**PROPOSAL SUMMARY FORM**

## A.  Administrative

**1.Title**
Proposal to encode Ancient Greek Musical Notation Characters in the UCS
**2. Requester's name**
Thesaurus Linguae Graecae Project (University of California, Irvine)
3. **Requester type**
Expert contribution
**4. Submission date:**
2002-11-07
**5. Requester's reference**
**6. Completion**
This is a complete proposal.

## B.  Technical - General

**1.The proposal is for addition of a new character block:**
**If yes, proposed name:**
Ancient Greek Musical Symbols
**2. Number of characters in proposal:**
70
**3. Proposed category**
Category B.2
**4. Proposed Level of Implementation:**
Level 1 for characters 1-66 and 70
Level 3 for characters 67-69.
**5a. Character names provided?**
Yes.
**5b.  Character names in accordance with guidelines**
Yes.
**5c. Character shapes reviewable?**
Yes
**6a. Who will provide the appropriate computerized font for publishing the standard?**
TLG Project
**6b. Fonts currently available**.
Available in non-Unicode fonts.
**6c. Font format**
True Type
**7a.  Are references (to other character sets, dictionaries, descriptive texts etc.) provided?**
Yes
**7b. Are published examples of proposed characters attached?**
Yes.
**8. Does the proposal address other aspects of character data processing?**
No.

## C. Technical - Justification

**1. Has this proposal for addition of character(s) been submitted before?**

No.

**2. Has contact been made to members of the user community**

Yes.The TLG has been in contact with a great number of experts. Earlier versions of this proposal have been posted online and received comments by members of the profession. The proposal was extensively reviewed by Professor William Johnson, University of Cincinnati and Dr. David Creese, University of St.Andrews, Scotland.

**3. Information on the user community for the proposed characters**

Scholarly community.

**4. The context of use for the proposed characters (type of use; common or rare)**

Use varies. Some characters are common in extant Greek texts. Some appear less often.

**5. Are the proposed characters in current use by the user community?**

Yes. Characters are present in various editions of Greek texts and used extensively by scholars and students of Greek as well as individuals interested in the study of ancient Greek music.

**6. After giving due considerations to the principles in *Principles and Procedures document*, must the proposed characters be entirely in the BMP?**

No, Plane 1

**7. Should the proposed characters be kept together in a contiguous range (rather than being scattered)?**

Yes.

**8. Can any of the proposed characters be considered a presentation form of an existing character or character sequence?**

No.

**9. Can any of the proposed characters be encoded using a composed character sequence of either existing characters or other proposed characters?**

No.

**10. Can any of the proposed character(s) be considered to be similar (in appearance or function) to an existing character?**

Yes, three of the proposed characters resemble (but are not identical) to Greek or Roman alphabetic characters.

**11a. Does the proposal include use of combining characters and/or use of composite sequences**

Yes (combining characters).

**11b. Is a list of composite sequences and their corresponding glyph images (graphic symbols) provided?**

No. Too numerous to list.

**12. Does the proposal contain characters with any special properties such as control function or similar semantics?**

No.

**13. Does the proposal contain any Ideographic compatibility character(s)?**

No.

# Proposal

Music played a central role in Ancient Greek and Roman societies. We have surviving musical scores of all sorts, ranging from a fragment of Euripides' *Orestes* to Christian hymns.[1]

The Greeks had two systems of musical notation which correspond note for note with each other: one for the vocal and one for the instrumental melody (See overview of the two systems of notation below). The whole scheme covers a little over three octaves. The symbols form groups of three. The bottom symbol in each triad represents a 'natural' note on a diatonic scale. The modern notes shown in the boxes are the conventional equivalents used in most scholarly literature. The other two symbols in each triad represent successive sharpenings of the 'natural' note. West also notes that the "degree of sharpening is not fixed but varies between a quarter–tone and a semitone, depending on the genus of the composition or the conventions of the key." There is no distinction in this system between enharmonic and chromatic scales.

## Greek Vocal Notation

The characters proposed here represent simple rotations or reflections of the characters of standard Greek alphabet. Exceptions to this will be discussed in the appropriate characters below. Greek Vocal Notation Symbols 1-24 are a set of variants on the whole Greek alphabet in reverse order. Greek Vocal Notation Symbols 49-54 are further variants of the last six letters of the standard Greek alphabet, again in reverse order.

## Greek Instrumental Notation

The Instrumental set is rather more complicated in form and obscure in origin than the vocal notation.[2] The first two triads are variations on the last six letters of the Greek alphabet. The following twelve triads are formed thus: the first character is either a standard Greek letter or is a variant thereof; the second character in the triad is the first character rotated 90º counter-clockwise; the third is the first character reflected in the y-axis. The final three triads proposed all have variants of 039D GREEK CAPITAL LETTER ETA as their first symbol. The second and third symbols in each are based on diagonal slashes.[3] Instrumental symbols that overlap with vocal, even at different pitches have not been included in this proposal. Also symbols that overlap with Greek alphabetic characters have not been reproposed.

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[1] Ibid. 218-263 for an in depth analysis of surviving scores. See also Mathiesen (1999) 12-13, 247-252.

[2] See Winnington-Ingram (1978) 237

[3] See Winnington-Ingram (1978) 241-248

**Naming Conventions**

There is no standardized ancient system for naming these characters. For instance, while Alypius—our most extensive source[4]—provides descriptive names for the characters, such as 'inverted gamma' for Vocal Notation Symbol 22, his scheme of naming is based on his own deductions from looking at the characters, rather than understanding how they developed and, on occasion his naming is misleading and his terminology inconsistent. For instance, Vocal Notation Symbol 20 is described as being a Digamma, however, given its position in the list of following a variant Delta and preceding a variant Zeta, it is much more likely that it is a variant Epsilon. We propose the standard names widely used by modern scholars. The naming convention is simple: Vocal Notation Symbol 1, etc.

# Bibliography

Barker, A., "Music" in *OCD*<sup>3</sup> (Oxford University Press, Oxford, 1996) 1003-1012

Barker, A., *Greek Musical Writings. Volume II: Harmonic and Acoustic Theory* (Cambridge, 1989)

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Jan, K., *Musici scriptores Graeci* (Hildesheim, 1962)

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Landels, J.G., *Music in Ancient Greece and Rome* (London, 1999)

Larfeld, W., *Handbuch der griechiscehn Epigraphik 2.2. Die attischen Inschriften* (Leipzig, 1902)

Mathiesen, T.J., *Apollo's Lyre: Greek music and music theory in Antiquity and the Middle Ages* (Lincoln & London, 1999)

Najock, D., *Anonyma de musica scripta Bellermanniana.* (Teubner, 1975)

Pöhlmann, E., *Denkmäler altgriechischer Musik* (Nuremberg, 1970)

West, M.L., *Ancient Greek Music* (Oxford, 1992)

Winnington-Ingram, R.P., "The First Notational Diagram of Aristides Quintilianus", in *Philologus* 117 (1973) 244-249

Winnington-Ingram, R.P., "Two studies in Greek musical notation" in *Philologus* 122 (1978) 237-248

Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Leipzig, 1963)

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[4] Landels (1999) 207

# Ancient Greek Musical Characters: Table of Characters Proposed

Full documentation available at URL: http://www.tlg.uci.edu/Uni.prop.html

| Number | | Name | Unicode | Comment |
|---|---|---|---|---|
| **Ancient Greek Vocal Notation** | | | | |
| 1 | Ɔ | Greek Vocal Notation Symbol 1 | | |
| 2 | Ǝ | Greek Vocal Notation Symbol 2 | | |
| 3 | ⋇ | Greek Vocal Notation Symbol 3 · Greek Instrumental Notation Symbol 3 | | |
| 4 | ⏝ | Greek Vocal Notation Symbol 4 | | |
| 5 | ＜ | Greek Vocal Notation Symbol 5 | | |
| 6 | ⊣ | Greek Vocal Notation Symbol 6 · Greek Instrumental Notation Symbol 21 | | |
| 7 | Ɜ | Greek Vocal Notation Symbol 7 · Greek Instrumental Notation Symbol 9 | | |
| 8 | Ь | Greek Vocal Notation Symbol 8 | | |
| 9 | ⊔ | Greek Vocal Notation Symbol 9 · Greek Instrumental Notation Symbol 44 | | |
| 10 | ϙ | Greek Vocal Notation Symbol 10 | | This is a variation of 038F, and is therefore not the same as 03D8. |
| 11 | NN | Greek Vocal Notation Symbol 11 | | |
| 12 | И | Greek Vocal Notation Symbol 12 | | |
| 13 | Ϻ | Greek Vocal Notation Symbol 13 | | |
| 14 | V | Greek Vocal Notation Symbol 14 · Greek Instrumental Notation Symbol 41 | | Similar to 0056 LATIN CAPITAL LETTER V |
| 15 | ⊻ | Greek Vocal Notation Symbol 15 · Greek Instrumental Notation Symbol 35 | | |
| 16 | ＼ | Greek Vocal Notation Symbol 16 | | This character has two glyph variants: — and ＼. Therefore this character may not be unified with Greek Instrumental Notation Symbol 48. |
| 17 | ⌒ | Greek Vocal Notation Symbol 17 | | |
| 18 | ⊢ | Greek Vocal Notation Symbol 18 · Greek Instrumental Notation Symbol 15 | | |
| 19 | Ⴠ | Greek Vocal Notation Symbol 19 | | |
| 20 | Ϝ | Greek Vocal Notation Symbol 20 · Greek Instrumental Notation Symbol 28 | | This is a variation of 0395, and is therefore not the same as 0046 |
| 21 | ∇ | Greek Vocal Notation Symbol 21 | | |
| 22 | ⌐ | Greek Vocal Notation Symbol 22 | | |
| 23 | R | Greek Vocal Notation Symbol 23 | | This is a variation of 0392, and is therefore not the same as 0052 |
| 24 | Ɐ | Greek Vocal Notation Symbol 24 | | |
| 25 | ⋔ | Greek Vocal Notation Symbol 50 | | |
| 26 | X̵ | Greek Vocal Notation Symbol 51 | | |
| 27 | ϴ | Greek Vocal Notation Symbol 52 | | |

| 28 | ᘁ | Greek Vocal Notation Symbol 53 | | |
|----|---|--------------------------------|---|---|
| 29 | ⊥ | Greek Vocal Notation Symbol 54<br>· Greek Instrumental Notation Symbol 20 | | |

**Ancient Greek Instrumental Notation**

| 30 | ᘉ | Greek Instrumental Notation Symbol 1 | | |
|----|---|--------------------------------------|---|---|
| 31 | ∈ | Greek Instrumental Notation Symbol 2 | | |
| 32 | ᘘ | Greek Instrumental Notation Symbol 4 | | |
| 33 | ⅄ | Greek Instrumental Notation Symbol 5 | | |
| 34 | ε | Greek Instrumental Notation Symbol 7 | | |
| 35 | ω | Greek Instrumental Notation Symbol 8 | | |
| 36 | � | Greek Instrumental Notation Symbol 11 | | |
| 37 | Ⴘ | Greek Instrumental Notation Symbol 12 | | |
| 38 | Ⴙ | Greek Instrumental Notation Symbol 13 | | |
| 39 | ⌐ | Greek Instrumental Notation Symbol 14 | | |
| 40 | ɯ | Greek Instrumental Notation Symbol 17 | | |
| 41 | Ⅎ | Greek Instrumental Notation Symbol 18 | | |
| 42 | ⊢ | Greek Instrumental Notation Symbol 19 | | |
| 43 | ∟ | Greek Instrumental Notation Symbol 23 | | |
| 44 | ⅂ | Greek Instrumental Notation Symbol 24 | | |
| 45 | Ⴑ | Greek Instrumental Notation Symbol 25 | | |
| 46 | ⌐ | Greek Instrumental Notation Symbol 26 | | |
| 47 | Ⴏ | Greek Instrumental Notation Symbol 27 | | |
| 48 | ⸆ | Greek Instrumental Notation Symbol 29 | | |
| 49 | ⅎ | Greek Instrumental Notation Symbol 30 | | |
| 50 | ᴒ | Greek Instrumental Notation Symbol 32 | | |
| 51 | Ⴜ | Greek Instrumental Notation Symbol 36 | | |
| 52 | ⊳ | Greek Instrumental Notation Symbol 37 | | |
| 53 | ◁ | Greek Instrumental Notation Symbol 38 | | |
| 54 | Λ | Greek Instrumental Notation Symbol 39 | | |
| 55 | ＜ | Greek Instrumental Notation Symbol 40 | | |
| 56 | ＞ | Greek Instrumental Notation Symbol 42 | | |
| 57 | ⊏ | Greek Instrumental Notation Symbol 43 | | |
| 58 | ⊐ | Greek Instrumental Notation Symbol 45 | | |
| 59 | ╱ | Greek Instrumental Notation Symbol 47 | | Similar but not identical to 002F |
| 60 | ╲ | Greek Instrumental Notation Symbol 48 | | Similar but not identical to 005C |
| 61 | ⌐ | Greek Instrumental Notation Symbol 49 | | |
| 62 | ⟋ | Greek Instrumental Notation Symbol 50 | | |
| 63 | ⟍ | Greek Instrumental Notation Symbol 51 | | |
| 64 | ⅏ | Greek Instrumental Notation Symbol 52 | | |
| 65 | ⟋ | Greek Instrumental Notation Symbol 53 | | |
| 66 | ⟍ | Greek Instrumental Notation Symbol 54 | | |

**Further Greek Musical Notation Symbols**

| 67 | ◌̅ | Greek Musical Triseme | | Combining character |
|----|---|-----------------------|---|---------------------|
| 68 | ◌̲ | Greek Musical Tetraseme | | Combining character |
| 69 | ◌̿ | Greek Musical Pentaseme | | Combining character |
| 70 | ∩ | Greek Musical Leimma | | |

# TABLE xx01-4F: GREEK MUSICAL CHARACTERS

|  | xx0 | xx1 | xx2 | xx3 | xx4 |
|---|---|---|---|---|---|
| 0 | ℧ | ⌒ | Y | ꟻ | ⟋ |
| 1 | Ꙅ | ⊢ | Ɛ | ℃ | ⟋ |
| 2 | ✗ | ⟋ | ω | ⤬ | ◌ᴑ |
| 3 | Ꝑ | F | ⊞ | ⊳ | ◌ᴑ |
| 4 | Y | ▽ | ⊟ | ◁ | ◌ᴇ |
| 5 | ⊤ | ⌐ | ꓧ | ◸ | ∩ |
| 6 | Ɛ | R | ⊥ | ⟨ | |
| 7 | Ь | Ɐ | ⨈ | ⟩ | |
| 8 | ⊔ | Ꝏ | Ǝ | ⊓ | |
| 9 | ⸱ | ✗ | ⊢ | ⊔ | |
| A | ⋈ | Ꝋ | ∟ | ⟋ | |
| B | И | ⅄ | ⅂ | ⟍ | |
| C | M | ⊤ | Γ | ⌐ | |
| D | V | ⊓ | Ꝇ | ⟋ | |
| E | ⤬ | Ⲑ | ⅁ | ⟋ | |
| F | ⟍ | Ꝓ | ⅂ | ⟋ | |

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# TABLE xx01-4F: GREEK MUSICAL CHARACTERS

| hex | Name | hex | Name |
|-----|------|-----|------|
| xx00 | Greek Vocal Notation Symbol 1 | xx40 | Greek Instrumental Notation Symbol 53 |
| xx01 | Greek Vocal Notation Symbol 2 | xx41 | Greek Instrumental Notation Symbol 54 |
| xx02 | Greek Vocal Notation Symbol 3 | xx42 | Greek Musical Triseme |
| xx03 | Greek Vocal Notation Symbol 4 | xx43 | Greek Musical Tetraseme |
| xx04 | Greek Vocal Notation Symbol 5 | xx44 | Greek Musical Pentaseme |
| xx05 | Greek Vocal Notation Symbol 6 | xx45 | Greek Musical Leimma |
| xx06 | Greek Vocal Notation Symbol 7 | | |
| xx07 | Greek Vocal Notation Symbol 8 | | |
| xx08 | Greek Vocal Notation Symbol 9 | | |
| xx09 | Greek Vocal Notation Symbol 10 | | |
| xx0A | Greek Vocal Notation Symbol 11 | | |
| xx0B | Greek Vocal Notation Symbol 12 | | |
| xx0C | Greek Vocal Notation Symbol 13 | | |
| xx0D | Greek Vocal Notation Symbol 14 | | |
| xx0E | Greek Vocal Notation Symbol 15 | | |
| xx0F | Greek Vocal Notation Symbol 16 | | |
| xx10 | Greek Vocal Notation Symbol 17 | | |
| xx11 | Greek Vocal Notation Symbol 18 | | |
| xx12 | Greek Vocal Notation Symbol 19 | | |
| xx13 | Greek Vocal Notation Symbol 20 | | |
| xx14 | Greek Vocal Notation Symbol 21 | | |
| xx15 | Greek Vocal Notation Symbol 22 | | |
| xx16 | Greek Vocal Notation Symbol 23 | | |
| xx17 | Greek Vocal Notation Symbol 24 | | |
| xx18 | Greek Vocal Notation Symbol 50 | | |
| xx19 | Greek Vocal Notation Symbol 51 | | |
| xx1A | Greek Vocal Notation Symbol 52 | | |
| xx1B | Greek Vocal Notation Symbol 53 | | |
| xx1C | Greek Vocal Notation Symbol 54 | | |
| xx1D | Greek Instrumental Notation Symbol 1 | | |
| xx1E | Greek Instrumental Notation Symbol 2 | | |
| xx1F | Greek Instrumental Notation Symbol 4 | | |
| xx20 | Greek Instrumental Notation Symbol 5 | | |
| xx21 | Greek Instrumental Notation Symbol 7 | | |
| xx22 | Greek Instrumental Notation Symbol 8 | | |
| xx23 | Greek Instrumental Notation Symbol 11 | | |
| xx24 | Greek Instrumental Notation Symbol 12 | | |
| xx25 | Greek Instrumental Notation Symbol 13 | | |
| xx26 | Greek Instrumental Notation Symbol 14 | | |
| xx27 | Greek Instrumental Notation Symbol 17 | | |
| xx28 | Greek Instrumental Notation Symbol 18 | | |
| xx29 | Greek Instrumental Notation Symbol 19 | | |
| xx2A | Greek Instrumental Notation Symbol 23 | | |
| xx2B | Greek Instrumental Notation Symbol 24 | | |
| xx2C | Greek Instrumental Notation Symbol 25 | | |
| xx2D | Greek Instrumental Notation Symbol 26 | | |
| xx2E | Greek Instrumental Notation Symbol 27 | | |
| xx2F | Greek Instrumental Notation Symbol 29 | | |
| xx30 | Greek Instrumental Notation Symbol 30 | | |
| xx31 | Greek Instrumental Notation Symbol 32 | | |
| xx32 | Greek Instrumental Notation Symbol 36 | | |
| xx33 | Greek Instrumental Notation Symbol 37 | | |
| xx34 | Greek Instrumental Notation Symbol 38 | | |
| xx35 | Greek Instrumental Notation Symbol 39 | | |
| xx36 | Greek Instrumental Notation Symbol 40 | | |
| xx37 | Greek Instrumental Notation Symbol 42 | | |
| xx38 | Greek Instrumental Notation Symbol 43 | | |
| xx39 | Greek Instrumental Notation Symbol 45 | | |
| xx3A | Greek Instrumental Notation Symbol 47 | | |
| xx3B | Greek Instrumental Notation Symbol 48 | | |
| xx3C | Greek Instrumental Notation Symbol 49 | | |
| xx3D | Greek Instrumental Notation Symbol 50 | | |
| xx3E | Greek Instrumental Notation Symbol 51 | | |
| xx3F | Greek Instrumental Notation Symbol 52 | | |