Amateur Telescope Making

...or how to make your own telescope at home

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What is Amateur Telescope Making?

Amateur Telescope Making, or ATM, is a hobby taken by people that have an interest in astronomic observation and enjoy building telescopes.[1]

ATM can range from just assembling the individually bought components to actually fabricate some or all of the components of a telescope.

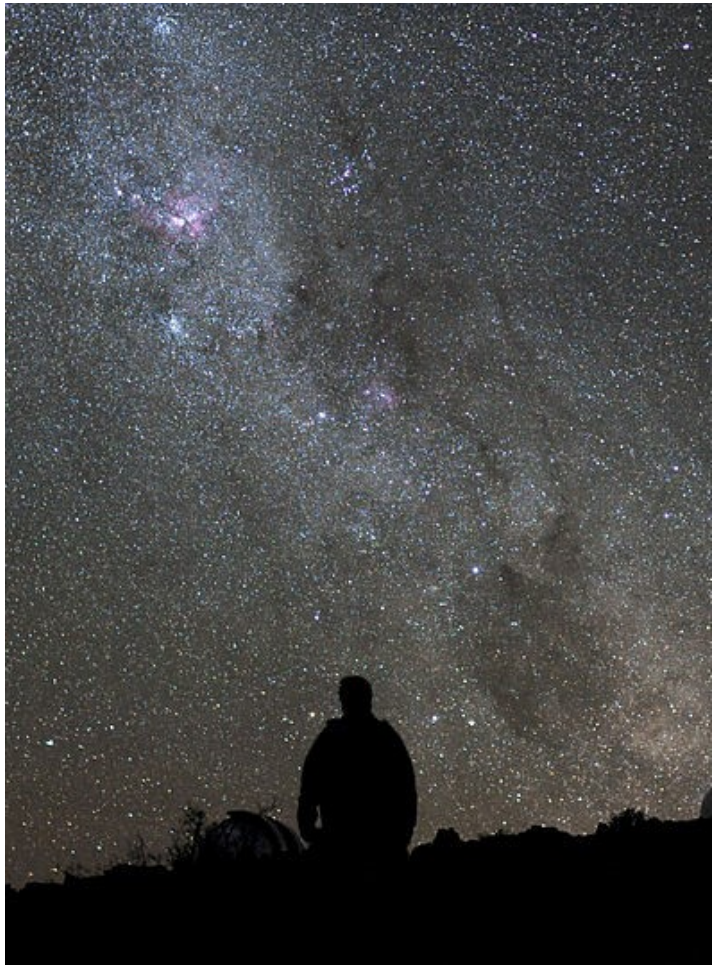
The most common type of telescope made by hobbyists is the so called Newtonian reflector (invented by Sir Isaac Newton).[2]

[1] https://en.wikipedia.org/wiki/Amateur_telescope_making

[2] https://en.wikipedia.org/wiki/Newtonian_telescope

My personal motivation for ATM

One time by chance a few years ago, I had the opportunity to look up at the night sky in Alentejo's countryside, in southern Portugal.
The combination of very low light pollution and clear sky provided for a very distinctive view of the Milky Way.
I had some interest in astronomy in general, but that event was what sparked the beggining of my interest in astronomical observation and ended up in deciding to build a telescope myself.



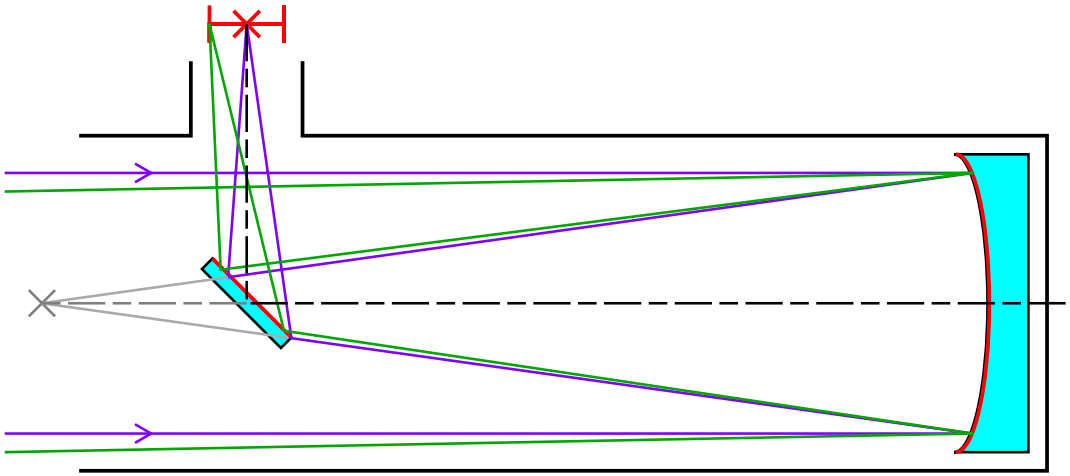
Not me!

What I'm working on?

I'm building a Newtonian reflector telescope and I'm making the main mirror myself.
It has a 200mm diameter main mirror and a desired goal of a focal length of 1200mm.
Reasons:

- It is the easiest type of telescope to make if one is also making the main optics.
- For a certain cost, it gets you the biggest size optics.
- A 200mm main mirror with 1200mm focal lenght is one of the most common configurations as a compromise between portability and light collection capability.
- Provided you make your own tools, the mirror's optical quality will only be limited by your own time and pacience (or lack thereof).

The Newtonian Reflector telescope



Newtonian telescope

The main components of a Newtonian reflector telescope are the main mirror[3](right, blue), the diagonal mirror (left, blue), and the eyepiece[4](opening at the top).
Incoming light comes from the top of the telescope (left), iluminates the main mirror, and is reflected back to the eyepiece by the diagonal mirror.

[3] https://en.wikipedia.org/wiki/Primary_mirror
[4] https://en.wikipedia.org/wiki/Eyepiece

Making the main mirror

The process of mirror making is comprised of several steps.

- Coarse grinding to obtain an approximation of the desired curce
- Fine grinding...

About the author

My name is Nuno and ...

The end

Thank you!