

UNITS AND TIME



Hello. I wish to provide, for you, the simple acknowledgement of galactic standards for which you will be dealing with in the everyday events of your life.

First off, we need to go over time. Time can be a tricky thing when one boils down the physics of the galaxy. However, for a little history, we owe our system of measurements for time and distance to the Fox, and the Human, races. This system has been adopted by the Government Council of Benthium, as the standard for all Central Core sectors, as well as the Intermediate territories.

Years: Referred to as *Standard Years*. The standard for a year roughly four hundred standard days. In example, if one says they are twenty-six standard years old, for those accustomed to Earth time, they would be about twenty-eight and a half years old. The standard year has been excepted as the basis for calculating years among the multitudes of worlds throughout the galaxy, and is based on the mean solar years of both Earth, and Ciron. Earth having a 365 day year, and Ciron having a 435 day year. A Standard Day is simply a Standard Year broken into 400 periods. The day is roughly the same for about half the Central Core habitable planets, but a standard had to be set in order to do business and make progress. I'll explain it in another way, next.

Time: Time is a tricky subject, more so than the years problem. When one is on a planet, the size of the planet, rotation speed and orbit, all play factors in what your time is. But what if your on a spaceship drifting through void? In efforts to fix this problem, starship time is run military style, with twenty-four hours in a day. Since travelers rarely visit two planetoids with the same time, this allows space traffic to run on it's own schedule regardless of the worlds around it. This also applies to space stations, research outposts and non-planetary bases, such as mining facilities on moons and asteroids. This set time has become so standardized, that it is the basis for critical time management. This time standard is know as *Standard Spatial Time*, SST.

Time, Planet-side, can vary according to a set rule. Since no planet runs the exact same orbit as another, it can take anywhere from less to more than a standard year to complete its' revolution. Depending on the size and type of star, and any physical features of the system, a planet can have exactly the same habitable conditions as Earth or Ciron, yet have a very long or very short orbital period. As such, the date of a particular planet runs according to its' own system and no other. When working between two different locations, the difference is calculated in both times for both parties to concur. Years are held respective to the standard year but are only for census, economy and external matters. Every four hundred days, a year is marked in respect to the SST. This is regardless of the current time situation and is used purely to set a stopping point for various things from aging to the economy. Every planet's government(s) keeps SST time in order to set pace with other locations. To get a quick view of things, it is like having two times, one real to the location and one real to everything. In reality,

you will almost always deal in standard time, but planetary holidays and such will be carried out on a local timescale.

Lastly, months. There exists no system of months for SST time. Instead, the four hundred day year has been divided into sixteen sections called *Marks*. 25 standard days to a Mark. Marks can be written in two ways. By hand, they are often written using a system called, Marks. Hence the name. Though not originally developed for the standard year, Marks closely resemble the Roman Numeric system, up to number twenty. The other way of writing Marks is used primarily by computers who run more efficiently on numbers than text and graphics. For example, let's say it's the eighth Mark, day twenty-three.

Using *Marks*: VIII, XXIII

Using Computers: 8.23

If you use the notation: 8/23, as I'm sure you are used to, people will think you are referring to your local calendar, so try to avoid doing this.

Distances: This is where things become a little more relaxing. Despite all efforts, many creatures still cling to measurements, such as feet, inches and miles. This has grown so far that some manufacturers deal only in these borders. A good portion of the galaxy's creatures, however, deal in standardized measurements, such as kilometers, centimeters, etc.

The standard system of measurements for both Human measurements, (feet, inches, miles), and Fox, (which has always been base ten, for kilometers, meters, etc.) is only narrowly different from what you know, so no real conversion in thinking is needed. The only trouble comes when you are doing stellar travel.

A parsec, for those of you unaccustomed to the term, is based on an AU, or Astronomical Unit. An AU is the distance from the Earth, to the Earth's Sun. So, a parsec is the distance at which one AU subtends to one arc-second. Sorry if that is confusing.

That being said, an Earth parsec is obsolete, seeing as no system has the same AU as another.

Let me give you some raw data for you to think about, however.

1 Earth parsec is roughly = 3.0857×10^{16} meters, or 3.2616 light-years.

A standard parsec was set to 3.1×10^{16} meters, which comes out to 31,000,000,000,000.0 meters.

Now, to get a sense of scale, the nearest star to Earth was 4 Earth light-years away. Earth was relatively isolated, but not too much.

A standard parsec makes up the basis for star travel, and is kind of like the meter or foot in measurement systems. Despite what you think, it being such a huge distance, it's nothing compared to the awesome size of the galaxy.



(Note from the author:)

I would like to note that the point of definition for a second has been causing a little bit of controversy here. I will state that a second has been defined by the vibrations of a cesium atom, or the use of atomic-fountain clocks, (which I would be happy to discuss in the forum), which would derive a universal "second" time-period. This, of course, is only due to the fact that the central government of the Central Core, has long since laid down that such measurements will be performed using the said atom.

Also, I will note that a standard light-year is based upon the same time standards as everything else in the galaxy. An Earth light-year is based on the assumption of a 365 day year, while a standard year is 400 days. The difference, while insignificant on a galaxy scale, does have its effects. One standard light-year is approximately 1.09 Earth light-years. It's almost a tenth of a light-year difference.



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