

# ADC

## Quick Guide



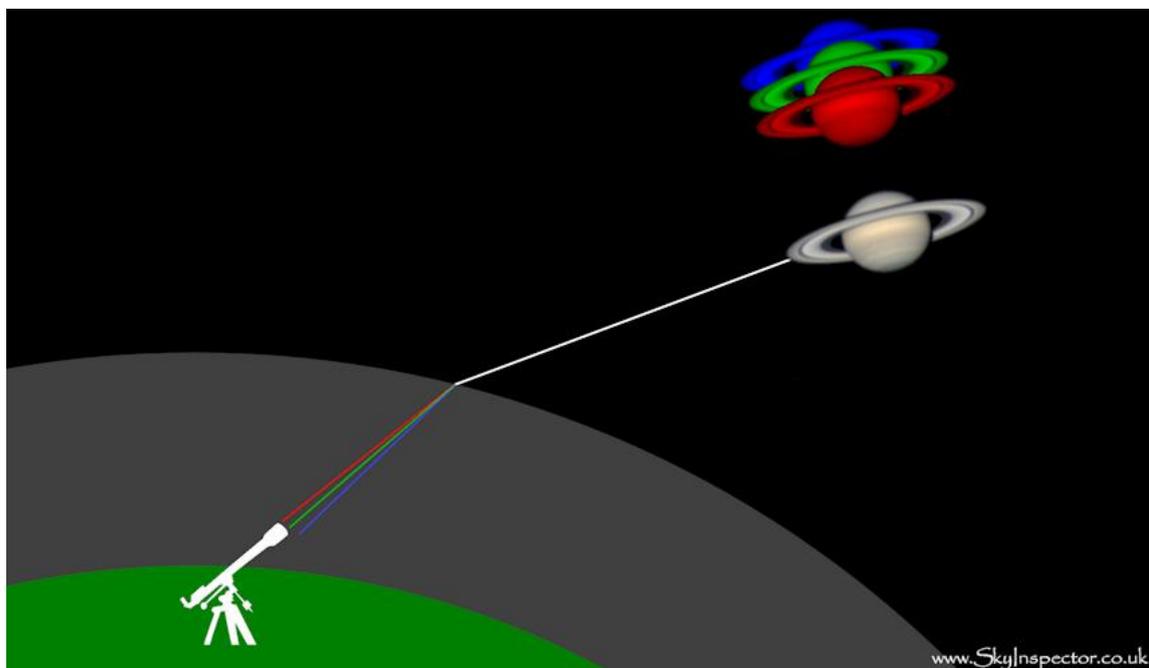
苏州振旺光电有限公司

Suzhou ZWO Co.,Ltd.

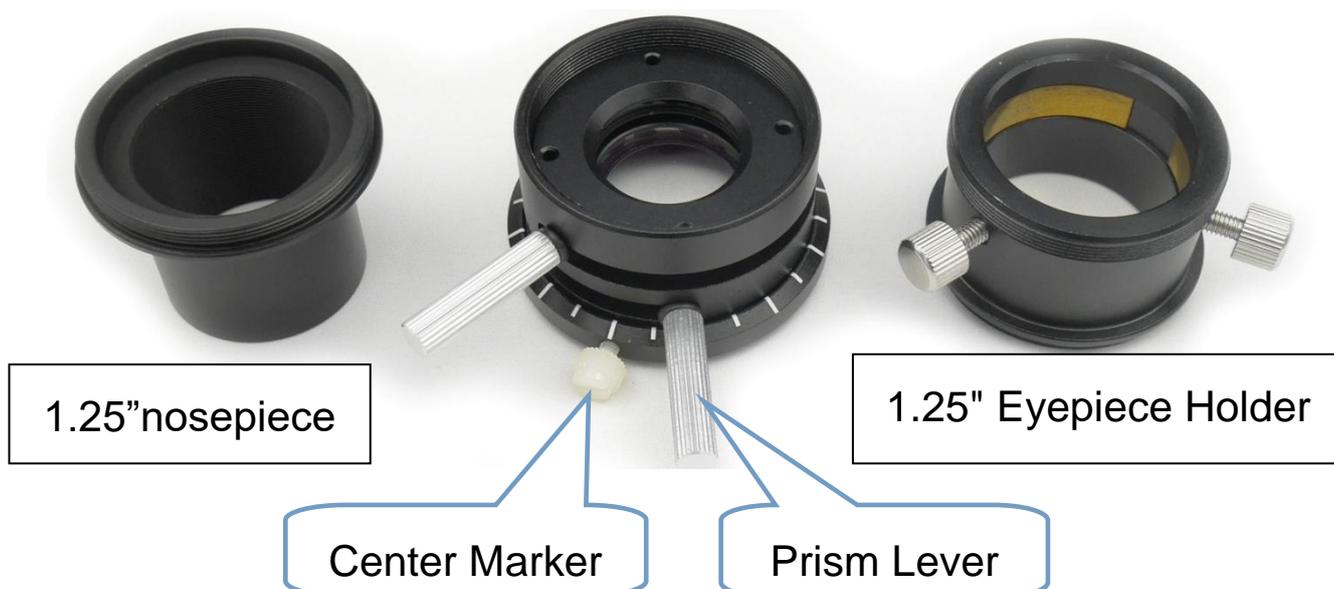
*Congratulations and thank-you for buying this ZWO ADC! This manual will give you a brief introduction to the use of your ADC. Please take the time to read it thoroughly and if you have any other questions, feel free to contact us at [info@zwoptical.com](mailto:info@zwoptical.com)*

## ADC Description

The ZWO ADC contains a pair of identical thin, round, wedge-shaped prisms which work together to cancel out atmospheric dispersion.



To work properly the two prisms need to be adjusted correctly as described later in 'Setting the Prisms'.



## Setting the prisms

### Step 1: Zero the ADC

- ◆ Tighten the white center marker knob which marks “the zero position”
- ◆ Align the two prism levers with the center marker as right image to create zero prism correction.
- ◆ Insert the ADC into the Telescope focuser

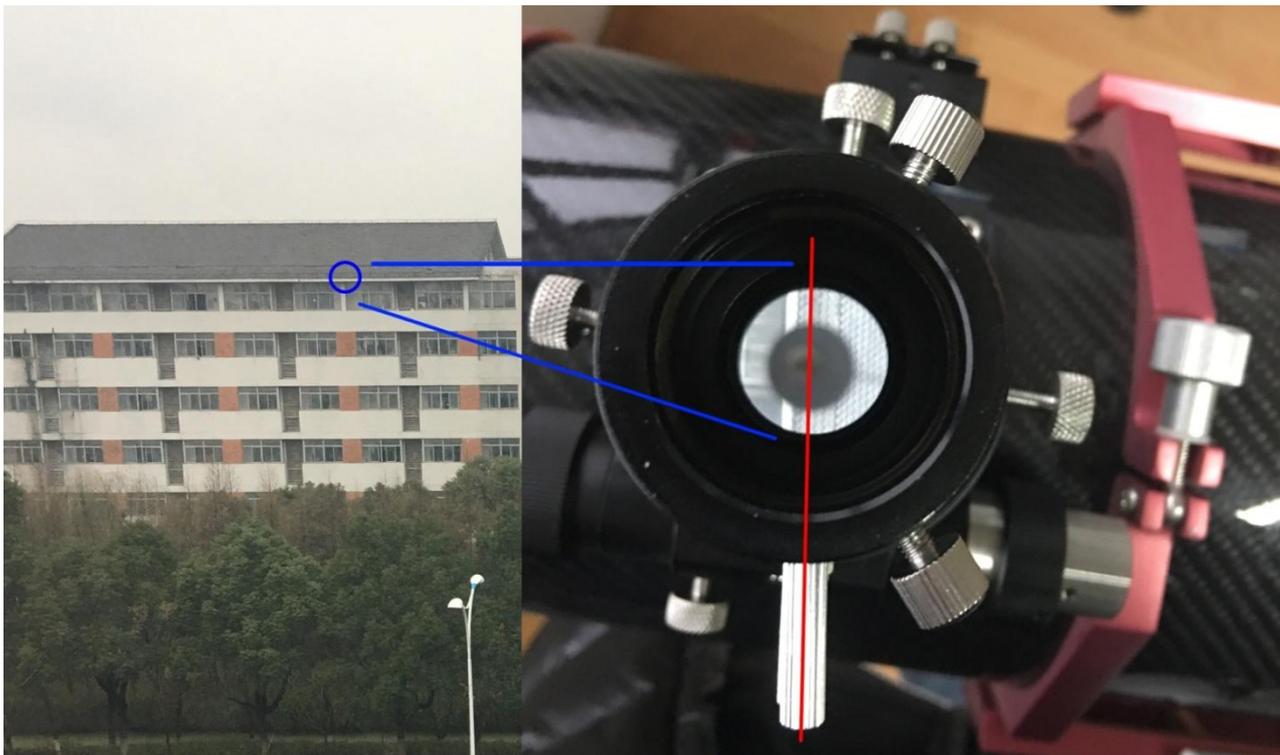


### Step2: Align with the Horizontal

To work properly the ADC center marker has to be aligned with the horizontal direction as seen through the telescope and the two prism levers must be equally spaced to either side of this center marker.

If there is no right-angle mirror in your telescope, such as Refractor, RC, MCT, or SCT, all without a diagonal then this task is easy - the horizontal axis as seen through the focuser is the same orientation as your horizon. In this case the center marker zero axis should point horizontally left or right. In one of these cases adjusting the ADC will make the atmospheric dispersion worse but in the other orientation it will make it better. You need to find which of the two possibilities is correct by experimentation.

If there is a right-angled mirror in your telescope, such as a Newtonian reflector or you use a diagonal in one of the above designs then the horizontal orientation through the focuser is likely not to be parallel to the horizon. Then you will need to first find the horizontal axis of the sky as viewed through the focuser.



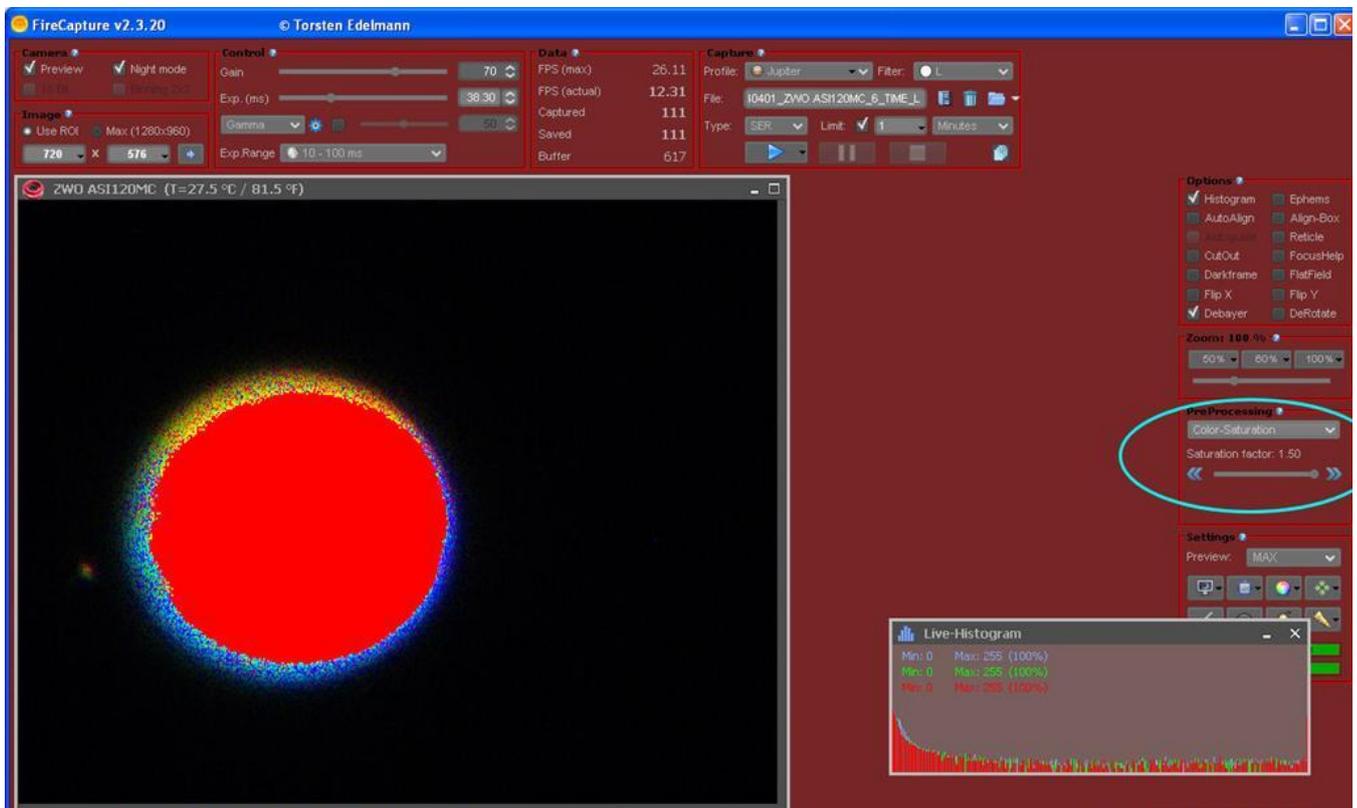
### **Step 3a: Adjusting the ADC using a Color Camera**

Once the orientation is correct you need to adjust the levers equally either side of the center marker until the dispersion in the object is fully corrected.

One popular method to do this is to use a color camera and adjust until the edges are equally colored

## 1) Connect the Camera

- ◆ Attach the color camera to the ADC
- ◆ Run the camera in color mode through FireCapture or SharpCap.
- ◆ Increase the exposure to over-expose by 2X-3X and turn the color saturation of the preview setting to maximum.
- ◆ You will see one side of the planet as red and one side as blue



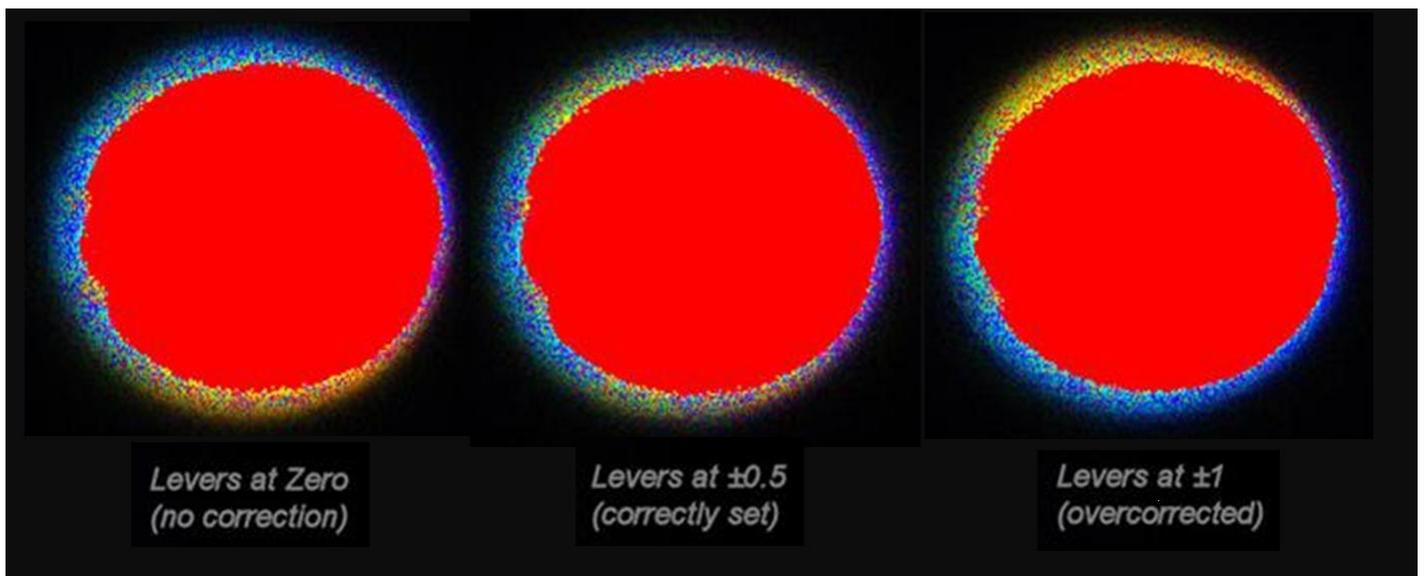
## 2) Adjust the prism Levers

- ◆ Starting with the two levers together at the zero position, adjust the two levers in opposite directions by equal amounts from the center marker. The scale on the body guarantees that you can rotate the same amount for both levers.

- ◆ Adjust the levers until the color at the edge of the preview image is even all the way round the planet and the red/blue difference disappears
- ◆ Be careful that you don't overcorrect. You can refer to the image below for reference:

### 3) Align the Horizontal again

- ◆ You need align the horizontal direction again after capturing for about an hour. The step is the same with before. Align the horizontal direction and adjust the levers until you get a corrected image

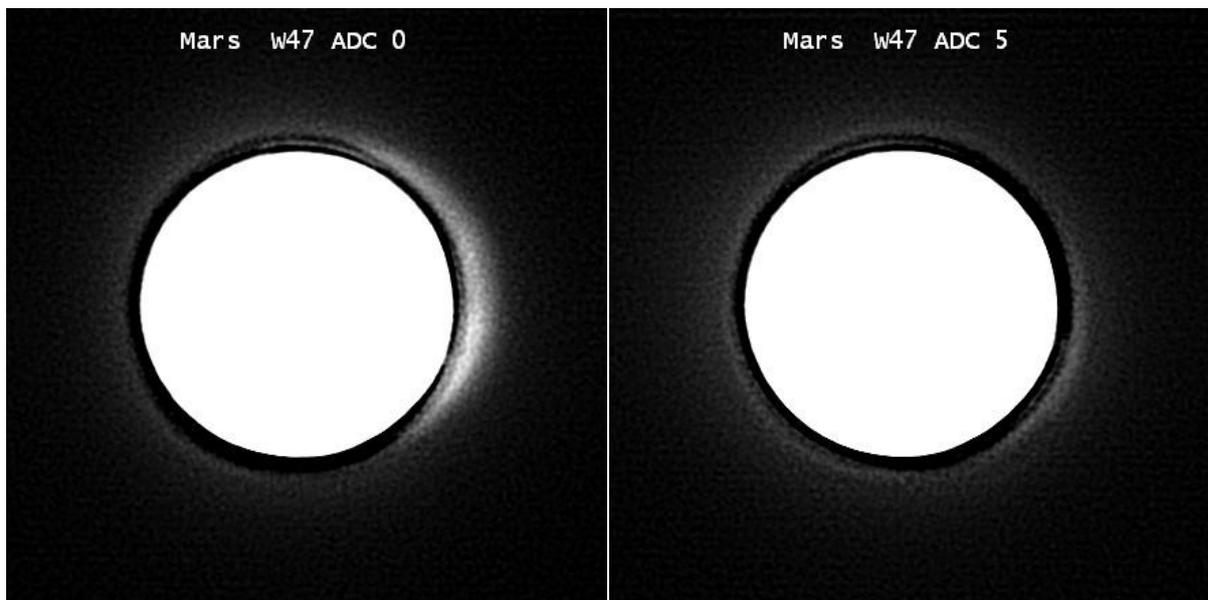


### Step 3b: Adjusting the ADC using a Mono Camera

If you use mono camera, there are two ways to adjust the ADC.

- 1) Adjust first using a color camera as described already (please refer to Step 3a) then use your mono camera afterwards
- 2) Adjust ADC using a W47 filter

- ◆ A W47 filter allows violet light to pass but also allows a small amount of Infra-Red light right at the other end of the spectrum to pass. Thus when the dispersion is not corrected, you will see two images of a star separated vertically due to the dispersion effect. These images are the strong violet image and the weaker infra-red image.
- ◆ Glenn has illustrated this with the images of Mars below. Notice how the image on the right (with the ADC levers adjusted to 5 small divisions each) is clearly sharper and the clouds and haze streaks have better definition. Compare to the image on the left, and how the blur off to the side is accentuated without ADC correction.



◆ **More Information**

<http://www.skyinspector.co.uk/atm-dispersion-corrector--adc>

[http://www.astrosurf.com/prostjp/Dispersion\\_en.html](http://www.astrosurf.com/prostjp/Dispersion_en.html)



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