

Dating the New Testament documents

with Peter Eyland

www.insula.com.au

Papyrus
Parchment
Scroll and Codex
Inks
The basic Timeline
Brief history of letter shapes
The next Timeline
Dating by:
Radiometric means
Recorded historical events
Internal dates
Provenance
Paleography

1000	11	P ¹ Codex Bezae Cantabrigiae	12, 14, 16, 21
1000	12	P ² Codex Bezae Cantabrigiae	12, 14, 16, 21
1000	13	P ³ Codex Bezae Cantabrigiae	12, 14, 16, 21
1000	14	P ⁴ Codex Bezae Cantabrigiae	12, 14, 16, 21
1000	15	P ⁵ Codex Bezae Cantabrigiae	12, 14, 16, 21
1000	16	P ⁶ Codex Bezae Cantabrigiae	12, 14, 16, 21
1000	17	P ⁷ Codex Bezae Cantabrigiae	12, 14, 16, 21
1000	18	P ⁸ Codex Bezae Cantabrigiae	12, 14, 16, 21
1000	19	P ⁹ Codex Bezae Cantabrigiae	12, 14, 16, 21
1000	20	P ¹⁰ Codex Bezae Cantabrigiae	12, 14, 16, 21
1000	21	P ¹¹ Codex Bezae Cantabrigiae	12, 14, 16, 21
1000	22	P ¹² Codex Bezae Cantabrigiae	12, 14, 16, 21
1000	23	P ¹³ Codex Bezae Cantabrigiae	12, 14, 16, 21
1000	24	P ¹⁴ Codex Bezae Cantabrigiae	12, 14, 16, 21
1000	25	P ¹⁵ Codex Bezae Cantabrigiae	12, 14, 16, 21
1000	26	P ¹⁶ Codex Bezae Cantabrigiae	12, 14, 16, 21
1000	27	P ¹⁷ Codex Bezae Cantabrigiae	12, 14, 16, 21
1000	28	P ¹⁸ Codex Bezae Cantabrigiae	12, 14, 16, 21
1000	29	P ¹⁹ Codex Bezae Cantabrigiae	12, 14, 16, 21
1000	30	P ²⁰ Codex Bezae Cantabrigiae	12, 14, 16, 21

In the ancient world around the Mediterranean, people wrote on:

- clay tablets
- stone
- bone
- wood (with/without a layer of wax)
- leather
- metals (Copper, Lead etc)
- broken pottery (ostraca)



The most widely used were **papyrus** and **parchment**.

Papyrus

Papyrus (πάπυρος) is a marshland plant with stalks that are often triangular in cross-section.

Stems were cut into 460 - 510 mm lengths, stripped of the outer rind and cut into thin slices.



Papyrus

The slices were placed side by side. A layer at right angles was put over this.



By pressing and beating, the layers became one sheet approx. 380 mm high by 230 mm wide.

With starch paste **20 sheets** were overlapped and joined together to form a blank roll **4.3 ± 0.2 m** long.

Lengths were bought from the papyrus shop & cut as needed.

Papyrus

25 to 45 lines of text, 50mm to 100mm columns.



The side with horizontal strips (\leftrightarrow) is called the **Recto**.

The side with vertical strips (\updownarrow) is called the **Verso**.

Pliny the Elder 23 CE – August 25, 79 CE.

“our civilization, or at all events our records, depend very largely on the employment of papyrus”.

Natural History, Book 13

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Parchment

Ptolemy (probably Philadelphus 205-182 BCE) embargoed the export of papyrus from Egypt.

Eumenes II of Pergamum (197-159 BCE) then developed a high quality leather called *περγαμηνή* (from which we get the English word *parchment*).



Scraping.

Smoothing.

Stretching.

Polishing.

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1000	17	P. Oxy. 108 (1924)	4th cent. AD
1000	18	P. Oxy. 109 (1924)	4th cent. AD
1000	19	P. Oxy. 110 (1924)	4th cent. AD
1000	20	P. Oxy. 111 (1924)	4th cent. AD
1000	21	P. Oxy. 112 (1924)	4th cent. AD
1000	22	P. Oxy. 113 (1924)	4th cent. AD
1000	23	P. Oxy. 114 (1924)	4th cent. AD
1000	24	P. Oxy. 115 (1924)	4th cent. AD
1000	25	P. Oxy. 116 (1924)	4th cent. AD
1000	26	P. Oxy. 117 (1924)	4th cent. AD
1000	27	P. Oxy. 118 (1924)	4th cent. AD
1000	28	P. Oxy. 119 (1924)	4th cent. AD
1000	29	P. Oxy. 120 (1924)	4th cent. AD
1000	30	P. Oxy. 121 (1924)	4th cent. AD
1000	31	P. Oxy. 122 (1924)	4th cent. AD
1000	32	P. Oxy. 123 (1924)	4th cent. AD
1000	33	P. Oxy. 124 (1924)	4th cent. AD
1000	34	P. Oxy. 125 (1924)	4th cent. AD
1000	35	P. Oxy. 126 (1924)	4th cent. AD
1000	36	P. Oxy. 127 (1924)	4th cent. AD
1000	37	P. Oxy. 128 (1924)	4th cent. AD
1000	38	P. Oxy. 129 (1924)	4th cent. AD
1000	39	P. Oxy. 130 (1924)	4th cent. AD
1000	40	P. Oxy. 131 (1924)	4th cent. AD
1000	41	P. Oxy. 132 (1924)	4th cent. AD
1000	42	P. Oxy. 133 (1924)	4th cent. AD
1000	43	P. Oxy. 134 (1924)	4th cent. AD
1000	44	P. Oxy. 135 (1924)	4th cent. AD
1000	45	P. Oxy. 136 (1924)	4th cent. AD
1000	46	P. Oxy. 137 (1924)	4th cent. AD
1000	47	P. Oxy. 138 (1924)	4th cent. AD
1000	48	P. Oxy. 139 (1924)	4th cent. AD
1000	49	P. Oxy. 140 (1924)	4th cent. AD
1000	50	P. Oxy. 141 (1924)	4th cent. AD
1000	51	P. Oxy. 142 (1924)	4th cent. AD
1000	52	P. Oxy. 143 (1924)	4th cent. AD
1000	53	P. Oxy. 144 (1924)	4th cent. AD
1000	54	P. Oxy. 145 (1924)	4th cent. AD
1000	55	P. Oxy. 146 (1924)	4th cent. AD
1000	56	P. Oxy. 147 (1924)	4th cent. AD
1000	57	P. Oxy. 148 (1924)	4th cent. AD
1000	58	P. Oxy. 149 (1924)	4th cent. AD
1000	59	P. Oxy. 150 (1924)	4th cent. AD
1000	60	P. Oxy. 151 (1924)	4th cent. AD
1000	61	P. Oxy. 152 (1924)	4th cent. AD
1000	62	P. Oxy. 153 (1924)	4th cent. AD
1000	63	P. Oxy. 154 (1924)	4th cent. AD
1000	64	P. Oxy. 155 (1924)	4th cent. AD
1000	65	P. Oxy. 156 (1924)	4th cent. AD
1000	66	P. Oxy. 157 (1924)	4th cent. AD
1000	67	P. Oxy. 158 (1924)	4th cent. AD
1000	68	P. Oxy. 159 (1924)	4th cent. AD
1000	69	P. Oxy. 160 (1924)	4th cent. AD
1000	70	P. Oxy. 161 (1924)	4th cent. AD
1000	71	P. Oxy. 162 (1924)	4th cent. AD
1000	72	P. Oxy. 163 (1924)	4th cent. AD
1000	73	P. Oxy. 164 (1924)	4th cent. AD
1000	74	P. Oxy. 165 (1924)	4th cent. AD
1000	75	P. Oxy. 166 (1924)	4th cent. AD
1000	76	P. Oxy. 167 (1924)	4th cent. AD
1000	77	P. Oxy. 168 (1924)	4th cent. AD
1000	78	P. Oxy. 169 (1924)	4th cent. AD
1000	79	P. Oxy. 170 (1924)	4th cent. AD
1000	80	P. Oxy. 171 (1924)	4th cent. AD
1000	81	P. Oxy. 172 (1924)	4th cent. AD
1000	82	P. Oxy. 173 (1924)	4th cent. AD
1000	83	P. Oxy. 174 (1924)	4th cent. AD
1000	84	P. Oxy. 175 (1924)	4th cent. AD
1000	85	P. Oxy. 176 (1924)	4th cent. AD
1000	86	P. Oxy. 177 (1924)	4th cent. AD
1000	87	P. Oxy. 178 (1924)	4th cent. AD
1000	88	P. Oxy. 179 (1924)	4th cent. AD
1000	89	P. Oxy. 180 (1924)	4th cent. AD
1000	90	P. Oxy. 181 (1924)	4th cent. AD
1000	91	P. Oxy. 182 (1924)	4th cent. AD
1000	92	P. Oxy. 183 (1924)	4th cent. AD
1000	93	P. Oxy. 184 (1924)	4th cent. AD
1000	94	P. Oxy. 185 (1924)	4th cent. AD
1000	95	P. Oxy. 186 (1924)	4th cent. AD
1000	96	P. Oxy. 187 (1924)	4th cent. AD
1000	97	P. Oxy. 188 (1924)	4th cent. AD
1000	98	P. Oxy. 189 (1924)	4th cent. AD
1000	99	P. Oxy. 190 (1924)	4th cent. AD
1000	100	P. Oxy. 191 (1924)	4th cent. AD

Scroll and Codex

Papyrus rolls or scrolls were the earlier universal form for books and documents.



In legend, Julius Caesar traveling in Gaul, found it useful to fold his scrolls concertina-style for quicker reference.

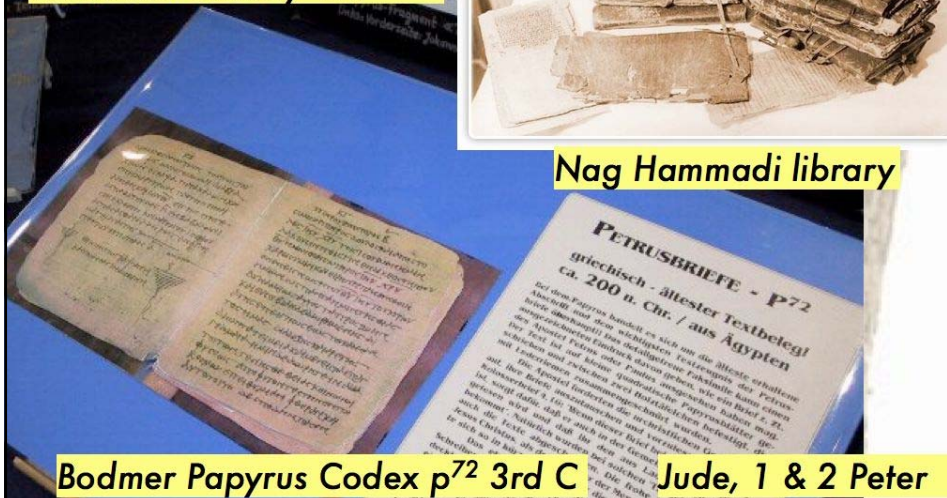
<http://www.newworldencyclopedia.org/>

Scroll and Codex

The earliest **codices** seem made of **papyrus** & dated in the first century CE.



Nag Hammadi library



Bodmer Papyrus Codex p⁷² 3rd C Jude, 1 & 2 Peter

Scroll and Codex

Codices may have developed from wax wooden tablets as shown on this mural from Pompeii.



The Latin Poet **Martial** (c40 - c100 CE) commended the usefulness and novelty of the codex to Romans.

"Since you want my booklets with you
Round the house and on the road,
Buy these compact **parchment tablets**:
Leave the book box with the rolls;
Hold this in a single hand!"
Book 1, Epigram 2, To the Reader

Greek literary & scientific books by form & century

Century	Codices	Rolls
1	1	252
1/2	4	203
2	17	857
2/3	17	349
3	93	406
3/4	50	54
4	99	36
4/5	68	7
5	88	11

Despite Martial, in the secular world, the adoption of the codex was slow and piecemeal.

Christian books by form & century

Century	Codices	Rolls
< 400 CE	158	2
2 CE	10	1

The Christian adoption of the codex form seemed instant and universal.

New Docs, ed S.R.Llewelyn, vol 7, p251

Early Papyrus Codices

The great **limitation** of the papyrus codex was that the largest possible format could only accommodate the Gospels and Acts.



The NT writings would not have existed as a **single papyrus codex**. They would need a collection of up to 8 codices.

D.C.Parker, Codex Sinaiticus, p16.

Early Papyrus Codices

P.Bodmer 2 p⁶⁶ is a papyrus codex with 154 pages.

Almost perfectly preserved for the first 14 chapters of John, with the other chapters in fragmentary state.



Early Papyrus Codices

p⁶⁶ Bodmer Jn 11:31-37

ΟΤΙ ΠΛΑΘΕΙ ΣΤΑ ΑΝΗΜΕΡΟΝ ΙΝΑ
ΚΛΑΥΣΗ ΚΑΙ Η ΟΥΝ ΚΑΡΙΑ ΤΩ ΧΑ
ΘΕΝ ΟΠΟΥ ΗΝΤΕ ΚΑΙ ΔΟΥΤΑΛ
ΤΟΝ ΕΡΕΣ ΣΥΝΑΥΤΟΥ ΕΙΣ ΤΟΥΣ ΤΟ
ΔΑ ΕΙΣ ΤΟΥΣ ΚΑ ΚΕ ΘΗ ΣΩ ΔΕ ΘΥ ΚΑ
ΜΟΥ ΑΠΡΘΑΝ ΕΝ ΟΛΔ ΕΛΦΟΣ ΤΟΥ
Ω ΣΗ Δ ΕΝ ΑΥΤΗΝ ΚΛΑΙΟΥΣΑΝ Κ
ΠΟΥ ΣΥΝ ΕΑ ΗΛΥΘ ΟΤΑ ΕΣΥΝ ΑΥΤΗ
ΟΥ ΔΑ ΙΟΥΣ ΚΛΑΙΟΝΤΑΣ ΣΤΑΡΧΟΝ
ΤΩΤΗΝ ΕΣΣΕ ΒΡΗΜΑ ΜΕΝΟΟ
ΤΩΝ ΚΑΙ ΕΙ ΠΕΝ ΠΟΥΤΕΟΙ ΚΑΤΑ ΙΑ Υ
ΟΝ ΧΕ ΤΟΥΣ ΕΝ ΑΥΤΩ ΕΡΧΟΥΕΙ
ΕΔΡΑ ΧΕΡΝΟΤΕ ΕΛΕΓΟΝ ΟΥΝ Ο
ΔΑΙΟΙ ΕΛΕΤ ΟΣΕ ΦΙΛΕΑΥΤΟ
ΝΕΣ ΔΕ ΕΠΟΝ ΕΣ ΑΥΤΩΝ ΟΥ ΧΕΛ
Ν ΑΤΟΥΤΟΣ Ο ΑΝΟΙΣ ΑΣ ΤΟΥΣ ΟΦΘΑ
ΜΟΧΕΙ ΟΥΤΥ Ο ΧΟΥΠΟΙ Η ΕΛΙΝ ΝΑΪΣ

Pages size
142mm x 162mm,
17↔19 lines.

One column i.e. a
single block of text.

16 syllables/line
was common.

Scriptio continua,
no word or paragraph spacings.

Rapid but
legible writing.

Early Papyrus Codices

p⁶⁶ Bodmer Jn 11:31-37

ΟΤΙ ΠΑΡΕΙΣΤΡΑΝΗΜΕΘΝΙΝΑ
ΚΛΑΥΣΗ ΚΕΙ ΗΟΥΝΑΛΑΝΙΑ ΚΑΙ
ΘΕΝ ΟΤΟΥ ΗΝΙΕ ΚΑΙ ΔΟΥΡΑ ΔΥ
ΤΟΝ ΕΠΕΣ ΕΝΑΥΤΟΥ ΕΙΣ ΤΟΥΤΟ
ΔΑΕΙΣ ΤΟΥΤΑ ΚΕ ΕΗΕ ΟΔΕ ΟΥΚΑ
ΜΟΥ ΑΠΡΟΑΝΕΓΝΟΑΔ ΕΛΦΟΣ ΤΟΥ
ΩΣ ΕΙΔΕΝ ΑΥΤΗΝ ΚΛΑΙΟΥΣΑΝ ΚΑΙ
ΠΟΥΣ ΕΝΕΡΑ ΗΛΥΘΟΤΑ ΕΣΥΝΑΥΤΗ
ΟΥΔΑΙΟΥΣ ΚΛΑΙΟΝΤΑΣ ΣΤΑΙΧΟΗ
ΟΤΙ ΤΩΝ ΕΩΣ ΕΒΡΗΜΩΜΟΝΟ
ΕΥΝ ΚΑΙ ΕΙΠΕΝ ΠΟΥΤΕΘΙ ΚΑΤΑΙ ΑΥ
ΟΝ ΧΕΤΟΥΣΙΝ ΑΥΤΩ ΕΡΧΟΜΕΘΕ
ΕΔΡΑΚΥΡΟΝ Ε ΕΑ ΕΓΟΝ ΟΥΝ ΟΙ ΙΟΥ
ΔΑΙΟΙ ΕΑ ΕΤΩΣ ΕΦΙΛΕΑΥΤΟΝΤΙ
ΝΕΣ ΔΕ ΕΠΟΝ ΕΣ ΑΥΤΩΝ ΟΥΚ ΕΣΥ
Ν ΑΤΟΥΤΟ ΕΟΔΑΝ ΟΙΣ ΑΣΤΟΥΡΟΦΑΙ
ΜΟΧΣ ΤΟΥΤΥ ΦΧΟΥΠΟΙ ΗΕΛΙΝΑΙΣ

Along with p⁷⁵ it does not contain the pericope of the adulteress (7:53-8:11)

Nomina sacra, and abbreviations are used.

Nomina sacra

A number of sacred Christian words are contracted by writing the first and the last letter, with a line above. For instance:

$\overline{\theta\varsigma}$ = θεός (gen. $\overline{\theta\upsilon}$, dat. $\overline{\theta\omega}$, acc. $\overline{\theta\nu}$)

$\overline{\kappa\varsigma}$ = κύριος (gen. $\overline{\kappa\nu}$, etc.)

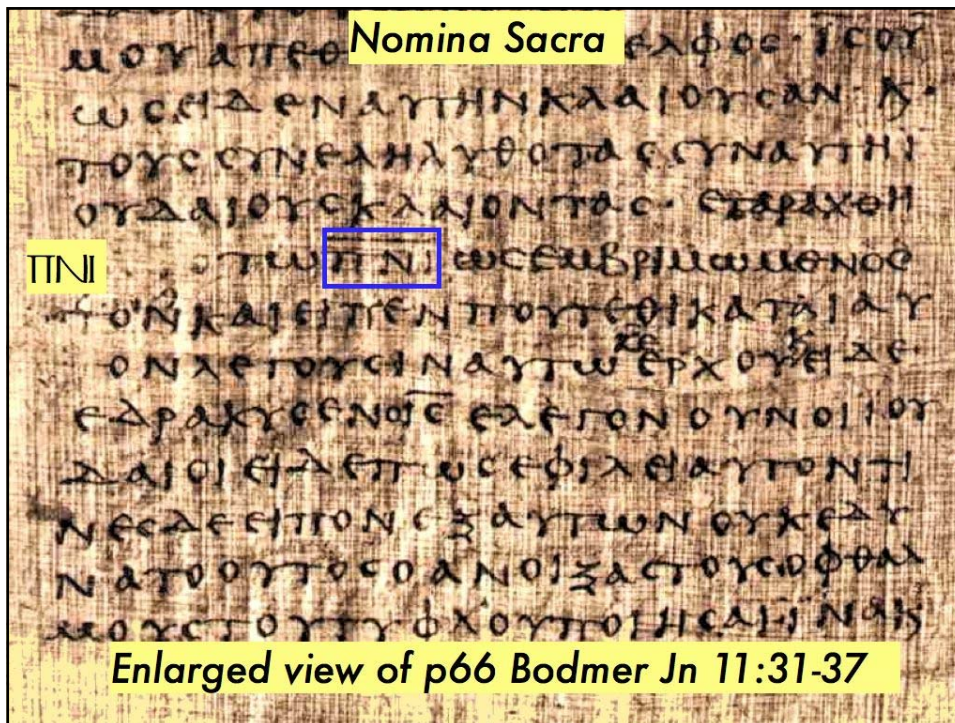
$\overline{\iota\varsigma}$ = Ἰησοῦς (gen. $\overline{\iota\nu}$, etc.); also $\overline{\iota\eta}$ or $\overline{\iota\eta\varsigma}$

Malcolm Choat wrote that he can find "no instance of a nomen sacrum in an unquestionably non-Christian document".

Malcolm Choat, "Belief and Cult in Fourth Century Papyri", *Studia Antiqua Australiensia* 1, 2006, pp119-125

Don Barker suggests that they come from a Semitic practice of contracting personal names. Kurios was the **personal name** of God and it was abbreviated in order to distinguish it from secular use as "master/lord".

Don Barker, "P.Lond.Lit 207 and the Origin of Nomina Sacra", *Studia Humaniora Tartuensia*, 8.A.2, 2007



Christian Cryptograms and Symbols

Ϟθ = ἀμήν : the total of the numerical value of the letters
(α = 1, μ = 40, η = 8 and ν = 50) is Ϟθ = 99

χμγ = perhaps Χ(ριστὸν) Μ(αρία) γ(εννᾶ), "Maria bears Christ"

ἰχθῦς "fish" = Ἰ(ησοῦς) Χ(ριστὸς) Θ(εοῦ) Ὑ(ιὸς) Σ(ωτήρ)

+ "cross"

✠ Christogram: Χρ(ιστός).

† Staurogram: σταυρός, "cross"

The Beatty papyri are another example of a papyrus codex

End of Romans at 16:23

XY

ΗΜΩΝ

P.Beatty 2 p⁴⁶ was a single quire codex (like p⁶⁶) with 208 numbered pages (172 extant).

The last five leaves were probably blank and do not seem to be enough for the Pastorals.

Codex Sinaiticus 4th C. on parchment.

John 1

More than 740 leaves originally.

4 columns/page.

The oldest complete copy of NT.

Enabled the NT writings to be thought of as a single entity.

Codex Sinaiticus 4th C. on parchment.

Romans 1

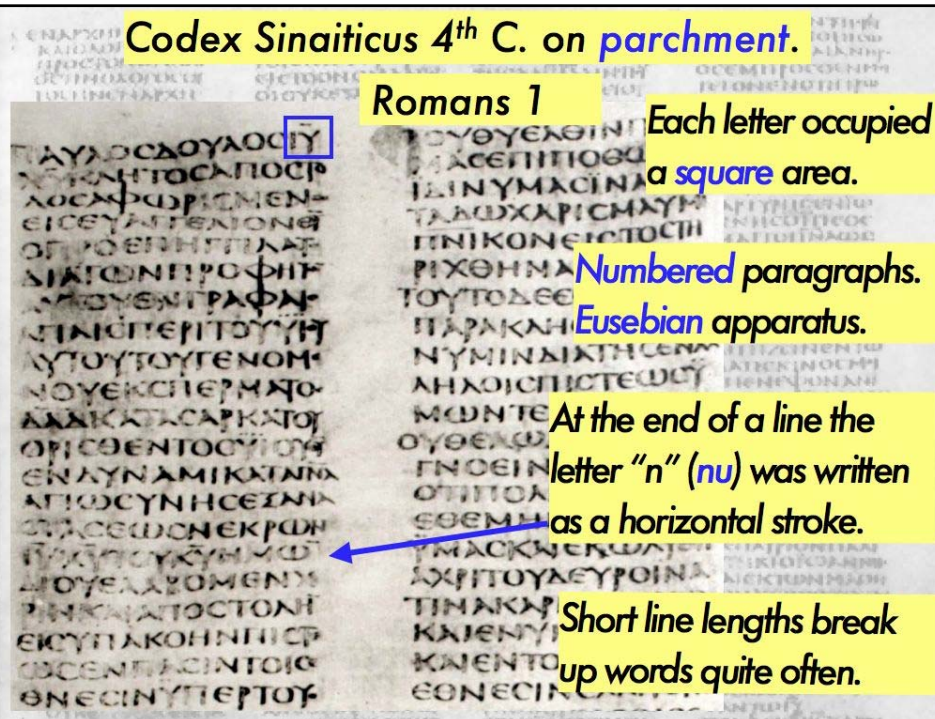
Each letter occupied a square area.

Numbered paragraphs.

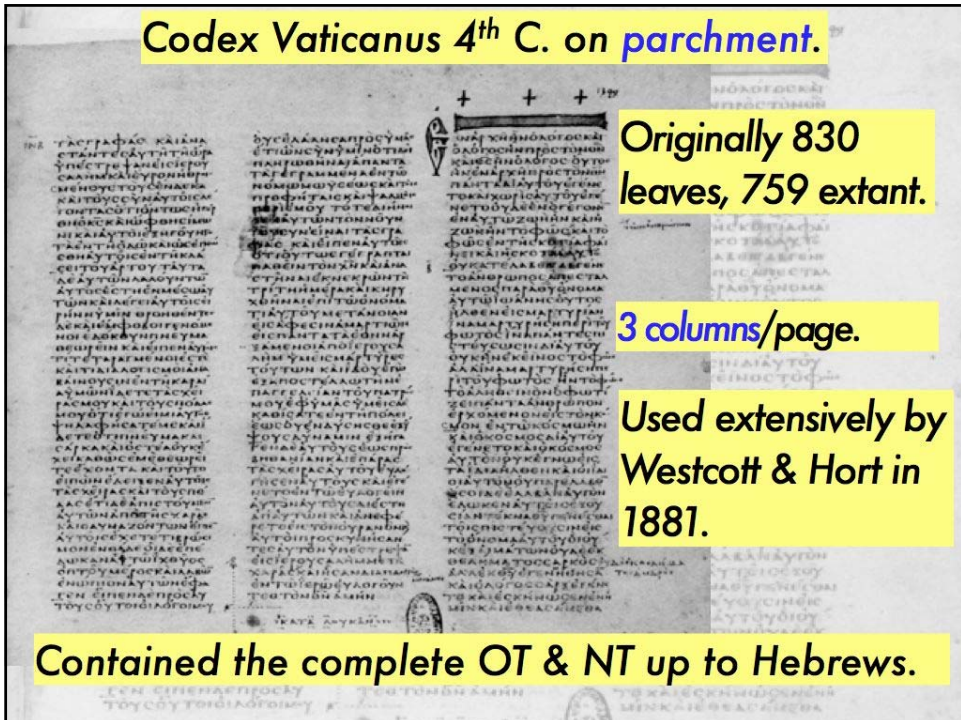
Eusebian apparatus.

At the end of a line the letter "n" (nu) was written as a horizontal stroke.

Short line lengths break up words quite often.



Codex Vaticanus 4th C. on parchment.



Originally 830 leaves, 759 extant.

3 columns/page.

Used extensively by Westcott & Hort in 1881.

Contained the complete OT & NT up to Hebrews.

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Papyrus ID	Date	Location
3029	117	1875/80
3030	18	1875/80
3031	15	1875/80
3032	30	1875/80
3033	8-14	1875/80
3034	23	1875/80
3035	25	1875/80
3036	25	1875/80
3037	26	1875/80

Inks (μελαν)

The ink used on **papyrus** was commonly a **Carbon** based ink, made from Charcoal or Lamp Black, gum Arabic and water.

Coloured inks were also used.

Red: from cinnebar (κινναβαρις) and minium (μιλτος)

Purple: from murex and purpura gastropods (πορφυρα)

Carbon inks didn't stick too well to **parchment**.
Another ink was needed.

Inks (μελαν)

Oak Gall Ink was a purple-black colour.

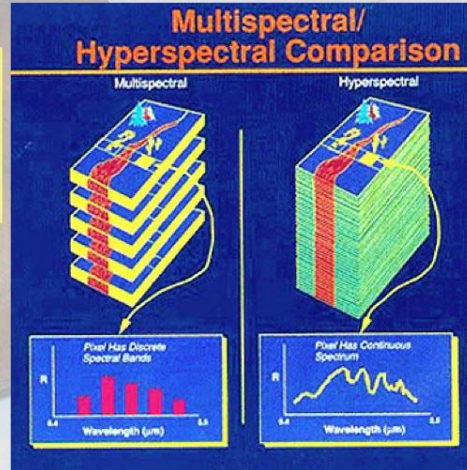


Green Vitriol (FeSO_4) was added to pulverised remains of Oak galls (with Tannic salts) invaded by Gall wasps. It was then combined with Gum Arabic.

The ink colour changed to a rusty-brown in time.
Sulphuric acid is gradually released which eats into things over time.

Inks (μελαν)

Carbon Ink can be seen even when the papyrus is burnt by using **Multi-Spectral Imaging (MSI)**.

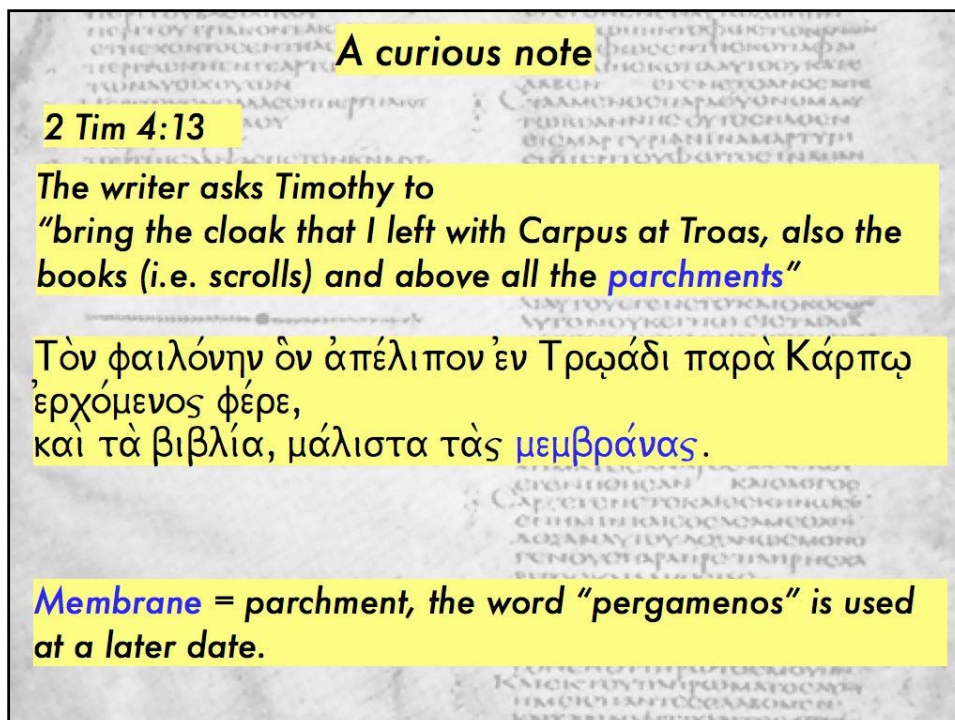
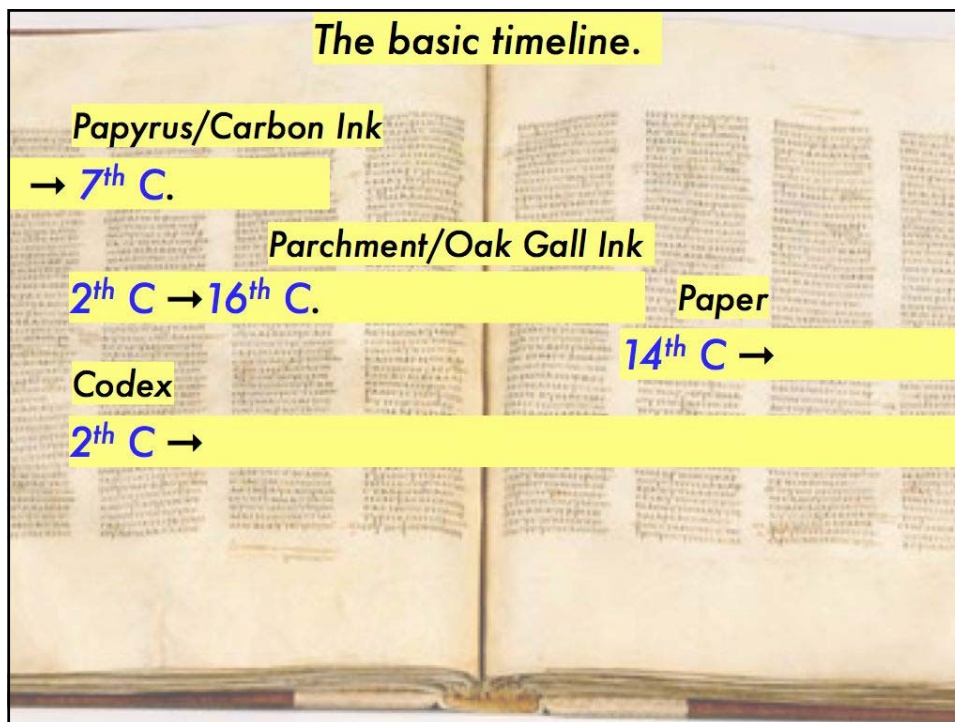


Oak Gall Ink can be seen when faded by using **X-Ray Fluorescopy**.

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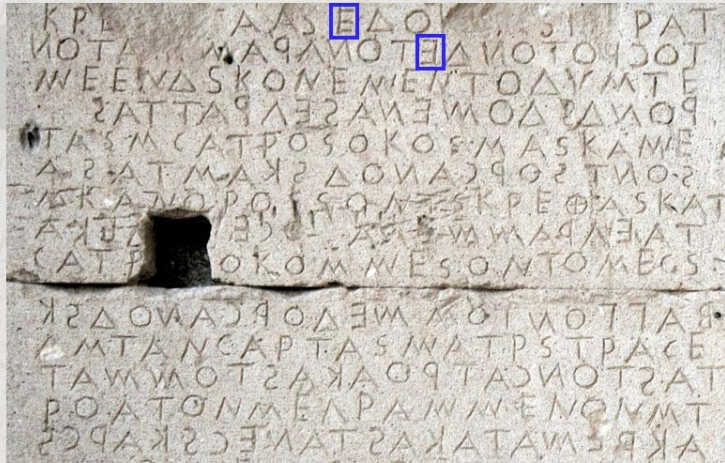
This block contains a collage of images related to ancient documents. On the left, there are images of papyrus scrolls and parchment. On the right, there is a table with columns for document numbers, dates, and descriptions. The table includes entries such as P. Oxy. 1, P. Oxy. 2, P. Oxy. 3, P. Oxy. 4, P. Oxy. 5, P. Oxy. 6, P. Oxy. 7, P. Oxy. 8, P. Oxy. 9, P. Oxy. 10, P. Oxy. 11, P. Oxy. 12, P. Oxy. 13, P. Oxy. 14, P. Oxy. 15, P. Oxy. 16, P. Oxy. 17, P. Oxy. 18, P. Oxy. 19, P. Oxy. 20, P. Oxy. 21, P. Oxy. 22, P. Oxy. 23, P. Oxy. 24, P. Oxy. 25, P. Oxy. 26, P. Oxy. 27, P. Oxy. 28, P. Oxy. 29, P. Oxy. 30, P. Oxy. 31, P. Oxy. 32, P. Oxy. 33, P. Oxy. 34, P. Oxy. 35, P. Oxy. 36, P. Oxy. 37, P. Oxy. 38, P. Oxy. 39, P. Oxy. 40, P. Oxy. 41, P. Oxy. 42, P. Oxy. 43, P. Oxy. 44, P. Oxy. 45, P. Oxy. 46, P. Oxy. 47, P. Oxy. 48, P. Oxy. 49, P. Oxy. 50, P. Oxy. 51, P. Oxy. 52, P. Oxy. 53, P. Oxy. 54, P. Oxy. 55, P. Oxy. 56, P. Oxy. 57, P. Oxy. 58, P. Oxy. 59, P. Oxy. 60, P. Oxy. 61, P. Oxy. 62, P. Oxy. 63, P. Oxy. 64, P. Oxy. 65, P. Oxy. 66, P. Oxy. 67, P. Oxy. 68, P. Oxy. 69, P. Oxy. 70, P. Oxy. 71, P. Oxy. 72, P. Oxy. 73, P. Oxy. 74, P. Oxy. 75, P. Oxy. 76, P. Oxy. 77, P. Oxy. 78, P. Oxy. 79, P. Oxy. 80, P. Oxy. 81, P. Oxy. 82, P. Oxy. 83, P. Oxy. 84, P. Oxy. 85, P. Oxy. 86, P. Oxy. 87, P. Oxy. 88, P. Oxy. 89, P. Oxy. 90, P. Oxy. 91, P. Oxy. 92, P. Oxy. 93, P. Oxy. 94, P. Oxy. 95, P. Oxy. 96, P. Oxy. 97, P. Oxy. 98, P. Oxy. 99, P. Oxy. 100. The table also includes a section for "ETOUΔ ΣΥΜΕ" with the year 6457.



Boustrophedon writing

Law of Gortyn: 5th Century BCE, written in a **raster pattern** called βουστροφηδον, ie turning as the ox [ploughs].

The letters are mirror imaged from left to right.



B.M. Metzger & B.D. Ehrman "Manuscripts of the Greek Bible, An Introduction to Greek Palaeography", Oxford 1981

No 3 bar sigma (Ϛ) or tailed rho (Ϟ) after the Egesta decree 412 BCE.

Three letters were dropped out of the alphabet, but retained in the number system.

stigma/digamma 6 Ϛ F
koppa 90 Ϟ
sampi 900 Ϟ



α	alpha	1	ι	iota	10	ρ	rho	100
β	beta	2	κ	kappa	20	σ	sigma	200
γ	gamma	3	λ	lambda	30	τ	tau	300
δ	delta	4	μ	mu	40	υ	upsilon	400
ε	epsilon	5	ν	nu	50	φ	phi	500
Ϛ	stigma	6	ξ	xi	60	χ	chi	600
ζ	zeta	7	ο	omicron	70	ψ	psi	700
η	eta	8	π	pi	80	ω	omega	800
θ	theta	9	Ϟ	koppa	90	Ϟ	sampi	900

Writing styles

The purpose and fashion of the writing affected the writing style.

Documentary hand (contracts, reports, letters etc)

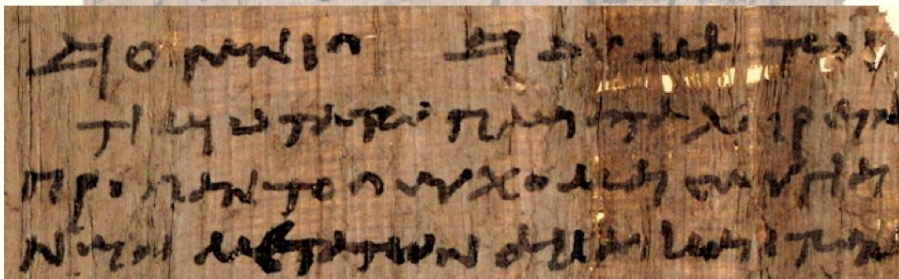
Book hand (literary works)

Majuscule lettering (early cursive and capital letters)

Minuscule lettering (late cursive)

Early Documentary hand P.Oxy 1758 C2 Egypt

Informal script based on a top line. This period is characterised as "hanging the washing off the line".



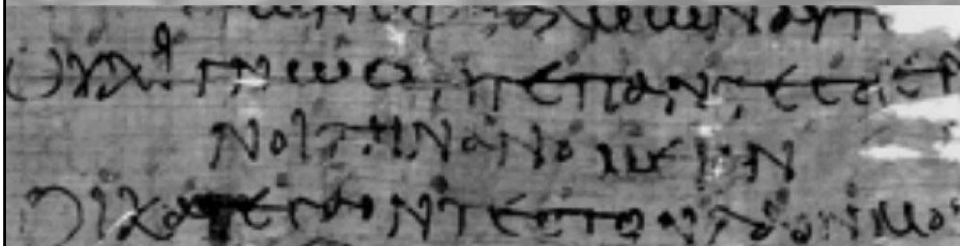
Diogenis to Didymas the most honoured greetings. **First of all I pray for your health** and for your children whom the evil eye shall not harm.

3rd/4th lines

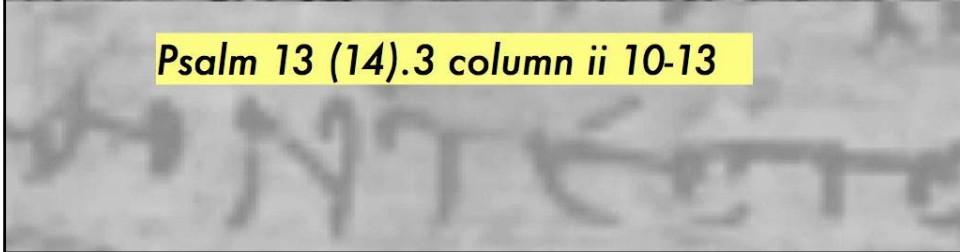
πρὸ παντὸς εὐχομαί σε ὑγιαί-
VELV

Early Documentary hand P.Lit.Lond.207 Egypt

Rounded cursive script 3rd/4th C, Fayum, Egypt



Psalm 13 (14).3 column ii 10-13

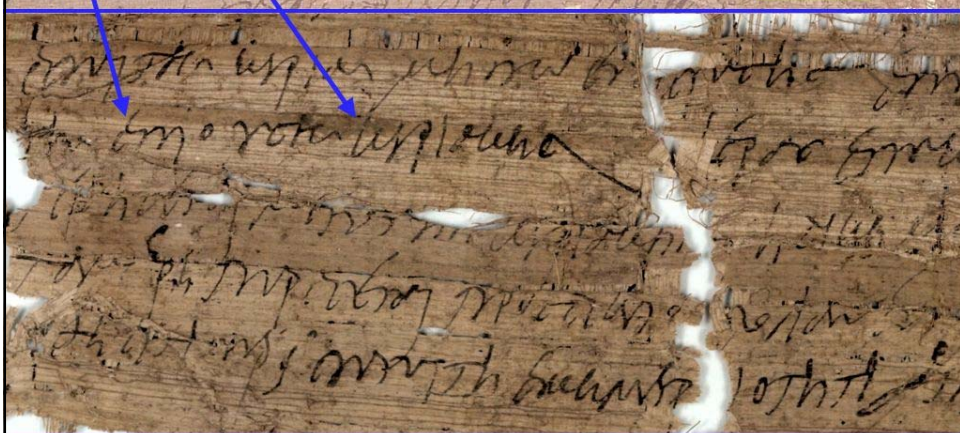


Documentary hand P.Oxy.3759 4th C

Formal cursive script

τῆς ἐπιούσης κυριακῆς ἱερᾶς ἐπέκυψεν

2nd line



the coming sacred Lord's day intervenes

Book hand Sinaiticus Majuscule 4th C

Bi-linear capitals (between 2 horizontal lines), formal, careful, separate letters.

Acts 2:5,6

There were [Jews] living in Jerusalem, pious people from all over the place ...

Diaeresis on "I" & "U". Small raised letters at the end of a line.

ΗΣΑΝΔΕΕΝΤΗΑΜ,
ΚΑΤΟΙΚΟΥΝΤΕΣ
ΔΡΕΣΕΥΛΑΚΕΙΣ
ΠΟΤΙΑΝΤΟΣΕΟΝ
ΤΩΝΥΠΟΤΟΝ
ΡΑΝΟΝ ΓΕΝΟΜ
ΝΗΣΔΕΤΗΣΦΩ
ΝΗΣΤΑΥΤΗΣΣΥΝΑ
ΘΕΤΟΓΙΛΗΘΟΣΚΑΙ
ΣΥΝΕΧΥΘΗΟΤΗ
ΚΟΥΣΕΝΕΚΑΣΤΟΣ
ΤΗΔΙΑΔΙΑΛΕΚΤΩ
ΛΑΛΟΥΝΤΩΝΑΥΤΩ

Book hand Tirana ANA 10 Minuscule C12

Quadri-linear (between 4 horizontal lines), cursive. The body of the text hung off the top line, but essentially between the 2 central lines. The ascenders and descenders are between the outer lines.

Ekthesis

περί τῆς σῆς τελείας + Mt 24:1
προσῆλθον ἀπὸ οἰματικαὶ αὐτοῦ.
ὅτι ἰδοὺ ἐγὼ πέμπω τοὺς ἀγγέλους μου
ὅτι ἰδοὺ ἐγὼ πέμπω τοὺς ἀγγέλους μου
ὅτι ἰδοὺ ἐγὼ πέμπω τοὺς ἀγγέλους μου
ὅτι ἰδοὺ ἐγὼ πέμπω τοὺς ἀγγέλους μου
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ὅτι ἰδοὺ ἐγὼ πέμπω τοὺς ἀγγέλους μου
ὅτι ἰδοὺ ἐγὼ πέμπω τοὺς ἀγγέλους μου
ὅτι ἰδοὺ ἐγὼ πέμπω τοὺς ἀγγέλους μου

The Center for the Study of New Testament Manuscripts (www.csntm.org) has granted permission for this image to be used.

Book hand Tirana ANA 10 Minuscule C12

Mt 24:1-7

Note "p" and ligatures (joined letters)

πρ + ΠΕΡΙ ΤΗΣ ΚΥΗ ΤΕΛΕΙΔΕ +
 (α' ιε . . . ω κ η κ η . . . προσηλθον μαθηται αυτου . . . ωπιθξαι αυτω . . .)
 προσηλθον αυτω οι μαθηται αυτου .
 εβιδεξαι αυτω τας οικοδομας του
 ιερου . ο δε ΙC ειπεν αυτοις . ου βλε
 πετε παντα ταυτα ; αμην λεγω
 υμιν . ου μη αφεθη ωδε λιθος επι λι
 προσηλθον οι μαθηται αυτου
 εβιδεξαι αυτω τας οικοδομας του
 ιερου . ο δε ΙC ειπεν αυτοις . ου βλε
 πετε παντα ταυτα ; αμην λεγω
 υμιν . ου μη αφεθη ωδε λιθος επι λι

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Dating the New Testament documents

Papyrus

Parchment

Scroll and Codex

Inks

The basic Timeline

Brief history of letter shapes

The next Timeline

Dating by:

Radiometric means

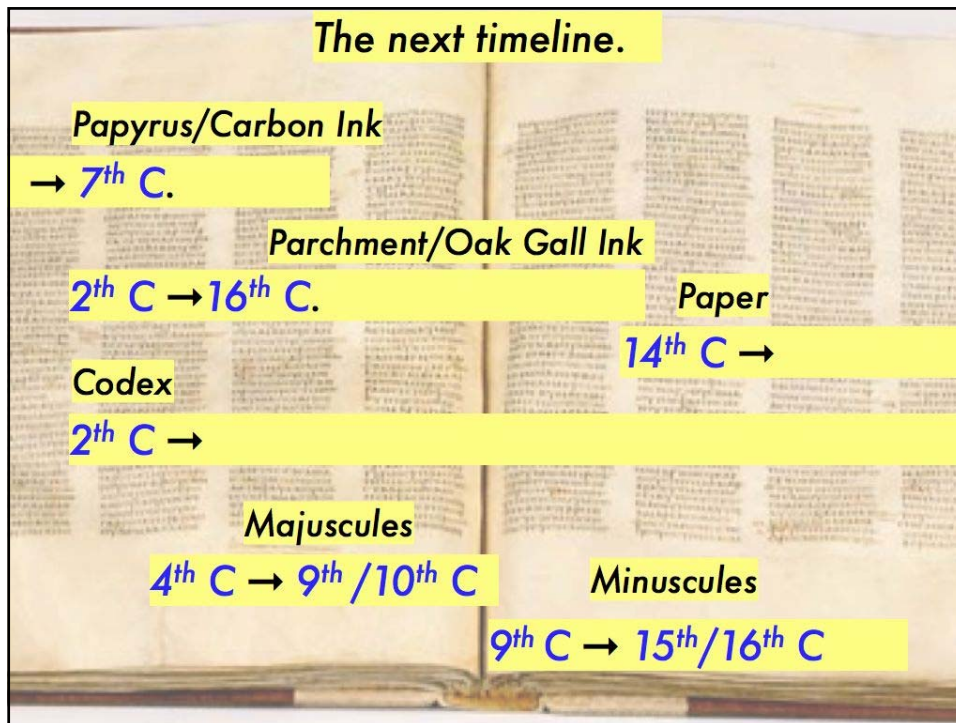
Recorded historical events

Internal dates

Provenance

Paleography





Types and numbers of NT Manuscripts

2007

Papyri	118	Plant material
Majuscles	318	Capital letters
Minuscules	2877	Cursive writing
Lectionaries	2433	Bible readings
Total	5746	

S.D.Charlesworth "The Gospel Manuscript Tradition" in "The content and Setting of the Gospel Tradition", ed M.Harding, A.Nobbs, Eerdmans, Michigan, 2010, p31.

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Inks

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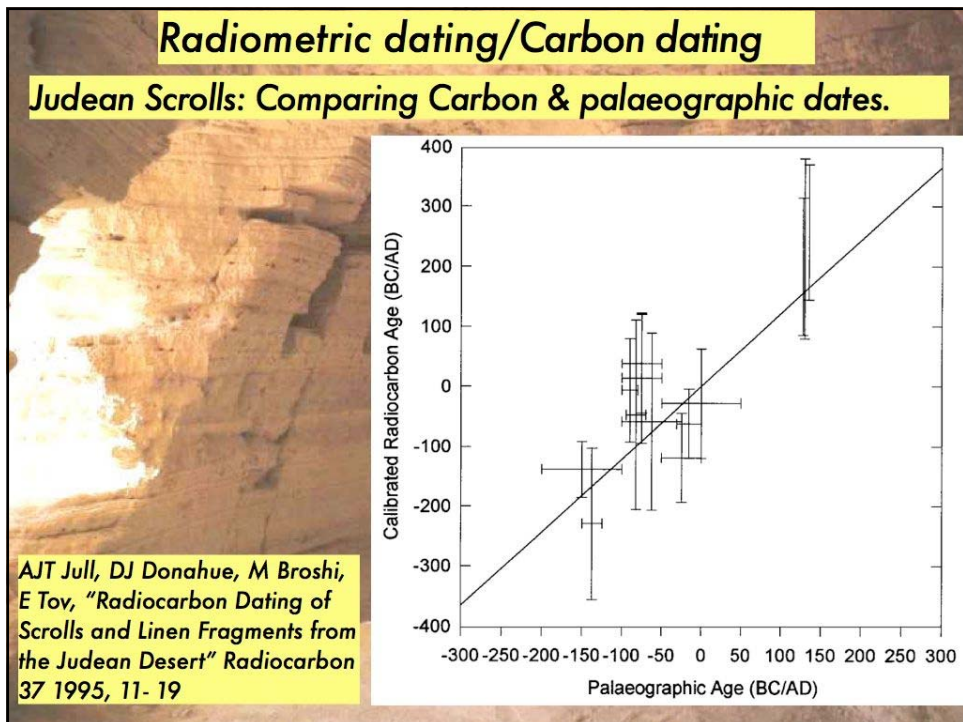
Brief history of letter shapes

The next Timeline

Dating by:

- Radiometric means
- Recorded historical events
- Internal dates
- Provenance
- Paleography

3089	17	P.Lond. VIII 1521
		P.Erl. Dissep. 2.36
		23, 40, 45, 4
3093/10	18	P.Erl. Dissep. 2.30
		42, 45, 71
3103/11	19	P.Erl. Dissep. 2.49
		P.Lond. VIII 1521
		SP XXI 1250/14
		P.Rom. Cont. 83.1
		P.Mich. XII 652
	19.7	
		P.Ju. VIII 886.7
3112	20	P.Erl. Dissep. 2.2
		29, 40, 45, 48, 4
		P.Erl. Dissep. 1.29
		P.Lond. VIII 1521
		P.Princ. Beil 191
		P.Mich. XII 652
3134	22	P.Cair. Iud. 122.1
3145	23	P.Princ. Beil 123
		49, 44, 108, 104
		P.Cair. Iud. 122.1
3167	25	P.Arkans. 19.16
		P.Princ. Beil 176
3178	26	P.Princ. Beil 202



Radiometric dating/Carbon dating

Codex Tchacos

The codex contains the Coptic **Gospel of Judas**, the **First Apocalypse of James**, the **Letter of Peter to Philip**, and **Book of Allogenes**.

The **Gospel of Judas** was Carbon dated by the University of Arizona's NSF-Arizona Accelerator Mass Spectrometry to **280 CE ± 60 years**.

This does not seem to be the one mentioned by Irenaeus.

A manuscript of the **Gospel of Thomas** has been Carbon dated to **348 CE ± 60 years**.

Radiometric dating/Carbon dating

The wooden sticks from 2 **Chinese manuscripts** from Dunhuang (CP2547 662–781CE and CP2490 862–994CE) were found to have the **expected dates**.

Journal of Cultural Heritage, Volume 11, Issue 4, 2010, Pages 398-403

Eleven samples (parchment and paper) from **medieval manuscripts** at the University of Seville have been radiocarbon dated on the 1 MV AMS facility at the CNA in Seville (Spain). A **general agreement** was found between **Carbon and palaeographical dates**.

Santos, F.J., Gomez-Maertinez, I., Garcia-Leon, M., "Radiocarbon dating of medieval manuscripts from the University of Seville", *Nuclear Instruments and Methods in Physics Research Section B, Volume 268, Issue 7-8, p. 1038-1040.*

Recorded historical events

Manuscripts found at Herculaneum were burnt at the time of the eruption of Vesuvius on 24th August 79 CE.



These are now being read by using MSI
They are Greek literary and philosophical documents, e.g. works by Philodemus who died 125 years before.

R.S. Bagnall, p32

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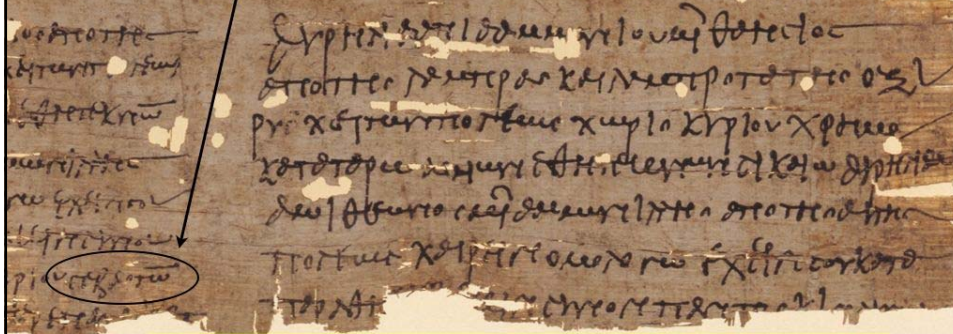
A collage of images related to dating New Testament documents. It includes a papyrus scroll, a parchment fragment, a scroll, and a list of manuscript references. The list includes the following entries:

3009	47	P.Vind. VIII 1527 P.Erd. Dingo 236 23, 41, 44, 45, 51
309310	38	P.Erd. Dingo 230 42, 45, 71
310311	49	P.Vind. VIII 1522 SB XVI 123818 P.Boiss. Cont. 93.1
	19.7	P. Mich. XII 6522
3112	30	P. Vind. VIII 886.7 P.Erd. Dingo 222 29, 40, 43, 48, 49 P.Erd. Dingo 129 P.Vind. VIII 1521 P. Prim. Beil 191 P. Mich. XII 6522 P. Cantabrig. 122.1
3134	22	8.6.4
3145	23	P. Prim. Beil 125 49, 142, 168 P. Cantabrig. 122.1
3167	25	P. Nidame 19.16 P. Prim. Beil 176
3178	26	P. Prim. Beil 202

Some manuscripts give some reference to when they were written or signed.

P.Oxy.1714 285 - 304 CE **Documentary Hand**

(sebastōn is the plural of Augustus)

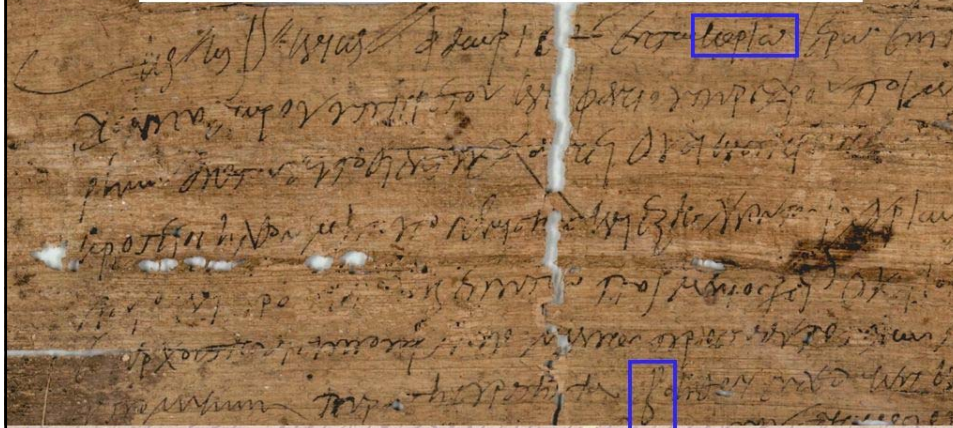


Contract for a deposit of money (≈ 110 talents).
Probably time of Diocletian and Maximian .

Documentary hand P.Oxy.3759 2nd Oct. 325CE

σ// = ἔτους year

κ σ// και ι σ// και β σ// Φαῶφι ε. ἐν τῷ Κοριῶ ἱερῷ.



In year 20 and 10 and 2, Phaophi 5, in the temple of Kore
Three separate years given.

NAMES OF MONTHS IN THE Egyptian Months			AGRICULTURAL YEAR		
	<i>Egyptian</i>	<i>Macedonian</i>	<i>Roman</i>		
Ache (Flood)	Θώθ	Δίος	Σεβαστός (or Γερμανικός)	Sept.	The Nile flood peaks and begins to fall. The vintage completed. Dates are picked.
	Φαῶφι	Ἀπελλαῖος	—	Oct.	The Nile flood is past. Sowing of cereal crops begins. Olives are gathered. The harvest of dates is at peak.
	Ἄθϋρ	Αὐδναῖος	Νέος Σεβαστός (or Δομιτιανός)	Nov.	Sowing of cereals continues, cultivation begins. Olives and some dates are gathered.
Prôje (Winter)	Χοίακ	Περίτιος	Νερώνιος (or Ἀδριανός)	Dec.	Cultivation continues. Olives are gathered.
	Τϋβι	Δύστρος	—	Jan.	The olive harvest ends. The new growing season of vines and olives begins.
	Μεχείρ	Ξανδικός	—	Feb.	Preparations are begun for the grain harvest.
	Φαμενάθ	Ἄρτεμισίος	—	March	Preparations continue.
Shômû (Summer)	Φαρμουῖθι	Δαΐσιος	—	April	The grain harvest begins.
	Παχών	Πάνεμος	Γερμανίκειος	May	Harvesting continues, threshing begins.
	Παϋνι	Λώσιος	Σωτήριος	June	Rise of the Nile begins. Harvesting of cereal crops ends, threshing continues.
	Ἐπίφ	Γορπιαῖος	—	July	The Nile, accelerating its rise, enters the flood stage. Threshing ends.
	Μεσορή αἱ ἐπογόμεναι	Ἵπερβερεταῖος	Καيسάρειος	August August	The Nile approaches full flood. The vintage begins.

(N. Lewis, *Life in Egypt*, 11)

Dating NT manuscripts with Colophons

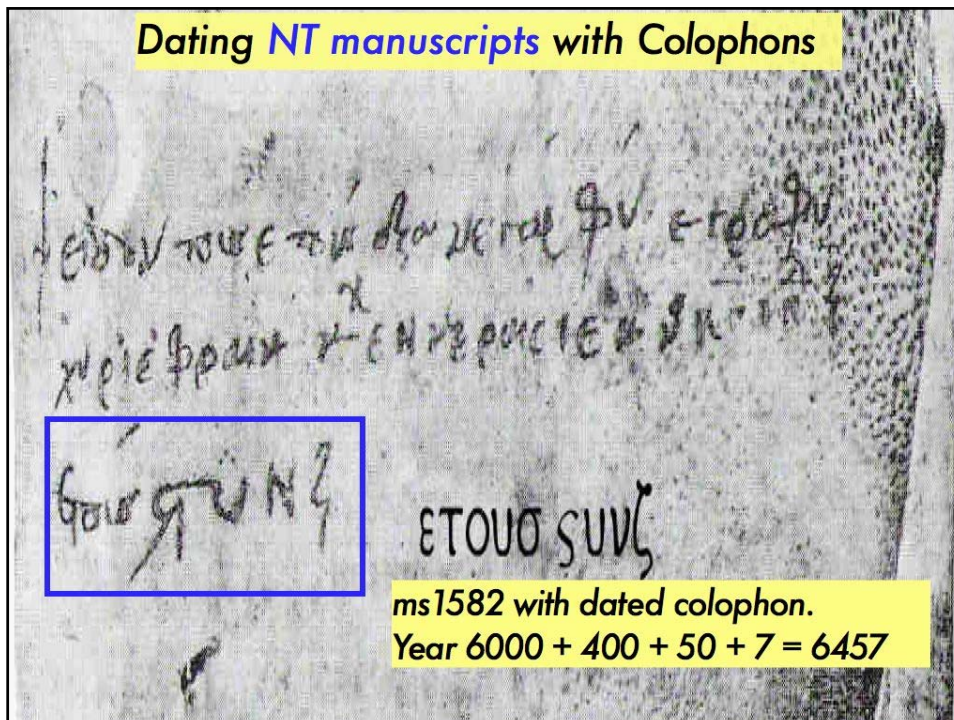
Colophon κολοφῶν ("peak or finishing touch")

Sometimes a scribe added some personal touches to a NT manuscript. They may give the scribe's name and the date the manuscript was finished. Sometimes there are references to natural disasters and epidemics.

ΚΕΙΥΧΕ ΜΕ ΤΟΥ ΘΕΟΥ ΕΛΕΗΣΟΜΕ
 ΤΟ ἄμαρ τῶλο τερον παν τοῦ
 ἡμαρ τῶλομαῦ τῶμιον ταχα
 και μαχαρον, τῶμμαλαι κηρ.
 ασηδ

ms 1305 dated 1000 + 200 + 40 + 4 = 1244 AD

Dating NT manuscripts with Colophons



Calendric Complexity

In Rome, Greece, Egypt, Syria and Mesopotamia there were different calendars in use.

Some were defined as an era counting **cumulative years from an event**. Greek 1st Olympiad was in 776 BCE and founding of Rome on 21 April 753 BCE (AUC).

Some were non-cumulative by a **yearly political election** (when Constantine was Consul for the 2nd time, i.e. 303).

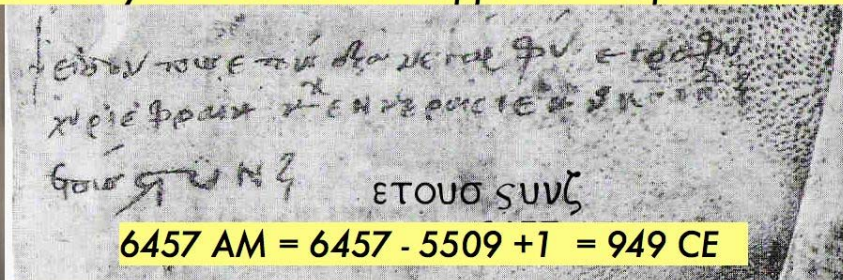
Some were **cyclic**, e.g. **indiction years** were a 15 year cycle started by Licinius in 312 CE.

Additionally, there were often **multiple calendars** used through the year in a particular country (civil, festival).

Calendric Complexity

ms1582 was written by "Michael, monk [and] sinner," who finished his work "in the month of March, the 5th day, the 6th hour, the year 6457, the 7th indiction."

For the Byzantines creation happened 1 Sept 5509 BCE



Dating NT manuscripts with Colophons

Some manuscripts dated by colophon.

ms18	1364	ms174	7/9/1052
ms60	1297 for Gospels	ms201	1357
ms81	20/4/1044 by John	ms203	1111
ms93	1079 by Anthony	ms223	1244?
ms104	1087	ms225	1192
ms160	1123	ms229	1140
ms162	13/5/1153	ms245	1199

Some non specific Colophons

He who does not know how to write supposes it to be no labour; but though only three fingers write, the whole body labours.

As travellers rejoice to see their home country, so also is the end of a book to those who toil [in writing].

The end of the book; thanks be to God!

Metzger & Ehrman p29

Some non specific Colophons

There is no scribe who will not pass away, but what his hands have written will remain forever.

Written in Irish in a European manuscript

It is cold today. That is natural; it is winter. The lamp gives a bad light. It is time for us to begin to do some work. Well, this vellum is certainly heavy! Well, I call this vellum thin! I feel quite dull today; I don't know what's wrong with me.

Fool and knave, can't you leave the old reading alone and not alter it!

Metzger & Ehrman p29

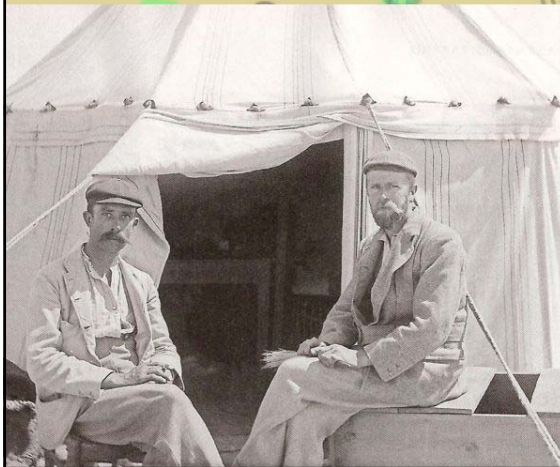
Dating the New Testament documents

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- Parchment
- Scroll and Codex
- Inks
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 - Paleography



Provenance

If the history of the site is known, then where a manuscript was found can give a fix on the date.



Grenfell and Hunt at Oxyrhynchus in 1897, a site occupied up to the Islamic invasion.



Provenance

Oxyrhynchus ("the place of the sharp nosed fish") is 190km S of Cairo.

Grenfell & Hunt looked in deserted houses, rubbish dumps (10m high) and tombs (found rolls and cartonnage). It produced a **huge collection of papyri**.

These included literary works (Aristotle, Unknown Gospel, NT, other Christian books) and letters, contracts, reports, incantations, medical prescriptions, maths tables etc.

They range in date from 323 BCE to 641 CE.

A.S.Hunt "Papyri and Papyrology", *Journal of Egyptian Archaeology*, Vol 1, No 2, 1914

Provenance

The **Beatty papyri** were reported in **1931** as found in the **Fayûm**.

Turner & Roberts think the Beatty papyri came from a Christian school at **Panopolis** (390km S Cairo).

Turner, *Greek Papyri*, pp52-53
Roberts, *Manuscript*, p28, n1

The **Bodmer papyri** were found in **1952** at **Pabau**, and it is also likely they were copied at **Panopolis**.

From S.D.Charlesworth "The Gospel Manuscript Tradition" in "The content and Setting of the Gospel Tradition", ed M.Harding, A.Nobbs, Eerdmans, Michigan, 2010, p39.

Provenance

Oxyrhynchus revealed some 40 papyri and 4 parchments spanning 16 of the NT books.

There were 20 copies of 9 other Christian writings plus 3 unidentified Gospel-like writings.

The 7 copies of the Shepherd of Hermas seem spread evenly from the late 2nd C through to the 4th C, so the canonical documents do not stand out as a separate group.

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1000	17	P. Oxy. 1001-1010	middle 2nd cent. 1
		P. Oxy. Group 24, 13, 19,	3rd cent. 1
		12, 14, 15, 17,	
100-1000	18	P. Oxy. Group 1, 30, 36,	4th cent. 1
		45, 47,	
700-1000	19	P. Oxy. Group 1, 49	4th cent. 1
		P. Oxy. 1001-1010	4th cent. 1
		P. Oxy. 1234-1243	4th cent. 1
		P. Oxy. 1011-1012	4th cent. 1
	18.7	P. Oxy. 1012-1013	4th cent. 1
		P. Oxy. 1014	4th cent. 1
1000	20	P. Oxy. Group 22, 10, 23,	4th cent. 1
		16, 18, 44, 42,	
		P. Oxy. Group 1, 204	4th cent. 1
		P. Oxy. 1011-1012	4th cent. 1
		P. Oxy. 1013-1014	4th cent. 1
		P. Oxy. 1015-1016	4th cent. 1
		P. Oxy. 1017-1018	4th cent. 1
		P. Oxy. 1019-1020	4th cent. 1
		P. Oxy. 1021-1022	4th cent. 1
		P. Oxy. 1023-1024	4th cent. 1
		P. Oxy. 1025-1026	4th cent. 1
		P. Oxy. 1027-1028	4th cent. 1
		P. Oxy. 1029-1030	4th cent. 1
		P. Oxy. 1031-1032	4th cent. 1
		P. Oxy. 1033-1034	4th cent. 1
		P. Oxy. 1035-1036	4th cent. 1
		P. Oxy. 1037-1038	4th cent. 1
		P. Oxy. 1039-1040	4th cent. 1
		P. Oxy. 1041-1042	4th cent. 1
		P. Oxy. 1043-1044	4th cent. 1
		P. Oxy. 1045-1046	4th cent. 1
		P. Oxy. 1047-1048	4th cent. 1
		P. Oxy. 1049-1050	4th cent. 1
		P. Oxy. 1051-1052	4th cent. 1
		P. Oxy. 1053-1054	4th cent. 1
		P. Oxy. 1055-1056	4th cent. 1
		P. Oxy. 1057-1058	4th cent. 1
		P. Oxy. 1059-1060	4th cent. 1
		P. Oxy. 1061-1062	4th cent. 1
		P. Oxy. 1063-1064	4th cent. 1
		P. Oxy. 1065-1066	4th cent. 1
		P. Oxy. 1067-1068	4th cent. 1
		P. Oxy. 1069-1070	4th cent. 1
		P. Oxy. 1071-1072	4th cent. 1
		P. Oxy. 1073-1074	4th cent. 1
		P. Oxy. 1075-1076	4th cent. 1
		P. Oxy. 1077-1078	4th cent. 1
		P. Oxy. 1079-1080	4th cent. 1
		P. Oxy. 1081-1082	4th cent. 1
		P. Oxy. 1083-1084	4th cent. 1
		P. Oxy. 1085-1086	4th cent. 1
		P. Oxy. 1087-1088	4th cent. 1
		P. Oxy. 1089-1090	4th cent. 1
		P. Oxy. 1091-1092	4th cent. 1
		P. Oxy. 1093-1094	4th cent. 1
		P. Oxy. 1095-1096	4th cent. 1
		P. Oxy. 1097-1098	4th cent. 1
		P. Oxy. 1099-1100	4th cent. 1
		P. Oxy. 1101-1102	4th cent. 1
		P. Oxy. 1103-1104	4th cent. 1
		P. Oxy. 1105-1106	4th cent. 1
		P. Oxy. 1107-1108	4th cent. 1
		P. Oxy. 1109-1110	4th cent. 1
		P. Oxy. 1111-1112	4th cent. 1
		P. Oxy. 1113-1114	4th cent. 1
		P. Oxy. 1115-1116	4th cent. 1
		P. Oxy. 1117-1118	4th cent. 1
		P. Oxy. 1119-1120	4th cent. 1
		P. Oxy. 1121-1122	4th cent. 1
		P. Oxy. 1123-1124	4th cent. 1
		P. Oxy. 1125-1126	4th cent. 1
		P. Oxy. 1127-1128	4th cent. 1
		P. Oxy. 1129-1130	4th cent. 1
		P. Oxy. 1131-1132	4th cent. 1
		P. Oxy. 1133-1134	4th cent. 1
		P. Oxy. 1135-1136	4th cent. 1
		P. Oxy. 1137-1138	4th cent. 1
		P. Oxy. 1139-1140	4th cent. 1
		P. Oxy. 1141-1142	4th cent. 1
		P. Oxy. 1143-1144	4th cent. 1
		P. Oxy. 1145-1146	4th cent. 1
		P. Oxy. 1147-1148	4th cent. 1
		P. Oxy. 1149-1150	4th cent. 1
		P. Oxy. 1151-1152	4th cent. 1
		P. Oxy. 1153-1154	4th cent. 1
		P. Oxy. 1155-1156	4th cent. 1
		P. Oxy. 1157-1158	4th cent. 1
		P. Oxy. 1159-1160	4th cent. 1
		P. Oxy. 1161-1162	4th cent. 1
		P. Oxy. 1163-1164	4th cent. 1
		P. Oxy. 1165-1166	4th cent. 1
		P. Oxy. 1167-1168	4th cent. 1
		P. Oxy. 1169-1170	4th cent. 1
		P. Oxy. 1171-1172	4th cent. 1
		P. Oxy. 1173-1174	4th cent. 1
		P. Oxy. 1175-1176	4th cent. 1
		P. Oxy. 1177-1178	4th cent. 1
		P. Oxy. 1179-1180	4th cent. 1
		P. Oxy. 1181-1182	4th cent. 1
		P. Oxy. 1183-1184	4th cent. 1
		P. Oxy. 1185-1186	4th cent. 1
		P. Oxy. 1187-1188	4th cent. 1
		P. Oxy. 1189-1190	4th cent. 1
		P. Oxy. 1191-1192	4th cent. 1
		P. Oxy. 1193-1194	4th cent. 1
		P. Oxy. 1195-1196	4th cent. 1
		P. Oxy. 1197-1198	4th cent. 1
		P. Oxy. 1199-1200	4th cent. 1

Palaeography

Palaeography (or paleography) is about determining the date of a manuscript from the handwriting by comparing it with established dates and conventions.

"Paleography is a last resort for dating"

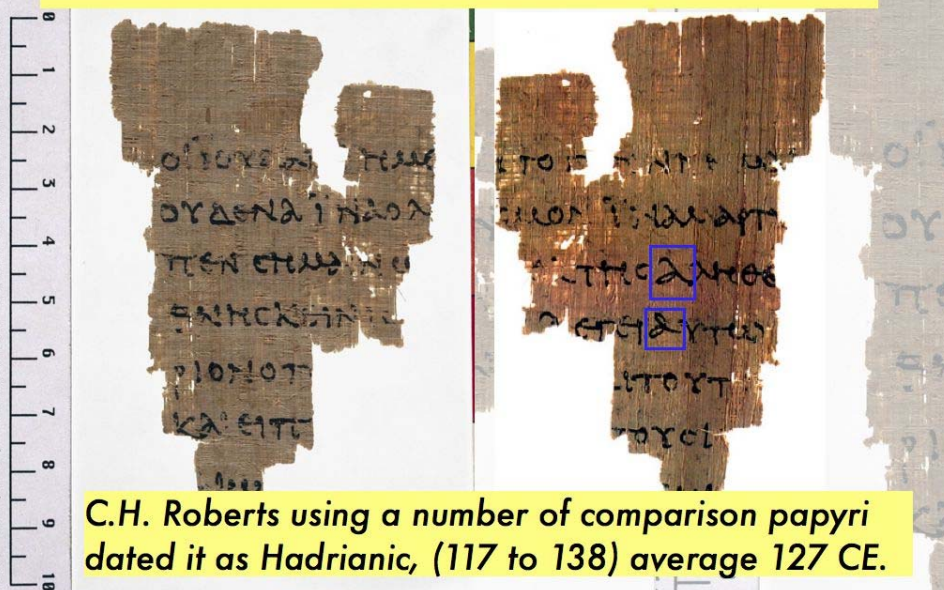
Brent Nongbri: HTR 98:1 2005, 23-48

"For book hands, a period of 50 years is the least acceptable spread of time" as they are long lived,
Eric G. Turner, "Greek Manuscripts of the Ancient World", Institute of Classical Studies, London, 1987, 20

Codex Washingtonianus (W 032) 4th or 5th C Freer Logion in Mark

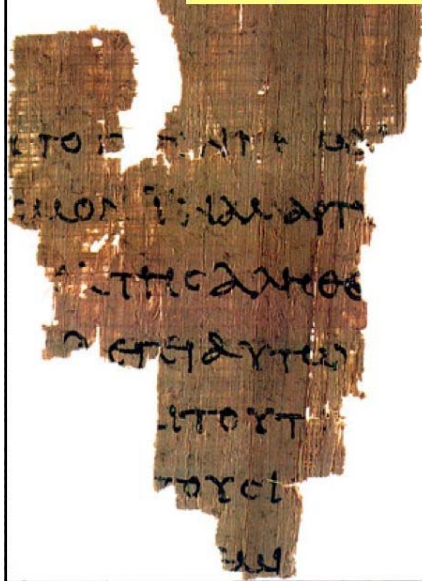
p⁵² Rylands Greek Papyri 457

60mm x 89mm 114 letters Jn 18:31-33,37-38



C.H. Roberts using a number of comparison papyri dated it as Hadrianic, (117 to 138) average 127 CE.

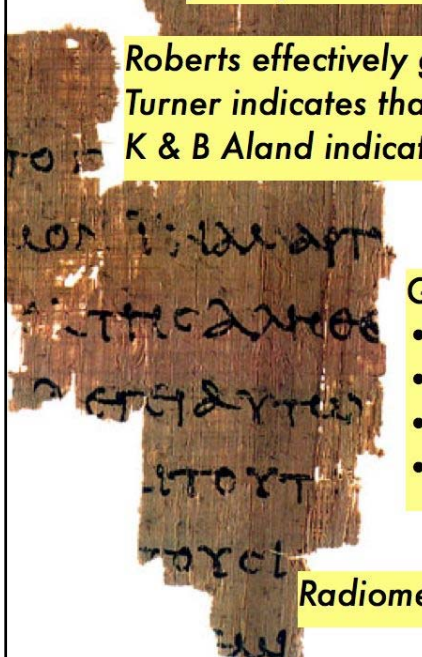
p⁵² Rylands Greek Papyri 457



<u>Roberts papyri</u>	<u>Date CE</u>
Egerton Papyrus2	?
P.Fayûm110	94
P.Lond.inv2078	81-96
P.Oslo2.22	127
B.G.U.1.22	114
P.Flor.1.1	153
<u>Nongbri papyri</u>	
P.Mitch.inv5336	152
P.Amh.2.78	184
P.Oxy.51.3614	>200
P.Oxy.41.2968	190

Brent Nongbri 2nd C/early3rd C but Young Kyu Kim 1st C

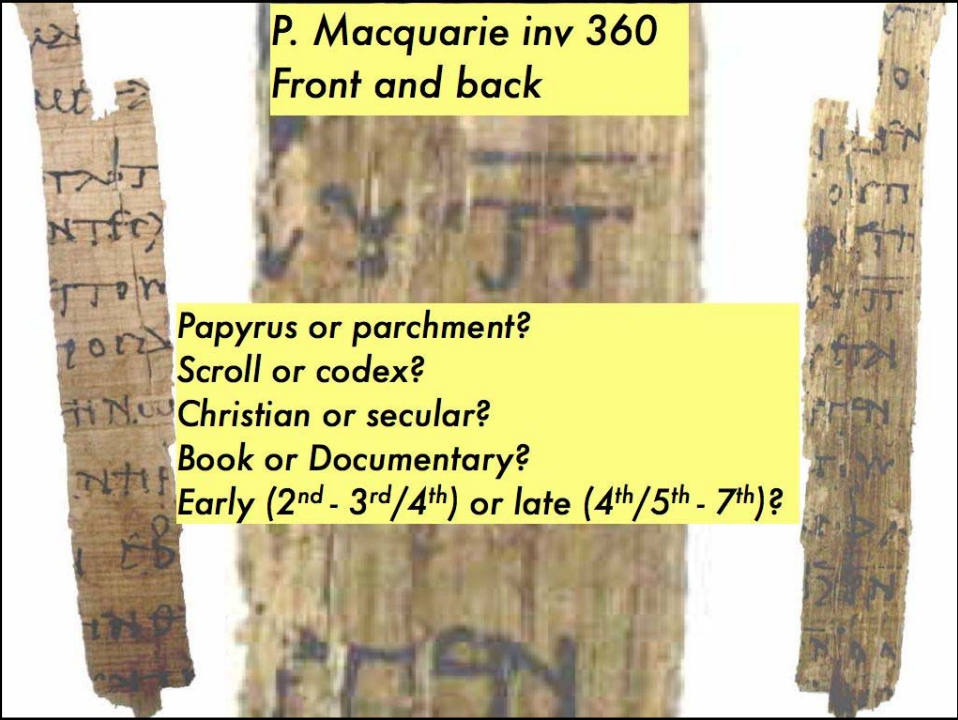
p⁵² Rylands Greek Papyri 457



Roberts effectively gave 127 CE ± 11 years.
Turner indicates that ± 25 years is a minimum.
K & B Aland indicate that ± 40 years is appropriate.

- Giving a date 130 ± 40 years:
- retains Robert's date
 - includes Kim's 1st C arguments
 - includes Nongbri's concerns
 - uses the Alands' criterion.

Radiometric dating would give ± 60 years.



**P. Macquarie inv 360
Front and back**

**Papyrus or parchment?
Scroll or codex?
Christian or secular?
Book or Documentary?
Early (2nd - 3rd/4th) or late (4th/5th - 7th)?**



P. Macquarie inv360 Acts 2:30 – 37

**3rd C Egypt
Possibly the oldest fragment of Acts.
Stored in Australia at Macquarie Uni.**

Dating the New Testament documents

Papyrus

Parchment

Scroll and Codex

Inks

The basic Timeline

Brief history of letter shapes

The next Timeline

Dating by:

Radiometric means

Recorded historical events

Internal dates

Provenance

Paleography

The End

Peter Eyland

www.insula.com.au

Codex Burney 19 or ms 481 Luke 1