

Optical Nasmyth ADC

Prepared by: Omar Estay H
Reviewed by: César Briceño
Version: 1.3
Date: October 28, 2014

Procedure for operating the Optical Nasmyth ADC

1.- Initialize mechanisms.

Sign in via vnc to 139.229.15.64:4, pwd = vnc4adc.

If the ADC Motion Control GUI seen below is not running, or if you needed to kill it and restart it, you can find the icon by scrolling all the way to the right of the desktop. You will see the icon there as shown here:



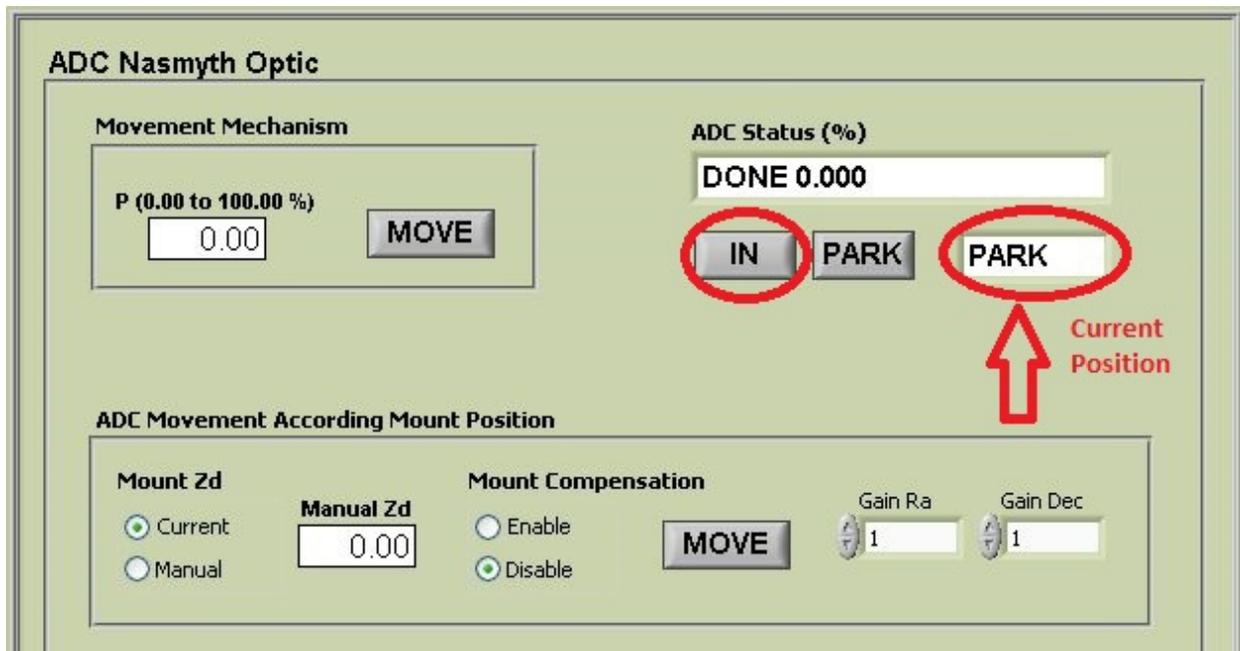
In the ADC Motion Control GUI proceed to initialize each mechanism pressing "Init Mech" button.

The screenshot shows the ISB-OP ADC Motion Control GUI. The interface is divided into several sections:

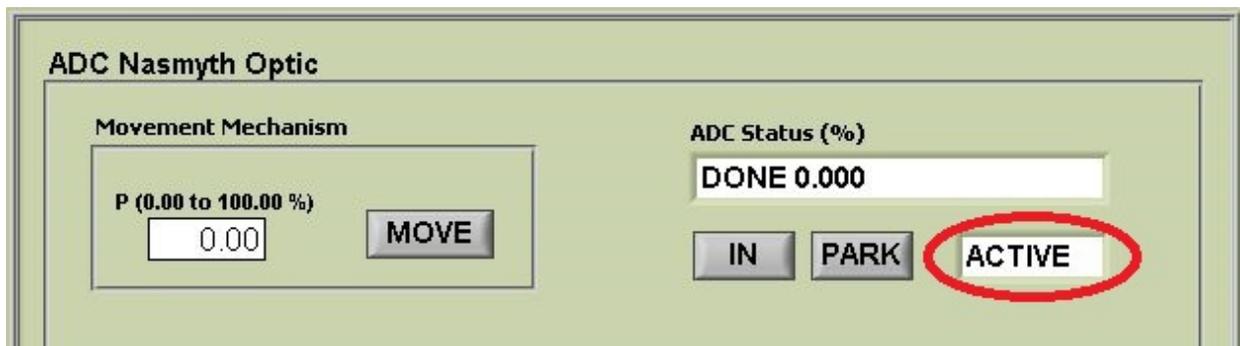
- Header:** SOAR TELESCOPE logo, ISB-OP ADC Motion Control title, a clock, and an OBSERVATION status indicator with an EXIT button.
- Navigation:** A sidebar on the left contains buttons for Move, Status, and Init Mech. Below Init Mech is a dropdown menu with options: ADC Inner, ADC Outer, and ADC Stage. A red circle highlights the dropdown menu, and a red arrow points to the Init Mech button.
- ADC Inner P1:** Target: -2.000, Position: 0.000, DONE status. Includes IN and OUT buttons.
- ADC Outer P2:** Target: -2.000, Position: 0.000, DONE status. Includes IN and OUT buttons.
- ADC Stage:** Target: 0.000, Position %: -0.000, Position mm: -0.001, DONE status. Includes a park button and an IN button.
- Bottom Status Bar:** Last Error field, clear button, and checkboxes for Serial Port, App, AO, SAMI, Observation, and Engineering.

2.- Preparation for operation.

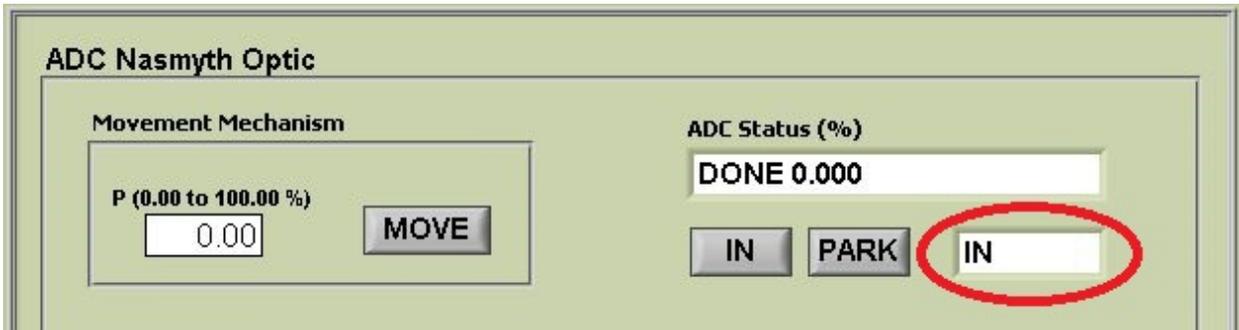
Using the user graphics interface for the telescope, in your Telescope Operator station, choose the tab "ADC Nasmyth Optic"



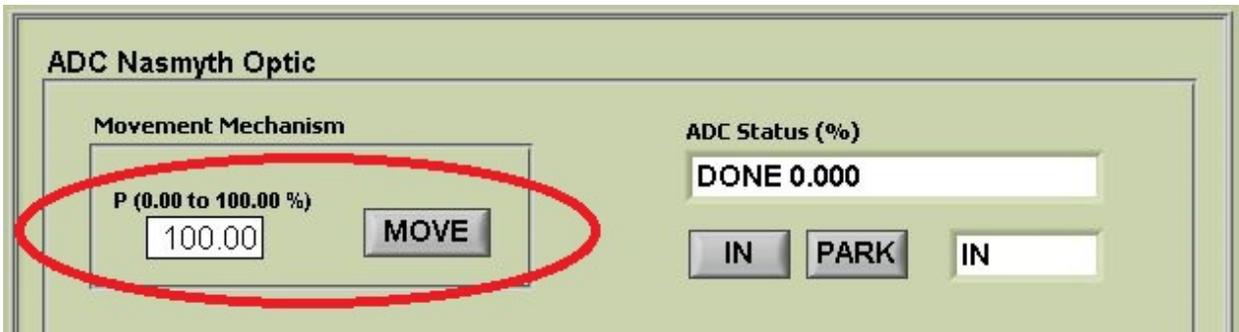
Initially you will have found the ADC in the "PARK" position, therefore, you must change its position to "IN" by pressing the "IN" button. It will start to move, changing its status to "ACTIVE".



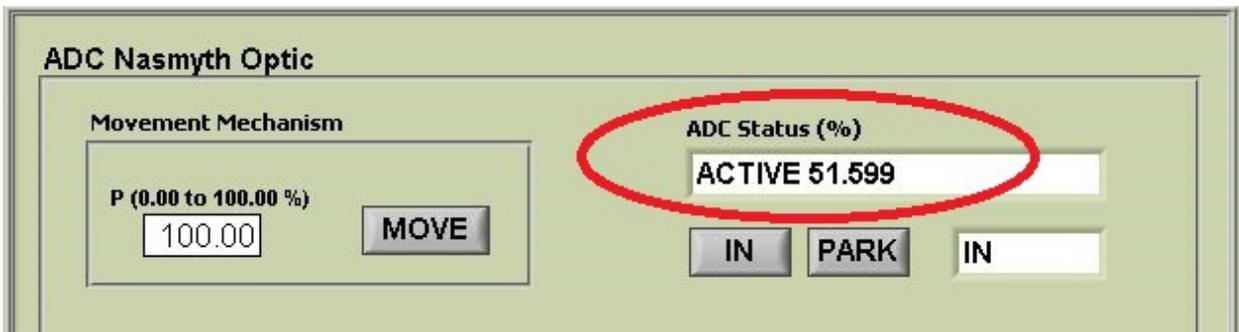
The end of the movement should be at the "IN" position.



Now you need to move the ADC to 100% in order to see the star in the guider field. Do this with the "MOVE" button.



This movement should be seen in the "ADC Status (%)" white box



The movement is finished when your status box says "DONE 100,000"

3.- Enabling the ADC and acquiring your first target and guide star.

After having prepared the ADC, you can choose your target star and the guide star. When you have the guide star well centered you can activate the ADC with the “ADC switch”.



Once the ADC is enabled you will see in the ADC Status white box (page 2) that the correction value changes from 100% to the value corresponding to the elevation of the target at which the telescope is now pointing. During the move the ADC Status will read ACTIVE, and when finished will read something like DONE 53.345. After that you can enable the guider.

Note that there is no need to manually change the focus when the ADC is used, as this is now automatically done by the software (see item 6, below).

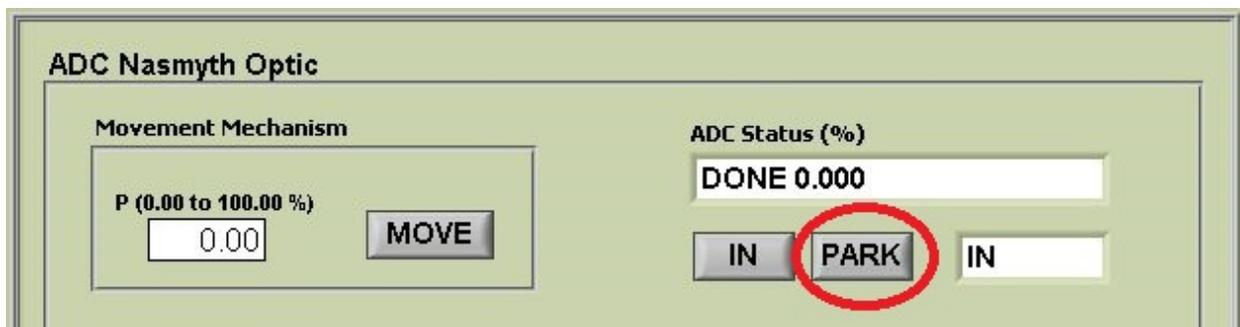
4.- Slewing to a new target.

Before sending the telescope to the new target, set the ADC to 100% and click on the MOVE button. Then slew to the new target.

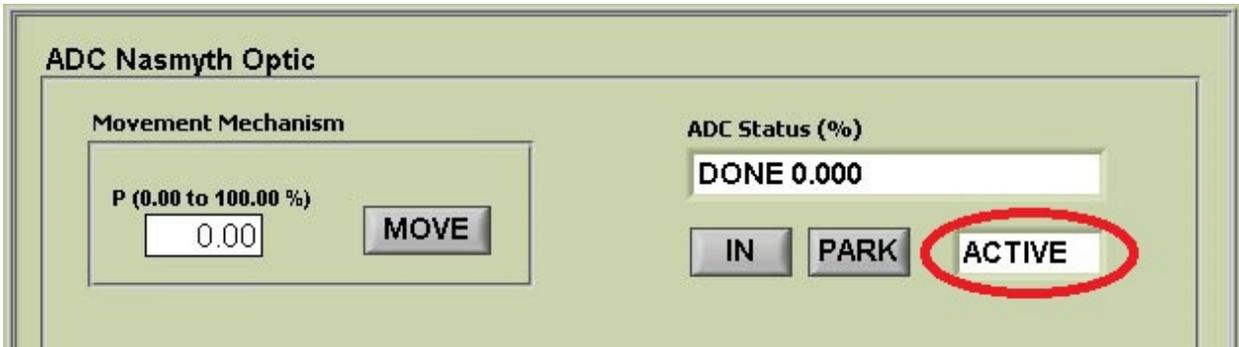
In this way the ADC will already be moving to the 100% (no correction), and you will save overhead time when acquiring the guide star for the next target.

5.- Disabling the ADC.

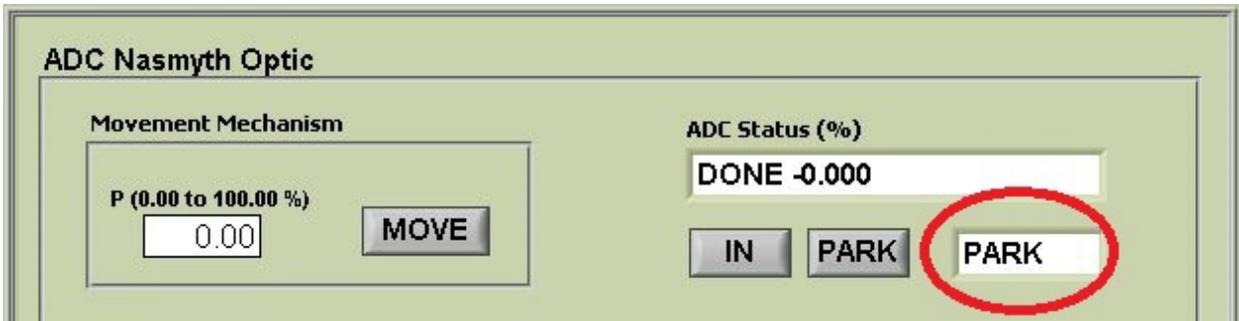
When you finish using the ADC, you must disable the ADC switch and then choose the tab "ADC Nasmyth Optic", and press the “PARK” button.



Wait while it says it is in mode "ACTIVE".



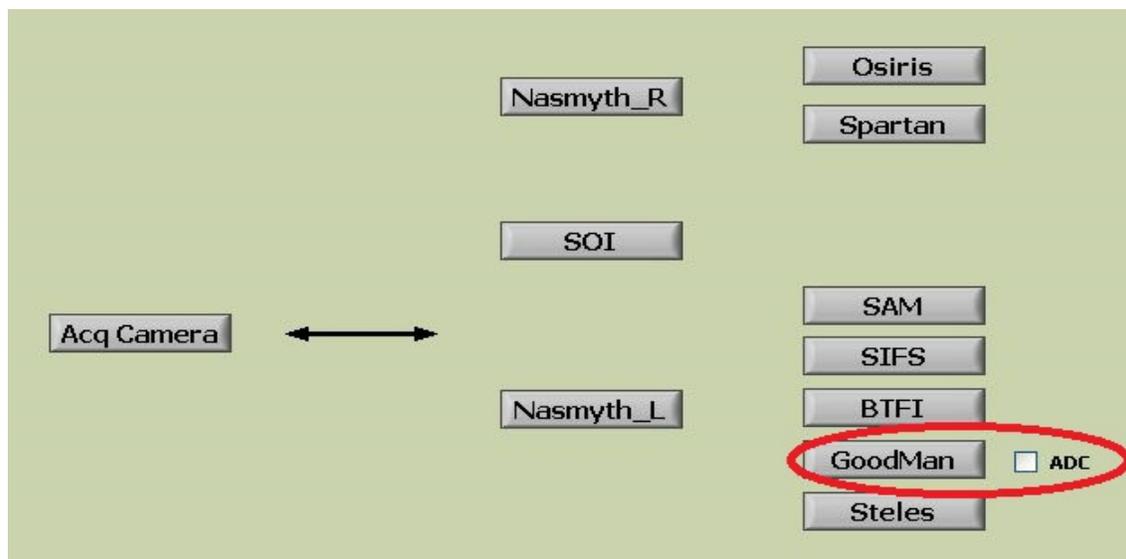
When it has finished its movement, the ADC Status box should read "PARK". Now the ADC is parked and out of the way in the optical ISB.



6.- Final Notes:

Instrument Selector:

There is a difference of focus (170 um) between the telescope focus and the instrument focus when using the ADC, difference that has been incorporated automatically when the instrument (GoodMan + ADC) is selected. And the reverse process occurs when returning CWFS.



Using the ADC at airmasses ~2 or greater:

The software prevents the ADC from moving beyond the position corresponding to an elevation of 30 deg (airmass of ~2), and also there are hardware limits beyond this point. Therefore, the ADC can be left ON at elevations <30 deg. The software will simply ignore any move commands beyond that limit, and spectra obtained at lower elevations will have a partial correction from the ADC, that is, the correction for elev=30 deg. Leaving the ADC active at elevations < 30deg will do no harm to the system.