East Valley Astronomy Club (EVAC)

Filters for Deep Sky Objects

Introduction

There are a number of filters available to the astronomer for assistance in observation of deep sky objects (galaxies, globular clusters, open clusters and various nebula). Ultimately the goal of these filters is to increase the contrast between the background and the target object to make it easier to view the details of the object. This is accomplished is by blocking out the light that is not associated with the subject while allowing as much light through the filter of the targeted object. These filters can be classified as three types: Broadband filters, Narrowband (Nebula) filters, and Line Filters (Oxygen III and Hydrogen beta for this discussion).

Filter Type	Deep Sky Objects	Examples
Broadband	Galaxies, Globular Clusters, Open Clusters, Reflection Nebula, Stars	Whirlpool Galaxy (M-51), Hercules Globular Cluster (M-13), Pleiades Open Cluster (M-45)
Narrowband	Emission Nebula, Planetary Nebula, Supernova Remnants	Orion Nebula (M-42), Owl Nebula (M-97), Lagoon Nebula (M-8)
Line (OIII)	Planetary Nebula, some Supernova Remnants	Crab Nebula (M-1), Veil Nebula (NGC-6960)

There are many manufactures that offer various filters. The experience each astronomer has for a given filter can vary from person to person with the various types of equipment and skills each astronomer brings to the table. The East Valley Astronomy Club (EVAC) is offering a filter rental program allowing the astronomer to try many of the brands and types being offered so they can compare these and determine what works best for their unique situation.

For a detailed conversation on factors to consider when purchasing filters check out the "Deep Sky Filters for Visual Observation" (PDF) located here: https://tinyurl.com/VisualFilters-2023

Special Thanks

Special thanks to the following companies for contributions of filters to this program:

- Astronomik: www.astro-shop.com for donations of Astronomik filters.
- Thousand Oaks Optical: for donations of Thousand Oaks Optical filters.

References

- East Valley Astronomy Club: Filters for Observing Deep Sky Objects 2023-05
- Pairie Astronomy Club:
  - Useful Filters for Viewing Deep-Sky Objects
  - Filter Performance Comparison for Some Common Nebula
- Agena AstroProducts: A Guide to Light-Pollution Filters for Visual Astronomy
- Astronomik: Filters for Visual Observation
- Lumicon: Filter Specifications & Uses
- Sky at Night: Best Light Pollution Filters for Telescopes
- Astronomy Online: Best Light Pollution Filters for 2023
- Astronomy Technology Today
  - Astronomik Visual Filters Review Part 1
  - Astronomik Visual Filters Review Part 2

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Filters Summary and Evaluation

It should be noted that this collection of filters does not represent all of the filters currently available in the market today, but it should provide a pretty good idea of what the capabilities of the various types are and how performance can vary from various manufacturers.

Broadband Filters

Ref	Manufacture	Name	Price	Your Rating/Comments
B-01	Baader Planetarium	Moon and Skyglow	$95	
B-02	Astronomik	CLS	$100	
B-03	Orion	SkyGlow	$45	
B-04	Lumicon	Deep-Sky	$140	

Narrowband Filters

Ref	Manufacture	Name	Price	Your Rating/Comments
N-01	Thousand Oaks Optical	LP-2 Broadband	$90	
N-02	Astronomik	UHC	$100	
N-03	DGM	NPB Nebula	$75	
N-04	Orion	UltraBlock	$75	

Single Line Filters

Ref	Manufacture	Name	Price	Your Rating/Comments
S-01	Thousand Oaks Optical	LP3-Oxygen	$90	
S-02	Thousand Oaks Optical	LP4-H-Beta	$90	
S-03	Astronomik	OIII	$90	
S-04	Astronomik	H-beta	$90	

Additional Comments: _____

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