# Alchemist symbols in Unicode 

Engelbert Buxbaum

11th March 2023

The alchemist-style makes accessible alchemistic and astrological symbols in Unicode. It uses the Gnu Unifont https:// unifoundry.com/unifont/, which has all required symbols. Unfortunately, the font is split into an upper and lower part. The Symbola-font (https://fontlibrary.org/de/font/symbola) and Quivira (https://www.fontspace.com/quivira-font-f13271) may also be suitable, but are incomplete. If you want to use them, set AlchemistA and AlchemistB to the same font. Quivira has a more handwritten look that may fit very well to the ancient character of the symbols.

## 1 Concepts

The symbols used by alchemists served as aide memoir for the researchers themself and for communication, even across language barriers. At the same time, however, their meaning was hidden except to a small group of specially trained practitioners.
 348 BC) [1], but goes back to earlier philosophers ('Eนлєठок ${ }^{2} \tilde{\eta} \varsigma$ Empedoklés ca. 490-430 BC, $\Delta \eta \mu$ о́крıтоऽ Dēmókritos ca. 460-370 BC). Assume a cube of some material, say, iron. This cube could be cut in halves, those halves into halves again, and so on. However, this is not possible ad infinitum, but at some point one would reach a limit, where further division is no longer possible. These smallest possible particles are called atoms (from
 Platonic bodies constructed from triangles: tetrahedron, octahedron, icosahedron and cube. These different atomic shapes correspond to the 4 elements: the atoms of fire are tetrahedrons (prickly) , soil cubes (tessellates Euclidean space and causes the solidity of the soil), water icosahedras (flows out of the hands like little balls) and air octahedrons (smooth, can hardly be felt). Each of those elements embodies a particular combination of the primary qualities hot - cold and wet - dry: air is hot and wet, fire hot and dry, soil dry and cold and water wet and cold. Air is gaseous, water liquid and soil solid, fire is consuming. Fire represents the male, water the female principle, air and soil are transition elements.

Each of the basic elements is also associated with one of the 4 bodily fluids that must be in balance to avoid disease, they also correspond to temperaments: blood - air - sanguinic, black gall - soil - melancholic, yellow gall - fire - choleric and slime - water

- phlegmatic (humoral pathology, 'Іллокро́тŋя Hippokrates 460-370 BC, Гадŋvós GAlenos, 129-199 AD, أبو علي الحسين بن عبد الله ابن سينا Abū Alī al-Husain ibn Abd Allāh ibn Sīnā (Avicenna) 980-1037 AD).

The fifth platonic body - dodecaeder - is not composed of triangles, is considered the most noble and represents the cosmos or the spirit.

Alchemy had three goals:

- the preparation of chemicals, often in the context of practical purposes (e.g., metals and dyes). This is now handled by chemistry.
- the preparation of medicines that can cure diseases. This is now dealt with by pharmacology.
- the transmutation of base metals (like lead) into noble metals like silver and gold (Gr. $\chi \rho$ иболоו́ $\alpha$, chrysopoeia = gold making). Today we understand that this requires the transformation of elements (nuclei with different number of protons), which is not possible by chemistry. Nuclear physics can do so in particle accelerators by bombarding bismuth with high energy atoms to kick out 4 protons and $6-9$ neutrons from the ${ }_{83}^{209} \mathrm{Bi}$-nuclei to produce a variety of ${ }_{79} \mathrm{Au}$-isotopes, of which only ${ }_{79}^{197} \mathrm{Au}$ is not radioactive [2]. Also, the process requires vast amounts of energy (worth about US $\$ 5000$ per h, for 1 d to produce a few thousand gold atoms) and is thus not cost effective. For true alchemists, however, transmutation was only a symbol for obtaining spiritual enlightenment by liberating ones essence from the worldly personality.

Later authors added the quintessence, an eternal substance that forms the basis of the other elements. Philippus Theophrastus Aureolus Bombast von Hohenheim (Paracelsus) 1493-1541 [3] replaced the 4 elements from antiquity with the tria prima (original trias) mercury (volatile), sulfur (burning) and salt (stabilising). He didn't mean the substances we take from the lab shelf, but their "philosophical" equivalent. Paracelsus based medicine on observation rather than philosophical book wisdom and explored the pharmaceutical use of minerals, complementing the plants suggested by Galenos. He introduced the concept that substances toxic in higher doses may be curative in low (dosis facit venenum, the dose makes the poison) and is the father of modern toxicology. In particular, he experimented with mercury against the "French disease" (syphilis), but the results were, at best, variable. It is thus not surprising that Paracelsus died from chronic exposure to mercury vapours as attested by the Hg -concentration in his bones.

| Hex | Decimal | Char | Name | Description |
| ---: | ---: | ---: | :--- | ---: |
| 1F747 | 128839 | $\AA$ | Spirit |  |
| 1F700 | 128768 | $\& E$ | Quintessence | aether |
| 1F701 | 128769 | $A$ | Air |  |
| 1F702 | 128770 | $\triangle$ | Fire |  |
| 1F703 | 128771 | $\nabla$ | Soil |  |
| 1F704 | 128772 | $\nabla$ | Water |  |
| 1F70E | 128782 | 公 | Philosopher's Sulphur |  |
| 2721 | 10017 |  | Materia prima |  |

2 Compounds

| Hex | Decimal | Char | Name | Description |
| :---: | :---: | :---: | :---: | :---: |
| 1F705 | 128773 | F | Aqua fortis | Nitric acid $\mathrm{HNO}_{3}$ |
| 1F706 | 128774 | R | Aqua regia 1 | 1 part nitric， 3 parts hydrochloric acid NOCl |
| 1F707 | 128775 | R | Aqua regia 2 |  |
| 1F708 | 128776 | \％ | Aqua vitae 1 | Ethanol，distilled spirit $\mathrm{CH}_{3}-\mathrm{CH}_{2}-\mathrm{OH}$ |
| 1F709 | 128777 | 8 | Aqua vitae 2 |  |
| 1F70A | 128778 | ＋ | Vinegar | acetic acid $\mathrm{CH}_{3}-\mathrm{COOH}$ |
| 1F70B | 128779 | ＊ | distilled vinegar 1 |  |
| 1F70C | 128780 | ： | distilled vinegar 2 |  |
| 1 1F710 | 128784 | 管 | Sublimate of mercury 1 | mercury（II）chloride $\mathrm{HgCl}_{2}$ |
| 1F711 | 128785 | \％ | Sublimate of mercury 2 |  |
| 1F712 | 128786 | 会 | Sublimate of mercury 3 |  |
| 1F713 | 128787 | 3 | Cinnabar | mercury（II）sulphide HgS |
| 1F714 | 128788 | ө | Salt | sodium chloride NaCl |
| 1F715 | 128789 | （1） | Nitre | salpeter， $\mathrm{KNO}_{3}$ |
| 1 1F716 | 128790 | ${ }^{(1)}$ | Vitriol 1 | sulphuric acid $\mathrm{H}_{2} \mathrm{SO}_{4}$ |
| 1 F717 | 128791 | ${ }^{(1)}$ | Vitriol 2 |  |
| 1 1F718 | 128792 | ¢ | Rock salt 1 | sal gemmae，impure NaCl |
| 1F713 | 128793 | $\diamond$ | Rock salt 2 |  |
| 1F71C | 128796 | $0{ }^{8}$ | Iron ore 1 |  |
| 1F71D | 128797 | \％ | Iron ore 2 |  |
| 1F71E | 128798 | 寺 | Crocus of iron | crocus martis，rust |
| 1F720 | 128800 | ¢ | Copper ore |  |
| 1F723 | 128803 | 웅 | Crocus of copper 1 | copper（II）oxyde CuO |
| 1F724 | 128804 | （e） | Crocus of copper 2 |  |
| 1F721 | 128801 | ${ }^{\circ}$ | Iron copper ore | chalcopyrite $\mathrm{CuFeS}_{2}$ |
| 1F71B | 128795 | A | Sublimate of copper 1 | copper（I）chloride CuCl |


| Hex | Decimal | Char | Name | Description |
| :---: | :---: | :---: | :---: | :---: |
| 1F71C | 128796 | 棹 | Sublimate of copper 2 |  |
| 1F725 | 128805 | 龺 | Copper antimonate 1 | $\mathrm{CuSb}_{2} \mathrm{O}_{6}$ |
| 1F726 | 128806 | 龺 | Copper antimonate 2 |  |
| 1F728 | 128808 | $\oplus$ | Verdigris | patina on copper（acetate，hydroxyde，chloride） |
| 1F729 | 128809 | 2 우 | Tin ore | Cassiterite $\mathrm{SnO}_{2}$ |
| 1F72A | 128810 | ちo | Lead ore | Galena PbS |
| 1F72B | 128811 | б | Antimony ore | stibnite $\mathrm{Sb}_{2} \mathrm{~S}_{3}$ |
| 1F72C | 128812 | 类 | Sublimate of antimony | senarmontite $\mathrm{Sb}_{4} \mathrm{O}_{6}$ |
| 1F72D | 128813 | 古 | Salt of antimony | Antimony sulphate $\mathrm{Sb}_{2}\left(\mathrm{SO}_{4}\right)_{3}$ |
| 1F72E | 128814 | 籴 | Sublimate of salt of antimony | an antimony oxyde from decomposition of the sulphate？ |
| 1F72F | 128815 | 雬 | Vinegar of antimony | may be $\mathrm{Sb}\left(\mathrm{CH}_{3} \mathrm{COO}\right)_{3}$ ，but this is unstable |
| 1F736 | 128822 | 9 | Alkali 1 | sal alkali $\mathrm{Na}_{2} \mathrm{CO}_{3}$ or $\mathrm{K}_{2} \mathrm{CO}_{3}$ |
| 1F737 | 128823 | 号 | Alkali 2 |  |
| 1F738 | 128824 | $\theta$ | Marcasite | $\mathrm{FeS}_{2}$（originally included iron pyrite or fools gold） |
| 1F739 | 128825 | 米 | Sal ammoniak | ammonium chloride $\mathrm{NH}_{4} \mathrm{Cl}$ |
| 1F73B | 128827 | $\delta$ | Realgar 1 | $\mathrm{As}_{4} \mathrm{~S}_{4}$ |
| 1F73C | 128828 | $\delta$ | Realgar 2 |  |
| 1F73D | 128829 | （8） | Auripigment | As2S3 |
| 1F73E | 128830 | 24 | Bismuth ore | bismuthinite $\mathrm{Bi}_{2} \mathrm{~S}_{3}$ or bismite $\mathrm{Bi}_{2} \mathrm{O}_{3}$ ？ |
| 1F73F | 128831 | $\square$ | Tartar1 | wine stone，potassium hydrogen tartrate |
| 1F740 | 128832 | 业 | Tartar2 |  |
| 1F741 | 128833 | ＇ 7 | Quicklime | calcium oxyde CaO |
| 1F742 | 128834 | T | Borax 1 | $\mathrm{Na}_{2} \mathrm{~B}_{4} \mathrm{O}_{7} \times 10 \mathrm{H}_{2} \mathrm{O}$ |
| 1F743 | 128835 | 内 | Borax 2 |  |
| 1F744 | 128836 | $\bigcirc$ | Borax 3 |  |
| 1F745 | 128837 | 尚 | Alum | double salt like $\mathrm{KAl}\left(\mathrm{SO}_{4}\right)_{2} \times 12 \mathrm{H}_{2} \mathrm{O}$ |


| Hex | Decimal | Char | Name | Description |
| ---: | ---: | ---: | :--- | :--- |
| 1F753 | 128851 | $\diamond$ | Lodestone | magnetite, Fe(II, III)oxyde |
| 1F758 | 128856 | $\div$ | Potashes | $\mathrm{K}_{2} \mathrm{CO}_{3}$ |
| 1F75C | 128860 | $\circlearrowleft$ | Stratum super stratum 1 | layer over layer |
| 1F75D | 128861 |  | Stratum super stratum 2 |  |

3 Mixtures

| Hex | Decimal | Char | Name | Description |
| :---: | :---: | :---: | :---: | :---: |
| 1F70F | 128863 | क | Black sulphur | residue left after sublimation of sulphur |
| 1F754 | 128852 | $\stackrel{ }{\circ}$ | Soap | sodium salt of mixed fatty acids |
| 1F755 | 128853 | $\square$ | Urine |  |
| 1F756 | 128854 | 8 | Horse dung |  |
| 1F757 | 128855 | E | Ashes |  |
| 1F759 | 128857 |  | Brick |  |
| 1F75A | 128858 | 四 | powdered brick |  |
| 1F75B | 128859 | $\bar{c} \overline{3}$ | Amalgam | alloy of mercury |
| 1F74E | 128862 | (2) | Caput mortuum | slag left after a purification |
| 1F746 | 128838 | $\therefore$ | Oil |  |
| 1F749 | 128841 | Sts | Gum |  |
| 1F74A | 128842 | - ${ }^{\text {d }}$ | Wax |  |
| 1F74C | 128844 | Q | Calx | oxydised residue, also CaO |
| 1F74D | 128845 | 区 | Tutty | ZnO or $\mathrm{ZnCO}_{3}$ |

## 4 Elements

The alchemist's idea about elements (atoms shaped like different Platonic bodies) was very different from ours (different number of protons in the nucleus). In the following, we list elements in our modern understanding. Even then, however, there can be misunderstandings. "Regulus of antimony" is quite clear, a drop of antimony left after purification. However, "regulus of iron" and "regulus of copper" also mean antimony, but made by reducing antimony oxyde with iron or copper, respectively. It was assumed that they were different because of the different synthetic route.

The symbols for iron/Mars and copper/Venus are also used for male and female.

| Hex | Decimal | Char | Name | Description |
| :---: | :---: | :---: | :---: | :---: |
| 2646 | 9798 | ＊ | Bismuth | also planet Neptune |
| 2640 | 9792 | $\bigcirc$ | Copper | also planet Venus |
| 1F71A | 128794 | $\theta$ | Gold |  |
| 2609 | 9737 | $\odot$ | Gold | also sun |
| 2642 | 9794 | $\sigma$ | Iron | also planet Mars |
| 2644 | 9796 | \％ | Lead | also planet Saturn |
| 1F730 | 128816 | $\stackrel{\wedge}{9}$ | Regulus of Antimony 1 | impure antimony |
| 1F731 | 128817 | 古 | Regulus of Antimony 2 |  |
| 1F71F | 128799 | 杽 | Regulus of iron | antimony prepared from stibnite by reduction with iron |
| 263F | 9791 | $\square$ | Mercury | also the planet mercury |
| 1F71B | 128795 | \＆ | Silver 1 |  |
| 263D | 9789 | ） | Silver 2 | also first quarter moon |
| 263E | 9790 | c | Silver 3 | also last quarter moon |
| 1F70D | 128781 | $\stackrel{\text { 全 }}{ }$ | Sulphur |  |
| 2643 | 9795 | 2 | Tin | also planet Jupiter |

## 5 Processes

As mentioned, the opus magnum of gold making is really only an allegory of the journey to self-knowledge and, yes, eventually to god [4,5]:

Calcination exposure of a sample to high, dry heat (roasting, even glowing). Many substances under these condition loose weight, turn white and become easy to grind. First (black) stage of the opus magnum. The colour black represents chaos, and that what is hidden or buried, the materia prima from which all other things may be obtained. Spiritually, calcination means burning off our attachments to the world: the desire for status, fame, wealth and identity. Our preconceived notions about ourself are put to the test by fire, in an existential crisis, in the dark night of the soul.

Dissolution forming a $\rightarrow$ solution. In the opus magnum, the ashes obtained during calcination are dissolved in water, the symbol of the unconscious or hidden. Spiritually, we free ourselves from our inauthentic and acquired traits. The dissolution stage involves freeing repressed emotions from traumatic events that we have pushed down into our subconsciousness (dissolution of the ego [5]), and can be a cathartic step.

Separation is the 3rd stage of the opus magnum, where the products of dissolution are filtered and separated. Whilst the first stages were associated with the elements fire and water, this one is associated with air. The pure essence is extracted from the mixture. Spiritually, we leave our acquired personality in form of engrained thought processes and emotional triggers to become our true, essential self. Collect all the things in you that are helpful for yourself and for others, and let go of everything else. After the turmoil of the first steps, we can now enjoy the stillness of being removed from all that is inauthentic and artificial.

Conjunction means bringing together the elements purified in the first three stages by fire, water and air in the sign of the soil. Spiritually, we bring what is left of us together to form a new, authentic personality. The conflict of dualities like body and soul, spirit and matter, conscious and unconscious are resolved. Feminine qualities like emotion and intuition join male like intellect and logic.

Fermentation exposure to microorganisms for longer time to achieve a chemical reaction and remove what is no longer needed.

Putrefaction leaving a sample undisturbed, often after adding the desired material (seed). Both fermentation and putrefaction form the 5th stage of the opus magnum: the removal of the old, unauthentic self. This process can be painful, but we cannot see dawn before we have gone through the darkest of nights.

Distillation process of vaporising and then condensing a substance. The different boiling points of the components of a mixture are used for purification of the essence.

In spiritual alchemy, our core identity is freed from any inferior elements. The ego is no longer dominating, so that the soul can be heard.

Coagulation old term for crystallisation. The result is the philosophers stone. Spiritually, the self comes together in a healing process. This is called rubedo. This word also refers to the state achieved by the mage where he is fully attuned to the anima mundi, the fountainhead of creation and source of the prima materia.

Apart from the processes involved in the opus magnum, the following methods were used by alchemists:

Ceration allowing a hard, dry substance to absorb water while it is heated (imbibition) for the purpose of softening it (from Latin cera = wax).

Digestion heating a sample in an open vessel for long times, but without boiling it.
Fixation turning a volatile compound into a solid that is not affected by fire
Multiplication increasing the potency of an elixir or philosophers stone, often by repeating the process by which it was originally obtained

Precipitation letting a solid form from a solution and collecting it.
Projection process of transmuting base metals to gold using the philosopher's stone
Purify increasing the concentration of a particular substance, if possible close to $100 \%$.
Regulus formation getting the pure form of a metal (especially antimony) out of an ore.

Solution one component (solute) is homogenously dispersed in a second component (solvent, usually, but not necessarily, a liquid).

Sublimation heating a substance to turn it from the solid directly into the gaseous state and back, without forming a liquid first. The sublimate is called "flower".

Tincture extract in alcohol.

| Hex | Decimal | Char | Name | Description |
| :---: | :---: | :---: | :---: | :---: |
| 2648 | 9800 | $r$ | Calcination | also aries |
| 2650 | 9802 | * | Ceration | also Sagittarius |
| 2649 | 9801 | ૪ | Congelation | also Taurus |
| 264C | 9804 | $\therefore$ | Digestion | also Leo |
| 1F761 | 128865 | f | Dissolve 1 |  |
| 1F762 | 128866 | $v$ | Dissolve 2 |  |
| 1F760 | 128864 | a | Distillation 1 |  |
| 264D | 9805 | 4 | Distillation 2 | also Virgo |
| 2651 | 9803 | 7 | Fermentation | also Capricorn |
| 264A | 9802 | II | Fixation | also Gemini |
| 2652 | 9804 | \% | Multiplication | also Aquarius |
| 1F75F | 128863 | ज | Precipitation |  |
| 2653 | 9805 | H | Projection | also Pisces |
| 1F763 | 128867 | \% | Purify |  |
| 1F764 | 128868 | + | Putrefaction |  |
| 1F732 | 128818 | $\stackrel{\wedge}{*}$ | Regulus 1 | smelting of metallic ore |
| 1 F733 | 128819 | ค | Regulus 2 |  |
| 1F734 | 128820 | 工. | Regulus 3 |  |
| 1F735 | 128821 | 旱 | Regulus 4 |  |
| 264F | 9807 | It | Separation | also Scorpio |
| 264B | 9803 | \% | Solution | also Cancer |
| 1F75E | 128862 | $\bumpeq$ | Sublimation 1 |  |
| 264 E | 9806 | ¢ | Sublimation 2 | also Libra |
| 1F748 | 128840 | R | Tincture | alcoholic extract |

## 6 Tools

Alembic from Greek ${ }^{\alpha} \mu \mu \imath \xi$ ambix $=$ beaker over Arabic الإنبيق al-inbīq is a distillation head connecting two vessels. In the fist (cucurbit from $\beta$ ĩкo $\begin{gathered}\text { bîkos) a sample was }\end{gathered}$ heated, the second (receiver, from $\varphi \iota \alpha ́ \lambda \eta$ phialē over Arabic qābila) received the vapours condensed in a connecting tube (Greek $\sigma \omega \lambda \eta \dot{\eta} v$ sōlēn). Its invention is attributed to Maria Prophetissa of Alexandria in the 1st century AD (variously also called Maria the Jewess or Maria the Copt). The bridge of modern chemical glassware is the closest equivalent.

## Athanor furnance

Caduceus is the staff of Hermes (Gr.) = Mercury (Lat., god of traders and thieves) with two snakes and wings. It should not be mixed up with the staff of Asclepios (Son of Apollo) with one snake and no wings, which is a symbol of medicine. The astrological/alchemists sign of Mercury is an older version of the caduceus, with the snakes protruding from the staff.

Crucible a heat resistant ceramic vessel used to heat substances in fire.
Balneum Mariae hot water bath invented by Maria Prophetissa and still used to keep food warm in refectories and the like (bain de Marie). It consists of an outer vessel half-filled with a hot fluid (usually water) and an inner vessel that is filled with the material to be kept warm and immersed in the fluid of the outer vessel. The material in the inner vessel is kept at a constant temperature, without hot or cold spots.

Retort (from Lat. retortus = curved backward) glass vessel used by alchemists. Heating it was an art in itself, as the soda-lime glasses available at the time were liable to crack when heated unevenly. In the modern chemical industry, vessels of any shape and material used for pyrolysis are still called retort (production of shale oil, charcoal, recovery of Hg in gold mining). In the laboratory, the Liebig condenser has largely replaced the retort.

Scepter of Jove or bident, a pitchfork-like instrument with two prongs, was used in Roman time for the consecration of a place struck by lightning. It is probably a symbol for Jupiter's lightning bolt. The name may be derived from the young sheep sacrificed in the ritual (so young as to have only two teeth). The bident is also the symbol for Hades (Pluto), the god of the underworld.

Staff of Asclepios Staff with a snake (allegedly a Aesculapian adder Zamenis longissimus (Laurenti, 1768), Colubridae) wound around it. Originally, the "snake" is probably a Guinea worm (Dracunculus medinensis L., Dracunculidae), which already in ancient Egypt was removed from affected limbs by slowly pulling it out and winding it around a piece of wood.

Trident is similar to the bident, but has three prongs. It is the symbol of Poseidon (Neptune), god of the seas.

## Starred Trident

## Vapour bath

It is noteworthy that there were female alchemists at a time when females were generally limited to "kitchen, children and church", and that the work of these female alchemists was highly respected by their male colleagues. Maria Prophetissa and Cleopatra the Alchemist (Alexandria, ca. 3rd century AD, not related to the Ptolemaic queens) may be the most well-known of them.

| Hex | Decimal | Char | Name | Description |
| :---: | :---: | :---: | :---: | :---: |
| 1F76A | 128874 | ＞$\times$ | Alembic 1 | distillation head |
| 2697 | 9879 | \％ | Alembic 2 |  |
| 2695 | 9877 | 事 | Staff of Asclepius | symbol of medicine |
| 1F750 | 128848 | $\cdots$ | Caduceus 1 | staff of Hermes $=$ Mercury（with two snakes） |
| 2624 | 9764 | 㴍 | Caduceus 2 |  |
| 1F765 | 128869 | \％ | Crucible 1 | ceramic，heat－resistant vessel |
| 1F766 | 128870 | 匈 | Crucible 2 |  |
| 1F767 | 128871 | v | Crucible 3 |  |
| 1F768 | 128872 | T | Crucible 4 |  |
| 1F769 | 128873 | 7 | Crucible 5 |  |
| 1F76B | 128875 | MB | Balneum Mariae | water bath |
| 1F76D | 128877 | 6 | Retort | glass vessel |
| 1F74F | 128879 | W | Scepter of Jove |  |
| 1F751 | 128849 | $\rightarrow$ | Trident |  |
| 1F752 | 128850 | ＊ | Starred Trident |  |
| 1F76C | 128876 | 18 | Vapour bath |  |

## 7 Astronomy and astrology

### 7.1 Astrology

Regulus brightest star system (apparent magnitude of +1.35 ) in the constellation Leo ( $\alpha$ Leonis). Actually consists of 4 stars, Regulus A is a blue-white main-sequence star, its companion has not been observed directly but is probably a white dwarf. Regulus $B$ and $C$ are main sequence stars.

Ascending node if the plane defined by the orbit of a celestial body has an angle (inclination) $\neq 0$ to a reference plane, then the orbit intersects the reference plane in two points. The one crossed by the north-moving body is called the ascending node (Latin caput draconis = dragon's head or Greek $\alpha v \alpha \beta \iota \beta \dot{\alpha} \zeta \omega v$ anabibazon). In astrology, these terms refer to the crossings of the orbit of the moon with the apparent orbit of the sun across the sky.

Descending note The node of the south-moving body (cauda draconis = dragon's tail or кат $\beta \beta \beta \dot{\beta} \zeta \omega v$ catabibazon).

Conjunction is the apparent meeting of two celestial bodies as seen from earth (angle $\pm 10^{\circ}$ ). For example, a conjunction of sun and moon is visible as solar eclipse. "Great conjugation" we call the meeting of Jupiter and Saturn, its occurance 7 BC may have been the biblical star of Bethlehem ( $\mathrm{Mt} 2_{2}$ ).

Opposition is the situation where two celestial bodies appear (from the earth) to have an angle of $180^{\circ}$. Usually, one of the bodies is the sun, the other then is visible during the entire night. A near opposition of moon and sun is called full moon, an exact opposition lunar eclipse. Planets have their smallest distance from the earth during their opposition.

Sextile two celestial bodies appear to have an angle of $60^{\circ}$.
Semisextile two celestial bodies appear to have an angle of $30^{\circ}$.
Quincunx two celestial bodies appear to have an angle of $150^{\circ}$.
Sesquiquadrate two celestial bodies appear to have an angle of $135^{\circ}$.
Lot of fortune or lucky point (Lat. Pars Fortunae), its exact meaning varies between ancient, arabic and western astrologers.

Occultation occurs when one object is hidden from the observer by a second moving between them. If the second object is too small to hide the first completely, we call this transit.

Lunar eclipse moon becomes invisible because of an exact opposition with the sun (moon enters the shadow cast by the earth).

| Hex | Decimal | Char | Name | Description |
| :---: | :---: | :---: | :---: | :---: |
| 1F732 | 128818 | $\stackrel{\wedge}{ }$ | Regulus 1 | one of the brightest stars, also the process of smelting |
| 1F733 | 128819 | ค | Regulus 2 |  |
| 1F734 | 128820 | 工 | Regulus 3 |  |
| 1F735 | 128821 | 舁 | Regulus 4 |  |
| 260A | 9738 | n | AscendingNode |  |
| 260B | 9739 | $\checkmark$ | DescendingNode |  |
| 260C | 9740 | - | Conjunction |  |
| 260D | 9741 | 8 | Opposition |  |
| 26B9 | 9913 | * | Sextile |  |
| 26BA | 9914 | $v$ | Semisextile |  |
| 26BB | 9915 | $\pi$ | Quincunx |  |
| 26BC | 9916 | $\square$ | Sesquiquadrate |  |
| 1F774 | 128884 | * | LotOfFortune |  |
| 1F775 | 128885 | * | Occultation | hiding one celestial body by another |
| 1F776 | 128886 | $*$ | LunarEclipse |  |

### 7.1.1 Star signs

| Hex | Decimal | Char | Name | Description |
| :---: | :---: | :---: | :---: | :---: |
| 2648 | 9800 | $\gamma$ | Aries | also calcination |
| 2649 | 9801 | б | Taurus | also congelation |
| 264A | 9802 | II | Gemini | also fixation |
| 264B | 9803 | $\stackrel{\text { \% }}{ }$ | Cancer | also solution |
| 264C | 9804 | ${ }^{2}$ | Leo | also digestion |
| 264D | 9805 | ${ }^{1+}$ | Virgo | also distillation |
| 264E | 9806 | $\stackrel{\square}{\square}$ | Libra | also sublimation |
| 264F | 9807 | It. | Scorpio | also separation |
| 2650 | 9808 | $\times$ | Sagittarius | also ceration |
| 2651 | 9809 | 7 | Capricorn | also fermentation |
| 2652 | 9810 | " | Aquarius | also multiplication |
| 2653 | 9811 | H | Pisces | also projection |

7.2 Solar system

| Hex | Decimal | Char | Name | Description |
| :---: | :---: | :---: | :---: | :---: |
| 2609 | 9737 | - | Sun | also gold |
| 263D | 9789 | ) | First quarter moon | also silver |
| 263 E | 9790 | c | Last quarter moon |  |
| 26B8 | 9912 | 4 | Black moon Lilith | 2nd focal point of lunar orbit |
| 263F | 9791 | \% | Mercury | also the element mercury |
| 2640 | 9792 | $\bigcirc$ | Venus | also copper |
| 2641 | 9793 | t | Earth |  |
| 2642 | 9794 | $\sigma$ | Mars | also iron |
| 2643 | 9795 | 2 | Jupiter | also tin |
| 2644 | 9796 | b | Saturn | also lead |
| 2645 | 9797 | ${ }^{*}$ | Uranus |  |
| 2646 | 9798 | $\Psi$ | Neptune | also bismuth |
| 2647 | 9799 | E | Pluto 1 |  |
| 2BD3 | 11219 | 9 | Pluto 2 |  |

7.2.1 Dwarf planets

| Hex | Decimal | Char | Name | Description |
| :---: | :---: | :---: | :---: | :---: |
| 1F77B | 128891 | 品 | Haumea |  |
| 1F77C | 128892 | ศ* | Makemake |  |
| 1F77D | 128893 | 范 | Gonggong |  |
| 1F77E | 128894 | , | Quaoar |  |
| 1F77F | 128895 | (1) | Orcus |  |
| 2BF0 | 11248 | $\times$ | Eris 1 |  |
| 2BF1 | 11249 | 9 | Eris 2 |  |
| 2BF2 | 11250 | * | Sedna |  |

7.2.2 Asteroids

| Hex | Decimal | Char | Name | Description |
| :---: | :---: | :---: | :---: | :---: |
| 26B3 | 9907 | $?$ | Ceres |  |
| 26B4 | 9908 | 4 | Pallas |  |
| 26B5 | 9909 | 类 | Juno |  |
| 26B6 | 9910 | $\stackrel{1}{*}$ | Vesta |  |
| 26B7 | 9911 | \% | Chiron |  |

8 Measures

| Hex | Decimal | Char | Name | Description |
| ---: | ---: | ---: | :--- | :--- |
| 1F76E | 128878 | 率 | Hour |  |
| 29D6 | 10710 | z | Hour |  |
| 29D7 | 10711 | $\mathbf{z}$ | Hour |  |
| 1F76F | 128879 | $\circ$ | Night |  |
| 1F770 | 128880 | os | DayNight |  |
| 1F771 | 128881 | 区 | Month |  |
| 1F772 | 128882 | 3/ | HalfDram | 1 dram $\approx 3.6 \mathrm{~mL}$ |
| 1F773 | 128883 | 3 | HalfOunce | 1 ounce $\approx 28-31 \mathrm{~g}$ |

## References

[1] П $\lambda \dot{\alpha} \tau \omega v$ [PLátōn]: Tíu人ıos [Tímaios] Athens (GR), 360 BC B. Jowett, ed. and trans.: The Dialogues of Plato, in 5 vols 3rd ed. Oxford (UK): Oxford University Press, 1892 URL: https : //www.gutenberg.org/ebooks/1572.
[2] K. Aleklett et al.: Energy dependence of ${ }^{209} \mathrm{Bi}$ fragmentation in relativistic nuclear collisions, Phys. Rev. C 23:3 (1981), 1044-1046 Doi: 10.1103/PhysRevC.23.1044.
[3] S.N. Michaleas et al.: Theophrastus Bombastus Von Hohenheim (Paracelsus) 1493-1541: The eminent physician and pioneer of toxicology, Toxicol. Rep. 8 (2021), 411-414 dor: 10. 1016/j.toxrep.2021.02.012.
[4] Sir George Ripley: The Compound of Alchemy London (UK): Ralph Rabbards, 1471 isbn: 9781497945739 url: https://quod. Lib.umich.edu/e/eebo/A10786.0001.001?view=toc.
[5] C.G. Jung: Psychologie und Alchemie Zürich (CH): Rascher Verlag, 1944.

