SunoikisisDC Session 10

Digital Representations of Ancient Dates

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Outline

- Introduction: Chronology and dating in ancient world
- Case-study: Prosopography
- Case-study: Epigraphy
- Text encoding: TEI custom date
- NER for date expressions
- Date ontologies: GODOT

Introduction

Dating in ancient world

In the last two centuries:

1. Increasing scholarship (an enormous amount of work)
2. Increasing evidence (new texts found, re-read, re-numbered, re-published)
3. Differences between ancient and modern dating systems

Distance between evidence and statement

How are we able to date the events of ancient history?

To answer this kind of question, we have to understand the **calendar systems** used by the ancients and their **time reckoning**.

Moreover, how do we represent this data in a **digital environment**?

Time is the **proper dimension of history**.

Chronology, an auxiliary of history, enables us to state this time-interval between a historical fact and ourselves by converting the chronological indications of our sources into units of our own time reckoning.

The purpose of the chronology is therefore to **convert** the chronological references of our sources into the Julian dates of our era (BC, or AD).

The device of counting backward from the (supposed) date of the birth of Christ was first used by D. Petavius (in 1627) and has been in regular use from the end of the eighteenth century.

For example,

Horace “died on the fifth day before the Kalends of December when C. Marius Censorinus and C. Asinius Gallus were consuls”
(*decessit V Kal. Dec. C. Marcio Censorino et C. Asinio Gallo consulibus*)
– Suet. *De viris ill*. 40

= 27 November 8 BC
(27 + 5 = 1 December)

Gela was founded by Antiphemus from Rhodes and Entimus from Crete, who joined in leading a colony thither, in the forty-fifth year after the foundation of Syracuse (Γέλαν δὲ Ἀντίφημος ἐκ Ῥόδου καὶ Ἔντιμος ἐκ Κρήτης ἐποίκους ἀγαγόντες κοινῇ ἔκτισαν, ἔτει πέμπτῳ καὶ τεσσαρακοστῷ μετὰ Συρακουσῶν οἴκισιν)
– Thuc. 6.4.3

= 688 BC
(733 - 45 = 688)

Handbuch

der

mathematischen und technischen Chronologie.

Aus den Quellen bearbeitet

von

Dr. Ludwig Ideler,

Königlichem Astronomen, ordentlichem Professor an der Universität zu Berlin, Mitgliede der Königl. Preufsischen Akademie der Wissenschaften und Correspondenten der Göttinger Societät.

Erster Band.

Berlin, bei August Rücker.

1825.

Handbuch

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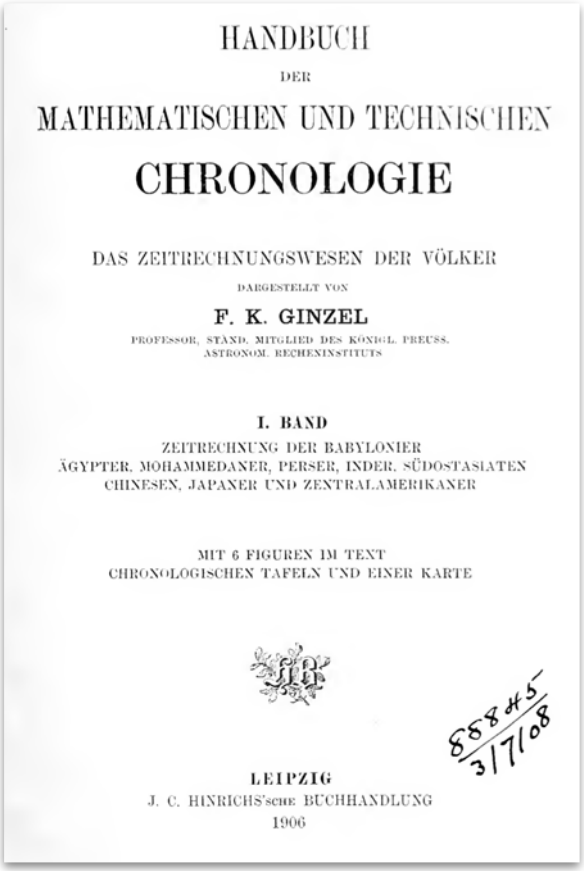
Königlichem Astronomen, ordentlichem Professor an der Universität zu Berlin, Mitgliede der Königl. Preufsischen Akademie der Wissenschaften und Correspondenten der Göttinger Societät.

Zweiter Band.

Berlin, bei August Rücker.

1826.

https://www.google.com/search?client=firefox-b-d&q=9Sv687JBi54C



HANDBUCH

DER

MATHEMATISCHEN UND TECHNISCHEN

CHRONOLOGIE

DAS ZEITRECHNUNGSWESEN DER VÖLKER

DARGESTELLT VON

F. K. GINZEL

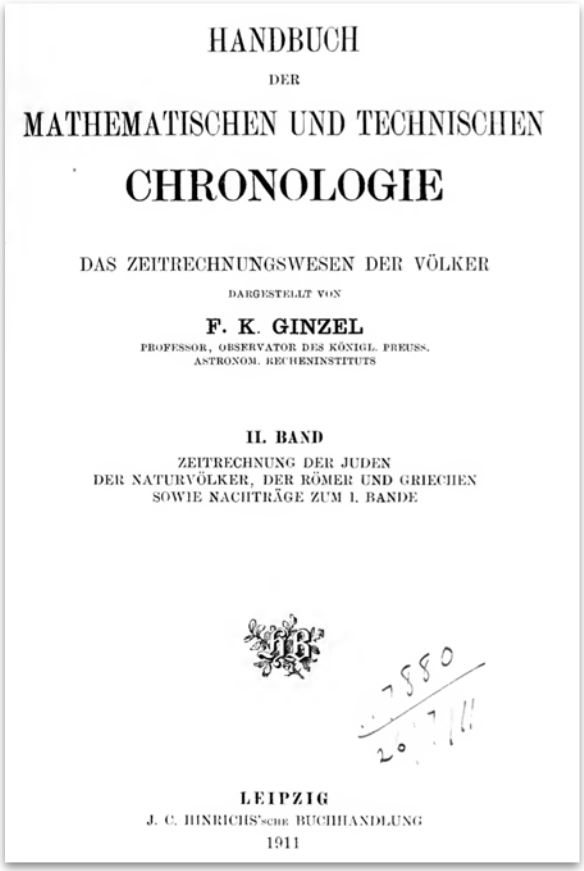
PROFESSOR, STÄND. MITGLIED DES KÖNIGL. PREUSS. ASTRONOM. RECHENINSTITUTS

I. BAND

ZEITRECHNUNG DER BABYLONIER
ÄGYPTER, MOHAMMEDANER, PERSER, INDER, SÜDOSTASIATEN
CHINESEN, JAPANER UND ZENTRALAMERIKANER

MIT 6 FIGUREN IM TEXT
CHRONOLOGISCHEN TAFELN UND EINER KARTE

LEIPZIG
J. C. HINRICHS'SCHE BUCHHANDLUNG
1906



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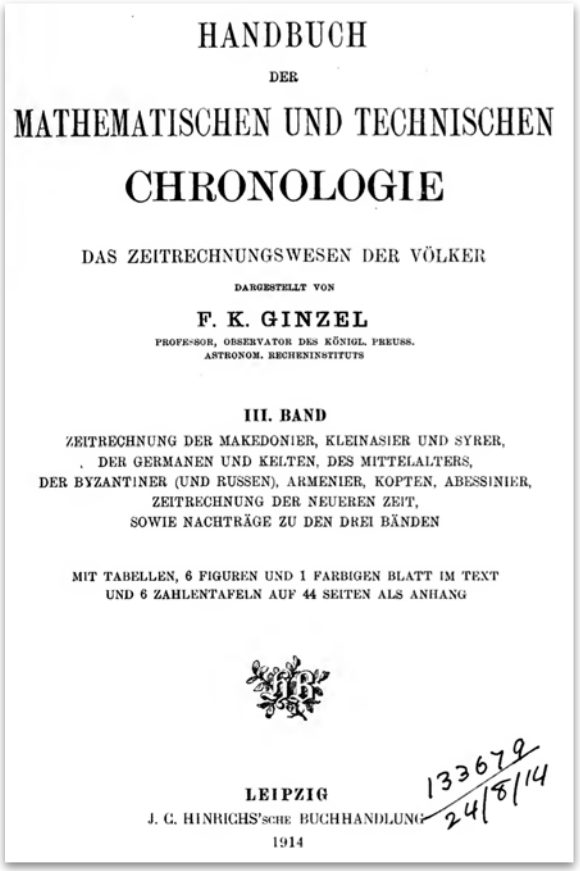
PROFESSOR, OBSERVATOR DES KÖNIGL. PREUSS. ASTRONOM. RECHENINSTITUTS

II. BAND

ZEITRECHNUNG DER JUDEN
DER NATURVÖLKER, DER RÖMER UND GRIECHEN
SOWIE NACHTRÄGE ZUM I. BANDE

LEIPZIG
J. C. HINRICHS'SCHE BUCHHANDLUNG
1911



HANDBUCH

DER

MATHEMATISCHEN UND TECHNISCHEN

CHRONOLOGIE

DAS ZEITRECHNUNGSWESEN DER VÖLKER

DARGESTELLT VON

F. K. GINZEL

PROFESSOR, OBSERVATOR DES KÖNIGL. PREUSS. ASTRONOM. RECHENINSTITUTS

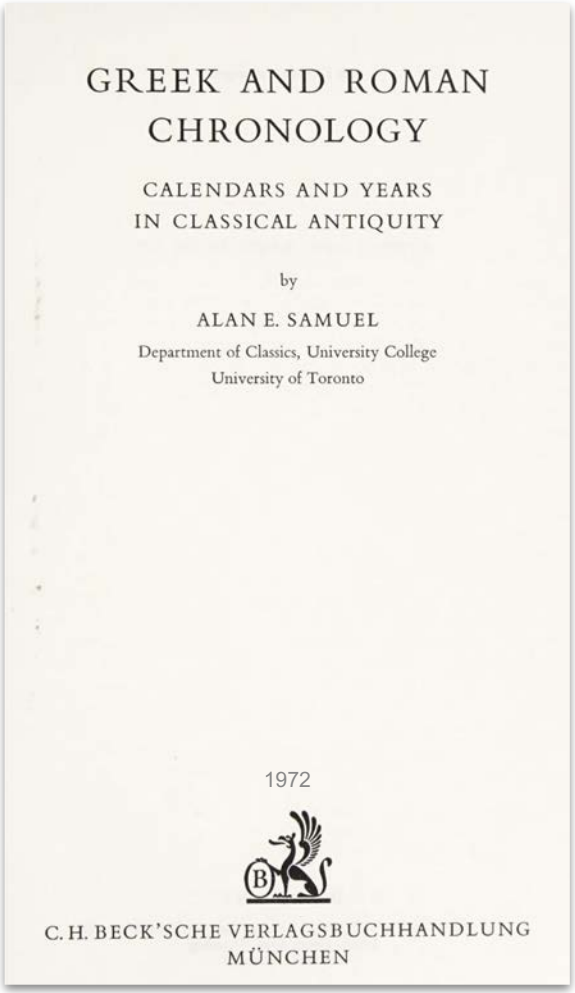
III. BAND

ZEITRECHNUNG DER MAKEDONIER, KLEINASIER UND SYRER,
DER GERMANEN UND KELTEN, DES MITTELALTERS,
DER BYZANTINER (UND RUSSEN), ARMENIER, KOPTEN, ABESSINIER,
ZEITRECHNUNG DER NEUEREN ZEIT,
SOWIE NACHTRÄGE ZU DEN DREI BÄNDEN

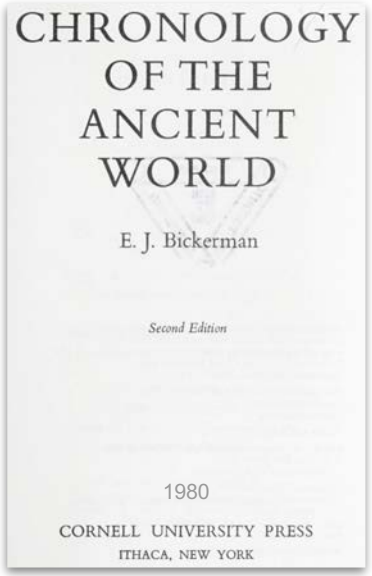
MIT TABELLEN, 6 FIGUREN UND 1 FARBIGEN BLATT IM TEXT
UND 6 ZAHLENTAFELN AUF 44 SEITEN ALS ANHANG

LEIPZIG
J. C. HINRICHS'SCHE BUCHHANDLUNG
1914

https://archive.org/search.php?query=creator%3A%22Ginzel%2C+Friedrich+Karl%2C+1850-%22



1. The astronomical background
2. Greek astronomical calendars
3. Greek civil calendars
4. Calendars of the Hellenistic kingdoms
5. The Roman calendar
6. Calendars of the eastern Roman provinces
7. Greek chronography
8. Roman chronography


CHRONOLOGY
OF THE
ANCIENT
WORLD

E. J. Bickerman

Second Edition

1980

CORNELL UNIVERSITY PRESS
ITHACA, NEW YORK

https://archive.org/details/chronologyofanci00bick/page/n5

Case study: Prosopography

SNAP DRGN

Standards for Networking Ancient Prosopographies

Data and Relations in Greco-Roman Names

SNAP RDF

SNAP:DRGN will publish recommendations and examples, with a view to encouraging: (i) the publication of minimal, consistent prosopographical data in RDF and compatible with the Linked Ancient World Data graph; (ii) building a loose network ancient prosopographical projects that will collectively contribute to a graph of millions of person-records; (iii) stand-off assertions of co-references or other relationships between persons, names and other prosopographical entities; (iv) Open Annotation Collaboration (OAC)-style RDF annotations of named entities in texts to point them to authoritative person-record-clusters in the SNAP:DRGN graph.

Scenario 1. Putting your prosopography online

The first task is to put your prosopography online, with stable URIs for as many entities as you can identify (person, name, source etc.). You need to be able to point to (e.g.) http://www.example.com/person/1234567 and reliably/persistently find here your record about (e.g.) Procopius. This may be no more than an HTML page intended for human consumption. SNAP:DRGN does not advise on this step.

Scenario 2. RDF summary of your prosopography

You might go further and make the entirety of your prosopography (or as much of it as you are comfortable with releasing openly) available in a more formal way using RDF, using the ontology you think useful (CIDOC CRM can work for normal prosopography, cf http://www.lgpn.ox.ac.uk/id/V5a-35642/rdf). This will enable software to get at the data as well as humans. To manage this, you'll need some sort of transformation of your data to RDF, using a categorisation of entities, and a set of names for the relationships (properties) between them. A subset of this RDF may then be ingested by SNAP:DRGN, expressing names, relations, attestations, citations, date/place information, and other existing person identifiers (VIAF, DBpedia, canonical print prosopographies, etc.).

Scenario 3. Aligning between prosopographies

Persons can be "merged" in SNAP:DRGN by creating a new person record that "replaces" the two or more original records. The "replaced" entities are both SNAP URIs derived from partner project IDs, rather than the original IDs from partner source data (see http://snapdrgn.net/archives/152). Merging is accomplished by the creation of a new lawd:Person which replaces two or more existing ones. Such resources have the additional type snap:MergedResource (signaling that they are the result of a merge operation) and the additional property snap:reason, which can point at evidence or justification for the merge. The dc:publisher of this new, merged person is the entity responsible for the merge.

Scenario 4: Relationships and other scholarly statements

SNAP preson records may include basic relationship information ("Eudemia daughter of Dionella"), but a prosopography becomes really useful when a rich network of relationships can be expressed, queried and reasoned upon, and visualized. We envision a method of RDF annotation to enable such relationships and other scholarly statements to be attached to a record, including attribution, reasoning and certainty.

Scenario 5: Disambiguating text references with SNAP annotations

The process for annotating a third-party text, dataset or object with a SNAP URI to disambiguate a reference therein is closely based on the methods for annotating geographical names with Pleiades URIs using the Open Annotation Collaboration ontology, as devised by the Pelagios project. Currently in its third phase of funding, Pelagios is working closely with the SNAP:DRGN community on synchronize standards, tooling and functionality for future interoperability between the datasets. An annotation of a name in an online text should be able to say, "In line 17 of section 90 of this text, the word 'Alexandria' refers to the person/place/entity described at this URI."

Gabriel Bodard, Faith Lawrence, King's College London; Sebastian Rahtz, Oxford University; Mark Depauw, KU Leuven; Hugh Cayless, Duke University; Leif Isaksen, University of Southampton.

SNAP:DRGN “scenarios”

I. Put prosopography online (URIs)

II. Contribute person RDF to SNAP:DRGN

III. Identify co-references

IV. Make assertions/relationships

V. Annotate your texts with person ids

SNAP:DRGN “scenario 2”: ontology

II. Contribute person RDF to SNAP:DRGN

i-iv. URI, type, citation, publisher (required)

v. Name (*recommended*)

vi. Attestations (*recommended*)

vii. Disambiguators (*optional*)

- attestedDate
- attestedPlace
- occupation/title

viii. Relationships/bonds (*optional*)

ix. Other identifiers (*optional*)

SNAP:DRGN ontology

snap:attestedDate

- snap:birthDate
- snap:deathDate
- snap:reign (?)
- snap:floruit
  - cf. periodo:earliestDate/latestDate

Case study: Epigraphy

Georgian Choronicon

The oldest of the Georgian written sources that are discovered in Georgia, the building inscription of Bolnisi cathedral and Martyrdom of the Queen Shushanik include regnal year of Peroz I, eighteenth shah of the Sasanian Empire.

At the end of the 8th century, during the reign of Ashot I of Iberia, new dating system Georgian Choronicon was adopted together with lunisolar calendar.

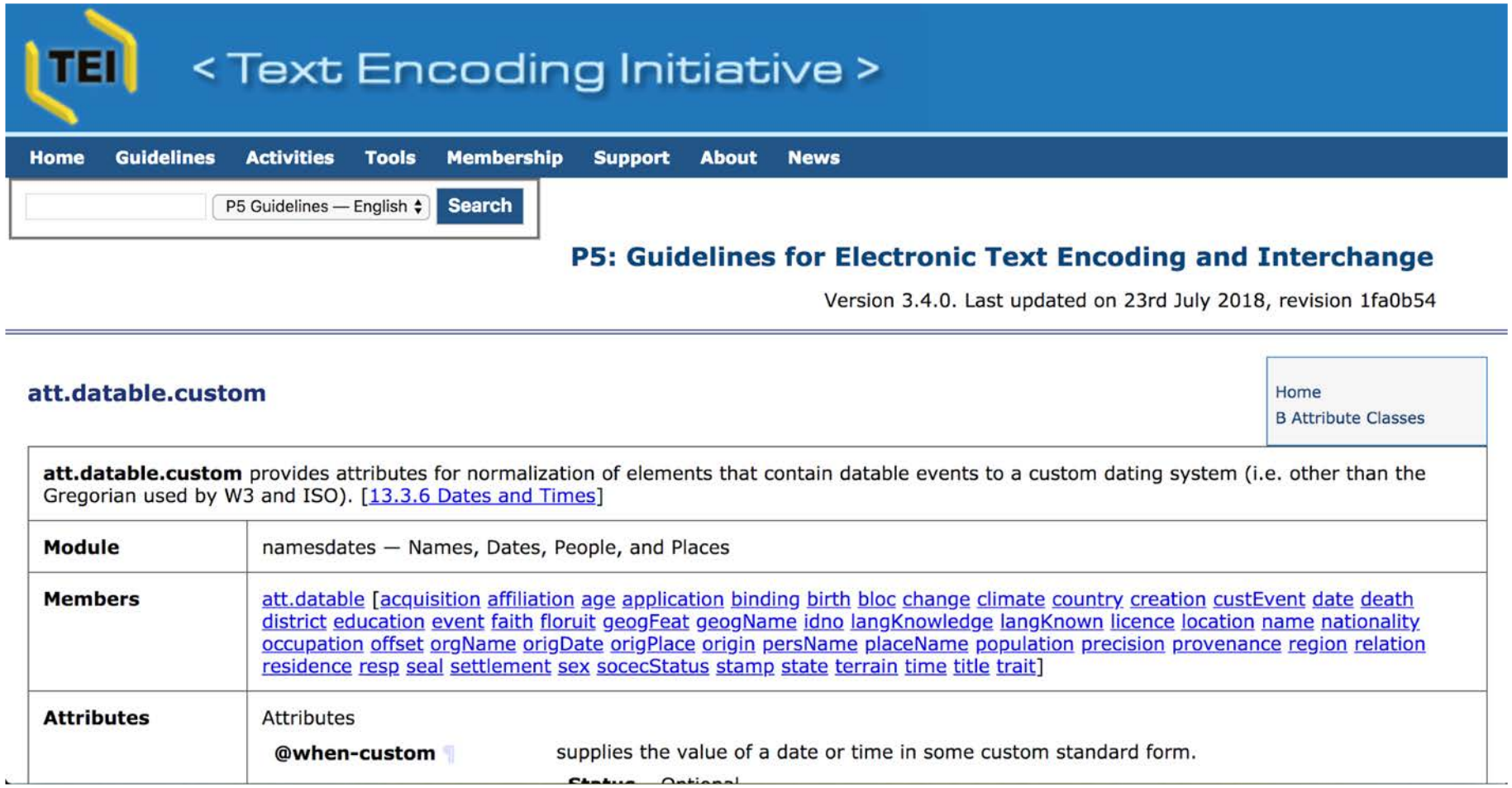
It indicated the year 5604 BC as the date of the creation of the world. It had cycle (Moktseva) of 532 years.

The Choronikon year started on 21th of March, i.e, spring equinox

Overlap of Choronikon and Julian year

1 January - 20 March	21 March - 21 March

Text encoding: TEI custom dating



http://www.tei-c.org/release/doc/tei-p5-doc/en/html/ref-att.datable.custom.html

Straightforward dating

- `@when`
- `@notBefore/@notAfter`
- `@from/@to`

Straightforward dating

- `@when`
- `@notBefore/@notAfter`
- `@from/@to`

All expect and require ISO date standard:

***i.e.* Gregorian dates**

Straightforward dating

```
<origDate when="1882-01-17">
Written on the 17th January, 1882.
</origDate>
```

Straightforward dating

```
<origDate notBefore="-0031"
notAfter="0014">
Between 31 BCE and 14 CE.
</origDate>
```

Straightforward dating

```
<origDate from="0098" to="0117">
Updated regularly throughout the
reign of Trajan
</date>
```

Attributes

@when-custom ¶ supplies the value of a date or time in some custom standard form.

Status Optional

Datatype 1–∞ occurrences of teidata.word separated by whitespace

The following are examples of custom date or time formats that are *not* valid ISO or W3C format normalizations, normalized to a different dating system

```
<p>Alhazen died in Cairo on the
<date when="1040-03-06"
  when-custom="431-06-12"> 12th day of Jumada t-Tania, 430 AH
 </date>.</p>
<p>The current world will end at the
<date when="2012-12-21"
  when-custom="13.0.0.0.0">end of B'ak'tun 13</date>.</p>
<p>The Battle of Meggidu
 (<date when-custom="Thutmose_III:23">23rd year of reign of Thutmose
III</date>).</p>
<p>Esidorus bixit in pace annos LXX plus minus sub
<date when-custom="Ind:4-10-11">die XI mensis Octobris indictione
IIII</date>
</p>
```

Not all custom date formulations will have Gregorian equivalents.

The @when-custom attribute and other custom dating are not constrained to a datatype by the TEI, but individual projects are recommended to regularize and document their dating formats.

http://www.tei-c.org/release/doc/tei-p5-doc/en/html/ref-att.datable.custom.html

- @when-custom
- @notBefore-custom
- @notAfter-custom
- @to-custom
- @from-custom
- @datingPoint
- @datingMethod

[- @calendar]

[- @period]

http://www.tei-c.org/release/doc/tei-p5-doc/en/html/ref-att.datable.custom.html

- @when-custom
- @notBefore-custom
- @notAfter-custom
- @to-custom
- @from-custom
- @datingPoint
- @datingMethod

[- @calendar]

[- @period]

@*-custom attributes

transcribed content

http://www.tei-c.org/release/doc/tei-p5-doc/en/html/ref-att.datable.custom.html

Dating of object/text

<origDate notBefore="-0300" notAfter="-0201" precision="medium">Third century BCE</origDate>

Calendars/dating methods

<origDate notBefore-custom="-0020-12-11"
notAfter-custom="-0019-12-10"
datingMethod="#julian">
20/19 BCE</origDate>

Calendars/dating methods

<origDate notBefore-custom="-0020-12-11" notAfter-custom="-0019-12-10" datingMethod="#julian" calendar="#actian">Year 11 of the Actian era (i.e. 20/19 BCE)</origDate>

Mentioned dates

<date when-custom="0221-10-30">*III kalendas Novembres Grato et Seleuco consulibus***</date>**

Mentioned dates

biuerunt <date type="life-span" dur="P70Y9M">*annos plus minus septuaginta menses IX*</date>

Mentioned dates

<date type="marriage-span" dur="P30Y">agente coniuge anno XXX</date>

```
<p>Alhazen died in Cairo on the
<date when="1040-03-06"
  when-custom="431-06-12"> 12th day of Jumada t-Tania, 430 AH
 </date>.</p>
<p>The current world will end at the
<date when="2012-12-21"
  when-custom="13.0.0.0.0">end of B'ak'tun 13</date>.</p>
<p>The Battle of Meggidu
 (<date when-custom="Thutmose_III:23">23rd year of reign of Thutmose
III</date>).</p>
<p>Esidorus bixit in pace annos LXX plus minus sub
<date when-custom="Ind:4-10-11">die XI mensis Octobris indictione
IIII</date>
</p>
```

Not all custom date formulations will have Gregorian equivalents.

http://www.tei-c.org/release/doc/tei-p5-doc/en/html/ref-att.datable.custom.html

Encoding and Faceting

The greatest number of inscriptions preserved are from the 13th and 14th cycle or Indiction.

<rs type="date"><w lemma="ქრონიკონ"><expan><abr>ქ</abr><ex>რონი</ex><abr>კ</abr><ex>ონ</ex><abr>ს</abbr></expan></w> <num value="38">ლჱ</num></rs>

The date of the creation of the world - 5604 BC

The end of the 13th Indiction - 1312

Indiction 14, year ლჱ (38) 1312 + 38 = 1350

ძიება ლემატიზებულ ტექსტში

თარიღი -200 – 1400 A.D.

Facets

- Origin Place
- Support Material
- Inscription Category
- Script Type
- Execution
- Khanmetoba
- Date In Text

დასაბამითგანთა წელთა ხქ (1)
ქორონიკონი ნბ (1)
ქორონიკონი იყო (1)
ქორონიკონსა ხყევ (1)
ქორონიკონსა ხყევ (1)
ქორონიკონსა ხყეთ (1)
ქრონიკონი იყო ტკგ (1)
ქრონიკონი იყო სიე (1)
ქრონიკონს ლჱ (1)
ქრონიკონს რმიე (1)
ქრონიკონსა რჲე (1)
ქრონიკონსა სივ (1)

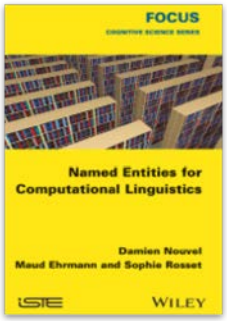
- წილკნის მიწაქვიშა აკლდამის ბერძნული წარწერა
- ბერძნულწარწერიანი კირქვის ფილა კავთისხევიდან
- ნოსირის ბერძნული წარწერა
- არმაზციხე-ბაგინეთი. ამაზასპეს მეუღლის წარწერა
- დრაკონტის დედოფლის წარწერა
- სეფიეთის ბერძნული წარწერა
- საჰაკდუხტის წარწერა, V საუკუნე
- სეფიეთის კირქვის ფილა
- ბერძნულწარწერიანი ვერცხლის ლანგარი
- მოსახსენებელი კოსტანტისა, წყისეს ციხე, VII ს.
- ატენის სიონი, მოსახსენებელი ზღუდის შემქმნელი ხელოსნისა (I)
- ორნამენტებიანი და ბერძნულწარწერებიანი კვარცხლბეკი კაზრეთიდან
- ნუხის ბერძნულწარწერიანი ფილა
- აკაურთას ეკლესია, V საუკუნის ფრაგმენტი საამშენებლო წარწერისა
- ვაშნარის ბერძნული წარწერა
- წარწერა მედალიონზე
- ოქროს ბეჭედი წარწერით „დედატოს“
- ზემო ნიქოზი, მთავარანგელოზის ტაძარი, X საუკუნის საამშენებლო წარწერა მიქაელ ეპისკოპოსისა (III)
- მცხეთის ჯვრის წარწერა, მოსახსენებელი ადარნარსე ჯაპტოსისა და ქობულისა (III)
- მცხეთის ჯვრის წარწერა, მოსახსენებელი სტეფანოს ქართლის პატრიკიოსისა (I)
- მცხეთის ჯვრის წარწერა, მოსახსენებელი დემეტრე ჯაპტოსისა (II)
- ზემო ნიქოზი, მთავარანგელოზის ტაძარი, X საუკუნის მოსახსენებელი მიქაელ ეპისკოპოსის დისწულისა (IV)
- ზემო ნიქოზი, ღვთაების ტაძარი V საუკუნის მოსახსენებელი ამშენებელ ზაქარია პირველ ეპისკოპოსისა (I)

« 1 2 3 4 … »

NER for date expressions

Named Entity Recognition (NER) is a task of information extraction that aims at finding mentions of named entities in the text and classify their types into categories corresponding to proper names and quantities of interest, such as people, places, organizations, **time expressions**, monetary amounts, percentages, etc.

https://en.wikipedia.org/wiki/Named-entity_recognition



Types	**Example**	**Counter-example**
ORG	*DARPA*	our university
PERS	*Harry Schearer*	St. Michael
LOC	*U.S.*	53140 Gatchell Road
MONEY	*19 dollars*	in dollars ? 19
TIME	*8 o'clock*	last night (*)
DATE	the *23 July*	last July (*)

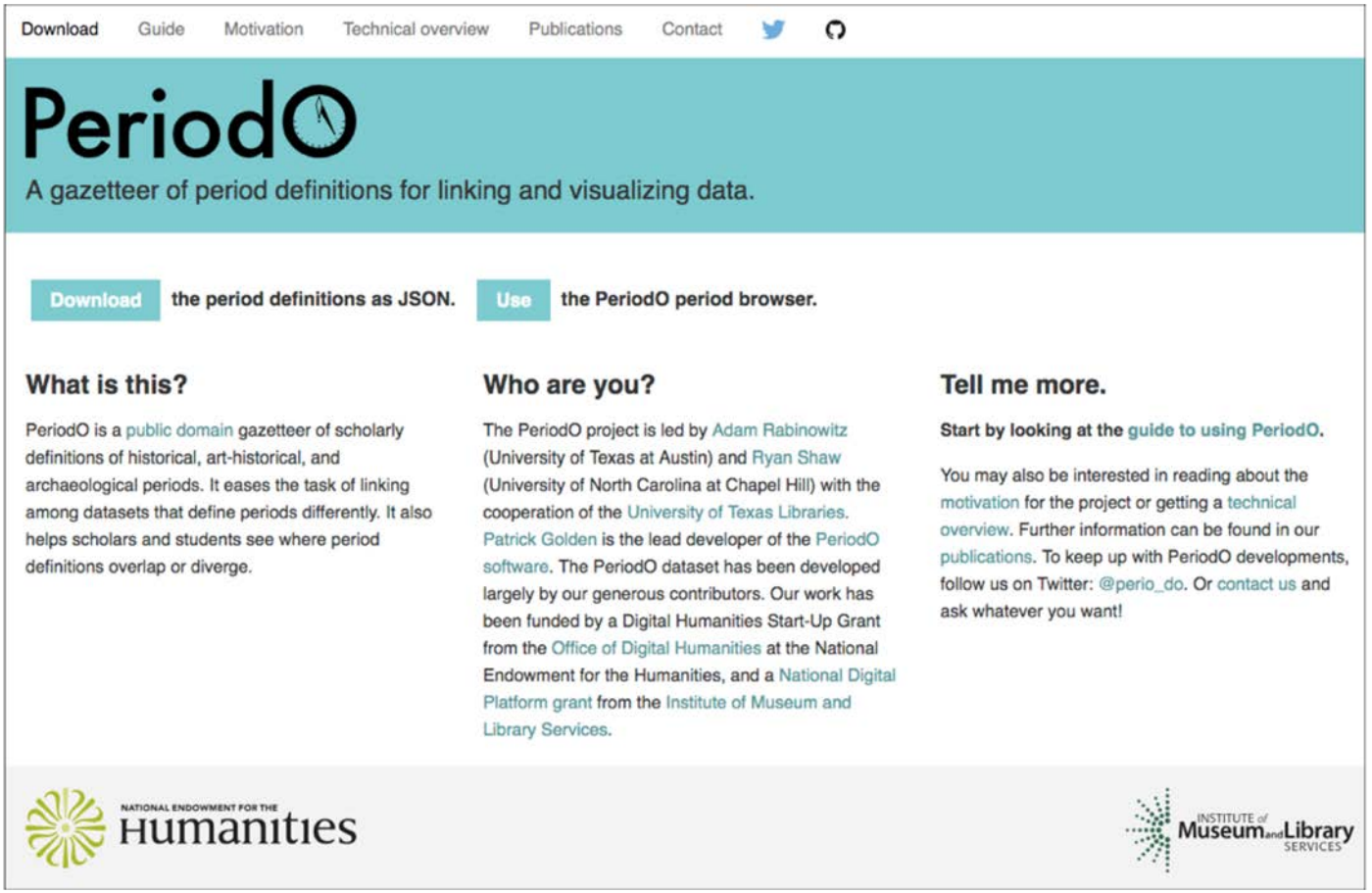
Types	***Subtypes***
pers	pers.hum, pers.anim
fonc	fonc.pol fonc.mil fonc.admi fonc.rel fonc.ari
org	org.pol org.edu org.com org.non-profit org.div org.gsp
loc	loc.geo loc.admi loc.line loc.addr (+3) loc.fac
prod	prod.vehicule prod.award prod.art prod.doc
time	time.date (+ 2 abs et rel) time.hour (+ 2 abs et rel)
amount	amount.phy.age amount.phy.dur amount.phy.temp amount.phy.len amount.phy.area amount.phy.vol amount.phy.wei amount.phy.spd amount.phy.other amount.cur

Types	**Examples**
PERS	the *democrat Hilary Clinton*, *Asterix*, the *Argentinian diaspora*, the *Beatles*
LOC	the *city of Chicago*, the *Moon*, *Route 66*, the *Atlas region*
ORG	the *Ford motor company*, the *US police*, the *NEA union*
AMOUNT	*three firefighters*, *a dozen cars*, *a few minutes*
TIME	*Thursday April 16*, in *1945*, the *1970s*, *yesterday morning*, *3 days ago*
PROD	*AK 47*, *Hamlet*, *Firefox 36.0.4*, the *Oscar for…*
FONC	the *mayor of New York*, the *firefighter*, …

Date ontologies: Godot

http://perio.do

“gazetteer of scholarly definitions of historical, art-historical, and archaeological periods”



PeriodO URIs on website of Epigraphic Database Heidelberg (EDH)

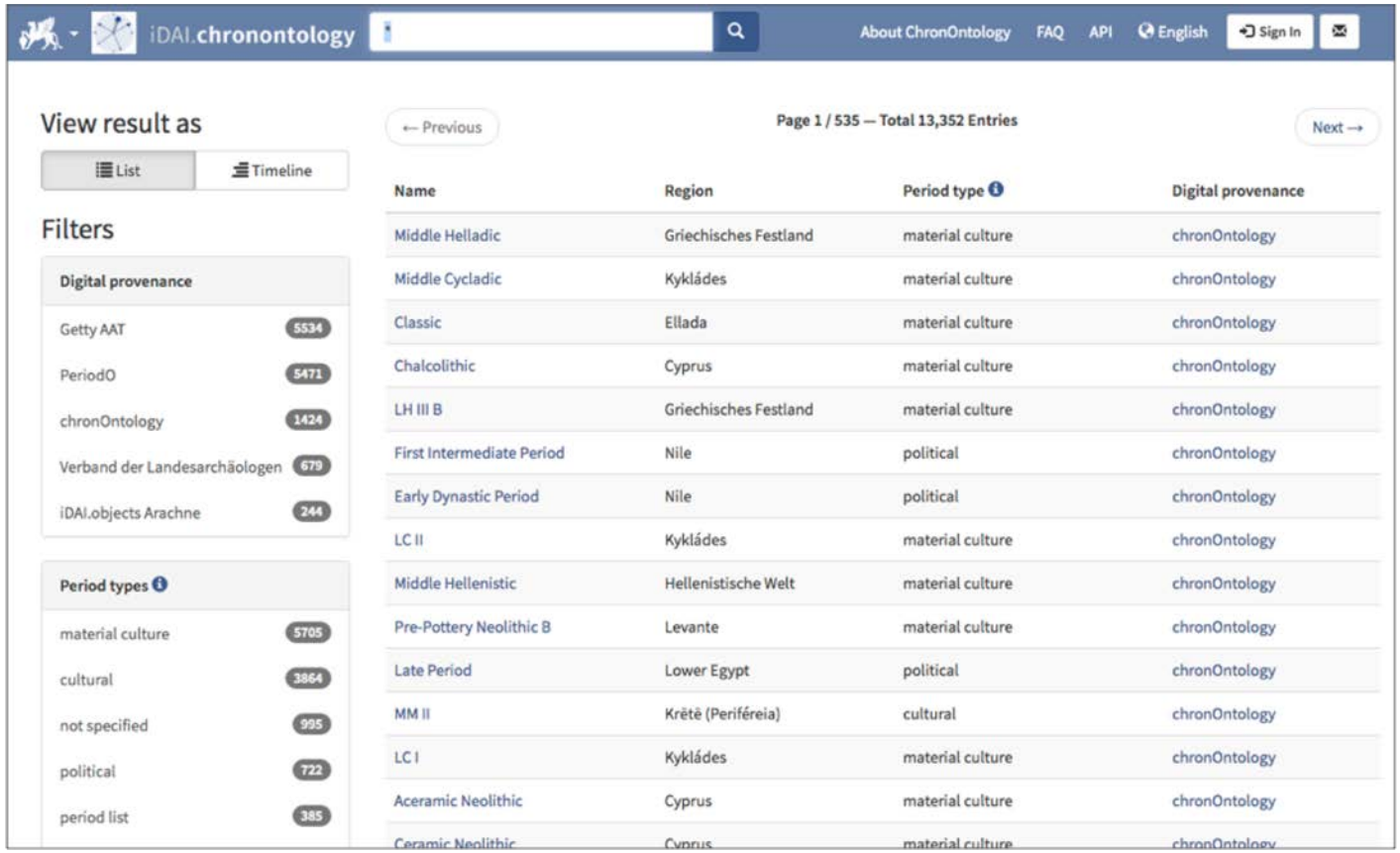
General data	
HD no.	HD004711
EDH Geo-ID	↗ 24338
Pleiades ID	↗ 197126 (↗ Related content from Pelagios)
see also Links are courtesy of ↗ Trismegistos API	**TM_ID:** ↗ http://www.trismegistos.org/text/195568 **EDCS:** ↗ http://db.edcs.eu/epigr/edcs_id_en.php?p_edcs_id=EDCS-09200446 **LUPA:** ↗ http://lupa.at/26271
Historic Period(s)	↗ Severans (193 AD - 235 AD) (↗ show all inscriptions from this period) ↗ Roman Empire (27 BC - 476 AD) (↗ show all inscriptions from this period)
Consulate Dating	208 AD: Imp. Caesar M. Aurelius Antoninus Augustus III / P. Septimius Geta Caesar II – ↗ https://godot.date/id/6XhekYhqHU2VA8DAxPCefS (↗ show more inscriptions from this consulate)
work status	checked with photo
last update	20 January 2017
responsible individual	↗ Gräf

https://edh-www.adw.uni-heidelberg.de/edh/inschrift/HD004711

https://chronontology.dainst.org/

“web service that connects chronological terms, i.e. epochs, periods and events, with dating information”

“it serves as a norm data vocabulary for other information systems at the DAI and links them with other global time gazetteer systems”

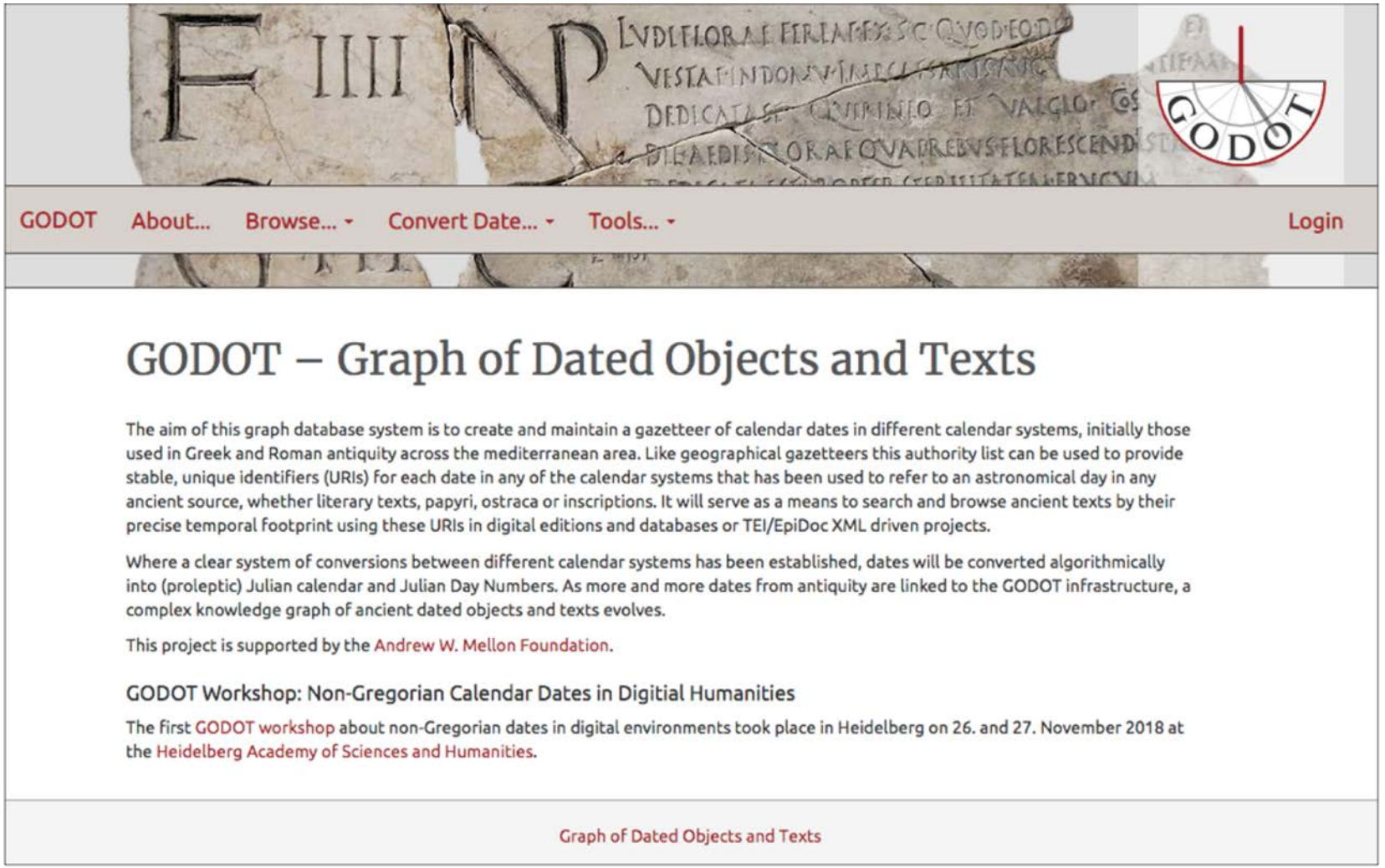


GODOT

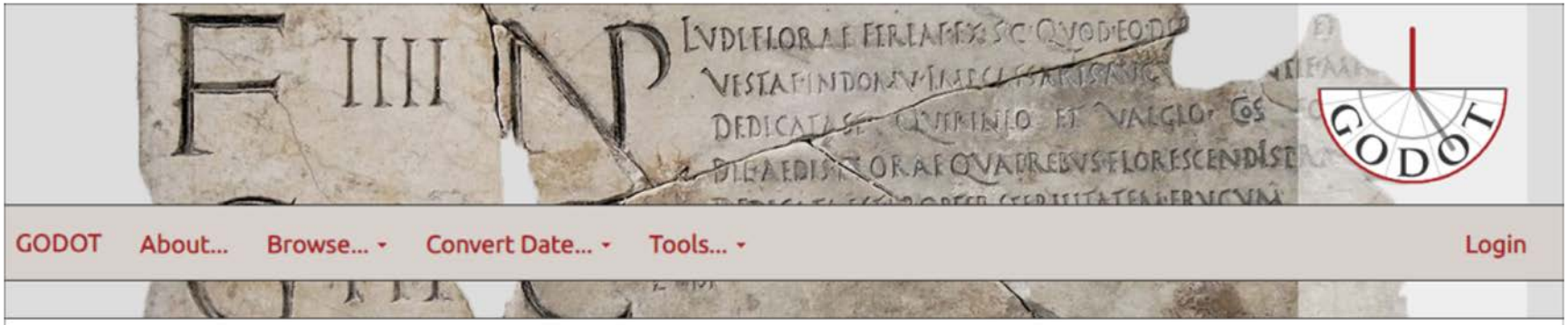
- “**G**raph **o**f **D**ated **O**bjects and **T**exts”
- Collaboration between
  - Prof. M. Depauw / Dr. H. Verreth (KU Leuven, Trismegistos Project)
  - Dr. F. Grieshaber (Heidelberg Academy of Sciences & Humanities)
  - Prof. C. Roueché (King’s College London) / Dr. G. Bodard (ICS London)
- 6 months prototype phase (July - December 2018)
- supported by Andrew W. Mellon Foundation

GODOT

- is both a chronological gazetteer and a research infrastructure (searching & browsing / tools)
- provides stable, citable URIs for instances of dates in major ancient calendar systems
- started with sample data taken from:
  - Inscriptions of Roman Cyrenaica (IRCyr, C. Roueché)
  - papyri & ostraca in Berlin Collection (BGU, Trismegistos - M. Depauw / H. Verreth)
- testing of different data import options: manual data entry and bulk imports
- tools on GODOT website:
  - date conversions into Julian & Gregorian calendar
  - identifier tools for Roman Emperors, Roman Consulates
  - OpenRefine Reconciliation Services (Roman Consulates)
  - API for reusing GODOT data



https://godot.date



GODOT About... Browse... Convert Date... Tools... Login

Browse Data

Filter by Year Reference System:

- All
- Cycles - Indiction Cycle
- Eponymous officials
- Era - Actian
- None
- ✓ Regnal Years - Ptolemies
- Regnal Years - Roman Emperors
- Roman Consulships
- Titulature of Roman Emperors
- Unknown

Ptolemies (alphabetically)

Berenice IV Cleopatra Berenice III Cleopatra II Cleopatra III Cleopatra VII Ptolemaeus I Ptolemaeus II Ptolemaeus III
Ptolemaeus IV Ptolemaeus IX Ptolemaeus V ✓ Ptolemaeus VI Ptolemaeus VIII Ptolemaeus X Ptolemaeus XII Ptolemaeus XIII

Regnal Years

Year 1
Year 2
Year 3

GODOT About... Browse... Convert Date... Tools... Login

GODOT Detail View

https://godot.date/id/pzpsUQPnAXJi5Z6WFaQurg

Calendar Date Information

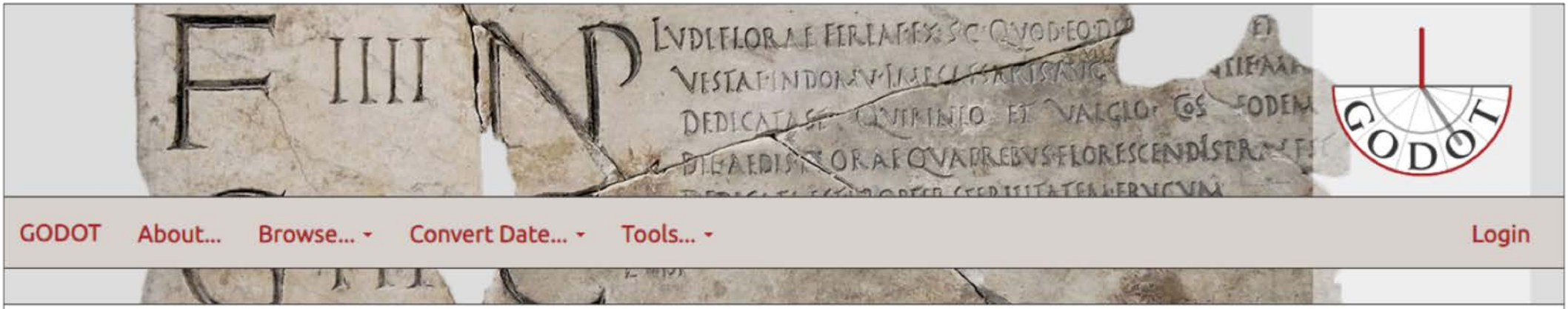
- Regnal Years
- Roman Emperors
  name: Trajan
  year: 18
  GODOT Information:
  - Not After: 115 AD
  - GODOT URI: https://godot.date/id/pzpsUQPnAXJi5Z6WFaQurg
  - Not Before: 114 AD

Attestations

BGU 13 2256, l. 1-2:
ἔτους ιη Αὐτοκράτορος Καίσαρος Νέρουα Τραιαν(οῦ) Σεβασ(τοῦ) Γερμανι(κοῦ) Δακι(κοῦ)
Contributor: Trismegistos (Depauw/Verreth) (last update: 2019-03-29)

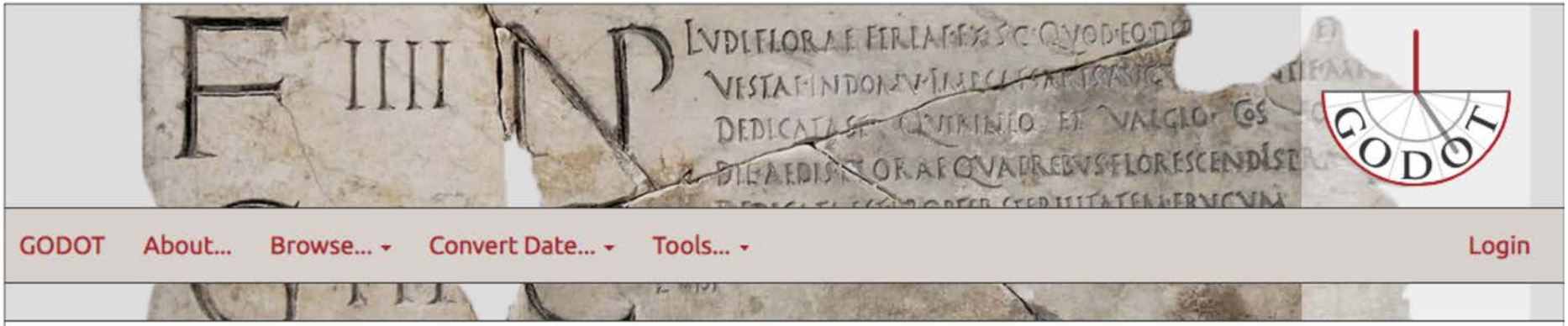
Attested Dates in this Period

Apellaios (BGU 2 418 1, l. 1-2)
ἔτους ὀκτωκαιδεκάτου Δακικοῦ μηνὸς Ἀπελλ[αίου]



Browse Synchronisms

- year 10 of Domitian Phamenoth 6 = year 10 of Domitian Artemisios 6 (BGU 13 2331, l. 1-3)
- year 6 of Claudius Dystros 21 = year 6 of Claudius Pauni 21 (BGU 13 2337 2, l. 1-4)
- year 6 of Domitian Apellaios 15 = year 6 of Domitian Phaophi 15 (BGU 2 526, l. 1-3)
- Antoninus Pius Apellaios [ ] = Antoninus Pius Phaophi [ ] (BGU 3 709 1, l. 1)
- year 10 of Trajan Apellaios 30 = year 10 of Trajan Phaophi 30 (BGU 3 856, l. 1-3)
- year 4 of Tiberius Hyperberetaios 18 = year 4 of Tiberius Mesore 18 (BGU 3 911, l. 1-2)
- year 19 of Tiberius Xandikos 13 = year 19 of Tiberius Mecheir 13 (BGU 3 912, l. 1-3)
- year same of Antoninus Pius [ ] = year [ ] of Antoninus Pius Mecheir (BGU 3 983, l. 15)
- year [ ] of Claudius Pharmouthi same = year [ ] of Claudius Daisios 3 (BGU 4 1013, l. 2-3)



GODOT About... Browse... Convert Date... Tools... Login

Egyptian Calendar Conversion (Ptolemies)

All calculations are based on the tables in Skeat, Reigns of the Ptolemies (1969), Pestman, Chronologie égyptienne d'après les textes démotiques (1967) and Pestman, Les papyrus démotiques de Tsenhor (1994). The system expects that the user knows what (s)he's doing; ahistoric entries will result in mathematically correct but otherwise rather useless dates. Not specifying a day will result in calculation of both the first and last day of the given month.

Reign:

Cleopatra VII Philopator, years 1-22

Year:

14

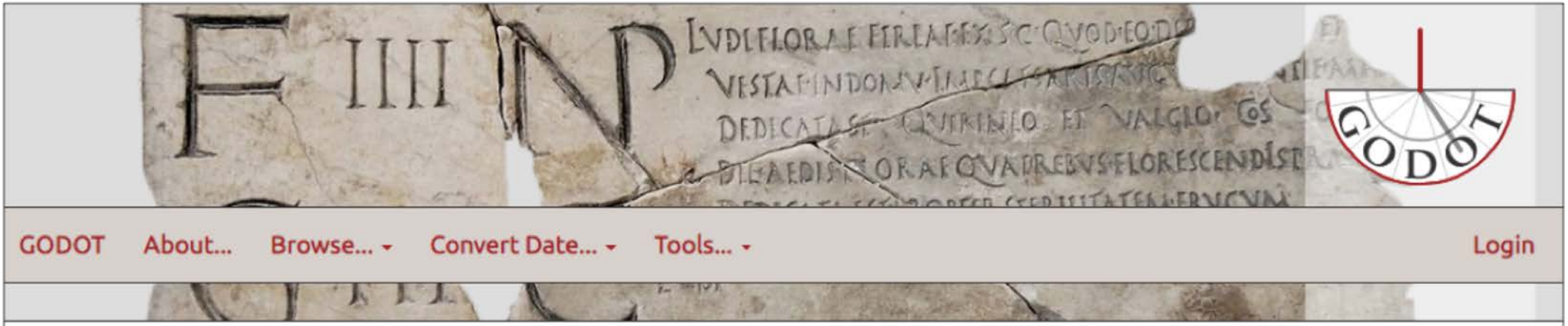
Months (Egyptian):

Hathyr

Day:

4

Submit... Reset...



Egyptian Calendar Conversion (Ptolemies) – Result

All calculations are based on the tables in Skeat, Reigns of the Ptolemies (1969), Pestman, Chronologie égyptienne d'après les textes démotiques (1967) and Pestman, Les papyrus démotiques de Tsenhor (1994). The system expects that the user knows what (s)he's doing; ahistoric entries will result in mathematically correct but otherwise rather useless dates. Not specifying a day will result in calculation of both the first and last day of the given month.

year 14 of Cleopatra VII Philopator, Hathyr, day 4:

0039-11-04 BC (Julian)
0039-11-02 BC (Gregorian)

Another date conversion...

GODOT About... Browse... Convert Date... Tools... Login

Identify Roman Emperor by Titulature

Trib Pot Number:

9

Imperator Number:

2

Consul Number:

4 ☐ consul designatus

Submit... Reset...

Identify Roman Emperor by Titulature – Results

Search for:

- Consul Number: 4
- Tribunicia Potestas Number: 9
- Imperial Acclamation Number: 2

Potential Roman Emperors:

Numbers in parenthsis provide information about the number of temporal overlaps in given titulature data, e. g. (2/3) = two out of three titulature partials show a temporal overlap. The list of emperors is sorted by this ratio with those emperors with highest ratio first.

Antoninus Pius (3/3) Caracalla (1/3) Claudius (1/3) Commodus (1/3) Diocletian (1/3) Gallienus (1/3) Licinius (1/3) Maximian (1/2) Nero (1/3) Trajan (1/3) Augustus (0/3) Constantin I (0/3) Constantius I (0/3) Constantius II (0/3) Galerius (0/3) Gratian (0/3) Tiberius (0/3) Titus (0/3) Valens (0/3) Valentinian I (0/3) Vespasian (0/3)

Antoninus Pius (3/3)

Temporal Overlap: 0145-12-10 – 0146-12-09

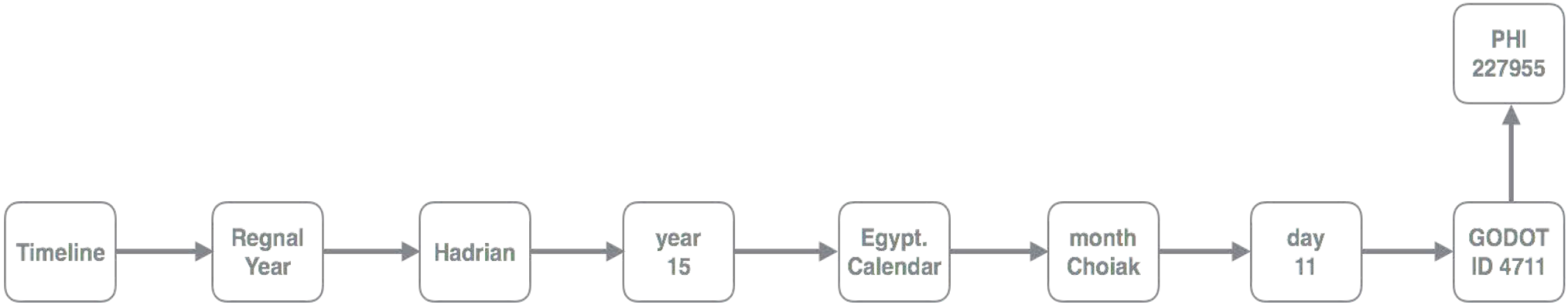
Consulate 0145-01-01 – 0145-02 (0161-03-07)

- Part of Consulate(s): https://godot.date/id/uYwLjEFh3QNQ4wx9wtnBVP
- date is uncertain
- comment: until end of February 145 AD

Tribunicia Potestas 0145-12-10 – 0146-12-09

Imperial Acclamation – 0142-04-26 (0161-03-07)

Emperor Hadrian, year 15, month Choiak, day 11



Manual data entry:

- for “Inscriptions of Roman Cyrenaica” (IRCyr, Prof. C. Roueché)
- project-specific data entry masks on GODOT website
    - single year dates (regnal years of Roman emperors, Actian era, …)
    - Titulature of Roman emperors (Trib. Pot; Cos.; Imp.; victory titles)
    - Eponymous Officials
- allow for create/read/update/(delete) of data

Bulk import:
1. **Data Export** by Content Provider

- for Trismegistos (BGU Greek Papyri, Prof. M. Depauw & Dr. H. Verreth)
    - preprocessing of data (NER workflow)
    - export in CSV
    - import into GODOT graph

2. Access via **API** of Content Provider

- for Epigraphic Database Heidelberg (Roman Consulates; Tribunicia Potestas)
- for Online Coins of the Roman Empire OCRE (Tribunicia Potestas)

ISO 8601-2:2019 / Extended Date/Time Format EDTF

- EDTF draft: https://www.loc.gov/standards/datetime/edtf.html
- features:
  - Qualification of a date
  - Time Interval
  - Sub-year groupings (seasons, quarter, quadrimester, semestral)
  - Date precision
  - Letter-prefixed calendar year
  - Unspecified Digit
  - Significant digits
  - Set representation
- Draft Implementations of EDTF (Python, …): http://www.loc.gov/standards/datetime/implementations.html

Qualification of a date

Additional qualification characters:

- ‘?’: uncertain
- ‘~’: approximate
- ‘%’: uncertain and approximate

Position of qualification character within date (left or right of component of date) matters!

Examples:
immediate **right** of a component

- ‘2004-06-11**%**’ : year, month, and day uncertain and approximate
- ‘2004**?**-06-11’ : year uncertain

immediate **left** of a component

- ‘**?**2004-06-**~**11’ : year uncertain; month known; day approximate

Time Interval

- a time interval where both the start and end are dates (not intervals themselves)
- start & end date are divided by slash

Examples:

- 1964/2008
- 2004-06/2006-08
- 2004-02-01/2005-02-08
- 2005/2006-02
- 1985-04-12/
- 2004-06-~01/2004-06-~20

Sub-year groupings (seasons, quarter, quadrimester, semestral)

replace month numbers with one of the following:

- 21 Spring (independent of location)
- 22 Summer (independent of location)
- 23 Autumn (independent of location)
- 24 Winter (independent of location)
- …
- 33 Quarter 1 (3 months in duration)
- 34 Quarter 2 (3 months in duration)
- 35 Quarter 3 (3 months in duration)
- 36 Quarter 4 (3 months in duration)
- …

Examples: ‘2001-34’ : second quarter of 2001
‘2001-21’ : spring, 2001

Unspecified Digit

the unspecified digit, 'X', may occur anywhere within a component

Examples:

- 156**X**-12-25 : December 25 sometime during the 1560s
- **XXXX**-12-**XX** : Some day in December in some year
- 1984-1**X** : October, November, or December 1984

THANK YOU!