The remains of the text

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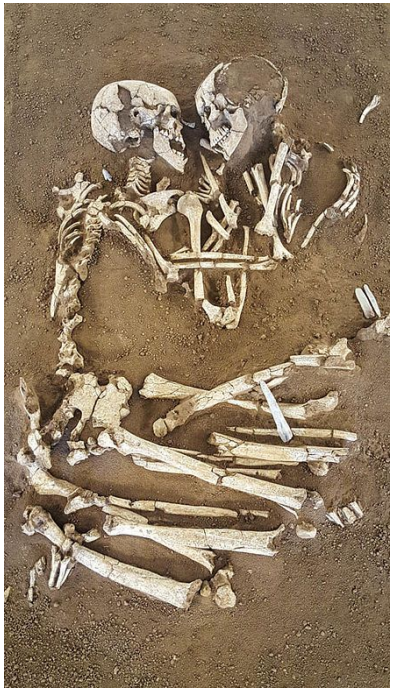
Venice, July 12, 2022

What Remains of the Text in the Heart of Those Who Remain?

The remains of the text …



… the co-text …

… the context …

… and the **reuse**

Overview

- Coronelli's *Epitome Cosmografica*
- Aratus' *Phaenomena* and the art of composing acrostics
- Latin poets between astronomy and mythology
- Lemmatisation and Semi-automated linguistic analysis of Latin texts
- Musisque Deoque: a powerful instrument to study intertextuality

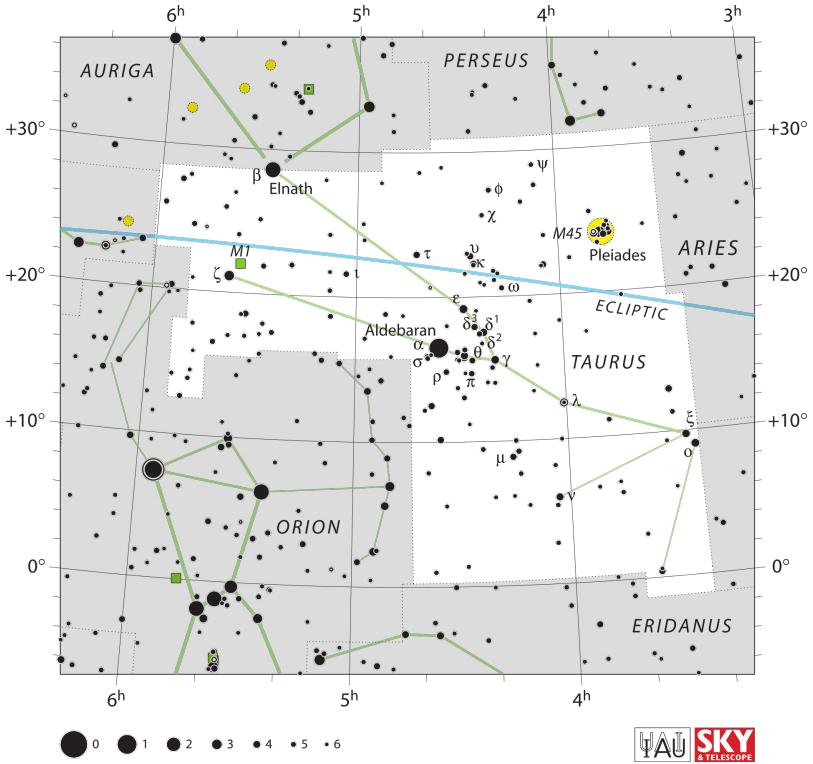
… and then…

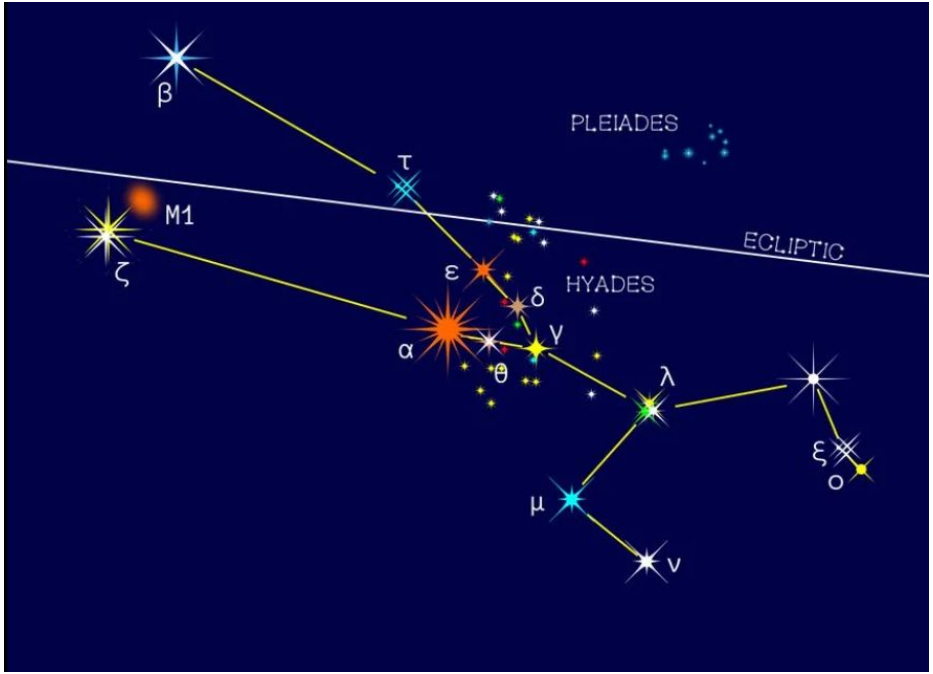
HANDS ON THE TEXTS!

CORONELLI’S SKY GLOBE

Coronelli’s Sky Globe

Coronelli's Sky Globe

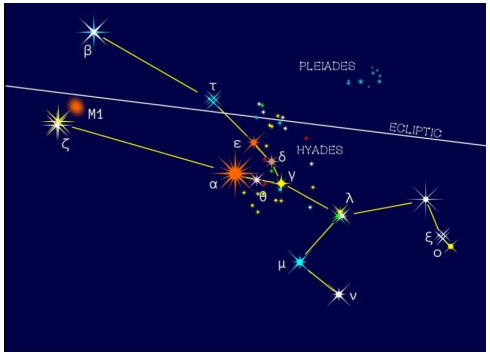




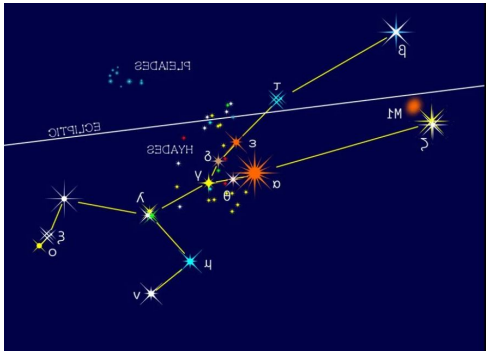
https://displate.com/displate/1252760

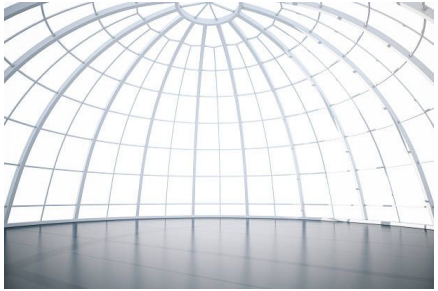
By IAU and Sky *Telescope magazine* (Roger Sinnott - Rick Fienberg) - [1], CC BY 3.0, https://commons.wikimedia.org/w/index.php?curid=15412408

Inside or Outside the Sphere?

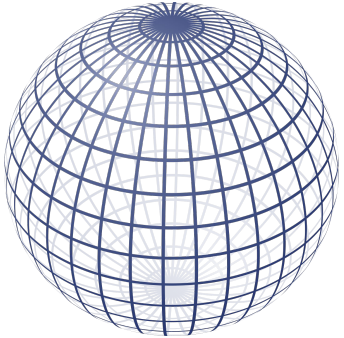


flip horizontally





Inside the celestial sphere



Outside the celestial sphere

Coronelli's *Epitome Cosmografica* (1693)

EPITOME

COSMOGRAFICA,

O

COMPENDIOSA INTRODUTTIONE

All' Astronomia, Geografia, & Idrografia,

Per l'Uso, Dilucidatione, e Fabbrica

Delle

SFERE, GLOBI, PLANISFERJ, ASTROLABJ, E TAVOLE GEOGRAFICHE,

E particolarmente degli stampati, e spiegati nelle

PUBLICHE LETTIONI

DAL P. MAESTRO

VINCENZO CORONELLI M.C.

COSMOGRAFO

DELLA

SERENISSIMA REPUBLICA DI VENETIA,

e Lettore di Geografia in quella Università, per l'Accademia Cosmografica

DEGLI ARGONAUTI.

COLONIA, MDCLXXXXIII.

Ad istanza di Andrea Poletti in Venetia.

CON PRIVILEGJ.

DEL TORO

Costellatione XXX. e II. del Zodiaco.

IL Toro, ò Tauro ♉, è la seconda Costellatione del Zodiaco, chiamata *Bubulum Caput*, *Bos*, *Portitor Europæ*, *Isis*; dagli Arabi *Altaur*, & *Attauuro*, e da' Greci Ταῦρος. Fù, conforme alle favole de' Poeti, trasportato da Giove in Cielo, in memoria di quando convertito in Toro, gli riuscì di godere Europa; mà perche si vede solo nella Testa, e nel Petto, alcuni vollero dar questo honore ad Iò, figliuola d'Inaco, pur dallo stesso Giove goduta in forma di Vacca, e dagli Egittij adorata col nome d' Iside; mentre anche Ovidio disse:

Vacca sit, an Taurus non est cognoscere promptum;
Pars prior apparet, posteriora latent.

Riceve la forma da 53 Stelle, 21 Settentrionali, fra le quali sono celebri le Pleiadi, e 32 Australi, che comprendono le Hiadi, più riguardevoli. Le Pleiadi sono chiamate altrimente *Septistellium*, e *Vergiliæ* dalla parola *Ver*, che significa Primavera, perche comparisconо nel fine di quella; sei si vedono chiare, l'ultima non si osserva mai; perciò il medesimo Ovidio scrisse nel terzo de' Fasti:

Quæ septem dici, sex tamen esse solent.

& i nomi di queste furono *Elettra*, *Alcione*, *Celene*, *Taigeta*, *Asterope*, *Maia*, e della settima *Merope*, la quale favoleggiarono, che si nasconda, perche si sposò a Sisifo, huomo mortale, mentre erano figlie d' Atlante, e della Ninfa Pleione, con la quale hebbe commercio Giove, e dal nome di essa furono dette Pleiadi.

Altri vogliono, che fossero figliuole di Licurgo, e di Nasso Ninfa, poi convertita in Isola, e che pe 'l merito d' haver allevato Bacco, e Giove le habbia unite alle Stelle.

Nel mezzo di queste ve ne sono altre 40 quasi invisibili; mà il Galileo nella sua Carta del Cielo le numerò solamente 36.

Maste-

Mastelino ne hà scoperto fin à 14. Gio: Battista Zuppo le calcolò 50 col Cannocchiale del Fontana.

Michiel Langreno alle sei ne aggiunse due, cioè il Padre Atlante, e la Madre Pleione; tutte 8 sono state collocate nel nostro Globo unite con l'altre all' Epoca 1700.

Altre sette sono le *Hiadi*, vicine al Palilicio, detto Aldebarano, & all'occhio Australe del Toro, figliuole anch' esse d'Atlante, ed Etra, Sorelle d'Hiante, il quale per essere stato lacerato da un Leone, si rilasciarono in così continuo disperato pianto, che si ridussero vicine all' estremo; impietositosene perciò Giove, le trasferì nel Cielo, e dal nome del Fratello furono Hiadi chiamate, benche i loro nomi distinti fossero *Ambrosia*, *Eudora*, *Pasitoe*, *Coronis*, *Plexauris*, *Pitho*, e *Tiche*.

Nomi rat. ant.	Nomi moder.	Caratteri di Bate.	NOMI DELLE STELLE	Segni del Zodiaco.	Longitudine. G.	M.	S.	Latitudine. G.	M.	S.	Grandezza, ò Magnitudine.	Stelle di tutta il Cielo
25	1	q	Le Pleiadi, Electra, ☉ ♂, ò ☉ ♃	♉	24	43	0	4	8	40	V.	803
25	2	q	Celeno, ☉ ♂, ò ☉ ♃	♉	24	45	10	4	15	35	VIII.	804
25	3	q	Taygeta, ☉ ♂, ò ☉ ♃	♉	24	53	10	4	31	36	VI.	805
25	4	q	Asterope, ☉ ♂, ò ☉ ♃	♉	24	56	50	4	30	30	VIII.	806
	5		Merope.	♉	24	59	50	3	52	30	VI.	807
33	6	q	Maia, ☉ ♂, ò ☉ ♃	♉	25	0	20	4	22	56	VI.	808
	7		Il Padre Atlante.	♉	25	46	20	3	50	20	VI.	809
	8		La Madre Pleione.	♉	27	47	20	3	53	0	VIII.	810
32	9	π	Alcione, detta in Baiero *Lucida Pleiadum*, ♂ ☉	♉	25	54	37	3	59	0	III.	811
34	10	A	Nel Collo, ♄ ♀	♉	29	14	0	1	12	30	V.	812
	11		Quella di mezzo nel Collo.	♊	0	45	30	6	32	50	V.	813
27	12	✠	La boreale nel Collo, ♄	♊	1	8	30	7	54	50	V.	814
31	13	ρ	L'australe ivi, ♂	♊	1	27	0	5	15	50	VI.	815
28	14	φ	La boreale delle due sopra l'Orecchia, ♄ ♀	♊	3	48	30	5	45	40	V.	816
29	15	χ	L'australe ivi, ♄ ♀	♊	3	57	0	3	57	10	V.	817
32	16	κ	L'australe delle due sopra l'Occhio, ♄ ♀	♊	4	1	0	0	25	30	IV.	818
22	17	υ	La boreale, ♄ ♀	♊	4	17	0	1	4	30	V.	819
20	18	τ	Nel mezzo del Fronte, ♂	♊	7	58	0	0	40	30	V.	820
41	19	K	La preced. delle due nella cima della Testa.	♊	11	45	0	1	35	0	VI - I	821
	20		La seguente.	♊	13	15	0	0	38	0	VI - I	822
	21	β	Nell' estremo del Corno boreale, ò nel Calcagno d'Auriga, ♂ ♀	♊	18	22	47	5	20	30	II.	823

Stelle

Coronelli’s Description of the Constellation Taurus

- Position in the Zodiac
- Latin names
- Arabic names
- Greek name
- Myth of Europa
- Myth of Io (alternative explanation)
- First **Ovid**’s quotation
- Description of the stars
- Description of the Pleiades (some information by **Hyginus**)
- Second **Ovid**’s quotation
- Myth of the Pleiades
- Variant of the myth
- Observations by telescope (Galileo, Mastelino, Zuppo)
- Description of the Hiades
- Myth of the Hiades

Translation

Taurus *is the second Constellation of the Zodiac, called* Bubulum Caput, Bos, Portitor Europae, Isis*; by the Arabs* Altaur *and* Attauuro*, and by the Greeks* Ταυρός*. It was, as the fables of the Poets say, transported by Jupiter to Heaven, in memory of when, converted into a bull, he succeeded in possessing Europa; but because it is seen only in the Head and Chest, some wished to give this honor to Ios, daughter of Inachus, also possessed by the same Jupiter when she had the form of a Cow, and by the Egyptians worshipped under the name of Isis. Ovid [Fasti, 4, 717-718] also said:*

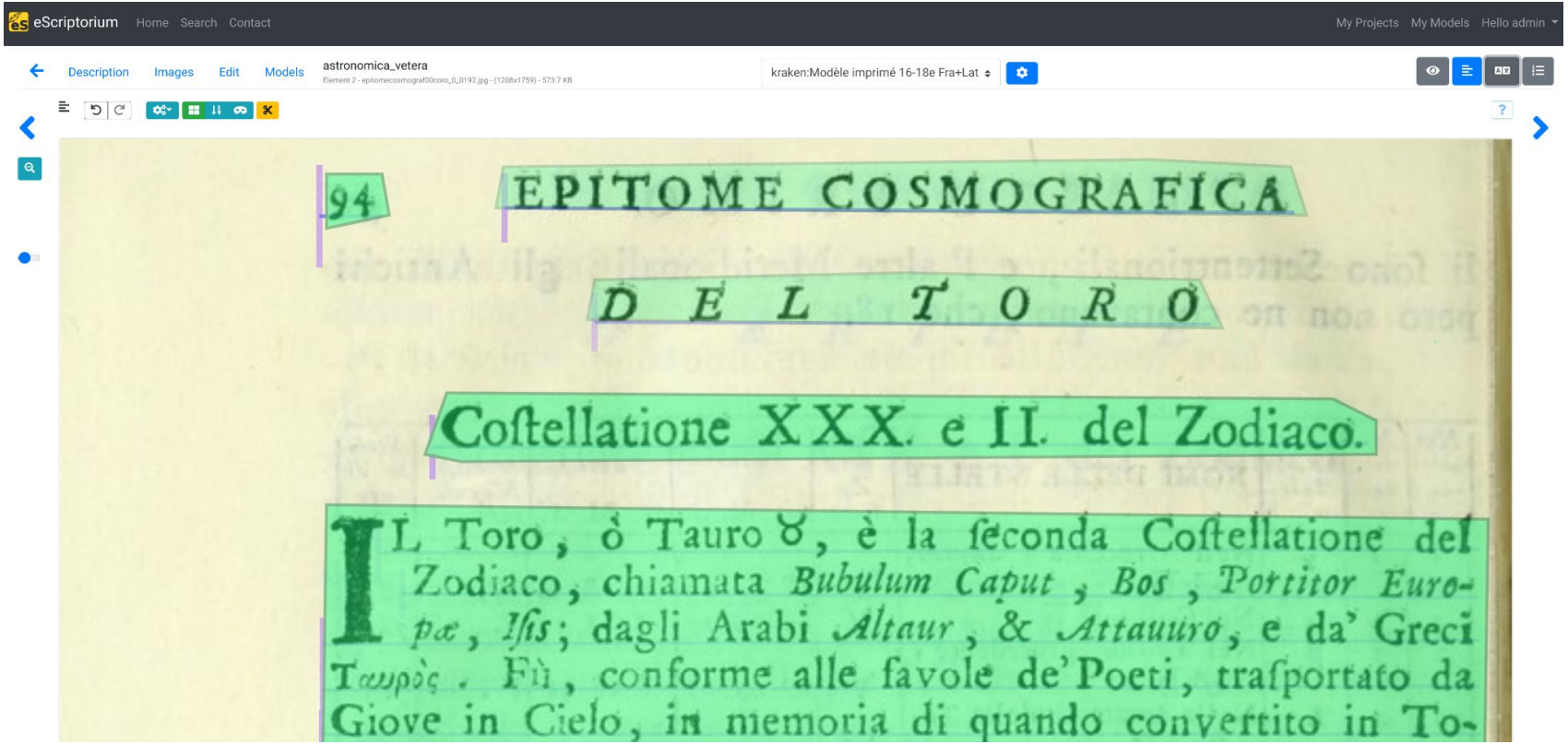
Whether it is cow or bull, it is not known.
The front part is clearly visible; the back part is hidden.

It receives its form from 53 Stars, 21 Northern, among which the Pleiades are famous, and 32 Southern, which include the more valuable Hiades. The Pleiades are also called Septistellium *and* Vergiliae *from the word* Ver*, meaning Spring, because they appear at the end of that season; 6 are visible, the last one can never be seen. Therefore, Ovid himself wrote in the third book of the* Fasti *[4, 170]:*

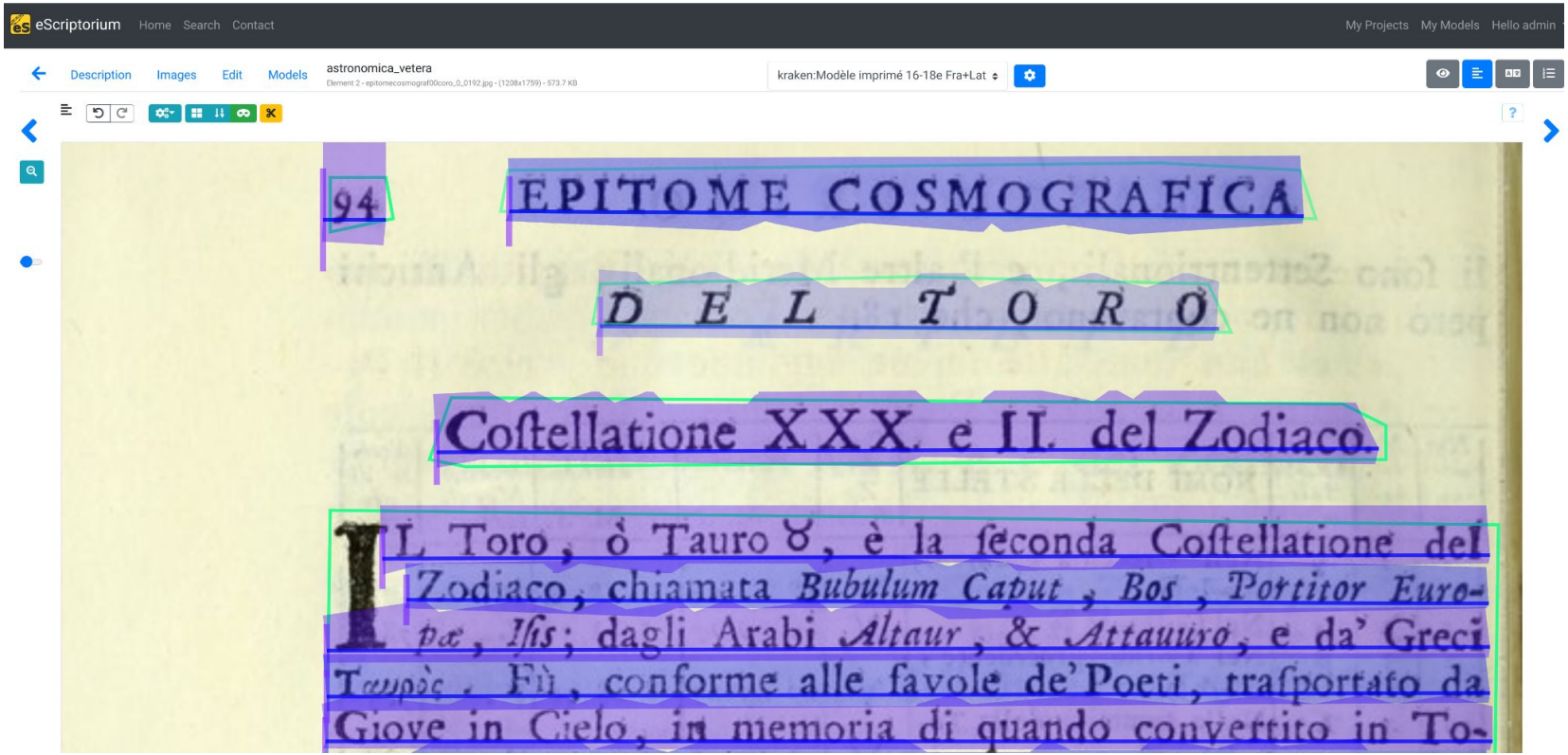
They are said to be seven, but they are only six.

And the names of these were Electra, Alcyone, Celene, Taigeta, Asterope, Maia, and of the seventh Merope, who some narrate is hidden, because she married Sisyphus, a mortal man, although they were daughters of Atlas and the nymph Pleione, with whom Jupiter had dealings, and from her name they were called the Pleiades. Others tell that they were the daughters of Lycurgus and the Nymph Naxos, later converted to the Island, and that for the merit of having raised Bacchus and Jupiter she united them with the Stars. In the middle of these are another 40 almost invisible; but Galileo in his Chart of the Sky counted only 36. Mastelino discovered as many as 14; Giovanni Battista Zuppo counted 50 with Fontana's Cannocchiale. Michiel Langreno to the previous six added two, namely Father Atlas and Mother Pleione; all 8 were placed in our Globe along with the others. There are seven others, called Hiades, near the Palilicium*, called Aldebaranus, and the Southern eye of* Taurus*, daughters also of Atlas et Etra, Sisters of Hiante, who for being torn by a Lion, gave themselves up to a despairing and uninterrupted weeping, that they strayed to the extremity; therefore Jupiter, moved by the situation, transferred them to Heaven, and by the name of the Brother they were pitied Hiadi, though their names were Ambrosia, Eudora, Pasitoe, Coronis, Plexauris, Pitho, and Tiche.*

Text Acquisition by eScriptorium: Layout Analysis



Text Acquisition by eScriptorium: Masks and line Bases



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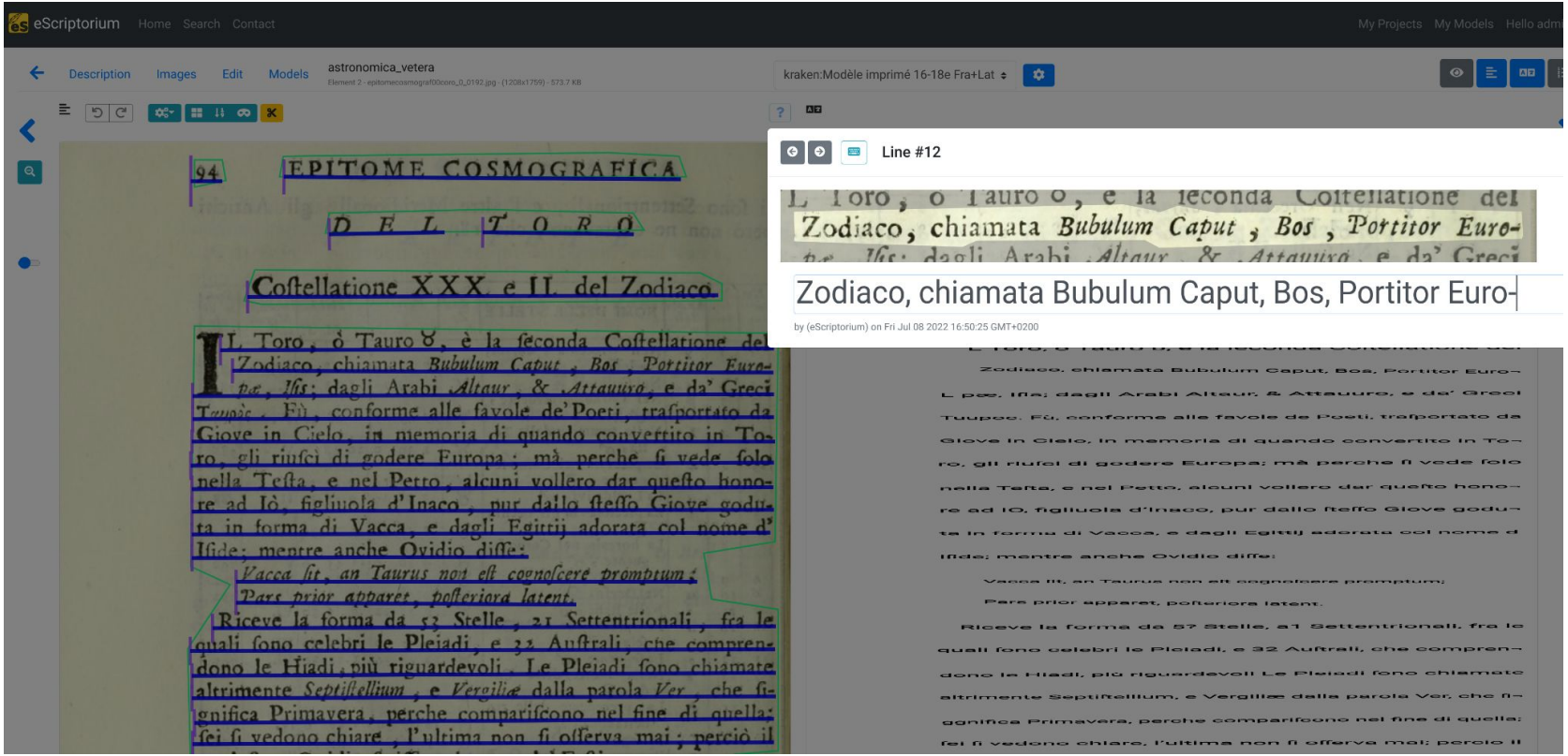


Caesius' *Coelum astronomico-poeticum* (1662)

PHILIPPI CÆSII
à ZESEN
COELVM
ASTRONOMICO-
POETICVM
ſive
MYTHOLOGICUM
STELLARVM FIXARVM,
hoc eſt,
Signorum cœleſtium, ſive Conſtellationum omnium ad certas imagines redactarum, inque Cœlo fictitio ſive Organo Globi Aſtronomici continui, mythologico nomine & picturâ, ab Antiquis repræſentatarum
SVCCINCTA DESCRIPTIO.

AMSTELÆDAMI,
Apud IOANNEM BLAEU.
cIↃ IↃC LXII.

II. TAVRVS, der Stier / ſive der Farre:

Bos, Portitor Europæ, Proditor Europes; Ovidio *Taurus Candidus*; Manilio *Princeps armenti: Bubulum caput*; *Io*, Ovidio *Inachis*, Virgilio 3 Georg.

Taurus, qui recentioribus tantum dimidius pingitur, Plinio, & Vitruvio integer erat; ac in cauda ejus *Pleiades*, quæ nunc in fronte, locabantur: quamquam & aliis eædem ſeorſim à Tauro ſint effictæ. Cæterùm Vaccáne, an Taurus conſtellatio hæc cenſeri, & utrum ad Iovem, an ad ſcortum ejus referri debeat, inter ipſos fabulatores antiquos ambigitur. Hinc Ovidius:

Vacca *ſit, an* Taurus, *non eſt cognoſcere promptum.*
Pars prior apparet, poſteriora latent.
Seu tamen eſt Taurus, *ſive hoc eſt* femina *ſignum,*
Iunone invitâ munus amoris habet.

Has nempe à cæſura Tauri ad originem cervicis traduxere poſteri. Idem l.4 Faſtorum, verſ.167, & ſeqq.

Pleiades *incipiunt humeros relevare paternos;*
quæ ſeptem dici, ſex tamen eſſe ſolent:

Ovid’s Quotations in Coronelli

Iſide; mentre anche Ovidio diſſe:
Vacca ſit, an Taurus non eſt cognoſcere promptum;
Pars prior apparet, poſteriora latent.

missing information

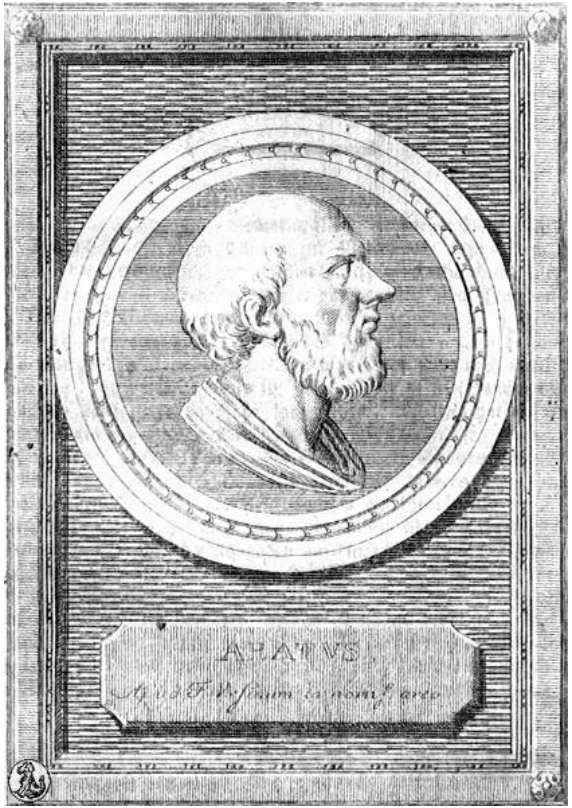
Iside; mentre anche Ovidio disse:
<quote source="#Ovid???">
<l n="???">Vacca sit, an Taurus non est cognoscere promptum;</l>
<l n="???">Pars prior apparet, posteriora latent.</l>
</quote>

medeſimo Ovidio ſcriſſe nel terzo de’ Faſti:
Quæ ſeptem dici, ſex tamen eſſe ſolent.

medesimo Ovidio scrisse nel <choice><sic>terzo</sic><corr>???</corr></choice> de’ Fasti:
<quote source="#Ovid_fasti_???">
<l n="???">Quae septem dici, sex tamen esse solent.</l>
</quote>

ARATUS

Aratus and the *Phainomena*



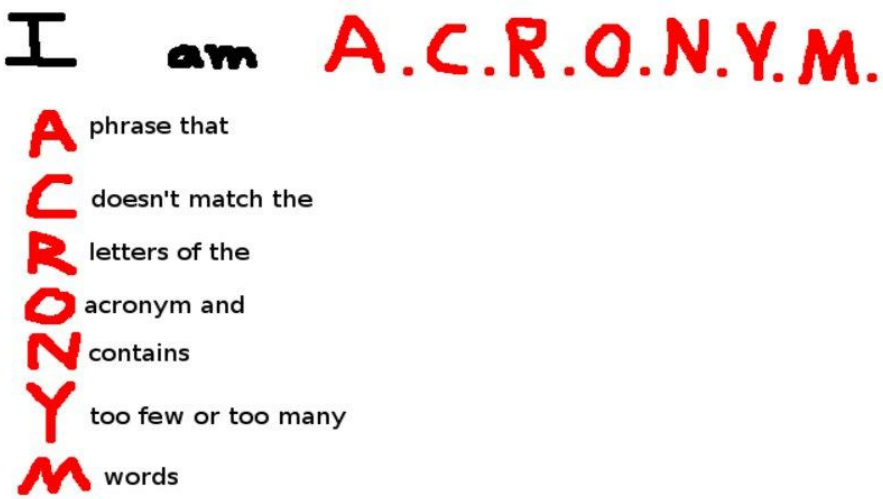
Aratus of Soli (3rd century BC) was a Greek didactic poet who wrote a poem in hexameters about the stars and their appearance (hence the title of his most famous work, **Phainómena**) and on the interpretation of astronomical signs for weather forecasting.

From the Hellenistic period until the late Middle Ages, the ***Aratea*** (a corpus of Latin translations and adaptations of Aratus' poem) were a common sourcebook for scholars interested in the study of **constellations**, the path of the Sun in the **Zodiac** and astronomical **meteorology**.

Aratus in Context

One of the most striking features of Hellenistic poetry is its emphasis on **stylistic experimentation**. Our attention today will be focused in particular on Aratus' **acrostics**, a literary device that we can identify also in epigraphic poems written in stone.

An **acrostic** is a poem or other composition in which the first letter (or syllable, or word) of each line (or paragraph, or other recurring feature in the text) spells out a word, message or the alphabet). <u>The acrostic has to be **intentional**!</u>



The *Lepté* Acrostic

785	**λεπτὴ** μὲν καθαρή τε περὶ τρίτον ἦμαρ ἐοῦσα **ε**ὔδιός κ᾽ **ε**ἴη, **λεπτὴ** δὲ καὶ εὖ μάλ᾽ ἐρευθὴς **π**νευματίη, **π**αχίων δέ καὶ ἀμβλείῃσι κεραίαις **τ**έτρατον ἐκ **τ**ριτάτοιο φόως ἀμενηνὸν ἔχουσα **ἢ** νότῳ ἄμβλυνται **ἢ** ὕδατος ἐγγὺς ἐόντος. (Arat. 783-787)	If [the Moon is] slender and clear about the third day, she will bode fair weather; if slender and very red, wind; if the crescent is thickish, with blunted horns, having a feeble fourth-day light after the third day, either it is blurred by a southerly or because rain is in the offing. (transl. D. Kidd)

Acrostic “discovered” by Jean-Marie Jacques, October 21st 1959

AcroFinder (in Aratus and beyond)

A simple **Python tool** to identify acrostics in a literary corpus.

Two elements needed: the **text** and a **vocabulary** that matches the outputs with a list of possible words in a specific language (plus an eventual **character map** that adapts uppercase characters to lowercase).

```
for i in range(1,lineListLen):
    if i>lineListLen-minLen:
        continue
    for j in range(0,maxLen):
        uw=''
        if j<minLen:
            continue
        for k in range(0, j):
            try:
                uw=''.join([uw,ucm.getUpperWord(lineList[i+k][1][0])])
            except:
                pass
        try:
            result=ucm.getLowerWordList(uw)[0]
            if len(result)>(minLen-1) and not(''' in result):
                print(f'{result}')
                for idx in range(i, i+len(result)):
                    print(f'{lineList[idx][0]}\t{lineList[idx][1]}')
                print()
        except:
            pass
```

AcroFinder Results

Cycling Aratus’ poem through AcroFinder, the tool identified 55 possible instances of acrostics. Let’s give (a couple of) them a closer look!

785	**ε**ὔδιός κ' εἴη, λεπτὴ δὲ καὶ εὖ μάλ' ἐρευθὴς **π**νευματίη· παχίων δὲ καὶ ἀμβλείῃσι κεραίαις **τ**έτρατον ἐκ τριτάτοιο φόως ἀμενηνὸν ἔχουσα **ἠ**ὲ νότου ἀμβλύνετ' ἢ ὕδατος ἐγγὺς ἐόντος.	240	**ἀ**μφοτέρῃς, ἡ δ' οὔτι τόση, μάλα δ' ἐστὶν ἑτοίμη **ε**ὑρέσθαι· περὶ γὰρ πολέων εὐάστερός ἐστιν. **Τ**ῶν ὀλίγον Κριοῦ νοτιώτεροι ἀστέρες εἰσίν. **Οἱ** δ' ἄρ' ἔτι προτέρω, ἔτι δ' ἐν προμολῇσι νότοιο **Ἰ**χθύες. Ἀλλ' αἰεὶ ἕτερος προφερέστερος ἄλλου,

O Tell me the Truth about…Acrostics

«In deciding whether the pattern is fortuitous, the length of the [acrostic] is important. Continuation of the message beyond four letters would prove that it was intended, though it might be disputed just how many more letters would be needed for proof. The converse is not true: the pattern may be intentional, even if it only covers one four-letter word and nothing significant follows. In that case, only additional evidence [. . .] would tell us for certain» (Hendry 1994)

«"Pray, Mr. Macaulay, do not you think that Buonaparte was the Beast?" "No, Sir, I cannot say that I do." "Sir, he was the Beast. I can prove it. I have found the number 666 in his name. […] If you write Napoleon Buonaparte in Arabic, leaving out only two letters, it will give 666.”» (Letter of July 1, 1834 in *Life and Letters of T. B. Macaulay*)

A Poem about Stars

Look at the stars!

Look how they shine for you,

Shine bright like a diamond

To infinity and beyond.

All that glitters is gold:

Rocket man,

Fly me to the Moon.

See you, space cowboy.

LLS
LLST
LLSTA
LLSTAR
LLSTARF
LLSTARFS …

LST
LSTA
LSTAR
LSTARF
LSTARFS …

STA
STAR
STARF
STARFS …

TAR
TARF
TARFS …

LATIN POETS
BETWEEN ASTRONOMY AND MYTHOLOGY

Index

1. Publius Vergilius Maro
2. Publius Ovidius Naso
3. Hyginus
4. Marcus Manilius
5. Marcus Valerius Martialis
6. Anthologia Latina
7. Martianus Capella
8. Basinio Basini
9. Giovanni Pontano

1. Publius Vergilius Maro

Vergilius (Mantua 70 BC, Brindisi 19 AD)

One of the greatest poets of the Augustan age, his major works include: *Bucolics*, *Georgics*, *Aenid*

Georgics are a didactic epic poem in 4 Books, written in hexameter.

IV Book: in the description of bees, honey harvesting is regulated on the Pleiades and the appearance of Taigete (star belonging to the constellation Taurus)

→ Quotation from the IV Book:

> Twice a year honeycombs are cleaned | twice it is harvest time: | as soon as, among the Pleiades, T<u>aigete | shows her graceful face to the earth | and scornfully repels with her foot the waves into the sea.</u> | Or when, fleeing the rainy stars of Pisces, | it descends sadly from the sky into the waters of winter.

SOURCES AND/OR MODELS: **Aratus**, *Phaenomena*: a didactic poem in which astronomical and meteorological topics are also dealt with.

2. Publius Ovidius Naso

Ovidius (Sulmona 43 BC - Tomi 17/18 AD)

Augustan age poet, his major works are the *Metamorphoses* and *Fasti*, with several points referring to the fields of astronomy and astrology. Also author of a (lost) compendium on the *Phaenomena* of Aratus.

Metamorphoses : Epic-mythological poem in 15 Books, a kind of encyclopedia of classical mythology. At least 3 explicit catasterisms are present. **Catasterism** = from greek καταστερίζω 'I place among the stars,' a process by which a hero or deity is turned into a star or constellation.

→ f.i.: the event of Callisto transformed into Ursa Major (II Book, vv. 505-507):

> But the Omnipotent prevented it: removing them both, he removed | the crime, and lifting them into the air with a wind turbine, | placed them in the sky making them two contiguous constellations.

SOURCES AND/OR MODELS: **Aratus** (*Phaenomena*), **Eratosthenes** (*Catasterisms*)

3. Hyginus

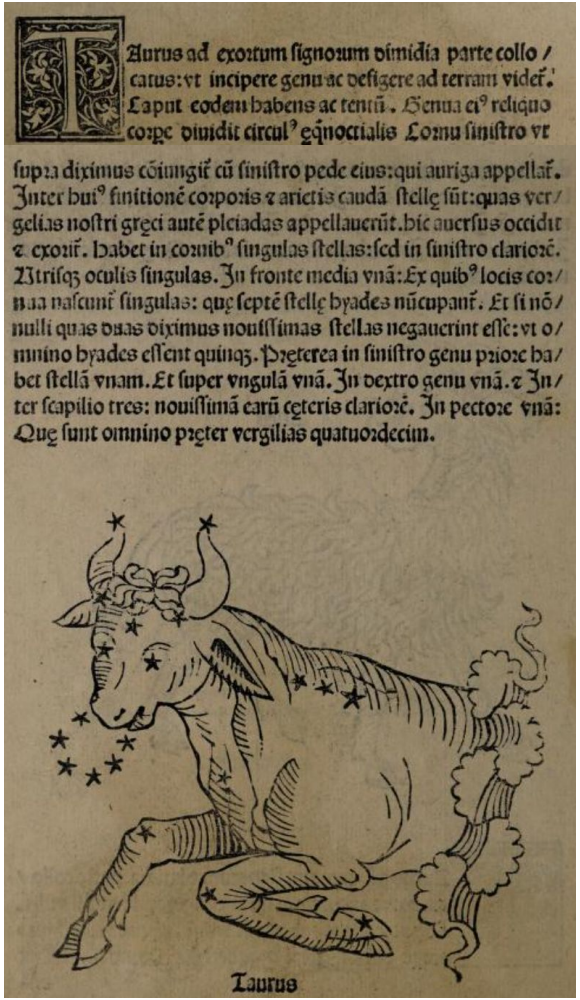
Hyginus, called the Astronomer (lived around the 1st century AD)

DE ASTRONOMIA: prose work divided into 4 Books and dedicated to the description of the Universe: stars, planets, constellations,...

→ Incipit constellation of Taurus (III Book)

> Taurus is set toward the east, in the central part of the sky occupied by the zodiac signs; his knees point toward the ground; his head is slightly raised.

Also for him, sources and/or models are from the Greek tradition: **Aratus** and **Eratosthenes.**


Taurus ad exortum signorum dimidia parte collo / catus: vt incipere genu ac defigere ad terram videat. Caput eodem habens ac tentū. Genua eius reliquo corpe dimidit circulū equinoctialis Cornu sinistro vt

supra diximus cōiungit cū sinistro pede eius: qui auriga appellat. Inter hui⁹ finitionē corporis et arietis caudā stellę sūt: quas vergelias nostri greci autē pleiadas appellauerūt. hic auersus occidit et exorit. habet in cornib⁹ singulas stellas: sed in sinistro clariorē. Utrisq; oculis singulas. In fronte media vnā: Ex quib⁹ locis cornua nascunt singulas: quę septē stellę hyades nūcupant. Et si nō / nulli quas duas diximus nouissimas stellas negauerint esse: vt omnino hyades essent quinq;. Preterea in sinistro genu prior habet stellā vnam. Et super vngulā vnā. In dextro genu vnā. et Inter scapilio tres: nouissimā earū ceteris clariorē. In pectore vnā: Quę sunt omnino preter vergilias quatuordecim.

Taurus

4. Marcus Manilius

Latin poet of Berber origin, born in the 1st century BC, in the Augustan age.

ASTRONOMICA: a didactic poem in 5 Books on astronomy and astrology: cosmos, constellations, planets. First work to deal extensively with the horoscope, that is the influence of the stars on man's destiny.

→ I book:

> First Aries resplendent in its golden fleece marveling | looks back at Taurus rising in the direction opposite,| who with face and bowed forehead calls to Gemini, | to whom comes after Cancer, to Cancer Leo, Virgo to Leo.

[The underlined description also returns in Hyginus and Basinus]

SOURCES AND/OR MODELS: **Ovidius** (*Metamorphoses*), **Lucretius** (*De rerum Natura)* and **Aratus** (*Phaenomena*)

5. Martialis

Martialis (Augusta Bilbilis, Spain 38 AD - 104 AD) - poet of the Imperial Age

EPIGRAMMES: short, verse compositions featured by satire and parody of everyday events. Reuse of mythological elements in a polemical, satirical key.

6. The *Anthologia Latina*

ANTHOLOGIA LATINA: collection of verse compositions (6th century) - Late Imperial Age

It is a set of poems with didactic intent on various topics: poetry, medicine, hunting,...

Among them:

→ *Pervìgilium Vèneris*: anonymous poem in which the figure of Venus is celebrated as the lady of life and rebirth, with mythological cues. One of the last pagan-inspired compositions of Latin literature, with reuse of mythological materials from the classical tradition

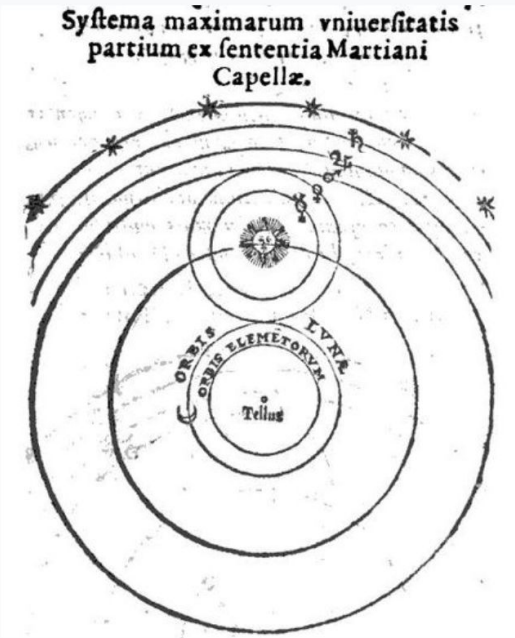
SOURCES AND/OR MODELS: **Vergilius** (*Georgics*), **Ovidius** (*Tristia*)

7. Martianus Capella

Martianus Capella was an African writer who lived at the turn of the 4th and 5th centuries, in late Imperial Age. He wrote the allegorical novel *De nuptiis Philologiae et Mercurii*.

De nuptiis Philologiae et Mercurii is a prosimeter, a mix of verse and prose, divided in 9 books. Is an allegorical work on the liberal arts (grammar, geometry, music,...). The VIII Book is on astronomy.

The figure illustrates the geo-heliocentric model of Heraclides Ponticus (a Greek philosopher) described by Martianus Capella.



SOURCES AND/OR MODELS for the astronomical Book:
Eratosthenes, **Hyginus**.

8. Basinio Basini

Basinio Basini, called Basinus Parmensis, was born in the XV century.

One of his works is ASTRONOMICA: it is a didactic poem in hexameters, divided into 2 Books, with an evident astronomical inspiration.

There are described constellations, planets, weather phenomena, ... This poem is the first attempt of Italian Humanism to refound the Latin tradition of astronomical subjects, after the work of Manilio.

→ ASTRONOMICA (I Book)

And indeed on the circle that equals nights to days, | Aries is the first sign, facing the eastern quarters,| which the great figure of the Triangle covers in snout and head.

SOURCES AND/OR MODELS: **Cicero** (*Somnium Scipionis*) known in the commentary of **Macrobius**, **Ovid** (*Fasti*), **Hyginus** (*De Astronomica*) and **Manilius.**

9. Giovanni Pontano

Giovanni Pontano was an important Italian philosopher, politician and diplomat of the XV century.

One of his works is URANIA, an astrological poem in hexameters that concerns the constellations and their influences on worldly phenomena. The writing expresses a naturalistic vision of astrological knowledge which refers to the modern rediscovery of the Ptolemaic astrological doctrine.

SOURCES AND/OR MODELS: **Ovid** (*Metamorphoses*), **Manilius** (*Astronomica*), **Basinus** (*Astronomica*)

LEMMATISATION

A Brief Introduction to Lemmatisation

1. What?

2. Why?

3. How?
3.1. Universal Dependencies
3.2. CoNLL-U
3.3. UDPipe

4. Let’s try!

```
1 Hic hic PRON  p-s---mn- Case=N
2 dicitur dico  VERB  v3spip---
3 inter inter ADP r-------- _ 4
4 astra astrum  NOUN  n-p---na-
5 esse  sum VERB  v--pna--- Tens
6 constitutus constituo VERB  v-
7 , , PUNCT u-------- _ 8 punct
8 quod  quod  SCONJ c-------- _
9 Europam europa  NOUN  n-s---fa
10  incolumem incolumis ADJ a-s-
11  transuexerit  transuo VERB
12  Cretam  Creta NOUN  n-s---fa
13  , , PUNCT u-------- _ 14  pu
14  ut  ut  SCONJ c-------- _ 16
15  Euripides Euripides NOUN  n-
16  dicit dico  VERB  v3spia---
17  . . PUNCT u-------- _ 2 punc
```

1. What is Lemmatisation?

A Short Definition

- Lemmatisation is one of the procedures of linguistic analysis
- Lemmatisation is the process of reducing an inflected form of a word to its canonical form
- The canonical form, or dictionary form, or citation form, or base form is called lemma
- A lemma is usually represented by a single word, disambigued from those that have the same spelling

For example, in Latin:

1. *lego*, *legas*, *legavi*, *legatum*, *legare* (‘to delegate’) ≠ 2. *lego*, *legis*, *legi*, *lectum*, *legere* (‘to collect, to read’)

2. Why Lemmatise?

The Advantages of an In-depth Analysis

Lemmatisation

- allows a in-depth analysis of the language and its morphology

- identifies not only the base form of the word but also its part of the speech, a step necessary for the *Part-of-speech tagging*, i.e. the process of marking up a word (called *token*) in a text (*corpus*) as corresponding to a particular part of speech, based on both its definition and its context

Lemmatisation + POS-tagging

- are preparatory to the study of the syntactic structure of the period to which those single words belong

- the results of this kind of study are called *Treebanks*, i.e. parsed text corpus that annotates syntactic or semantic sentence structure following specific linguistic theory (e.g. phrase or dependencies structure)

3. How to Lemmatise?

Two Methods

Method #1

We can add specific attributes to the words/tokens of an XML document (see *Musisque Deoque*)

Method #2

We can refer to the format Conll-U, where multiple levels of analysis are represented: it shows not only the results of the lemmatization but also of the syntactic analysis and of the relationships between the parts of speech, according to the standard of *Universal Dependecies*

3.1. Universal Dependencies

https://universaldependencies.org

Universal Dependencies (UD) is a framework for consistent annotation of grammar (parts of speech, morphological features, and syntactic dependencies) across different human languages

Irish	2	131K		IE, Celtic
Italian	8	858K	W	IE, Romance
Japanese	8	2,849K	W	Japanese
Javanese	1	2K		Austronesian, Javanese
Kaapor	1	<1K		Tupian, Tupi-Guarani
Kangri	1	2K		IE, Indic
Karelian	1	3K		Uralic, Finnic
Karo	1	2K		Tupian, Purubora-Ramarama
Kazakh	1	10K	W	Turkic, Northwestern
Khunsari	1	<1K		IE, Iranian
Kiche	1	10K	W	Mayan
Komi Permyak	1	<1K		Uralic, Permic
Komi Zyrian	2	10K		Uralic, Permic
Korean	3	446K	W	Korean
Kurmanji	1	10K	W	IE, Iranian
Latin	5	977K		IE, Italic

3.2. CoNLL-U Format

https://universaldependencies.org/format.html

The .conllu format is divided into columns, where each column represents a level of analysis, from the first indicating the token number, to the last indicating the position of that particular token in the sentence, through the declaration of the identification number of the character(s) in the parsed string, useful for reconstructing the original text

Id	Form	Lemma	UPosTag	XPosTag	Feats	Head	DepRel	Deps	Misc
# generator = UDPipe 2, https://lindat.mff.cuni.cz/services/udpipe									
# udpipe_model = latin-llct-ud-2.6-200830									
# udpipe_model_licence = CC BY-NC-SA									
# newdoc									
# newpar									
# sent_id = 1									
# text = Ego sum .									
1	Ego	ego	PRON	p|p|1|s|-|-|-|m|n|-	Case=Nom|Gender=Masc|Number=Sing|Person=1|PronType=Prs	2	nsubj	_	TokenRange=0:3
2	sum	sum	AUX	v|v|1|s|p|i|a|-|-|-	Mood=Ind|Number=Sing|Person=1|Tense=Pres|VerbForm=Fin|Voice=Act	0	root	_	TokenRange=4:7
3	.	.	PUNCT	Punc	_	2	punct	_	SpaceAfter=No|TokenRange=8:9

1. **ID**: Word index, integer starting at 1 for each new sentence; may be a range for multiword tokens; may be a decimal number for empty nodes (decimal numbers can be lower than 1 but must be greater than 0)

2. **FORM**: Word form or punctuation symbol

3. **LEMMA**: Lemma of word form

4. **UPOS**: Universal part-of-speech tag (17 categories)

5. **XPOS**: Language-specific part-of-speech tag, underscore if not available

6. **FEATS**: List of morphological features from the universal feature inventory or from a defined language-specific extension

7. **HEAD**: Head of the current word, which is either a value of ID or zero (0)

8. **DEPREL**: Universal dependency relation to the HEAD (root if HEAD = 0)

9. **DEPS**: Enhanced dependency graph in the form of a list of head-deprel pairs

10. **MISC**: Any other annotation (e.g. Token Range)

3.3. UDPipe for a Semi-automated Analysis

https://lindat.mff.cuni.cz/services/udpipe/

UDPipe is a trainable pipeline for tokenization, tagging, lemmatization and dependency parsing of CoNLL-U files. UDPipe is language-agnostic and can be trained given annotated data in CoNLL-U format. Trained models are provided for nearly all UD treebanks.

Steps:

1. Choose a tokenized text
2. Choose the model
3. Input the text and process
4. Check and eventually correct the results
5. View the graphic representation of the treebank

4. Let’s Try to Lemmatise!

Exercise. Choose the model *Ittb*; enter the following Latin sentence in UDPipe and process; check the results (cols. 1–4): are they correct?; if not, what should we do?

Hic dicitur inter astra esse constitutus , quod Europam incolumem transuexerit Cretam , ut Euripides dicit .

[*The Bull*] *was placed among the stars because it carried Europa safely to Crete, as Euripides says*

Hyginus, *Astronomica*, II, XXI: Taurus

Service

The service is freely available for testing. Respect the CC BY-NC-SA licence of the models – **explicit written permission of the authors is required for any commercial exploitation of the system**. If you use the service, you agree that data obtained by us during such use can be used for further improvements of the systems at UFAL. All comments and reactions are welcome.

Model: (•) UD 2.6 (description) ( ) EvaLatin20 (description)

latin-ittb-ud-2.6-200830

Actions: [x] Tag and Lemmatize [x] Parse

▼ Advanced Options

A Input Text | Input File

Hic dicitur inter astra esse constitutus , quod Europam incolumem transuexerit Cretam , ut Euripides dicit .

↓ Process Input ↓

ITTB

Index Thomisticus Treebank

Save Output File

Id	Form	Lemma	UPosTag	XPosTag	Feats	Head	DepRel	Deps	Misc
# generator = UDPipe 2, https://lindat.mff.cuni.cz/services/udpipe									
# udpipe_model = latin-ittb-ud-2.6-200830									
# udpipe_model_licence = CC BY-NC-SA									
# newdoc									
# newpar									
# sent_id = 1									
# text = Hic dicitur inter astra esse constitutus , quod Europam incolumem transuexerit Cretam , ut Euripides dicit .									
1	Hic	hic	ADV	O4	_	2	advmod	_	TokenRange=0:3
2	dicitur	dico	VERB	N3|modJ|tem1|gen6	Mood=Ind|Number=Sing|Person=3|Tense=Pres|VerbForm=Fin|Voice=Pass	0	root	_	TokenRange=4:11
3	inter	inter	ADP	S4	AdpType=Prep	4	case	_	TokenRange=12:17
4	astra	astrum	NOUN	B1|grn1|casM|gen3	Case=Acc|Degree=Pos|Gender=Neut|Number=Plur	6	obl	_	TokenRange=18:23
5	esse	sum	AUX	N3|modH|tem1	Tense=Pres|VerbForm=Inf|Voice=Act	6	aux:pass	_	TokenRange=24:28
6	constitutus	constituo	VERB	L2|modM|tem4|grp1|casA|gen1	Aspect=Perf|Case=Nom|Degree=Pos|Gender=Masc|Number=Sing|Tense=Past|VerbForm=Part|Voice=Pass	2	xcomp	_	TokenRange=29:40
7	,	,	PUNCT	Punc	_	11	punct	_	TokenRange=41:42
8	quod	quod	SCONJ	O4	_	11	mark	_	TokenRange=43:47
9	Europam	europus	NOUN	A1|grn1|casD|gen2	Case=Acc|Degree=Pos|Gender=Fem|Number=Sing	11	obj	_	TokenRange=48:55
10	incolumem	incolumis	ADJ	C1|grn1|casD|gen1	Case=Acc|Degree=Pos|Gender=Fem|Number=Sing	9	amod	_	TokenRange=56:65
11	transuexerit	transuo	VERB	N3|modB|tem4|gen6	Aspect=Perf|Mood=Sub|Number=Sing|Person=3|Tense=Past|VerbForm=Fin|Voice=Act	2	csubj:pass	_	TokenRange=66:78
12	Cretam	cretus	VERB	K2|modM|tem4|grp1|casD|gen2	Aspect=Perf|Case=Acc|Degree=Pos|Gender=Fem|Number=Sing|Tense=Past|VerbForm=Part|Voice=Pass	11	ccomp	_	TokenRange=79:85
13	,	,	PUNCT	Punc	_	16	punct	_	TokenRange=86:87
14	ut	ut	SCONJ	O4|vgr1	_	16	mark	_	TokenRange=88:90
15	Euripides	euripides	PROPN	C1|grn1|casA|gen1	Case=Nom|Degree=Pos|Gender=Masc|Number=Sing	16	nsubj	_	TokenRange=91:100
16	dicit	dico	VERB	N3|modA|tem1|gen6	Mood=Ind|Number=Sing|Person=3|Tense=Pres|VerbForm=Fin|Voice=Act	11	advcl	_	TokenRange=101:106
17	.	.	PUNCT	Punc	_	2	punct	_	SpacesAfter=\r\n|TokenRange=107:108

```
# generator = UDPipe 2, https://lindat.mff.cuni.cz/services/udpipe
# udpipe_model = latin-ittb-ud-2.6-200830
# udpipe_model_licence = CC BY-NC-SA
# newdoc
# newpar
# sent_id = 1
# text = Hic dicitur inter astra esse constitutus , quod Europam incolumem trans
1 Hic hic ADV O4  _ 2 advmod  _ TokenRange=0:3
2 dicitur dico  VERB  N3|modJ|tem1|gen6 Mood=Ind|Number=Sing|Person=3|Tense=Pres
3 inter inter ADP S4  AdpType=Prep  4 case  _ TokenRange=12:17
4 astra astrum  NOUN  B1|grn1|casM|gen3 Case=Acc|Degree=Pos|Gender=Neut|Number=P
5 esse  sum AUX N3|modH|tem1  Tense=Pres|VerbForm=Inf|Voice=Act 6 aux:pass  _ To
6 constitutus constituo VERB  L2|modM|tem4|grp1|casA|gen1 Aspect=Perf|Case=Nom|D
7 , , PUNCT Punc  _ 11  punct _ TokenRange=41:42
8 quod  quod  SCONJ O4  _ 11  mark  _ TokenRange=43:47
9 Europam europus NOUN  A1|grn1|casD|gen2 Case=Acc|Degree=Pos|Gender=Fem|Number=
10  incolumem incolumis ADJ C1|grn1|casD|gen1 Case=Acc|Degree=Pos|Gender=Fem|Num
11  transuexerit  transuo VERB  N3|modB|tem4|gen6 Aspect=Perf|Mood=Sub|Number=Si
12  Cretam  cretus  VERB  K2|modM|tem4|grp1|casD|gen2 Aspect=Perf|Case=Acc|Degre
13  , , PUNCT Punc  _ 16  punct _ TokenRange=86:87
14  ut  ut  SCONJ O4|vgr1 _ 16  mark  _ TokenRange=88:90
15  Euripides euripides PROPN C1|grn1|casA|gen1 Case=Nom|Degree=Pos|Gender=Masc|
16  dicit dico  VERB  N3|modA|tem1|gen6 Mood=Ind|Number=Sing|Person=3|Tense=Pres
17  . . PUNCT Punc  _ 2 punct _ SpacesAfter=\r\n|TokenRange=107:108
```

If at first you don’t succeed, try, try again!

i.e. Change the model and choose a more appropriate one for the language you are dealing with.

PERSEUS

Save Output File

Id	Form	Lemma	UPosTag	XPosTag	Feats	Head	DepRel	Deps	Misc
# generator = UDPipe 2, https://lindat.mff.cuni.cz/services/udpipe									
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1	Hic	hic	PRON	p-s---mn-	Case=Nom|Gender=Masc|Number=Sing	2	nsubj	_	TokenRange=0:3
2	dicitur	dico	VERB	v3spip---	Mood=Ind|Number=Sing|Person=3|Tense=Pres|VerbForm=Fin|Voice=Pass	0	root	_	TokenRange=4:11
3	inter	inter	ADP	r--------	_	4	case	_	TokenRange=12:17
4	astra	astrum	NOUN	n-p---na-	Case=Acc|Gender=Neut|Number=Plur	6	obl	_	TokenRange=18:23
5	esse	sum	VERB	v--pna---	Tense=Pres|VerbForm=Inf|Voice=Act	6	cop	_	TokenRange=24:28
6	constitutus	constituo	VERB	v-srppmn-	Aspect=Perf|Case=Nom|Gender=Masc|Number=Sing|Tense=Past|VerbForm=Part|Voice=Pass	2	xcomp	_	TokenRange=29:40
7	,	,	PUNCT	u--------	_	8	punct	_	TokenRange=41:42
8	quod	quod	SCONJ	c--------	_	11	mark	_	TokenRange=43:47
9	Europam	europa	NOUN	n-s---fa-	Case=Acc|Gender=Fem|Number=Sing	11	obj	_	TokenRange=48:55
10	incolumem	incolumis	ADJ	a-s---fa-	Case=Acc|Gender=Fem|Number=Sing	9	amod	_	TokenRange=56:65
11	transuexerit	transuo	VERB	v3srsa---	Aspect=Perf|Mood=Sub|Number=Sing|Person=3|Tense=Past|VerbForm=Fin|Voice=Act	2	advcl	_	TokenRange=66:78
12	Cretam	Creta	NOUN	n-s---fa-	Case=Acc|Gender=Fem|Number=Sing	11	obj	_	TokenRange=79:85
13	,	,	PUNCT	u--------	_	14	punct	_	TokenRange=86:87
14	ut	ut	SCONJ	c--------	_	16	mark	_	TokenRange=88:90
15	Euripides	Euripides	NOUN	n-s---mn-	Case=Nom|Gender=Masc|Number=Sing	16	nsubj	_	TokenRange=91:100
16	dicit	dico	VERB	v3spia---	Mood=Ind|Number=Sing|Person=3|Tense=Pres|VerbForm=Fin|Voice=Act	11	advcl	_	TokenRange=101:106
17	.	.	PUNCT	u--------	_	2	punct	_	SpacesAfter=\r\n|TokenRange=107:108

```
# generator = UDPipe 2, https://lindat.mff.cuni.cz/services/udpipe
# udpipe_model = latin-perseus-ud-2.6-200830
# udpipe_model_licence = CC BY-NC-SA
# newdoc
# newpar
# sent_id = 1
# text = Hic dicitur inter astra esse constitutus , quod Europam incolumem trans
1 Hic hic PRON  p-s---mn- Case=Nom|Gender=Masc|Number=Sing  2 nsubj _ TokenRange
2 dicitur dico  VERB  v3spip--- Mood=Ind|Number=Sing|Person=3|Tense=Pres|VerbFor
3 inter inter ADP r-------- _ 4 case  _ TokenRange=12:17
4 astra astrum  NOUN  n-p---na- Case=Acc|Gender=Neut|Number=Plur  6 obl _ TokenR
5 esse  sum VERB  v--pna--- Tense=Pres|VerbForm=Inf|Voice=Act 6 cop _ TokenRange
6 constitutus constituo VERB  v-srppmn- Aspect=Perf|Case=Nom|Gender=Masc|Number=
7 , , PUNCT u-------- _ 8 punct _ TokenRange=41:42
8 quod  quod  SCONJ c-------- _ 11  mark  _ TokenRange=43:47
9 Europam europa  NOUN  n-s---fa- Case=Acc|Gender=Fem|Number=Sing 11  obj _ Toke
10  incolumem incolumis ADJ a-s---fa- Case=Acc|Gender=Fem|Number=Sing 9 amod  _
11  transuexerit  transuo VERB  v3srsa--- Aspect=Perf|Mood=Sub|Number=Sing|Perso
12  Cretam  Creta NOUN  n-s---fa- Case=Acc|Gender=Fem|Number=Sing 11  obj _ Toke
13  , , PUNCT u-------- _ 14  punct _ TokenRange=86:87
14  ut  ut  SCONJ c-------- _ 16  mark  _ TokenRange=88:90
15  Euripides Euripides NOUN  n-s---mn- Case=Nom|Gender=Masc|Number=Sing  16  ns
16  dicit dico  VERB  v3spia--- Mood=Ind|Number=Sing|Person=3|Tense=Pres|VerbFor
17  . . PUNCT u-------- _ 2 punct _ SpacesAfter=\r\n|TokenRange=107:108
```

MUSISQUE DEOQUE

MQDQ Galaxy: *Corpora* and Technology

- **Musisque Deoque**
  - Poetic texts in Latin language from **origin** to **VII sec.** A.D.
  - 276 authors, 642 works, 343.709 verses, 170.785 word-types, 2.300.000 tokens ca.

- **Poeti d'italia in lingua latina**
  - Poetic texts in Latin concerning Italian culture from **1250** to **1600**
  - 315 authors, 839 works, 486.404 verses, 169.549 word-types, 3.200.000 tokens ca.

- **Hellenica**
  - Small corpus of Greek texts
  - 10 authors, 31 works, 116.316 verses, 94.998 word-types, 880.000 tokens ca.

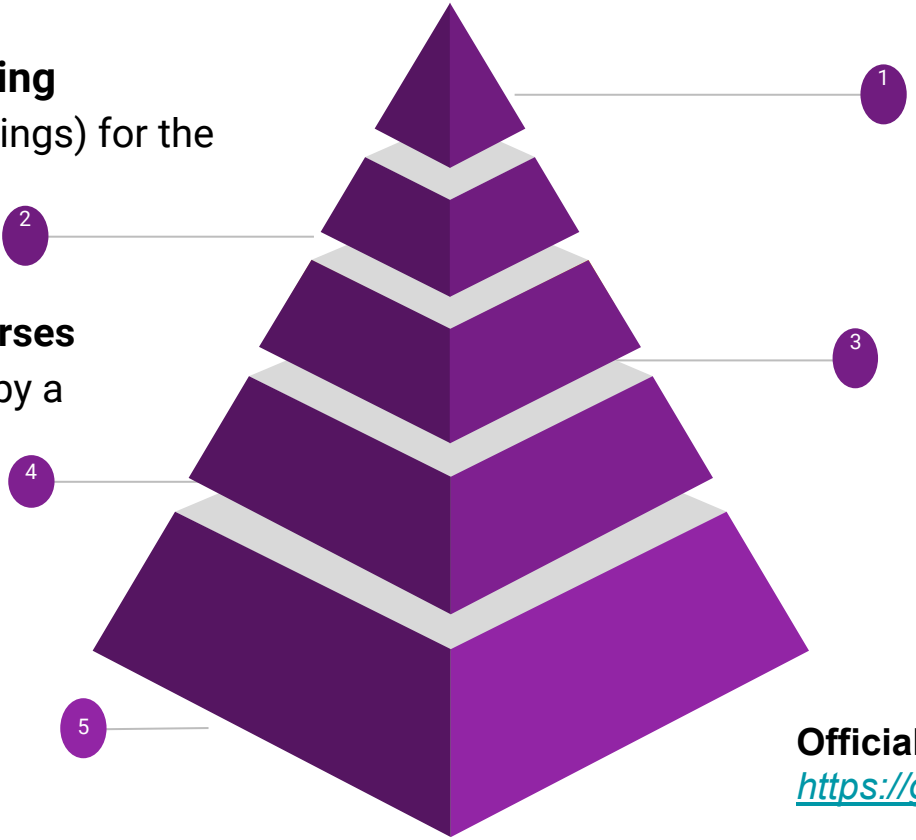
- **Pedecerto: Metrical scanning of Latin Texts**

Musisque Deoque: Components and Process

Critical apparatus encoding
Encoding varia lectio (readings) for the available critical texts

Metrical analysis of the verses
Critical texts are analyzed by a rule-based metrical processor

Web exploitation and presentation
Query the corpus via Web Graphical User Interface



Texts encoding
Editing and encoding for data and metadata

Digital Archive and indexing
Textual processing to provide scholars with an advanced search engine

Official github site:
https://github.com/mqdq-galaxy

XML/TEI: Text Encoding (*Ouidius fasti 4, 717-718*)

```
<TEI xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://www.tei-c.org/ns/1.0">
    <teiHeader>
        <fileDesc>…
        </fileDesc>
        <encodingDesc>…
        </encodingDesc>
        <profileDesc>…
        </profileDesc>
    </teiHeader>
    <text>
        <body>
            <div1 xml:id="d001" type="section" decls="#md" met="E">
                <head>…
                </head>
                <!-- -->
                <l xml:id="d0041715" n="715">De duce lanigeri pecoris, qui prodidit Hellen,</l>
                <l xml:id="d0041716" n="716">Sol abit: egresso uictima maior adest.</l>
                <l xml:id="d0041717" n="717">Vacca sit an taurus non est cognoscere promptum:</l>
                <l xml:id="d0041718" n="718">Pars prior apparet, posteriora latent.</l>
                <l xml:id="d0041719" n="719">Seu tamen est taurus siue est hoc femina signum,</l>
                <l xml:id="d0041720" n="720">Iunone inuita munus amoris habet.</l>
                <!-- -->
            </div1>
        </body>
    </text>
</TEI>
```

XML/TEI: Critical Apparatus Encoding

```
<l xml:id="d071l6" n="6">
    <w xml:id="d071w32">Concordem</w>
    <w xml:id="d071w33">satiat</w>
    <w xml:id="d071w34">sed</w>
    <w xml:id="d071w35">rudis</w>
    <w xml:id="d071w36">agna</w>
    <w xml:id="d071w37">famem.</w>
</l>
<l xml:id="d071l7" n="7">
    <w xml:id="d071w38">Quid</w>
    <w xml:id="d071w39">meruit</w>
    <w xml:id="d071w40">terror</w>
    <w xml:id="d071w41">Nemees,</w>
    <w xml:id="d071w42">quid</w>
    <w xml:id="d071w43">portitor</w>
    <w xml:id="d071w44">Helles,</w>
</l>
<l xml:id="d071l8" n="8">
    <w xml:id="d071w45">Vt</w>
    <w xml:id="d071w46">niteant</w>
    <w xml:id="d071w47">celsi</w>
    <w xml:id="d071w48">lucida</w>
    <w xml:id="d071w49">signa</w>
    <w xml:id="d071w50">poli?</w>
</l>
```

Available via **CLARIN VLO** at http://hdl.handle.net/20.500.11752/OPEN-555

```
<app from="#d071w43" to="#d071w43">
    <lem wit="#lw1-22 #lw1-32">portitor
        <add type="intertext">Cfr. Colum. X 155 <emph style="font-style:italic">mox ubi nubigenae
        Phrixi nec portitor Helles</emph>; Lucan. IV 57 <emph style="font-style:italic">sidera
        respiciens delapsae portitor Helles</emph>; Ioh. Hauv. <emph
        style="font-style:italic">architr.</emph> IX 20 <emph style="font-style:italic">cui magis
        accedit trepidantis portitor Helles</emph>; 48 <emph style="font-style:italic">versa,
        priorque venit, quam pisces portitor Helles</emph></add>
    </lem>
    <rdg wit="#lw1-31">proditor
        <add type="intertext">Cfr. <emph style="font-style:italic">AL</emph> 616, 1<emph
        style="font-style:italic"> proditor est Helles et proditor Europaeus</emph></add>
        <ident n="d071w43">PRODITOR</ident>
    </rdg>
</app>
```

Martialis epigrammata 9, 71

Reference basis text: W. M. Lindsay, 1929

Editing of the digital edition: A. Fusi, 2010

MQDQ for the summer school: http://omega.ilc.cnr.it/mqdq

Texts for the Summer School: MQDQ & poetiditalia

aetas Augusti et Tiberii	
Vergilius 70 – 19 a.	
Ouidius 43 a. – 17/18 p.	
Manilius aetate Tiberii	
saec. I me. - II	
Martialis fere 40 – 103	
saec. IV me. - V	
Martianus Capella saec. V	
saec. VI - VII ex.	
Boethius † 524	
aetatis uariae	
anthologia Latina aetatis uariae	
carmina epigraphica aetatis uariae	
Da Dante a Petrarca (1250 - 1374)|From Dante to Petrarca (1250 - 1374)	
Alberico da Marcellise Venezia post 1340 – 1398	
Umanisti del Quattrocento (1374 - 1494)|Humanists of the XVth century (1374 - 1494)	
Basinio da Parma Tizzano 1425 – Rimini 1457	
Pontano, Giovanni Gioviano Cerreto di Spoleto 1429 – Napoli 1503	

Giovanni Gioviano Pontano

Cerreto di Spoleto 1429 – Napoli 1503

- *Uraniae libri* (B. Soldati, 1902)
- *meteororum liber* (B. Soldati, 1902)
- *de hortis Hesperidum* (B. Soldati, 1902)
- *eglogae* (B. Soldati, 1902)
- *Parthenopeus* (B. Soldati, 1902)
- *de amore coniugali* (B. Soldati, 1902)
- *de amore coniugali* (B. Soldati, 1902)
- *de amore coniugali* (B. Soldati, 1902)
- *de tumulis* (B. Soldati, 1902)
- *de tumulis* (B. Soldati, 1902)
- *de laudibus divinis* (B. Soldati, 1902)
- *hendecasyllabi* (B. Soldati, 1902)
- *iambici* (B. Soldati, 1902)
- *lyra* (B. Soldati, 1902)
- *Eridanus* (B. Soldati, 1902)
- *anecdota* (B. Soldati, 1902)

MQDQ Multi-word Search Using Wildcard: *vacc? taur**

Do | Clear | ?

Key

vacc? taur* | all the words | any position in the verse | +

Distance/Order

5 interposing words | Interval | Search in the entered order only

0 interposing words
1 interposing word
2 interposing words
3 interposing words
4 interposing words
5 interposing words
6 interposing words
7 interposing words
8 interposing words
9 interposing words
In text's unit

rch for **LEMMAS** ?

wild cards

Metres

Authors/works

715 Dĕ dŭcĕ lānĭgĕrī | pĕcŏrĭs, | quī ¦ prŏdĭdĭt Hĕllen, DDDS
Sŏl ăbĭt: ĕgrēssŏ || uĭctĭmă măiŏr ădést. DS—|DD—
Văccă sĭt ăn | tāurŭs | nōn ĕst | cōgnŏscĕrĕ prŏmptum: DSSS
Pārs prĭŏr ăppārĕt, || pŏstĕrĭŏrā lătént. DS—|DD—
Sĕu tămĕn ĕst | tāurŭs | sĭuĕst | hōc ¦ fĕmĭnă sĭgnum, DSSS

Home | Search | Co-occurrences | Indices | M

: vacc? near taur* | Indexes | Export | New search

OVID. am. 1, 10, 27	Non equa munus *equum*, non *taurum* uacca poposcit,
OVID. am. 3, 5, 38	Tu uir et in uacca compare taurus eras.
OVID. am. 3, 5, 41	Quod cunctata diu taurum sua uacca reliquit,
OVID. met. 4, 755	Ara Iouis media est; mactatur uacca Mineruae,
OVID. met. 13, 871	Surgit et, ut taurus uacca furibundus adempta,
OVID. fast. 4, 717	De duce lanigeri pecoris, qui prodidit Hellen, Sol abit: egresso uictima maior adest. Vacca sit an taurus non est cognoscere promptum: Pars prior apparet, posteriora latent. Seu tamen est taurus siue est hoc femina signum,

MQDQ Lemma Search and Ambiguities (*late*)

Do | Clear | ?

Key

late | all the words | any position in the verse | +

▼ Distance/Order

3 interposing words | Interval | Search in the entered order only

▼ Feature

○ Search for **FORMS** ◉ Search for **LEMMAS** ?

☐ Show word-forms while using wild cards

Selection of lemmas

LATE	☑ *fĕro, -ferre*
	☑ *lātē*
	☑ *lătĕo, -ēre*
	☑ *lātus, -a, -um*

Ok | Annul

OVID. fast. 4, 718	▼ Sol abit: egresso uictima maior adest. Vacca sit an taurus non est cognoscere promptum: Pars prior apparet, posteriora latent. Seu tamen est taurus siue est hoc femina signum, Iunone inuita munus amoris habet.
OVID. fast. 4, 726	▶ Saepe tuli plena, februa tosta, manu;

BASINIO carm. 20, 127	▶ Lucanum, cursu fertur qui semper eodem.
BASINIO carm. 20, 274	▶ Nigrantis late nemoris, uiridante uel herba,
PONTANO Uran. 1, 20, 14	▶ Lustrabo, tumuloque feram solennia dona
PONTANO Uran. 1, 20, 158	▶ Inclusit, laterique auratum accinxit et ensem.

⚠ The selection of lemmas does not prevent the interception of homographic forms belonging to other previously excluded lemmas

Varia Lectio Feature in MQDQ (*Portitor* - *Proditor*)

MQDQ

Home | Search | Co-occurrences | Indices | Metrical typology | Epigraphica

7 occurrences for the key: **proditor**

7

portitor T γ Cfr. Colum. X 155 *mox ubi nubigenae Phrixi nec portitor Helles*; Lucan. IV 57 *sidera respiciens delapsae portitor Helles*; Ioh. Hauv. *architr.* IX 20 *cui magis accedit trepidantis portitor Helles*; 48 *versa, priorque venit, quam pisces portitor Helles*

proditor β Cfr. *AL* 616, 1 *proditor est Helles et proditor Europaeus*

consensus codicum LPQf

OVID. am. 2	
OVID. am. 3,	
OVID	aeui perit auriga tyranni
MART. epig	horum gaudent nec mitibus herbis, Concordem satiat sed rudis agna *famem.* Quid meruit terror Nemees, quid *portitor* Helles, Vt niteant celsi lucida signa poli? Sidera si possent pecudesque feraeque mereri,
ANTH. Lat. 616, 1	▼ 122 (= 616 *R*) HYLASIVS Proditor est *Helles et* proditor *Europaeus* Et Gemini iuuenes et pressus ab Hercule Cancer, Horrendusque Leo sequitur cum Virgine *sancta*
CARM. epigr. CLE 01340, 1	▶ [Munde, tuas fug]io insidias, uale proditor: at t[e]

Exercises

Musisque Deoque website: http://omega.ilc.cnr.it/mqdq

Exercise #1. Search for: *portitor*, *proditor*, *taur**, *Europ**.

Exercise #2. Search for forms and lemmas of: *fero* (hint: for the forms, use *fer**, *tul**, *lat**).

Exercise #3. Consider the verse 490 from the second book of the *Astronomica* by Manilius:

Europam dorso retinentem cornua laeua

and search for Manilius' possible model(s).

Exercise #4. Search for co-occurrences of *corn** (lemma: *cornu*) and *aurat** (lemma: *auratus*) and evaluate possible relations among the texts.

Exercise #5. Are you able to find other interesting relations among Latin authors?

Thank you!
The remains of the text

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