YOUR FIRST OBSERVING SESSION

With a New Mount

These instructions assume that you have followed the setup procedures prior to using your mount in the field. Refer to the previous section.

As you may have gathered from the previous section, there are three methods for starting your keypad – the normal startup sequence, the auto-connect sequence and the external startup sequence.

When you plug in the cable of your keypad controller and the power cable, the words Astro-Physics and the version number of the firmware will appear briefly.

- If Auto-Connect is set to “no”, the Site Menu will appear. Refer to the section entitled: ”Normal Startup Sequence – For Mounts that are Set Up in the Field.”
- If Auto-Connect is set to “yes”, the Main Menu will appear. Refer to the section “Auto-Connect Sequence – For Permanent, Polar-aligned Mounts.”
- If Auto-Connect is set to “EXT”, the keypad will wait until location and time data is sent to the mount by a computer with mount control software. Pressing Menu to cancel will make the Location Selection screen appear and the keypad would behave as if auto-connect is set to “no”. Refer to the section entitled: ”External Startup Sequence – For Mounts that are controlled by a computer.”

With a Mount that Already Had “C” (or later) Chip and Just Upgraded the Keypad

These instructions are for people who have been using their GTO mount with the “C” (or later) chip for a while, but recently upgraded to the new 4.x version of the keypad firmware.

Follow the procedures in the previous “Getting Started” section to be sure that your location, date and time settings have been set. The location area of memory is overwritten in the upgrade process, so you should not see any location data. Also, since the daylight savings entry location has changed, you will also have to make changes, if you observe daylight savings time.

When you plug in the cable of your keypad controller and the power cable, the words Astro-Physics and the version number of the firmware will appear briefly.

- If Auto-Connect is set to “no”, the Site Menu will appear. Refer to the section entitled: ”Normal Startup Sequence – For Mounts that are Set Up in the Field.” You can use any of the startup sequences you prefer, including Resume from Park since the chip of your mount remembers your prior park position.

  If you are permanently polar-aligned and your scope is not moved between sessions, we suggest that you change Auto-Connect to “yes” before you finish this session. Then next session, you can avoid the startup sequence all together and go directly to the Main Menu. Please refer to the “Auto-Connect Sequence – For Permanent, Polar-aligned Mounts” for additional information.
- If Auto-Connect is set to “yes”, the Main Menu will appear. Refer to the section “Auto-Connect Sequence – For Permanent, Polar-aligned Mounts.” Since you had the “C”(or later) chip installed already with “Auto-park” feature, it remembers the last position of your mount before the power was disconnected. Assuming you have not moved your telescope, you are ready to go directly to the Objects Menu.
- If Auto-Connect is set to “EXT”, the keypad will wait until location and time data is sent to the mount by a computer with mount control software. Pressing Menu to cancel will make the Location Selection screen appear and the keypad would behave as if auto-connect is set to “no”. Refer to the section entitled: ”External Startup Sequence – For Mounts that are controlled by a computer.”

After a Chip Replacement and Keypad Upgrade

Follow these procedures only if you meet BOTH of these criteria:

- A new ROM chip in has been upgraded in the GTO control box.
- The keypad has been upgraded from version 2.x or 3.x to 4.x

Since the new chip in your mount does not know the site location, date, time, daylight savings status or where your telescope is pointing, this is the procedure that you must follow for your first session only. Even if you parked your mount in your last session with the old chip, the new chip does not know that you parked. It does not have that information in its memory.

PEM data is stored also on the ROM chip in the control box. If you used the PEM training procedure with the previous chip, you will need to repeat the process to store the information on the new one. It is not necessary to do this immediately, but can be done during any session, at your convenience.

1. The Location Selection Screen will appear the first time you start up your mount if you have just upgraded the keypad yourself. If this is a new mount or your keypad was upgraded or repaired by Astro-physics, please skip ahead to step 3.
2. Press GOTO to by-pass this screen then select option 3=Resume From Park
3. Main Menu should now be on the display. All of your location, time, daylight savings and date settings will have been erased due to the complete re-organization of the Keypad for version 4.x. We recommend that you find your location, date, time, and daylight savings settings that you recorded on paper before you loaded 4.x and make sure that they are correct. You will need this information to get your mount up and running again.
4. DO NOT ATTEMPT TO SLEW TO ANY OBJECTS AT THIS POINT. You must first setup your location and time as described below.
5. Go to Keypad Options selection screen (Main Menu → Setup → Keypad Options). The top line displays 1=Auto-Connect. Press “1” to toggle to “no” if it is not set to “no” already.
6. Press Menu to go back to the Setup Menu.
7. Press 1=Locations & Time. Then, select 1=Set Site Location
8. You will now be presented with the new Location Selection screen with locations 1-9 available.
9. Choose location 1 by entering #1 and pressing GOTO. We recommend that you set location 1 to the site you observe from the most. Enter your longitude, latitude and time zone settings. If you do not wish to change the settings that are already entered, press the GOTO button to return to the Locations & Time Menu. After you have entered the information, you **MUST** press GOTO to save your data and return to the Locations & Time Menu. If you made a mistake just use the <PREV and NEXT> keys to move back to it and fix it.
10. If you wish to enter more locations (up to 9 different sites are available), please do the previous step again; changing the number for each location you enter. We suggest that you write the location number and a brief description on a piece of paper and tape it to the back of the keypad to aid your memory.
11. After you are happy with your location site settings, you need to enter your time, date and daylight savings settings.
12. Press 2=Set Date & Time on the Locations & Time menu. Enter the correct time, date, and current daylight savings settings, for your current location. If you made a mistake just use the <PREV and NEXT> keys to move back to it and fix it If the settings are already correct, press the GOTO button to return to the Locations & Time menu. To save your changes you **MUST** press GOTO to return to the Locations & Time menu, Pressing MENU will exit the screen with the changes unsaved.

Sync, Align, and Resume Menu

```
1=Star-Sync
2=Polar Alignment
3=Resume from Park
4=Resume Ref-Park 1
```

Main Menu

```
1=Object      5=S:1200
2=Setup       6=B:600
3=Tools       7=A:1
4=Time/LST 8=T:Side
```

Setup Menu

```
1=Locations & Time
2=Mount Move Limits
3=Keypad Options
4=Park / Mount Opt.
```

Locations & Time Menu

```
1=Set Site Location
2=Set Date & Time
3=Get Time/Loc FrMnt
4=Load / Initialize
```

Location Input Screen

```
Long: W   000:00:00
Lat  : N    00:00:00
Time Zone          :00
```

Time & Date Input Screen

```
TIME:  21:12:38
DATE:  05/15/2003
Daylight Saving: 0
1=Summer 0=Winter
```

Star Selection Menu

```
Choose Star   Z=05:54
1=Polaris             <
2=Acamar
3=Achernar            >
```

13. After you have competed ALL of the above entries, press Menu twice to go back to the Main Menu.

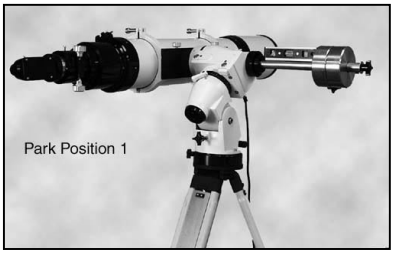
14. Turn off the power to your mount for 10-15 seconds.

15. When you re-apply the power, the keypad should display the Location Selection screen. Please select your location by entering the desired number and press GOTO.

16. You will now be presented with the Sync, Align and Resume Menu (see example screen). You will use this menu to tell your telescope where it is in relation to the sky.
Very Important: You must point to stars in the west when your telescope is on the east side of the mount and stars in the east when your scope is on the west side. When the stars are high and close to the zenith, this can be tricky. However, you can tell which side the star is on by looking at the "z" number in the upper right corner of the Choose Star screen, then comparing that number with the RA number of the star you choose. If the RA number is larger, the star is in the east. If your scope is not on the correct side, the mount will not slew properly and the telescope could strike the pier/tripod.
These are your choices:

a) **Star Sync**. If you are polar-aligned, choose Star Sync. Aim the scope at a known object on the star list, which now includes solar system objects (at the end of the star list). Press the +- key to change your button-centering rate, if needed. Scroll through the list to find the object, enter the object number, press the GOTO button (the mount will not actually go anywhere) and you are synchronized. The Main Menu will appear. You are now ready to enter any object from the Object Menu or go to the Setup Menu to make changes, as needed.

b) **Polar Alignment**. If you are not fully polar-aligned yet, choose Polar Alignment, and then choose N Polar Calibrate or 2 Star Calibrate. Please refer to the section titled "Polar Alignment – Which method to choose" for further instructions about this process. Note, although the solar system objects display in the star list, you cannot use them in these calibration routines. Since the RA/Dec positions of these objects change with time, they are not suitable for slewing back and forth in multiple iterations. Do not use the solar system objects. When you have completed the routine, the Main Menu will appear and you can proceed as usual.



c) **Resume from park.** Do not select this item for this first session. The GTO control chip is new and does not know the last park position. Your telescope may slew to a dangerous position if you try this one.

d) **Resume Ref-Park 1.** For this start position you will need to have your mount properly polar aligned and a bubble level. Move your mount to the park 1 position by setting both axes to be level with the ground with the telescope on the west side of the mount. Use the bubble level to be sure of this. After you have done this select this option and the main menu should appear.

17. Please refer to manual for a list of all the new features and instructions for their use. The procedures for using the Objects Menu are the same, however you may want to learn about auto-connect, SmartGuide, horizon limit, external sync, and more. We strongly encourage you to read your manual to get the most from your GTO mount.

When you have finished your observing in this and all subsequent sessions, you have several options:

1. Mounts that will be disassembled and will lose polar alignment. Leave the Mount Auto-start set to "no." The next time you set up, you will chose your location, date, etc as you are accustomed to doing. Read the manual pages regarding Normal Startup Sequence, if you need a refresher.

2. Mounts that will remain polar-aligned and the telescope will not be moved from its present position. Go to Setup, then to the last Mount Auto-Start Menu. Toggle to "yes." Now, you have several more choices:

   a) Use park positions 1, 2, or 3 and simply remove the power. When you start up next time, the Main Menu will appear and you are ready to go. The mount will remember where you were parked. You do not have go through any other startup routine or use Resume from Park. Refer to "Auto-Start Sequence" of the manual for additional information.
   However, if you left the Mount Auto-Start set to "no," you can use resume from park in the startup routine, as you have done in the past.

   b) If you don't care what position the telescope is in, simply disconnect the power. The mount will remember where it was when the power was removed. Refer to "Auto-Connect Sequence" of the manual for additional information. Please do not park the mount with the counterweights higher than the telescope. It is not a recommended park position.