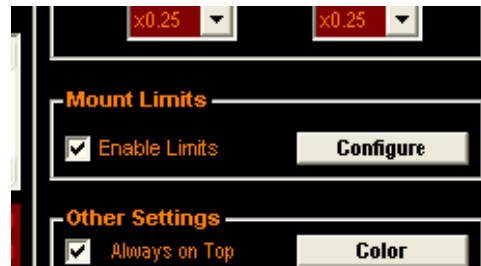


## EQASCOM Mount Limits

To protect the scope and telescope from possible collisions, EQASCOM provides a Limit function. This function is optional and can be enabled/disabled via the associated check box.



Operations that are subject to mount limits are:

- Tracking
- Gotos

Operations to which limits not applied are:

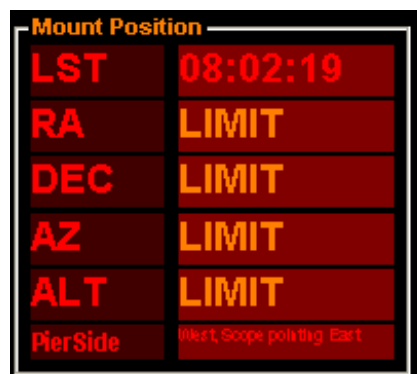
- Park
- Unpark & Goto (\*new feature)
- Manual slews initiated by the EQASCOM direction pad or external gamepad

When a limit condition is detected the following actions are performed

Both RA and DEC motors are stopped

Tracking is stopped.

The Mount position display will alternately flash "LIMIT" and the current coords.



These actions are continually re-applied until such time as the limit condition no longer applies. To remove the mount from the "limited" state use the direction pad or gamepad to slew the scope away from the limit point or execute a Park operation.

EQASCOM provides detection of limit conditions for both the meridian and horizon. For full protection it is essential that both meridian and horizon limits are applied

## Configuration



### Meridian.

This detects when the scope has moved past the meridian (usually through tracking) and has been a part of EQASCOM since V1.07. By default the limit is set to trigger when the RA axis is horizontal but most folks will want to allow some degree of tracking past the meridian. To set the limits simply slew the scope to the limit position and click the “add” button. You will need to do this for both East and West sides of the pier.

As these limits use encoder positions they can only be applied properly if the mount is parked and unparked. On start-up the default ‘horizontal’ limits are applied and on unparking any user specified limits are restored.

The default ‘horizontal’ limit can be restored by pressing the “Defaults” button.

Meridian limits can be removed altogether by pressing the delete button.

### Horizon.

This detects when the mount is pointing below a specified horizon profile. By default a horizon is applied of Alt= 0 degrees.

There are three ways to create a horizon profile.

1. Slew the scope along your horizon using the “add” button to add points.
2. Manually enter points, either in alt/az or HA/DEC (i.e. from reading setting circles).
3. Edit a text file with you horizon points (in Alt/Az)

The horizon profile is stored in a text file that is the same format as CDC’s horizon file. This allows both applications to share the same file if you wish.

Points can be individually deleted if required.

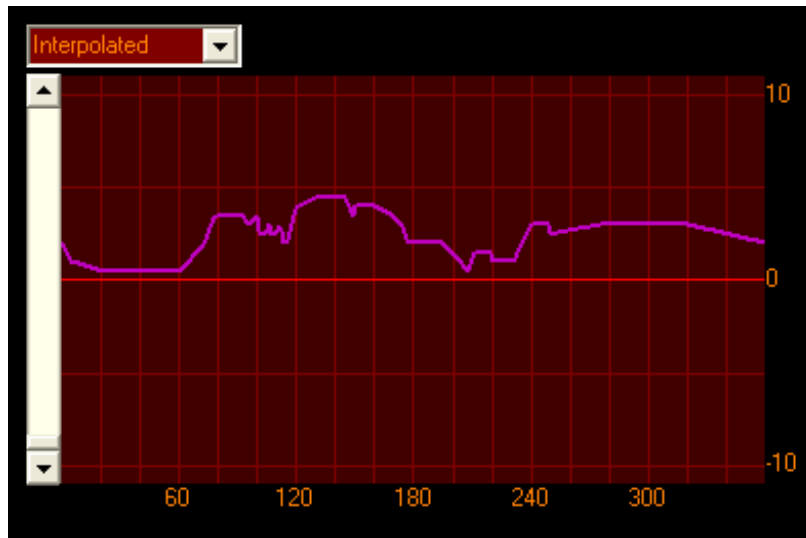
The 'defaults' button removes all points restoring the Alt=0 horizon.

EQASCOM provides a plot of the current profile. The scopes position is marked with a cross.

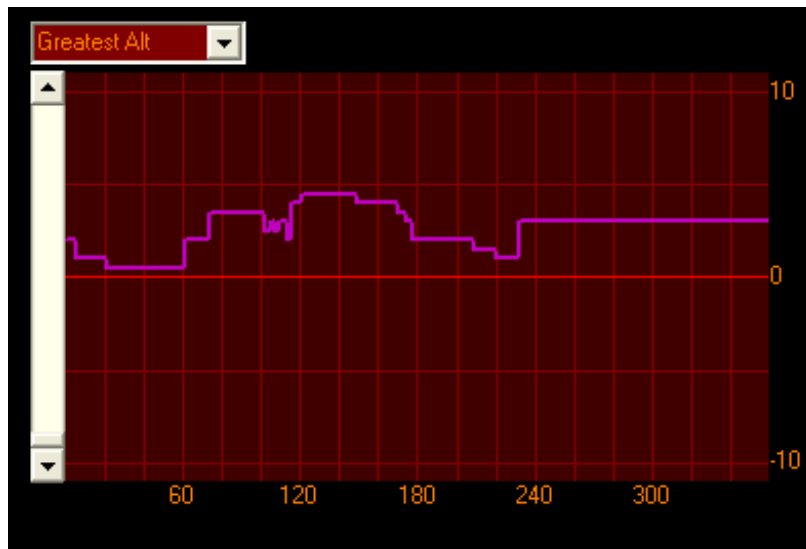
On startup EQASCOM will attempt to reload the last horizon definition file to be opened (the filename was stored in the EQMOD.ini file). If you wish any changes that you make to be permanent then you must save the file otherwise they will apply only for the current EQASCOM session.

There are two algorithms that determine how EQASCOM uses the points list to calculate an Altitude limit.

Using Interpolated mode EQASCOM calculates a straight line between the two points and then establishing the point on the line that corresponds to the current Azimuth.



Using "Greatest Alt" mode EQASCOM finds the two points on either side of the scopes current Azimuth and uses the one that has the greatest Altitude.



## Park and Unpark.

As mentioned previously Park operations are excluded from limit detection so the Park position can be below the horizon limits. A new Unpark mode has been added, "Unpark to defined position" which allows the scope to be moved to a predefined above horizon start position on unpark .

