

Controlling the Mount!

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To Discuss the following:

- Slew Controls
- Slew Pad
- Keypad
- Game controller
- Parking/Unparking
- Limits
- Planetarium



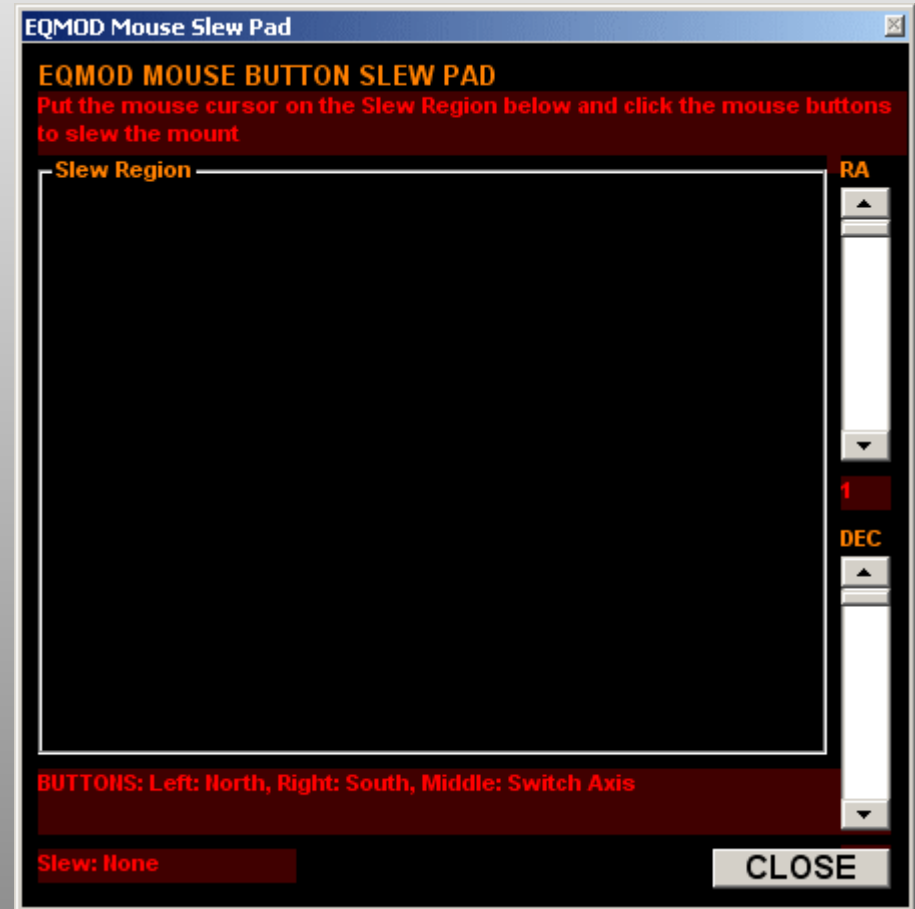
Slew Controls

- N,S,E,W, Stop
- RA Rate, DEC Rate
- Preset Rates
- Reverse RA / DEC
- Tour, Mosaic, Spiral
- Spiral Controls
- Control Pad



Slew Pad

- Requires 3 button Mouse
- Left: West/North
- Right: East/South
- Middle: Switch axis
- Mouse pointer anywhere in slew region



Keypad Slew Control

- Part of Slew Pad
- 7:NW | 8:N | 9:NE
- 4:W | 5:Stop | 6:E
- 1:SW | 2:S | 3:SE
- 0-Sidereal track
- Slew pad rates apply

Ins	Home	PgUp	NumLk	/	*	-
Del	End	PgDn	7	8	9	+
			4	5	6	
		↑	1	2	3	Ent
←	↓	→	0		.	

Arrow Keys also apply

Game Pad Controls

Gamepad Configuration

Initialise Configure



Default Game Pad Configuration

Button Configuration		Joystick Calibration	
Emergency Stop	BUTTON_11	Reverse RA	---
Park to Home	---	Reverse DEC	---
Park to User Defined	---	Increase RA Rate	BUTTON_5
Park to Current Posn.	---	Decrease RA Rate	BUTTON_7
Unpark	---	Increase DEC Rate	BUTTON_6
Sidereal Rate	BUTTON_10	Decrease DEC Rate	BUTTON_8
Lunar Rate	---	Increment Preset	---
Solar Rate	---	Decrement Preset	---
Custom Rate	---	Rate_1	---
Spiral Search	BUTTON_1	Rate_2	---
North	POV_N	Rate_3	---
East	POV_E	Rate_4	---
South	POV_S	Alignment Accept	BUTTON_3
West	POV_W	Alignment Cancel	BUTTON_2
NorthEast	POV_NE	Alignment End	---
NorthWest	POV_NW	Sync	---
SouthEast	POV_SE		
SouthWest	POV_SW		

	Min	Max
X Axis	0	65535
Y Axis	0	65535
Z Axis	0	65535
R Axis	0	65535

Move the joysick paddles to their extreme limits until the numbers above cease changing.

Start Calibration

System	
<input checked="" type="checkbox"/>	Gamepad Support Enabled
<input checked="" type="checkbox"/>	POV Pad Enabled
Auto Select	

Load Defaults	Clear All	Cancel	Apply Changes
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My Game Pad Configuration

Button Configuration		Joystick Calibration	
Emergency Stop	BUTTON_11		
Park to Home	BUTTON_10	Min	Max
Park to User Defined	---	X Axis	0 65535
Park to Current Posn.	---	Y Axis	0 65535
Unpark	BUTTON_1	Z Axis	0 65535
Sidereal Rate	BUTTON_4	R Axis	0 65535
Lunar Rate	---		
Solar Rate	---		
Custom Rate	---		
Spiral Search	BUTTON_9		
North	POV_N		
East	POV_E		
South	POV_S		
West	POV_W		
NorthEast	POV_NE		
NorthWest	POV_NW		
SouthEast	POV_SE		
SouthWest	POV_SW		
Reverse RA	BUTTON_3		
Reverse DEC	BUTTON_2		
Increase RA Rate	---		
Decrease RA Rate	---		
Increase DEC Rate	---		
Decrease DEC Rate	---		
Increment Preset	BUTTON_5		
Decrement Preset	BUTTON_7		
Rate_1	---		
Rate_2	---		
Rate_3	---		
Rate_4	---		
Alignment Accept	---		
Alignment Cancel	---		
Alignment End	---		
Sync	BUTTON_6		

Move the joystick paddles to their extreme limits until the numbers above cease changing.

Start Calibration

System

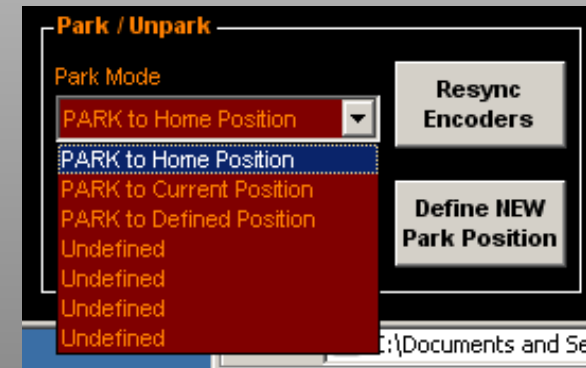
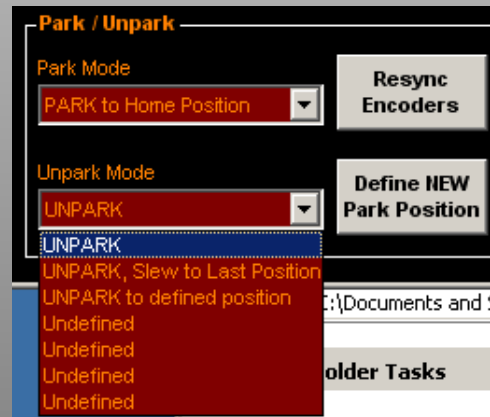
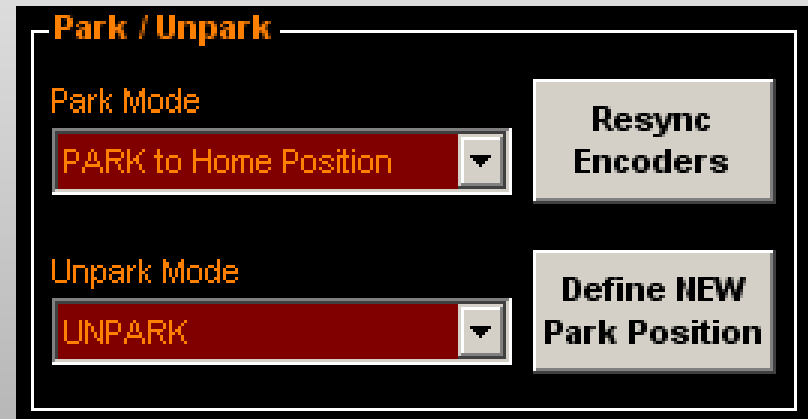
- Gamepad Support Enabled
- POV Pad Enabled

Auto Select

Load Defaults **Clear All** **Cancel** **Apply Changes**

Parking/Unparking?

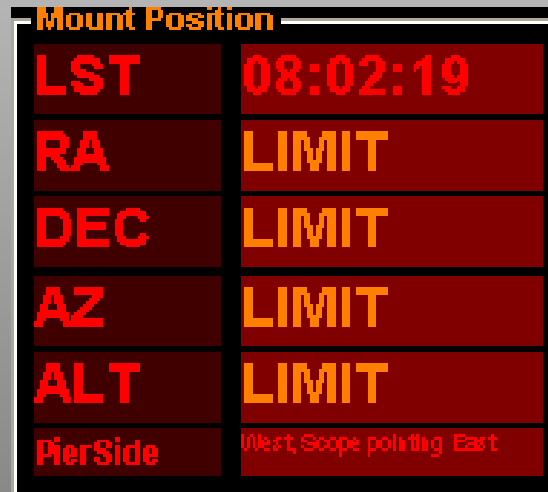
- Actions when parked/unparked.
- 7 park and unpark locations - user define.
- Park before power down.
- Resync if not.



Mount Limits



- Enabled in Setup area.
- Initial install can cause frustration with limits



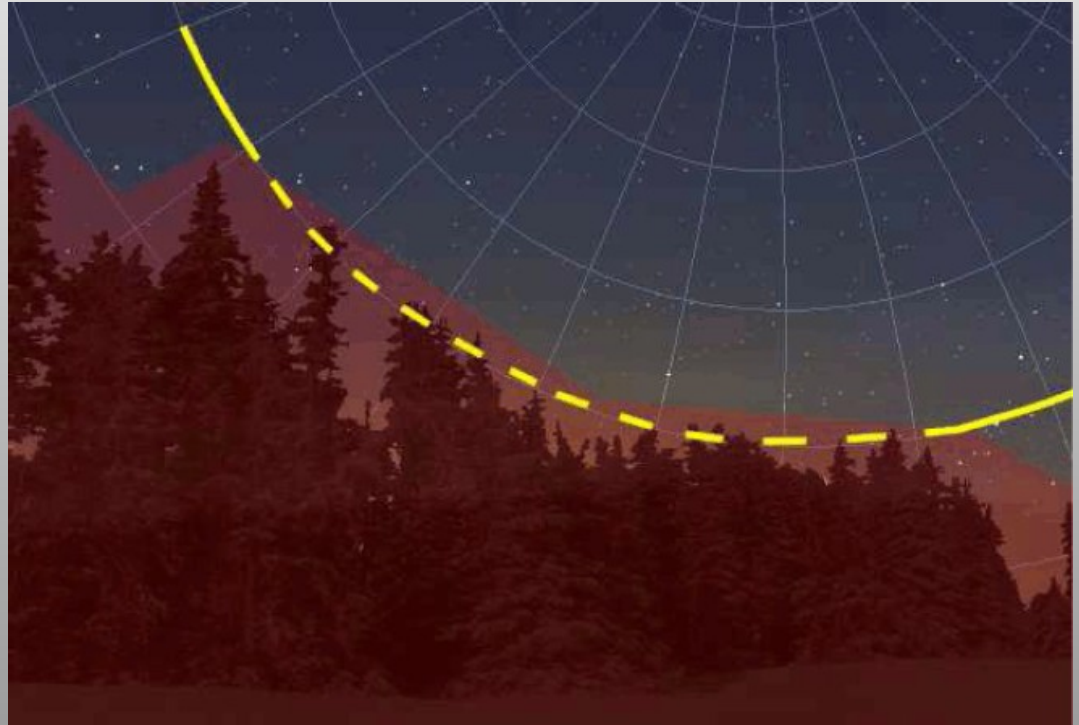
A screenshot of a display titled "Mount Position" showing various astronomical coordinates. The display is divided into two columns: the left column shows the coordinate name in red, and the right column shows the value in yellow.

Mount Position	
LST	08:02:19
RA	LIMIT
DEC	LIMIT
AZ	LIMIT
ALT	LIMIT
PierSide	West, Scope pointing East

Mount Limit Considerations




Why Have Limits?

- Horizon Shading
- Meridian flips



Limit Configuration





Meridian

   **East** **West**
5D5500 **A2AB00**

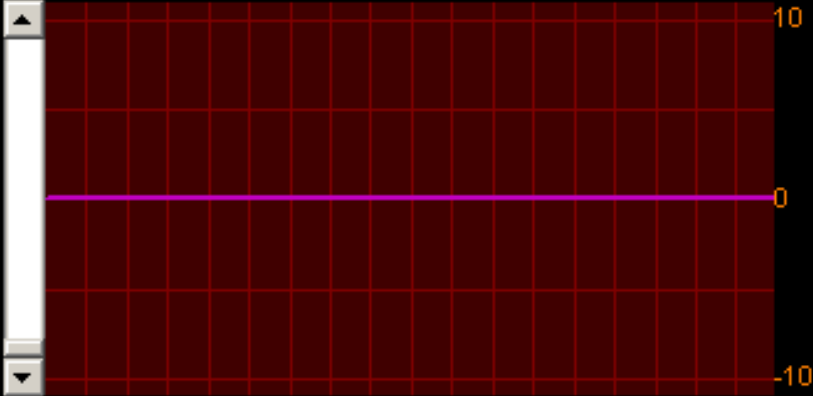
Options

Park On Limit Auto Meridian Flip
 Apply Limits To Gotos


Horizon

     **Interpolated**

AZ	ALT	HA	DEC
----	-----	----	-----



ALT AZ

0 0 0 0 **AZ/ALT** 

Time To Horizon --:--:-- Time To Meridian **06:01:33**

Limit Configuration

Meridian Limits

- Set by positioning the mount
- Affected by clutch locks and home position!
- One East, One West
- Does not account for DEC Position

The screenshot displays a software interface for configuring telescope limits. It is divided into several sections:

- Meridian:** Contains navigation icons (refresh, delete, add), and two limit settings: **East** (5D5500) and **West** (A2AB00).
- Options:** Includes checkboxes for Park On Limit, Auto Meridian Flip, and Apply Limits To Gotos.
- Horizon:** Features a graph with a red grid. The x-axis represents azimuth (0 to 300) and the y-axis represents altitude (-10 to 10). A horizontal purple line is drawn at 0 degrees altitude. Above the graph is a dropdown menu set to "Interpolated".
- Coordinate Displays:** Below the graph are fields for **ALT** (0, 0) and **AZ** (0, 0), along with a dropdown menu set to "AZ/ALT" and a green arrow icon.
- Time Displays:** At the bottom, it shows "Time To Horizon" (---:--:--) and "Time To Meridian" (06:01:33).

Limit Configuration

Horizon Limits

- Set by positioning the mount or entering values at bottom
- Points define limit profile
- A Single point defines the whole horizon

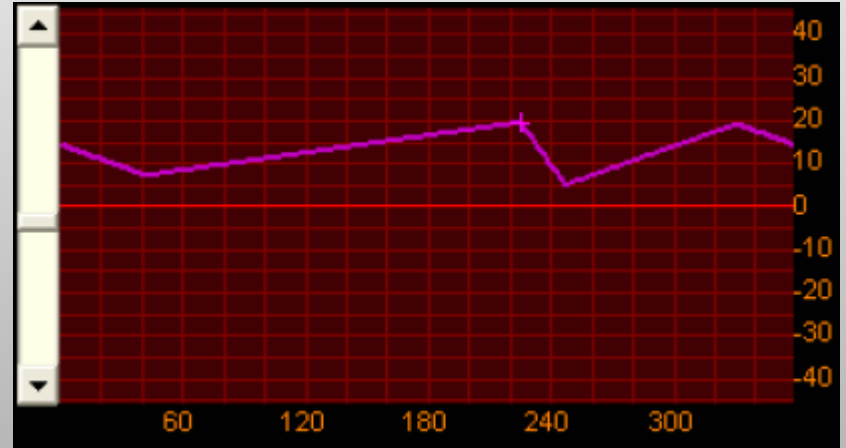
The screenshot shows a software interface for configuring telescope limits. It is divided into several sections:

- Meridian:** Contains a refresh icon, a delete icon, and an add icon. It shows 'East' as 5D5500 and 'West' as A2AB00.
- Options:** Includes checkboxes for 'Park On Limit' (unchecked), 'Auto Meridian Flip' (checked), and 'Apply Limits To Gotos' (checked).
- Horizon:** Features a data table with columns for AZ, ALT, HA, and DEC. To the right is a graph with a red grid and a horizontal purple line at 0 on the y-axis. The x-axis is labeled with 60, 120, 180, 240, and 300. A dropdown menu above the graph is set to 'Interpolated'.
- Bottom Controls:** Shows 'ALT' and 'AZ' fields with '0' values, a dropdown menu set to 'AZ/ALT', and an add icon.
- Status Bar:** Displays 'Time To Horizon' as --:--:-- and 'Time To Meridian' as 06:01:33.

Limit Configuration

Horizon Limits

- Graph links the points together.
- Slider adjusts scale.
- Interpreted - follows line
- Greatest Alt - use higher limit on either side



Options

- Park On Limit
- Auto Meridian Flip
- Apply Limits To Gotos

Planetariums

- Stellarium with Stellarium Scope
- Cartes du Ciel / Sky Charts (CdC)
- Starry Night Pro
- The Sky
- Astro-Planner

Planetarium Considerations

- Same Location!!!: Latitude / Longitude
- Same Time: PC time used
- Same Epoch: J2000 or JNOW
- Check Memory usage! (Change Frame Rate)
- EQMOD manual: good instructions for CdC, HNSKY, Starry Night, StarCalc, Stellarium, The Sky

Planetarium Programs

YAHOO! GROUPS

Name: Planetarium Epoch

Table Description: Record of which epoch various planetarium packages use

Planetarium Program <input type="checkbox"/>	Version	Epoch Used
Alignmaster	1.7	J2000
Astro-Planner	1.6, and 2-beta	J2000
C2A (Computer Aided Astronomy)	2.0.x	J2000 and JNOW selectable
EQTour	1.13	J2000 If Specified in file, can convert to JNOW
HNSKY (Hallo Northern Sky)	2.3.x	J2000
Prism		
Redshift	5	
Sky Charts (CdC)	2.76, 3.0	J2000 in Polar Projection, JNOW in Zenithal Projection
StarCalc	5.72	J2000
Stary Night Pro		J2000
Stellarium via stellarium scope	0.10.2 & SS2010-01-18	J2000 or JNOW user selected in Stellarium Scope
The Sky	6	J2000
Winstars	2.0	

Coordinate Go To!

- Hidden Gem!
- Know the Coordinate?
- Right click RA or Dec

Mount Position	
LST	16:36:38
RA	22:31:55
DEC	+88:29:03
AZ	02:26:42
ALT	51:41:49
PierSide	West, pointing East

Goto [Close]

RA 22 : 52 :32

DEC +88 : 29 :03

J2000 [Store] [Recall]

[Cancel] [GOTO]

EQMOD Reference Docs!

- [EQMOD doc.pdf](#)
- [game controllers.pdf](#)
- [planetarium epoch.pdf](#)

Questions?