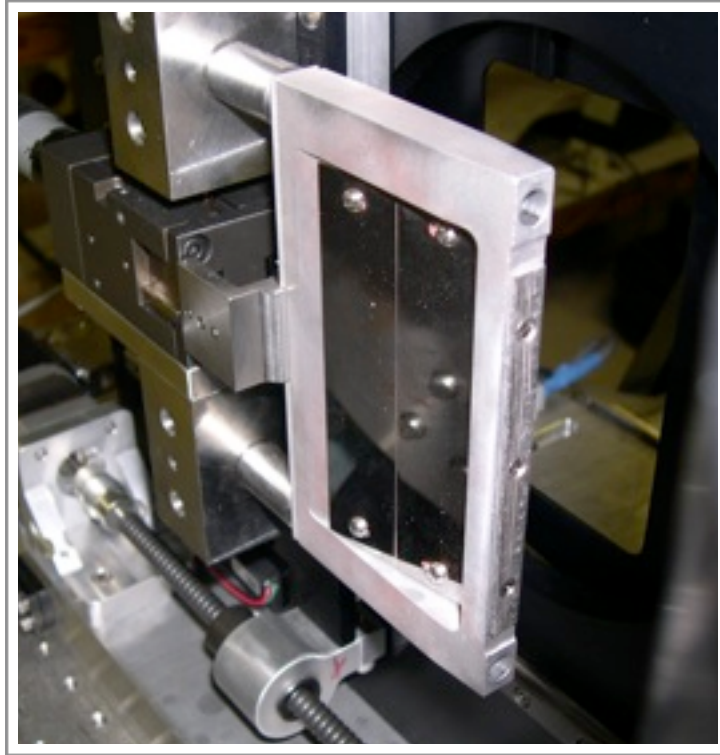
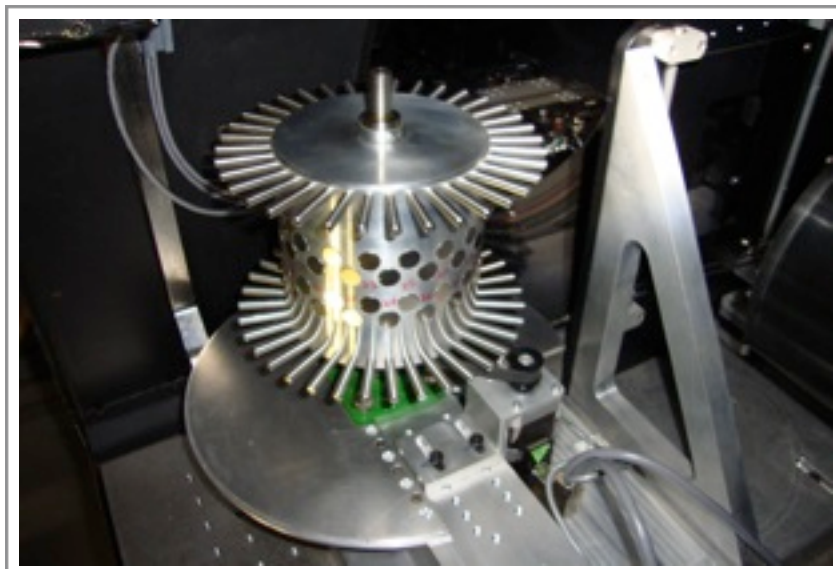


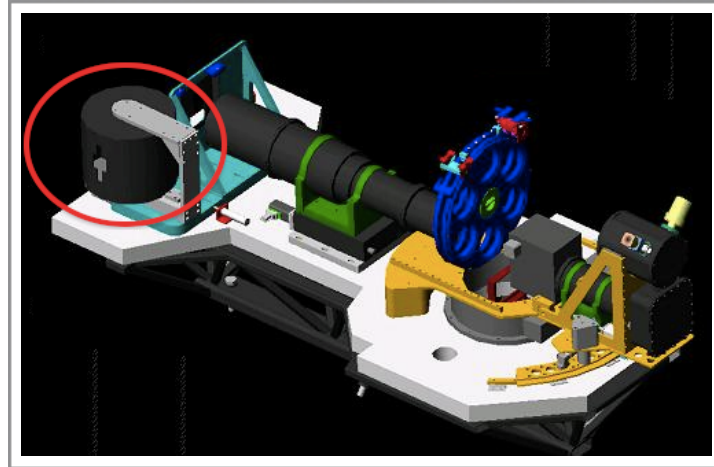
INSTALLING AND REMOVING SLIT MASKS



The slits for the Goodman Spectrograph are mounted in individual frames (see above) that are stored in a 36 position carousel. When a slit is requested, the carousel is rotated to the desired slit, and a translating mechanism grabs it from the carousel and pulls it into the imaging field. Inside the carousel, slit frames ride on posts (two per frame), and are held against a central drum by strong magnets. The figure below shows the carousel with the cover off.



Because removing and replacing slits in the carousel is a regular operation, it is streamlined. The carousel cover (red circle in figure below) has an accessible opening 180 degrees away from the place where slits are withdrawn by the translation mechanism. Slits are inserted and removed manually through this opening.



1. Rotate Nasmyth cage

Set Nasmyth rotator position to 0 degrees, so that the spectrograph bench is upright.

2. Log on to the Goodman Spectrograph Control Software

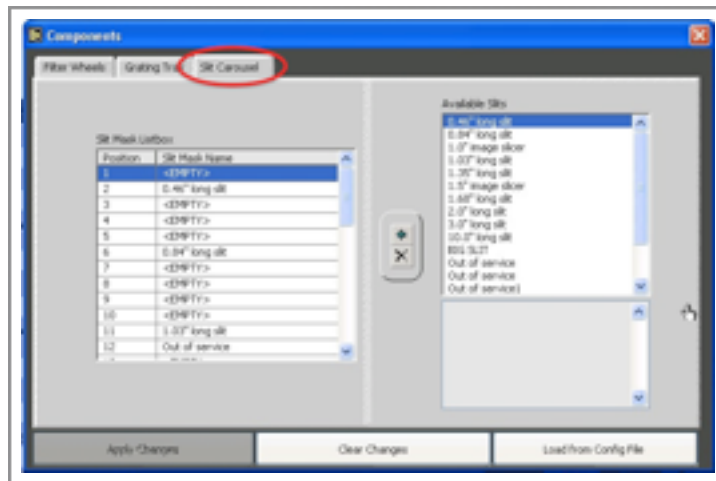
Turn on power to the Goodman electronics box and log-on to the GSCS using an Operator or Engineering account.

3. Home the slit assembly

Home the *Slit Assembly* (from the Main Menu, select *Users --> Home Systems*).

4. Open the instrument configuration window

From the Main Menu, select *Operator --> Configuration Panel*. (Note that this panel is not accessible using an Observer account). The instrument configuration window will appear, as shown below. Select the *Slit Carousel* tab to reveal the current settings and options for slits, slicers, etc.



5. Locate a position

Scroll through the *Slit Mask Listbox*, which displays the current configuration of masks inside the carousel. If installing a new mask, find an <EMPTY> position for the mask to be loaded. If removing a mask or replacing one with another, locate the current position of the mask to be removed. **NOTE:** Masks should not be loaded in positions labelled “Out of service” since masks in these positions may scrap the inner wall of the carousel housing drum when rotating.

6. Clear the position name

If the desired position already contains a mask, you must first clear it. Highlight the row corresponding to the position in the *Slit Mask Listbox* by clicking on it, and press the ‘X’ button to clear the slit mask name. If you are removing a mask, please note the position number as you will need to refer to it later.



7. Add the new mask name

Click on the desired slit name in the *Available Slits* listbox on the right, and press the green arrow to move the slit name to the *Slit Mask Listbox*.



If the name of the slit mask/slicer to be installed is not listed, please refer to the document [“INTEGRATING NEW COMPONENTS INTO THE GUI”](#) and return to these instructions thereafter.

8. Close the configuration window

If you are satisfied with the changes made, click the *Apply Changes* button to update the mask listing and close the window. Click the *Clear Changes* or *Load from Config File* to undo any changes.

9. Align the carousel for mask installation

Using the *Mask Assembly* drop-down menu, select the slit that is 18 positions after the slit to be removed/installed. If this results in a number greater than 36, then subtract 36. (e.g. if changing slit number 2, request slit number $18+2 = 20$, but if changing slit number 35, request slit number $35+18 = 53$, $53-36 = 17$).

10. Remove slit (if any)

Once requested position is loaded and the indicator light on the control panel for the slit assembly is green, remove the slit that is aligned to the opening on the accessible side of the carousel cover (see image below). To remove the slit, grasp the end of the frame through the opening and pull it off the retainer magnets.



11. Install the new mask (if loading new mask)

Insert new slit into opening with holes aligned to posts until it attaches and is held by the magnets. **IMPORTANT NOTE:** THE FRONT (ILLUMINATED) SIDE OF THE SLIT SHOULD BE INSTALLED FACING THE REAR OF THE INSTRUMENT (see arrow in picture above). After 180 degree rotation to the opposite side, the slit will be facing forward when withdrawn by the translation assembly.

12. Test the rotation and translation (if loading new mask)

Still standing next to the carousel, have someone select the new mask using the *Mask Assembly* drop-down menu. Listen for sounds of scrapping or dragging as the new device rotates within the carousel. It is best to test the mask's overall rotational freedom by selecting several different mask positions and listening for any contact points. If peculiar sounds are heard, move the mask to a different position and mark the carousel slot # it was in as "Out of service" using the instructions given in Steps 4-7.

13. Repeat

Repeat steps 4-12 for other slits to be removed/inserted.

Tips & Suggestions

- try to keep the carousel balanced by keeping the spacing between installed masks as even as possible. As more and more masks are added to this system, this may require a re-shuffling of all of them from time to time.