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]

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[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.
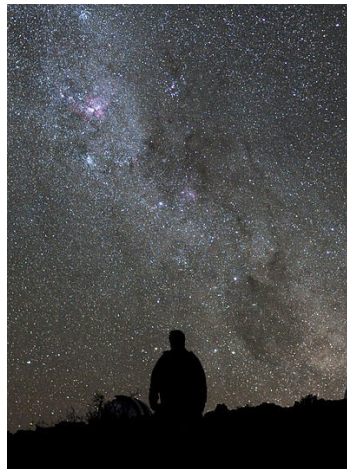

Figure: Not me!
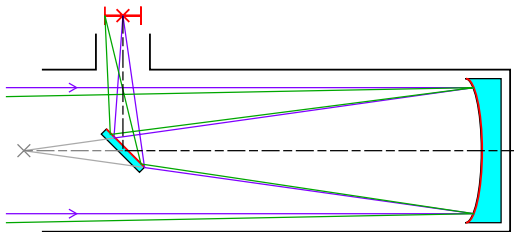
The Newtonian Reflector telescope

Figure: 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

My own telescope

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.

Making the main mirror

My name is Nuno and ...

About the author

My name is Nuno and ...

The end

Thank you!