

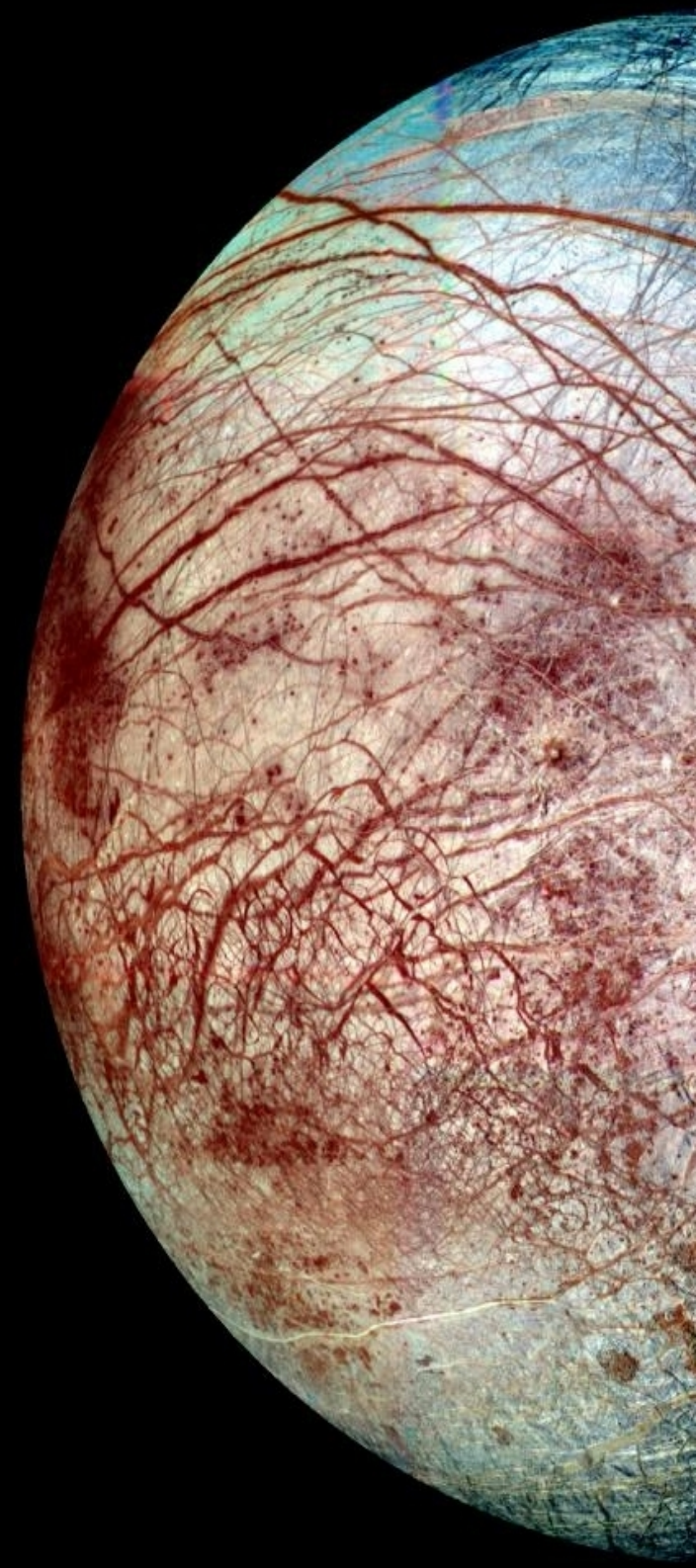
# Temporal Referencing for Historical Gazetteers

With Special Emphasis  
on the Ancient World

Lex Berman

China Historical GIS

Center for Geographic Analysis  
Harvard University



# Existing Gazetteers

Core Elements:

Placenames

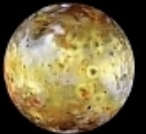
Types

Feature Types

Ontology of Relationships Between Types

Footprints

- Vernacular Names Treated as “Variant” Names
- Spellings lack specific sources, case by case
- Feature Types Lacking Historical / Local Terms
- Static Administrative Hierarchy
- Points for Footprints
- Lack Dates (GNS, Geonames, Getty TGN)



# Historical Gazetteers & Historical GIS

## Vernacular Names Treated as Default Names

- Both vernacular and romanized required (CHGIS)
- Default spellings & alternate spellings (GBHGIS)
- Multiple name attestations allowed (Pleiades)

## Feature Types Customized For Content

- Cultural and historical specific terms
- Semantic interoperability problems

## Dynamic Administrative Hierarchy

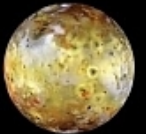
- Explicit dates in PartOf relationships (CHGIS)
- Series of dated static relationships (NHGIS)
- isPartOf relationship [ontology] w/o dates (GBHGIS)

## Dates

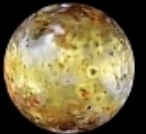
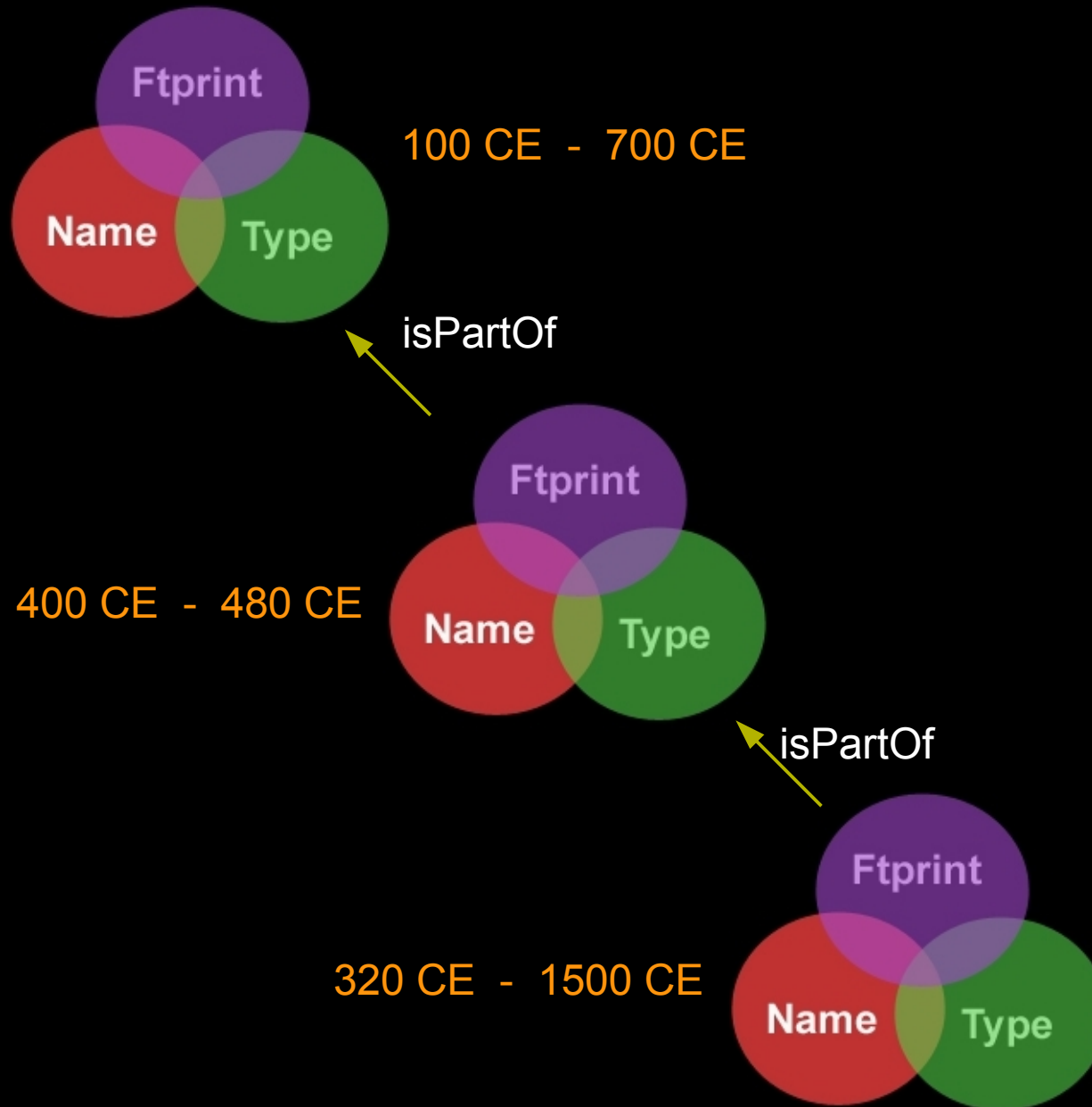
- Specific Placename Instances (CHGIS)
- Time Slices (NHGIS)
- Content Specific Date Ranges (Pleiades)
- Repeatable Date fields for each entry (ADL)

## Footprints

- Uncertainty, Accuracy, Lack of Sources, Scale



# Constructing Gazetteer Objects



# Pleiades Project - Next Gen Historical Gazetteer

## Attestations (Based on Specific Historical Source)

### Placename attestation

- Feature type is optional (may be unknown)
- Location is optional
- Date is optional

### Location of feature attestation

- Feature type is required
- Placename is optional
- Date is optional

### Placename + Location = “Historical Place”

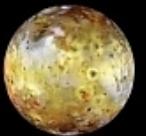
- Feature type is optional
- Date is optional

### Date Attestation

- Based on generally defined periods (Classical, Archaic, etc...)

Classical | Archaic | Hellenistic | Roman Early Empire | Mediaeval Byzantine

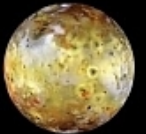
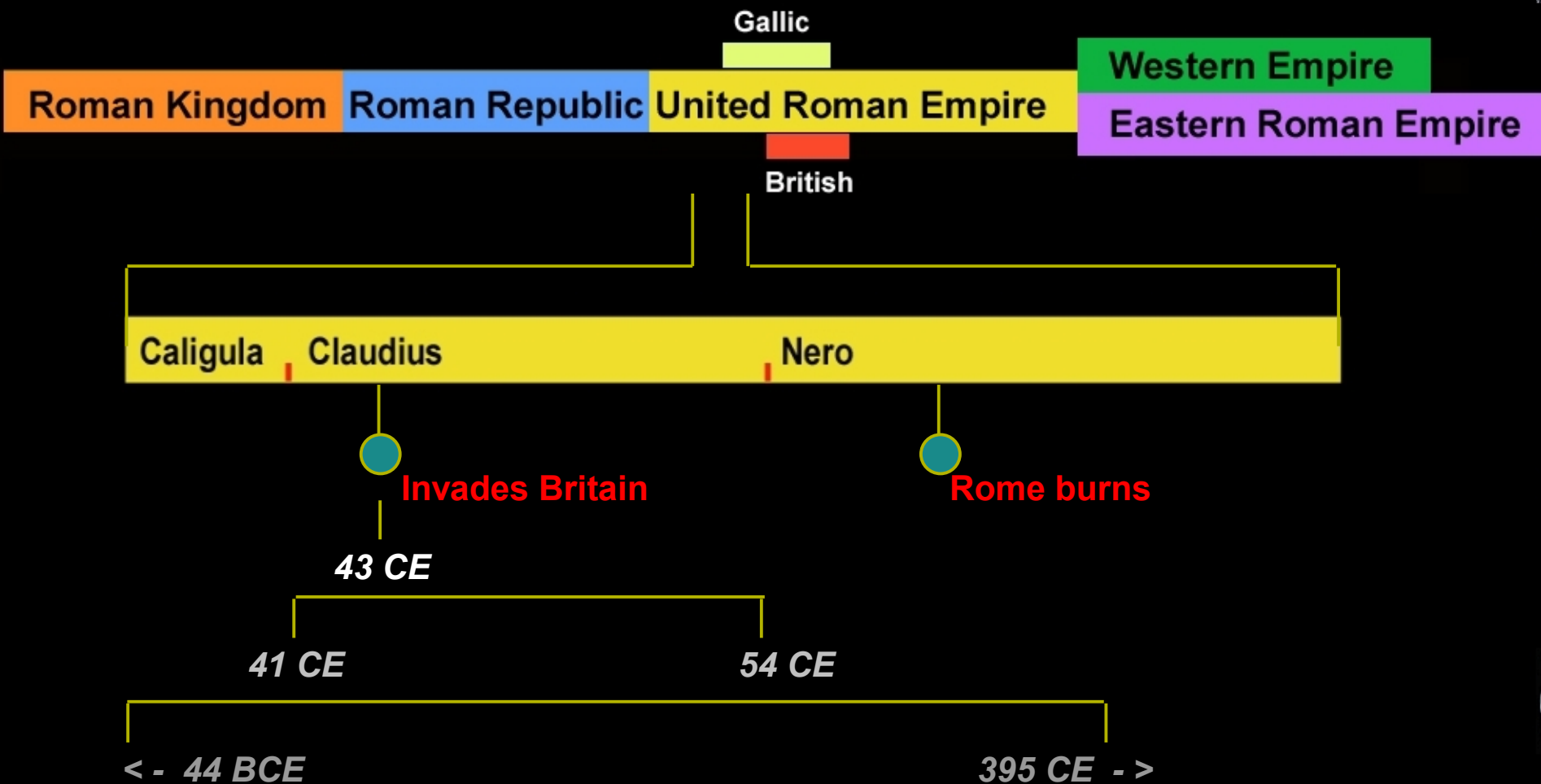
Collections: groups of objects according to Feature Type or Date attestations



# Temporal context for gazetteer entries

Socio-political "root unit" = the overall context

Roman Period



# Date Attestations within Temporal Context

## Placenames:

Rutupiae (default] (historical) (endonym) (lat)  
Richborough (alternate) (modern) (exonym) (eng)

## Dates:

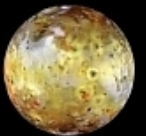
43 CE (begin) (sourced) (authority: x)  
43 CE (end) (sourced) (authority: x)

41 CE (period begin) (inherited) (authority: chronology of Roman Rulers)  
54 CE (period end) (inherited) (authority: chronology of Roman Rulers)

44 BCE (context begin) (inherited) (authority: chronology of Roman Rulers)  
395 CE (context end) (inherited) (authority: chronology of Roman Rulers)

## Range:

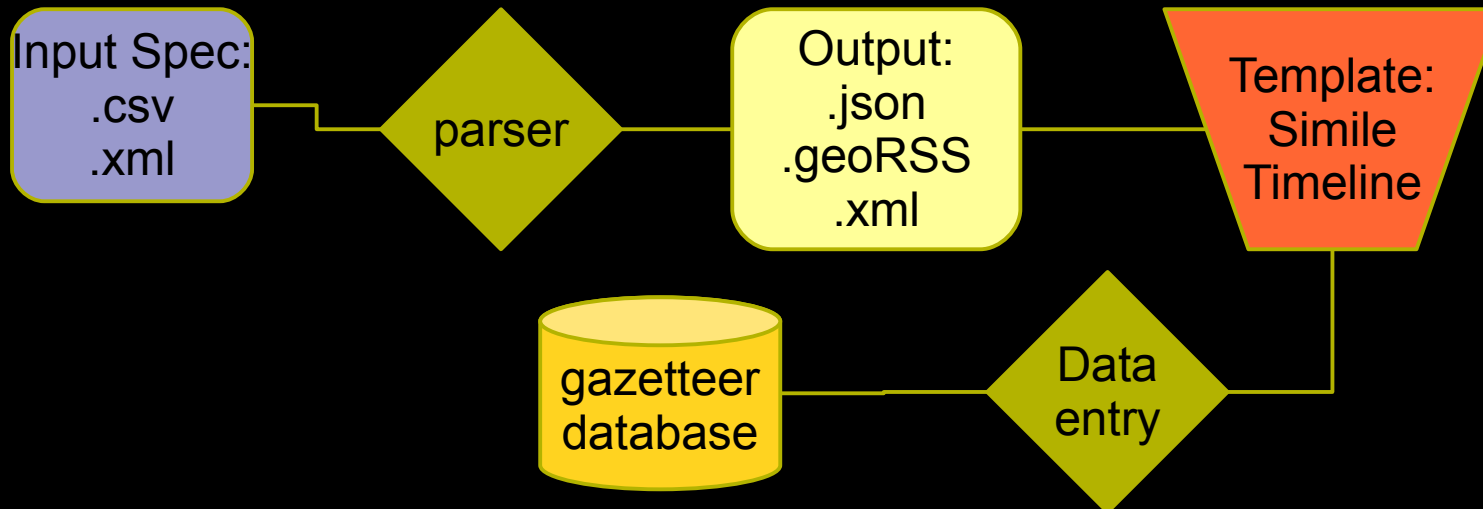
44 BCE (-0044) (earliest) (derived) (based on: context begin)  
395 CE (0395) (latest) (derived) (based on: context end)



# Temporal Referencing System

## Core Elements:

- Keyframes (Emperors, Reign Periods, Local Calendar Periods)
- Named Periods
  - Process for ingesting ad-hoc collections of user-defined periods
- User Interface for Browsing (Simile Timeline)
- Means of posting selected Timeline dates directly into external application
- Repository of Keyframes for free public consumption (web service)



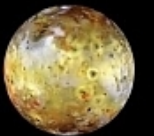


# JSON sample snippet

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  'wikiURL': "http://chgis.hmdc.harvard.edu",
  'wikiSection': "/time",

  'events' :

  [
    {
      "point": {"lon": 108, "lat": 34},
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      "description": "Period: 秦 趙子楚 -249 BCE to -247 BCE Capitol: 咸阳 (咸阳市)",
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    },
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    }
  ]
}
```

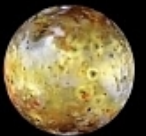
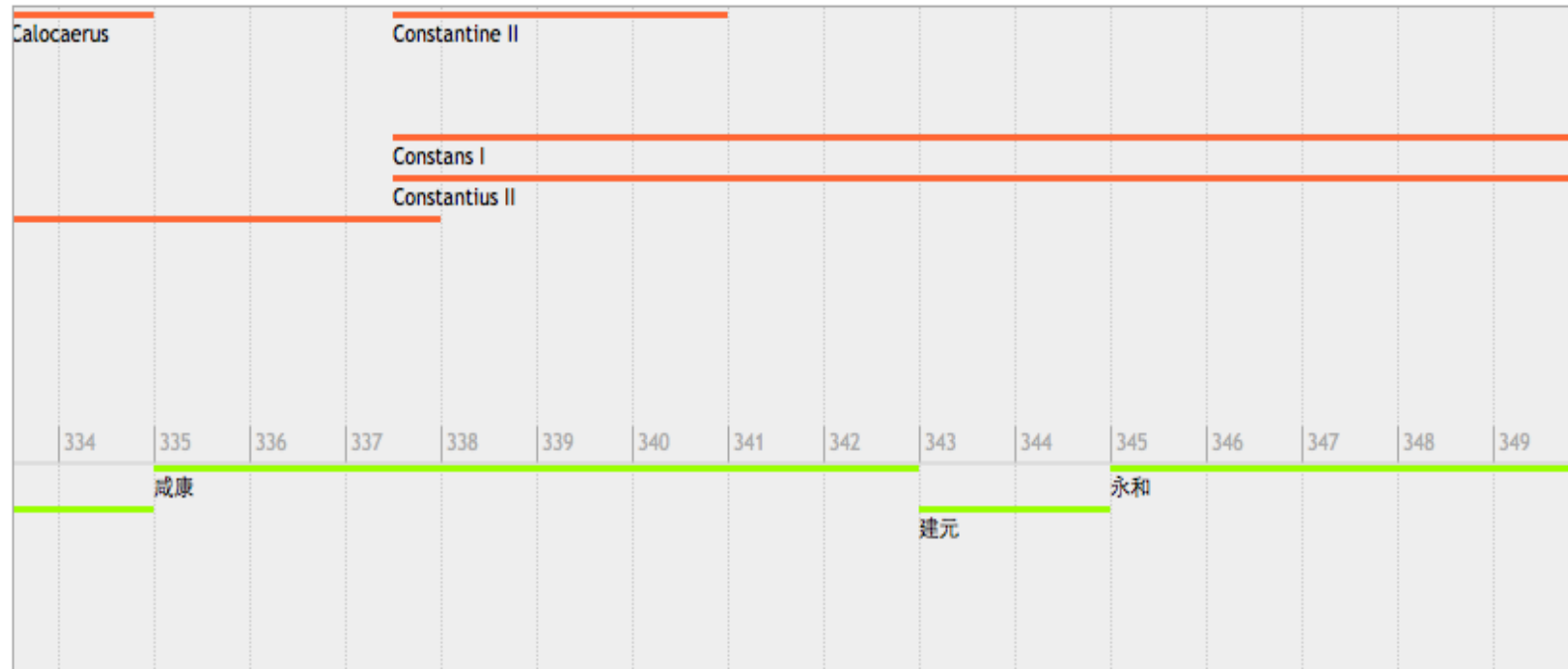


# API Simile Timeline

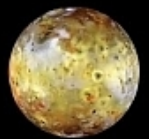
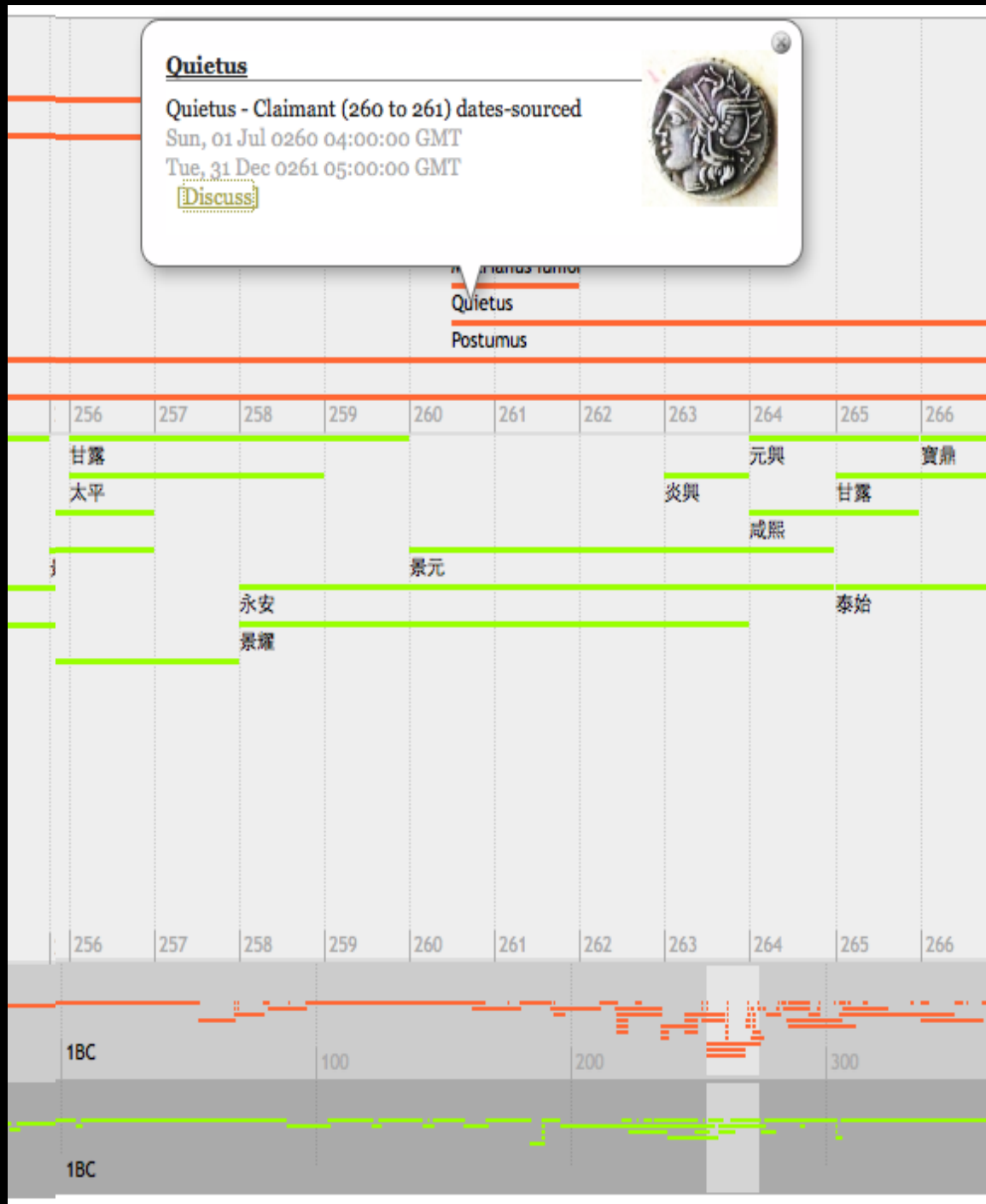
## Time Referencing System: Chinese Reign Periods

Sources:

- Chinese Reign Periods, from "Zhongguo lishi jinianbiao" in volume three of "Ci Hai, 1965 Xinbianben" edition.



# API Time Period Details



# Link to External Wiki Page

[article](#)[discussion](#)[edit this page](#)[history](#)

## Quietus

From Wikipedia, the free encyclopedia

For other uses, see [Quietus \(disambiguation\)](#).

### Quietus

**Usurper of the Roman Empire**

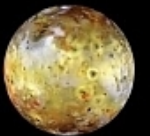
[Antoninianus-Quietus-RIC 0009.jpg](#)

Quietus on a coin  
celebrating *Eternal Rome*.<sup>[1]</sup>

<b>Reign</b>	260-1 (with <a href="#">Macrianus Minor</a> )
<b>Full name</b>	Titus Fulvius Iunius Quietus
<b>Died</b>	261
<b>Predecessor</b>	<a href="#">Gallienus</a>
<b>Successor</b>	<a href="#">Gallienus</a>
<b>Father</b>	<a href="#">Macrianus Major</a>
<b>Mother</b>	? (of senatorial descent)

**Titus Fulvius Iunius Quietus** (died 261) was a [Roman usurper](#) against [Roman Emperor Gallienus](#).

Quietus was the son of [Fulvius Macrianus](#) and a noblewoman, possibly named Iunia. According to *Historia Augusta*,



# Repository of Keyframe Chronologies



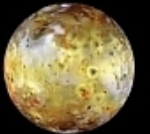
available now:

- Chinese Reign Periods (simple version, by year)
- Roman Rulers (from Augustus to the Divided Empire)



planned updates:

- Chinese Reign Periods (accurate to the day, via DDBC)
- Japanese Eras (accurate to the day, via DDBC)



[Dharma Drum Buddhist College – Time Authority Database]



permanent website will be linked from here:

<http://fas.harvard.edu/~chgis>

