

The Burns Antiphoner – From manuscript to interactive resource

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Boston College

DH 2017 | MONTREAL, CANADA

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BURNS ANTIPHONER

WELCOME TO THE BOSTON COLLEGE
FRANCISCAN ANTIPHONER PROJECT

INTRODUCTION

Project Partners

Project Team:

- Primary Investigator and Researcher: Dr. Michael Noone (Morrissey College of Arts and Sciences)
- Project Manager and Development: Anna Kijas (Digital Scholarship Group, O'Neill Library)
- Project Assistant: Jonathan Mott (June – August 2015; Music undergraduate)
- Research and editorial: Dr. Graeme Skinner (University of Sydney)
- Web Application Development: Ben Florin (Systems, O'Neill Library)

External Consultants & Partners:

- CANTUS Database Developer: Jan Koláček (Prague, Czech Republic)
- K&M Productions

ACKNOWLEDGEMENTS


This project received expertise and support from Digital Scholarship, Digital Library Programs, Special Collections, and Systems & Applications at the Boston College Libraries. We would like to thank the following individuals who were consulted during the development of this project: Andrew Hankinson (McGill University) [Diva.js](#) Developer and Debra Lacoste (University of Waterloo) [CANTUS](#) Project Manager.

Burns Antiphoner

BURNS ANTIPHONER EXPLORE MANUSCRIPT ABOUT THE ANTIPHONER PROJECT INFO **CONTACT US**

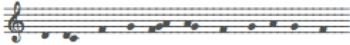
— + Zoom level: 2 Page 3 of 242 GO

Chants Search



Unus ex duobus qui secuti sunt

Feast Andrae
Office First Vespers
Genre Antiphon
Mode 1



Exsultet caelum laudibus
In omnem terram*
Regem apostolorum dominum
Vidit dominus Petrum et Andrea
Venite post me dicit dominus
Relictis retibus secuti sunt

14th century Franciscan Antiphoner



Daily office services

Daily office services (hours) with corresponding antiphons and responsories from Burns		
Service	Time	Chants (italicized when supplied in full in this antiphoner)
First vespers	Evening before the saint's day	5 psalms with 5 <i>antiphons</i> (not always written out separately in Burns, in which case usually the same as those of Lauds) Magnificat with <i>antiphon</i>
Matins	Night or very early in the morning of the saint's day	Psalm (<i>Venite</i>) with <i>invitatory</i> (antiphon) First nocturne 3 psalms with 3 <i>antiphons</i> , and 3 <i>responsories</i> Second nocturne 3 psalms with 3 <i>antiphons</i> , and 3 <i>responsories</i> Third nocturne 3 psalms with 3 <i>antiphons</i> , and 2 or 3 <i>responsories</i>
Lauds	Immediately after matins	5 psalms with 5 <i>antiphons</i> Benedictus with <i>antiphon</i>
Terce	Morning	A short <i>responsory</i>
Sext	Midday	A short <i>responsory</i>
None	Afternoon	A short <i>responsory</i>
Second vespers	Evening	5 psalms with 5 <i>antiphons</i> (usually repeats the 5 antiphons of vespers 1 and/or lauds) Magnificat with <i>antiphon</i>

intet me uidet et patrem meum aevia. **I**ubilate. **S**i cogno

uissetis me et patrem meum utiqz cognouissetis et amato cog

nossetis eum et uidistis eum aevia aevia aevia. **S**i di. **B**enedicite.

ligitis me sermonem meum seruate aevia aevia aevia.

*v. Frustrat celu
v. piosa mon.*

Laudate. **ad bñ an** **E**go sum uia ueritas et uita nemo ue

*Cap. En. v. pho
rag die sic sup.
z. l. ad vs. a.
z. omne. ps d. apl.
trites e. Paol.*

nit ad patrem nisi p me aevia. **S**i manserit **L**uovae

in me et vba mea in uobis manserint quocunqz pueritis fiet

*in unione sic crucis
v. oaur aue. v. Hoc
signum crucis erit ice
lo al. Cum dominus.*

uobis aevia aevia aevia. **S**icut splen **L**uovae

ditior: amatis astris mundi celebris hominibus multum

amabilis sanctor: uirtutis que sola fuisse digna ptare

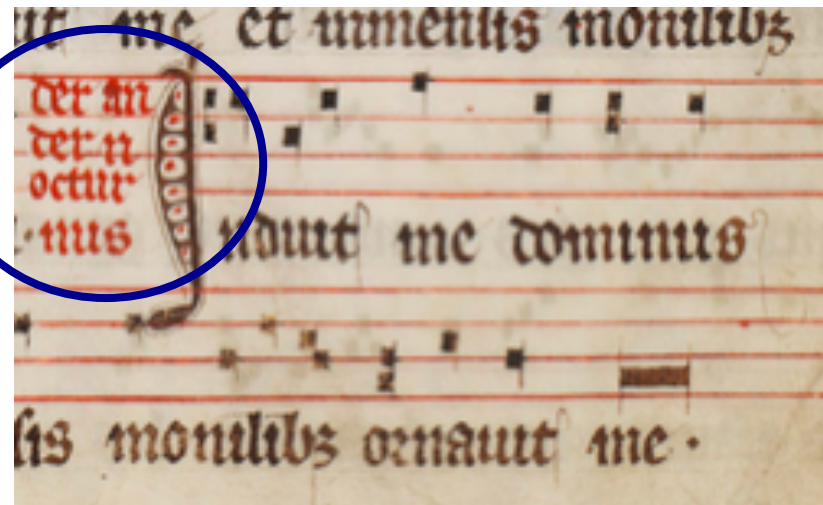
Santo tempore uobiscum sum et nō cognouistis me philippe qui uidet me uidet et patre meū

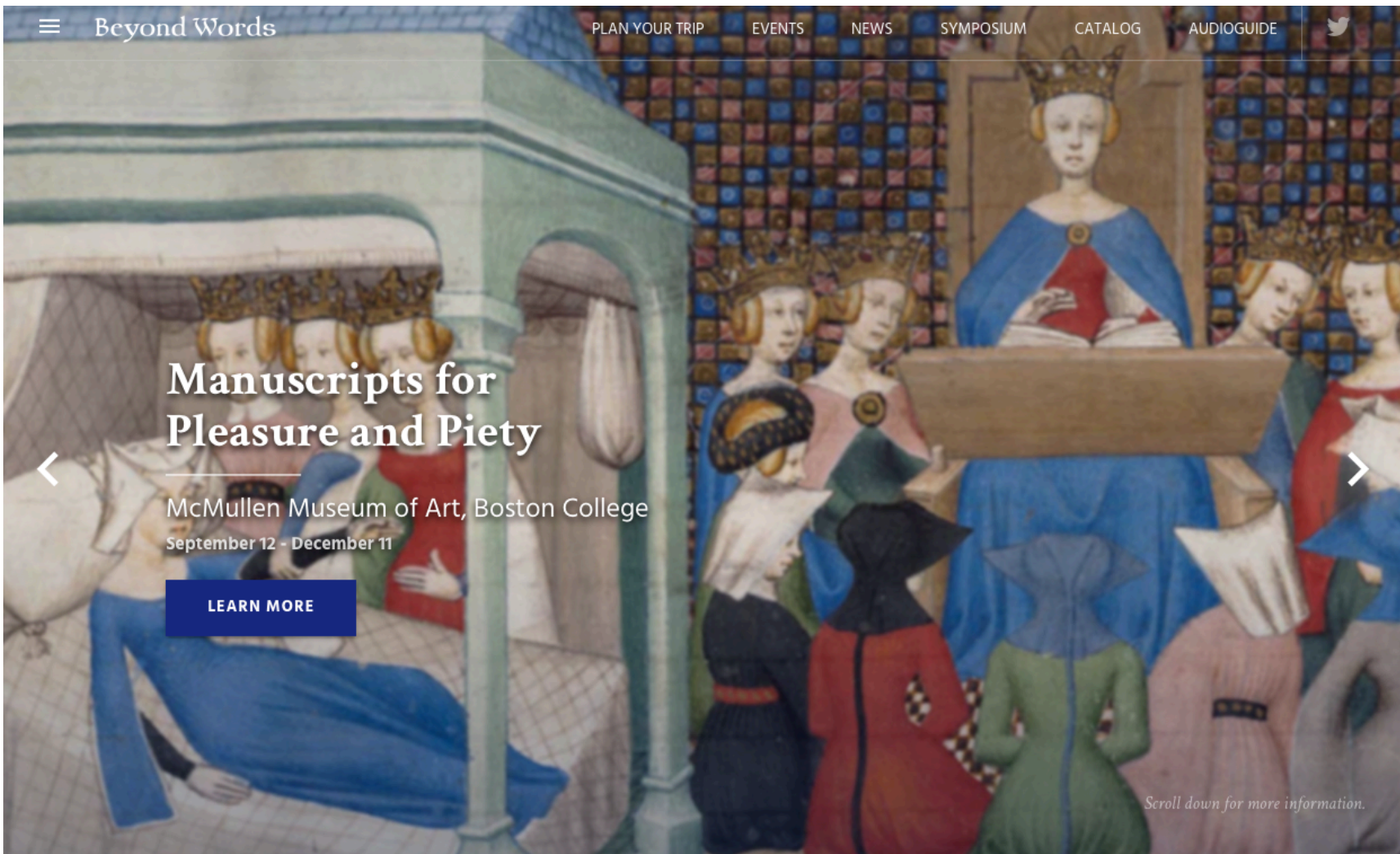
Example of palimpsest




Brief passage of written polyphony in the opening of the sequence *Celi solem imitantes*.

“Der ander nocturnus”
written in German





☰ Beyond Words

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Manuscripts for Pleasure and Piety

◀

McMullen Museum of Art, Boston College
September 12 - December 11

LEARN MORE

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Scroll down for more information.

Manuscripts for Pleasure and Piety exhibit at the McMullen Museum. September 12 – December 11, 2016. <http://beyondwords2016.org/>.

Contents by Liturgical Occasion

Folio	Liturgical occasion	File
1r	Andrew (30 November)	003
4v	Lucy (13 December)	110
5v	Thomas the Apostle (21 December)	012
6r	Agnes (21 January)	013
9v	Conversion of Paul (25 January)	020
9v	Octave of Agnes (28 January)	020
10r	Purification of Mary (2 February)	021
13v	Agatha (5 February)	028
17r	Chair of Peter (22 February)	035
17v	Annunciation of Mary (25 March)	036
18r	Saints in Eastertide	037
20v	Philip & James (1 May)	042
21r	Invention of the Cross (3 May)	043
23r	John before the Latin Gate (6 May)	047
23r	Nativity of John the Baptist (24 June)	047
27v	John & Paul (26 June)	056
28v	Peter & Paul (29 June)	058
32r	Commemoration of Paul (30 June)	065
36r	Octave of Peter and Paul (6 July)	073
36r	Mary Magdalene (22 July)	073

Antiphoner Inventory

INVENTORY (items with musical notation only; incipits spelling standardized)

Folio	Occasion	Office	Genre	Position	Incipit (incipit of subsidiary verse)	Mode
1r	Andrew	Vespers	Antiphon	Magnificat	Unus ex duobus qui secuti sunt	1
1r	Andrew	Matins	Invitatory	Venite	Regem apostolorum dominum	3
1r	Andrew	Matins	Antiphon	1	<u>Vidit dominus</u> Petrum et Andream	7
1r	Andrew	Matins	Antiphon	2	Venite post me dicit dominus	8
1r	Andrew	Matins	Antiphon	3	Relictis <u>retibus</u> secuti sunt	2
1r	Andrew	Matins	Responsory	1	Dum <u>deambularet</u> dominus (Erant enim piscatores)	4
1v	Andrew	Matins	Responsory	2	Mox ut vocem domini (Hic est qui per amore Christi)	3
1v	Andrew	Matins	Responsory	3	Doctor bonus et amicus dei (Salve crux quae in corpore)	3
2r	Andrew	Matins	Antiphon	4	Dignum sibi dominus computavit	7
2r	Andrew	Matins	Antiphon	5	Dilexit Andream dominus in odorem	8
2r	Andrew	Matins	Antiphon	6	<u>Biduo vivens</u> pendebat in cruce	2
2r	Andrew	Matins	Responsory	4	Homo dei ducebatur (Cumque carnifices ducerent eum)	2
2v	Andrew	Matins	Responsory	5	O bona crux que decorum (Beatus Andreas <u>expansis</u>)	8

Inventory identifies 846 incipits (Snapshot view)

Project Goals


- 1) Develop an interactive, open access and responsive website with a searchable database and dynamic presentation layer;
- 2) Use and develop open source technology;
- 3) Contribute our data to the scholarly community through a collaboration with CANTUS; and
- 4) Develop software, workflows, and documentation that can inform future projects using similar technologies.


Timeframe: June 2015 - August 2016

Metadata Record

Brief view Table view Full view Sort by: Creator

Image Thumbnail



Object  Franciscan antiphoner (sanctorale) with... - Mets (183 K)

Title Franciscan antiphoner (sanctorale) with sequences, circa 1300-1350.

Date created 1300-1350

Format 119 leaves of ms. music, bound : vellum ; 30 cm.

Abstract Gatherings 1-8: Proper of saints Andrew (30 Nov.), Lucy (13 Dec.), Thomas, Apostle (21 Dec.), Agnes (21 Jan.), Purification (2 Feb.), Agatha (5 Feb.), Annunciation (25 Mar.), De sanctis a festo Pasce usque ad Pentecostem, Philip and James (1 May), Inventio Crucis (May 3), John the Evangelist ante portam latinam (6 May), Birth of John the Baptist (24 June), Peter and Paul (29 June), Mary Magdalen (22 July), Laurence (10 Aug.), Assumption (15 Aug.), Beheading of John the Baptist (29 Aug.), Michael (29 Sept.), Francis (4 Oct), All Saints (1 Nov.), Martin (11 Nov.), Cecilia (22 Nov.), Clement (23 Nov.), Clare (12 Aug.); Celi solem imitantes (De Apostolia), Veni sancte spiritus et emitte celistus (De Sanctu Spiritu), Orbis totus gratulemur (De Beata Virgine) -- Gatherings 9-11: Common of saints, apostles, martyrs, confessors and bishops, virgins, dedication of a church; Hodierne lux diei (De Beata Virgine Maria), Celi cives in colono (De Beato Francisco) -- Appendix: Venite exultemus; Sancta Maria succurre miseris iuva pusillanimes; Celi regem attollamus et in voces erumpamus.

General notes A second vocal part has been added to the first stanza of the sequence Celi solem imitantes, the only polyphonic source of this sequence.

10 lines each of text (written in black ink in a gothic liturgical hand) and of music. Music in black square notation on a 4-line staff. Rubricated; initials in red, black and blue with penwork decoration.

From South Germany (?), first half of 14th century.

Bound with added fragment of a late 13th century manuscript as appendix containing nine variant settings of the psalm Venite exultemus.

Late 16th or early 17th century blind-tooled calf over (original?) bevelled wooden boards.

Electronic reproduction. Chestnut Hill, Mass. : Boston College, University Libraries, 2011. Mode of access: Internet.

Link to Item <http://hdl.handle.net/2345/2231>

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Subject [Antiphonaries](#)
[Gregorian chants](#)

Franciscan antiphoner (sanctorale)
with...

- front cover
- inside front cover

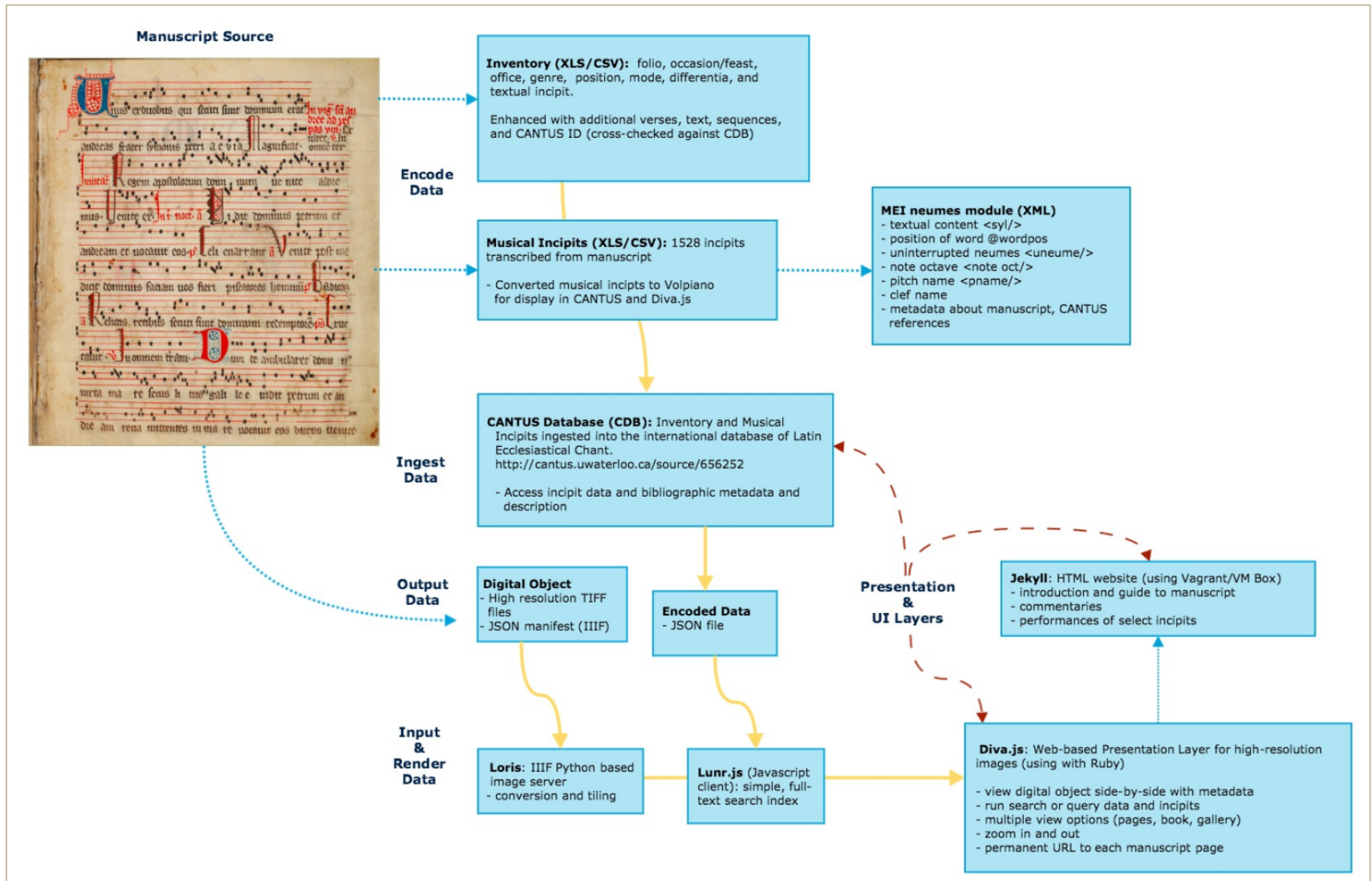
- 1a
- 1b
- 2a
- 2b
- 3a
- 3b
- 4a
- 4b
- 5a
- 5b
- 6a
- 6b
- 7a
- 7b
- 8a
- 8b
- 9a
- 9b
- 10a
- 10b
- 11a
- 11b
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- 14b
- 15a
- 15b
- 16a
- 16b
- 17a
- 17b

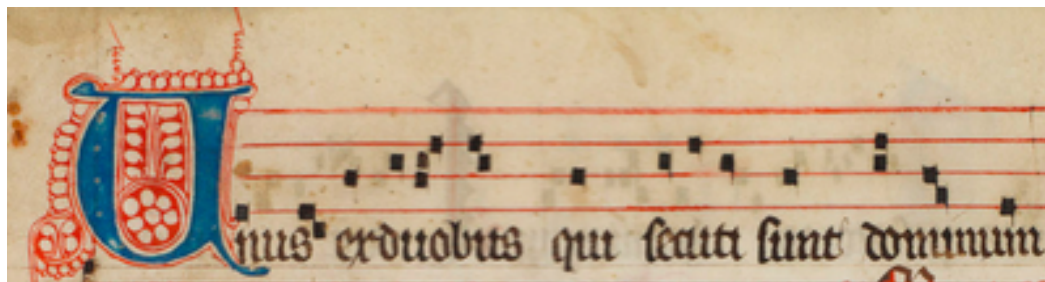
View options:

1a



Tech Workflow





A	B	C	D	E	F	G	H	I
Incipit	<syl>	<rend color</>	<uneume name>	<note oct>	<pname> (1)	<pname> (2)	<pname> (3)	<pname> (4)
Unus ex duobus qui secuti sunt	U	blue	punctum	3	d			
Unus ex duobus qui secuti sunt	nus		clivis		d	c		
Unus ex duobus qui secuti sunt	ex		punctum		f			
Unus ex duobus qui secuti sunt	du		punctum		g			
Unus ex duobus qui secuti sunt	o		podatus		f	g		
Unus ex duobus qui secuti sunt	""		punctum		a			
Unus ex duobus qui secuti sunt	bus		clivis		a	g		
Unus ex duobus qui secuti sunt	qui		punctum		f			
Unus ex duobus qui secuti sunt	se		punctum		g			
Unus ex duobus qui secuti sunt	cu		punctum		a			
Unus ex duobus qui secuti sunt	ti		punctum		g			
Unus ex duobus qui secuti sunt	sunt		punctum		f			
Regem apostolorum dominum	Re	brown	podatus	3	g	a		
Regem apostolorum dominum	gem		punctum		g			
Regem apostolorum dominum	a		punctum		g			
Regem apostolorum dominum	pos		punctum		g			
Regem apostolorum dominum	to		punctum		g			
Regem apostolorum dominum	lo		podatus		g	a		

Incipit encoding using MEI elements in Neume Module

Structure and Semantics of Neumes

```
151 <ndiv>
152 <score>
153 <scoreDef>
154 <staffGrp>
155 <staffDef n="1" lines="4" clef.line="3" clef.shape="C"></staffDef>
156 </staffGrp>
157 </scoreDef>
158 <section>
159 <staff>
160 <layer>
161 <syllable>
162 <syll n="initial" wordpos="i">
163 <rend color="blue">U</rend>
164 </syll>
165 <uneume name="punctum">
166 <note oct="3" pname="d"/>
167 </uneume>
168 </syllable>
169 <syllable>
170 <syll wordpos="t">nus</syll>
171 <uneume name="clivis">
172 <note oct="3" pname="d"/>
173 <note oct="3" pname="c"/>
174 </uneume>
175 </syllable>
176 <syllable>
177 <syll>ex</syll>
178 <uneume name="punctum">
179 <note oct="3" pname="f"/>
180 </uneume>
181 </syllable>
182 <syllable>
183 <syll wordpos="i">du</syll>
184 <uneume name="punctum">
185 <note oct="3" pname="g"/>
186 </uneume>
187 </syllable>
188 <syllable>
189 <syll wordpos="m">o</syll>
190 <uneume name="punctum">
191 <note oct="3" pname="f"/>
192 <note oct="3" pname="g"/>
193 </uneume>
194 <uneume name="punctum">
195 <note oct="3" pname="a"/>
196 </uneume>
```

CANTUS Manuscript Database

The screenshot shows the website's header with a logo and navigation menu. The main content area features a search bar, a 'What's new' section with two announcements, and a 'Most viewed sources' section with five columns of manuscript data. A photograph of a poster is visible in the bottom right corner.

CANTUS
CANTUS: A Database for Latin Ecclesiastical Chant

HOME Home page
ABOUT Information
SOURCES List of inventories
CHANTS Search
FEASTS List of feasts
TERMS Genres and More
RESOURCES Docs, Instructions, Tools

Cantus Manuscript Database: Inventories of Chant Sources

Cantus is a database of the Latin chants found in over 140 manuscripts and early printed books. This searchable digital archive holds inventories of primarily **antiphoners** and **breviaries** from medieval Europe; these are the main sources for the music sung in the Latin liturgical Office.

New phases of the project include adding chant melodies to existing records and indexing manuscripts for the **Mass**, including those sources that contain **sequences**.

For our catalogue of chants as well as a connection to our growing network of partner chant databases, see **Cantus Index** (Catalogue of Chant Texts and Melodies).

What's new

Tue, 07/18/2017 - 02:56
Cantus at the meeting of the Hymn Society

The Cantus Database will be at the Annual Meeting of the Hymn Society of America tomorrow! Sectional IV, Session 23: A Live Tour of the Cantus Database. (<http://www.thehymnsociety.org/2017-waterloo>)

[Read more](#)

Tue, 07/11/2017 - 22:57
MedRen 2017 Poster

Thanks to Jan Kolacek for representing the Cantus Database and Cantus Index last week with a poster at the 45th Medieval and Renaissance Music Conference in Prague. If you have any questions about either of our databases, or if you would like more information about the Cantus Analysis Tool, please write to us.

Most viewed sources

GB-AB 20541 E Aberystwyth, Llyfrge... Wales 1320+ <ul style="list-style-type: none">• Charles Downey• Keith Glaeske• Lila Collamore• Owain Tudor Edwards	F-AS 893 Arras, Bibliothèque... Arras 1300s <ul style="list-style-type: none">• Charles Downey• Keith Glaeske• Lila Collamore	D-BAs lit. 25 Bamberg, Staatsbibli... Bamberg 1200s	I-BV 19 Benevento, Archivio... Benevento 1100s <ul style="list-style-type: none">• Keith Glaeske• Lila Collamore	I-BV 20 Benevento, Archivio... Benevento 1100s <ul style="list-style-type: none">• Keith Glaeske• Lila Collamore
---	---	---	---	---

fx	Folio									
	A	B	C	D	E	F	G	H	I	J
1	Folio	Sequence	Occasion/Feast	Occasion/Feast name [http://cantus.uwaterloo.ca/feasts]	Office	Office Code [http://cantus.uwaterloo.ca/description#Liturgical%20Occasion%20/%20Feast]	Genre	Genre Code [http://cantus.uwaterloo.ca/genr]	Position	Position Code [http://cantus.uwaterloo.ca/description#Position]
2	001r	1	Andrew	Andreae	Vespers	V	Antiphon	A	Magnificat	M
3	001r	2		Andreae		V	Hymn	H		
4	001r	3		Andreae		V	Versicle	W		
5	001r	4	Andrew	Andreae	Matins	M	Invitatory	I	Venite	
6	001r	5	Andrew	Andreae	Matins	M	Antiphon	A	1	1.1
7	001r	6	Andrew	Andreae	Matins	M	Antiphon	A	2	1.2
8	001r	7	Andrew	Andreae	Matins	M	Antiphon	A	3	1.3
9	001r	8		Andreae		M	Versicle	W		1.
10	001r	9	Andrew	Andreae	Matins	M	Responsory	R	1	1.1
11	001v	1		Andreae		M		V		01

Top: CANTUS fields.

Bottom: CANTUS fields continued across spreadsheet

K	L	M	N	O	P
Incipit (incipit of subsidiary verse)	Full Text (Standardized Spelling)	Mode	Difference	File	CANTUS ID [http://cantusindex.org/]
Unus ex duobus qui secuti sunt	Unus ex duobus qui secuti sunt dominum erat	1	G1	3	005279
Exsultet*	Exsultet*	*			008301
In omnem terram*	In omnem terram*	*			008097
Regem apostolorum dominum	Regem apostolorum dominum venite adoremus	3	?	3	001125
Vidit dominus Petrum et Andream	Vidit dominus Petrum et Andream et vocavit eos	7	C1	3	005413
Venite post me dicit dominus	Venite post me dicit dominus faciam vos fieri piscatores	8	G1	3	005357
Relictis retibus secuti sunt	Relictis retibus secuti sunt dominum redemptorem	2	D1	3	004607
In omnem terram*	In omnem terram*	r			008097

Incipit Record in CANTUS

Unus ex duobus qui secuti

Siglum: **Folio:** **Sequence:**
GB-AB 20541 E 177r 1

Source:
Aberystwyth, Llyfryell Genedlaethol Cymru (National Library of Wales), 20541 E

Feast: **Office:** **Genre:** **Cantus ID:** **Mode:** **Differentia:** **CAO Concordances:**
Andreae V A 005279 1 * C BE VHRDFSL

Image link:

List of melodies (NEW)

Displaying 8 melodies from the following databases:

Cantus Database (CD) 8 chants

Chant	Melody
CH-E 611 153r M A 1.4 Andreae Cantus ID: 005279	 M:1 Unus ex duobus qui secuti sunt dominum erat andreas frater symonis pet
CH-E 611 156r P A Andreae Cantus ID: 005279	 M:1 Unus ex duobus
CDN-Hsmu M2149.L4 128r M A 1.4 Andreae	 M:1 Unus ex duobus qui secuti sunt dominum erat andreas frater symonis pet

Source navigation

GB-AB 20541 E

177r 171v < > 177v

Display previous chants ▾

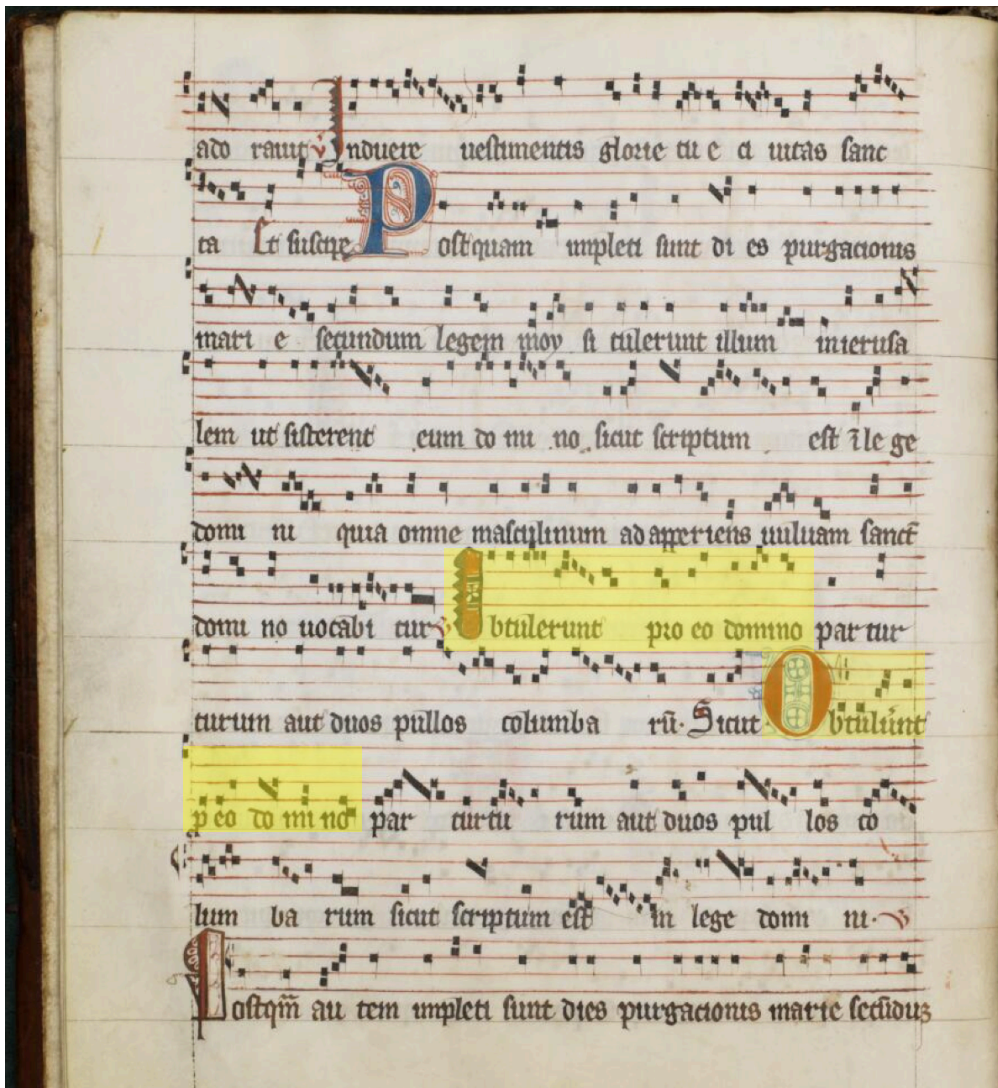
Folio: 177r - Feast: **Andreae**

1	V A	Unus ex duobus qui..	005279
2	V R	Homo dei*	006868
3	V H	Andrea pie sanctor..	008262
4	V W	Dilexit Andream do..	800105
5	V A M	Ambulans Jesus jux..	001366

Display next chants ▾

CANTUS Database
GB-AB 20541 E

Provenance: **Wales**
Date | 1320+
Indexed by:
Charles Downey
Catholic University of America
Keith Glaeske
Catholic University of America
Lila Collamore



“Obtulerunt pro eo domino”

Example of where duplicate incipit text merged into one string

113	010v	3	Purificatio M	V	01	Obtulerunt pro eo domino	l--k--k--klkk--hjkjhg---hg-hg---h--k---j--jlk--kj---a---a---cde---d---d---d---f---fef---de---dc---
114	010v	4	Purificatio M	R	1.3	Obtulerunt pro eo domino	

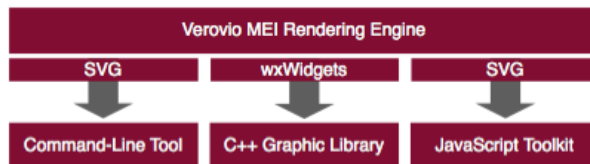
Verovio

[Home](#)[How it works](#)[SMuFL](#)[MEI Viewer](#)[Plain and Easy](#)[Download](#)

Verovio is a fast, portable and lightweight library for engraving [Music Encoding Initiative \(MEI\)](#) music scores into SVG. It is designed as a tool usable as a one-step conversion tool and it is written in pure standard C++ with no dependencies on third-party frameworks and libraries. Verovio implements its own rendering engine, which can render SVG with all the musical symbols embedded in it and without dependency on external fonts. In addition to MEI, Verovio can also render Plain and Easy (PAE) code and DARMS code.

Verovio follows the [Standard Music Font Layout](#) specification and the font can be changed for personalizing the output.

Since the rendering engine is defined as an abstract component, Verovio is highly modular and can be used in different contexts, including as a [JavaScript toolkit](#) compiled with [Emscripten](#) or as a [Python extension](#) using [SWIG](#). It is possible to implement easily a rendering output different from SVG if needed.



Verovio source code is available on GitHub at <https://github.com/rism-ch/verovio>

Verovio is developed by the Swiss RISM Office and is supported by the Swiss National Science Foundation. It is available under the [LGPLv3 license](#).




An example set of chords

Divajs

divajs

Try It Download Documentation GitHub About

New version 4.0 with IIF Support!



Divajs is a web-based document viewer optimized for high-resolution image collections.


```
22     "id": "001r2",
23     "folio": "001r",
24     "sequence": "2",
25     "incipit": "Exsultet caelum laudibus",
26     "feast": "Andreae",
27     "office": "First Vespers",
28     "genre": "Hymn",
29     "position": null,
30     "cantus_id": "008301",
31     "mode": "*",
32     "differentia": null,
33     "full_text_standard": null,
34     "volpiano": null,
35     "search_volpiano": ""
36 },
37 {
38     "id": "001r3",
39     "folio": "001r",
40     "sequence": "3",
41     "incipit": "In omnem terram*",
42     "feast": "Andreae",
43     "office": "First Vespers",
44     "genre": "Versicle",
45     "position": null,
46     "cantus_id": "008097",
47     "mode": "*",
48     "differentia": null,
49     "full_text_standard": null,
50     "volpiano": null,
51     "search_volpiano": ""
52 },
```

JSON output from inventory/incipit
data (snapshot)

The Burns Antiphoner in Action

Zoom level: 2

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GO



Chants

Search



- Unus ex duobus qui secuti sunt
- Exsultet caelum laudibus
- In omnem terram*
- Regem apostolorum dominum
- Vidit dominus Petrum et Andream
- Venite post me dicit dominus
- Relictis retibus secuti sunt
- In omnem terram*
- Dum deambularet dominus

Antiphoner Data

BURNS ANTIPHONER

EXPLORE MANUSCRIPT

ABOUT THE ANTIPHONER

PROJECT INFO

CONTACT US

Zoom level: 2

Page 3 of 242

Chants

Search



Unus ex duobus qui secuti sunt

Feast Andree

Office First Vespers

Genre Antiphon

Mode 1



Exsultet caelum laudibus

In omnem terram*

Regem apostolorum dominum

Vidit dominus Petrum et Andream

Venite post me dicit dominus

Relictis retibus secuti sunt

Antiphoner Data with Performance

BURNS ANTIPHONER

EXPLORE MANUSCRIPT ABOUT THE ANTIPHONER PROJECT INFO **CONTACT US**

Zoom level: 3 Page 44r of 242

Chants Search

Beatam me dicent omnes

Feast Assumptio Mariae
Office Matins
Genre Responsory
Mode 8

Search Interface

BURNS ANTIPHONER EXPLORE MANUSCRIPT ABOUT THE ANTIPHONER PROJECT INFO **CONTACT US**

Zoom level: 3 Page 17v of 242 **GO**

Chants Search

Search ?

- Full text
- Full text**
- Volpiano
- Genre
- Feast
- Office
- Mode

In annunciatione bte virg. ad xps. a. spiritus sanctus et ga. sic sicut in lau. ps. de dña nra. Ave maria gratia ple. do te. **S**piritus sanctus in te descendet maria et Evocae virtus altissimi obumbrabit tibi. Ave mari a gra cia ple na dommus te am. Venite. Illus est gabriel angelus ad maria virgmem desponsatam ioseph. Dñs reg. Ave maria gracia plena dommus tecum benedicta tu in mulieribz ae via. Subila. Te timeas maria inuentisti gratiam apud domnu eccē concepti

Resources

Boston College Libraries

- Burns Antiphoner: <http://burnsantiphoner.bc.edu/>
- Digital Scholarship Group: <http://ds.bc.edu>
- GitHub: <https://github.com/BCDigSchol/antiphoner-site>

CANTUS Database

- Tutorial for Cantus contributors: <http://cantus.uwaterloo.ca/tutorial>

Diva.js

- Full documentation: <https://github.com/DDMAL/diva.js/wiki>
- Other tools from DDMAL: <https://github.com/DDMAL>

MEI

- Full guidelines: http://music-encoding.org/?page_id=160
- Schemas, Customizations, XSLT stylesheets: <https://github.com/music-encoding/music-encoding>

Verovio

- Documentation and Viewer: <http://www.verovio.org/index.xhtml>

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