



Baader News 05/2008 - effective immediately /Product av. from stock

## Baader announces Anti-reflective LRGBC filter-line to complement Baader Narrowband CCD-Emission Line-filters

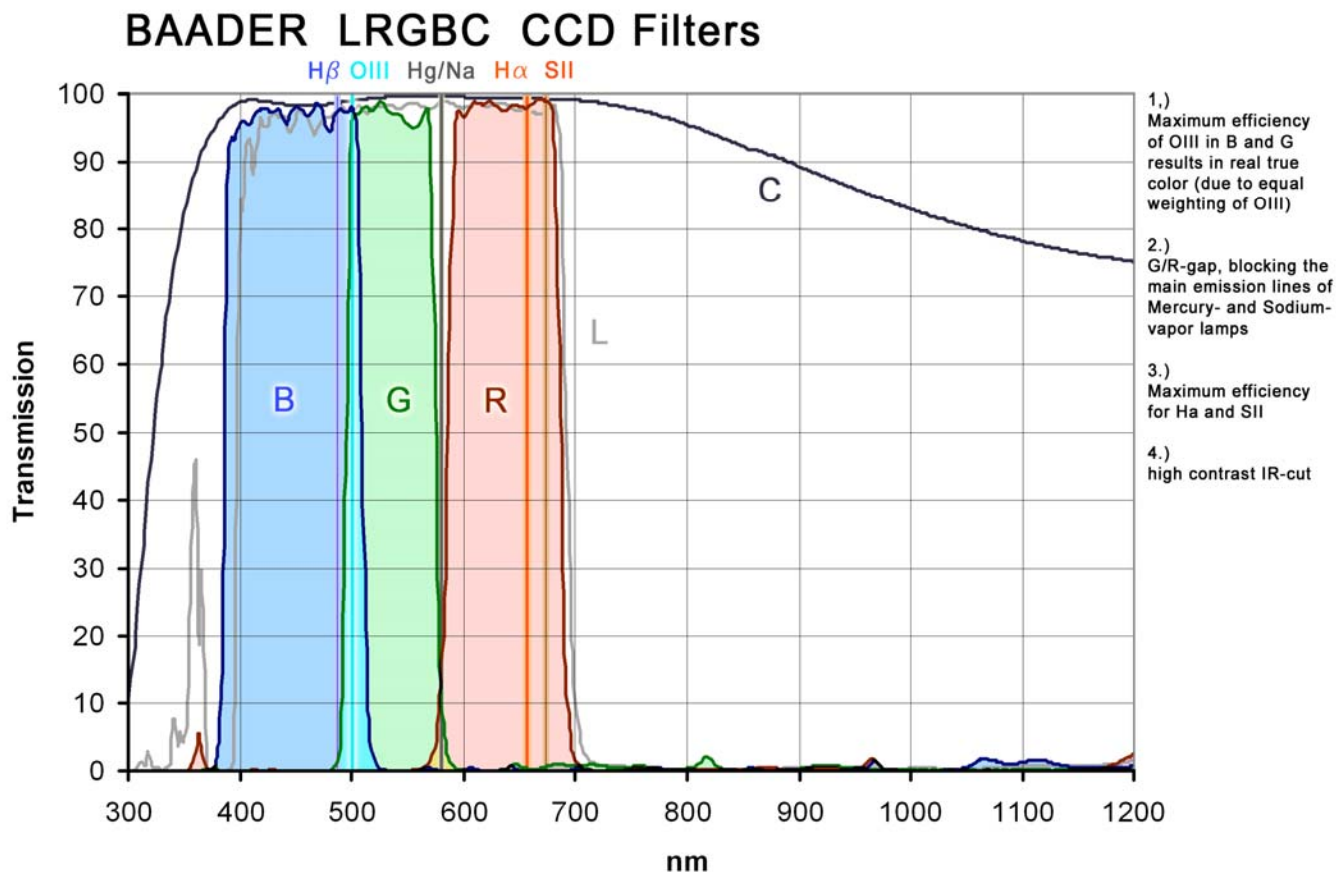
A new line of Baader LRGBC filters now supplements the Baader narrowband emission line filters (H-beta/O III/H-alpha/S II)

With this addition, Baader offers the complete line of LRGBC plus the emission line filters H-alpha / S II / O III (plus H-beta) in unmatched quality grade, all being parfocal and made of precision optically polished glass .

**Baader LRGBC-filters are available in the following sizes:**

- 1 1/4"(w.cell mount)
- 2"(w.cell mount)
- 50.8 mm Diam.(unmounted)
- 50x50 mm Square (unmounted)

Mounted filters feature a glass thickness of 2mm, unmounted filters feature a thickness of 3 mm.



**Design Considerations:** Unlike terrestrial objects, astronomical objects send out light as discrete emission lines. Starlight itself is emitted like from a back body, with the color of each star depending on it's stellar temperature - resulting in a smooth, wide spectrum. In the Sky, there is no such myriad of color nuances - as we observe terrestrially. Accordingly it does not make sense to offer filters aimed for enhancing color shades - by offering low gradient coating slopes and a wide overlap between colors. For RGB-Astro-Filters it is of utmost importance to produce extremely steep transmission slopes for maximum efficiency and highest contrast between the important emission lines, to clearly differentiate between the colors. For the first time it is possible to have the gradients of the coating curves produced in such steepness that the most important emission line (O III) can be doubly weighted for imaging, with both the B- and G-filters including more than 90% brightness of O III - enabling a perfect color balance and collecting every bit of precious energy that this most important DeepSky emission line can supply - while at the same time completely separating the G-filter from the blue H-Beta emission line.

Contrary to former RGB-designs, with the Baader RGBs the G- and R-filters form a very narrow gap but do not overlap almost at all, in order to transmit the R-channel in sufficient width to work for Full-Frame- and Interline-Chips with equal effectivity, but to sharply exclude the spectral area around 580 nanometer which carries the main light polluting emission lines of Mercury and Sodium street lamps. Baader RGBs will produce a darker sky background in polluted skies than other RGBs not excluding the ~580nm emission passband of street lamps.

#### **Mechanical Properties:**

- the only high quality filters - with each individual filter planeoptically polished to 1/4 wave and parfocal.
- Baader LRGB filters are COMPLETELY free from reflections due to an elaborate coating design when compared to competing designs.
- each filter coated separately. Filters are NOT just cut or bored out from a large coated plate
- Baader individual hard coatings do ensure sealed coating edges, impermeable from moisture and environmental forces - bored filters have the coating microcracked all around the edge. Baader sealed edge design will stay sealed and intact forever.
- Baader-filters may be even be boiled in water without water penetrating into the coating at the sides
- Baader-filters feature hard coatings that may be cleaned w. Baader Optical Wonder fluid w/o scratches

#### **Optical Properties:**

- NO REFLECTIONS - when compared to competitive designs
- RGB-imaging allows equal weighting factors for each channel, very important for automated imaging
- Unique filter design for absolute maximum contrast with extremely high gradients, to allow clear differentiation of colors
- O III emission overlaps on B/G-filters with maximum transmission to allow efficient and natural color imaging, better than ever before - R-filter delivers maximum transmission for H-alpha and S II while cutting IR with highest efficiency
- Gap between G/R-filters serves to reduce light pollution from Mercury and Sodium lamps and improves color balance and color separation.

#### **Commercial Highlights:**

- FAIR PRICING - more expensive filters will not offer better performance
- less expensive filters will offer significantly less performance

#### **Interesting Links:**

[http://panther-observatory.com/Baader\\_LRGB.htm](http://panther-observatory.com/Baader_LRGB.htm)  
[http://panther-observatory.com/gallery/deepsky/doc/M20\\_F9.htm](http://panther-observatory.com/gallery/deepsky/doc/M20_F9.htm)  
[http://panther-observatory.com/gallery/deepsky/doc/EtaCar\\_F9.htm](http://panther-observatory.com/gallery/deepsky/doc/EtaCar_F9.htm)

#### **Endorsements from Jim Riffle (ST-2000):**

I was able to get in 4 hours testing last night and processed most images this morning. I like your RGBC filter set. They are as close to 1-1-1 exposure as I can ask for and that is the way I processed the images! The small images are just the 2X binned RGB- combined with 2min each exposure. The bigger images are all LRGB with the C-filter luminance un-binned. What is notable is that the stars are very neutral in color and that I can increase color saturation without artifacts that I saw with other filter combined images. So I like these. There is less green in image than other filters since I color balance the background sky to neutral. I like the way the red nebs show in M83. Had to use Ha+ red to get in past. Last night tests were done in hazier skies and seeing was not very good.



# **BAADER PLANETARIUM**

G  
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