

Calcium K Filter Test Winter 2006

Introduction

1. The objective is to measure the pass band of the PSPT narrow band Calcium k filter vs. angle of incidence.
2. Look up the previous test notes performed in October of 2005

Setup

1. Remove SPINOR modulator (it does not transmit Ca K light)
2. Remove SPINOR polarizing beam splitter from behind the slit (it does not transmit Ca K light)
3. Adjust the 'L' fold mirror to put light on the grating.
4. Continue to use the 308.571/mm grating and adjust the angle of incidence from 56.35° to 54.33°
5. Put a Calcium K order isolation filter in front of the Sarnoff camera
6. Stray light should be kept to a minimum. No light leaks around the order isolation filter will help.
7. Try a slit width of 100 μ m
8. Use DemoCam on the Hagrid desktop. Set the "Camera" for internal (software) trigger and initially a long exposure of 500msec. Enable temperature control at 15C. Check intensity levels by changing the plot scale. Maximum intensity near the line should not exceed about 2000. Click the green camera icon to run continuously. Stop with the red camera. Under file save the image to some new directory on d:/. This saves the last image.
9. Adjust the camera position in focus until lines are sharp and grating angle to center the line (13.4 Angstroms across the CCD).

Measurements

1. Observe with the order isolation filter only and record a couple of 'gain' images
2. At the same exposure time record a couple of 'dark' images
3. With the narrow band filter in front of the slit check for the best exposure time, if not too dark use the same one as with the order isolation filter alone
4. Set the narrow band filter as normal to the input beam as possible and record a couple of images
5. Tilt the filter slightly, measure the angle, and record a couple of image. Repeat images for a range of angles such as 0°, 1°, 2°, 3°, 4°, and 5°
6. Record a couple of dark images at the same exposure time as the narrow band filter measurements.

Comments

1. David Elmore 303 497 1580 (303 669 7264 mobile)
2. If the Sarnoff camera proves to be a problem, substitute whatever NSO camera you desire.