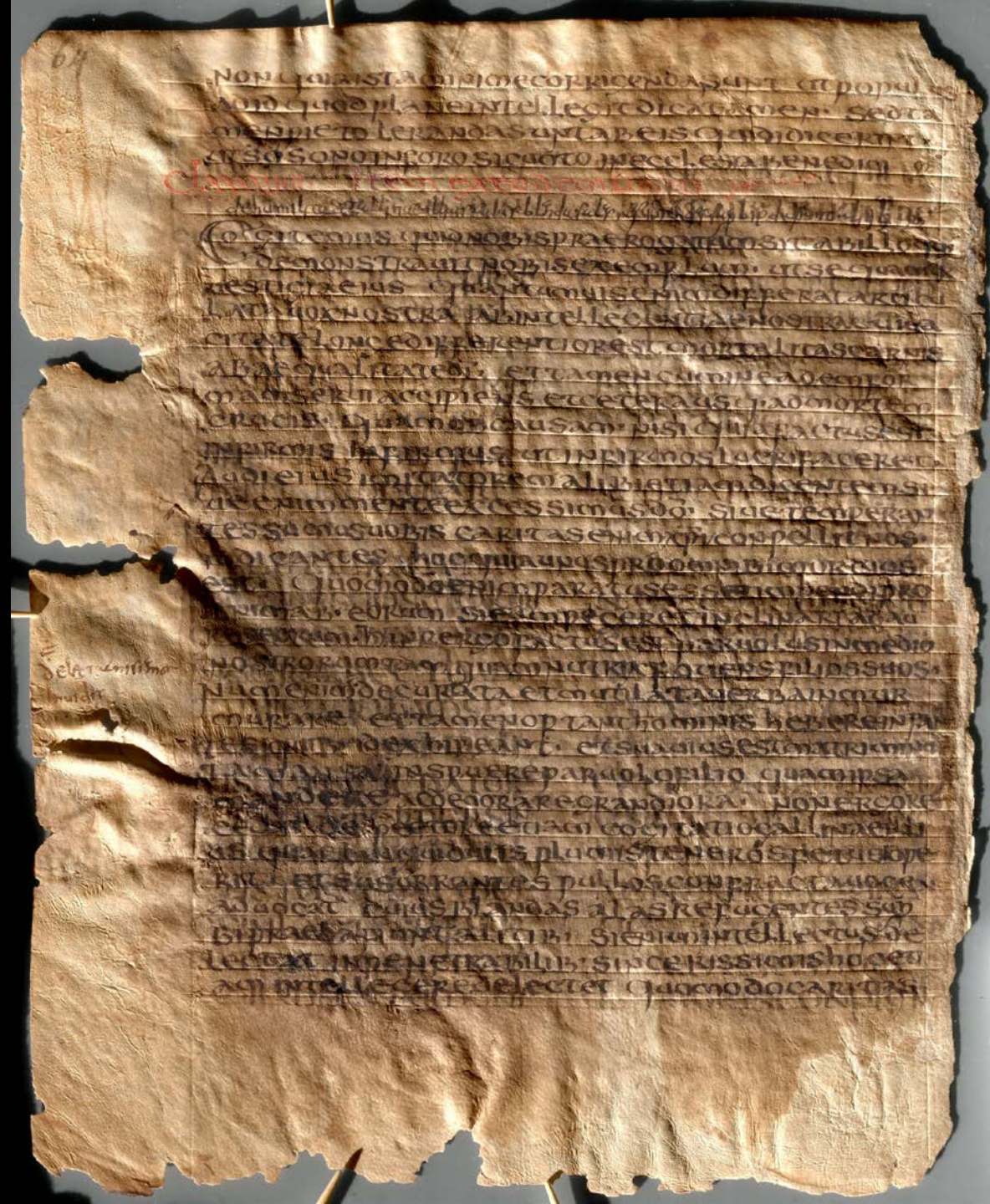


Plan for the Day

- ◆ What is the Jubilees Palimpsest Project?
- ◆ Codicology and scribal culture
- ◆ Spectral imaging
- ◆ Texture imaging and visualization
- ◆ Break
- ◆ Digital Humanities tools
- ◆ Theological questions
- ◆ The 2016-2019 NEH grant
- ◆ Plans for the coming weeks



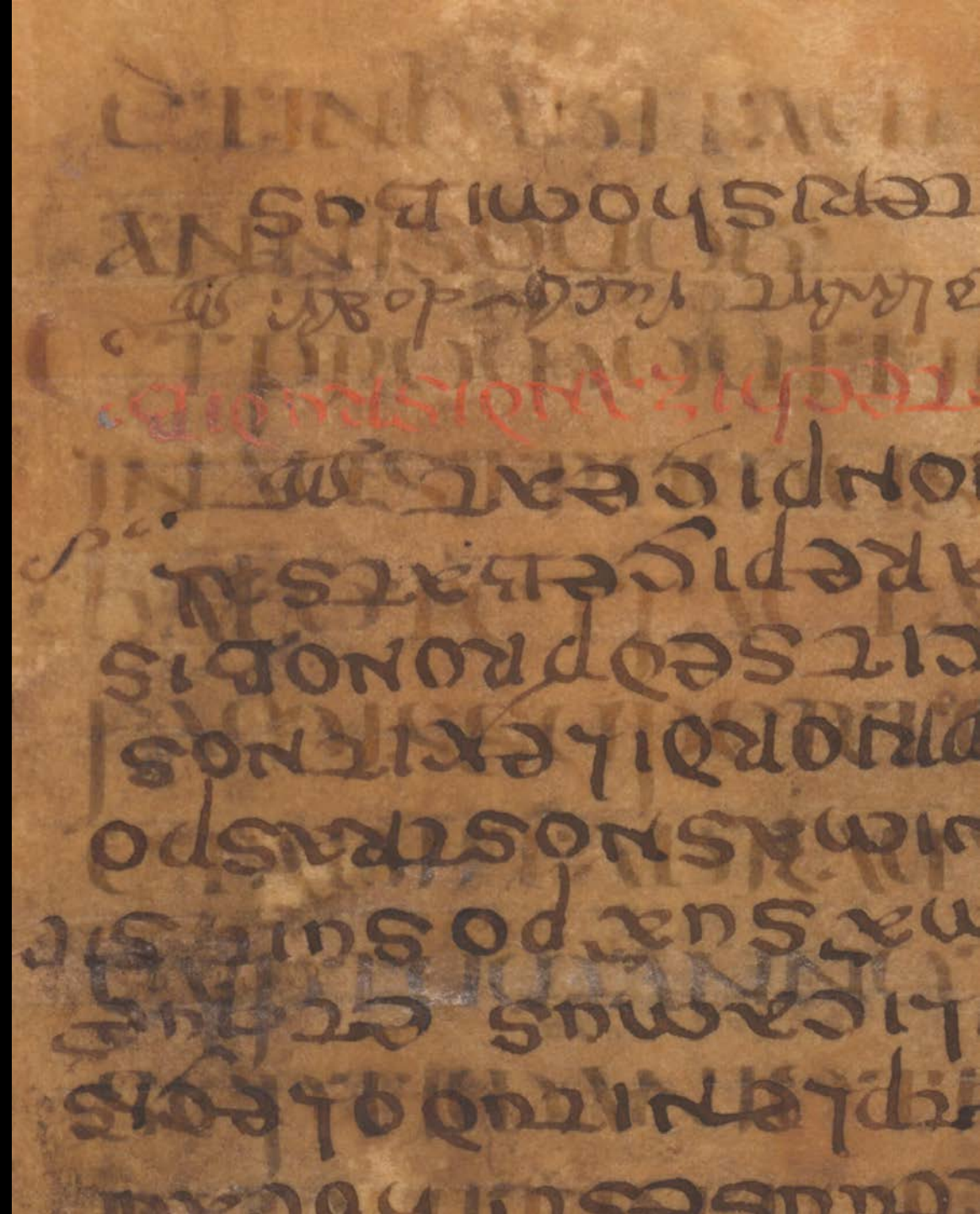
What is the Jubilees Palimpsest Project?

- ◆ **What is the Book of Jubilees?**
- ◆ What is a palimpsest?
- ◆ What are the goals and accomplishments of the project?



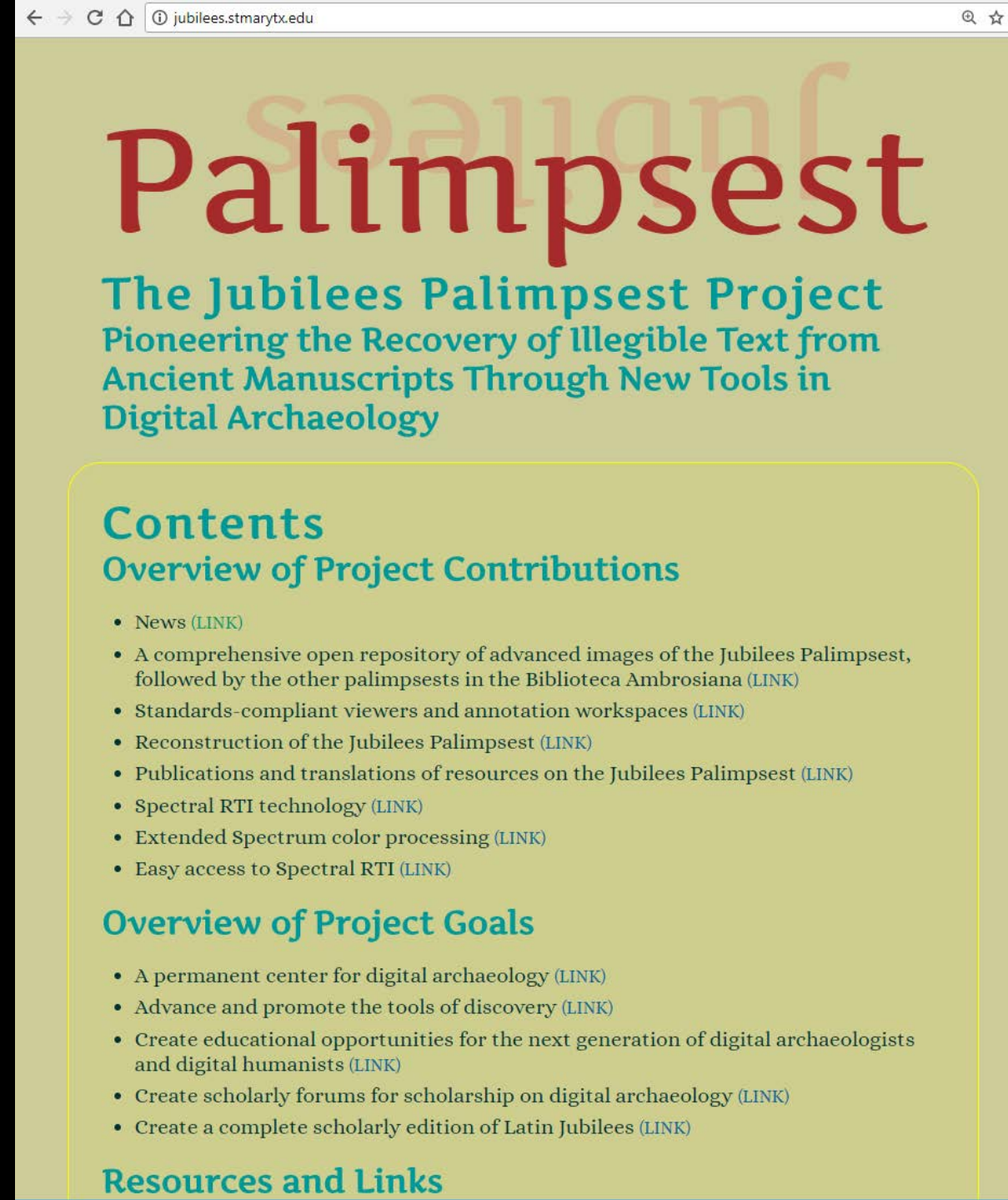
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What is the Jubilees Palimpsest Project?

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← → ↻ Ⓜ jubilees.stmarytx.edu 🔍 ☆

Palimpsest

season 1

The Jubilees Palimpsest Project

Pioneering the Recovery of Illegible Text from Ancient Manuscripts Through New Tools in Digital Archaeology

Contents

Overview of Project Contributions

- News ([LINK](#))
- A comprehensive open repository of advanced images of the Jubilees Palimpsest, followed by the other palimpsests in the Biblioteca Ambrosiana ([LINK](#))
- Standards-compliant viewers and annotation workspaces ([LINK](#))
- Reconstruction of the Jubilees Palimpsest ([LINK](#))
- Publications and translations of resources on the Jubilees Palimpsest ([LINK](#))
- Spectral RTI technology ([LINK](#))
- Extended Spectrum color processing ([LINK](#))
- Easy access to Spectral RTI ([LINK](#))

Overview of Project Goals

- A permanent center for digital archaeology ([LINK](#))
- Advance and promote the tools of discovery ([LINK](#))
- Create educational opportunities for the next generation of digital archaeologists and digital humanists ([LINK](#))
- Create scholarly forums for scholarship on digital archaeology ([LINK](#))
- Create a complete scholarly edition of Latin Jubilees ([LINK](#))

Resources and Links

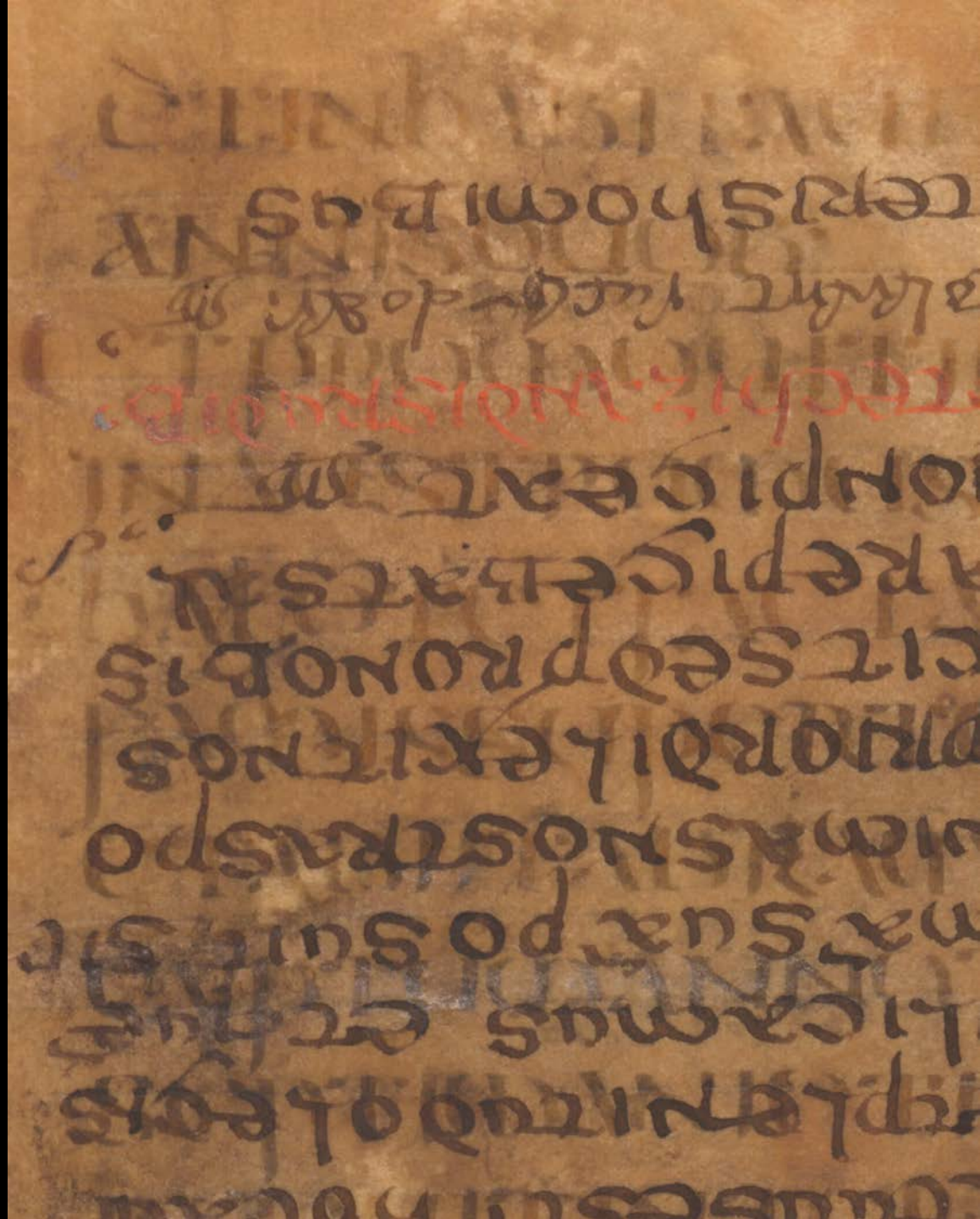
Codicology and scribal culture

- ◊ Who are scribes?
- ◊ What is a codex?
- ◊ Codex
- ◊ Quire
- ◊ Bi-folio
- ◊ Folio
- ◊ Page
- ◊ Column
- ◊ Line
- ◊ Marginalia, interlinear, illumination, rubric, etc.



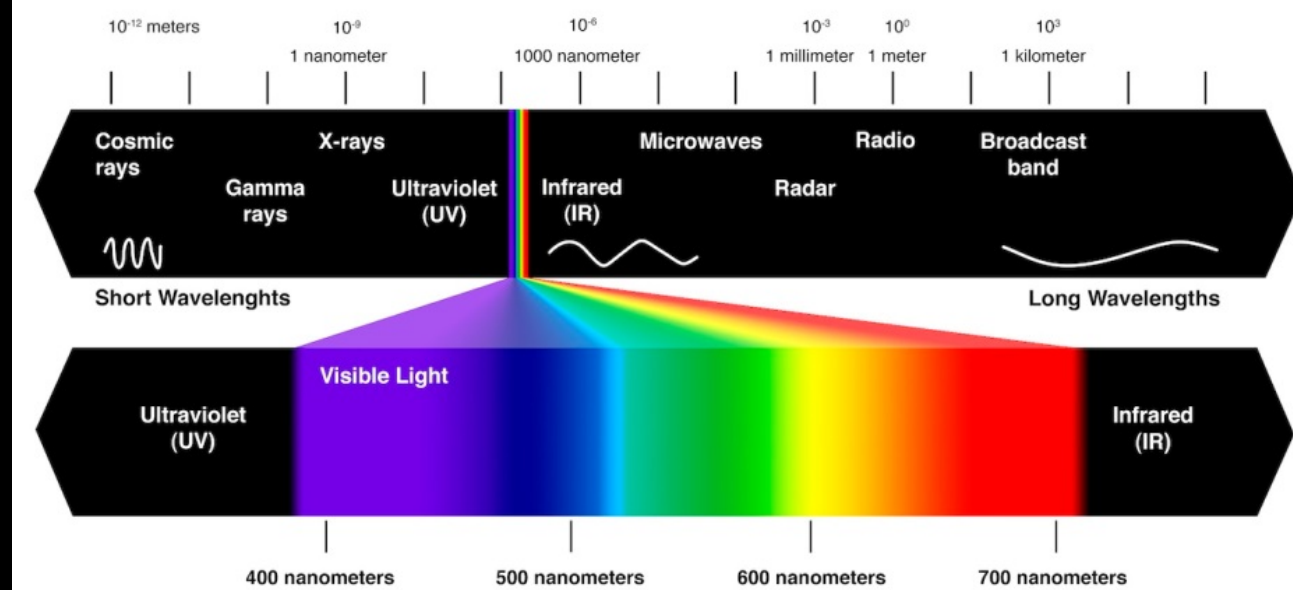
Spectral Imaging

- ◆ The importance of color perception for the study of cultural heritage
- ◆ The electromagnetic spectrum
- ◆ The spectral range of the human eye
- ◆ The spectral resolution of the human eye
- ◆ Multispectral capture
- ◆ Multispectral processing

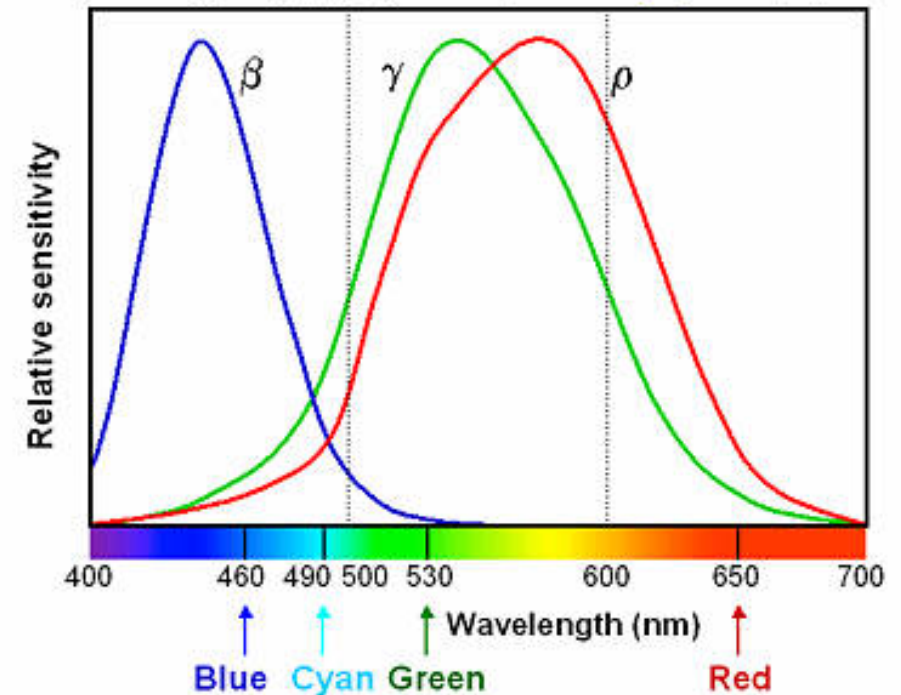


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Human spectral sensitivity to color
Three cone types (ρ , γ , β) correspond *roughly* to R, G, B.



Spectral Imaging

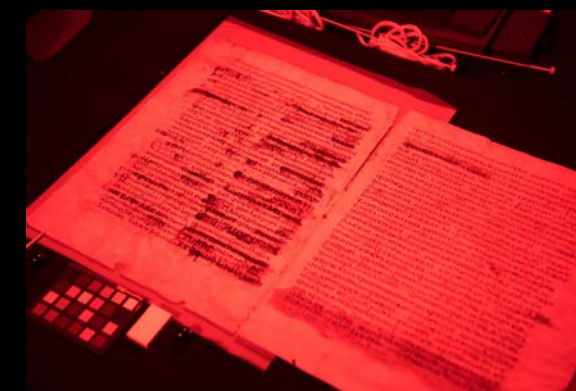
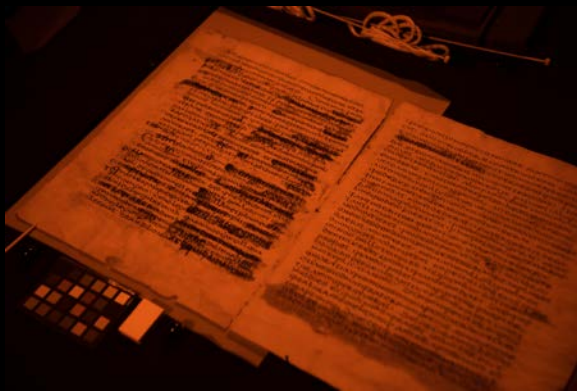
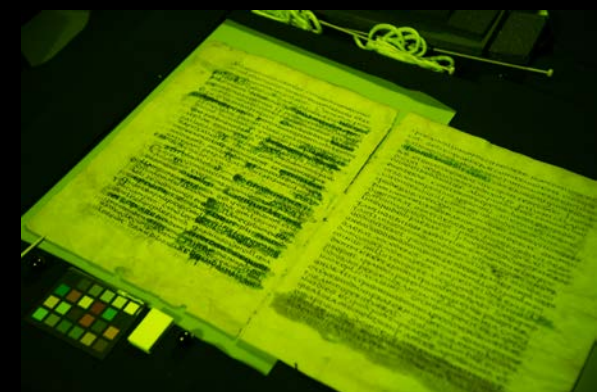
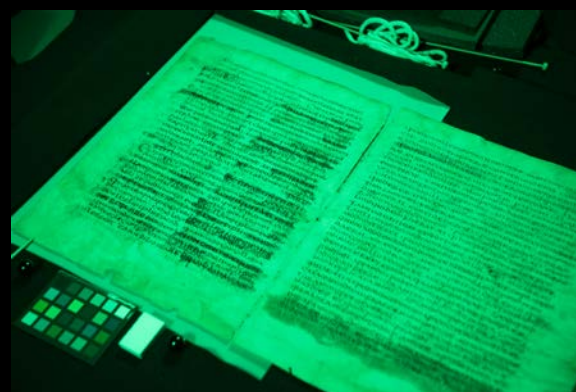
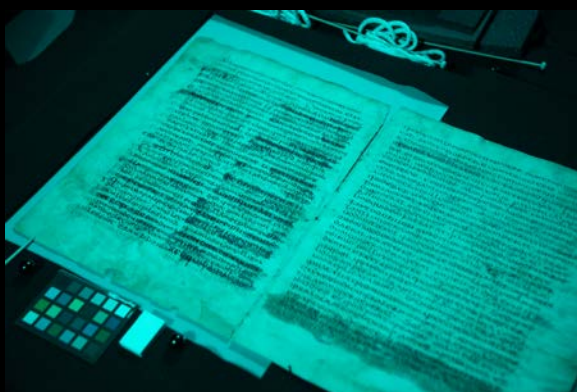
- ◇ The importance of color perception for the study of cultural heritage
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Spectral Imaging

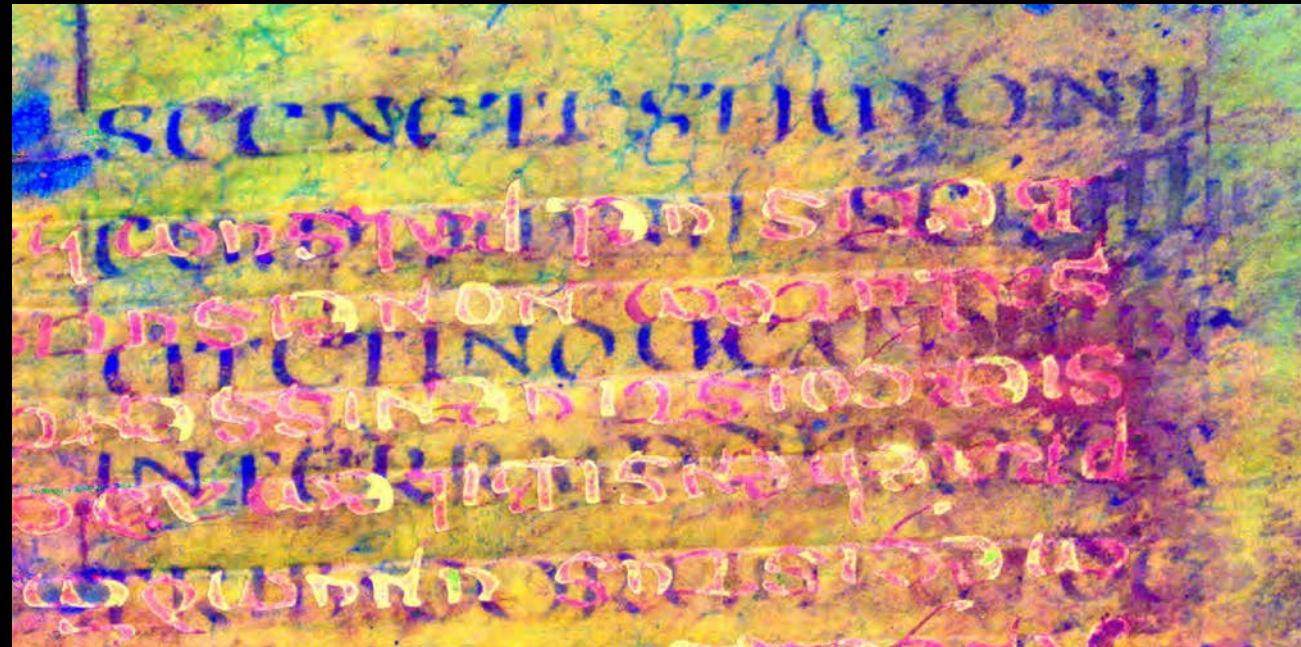
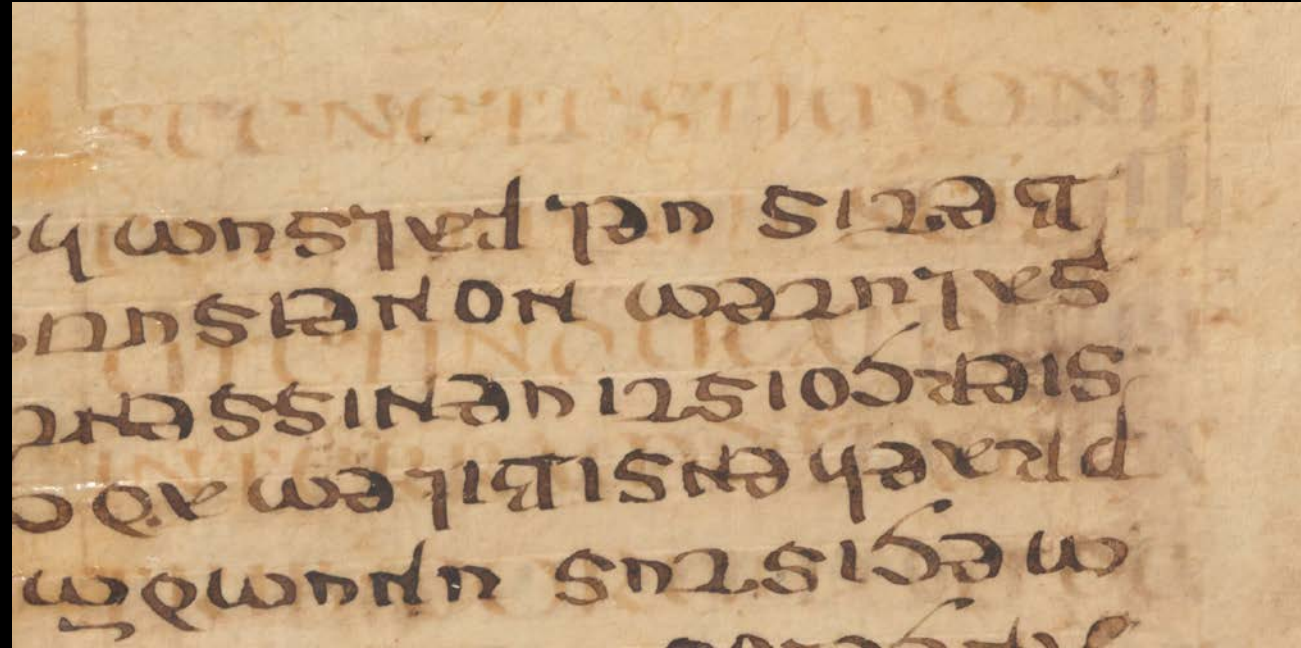
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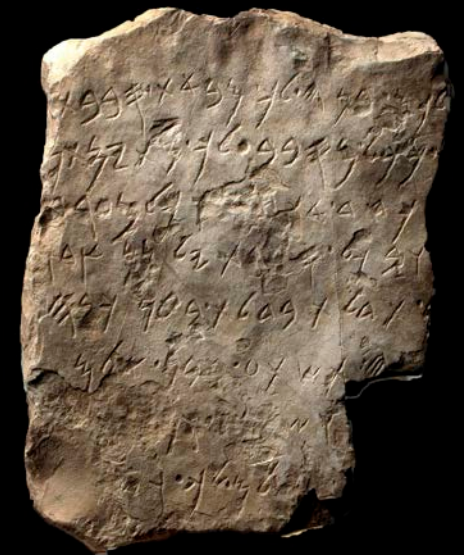
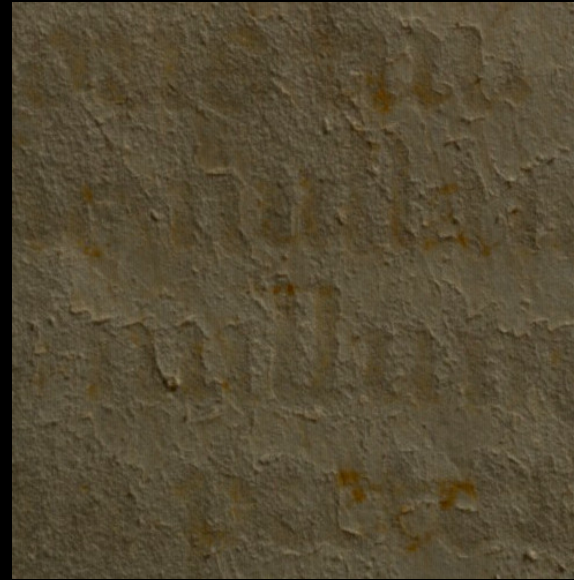
Texture Imaging and Visualization

- ◆ The importance of texture perception for the study of cultural heritage
- ◆ Raking light
- ◆ Reflectance Transformation Imaging (RTI)
- ◆ Capture
- ◆ Processing
- ◆ Visualization



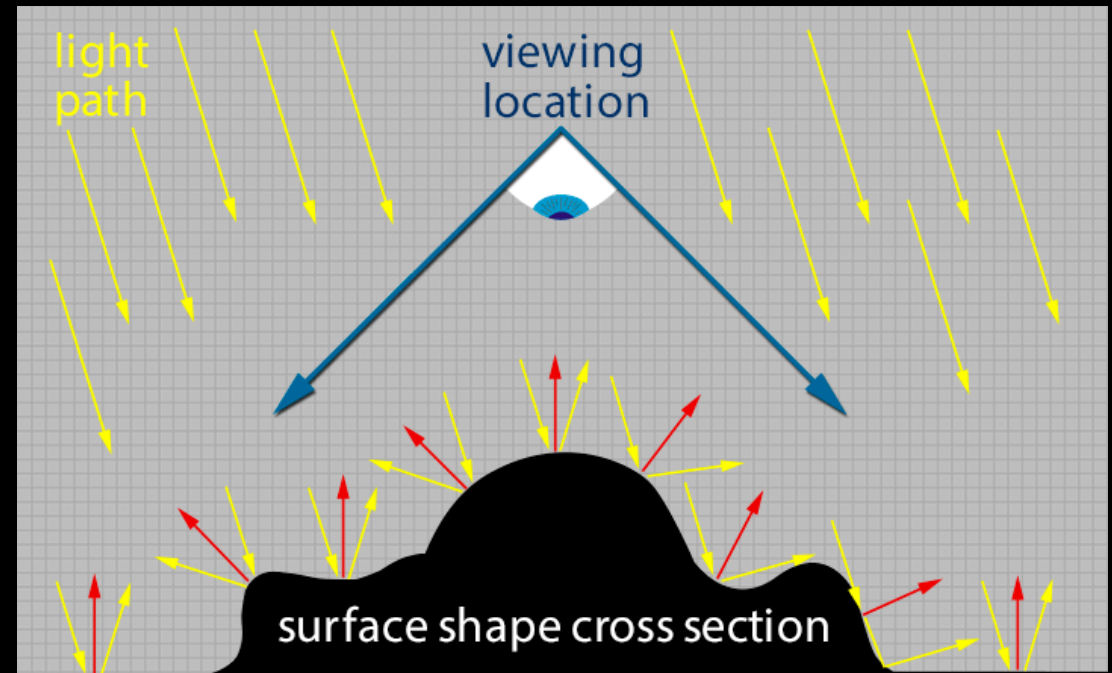
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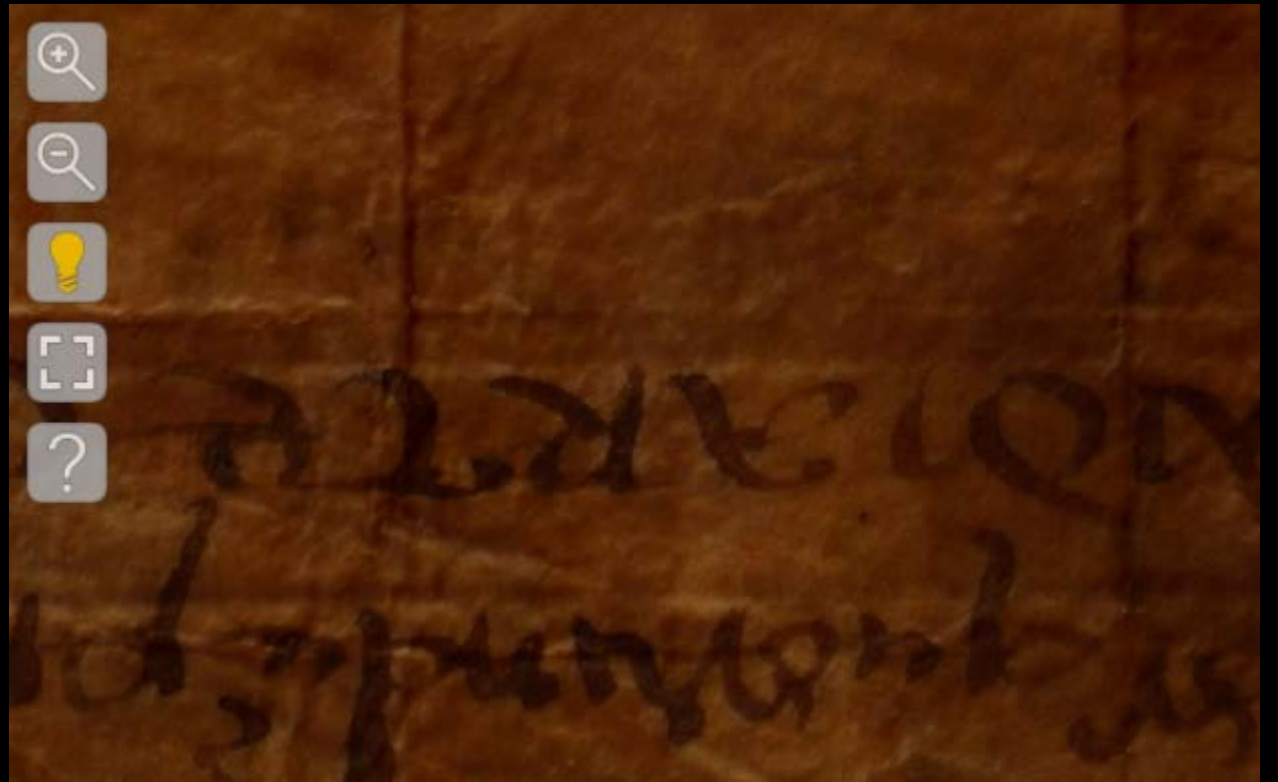
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Texture Imaging and Visualization

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Digital Humanities Tools

- ◇ Human and computer languages and standards
- ◇ The International Image Interoperability Framework (IIIF)
- ◇ The Text Encoding Initiative (TEI)

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Item	Item	Item	Item
Item	Item	Item	Item


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Navigate International Image Interoperability Framework (IIIF) Presentations available from the Jubilees Palimpsest Project. See also UCLA Mirador [\(LINK\)](#)

Latin Moses ▾ /iiif/LatinMoses/manifest.json
● all resources ● pages only List resources in manifest

Ambrosiana_C73inf (Latin Moses)



Reconstruction of the Fifth Century Codex of Mosaic Books in Latin (Jubilees and Testament of Moses)

Ordered in sequence of Fifth Century Codex



Page 083 (19c062) [Navigate](#)

Image cube contains:

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19. Microfilm (http://jubilees.stmarytx.edu/iiif/Ambrosiana_C73inf_062_microfilm.jp2) [Crop Resize](#)
20. Ceriani1861 (<http://jubilees.stmarytx.edu/iiif/Ceriani1861-15.jp2>) [Crop Resize](#)

Additional content in <http://jubilees.stmarytx.edu/iiif/LatinMoses/list/5c083.json>

WebRTI Images Available:

1. [Accurate Color](#)
2. [Extended Spectrum](#)
3. [KTK Ruby](#)

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Page 083 (19c062) [Navigate](#)

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	Ambrosiana_C73inf (Latin Moses)	Jubilees Palimpsest Project	96 items		...
	Ambrosiana_C73inf (Arian Commentary on Luke)	Jubilees Palimpsest Project	48 items		...
	Ambrosiana_S36sup	Jubilees Palimpsest Project	20 items		...
	Ambrosiana_O39sup (Origen Hexapla)	Jubilees Palimpsest Project	10 items		...
	Ambrosiana_H190inf	Jubilees Palimpsest Project	7 items		...
	Images from the Integrating phase of the Jubilees Palimpsest Project	Jubilees Palimpsest Project	6 items		...
	Bronze Amulet	Jubilees Palimpsest Project	2 items		...
	Ambrosiana_F130sup (Greek Commentary on Luke)	Jubilees Palimpsest Project	5 items		...
	Ambrosiana_A79inf (Petrarch's Virgil)	Jubilees Palimpsest Project	2 items		...

Digital Humanities

Tools

- ◇ Human and computer languages and standards
- ◇ The International Image Interoperability Framework (IIIF)
- ◇ **The Text Encoding Initiative (TEI)**

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 91 <seg>14 <title ref="#deTrinitate">De Trinitate</title>, c. 7,
 92 <bibl>
 93 <name>Augustinus</name>,
 94 <title>De Trinitate</title>,
 95 Bk. XIV, c. 4, n. 6 (PL 42:XXX CCSL XXX)</bibl>
 96 </ref>
 97 dicit iuxta
 98 <ref>illud <title ref="#ps">Psalmum</title></ref>
 99 <cit>
 100 <quote ana="#ps38_7">veruntamen in imagine
 101 pertransit homo,</quote>
 102 <bibl>Psalm 38:7</bibl>
 103 </cit>
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 105 facta est, ut poenae nulla sit.
 106 Ipsa autem mens humana secundum
 107 <app>
 108 <lem>substantiam</lem>
 109 <rdg wit="#M">substantia</rdg>
 110 </app>
 111 suam integre manet,
 112 igitur secundum substantiam suam non est
 113 imago Trinitatis.</p>
 114
 115 <p xml:id="b1d3qun-immnsm">Item, mens magis esset imago Dei quam h
 116 unumquodque propter quod et illud magis.
 117 Consequens falsum, quia homo magis est similis
 118 Deo quam mens, et exprimitur ab eo, igitur magis est eius imago.
 119 Haec consequentia patet per distinctionem imaginis quam ponit
 120 <ref>
 121 <seg><name ref="#Augustine">Augustinus</name> <title ref="#deD

RATIONES PRINCIPALES

- 2 Quod non videtur, quia secundum AUGUSTINUS in *Sermone com-*
muni de uno martyre "si servasset in se homo bonum quod in illo
 5 creavit Deus, id est imaginem suam, semper laudaret dictum non
 S79va solum lingua sed et vita" etc. Igitur ex opposito: non sic laudat, igi-
 tur non servavit in se bonum illud secundum imaginem Dei, et tamen
 servat mentem suam. Igitur mens humana non est imago Dei.
- 3 Item, 14 *De Trinitate*, c. 7, de parvis dicit iuxta illud *Psalmum* 10
 "veruntamen in imagine pertransit homo," quia haec imago ita de-
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 humana secundum substantiam suam integre manet, igitur secundum
 substantiam suam non est imago Trinitatis.
- 4 Item, mens magis esset imago Dei quam homo, quia unumquodque 15
 propter quod et illud magis. Consequens falsum, quia homo magis est
 similis Deo quam mens, et exprimitur ab eo, igitur magis est eius
 imago. Haec consequentia patet per distinctionem imaginis quam
 ponit AUGUSTINUS *De 83 Questionibus*, questione 78, ubi dicit quod:
 20 imago est expressa similitudo illius cuius est imago. Assumptum pro-
 batur, quia homo est ens nobilior quam mens hominis, igitur est magis
 similis Deo. Consequentia patet per ANSELMUM *Monlogion* capitulo

5-7 si ... vita] Auctor incertus (forte AUGUSTINUS HIPPONENSIS) *Sermo CCCXV*
 (PL 39:2349)

10 14 *De Trinitate*, c. 7, de parvis] AUGUSTINUS, *De Trinitate*, Bk. XIV, c. 4,
 n. 6 (PL 42:XXX CCSL XXX)

11 "veruntamen in imagine pertransit homo,"] Psalm 38:7

15 substantiam] substantia M [W1]

Theological Questions

◇ Text Criticism

- ◇ Deuteronomy 32:8, “When the Most High apportioned the nations, when he divided humankind, he fixed the boundaries of the peoples according to the number of the sons of _____.”
 - ◇ Hebrew: “Israel”
 - ◇ Greek: “God”
- ◇ Jubiees 32:18, “Kings will come from you, and they will rule wherever _____. I will give your descendants all the _____ under heaven.”
 - ◇ Ethiopic: “any man has set foot” / “land”
 - ◇ Latin: “they set foot against any man” / “blessings”

◇ History and Tradition

- ◇ Abandoned theologies and paths not taken
- ◇ “Boring” details of calendar and liturgy
- ◇ Scribes as theologians

Theological Questions

- ◇ Text Criticism

- ◇ History and Tradition

- ◇ The Bible has not always been the same. Bibles published today generally try to get as close to the intent of the original authors as possible, but that is not the Bible read by Paul, Augustine, Aquinas, Abraham Lincoln, etc.

- ◇ Secondary readings are not necessarily tangential to the tradition

- ◇ E.g., “A virgin shall conceive and bear a son and he shall be called Emmanuel.”

- ◇ E.g., books and versions of disputed canonicity: 4 Ezra, Jubilees, 1 Enoch, Ben Sira, Wisdom of Solomon, etc.

- ◇ Abandoned theologies and paths not taken

- ◇ “Boring” details of calendar and liturgy

- ◇ Scribes as theologians

Theological Questions

- ◇ Text Criticism
- ◇ History and Tradition
- ◇ Abandoned theologies and paths not taken
 - ◇ Many texts were erased because they were rejected as heretical
 - ◇ We can understand orthodoxy more clearly by understanding what was rejected
 - ◇ E.g., “eternally begotten of the Father”
- ◇ “Boring” details of calendar and liturgy
- ◇ Scribes as theologians

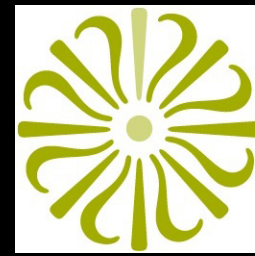
Theological Questions

- ◇ Text Criticism
- ◇ History and Tradition
- ◇ Abandoned theologies and paths not taken
- ◇ “Boring” details of calendar and liturgy
 - ◇ What was read by whom when?
 - ◇ When is Easter, and why is that so important for establishing identity?
- ◇ Scribes as theologians

Theological Questions

- ◇ Text Criticism
- ◇ History and Tradition
- ◇ Abandoned theologies and paths not taken
- ◇ “Boring” details of calendar and liturgy
- ◇ Scribes as theologians
 - ◇ Christian scribes copying Jewish texts would sometimes insert tiny bits of interpretation, such as adding “this is Christ” to a description of a messianic or heavenly figure.

The 2016-2019 NEH Grant



NATIONAL ENDOWMENT FOR THE
Humanities

- ◆ Year 1 focus: refine and build a showcase for Spectral RTI technology
- ◆ Year 2 focus: refine utility for humanities scholars
- ◆ Year 3 focus: refine tools for other imaging projects at museums and libraries
- ◆ Opportunities for student research

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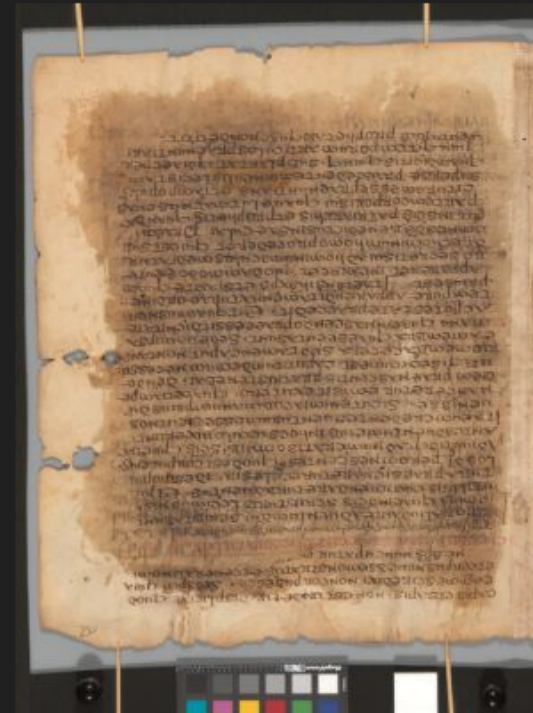


Image Cube

1. Accurate Color Diffuse
2. Accurate Color Raking NE
3. Accurate Color Raking SE
4. Accurate Color Raking SW
5. Accurate Color Raking NW
6. Accurate Color Transmissive
7. Extended Spectrum Diffuse
8. Extended Spectrum Raking NE
9. Extended Spectrum Raking SE
10. Extended Spectrum Raking SW
11. Extended Spectrum Raking NW
12. Extended Spectrum Transmissive
13. KTK Ruby Diffuse
14. KTK Ruby Raking NE
15. KTK Ruby Raking SE
16. KTK Ruby Raking SW
17. KTK Ruby Raking NW
18. KTK Ruby Transmissive
19. Microfilm
20. Ceriani1861

WebRTI Images Available:

1. Accurate Color
2. Extended Spectrum
3. KTK Ruby

Transcriptions and Translations:

1. [Transcription Latest](#)
2. [Transcription Ceriani 1861](#)
3. [Translation Latest](#)
4. [Translation VanderKam 1989 \(Latin\)](#)
5. [Translation VanderKam 1989 \(Ethiopic\)](#)

Plan for the Coming Weeks

- ◇ Move from lecture to workshop format
- ◇ Paperwork for paid work in workshops and on own schedule
- ◇ Tasks on the horizon
 - ◇ TEI encoding of print editions and manuscripts
 - ◇ Paleography charts
 - ◇ Image processing
 - ◇ Data management, versioning
 - ◇ Austin, New York
- ◇ Calendar
 - ◇ September 22, 29, then every other week
- ◇ Rooms and computers

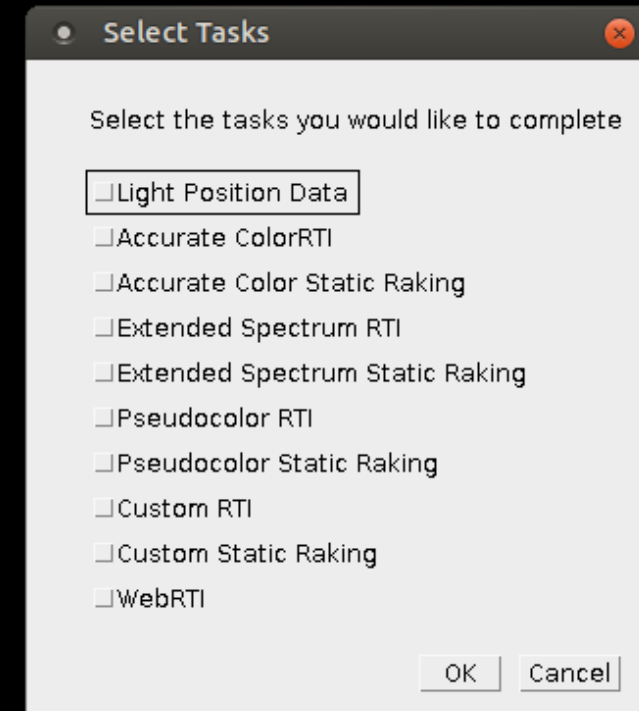
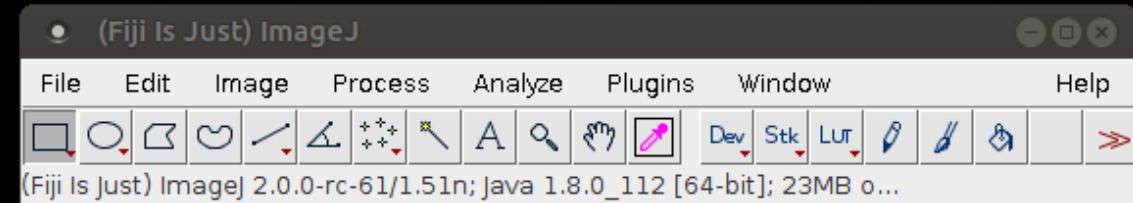
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The screenshot shows the GitHub interface for the repository 'thanneken / SpectralRTI_Toolkit'. The repository has 38 commits, 1 branch, 0 releases, 1 contributor, and is licensed under GPL-3.0. The repository is currently on the 'master' branch. The commit history is as follows:

File	Description	Time
Guide	Add files via upload	a month ago
LICENSE	Initial commit	a year ago
PCA_class	Principal Component Analysis Plugin	10 months ago
README.md	January 24, 2017 update	8 months ago
SpectralRTI_Dataset.bash	Capture folders now specify Gamma or NoGamma	6 months ago
SpectralRTI_Toolkit.ijm	Update SpectralRTI_Toolkit.ijm	a month ago
Stack_Manipulation-2.0.1.zip	Required "Slice Keeper" function, included in Fiji	2 months ago
bij_plugin.zip	Biomedical Imaging in Java	2 months ago
ijp-toolkit_bin_2.1.0.zip	http://ij-plugins.sourceforge.net/plugins/color/	6 months ago

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