

Non-staff and other non-common notations for music

MUSIC 253/CS 275A
STANFORD UNIVERSITY

Common Western Notation (CMN)

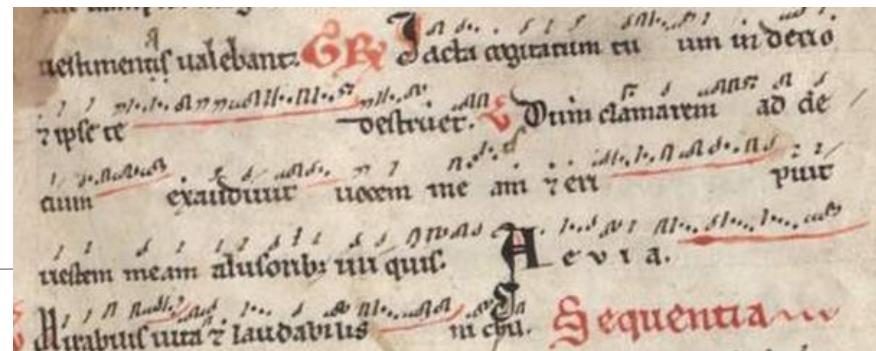
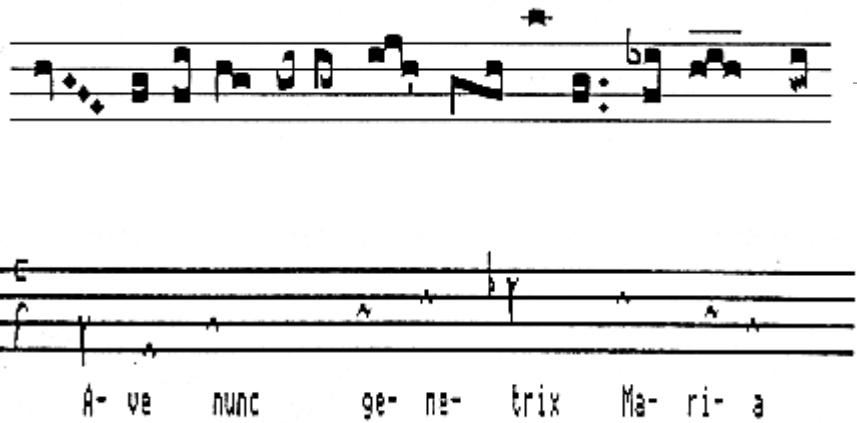
- References **specific** pitches and **relative** durations
- Assumes **regularity of meter**
- Has numerous **graphical** conventions
- Is **flexible** and **extensible** (up to a point)
- Potential includes hundreds (or thousands) or **graphical objects**
- Has numerous **organizational** conventions (scores, parts, etc.)
- **Meaning** of given object often **conferred contextually**

Other representations of music

Western non-common

- **A. Neumes:** specifies relative pitches, often in *patterned* groups associated with particular words or syllables. **Many scripts.**
- **B. Mensural notation:** differentiates multiple *organizational* hierarchies for meter and duration. **Many scripts.**
- **C. Tablature:** pitch and note onset information tied to *gestural* info. **Many dialects.**
- **D. Music since 1950:** arbitrary requirements for *irregular* meter, unusual tunings, unusual gestures. **Arbitrary notations.**
- **E. Braille MN:** tactile output of binary representation. **Many organizational methods. Many national dialects.**

Neumes



From the *Carmina Burana*

(Bavarian State Library [Hss Cgm 4660](#), Munich)

<http://daten.digitale-sammlungen.de/~db/0008/bsb00085130/images/index.html?id=00085130&groesser=&fip=eayaxseaya...&no=1&seite=191>



- *Staves*: usually 4-line
- *Notes*: shapes not standardized
- *Durations*: not explicit
- *Lyrics* (lang.): mainly Latin
- *Lyrics* (script): special fonts, diacriticals

Mensural notation

Metrical hierarchies

Missa Alleluia
1. Kyrie

Kyrie I

Discantus

Cantus

Tenor

Bassus1

Bassus2

Josquin: perfect

Pierre de la Rue

Requiem
1 Introit

Discantus

Contratenor

Hic iocundus sumit mundus

Ockeghem: Cut

Cantus

Contratenor

Tenor

Mensuration signs

Measurement, grouping

Metrical hierarchies

Mensuration signs

Tempus	Prolatio	Sign	Semibreves	Minims	Modern		
					1:4	1:2	1:1
perfectum	maior	⊕	ooo	oooo	9/8	9/4	9/2
perfectum	minor	○	ooo	oo	3/4	3/2	3/1
imperfectum	maior	●	oo	oo	6/8	6/4	6/2
imperfectum	minor	○	oo	o	2/4	2/2	2/1

Fretted-instrument tablatures



Six-string grid
Duration separated
Many graphical dialects



Lute

Classical guitar



pollice-indice-medio-anulare-mignolo

ALBORADA

Andalusian

Andante

Fine arm. XIX arm. XIX arm. XIX arm. XII



Plaisir D'amour

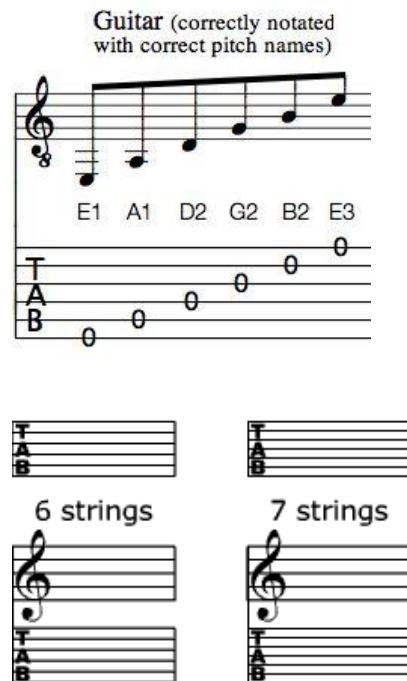
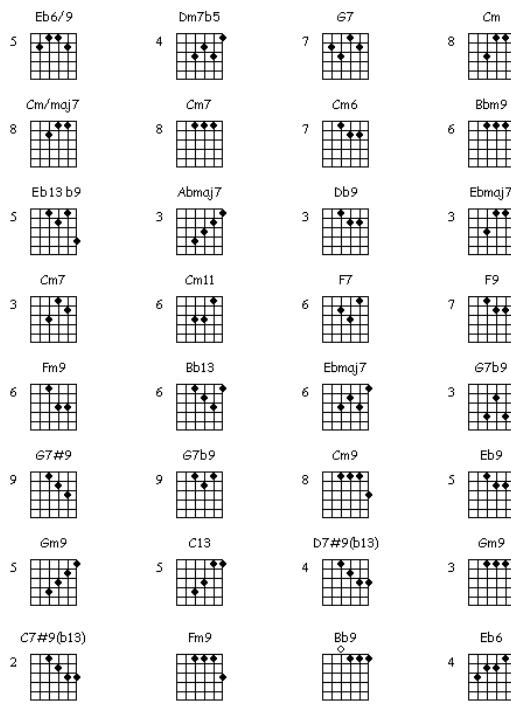
Fingerstyle Guitar Solo

Jean Paul Égide Martini (1741-1816)
Arranged Bill Tyers

Slow Rock $\text{J}=95$

Tablatures can take the form of....

- Pictographs
- Numeric codes
- Other graphs



Bergeronette

Borjon de Scellery, Traité de la Musette

Three examples of historical guitar tablatures. The first example is Bergeronette, showing a staff with note heads and corresponding pitch names (E1, A1, D2, G2, B2, E3) above the strings. The second example is Borjon de Scellery, Traité de la Musette, showing a staff with note heads and corresponding pitch names (T, A, B) below the strings. The third example is another version of Borjon de Scellery, showing a staff with note heads and corresponding pitch names (T, A, B) below the strings.

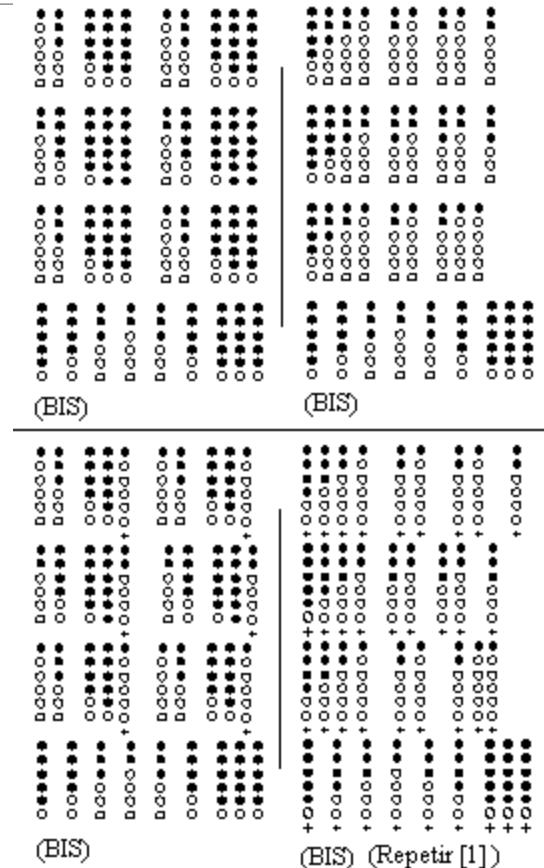
Musette tablature

http://en.wikipedia.org/wiki/List_of_guitar_tablature_software

<http://en.wikibooks.org/wiki/Guitar/Tablature>

Wind and keyboard tablatures

Recorder tablature



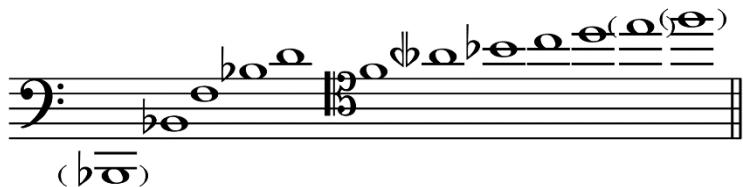
Horns, trumpets, trombones



Military 6-valve trombone



Sackbuts



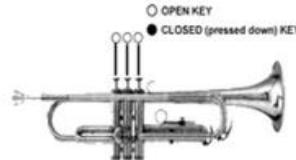
Trombone, first position overtone series

Valveless instruments



Natural horn, Paris, 1797

Trumpet tablature



F♯ G♯	G	G♯ A♭	A
(open circles)	(filled circles)	(open circles)	(filled circles)
A♯ B♯	B	C	C♯ D♯
(filled circles)	(open circles)	(open circles)	(filled circles)
D	D♯ E♯	E	F
(open circles)	(open circles)	(filled circles)	(filled circles)
F♯ G♯	G	G♯ A♭	A
(open circles)	(open circles)	(open circles)	(filled circles)



Anatolian folk instruments



Yang qin (zither)



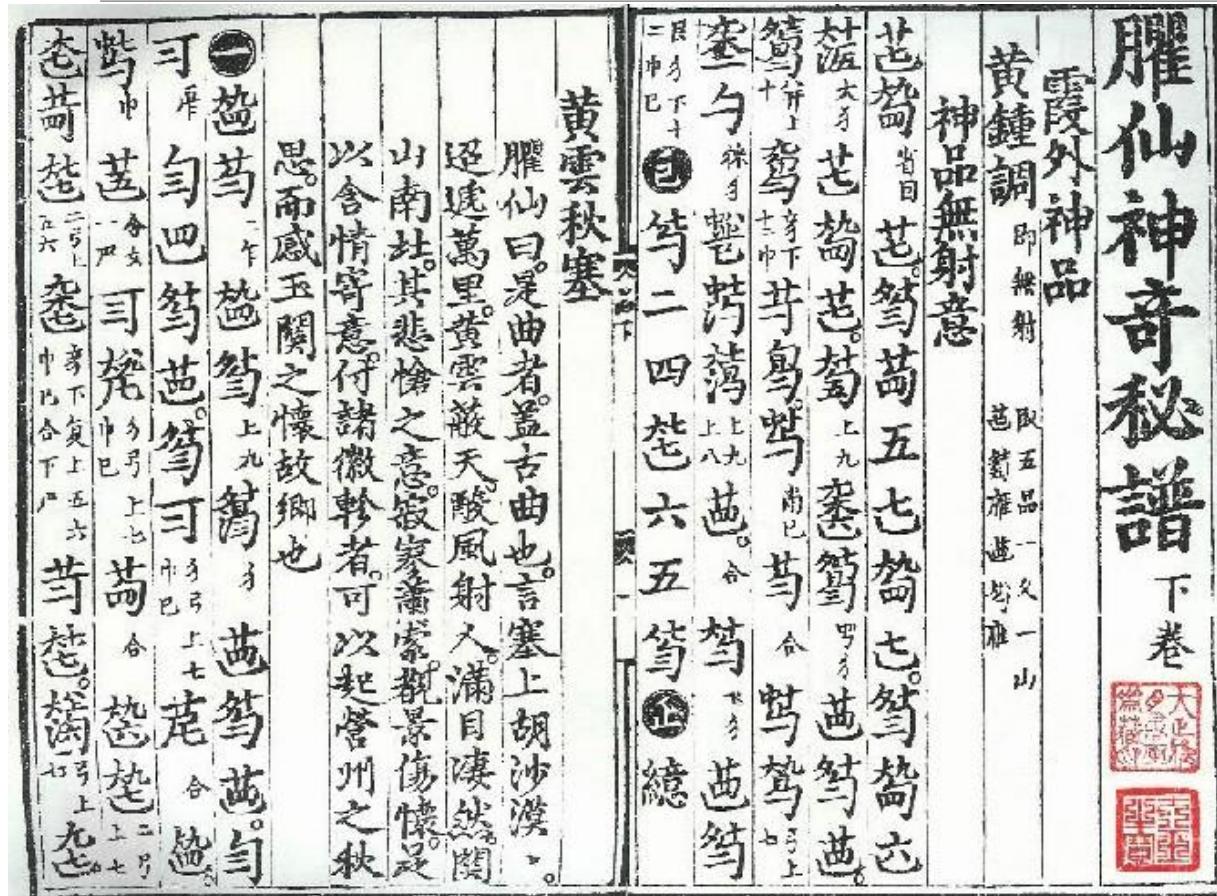
Neolithic Period ca.7000- 2000 B.C.
Bronze Age ca.2000-500B.C.
Shang dynasty ca. 1600-1050 B.C.
Zhou dynasty 1050-221 B.C.
Western Zhou 1050-771 B.C.
Eastern Zhou 771-221 B.C.
Warring States Period 480-221 B.C.
Qin dynasty 221-206 B.C.
Han dynasty 206 B.C.-A.D. 220
Western Jin dynasty A.D. 265-316
Tang dynasty A.D. 618-907
Song dynasty A.D. 960-1279
Northern Song A.D. 960-1127



Zhu, 5th cent. BCE



Guqin notation (tablature)



- Vol. number
 - Seals of the owner
 - Title of volume
 - Tuning, method of tuning
 - name of modal “preface”
 - tablature of modal preface

Next page:

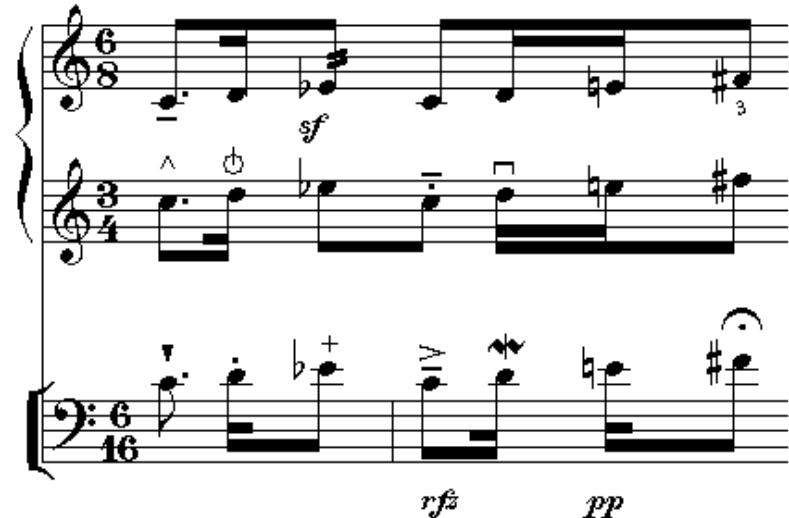
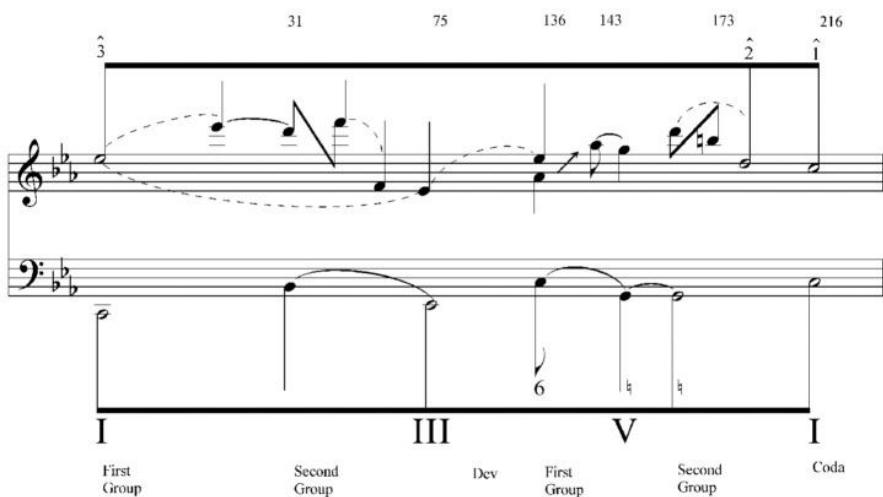
- title of piece
 - origins of piece
 - tablature for piece

Recent music

- Articulation marks
- Compound meters
 - Polymeters
 - Quarter-tones
- Off-staff presentations

Music Theory Spectrum Volume 16, Number 1, Spring 1994

Peter H. Smith, "Brahms and Schenker: A Mutual Response to Sonata Form"
Example 12. Brahms, C-minor String Quartet, Op. 51 No. 1, i; Tonal Structure



Systems of arbitrary complexity

Hyo-Shin Na's "Rain Study"

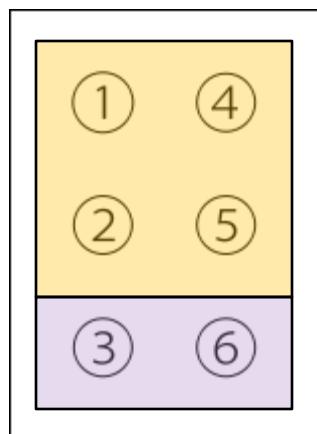


Typeset in SCORE by Craig Sapp (c. 2008)

Braille music notation

Requires impact printing (raised “cells” of information)

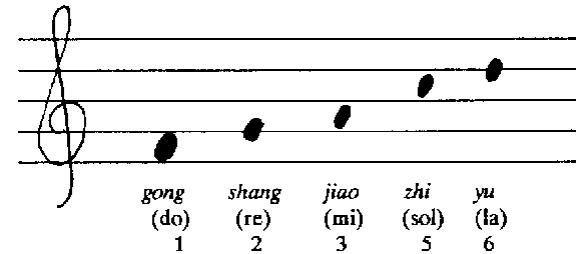
Two chapters on Braille MN in *Beyond MIDI*



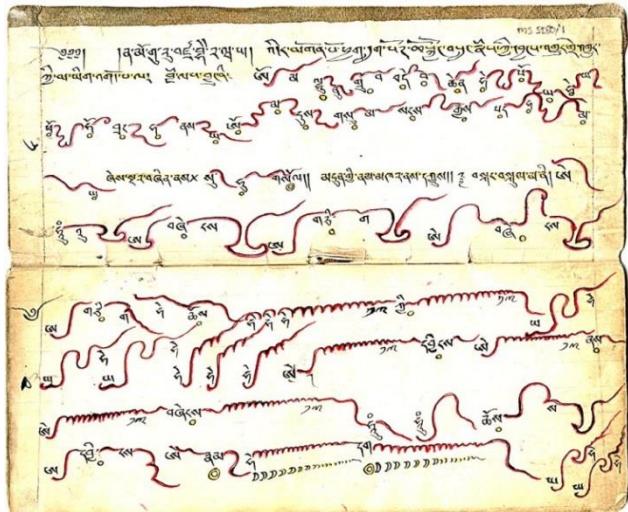
Cells 1, 2, 4, 5: “data” bits
Cells 3, 6: switches

Non-Western music

- Tuning systems unpredictable
 - Ambiguities of tuning, temperament, scale degrees
- Non-Western instruments (gesture)
 - String
 - Wind
 - Percussion
 - Tuned percussion
- Different understandings of pitch and duration



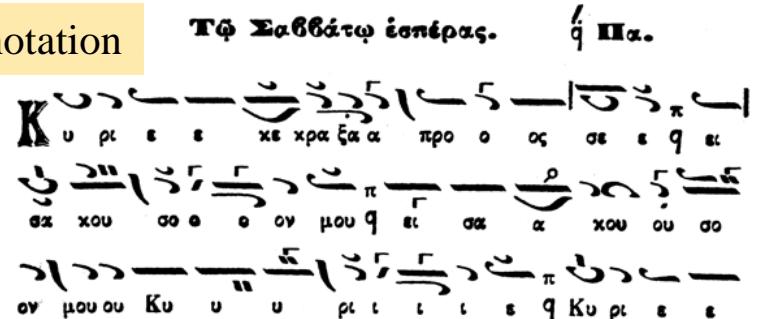
Other special-needs repertoires



Yang chants with Tibetan Yang-Yig graphic music notation. Tibet, 19th c.

Tibetan chant

Cheironomic notation



Τῷ Σαββάτῳ ἐσπέρας.

♩ πα.

A - men Lord I call to You, to . . .
A - μὴν Κύ - ρι - ε ἐ - κέ - κρα - ξα πρός
A - min Ki - ri - e e - ke - kra - xa pros

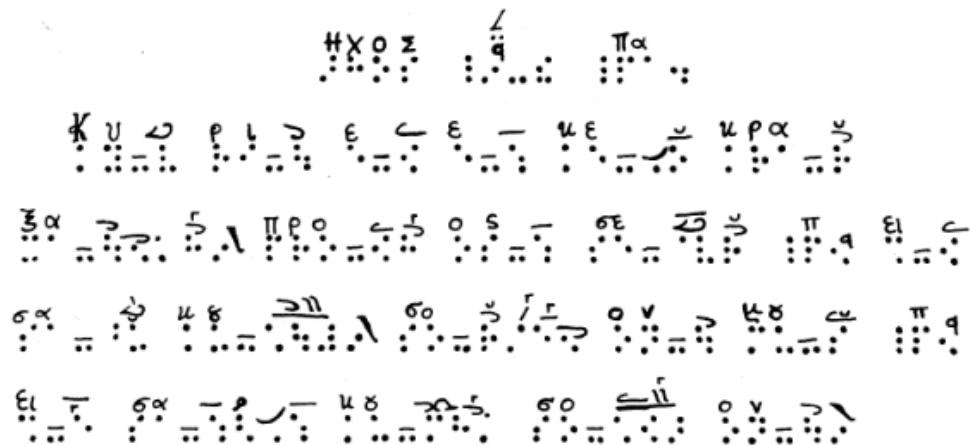
You O hear me O Lord O hear

Σὲ - ει - σά - κου - σό - - ov μου ει - σά - κου -
Se - i - sa - ku - so - - on mu i - sa - ku -

Greek Orthodox chant

Combinations of the above

Δεῖγμα τοῦ πῶς γράφονται τά κείμενα μετά μουσικῆς εἰς
BRAILLE. Ἐκ τοῦ Ἀναστασιματαρίου Ἰωάννου τοῦ πρωτοψ.



Greek Orthodox chant in Braille music notation

SCORE for special notations

Has extensive drawing capabilities

- Anticipated PostScript in use of splines

Has a few “palettes” for special characters

- Chant
- Mensural notation
- Tablatures (harp, trumpet, drum, guitar)
- Large-print notation (for plotter) [no Braille MN]

Legacy of large-print editions

Score: Maximum user control

Comes at price of parametric manipulation!