

Deep Space Astrophotography

“My God, it’s full of stars!”

(David Bowman)

Ken Bates & Bonnie Ryder

Typical astrophotography setup

- Specialized equipment
 - Astro tripod & mount, telescope, guide scope, cooled camera, focuser, dew heaters, filters, etc
 - All computer controlled
 - Three camera types:
 - One shot color (OSC) has RGGB Bayer matrix, takes RGB images, may use dual band filter (Ha, Oiii)
 - Mono has no Bayer matrix, uses external L, R, G, B, Ha, Oiii, and Sii filters for each “color”
 - DSLR (Internal filter blocks some Ha signal)
- Different techniques than “normal” photography
 - Multiple long exposures over many nights
 - Typically 2-10 minutes per exposure
 - Images stacked to increase detail and reduce noise
 - Minimum of 2 hours total exposure time, best if 20+ hours



The images

- All shot locally (Black Forest & Pueblo West)
 - All shot from driveway or back patio
- Some RGB, some narrowband (Ha, Sii, Oiii)
- Additional images:
 - <https://bonnieryder.smugmug.com>
 - <http://macbates.smugmug.com>
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