

Over 35 years ago, there was an article in Journal No. 10, called "A referee's guide to planet building" by the fabulous, furry, Keith Brothers, which impressed me immensely. In those days, when having a computer, was nothing ordinary, I was the proud owner of a SHARP MZ-80K with dual floppy discs and a 7-dot matrix printer. An amazing 48K of memory was at my disposal, with 16K left after the BASIC language was loaded.

This article impressed me so much, that I started to write a program that should do what the article did.

Many, many years, many operating systems, and many versions later, I am still working on that software that does what the Keith Brothers did in that article. There is software available on the net that is very good in translating those dreary UPP numbers into long tables, but I never found something that "explained" a world. So I had to write it myself.

This software tells a story about the world you are on.

It starts with a description of your first impression of the planet once you open the airlock. Basically the software calculates an orbit around the sun that will give the world a temperature that will make the world hospitable for humans. Then it generates the conditions the player will see and feel when they open the airlock (assumption is for hexrow 4)

**In this case the world is Cogri, Spinward Marches, Lanth Subsector. The first paragraph is what you see and feel when you leave the ship. It is meant for the players, so they get an impression that they are not in Kansas anymore.**

2419 Cogri CA6A643-9 Ni Oc Ri Wa

#### FIRST IMPRESSIONS WHEN YOU OPEN THE AIRLOCK:

A gigantic red Sun is mostly concealed by overcast. There is no wind. The mornings are very, very cold, the nights are very, very cold, and during the day it is very cold. The atmospheric pressure is comparable to earth conditions in a depth of 300 m. The humidity is extremely high. Gravity is high. A standard sized human (80kg) will weigh about 102 kg.

**This is followed by a description of the sun and the solar system, the composition of the planet's surface, as well as the physical data.**

#### THE SOLAR SYSTEM, PLANETARY DATA:

Cogri's sun is a red Star (M1 V). It has a Mass of .489 and a Luminosity of .45. Its perceived size is 244% SOL. The system has 8 worlds, 2 of which are gas giants and 3 asteroid belts. Cogri circles its sun in Orbit 0, at a distance of 29.92 Million kilometers, one year has a duration of 44.06 planetary days of 25.44 hours, each. The planetary axis is tilted 18°. The majority of Cogri's surface is covered by water, with the exception of one major Isle, 10 Archipelagos.

Density	:	1.02 Molten Core
Gravity	:	1.27
Seismic Factor	:	5.65
Air pressure	:	1.12 Atm, -300 m, Standard
Weather factor	:	21%-2.0
Energy absorption	:	62%
Native life	:	4

**This is followed by information about the government and settlements.**

#### GOVERNMENT, ECONOMIC AND CULTURAL INFORMATION:

Cogri has a population of 4.436 Million sentients. The world's government is a representative Democracy. The world is governed by elected politicians. One to three powerful individuals control the functions of the government. The authority is divided in 2-ways. The Executive and Judicial branches are the representative authorities, Legislative is secondary.

Cogri has 3 huge Cities with Millions of Inhabitants, 12 large Cities with 100K+ Inhabitants, 20 Cities with 10K+ Inhabitants, 33 small Cities with thousands of Inhabitants, 36 Outposts with hundreds of Inhabitants.

**Next comes an evaluation of the trade codes and the new T5 variables.**

Cogri is a non-industrial, rich, water, world of average importance, with abundant resources and a small labor force as well as a very weak infrastructure. The overall efficiency is mediocre. The world generates 260 Resource units, which puts it in the 2% Range. The Homogeneity Rating is 40%, Acceptance reaches 43%, Strangeness is 20%, Symbols = 6.

**Next part is the Starport. The software checks all worlds in a Jump-6 radius, if there is any traffic to that world, and how many daily tons of cargo and how many passengers will leave to that world. The traffic calculations are based on the GURPS far Trader WTN/BTN formulae. It also tells you the exact amount and type of ships you are going to meet on your way from Starport to jump point and vice versa.**

#### STARPORT TYPE C

The port has better than average facilities or services. Cogri has a big orbital port, with a passenger terminal as well as a freight terminal with a dispersed logistic base. The port has 100 landing pads, most of them equipped with a proper berth and one runway. Its traffic control can handle multiple takeoffs and landings at once. Unrefined fuel and all conventional ship's stores are available, refined fuel is also offered, but tankage is limited. All minor repairs and maintenance of ships up to 800t can be performed without undue delays. Handling of ordinary container cargo is efficient, though goods requiring very special handling will slow the routine. Modest but adequate shopping and restaurants, and usually some kind of entertainment, will be available for passengers and crews. Each year .82 Million passengers are handled and 4.66 Million tons of cargo shipped. The system has an average traffic volume.

The planet bound part of the port has a single fence and a cleared buffer zone with patrolling guards. The whole port measures 10 by 10 km. The planetary Navy has a total tonnage of 2.8 kilotons, the flagship is a SDB of 600 t.

#### TRAFFIC CONTROL HAS 2 CONTROLLED ZONES

**STARPORT CONTROL Zone.** It covers the physical extent of the starport (on the surface or in orbit), a 15 km radius around it and up to 15 km above it.

**AEROPSPACE Zone.** It extends from the planet's surface to 1600 km above the surface.

## TRAFFIC CONTROL, ENCOUNTERS AND REQUIREMENTS

Approach/Departure Control. Provides traffic control and separation that relies on craft adhering to published procedures within the planets AEROSPACE Zone. Also provides weather advisories and separation along flight path.

During the flight from the jump point to Cogri you encounter 5 x Tukera Long Liner (1000t), 1 x Bloodwell Class Merchant (1000t), 5 x Ad Astra Class Liner (600t), 3 x Far Trader (400t), 8 x Free Trader (200t), altogether 22 vessels.

To be cleared for landing, you need a bill of health for crew and passengers and you need to contact traffic control with your intentions as well as a customs declaration.

**The next part covers the amount of DAILY traffic leaving to other worlds. The jump number does not mean that the ship has to have that ability it only means that that many passengers want to go to that destination.**

DAILY freight and passenger amounts:

FEEDER ROUTE: Porozlo (J-5) 2353t, 148P. Rhylanor (J-4) 1332t, 732P. Lunion (J-5) 2994t, 879P. Heroni (J-2) 2619t, 75P.

MINOR ROUTE: Ivendo (J-1) 127t, 29P. Equus (J-2) 970t, 110P. Skull (J-1) 469t, 80P. Natoko (J-2) 155t, 5P. Adabicci (J-7) 77t, 3P. Capon (J-5) 57t, 13P. Fosey (J-2) 1196t, 140P.

**The next part concerns the available trade goods, again in a descriptive format.**

Available trade goods : Mediocre amounts (-2) of Textiles, Polymers, Pharmaceuticals. Very small amounts (-4) of Copper, Tin, Silver, Aluminium. Very small amounts (-4) of Liquor, Grain, Canned food, Aircraft, ATV, Machine tools, Farm machinery. Tiny amounts (-5) of Radioactives, Crystals, Gems, Processed Metals, Steel, Special Alloys, Tools, mechanical parts, Clothing, Computers, Entertainment, Recordings, Documents. Negligible amounts (-7) of Wood, Meat, Spices, Fruit, Artforms, Software.

**Next to last follows an evaluation of the tech level, namely which technologies you can expect to find, as well as which weapons are allowed under the worlds law level.**

TECH LEVEL ( 9) AND WEAPON LAWS ( 3):

SCIENCE 12 : Continued elaboration on unified field theory leads to practical methods for manipulating the strong and weak nuclear forces.

MATERIAL 9 : Crystalline iron and other super-strong allotropes of industrial metals.

ENERGY 9 : First fusion power plants. Energy grids have become global in scope.

INFORMATION 9 : Linguistic interfaces improve, allowing computers to be programmed exclusively in natural language. Computers are capable of reasonable linguistic interpretation. Holographic (three-V) telephones and media.

TRANSPORTATION 9 : Ultra-fast rail lines, comparable in speed to hypersonic aircraft but restricted to underground tunnels. Personal grav cars. Fusion rockets become practical, although the new reactionless drives are much faster and more efficient. Cultures using the Orion concept begin to abandon it at this point. If jump-space has been discovered, starships will now be possible with the development of the jump-1 and jump-2 drives.

WEAPONS 9 : The firearm attains its full maturity with advanced caseless-ammunition weapons (the ACR). Laser weapons become more common on the smallunit scale. Exoskeletons produce powered infantry units. Plasma cannon. Low law. Allowed are Energy and Shock weapons, EMP, Rad, Mag, Grav, Automatic weapons, Pistols, open carrying.

BIOLOGY 12 : Practical nanosurgery. First brain implants. Partial theory of aging.

MEDICINE 9 : Experimental nanosurgical techniques. Mechanical implants can be integrated with peripheral or sensory nerves, allowing a variety of bionic replacement organs. Clone transplants are available.

ENVIRONMENTAL 9 : Orbital and deep-space settlements with complete recycling efficiency (microworlds). Similar techniques make arcologies common in crowded planetary urban centers. Practical weather control. Terraforming can cause gradual change in planetary environments.

The final part describes the temperature ranges in differing geographical altitudes, also known as hexrows.

TEMPERATURES PER HEXROW (HR) in °C:

Year length : 0.13 Terra = 44 planetary days

HR	Spring			11	Summer			11	Autumn			11	Winter			11
1	13°	7°	-6°		13°	7°	-6°		13°	7°	-6°		13°	7°	-6°	
2	5°	-1°	-14°		5°	-1°	-14°		5°	-1°	-14°		5°	-1°	-14°	
3	-3°	-9°	-22°		-3°	-9°	-22°		-3°	-9°	-22°		-3°	-9°	-22°	
4	-11°	-17°	-30°		-8°	-14°	-27°		-11°	-17°	-30°		-15°	-22°	-34°	
5	-19°	-25°	-38°		-13°	-20°	-32°		-19°	-25°	-38°		-28°	-34°	-47°	
6	-27°	-33°	-46°		-19°	-25°	-38°		-27°	-33°	-46°		-40°	-47°	-59°	
7	-35°	-41°	-54°		-24°	-30°	-43°		-35°	-41°	-54°		-53°	-59°	-72°	
8	-43°	-49°	-62°		-32°	-38°	-51°		-43°	-49°	-62°		-61°	-67°	-80°	
9	-51°	-57°	-70°		-40°	-46°	-59°		-51°	-57°	-70°		-69°	-75°	-88°	
10	-59°	-65°	-78°		-48°	-54°	-67°		-59°	-65°	-78°		-77°	-83°	-96°	
11	-67°	-73°	-86°		-56°	-62°	-75°		-67°	-73°	-86°		-85°	-91°	-104°	
	:	:	:													
	:	:	:		Length of day						25:27					
	:	:	:													
	:	:			L.....Deepest Night temp at								5:00			
	:				L.....Medium values at								11:00 and 21:00			
					L.....Highest Noon temp at								16:00			

## STARTING THE SOFTWARE

**When you start the Explanator.exe you have to enter the name of a world. There is no need to enter the full name or use capitalization. The software will show you all worlds that start with the characters you entered. Enter the numbers for the world of your choice.**

Finally you have the choice to enter values like temperature, axial tilt, length of day and gravity.

The file will be saved in RTF format, in the Explanator directory. After that the program will restart automatically.