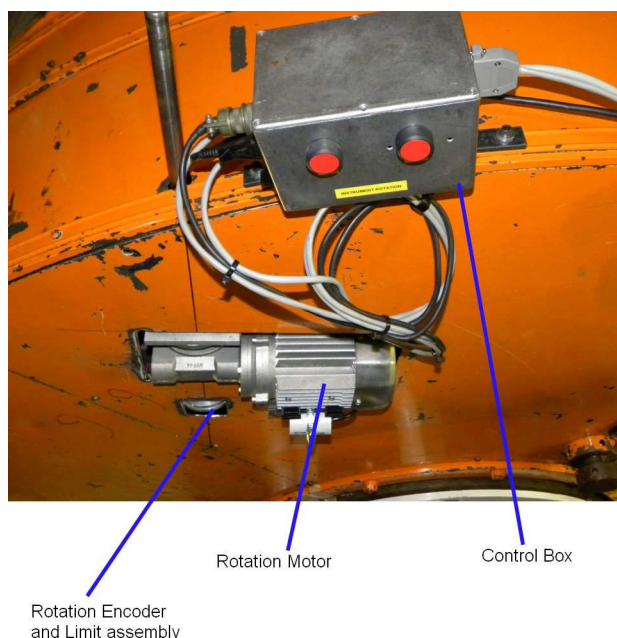


## Instrument Rotation Operating Manual

The rotation of the instrument is now controlled and monitored from the telescope PLC. This upgrade also allows the acquisition and auto-guider system to operate without mechanically rotating the XY-slide or acquisition camera to allow auto-guiding at any instrument angle.



The Instrument can only be rotated from the Control box on the telescope. The instrument rotation encoder is read by the telescope control PLC and the TCS use this reading to calculate the correct auto-guider errors during guiding.

### Rotating the Instrument

The instrument will not rotate unless the telescope is switched on.

Pressing the buttons on the control box can rotate the instrument. The total movement of the rotation is about 10 degrees east of the current standard position to 90 degrees west. Limit switches will stop the rotation when it reaches the end of its travel.

### Resetting the Instrument angle

During normal operations and with the instruments in the standard positions the instrument rotation angle on the telescope will be reported as 90 degrees. If for any reason this is not the case the instrument rotation encoder needs to be initialised. This is done by rotating the instrument through 90 degrees to the west until the limit switches stop the rotation. The encoder will then be reset to 0 and the instrument can be rotated back to the normal position. At the normal position the TCS will report an instrument angle of 90 degrees. Disconnecting the cables between the control box and the encoder and limit switches will reset the encoder reading to zero and the instrument rotation angle will have to be reset .

If for any reason the encoder system fail and it is not possible to rotate the instrument from the default (90) position the encoder system can be overridden by throwing the override switch. When the encoder is overridden the TCS will receive an instrument angle of 90 degrees. The encoder will still be active and will record movement if the instrument is rotated.

**Warning**

Currently none of the instruments that can be mounted on the 1.9m telescope is set up to be rotated without careful checking and removing several cables and hoses to prevent damage to the instruments. It is advisable to consult the technicians before rotating the instrument.