

ooo - Introduction

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So, you want to build a planet?

Good luck with that. See you around.

Had you going there, didn't I? 😊

What This Is About

Writers, gamers, students, educators (fill in the blank) sometimes have need to create a planet. Oftentimes, they just rename Earth and get on with it (which is fine, don't get me wrong). But, if you want to tweak the settings (does this knob go all the way up to *eleven?*), you need some background and some tools and skills to help out.

That's what WorldCrafting101 is intended to be.

This is not an astrophysics course, or a cosmology seminar, or anything of the kind. I am a college history professor, aspiring writer, and science nerd from *way back*, who found that a lot of the more hands-on, DIY aspects of designing planets, moons, stars, etc. were either utterly lacking, assumed *way* too much prior knowledge, or required skills in maths that I don't possess and don't have time to acquire.

Sidebar: There is *no calculus here*. There's algebra (some of it a bit gnarly), some geometry, trigonometry, a *little* statistics, but all of it completely accessible to anyone with a basic education background. And, anyway, whenever I introduce an equation, I explain it fully, what all the variables are, where they come from, why they're there, and *how you figure out what values to put in them for your own work*.

Say What? A Note About Terminology

There's a lot of terminology in this endeavor (*inertial frame*, *escape velocity*, *main sequence lifetime*, etc.), and -- I admit, I've invented some terminology myself for concepts or parameters that don't have an official one, or whose official name is more confusing than helpful. Such new words are technically called *neologisms* (literally, "new words"), and they're a habit of mine. Don't worry, though; I'll clarify each and every one of them as we encounter them.

Science Adjacent

Adjacent: next to, nearby, close to, *almost*. Pretty much everything here is based on hard science (and I'll tell you if something isn't), but some parts of the science (especially exoplanet classification) is still catching up with the needs of speculation and entertainment. (I don't know about you, but I'm holding my breath for the

day the International Astronomical Union -- yes, the ones who slapped down Pluto -- adopt "Class M" to describe planets with nitrogen-oxygen atmospheres.) That's where a lot of the neologisms will come into play.

The point, here, is that this is not intended to be an accurate description of the actual universe (that's what cosmology, astronomy, etc. are there for). This is a system designed to be *based on* hard science, but flexible enough for speculative and fictive uses. If you don't like a shortcut or an embellishment I've included, ignore it.

Because I Say So

Which brings me to a little Latin motto I like to keep on hand for those times when the scenario needs something science says a firm "no" to: *Sed ego dico*. It literally means, "Because I say," and it is your best friend and strongest ally. Do you design 90% real-world accurate and then pronounce *sed ego dico* over it and keep going. Hey, if your players or readers want to stop and take the time to do the math to "prove you wrong", it's their time to take. Jus' sayin'.

One other little Latin gem: *Mundus tuum est*: "It's your world". If you decide you don't have any real use for any of this because you're writing fantasy and hard science has no place, then *Sed phantasiae*: "because ... fantasy" can be your rallying cry, and all power to you.

Shall we get started?