My Astroimaging Equipment

What all the bits and pieces are, why they’re there, and pros and cons

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Tripod and Mount

Celestron Advanced VX

German equatorial goto mount

Pros

- Inexpensive (relatively)
- Lightweight (relatively)
- No rotation (if polar aligned)
- Sturdy tripod

Cons

- Poor tracking accuracy
- Easily buffeted

Optical Tube Assembly

Celestron EdgeHD 8

200mm flat field Schmidt-Cassegrain

Pros

- Compact
- Versatile (native f/10, f/7 with reducer, f/2 with HyperStar)
- 2030mm focal length is good for planets

Cons

- Slow, limited field of view
- Soft images, lack sharpness

Dew Heater Ring

Celestron Dew Heater Ring – 8”

Pros

- Perfect fit
- Always in place
- Built-in thermistor potentially saves power

Cons

- May warp the corrector plate (if too much heat applied)

Dew Heater Controller

Celestron Smart DewHeater Controller 2x

Pros

- Saves power: uses temperature and humidity sensors and thermistor inputs to power heaters only as much needed
- Dovetail mount

Cons

- Expensive
- Only supports two heaters

Dew Heater Cabling

As supplied

Just a necessary evil...

(but cable management could be better!)

Dew Shield

Astrozap Celestron 8” SCT Flexible Dew Shield

Pros

- Reduces dew heater power
- Reduces stray light
- Easy to store

Cons

- Lacks built-in dew heater cable management

Finderscope

Celestron 9x50 finder

Included with OTA

Pros

- Magnification and crosshairs mean accurate targeting

Cons

- Limited field of view
- Have to be a contortionist to use it
- Dews quickly
  (but not a problem in practice)

Guide scope + camera

Celestron StarSense Autoguider

Pros

- Guide scope and camera with plate solving in one package
- No computer needed
- Automates mount alignment

Cons

- Limited focal length reduces accuracy
- Cannot guide near the moon (can be improved with filter)
- Expensive

Guider Dew Heater

WW Astro 15cm dew heater strap for 2” eyepiece

Celestron Thermistor for Smart DewHeater

Pros

- Keeps the guidescope lens dew free
- Could be used with the finderscope instead

Cons

- Not sure the thermistor is doing anything

Deep Sky Imaging Train f/10: small objects (galaxies etc.)

Celestron T-adapter

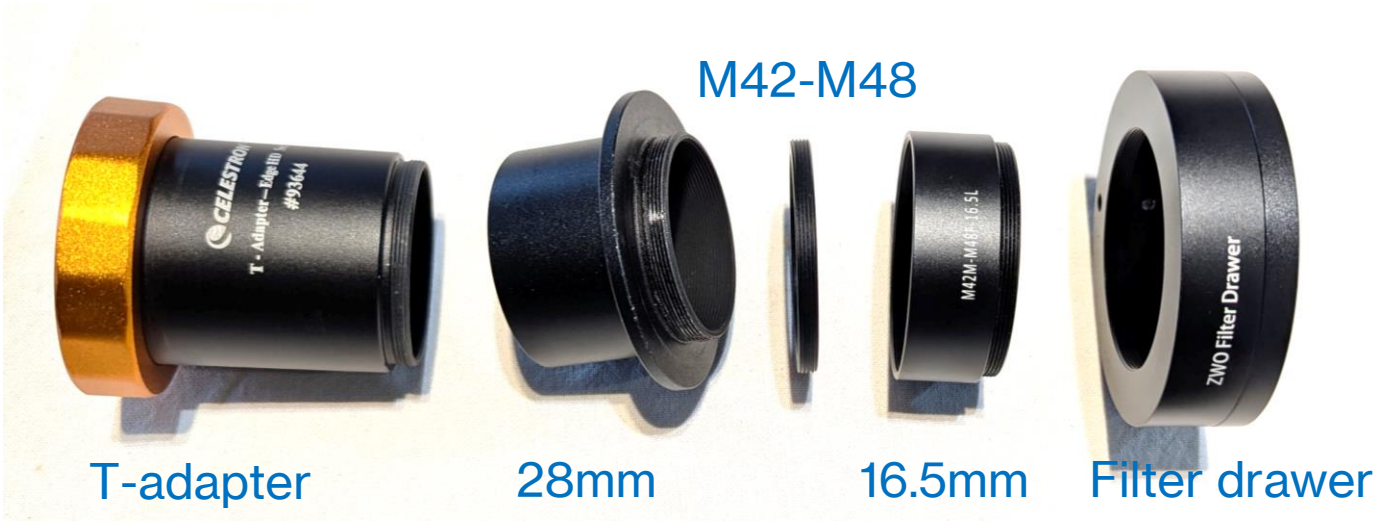
28mm extension tube

M42-M48 adapter ring

16.5mm extension tube

ZWO filter drawer M42

(133mm back focus)



Deep Sky Imaging Train f/7: bigger objects (nebulae)

Celestron 0.7x reducer lens

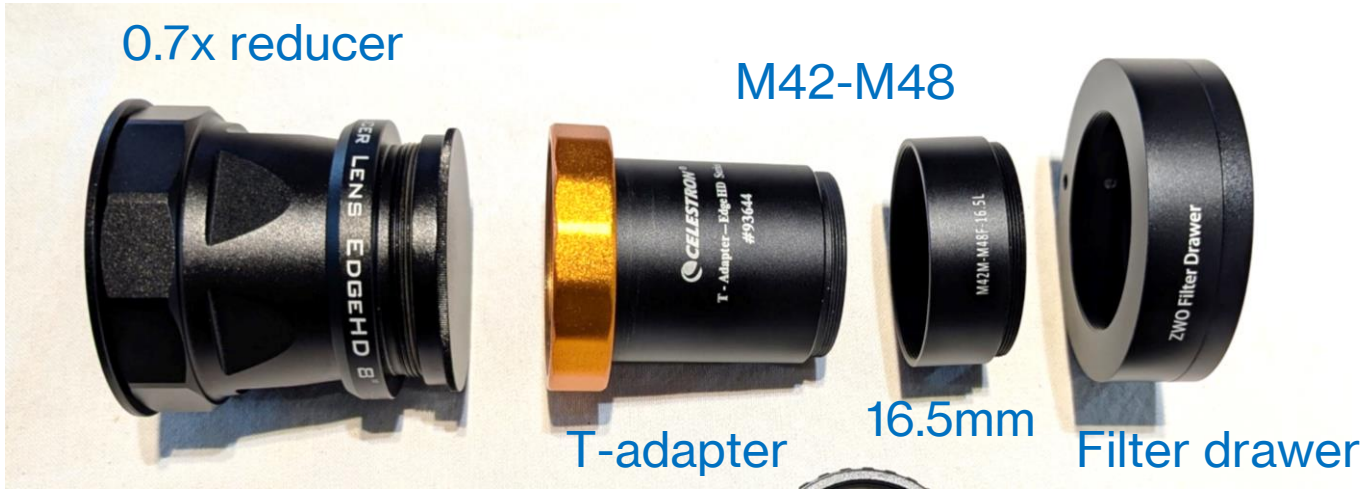
Celestron T-adapter

M42-M48 adapter ring

16.5mm extension tube

ZWO filter drawer M42

(105mm back focus)



0.7x Focal Reducer

Celestron .7x reducer for EdgeHD 8

Pros

- Flat field with EdgeHD
- 43% wider field of view
- f/7 = 2 x faster than f/10

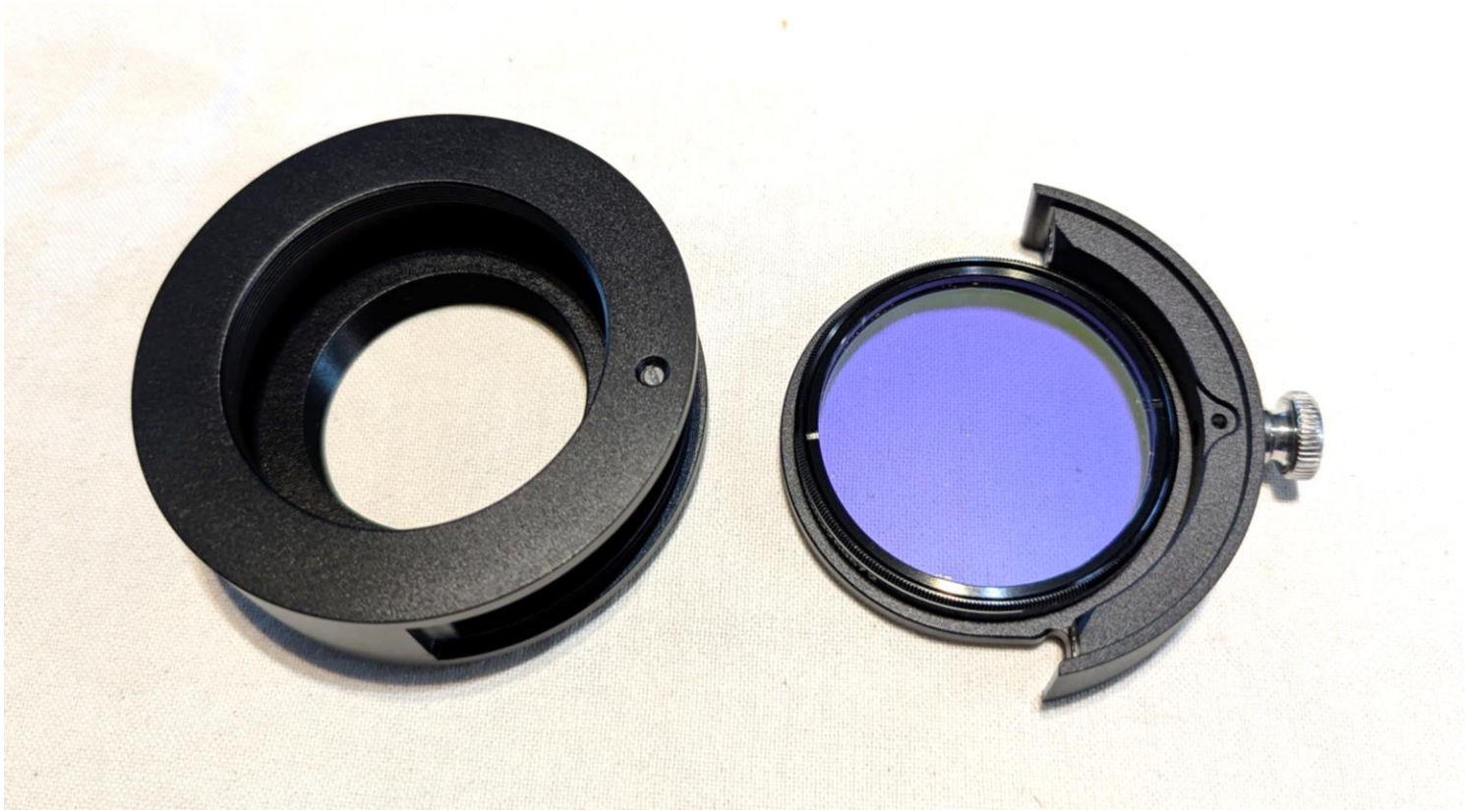
Cons

- Expensive
  (compared with common
  0.63x SCT reducer)

Filter

ZWO Filter Drawer M42

Optolong L-Pro 2” filter



Pros

- Easy to setup
- No power needed
- Easy to change filter

Cons

- Filter must be changed manually

Camera

ZWO ASI2600MC Pro

One shot colour

Pros

- Cooled (low thermal noise)
- Low readout noise
- Zero amp glow
- APS-C size (wide field of view)
- 16-bit ADC (high dynamic range)

Cons

- Needs separate power
- Less effective resolution than a mono camera
- Expensive

Planetary Imaging Train f/10: bigger objects (e.g. Jupiter + moons)

ZWO ASI662MC camera

IR cut filter
(might prefer IR pass for detail)

1.25” visual back

1.25” nosepiece

Spacers for back focus
(less important with small sensor)

Planetary Imaging Train f/20: small objects (e.g. Mars)

ZWO ASI662MC camera

Baader VIP Modular Apochromatic Barlow 2x

IR cut filter
(might prefer IR pass for detail)

1.25” visual back

Battery

Rovin MB3767

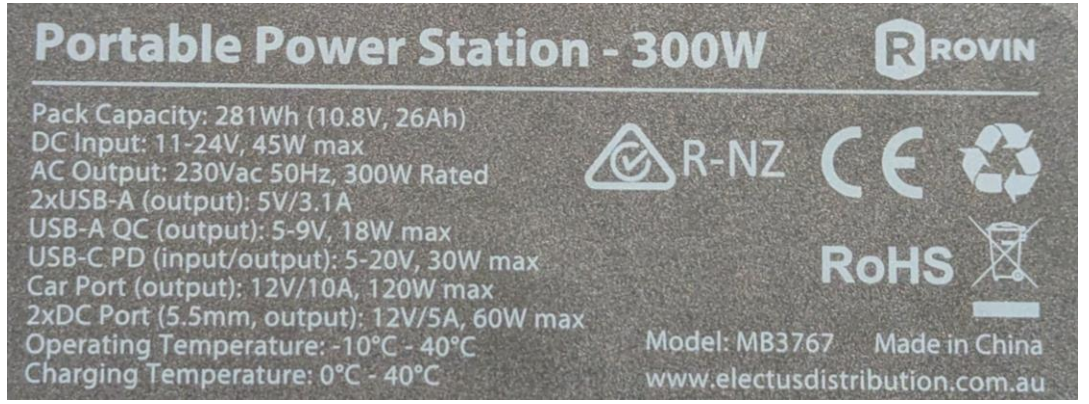
280Wh Li-Ion

Pros

- Lightweight
- 2 x 12V (mount and camera)
- 230V AC (laptop)
- USB (light panel)

Cons

- Only lasts ~6 hrs on a dewy night



Laptop

Just an old Asus...

USB connections for:

- Mount control
  (CPWI)
- Capture
  (ASI Studio / ASICap / ASIImg)
- (optionally) view guide stars

Pros:

- Works well

Cons:

- Need to leave laptop connected
  (no remote access)
- Need 2 – 3 USB cables
- Limited storage
- Wonky touchpad!

Putting it all together

Pros:

- When it works, I'm generally happy with what I'm getting out of it now
- Generally fun to use, including visual

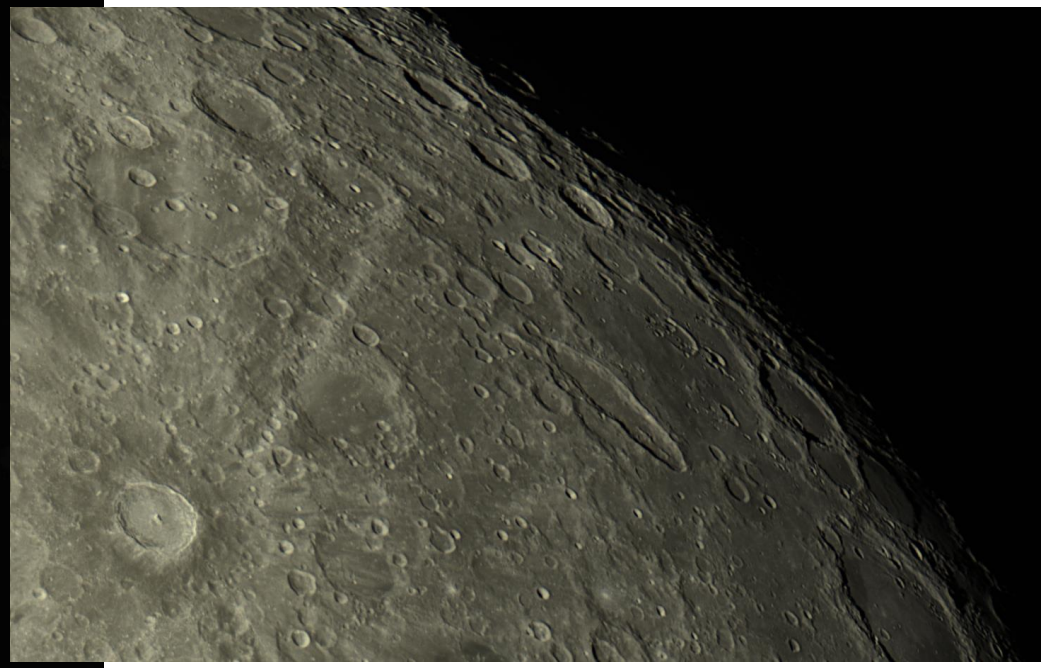
Cons:

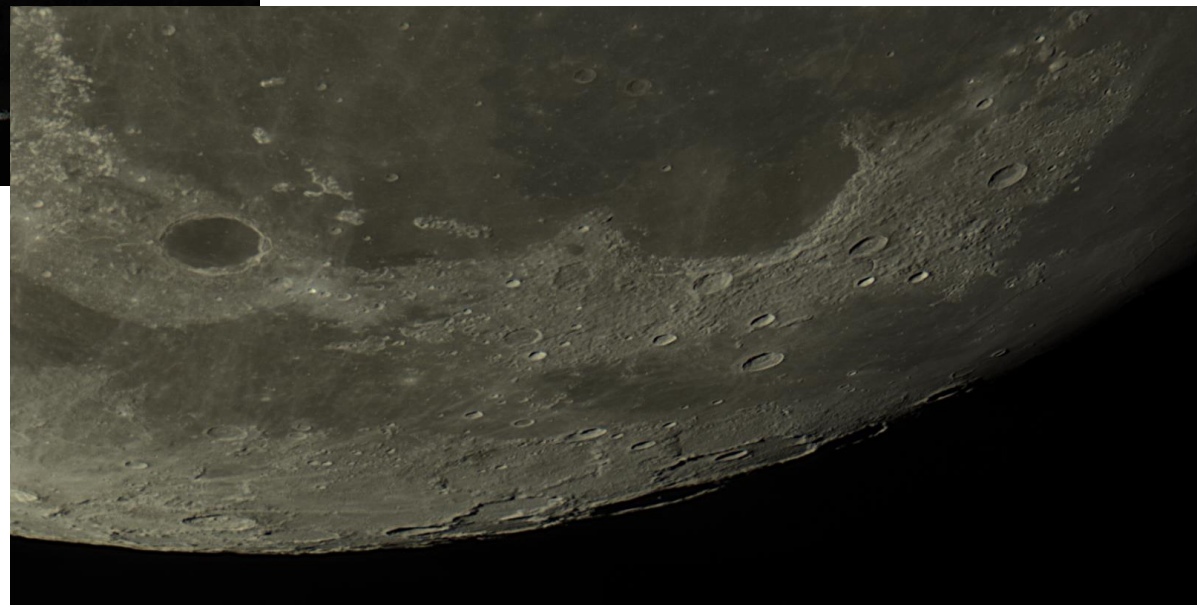
- Doesn't do everything well
- Tracking is not great
- Takes an hour to setup and align
- A bit heavy
- More expensive than I'd expected...

What can it do?

Planetary / Lunar

(Reasonable)

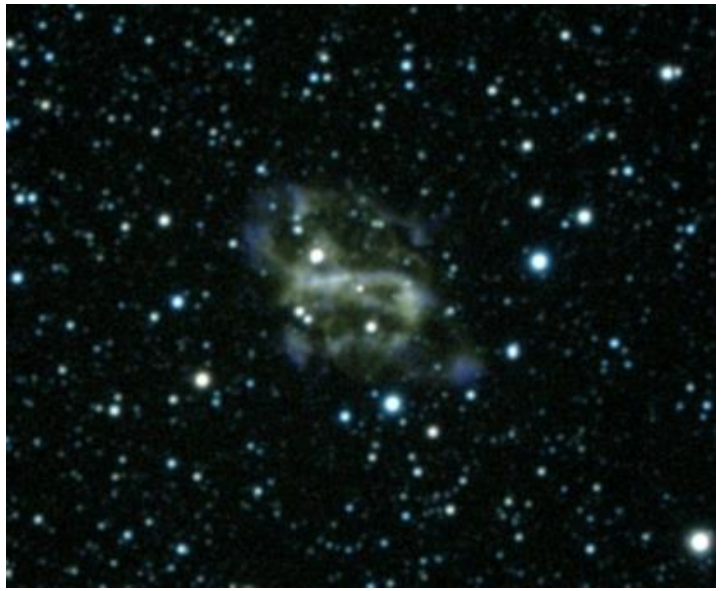




What can it do?

Nebulae

(Not so good,
but improving...)



NGC 5189

Carina

What can it do?

Globs and Galaxies
(Not too bad...)