

The Optical Neume Recognition Project



KATE HELSEN
WESTERN UNIVERSITY, CANADA

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¶ **D**ominus qui eripuit me de ore leonis & demanu bestie libera hunc.

Rominus qui eripuit me de ore leonis & demanu bestie liberavit

The Problem

- Identification and comparison of chant melody
- Staff notations
 - Melodic content present
 - OMR (Optical Music Recognition) developed
- Staffless neumes
 - Gestural content present
 - OMR needs to be developed

Cantus Ultimus (SIMSSA)

Manuscripts Search

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Neumes: Challenges

- Document Analysis
 - Manuscript quality
 - Image processing procedures
- Neume Identification
 - Developing a Ground-Truth set
- Content encoded in MEI (Musical Encoding Initiative)
 - Adaptable to notation types
 - Searchable

Optical Neume Recognition Project

- Kate Helsen, University of Western Ontario
- Inga Behrendt, Uni-Tübingen
- Alan Sexton, University of Birmingham
- Jennifer Bain, Dalhousie University
- Ichiro Fujinaga, McGill University
- Funded by: Social Science and Humanities Research Council



Social Sciences and Humanities
Research Council of Canada

Conseil de recherches en
sciences humaines du Canada

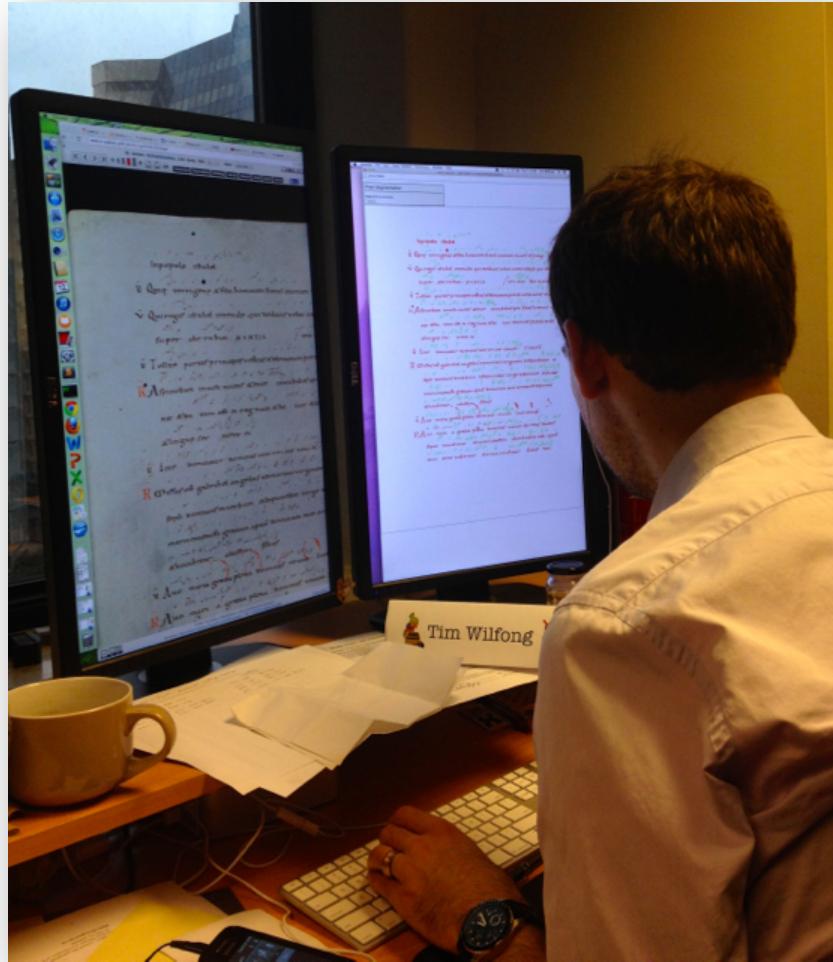
Canada

Neume Ground-Truth Set for Hartker's Antiphoner (Sang. Cod. 390)

Clivis	Simple – AC	cli														16	2 notes: H-L	
	Simple, langer zweiter Abstrich – AC	cli.long													17	2 notes: H-L		
	Episema a – AC	cli.e.a				 or 									18	2 notes: H-L		
	Episema b – AC	cli.e.b														19	2 notes: H-L	
	Episema c – AC	cli.e.c														20	2 notes: H-L	
	Episema c, langer zweiter Abstrich – AC	cli.e.c.long															21	2 notes: H-L
Liquescent Clivis aug. or Climacus dim., Ancus	Simple a – AC	cli.i.a/clim.i.a														22	2 or 3 notes: H-[i-i]	
	Simple b – AC	cli.i.b/clim.i.b														23	2 or 3 notes: H-[i-i]	

Created by Inga Behrendt, Kate Helsen, and Anton Stingl

Image Processing



Tim Wilfong, part of Ichiro Fujinaga's development team at McGill University

Linking MEI to Image Processing

Cantus Ultimus File ▾ Edit ▾ Validator ▾ Zone Display ▾ Help ▾ - + Zoom level: 4 Page 16 of 216 16 Go

ch-sgs-390_016.mei x

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<http://cantus.simssa.ca/editor/>

Manuscripts

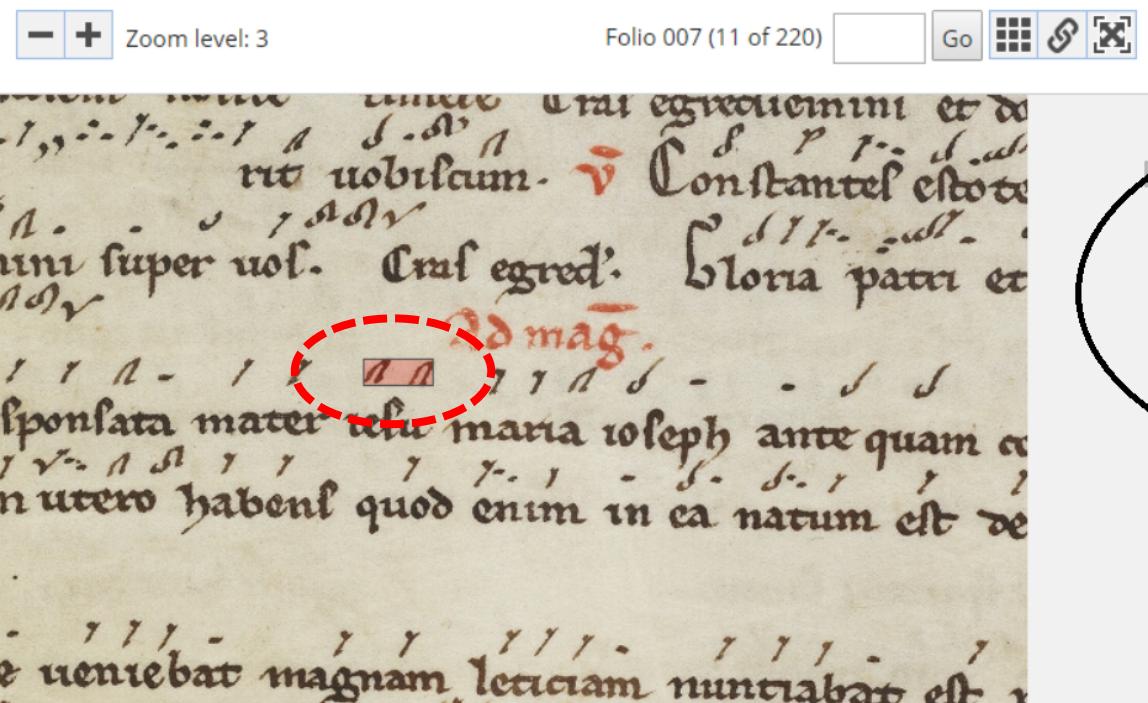
- [St. Gallen, CH-SGs 390](#)
Sankt Gallen, Stiftsbibliothek, 390, 0980+
- [Salzинnes, CDN-Hsmu M2149.L4](#)
Halifax (Canada), St. Mary's University - Patrick Power Library, M2149.L4 1554, 1554-5
- [St. Gallen, CH-SGs 391](#)
Sankt Gallen, Stiftsbibliothek, 391, 0980+

Future Manuscripts (in preparation)

- [Paris 12044](#)
Bibliothèque nationale, Département des manuscrits, Latin 12044, 12th C
- [Cologne 1161](#)
Köln, Dombibliothek, Codex 1161, 13th century
- [Paris 15181](#)
Bibliothèque nationale, Département des manuscrits, Latin 15181, 14th C
- [Einsiedeln 611](#)
Einsiedeln, Stiftsbibliothek, Codex 611(89), 14th C
- [Utrecht 406](#)
Utrecht, Universiteitsbibliotheek, MS 3 J 7, ca. 12th-15th C

Searching for Specific Neumes

Cantus Ultimus About Activities Team Manuscripts Search



Sankt Gallen, Stiftsbibliothek, 390

Folio Manuscript Details

Search this Manuscript

Neume:

Neume search

98 results found for query "clivis simple clivis simple"

1 2 3 4 5 6 7 8 9 »

A large black oval surrounds the search interface on the right. A white arrow points downwards from the top of the oval towards the search button.

<http://dev-cantus.simssa.ca/manuscripts/>

Future Applications

- Ground-truth library expansion
 - Various scribal traditions
- New connections within chant corpus only recorded in staffless neumes
 - Ex. Old Hispanic repertory
 - Ex. Meloform tropes (St. Gall)