I have a degree which dates back to the 90s in astronomy, so you’d think I’m well qualified to write speculative fiction? Well, it helps, but I still find there are lots that I need to research.

I’ve chosen to write hard science fiction (I need to remember that no-one put a gun to my head to do it), which means trying to keep the science as authentic as possible. That said, I have taken the odd liberty for dramatic purposes and general world-building.

Here are just some of the items I’ve had to down tools and research over the book series,

Is it possible to grow plants in Lunar soil?

What’s the composition of the Moon, what elements are abundant, what elements are tricky?

What’s the history of food in space?

Is having your period in space substantially different?

How does IVF work?

What kind of blood types can children inherit from their parents?

How do I simulate a nuclear explosion on Earth?

How do spacesuits work?

How fast did Lunar rovers go? How fast could you drive on the Moon given it is off-road, the surface is powdery and the gravity lower?

What does the Moon smell like?

Would swimming in a colony on the Moon feel easier?

How well could a chicken fly in one sixth gravity?

Can dogs be vegetarian?

Here is a list of some of my favourite tools and sites for helping me plan.

I give you… the Moon

I assume here I don’t need to introduce you to Google for general questions, but did you know there’s a Google Moon website? Sadly, one of my issues is I write a lot about my colony on the South Pole, which doesn’t have the best maps!

<https://www.google.com/moon/>

The Lunar Phase today

The Melody Harper series uses a series of journal entries, and for some I need to be mindful of the Lunar phase to work out if an area is in daylight of nighttime (remembering a Lunar day is 28 Earth days).

<https://www.timeanddate.com/calendar/?year=2083>

Cosmic Train Schedule

This site has been really helpful! It gives launch windows between different planets for the next hundred years, and has helped me plan out key events and when items would get critical

<http://clowder.net/hop/railroad/sched.html>

Nuke Map

Okay – this got dark fast. But sometimes you need to know what the blast radius effect is of dropping a nuke on a certain location

https://nuclearsecrecy.com/nukemap/

YouTube

There are a number of really great commentators on space flights out there, and here is a list of my favourites. Many of them are looking at historical missions, which I find helpful using what’s worked in the past to extrapolate to the future.

Curious Droid – I know it’s wrong to have a favourite, but Paul’s channel is my primary go-to. He’s very laid back, and I love his work. Like Amy below, focuses primarily on historical missions. Check out his video on Salyut 7 (a particular fave)

<https://www.youtube.com/channel/UC726J5A0LLFRxQ0SZqr2mYQ>

Vintage Space – Amy focuses mainly on historical missions. As a particular fave, check out her video on Apollo Applications planned Venus flyby that never happened.

[Amy has a certain influence on Mary in Melody Harper, who is known as ‘Space Girl’ and is a science commentator]

<https://www.youtube.com/vintagespace>

Scott Manley

<https://www.youtube.com/c/szyzyg>

Very similar to both Curious Droid and Vintage Space, I find Scott focuses a little more on current events in space.

Isaac Arthur

focuses mainly on speculative technology (his channel name is a merge of Isaac Asimov and Arthur C. Clarke btw). Isaac has a speech impediment, and good humouredly refers to himself as talking like a sci-fi Elmer Fudd, so please be kind.

<https://www.youtube.com/channel/UCZFipeZtQM5CKUjx6grh54g>

Homemade Documentaries – has a great series on remastered Apollo missions, which I’ve devoured. Especially around Lunar Rover excursions.

https://www.youtube.com/user/MrJJJacksonTyler

Kurzgesagt

The crazy animated science show that answers a lot of questions you didn’t think you needed answers on. I recommend the video on nuking the Moon (possible spoilers though).

<https://www.youtube.com/channel/UCsXVk37bltHxD1rDPwtNM8Q>

NASA

Where would we be without this and the other wonderful space organisations?

I’ve used some of the photos from their pages on this site (because I obviously can’t go out and take those pictures myself)

<https://www.nasa.gov/mission_pages/LRO/images/index.html>