

## Collimating with the Newton Concenter Eyepiece

This manual should be a small help to align (collimate) your Newton Telescope in a simple and practical way.

When you hold the Newton Aligning-set in your hand, you will notice at the bottom side a look-through plastic-disc with a central hole and concentrically engraved rings.

At the other end you will find a small single hole, that was on purpose made so small that the eye will not have a chance to be in a wrong position and as such cause a faulty alignment.

After we inserted the Concenter Eyepiece, in the Focuser, you will see matt half transparent rings in front of the optical components of the telescope.

### **1. Align the Focuser**

*With a covered primary mirror !(maybe a piece of paper or main mirror cover)*

When using this alignment set, we should pay attention to work in an environment with sufficient light.

Assuming that the focuser was fitted on the telescope tube in a straight angle (90deg), we can now align (shift or rotate) the secondary mirror in that way that he becomes concentric with the rings from the Newton Alignment Set.

With the focus-adjuster of the telescope we can bring one of the concentric rings into that position so that the outer side of the secondary mirror aligns with the fitting ring of the Concenter Eyepiece. By doing so, we can detect already the slightest change from the ideal position.

#### **Attention !**

*Your align includes the Offset of your Telescope so if you have a real middle mark on your secondary ,it is not in the middle of the concentric rings. Only if you have an Offset mark on your secondary its in the middle*

### **2. Align the secondary mirror with the prime mirror**

When you look into the eye-piece you should change the angle of the secondary mirror in that way so that the bright reflection of the prime mirror in the secondary mirror is concentric with the rings of the alignment set.

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### **3. Align the prime mirror to the optical axis**

When working in darkness you can enhance the visibility of the ring-disc by working with ,for example, with a LED-Lamp.

Now the prime-mirror middle-marking can be aligned with the bright rings that are now lit up. In the beginning the reflections from concentrically rings on the reflection mirror can cause some confusion.

Verify and train the mirror manipulations before you start using the Newton Concenter Eyepiece.

When aligning the mirrors, we should only use the main circles from the Alignment-ocular.

When you followed these instructions carefully, you will not need a final align using real stars.