

Arabic Musical Cultures

Explorations Term 2022



Background

Athens and Jerusalem

- Reason
 - Inquiry
 - (reason)
 - (philosophy)
 - (*logos*)
 - (science)
 - Revelation
 - Belief
 - (faith)
 - (poetry < rhetoric)
 - (*mythos*)
 - (religion)
- Cf. Tertulian, *On Prescriptions Against Heretics* 7)



Music and Philosophy

- The greatest musicians are philosophers
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- What is music?
 - Art of the muses
- What is philosophy?
 - Love of wisdom
 - What is the theory?
 - Way of seeing
- What is the connection of between these?

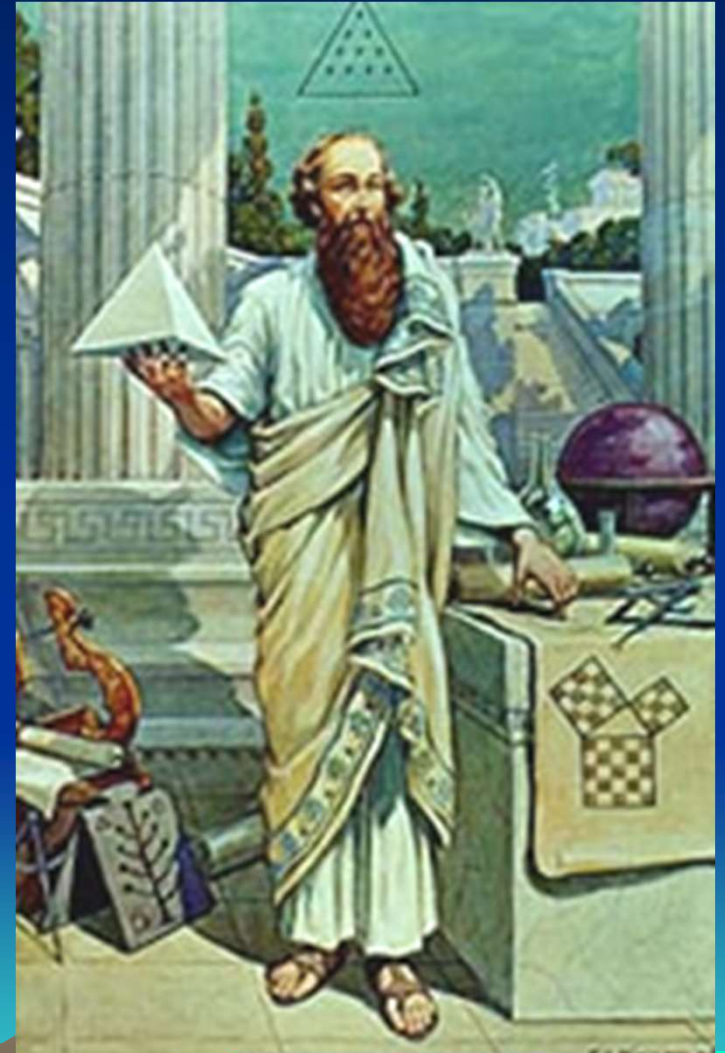


Fyodor Bronnikov's Pythagoreans Celebrate Sunrise (1869)

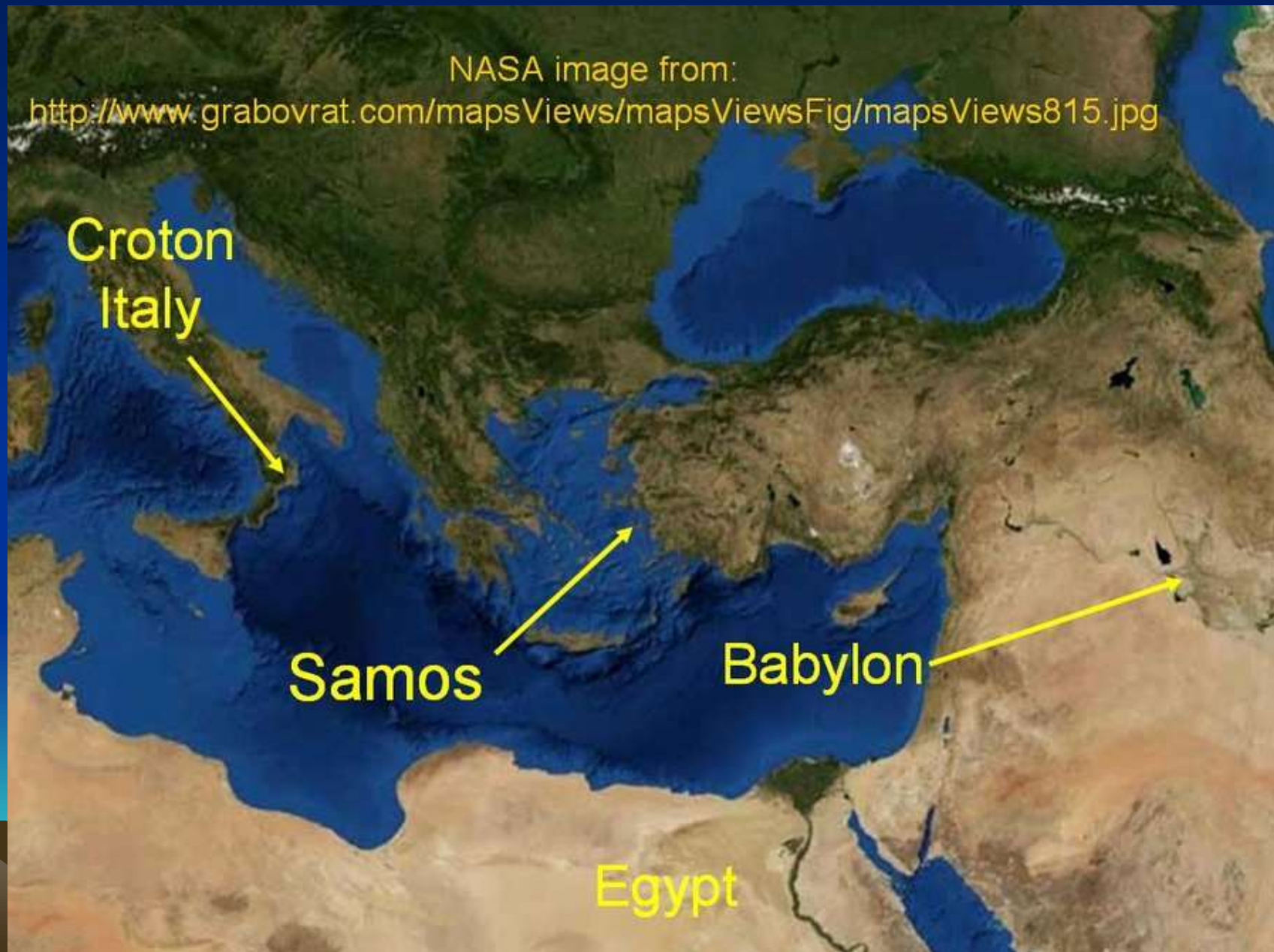


Pythagoras (of Samos, ca. 580? - ca. 500? B.C.E.)

- Traditionally
 - Initiated in Egypt
 - the first to use the word *philosophia*, and the first to call himself a *philosophos*.
 - Understands philosophy as a religious “way of life”—care and training of the soul < (soul/body dualism)



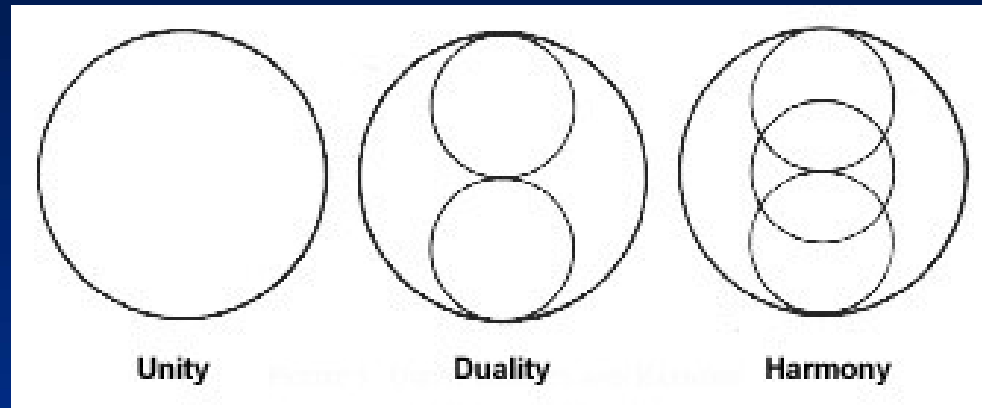
Life of Pythagoras



Enduring Ideas (and words) from the Pythagoreans

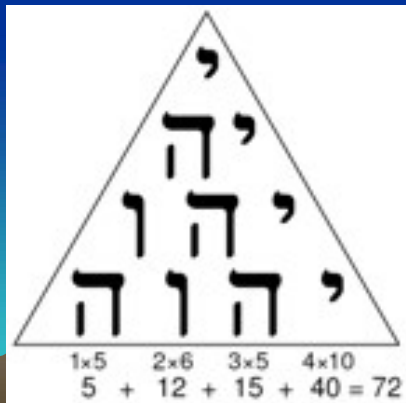
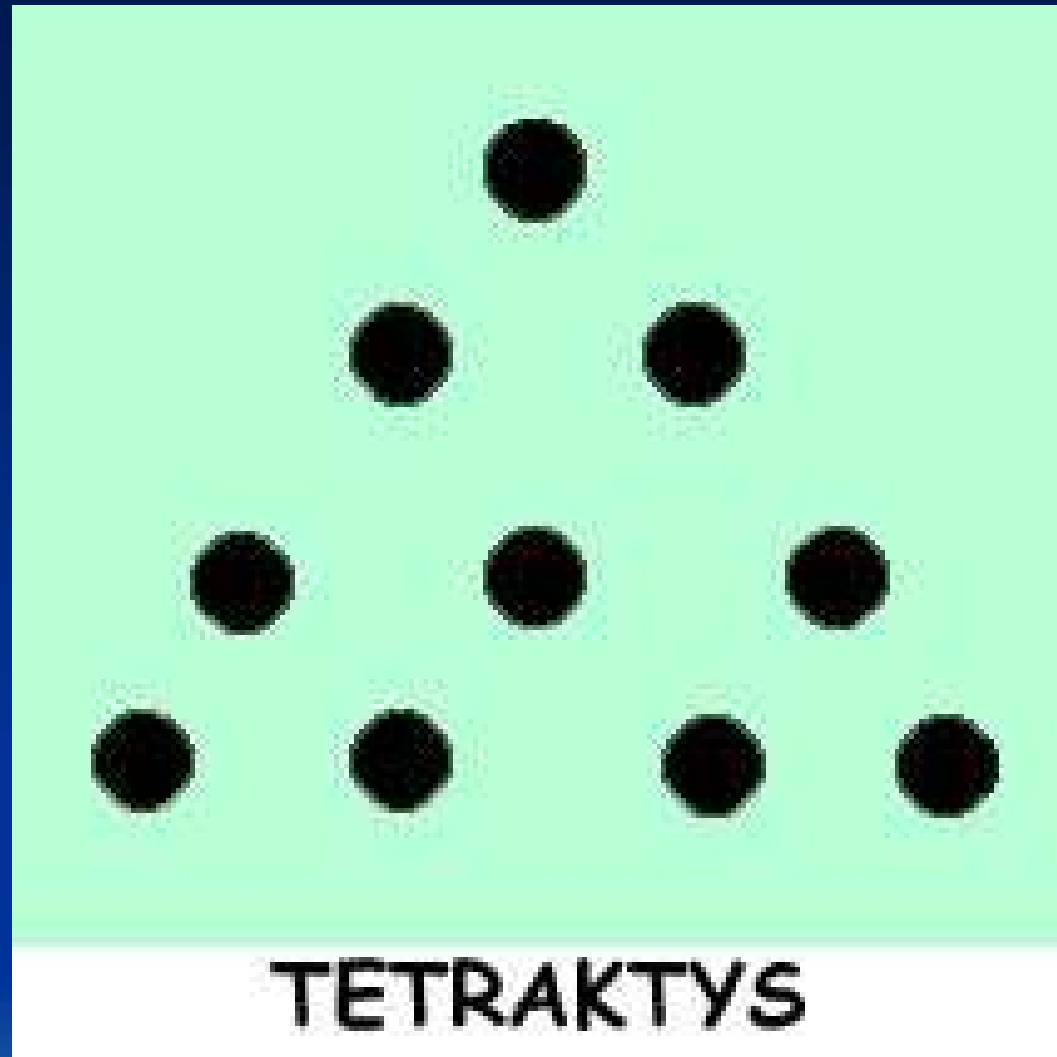
- *Philosophia*
 - a religious and communal “*way of life*”; “loving wisdom” distinguished from a presumed attainment of “wisdom” (*sophia*) itself.
- Rebirth (*palingenesia*)
 - (cf. “born again” - ◀ Orphic **Mysteries**)
- Number (*arithmos*)
 - Aristotle says that the Pythagoreans hold that “mathematical numbers” (*arithmoi mathematikoi*) are in sensible things as their “*arche*” (*Met.* 987b; 1090a) → “numerology” & “*gematria*” [+ “data science”?]
- *Kosmos*
 - understood as an “ordered whole”
- *Harmonia*
 - + Sound-number relations → harmonics
- *Theoria*
 - Contemplation assimilates us to the divine (*theos*)
 - *Women Philosophers*
 - Among Pythagoras’s followers were “the first women philosophers.”

Divine Number



- One, the principle of Unity; the Dyad, strife and relation; the Triad, bridges opposites.
- Four branches of Number: **Arithmetic** solely consists of Number; **Geometry**, Number and Space, **Music**, Number and Time; **Astronomy**, Number, Space, and Time.

The Tetraktys



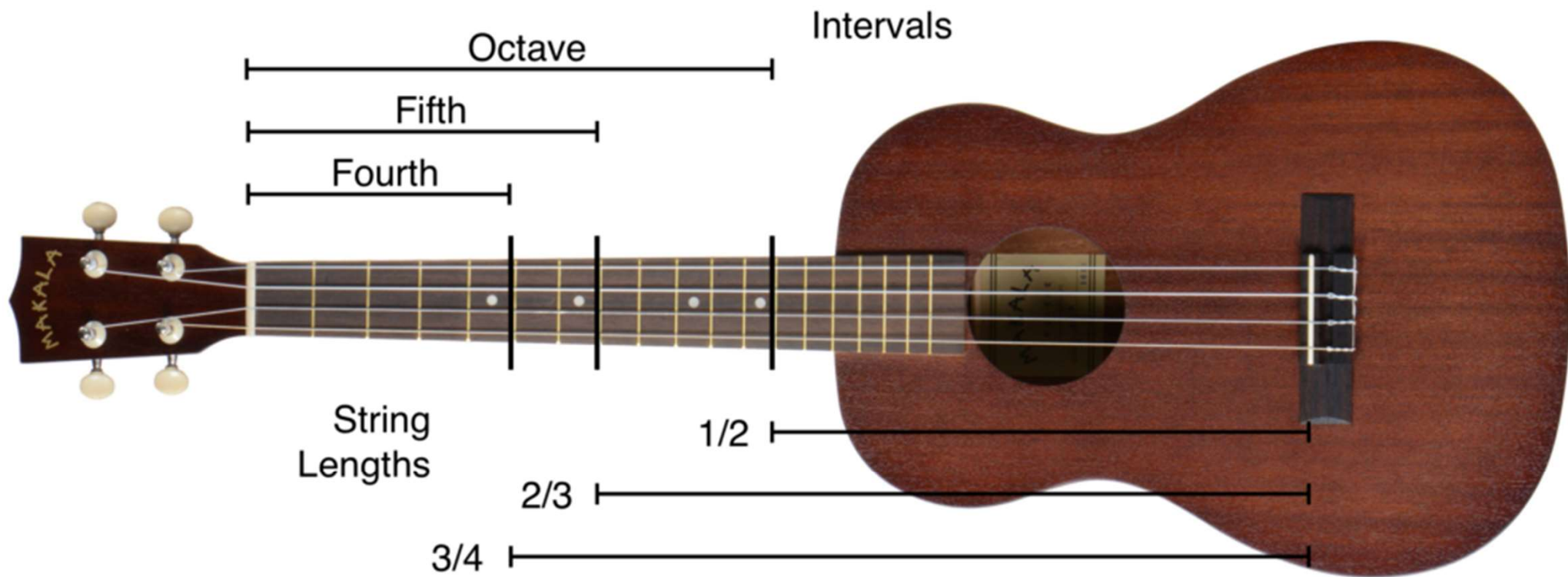
The *Tetraktys*

- $1+2+3+4 = 10$
 - also geometrical figures: point, line, plane, and 3-dimensional surface.
 - musical scales: 1:2 ratio is an octave, 2:3 the perfect fifth, and 3:4 the perfect fourth.
- encompasses both Odd and Even, Square and Oblong, etc. Thus the Tetraktys (or Decad) is often called the *Kosmos* (world-order), Ouranos (Heaven), or *to pan* (the All.)

Number and Harmonia

- All things resemble numbers.
- Pythagoras handed down the *tetraktys*, which contains the “fount and root of ever-flowing nature” and produces the most perfect number, 10.
 - $1+2+3+4 = 10$ [2nd Unity]
- The *kosmos* is arranged according to *harmonia* (attunement), which is a system of three concords: the octave→1:2 ratio [or $\frac{1}{2}$], the [perfect] fifth→2:3 [or $\frac{2}{3}$], the fourth→3:4 [or $\frac{3}{4}$].

from Sextus Empiricus KRS 279



Relationship between today's intervals and Pythagoras's harmonic ratios

Al-Kindi (b. Kūfah-Basra [?] Iraq, ca. 800-873)

- First great theoretician of music in the Arab-Islamic world
- First to provide a mathematical account of the “Pythagorean comma”—see his ‘ud tuning, which distinguishes between the apotome [C#], ratio $2187/2048$, and the limma [Db], ratio $256/243$
- <https://www.youtube.com/watch?v=6-qoQ0Lqcx8>



Al-Farabi

- forthcoming

