5 – Computers of the Ummites

On pages 109-125 in "Riss in der Matrix" the characteristics of the alien computers are explained. In Ummo-Brief D71 the same content is dealt with almost identically.
Unfortunately, the Ummo document **D71** is not available in German, only in Spanish, Italian and English. Therefore, there is no comparison of the texts here, but a summary of the Ummo letter and the text in "Crack in the Matrix".

Lilor and D71:

5.1 - Differences between computers

It is impossible to compile the physical properties of their "computers" (Xanmoo Baa). One can, however, work out the fundamental differences between the terrestrial and extraterrestrial endowments.

The earthly computers exist on both the digital and analog levels.
Digital computers use a system of binary numbering for coding, which as a sequence forms words or characters. The structure of the arithmetic calculation is designed in such a way that the complexity of the circuits is as small as possible.
Analog computers are based on a series of modules that are sufficiently connected and that contain special circuits such as integrators, differentiators, and so on. Any treatment of the information is interpreted as analog analytical functions transmitted with the help of electrical potentials, from which a series of sinusoidal functions of different amplitude, frequency and phase ultimately arise.
From a functional point of view, their devices are digital and analog at the same time. For example, when solving an analytical geometry problem, our output units (Xan Eloo) give us quantitative, discontinuous (digital) results just as well (e.g. if one wants to calculate the area of an orbit in surface units).
As well as the image of its equation and the visualization of its image in three dimensions (analogous operations).
Mind you, the selection of analog equipment that goes into treatment has been pre-programmed into what you call "routines" and built into peripheral memory units.

From a functional point of view, our XANMOO BAA are both digital and analogue. When a problem arises in e.g. analytical geometry, the XAN ELOO not only provides quantitative results (possibly translated to solids or output units) provided discontinuously (digitally) in units of area, namely the area of a hyperboloid of revolution, but also obtains a graph of your equation and a three-dimensional display of your image (analogue operation).

Given that the selection of analog devices involved in the process, which have been pre-programmed into what you would call routines (stored into a peripheral memory unit), although the physical process and names are quite different, and a digital type operation with base 12, are in turn reflected in the overall process.

5.2 - Operational base

By using electronic valves or transitions in their circuits, they need a coding approach they call BOOLEAN (of the kind ALL-or nothing or ZERO-ONE)
The arithmetic units operate with an <u>efficiency and a degree of reliability that you cannot achieve with your base 10 system</u>.

Likewise, the calculations in the binary system such as

101 + 111 = 1100
5 + 7 = 12

require a large number of bits when the numbers are large.

The modular units of the alien computers (Xanmoo Baa) are based on chemical reactions and nuclear reactions on the microphysical basis. The memory units are made of titanium and operate on the <u>real number base of 12</u>.

5.3 - Amplifier circuits and computing circuits

The devices for amplifying the tension (IYOAEE BOO) or the terrestrial intensity are based on the properties of the cathode emission through an electrode or on the properties of germanium or silicon, which we do not use.

The terrestrial circuits <u>do not amplify energy</u> because the output is always less than the input (gain <1). They only boost the voltage at the expense of an auxiliary power source (battery or other power supply).
The core amplifier elements (Odu Goaa) of the aliens possess completely different characteristics

1) *The basis is not electronic (neither in vacuum nor in crystalline solids) but nuclear (atomic nucleus). A weak input energy in the form of unitary neutrons or protons hitting some atoms and producing a large amount of energy through nuclear fusion.*

2) *Due to the fusion, the gain is greater than one. At the end of the elementary amplification process, the energy is obtained as thermal, non-electrical energy. This heat is then converted into electrical energy.*

3) *The units of calculation are based on purely atomic basic elements, with only a few units being used out of a few trillion atoms. The level of miniaturization is remarkable and the units can contain very complex circuits in very small volumes.*

On the following pictures you can see the symbolic analogy between a triode (- tube amplifier) and an ODU GOAA (Ummo amplifier element).

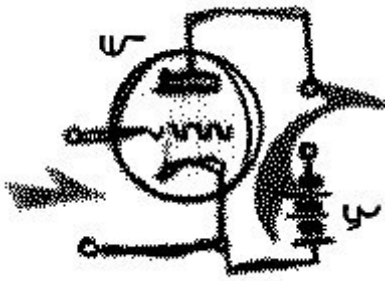

Figure 1 - Amplifier elements

Note that an energy input can control a great force, but only control!
It generates energy that controls the current from the battery ( ).

In contrast, in the ODU GOAA, a weakest energy (neutrons) causes nuclear fission ( ) in a single atom fission, releasing enormous energy that is captured by the AASNEII ( ) and converted into electricity to generate heat ( ).

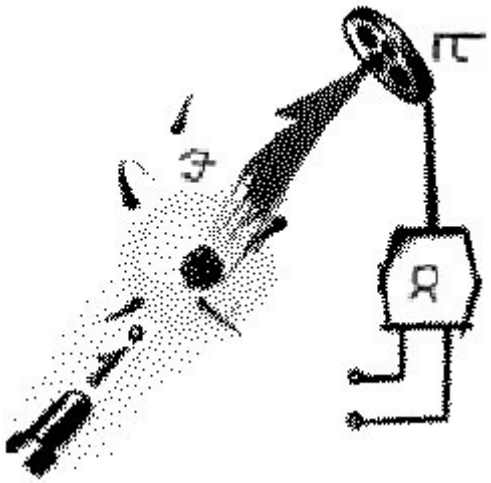

Figure 2 - Ummo amplifier elements

This process is analogous in principle to what you have applied to nuclear reactors or atom clusters, but controlled by a solar atom in our ODU GOAA.

On the terrestrial computers, equations (so-called arithmetic units) can be performed with great speed of the elementary operators (sums, subtractions) using transistor modules.

The extraterrestrial computers use units based on chemical-nuclear reactions on the microphysics scale. A few hundred base reactions have been specially selected for this so that the numbers are compatible with the base 12 system.

For example, the coding of the following addition happens:

12 + 1 = 13

With the help of the reaction (into which perfectly controlled micromasses go)

$$^{12}C_6 + {}^{1}H_1 = {}^{13}N_7$$

(The numbers 6,1,7 stand for the atomic number)

The result of this reaction (operation) is analysed with an exceptional precision and encoded again by another operation.

5.4 - The basic structure of Titanium memory

The terrestrial digital computers generally use a central memory made up of ferromagnetic cores and various peripheral storage units such as magnetic tapes, magnetic disks, etc.
The units are therefore able to accumulate, store and encode only a very limited number of bits, while the access times are very acceptable.

For the extraterrestrials, however, it has been shown that storage media such as CDs or magnetic tapes are insufficient to accumulate millions of trillions of numbers and millions of routines on them. According to Lilor, the aliens never used magnetostatic storage of any kind.
Instead, numeric data and characters were encoded microphysically (not optically, not magnetically) on the ***basis of quanta or quantum states****.*

It is known that the electron shell of an atom can exist as the electrons climb different energetic levels, called the "quantum levels" on Earth.
The transition from one state to another occurs through the release or absorption of quantized energy that has a characteristic frequency.

In the same way, a titanium atom can change its state in the shell by emitting a photon. In the titanium atom, as in other chemical elements, the electrons can switch between different states, emitting different types of photons or quanta of different frequencies. This phenomenon is called "the characteristic emission spectrum of this chemical element". This allows the element to be identified by a spectroscopic measurement.

If one succeeds in changing the quantum state of the electron shell of titanium at will, it can be transformed into a charge carrier, a storage state or an accumulation state, with an elementary message, namely a number.
For example, if the atom can have 12 (or more) different states, then each of these levels represents or encodes a number from 0 to 12.

A small titanium chip (XanwaaBuasii) contains trillions of atoms. The amount of encoded information that this chip stores cannot be matched by any other macrophysical storage base.
The titanium chips used must have a perfect crystal structure and a chemical purity level of 100%, i.e. a few impurity atoms (iron, molybdenum, silicon, etc.) are enough to render the chip unusable.

According to Lilor, the aliens are able to excite each individual atom and set its encoding or retrieve stored information.

This happens as follows:

A piece of titanium is struck by three beams of infinitesimal cross-section and very high frequency, which can traverse free space without affecting the atomic nuclei and affecting the respective electron shells. The frequency is $8{,}35 \cdot 10^{21}$ Hz (X-rays) and the frequencies of each beam are different. 

The very high frequencies are outside of Titan's characteristic spectrum because the independent frequencies of the individual beams are not able to excite the shell electrons individually.

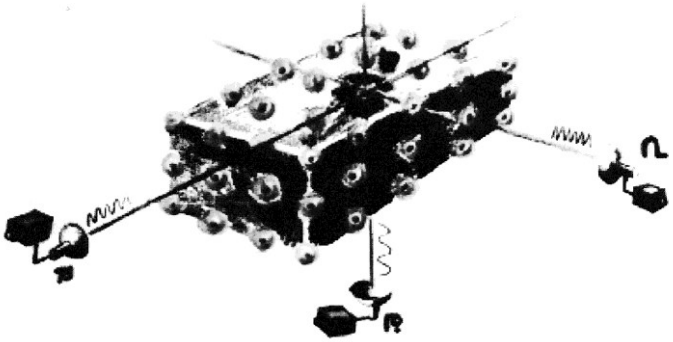

Figure 3 - Titanium memory

But when three rays strike a titanium atom at the same time, the superposition produces an effect called the superimposition effect, or heterodyne, which results in a much lower frequency that can match any titanium spectral line.
The atom is thus excited and since the three orthogonal beams can be positioned in space with great precision, they can locate the atoms of the piece of titanium individually.

The process of readout, which requires the electron shell to return to its initial quantum state, happens in reverse.

***1** - In practice, only ten states are used for each atomic quantum TITANIUM, corresponding to the following spectral lines:*

UMMO	*EARTH/nm*
323452	*383,470*
334902	*397,044*
334940	*397,089*
336122	*398,491*
337280	*399.864*
430591	*510,489*
453324	*537,440*
453478	*537,623*
453558	*537,717*

In practice, only 10 quantum states are used for each titanium atom, i.e. for each numerically represented digit in base 12, not just one, but two atoms are excited (10+2)).

***2** - Once encoded, the atom returns to its original state, emitting a photon (Iboaaya Oou), reversing a toroidal ferrite core that makes its information (without losing its magnetic excitation) available infinitely.*
Each encoded number is repeated hundreds of millions of times to create significant aggregations of information.

***3** - It is very important that the atoms have great spatial stability in the titanium crystal, because any thermal oscillation makes localization by the three high-frequency beams impossible. To prevent this, the titanium crystal works at absolute zero temperature.*

5.5 - Data input and output of the computers

Different program codes or generally understandable languages with heterogeneous equipment are used on terrestrial computers. Machine languages such as Fortran, Cobol, etc. are also used.

They introduce the information that is encoded at the heart of the computer with the help of cards, magnetic punched tape or optical and magnetic reading of typographic letters.
The results of solving problems with the digital and analog computers are obtained with the help of various output devices (cathode ray oscilloscope, punch card writer, etc.).

The alien computers directly include the query data, providing it in standard language and as written or phonetic (in speech) characters in a draft of the exposé. The exposé must always be very well formulated.

Annotation:

An exposé aims to give an overview of the planned work steps of a scientific elaboration. It forms something like the "red thread" of the work.

Complex pre-programming, either stored in the computer or derived from the manufacture of the equipment, interprets the logical elements of the synopsis and reads in the standardized data.

If there is any doubt, you will be exposed to the equipment at the exit of the data.

The results are obtained through three types of visualization*:*

1) *Printer* (Gaa Obeea)

2) *Numerical visualization (simple base 12 counters)*
   (Gaa Dnmaaei)

3) *Three or higher dimensional visualization of images*
   (Uuein Gaa Eimii)

The crystalline Titan computers exist on several planets such as UMMO, K1S1, MSq2, CETEPA, CETEDA of the Circle, KLM2, ASTER.

5.6 - Conclusion:

5.6.1 - Units of Account

The units of account are basic atomic elements, with only a few units needed by a few trillion atoms. A cube with an edge length of 1 mm contains about 37 trillion atoms.

The extraterrestrial computers use units based on chemical-nuclear reactions on the microphysics scale. A few hundred base reactions have been specially selected for this so that the numbers are compatible with the base 12 system.
A weak input energy in the form of single neutrons or protons hitting some atoms and creating a large amount of energy through nuclear fusion. Due to the fusion, the gain is greater than one. At the end of the elementary amplification process, the energy is obtained as thermal, non-electrical energy. This heat is then converted into electrical energy.

Such a technology, which can handle quanta and micromass in a controlled manner, is based on the multidimensional energy model presented in Chapter 6 – Elementary Particles.
Since we lack the knowledge here, it is not possible to understand the structure and functioning of the computing units.

5.6.2 - Titanium memory

A piece of information is stored on the number base 12 as a quantum state in a titanium atom. Since only 10 states are stored per atom, 2 titanium atoms are required to store information.
A tiny chip of titanium contains trillions of atoms. 1 trillion = 10^{12}
A cube of 1 trillion titanium atoms then has the edge length L = 10^4 atoms.

Radius of a titanium atom: R = 140-160 $\cdot$ 10^{-12} m

The length of the side of the cube is then:
$L \cdot 2R = 10^4 \cdot 2 \cdot 150 \cdot 10^{-12} = 3 \cdot 10^{-6}$ m = $3 \cdot 10^{-3}$ mm

A titanium memory with 1 trillion atoms fits into a cube with an edge length of 3/1000 mm.
A titanium memory with an edge length of 1/100 mm then comprises 37 trillion atoms.
The physical dimensions of the storage units are therefore in the micro range.

The storage tanks are operated at absolute zero temperature. Reading in and out is carried out by three orthogonal X-ray beams with infinitesimal diameter, which can target each individual atom.
There is also a toroidal ferrite core around the memory block. The indication of reversal probably refers to the fact that a dimensional axis is inverted, i.e. the torus is in inverse space.

When read out, the encoded atom returns to its original state and a characteristic frequency is generated, which is made available as information via the ferrite core (without losing its magnetic excitation).

5.6.3 - Result

With today's technology, it would probably be possible to produce a titanium crystal with the necessary purity.
But the atomic-precise positioning of the storage crystal over a certain spatial area initially exceeds our technical possibilities.
The inversion of a dimensional axis is also not yet possible in order to be able to produce a corresponding toroidal ferrite core.

The computing and storage units of the extraterrestrials are based on a technology that has its origins in the universal nuclear power described in Chapter 12 and the associated laws of microphysics.
This is a science or technology that can handle matter at any level (quantum, micromass, larger mass) and is therefore also able to realize computers on an atomic basis.

Annotation:

On page 117 in "Crack in the Matrix" Lilor speaks of the ancient memories of the photoelectric type, where digits were stored as pulses of light which, after being projected onto disks and stored as electrostatically alterable dots, became insufficient due to the large volume that was needed for their storage.
Lilor is talking about CDs here, which were not invented until the early 80s. The text about computers can therefore only date from the early 1980s.
If Lilor is speaking here of ancient memories and if he means a period of time as is common here, then the aliens used CD technology several thousand years ago.

The Ummo documents can be viewed here: https://www.cosmic-library.de/ummo/index.html