Astrogation

Astrogation is the science of navigating spacecraft through realspace and hyperspace.

Two tasks defines astrogation: (1) determining present location, and (2) planning a safe and reliable means of reaching a destination. The former is performed by those skilled in astrocartography familiar with star patterns or automata. Astronav charts is used to map areas of space and could be used to plot courses through hyperspace. The plotting of a course is generally handled exclusively by astromech droids or navigation computers. The knowledge of ones whereabouts in space and other celestial objects were vital to navigating hyperspace, as incorrectly calculated jumps could mean a ship could collide with a planet, star, or other body.

Because of the danger of mass shadows (not to mention interdicting pirates), hyperspace courses has to be plotted with great caution. Very few beings other than powerful Jedi could react while traveling at many times the speed of light, and in any case conventional sensors and communicators can not receive information faster than lightspeed. Even subspace sensors, which operates along an alternate dimension and propagate faster than light, can not keep up with the vast speeds of hyperspace travel. Thus, precise advance knowledge of the celestial bodies along the way is necessary in the form of navigational computers. These devices, also known as nav comps or navicomputers by spacers, contaizes detailed star charts and the ability to make astronavigational calculations quickly from one point to another before a jump is taken.

Most star travelers uses preexisting, well-known trade routes. This guarantees that interdiction by pirates and celestial bodies is kept to a minimum, help is close by in the case of a malfunction, and travel times can be reasonably predicted.

As a generanl rule, data for a particular route through hyperspace is available to anyone with access to the HoloNet - allhough that data might be out of dale if the route in question is not frequently traveled by other ships. For example, the data for moving from Tatooine to Coruscant is likely to be very fresh. since ships make this trip on a daily or almost daily basis. On the other hand, the data for moving between two more isolated locations (such as Phindar and Umgul) is liable to be severely out of date because no ship has made this particular trip for several weeks or months. When traveling on hyperlanes the quality of data is considered to be no more than a couple of days old.

Quality of Data	Astrogation Base Difficulty
One day old or less	Easy
More than one day old upp to one week old	Moderate
More than one week old upp to one month old	Difficult
More than one month old	Very Difficult
No data available	Heroic
When traveling on hyperlanes the quality of data is considered to be no more than a couple of days old.	

Traveling From:	Deep Core	Core	Colonies	Inner Rim	Expansion	Mid Rim	Outer Rim	Wild	Unknown
Deep Core	+10	+5	+3	+2	+1	+3	+5	+10	+20
Core Worlds	+5	-5	-4	-3	-2	-1	+0	+10	+25
Colonies	+5	-4	-3	-2	-1	+0	+2	+15	+20
Inner Rim	+5	-3	-2	-1	+0	+2	+3	+10	+15
Expansion Region	+10	-2	-1	+0	+0	-1	-2	+10	+15
Mid Rim	+10	+2	+1	+0	+1	-2	-1	+7	+12
Outer Rim	+15	+3	+2	+1	+1	+0	+1	+6	+10
Wild Space	+20	+18	+15	+12	+10	+7	+3	+0	+25
Unknown Regions	+25	+20	+15	+10	+5	+4	+3	+2	+1

Traveling To (Difficulty Modifier)

Navigation Computer

A navigation computer, also known as an astrogation computer, navicomputer, navicomp, or nav computer, was a device that made the careful calculations necessary to navigate through hyperspace. Navicomputers would calculate data like the exact destination, the quickest and safest route to it, and the number of hyperspace jumps necessary. Most starships carried a nav computer of some sort, though some starfighters made do with only the astrogation buffer of an astromech droid. Smaller ships often possessed limited nav computers, capable of containing data for only a small number of jumps; larger ships had large dedicated nav computers capable of storing coordinates for nearly any foreseeable destination. Some nav computers were handheld. Smugglers tended to voice-print their navicomputers to hide where their ship had been.

All navicomputers contained the Galactic coordinates for all star systems in the known galaxy.

Situation / Circumstance	Difficulty Modifier
No nav computer or astromech used	+20
Nav Computer	-5
Astromech droid used [a]	-3
Hasty Entry	Double difficulty
Lightly damaged ship	+5
Heavily damaged ship	+10
Each extra hour taken on journey	-1
Each hour saved on journey [b]	+1
No HoloNet access or campaign set in the Rebellion Era.	+5
Astrogating using Hyperspace Beacons [c] (Old Republic Era)	-3

[a] Does not apply if ship also has a nav computer.
[b] One can only cut the time by one forth at best.
[c] When trying to download information from a hyperspace beacon the GM rolls one dice. If the roll turns up "1", the beacon is broken or off line.

Astro Droids

Astromech droids, or commonly referred to as Astro droids, is a type of droid that serve as automated mechanics, performing a variety of repair duties and often serve as adjuncts or substitutes for nav computers on smaller starships. They are also able to use the mainframe of a larger ship to their advantage. A lot of starfighters rely on astromech co-pilots.

An astromech droid's primary purpose on smaller ships such as starfighters is as a backup or replacement for a nav computer; however, due to the limitations of each unit's astrogation buffer, an astromech can only hold a set number of hyperspace coordinates. They also provide in-flight maintenance and repair, and performes a number of routine functions so the pilot could focus on flying the ship.

Hyperspace travel times

While generally determined by the distance between two planets, hyperspace travel times between two locations seemingly close to one another could be drastically extended by the need to navigate around stellar hazards, such as asteroid fields and nebulae.

An example of this is the journey from Coruscant to Alderaan. In terms of distance, Alderaan was situated close to Coruscant—the former at approximately 5,000 light years from the Core, the latter at approximately 10,000. However, during the Imperial era, such a journey required roughly sixteen hours of travel due to a section of the route passing through a part of the largely-uncharted Deep Core, where navigation was difficult as a result of the gravity wells produced by the congregation of stars. Ironically, then, it was actually faster to get from Tatooine to Alderaan on the other side of the galaxy. In some cases, intragalactic travels could take days, depending on the distance between two planets and the obstacles between.

	Traveling To (Base Travel Time in Hours)								
Traveling From:	**Deep Core**	**Core**	**Colonies**	**Inner Rim**	**Expansion**	**Mid Rim**	**Outer Rim**	**Wild**	**Unknown**
Deep Core	12	18	24	48	72	96	120	144	168
Core Worlds	24	6	24	36	60	84	96	120	144
Colonies	48	24	12	24	48	72	96	120	96
Inner Rim	72	36	24	18	24	48	72	96	72
Expansion Region	96	60	48	24	24	24	48	72	96
Mid Rim	120	84	72	48	24	36	24	48	72
Outer Rim	144	96	96	72	48	24	48	24	60
Wild Space	168	120	120	96	72	48	24	12	120
Unknown Regions	192	144	96	72	60	72	96	120	48

Possible Modifiers	Effect on Journey
Hyperdrive other than x1 (x0.5, x2, x5, x10, etc.) [a]	Travel time = base travel time x hyperdrive multiplier
Journey within same quadrant [b]	Travel time halved
Astrogate roll result: [c]	
Failure by 10 or more	Roll on Astrogation Mishap Table pg 119.
Failure by 5-9	Jump occurs; add 2D hours to travel time
Failure by 1-4	Jump occurs; add 1D hours to travel time
Success by 1-4	Jump occurs; no time modifier
Success by 5-9	Jump occurs; subtract 1D hours to travel time [d]
Success by 10 or more	Jump occurs; subtract 2D hours to travel time [d]

[a] Apply this modifier first. [b] Apply this modifier second. [c] Apply this third.
[d] Travel time cannot be reduced to less then one forth of the base travel time.