

# Orion® Hydrogen-Beta Filter

#5583 1.25" model

#5584 2" model

The Orion Hydrogen-Beta filter is an extremely narrowband filter that transmits a less than 15nm wavelength region of the visual spectrum. This region corresponds with the hydrogen-beta emission wavelength of light (at 486.1nm) produced by certain types of nebulae. When the hydrogen-beta filter is threaded onto an eyepiece and used to visually observe one of these nebulae, the image contrast will be greatly increased. You'll be able to observe details you would not normally see!

Since the hydrogen-beta filter rejects all visible light without a wavelength between 475nm and 490nm, it should be used only to view hydrogen-beta emission nebulae, such as the Horsehead Nebula and the California Nebula. Other objects will literally disappear when the filter is employed.

## Using the Hydrogen-Beta Filter

To use the hydrogen-beta filter you will need to thread it onto a 1.25" (#5583) or 2" (#5584) eyepiece that can accept threaded filters. Any Orion eyepiece will work. Simply thread the filter onto the eyepiece barrel until it is finger tight. Then place the eyepiece into the telescope and bring it into focus.

It is recommended to find and center the hydrogen-beta emission nebulae in your eyepiece before adding the filter. This is because the filter will dim stars so greatly that it will be hard to locate the nebula otherwise.

Be aware that the filter imparts a blue-green tint to objects being viewed through it. This is because the filter only transmits light with a wavelength between approximately 475nm to 490nm, which corresponds to blue-green color. Since color cannot typically be seen in nebulae anyway, the bit of added tint should not detract from the view.

## Storage and Cleaning

When not in use, the hydrogen-beta filter should be kept in its plastic case. Given proper care and storage, the filter will last a lifetime.

Any quality optical lens cleaning tissue and optical lens cleaning fluid specifically designed for multi-coated optics can be used to clean the glass surfaces of your filter. Never use regular glass cleaner or cleaning fluid designed for eyeglasses.

Before cleaning with fluid and tissue, blow any loose particles off the surfaces of the filter with a blower bulb or compressed air. Then apply some cleaning fluid to a tissue, never directly on the optics. Wipe the lens gently in a circular motion, then remove any excess fluid with a fresh lens tissue. Oily fingerprints and smudges may be removed using this method. Use caution; rubbing too hard may cause scratches.

The graph to the right shows the typical light transmission through the Orion Hydrogen-Beta filter. Note that the filter only passes visible light with a wavelength between approximately 475 and 490nm. All other wavelengths are essentially blocked. Transmission is greatest at 486nm, which is the hydrogen-beta emission wavelength.

