**Liber Primus Ideas and Suggestions**

*This is mostly a talk page. Any additional information will be welcome.*

Canterbury Tales Runes? anyone look at that?

## Bruteforce Software & Programs Section

### *Cicada\_Breaker*

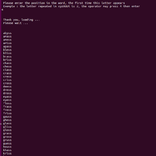
This is a tool I programmed to find words with a repeated letter in a specific position, or even a sequence with different letters. **Note: You need Linux to run it. Setting up a bootable USB with Linux takes 10 minutes. Check this for instructions :**

☀ <http://www.ubuntu.com/download/desktop/create-a-usb-stick-on-windows>

Tuto for Linux/Ubuntu/Backtrack ...

Launch a terminal from the same folder containing the program, write ./Prog then press enter if you want to use the 1-sequence mode, or ./Prog2 for the 2-sequence mode.

The more people on it the better results we get.

[](http://uncovering-cicada.wikia.com/wiki/File:Screenshot_from_2016-01-15_02-52-43.png)<http://paf.im/H0rBI>

***Update 1.0 :***

This tool will allow you to find for example words like :

xxxSS, xxBBxxxx, xxxOUxxxx, xABxxxxx ...

You have to enter the length of the word,

the sequence you're looking for,

and its position in the word.

The tool will give you all the words with this combination.

For this beta version you can use only 360 000 words,

I will work on it in order to use the whole dictionnary.

Notice that it is very optimised, it will take no time.

***Update 1.1 :***

***-*** Some bugs now are corrected

- Optimization ++

- 3 new modes

1 : Fixed length / Fixed position

  2 : Free length / Fixed position

  3 : Fixed length / Free position

  4 : Free length / Free position

***Update 1.2 :***

- 2 new modes :

5 : One character / Fixed position / Fixed length

6 : One character / Fixed position / Free length

***Update 1.3*** ***:***

- 8 new modes for 2 sequences

- You have many combines for the searched sequences based on

the length of the word containing the sequences (fixed and free),

the order of sequences (fixed = one before the other, free =

all possibilities for them) and their

position (Fixed seq\_1 at position X and seq\_2 at position Y).

PS : A Bruteforce code may come in the next updates

PPS : Next step the Bruteforce program

**Infos :**

The code starts being heavy, I have included the 2-sequence search option (with many modes like for the one sequence program) in a new program.

**PS : You don't have to pay the guy for his program "DECPRYPTIONIST", since this one does the same thing, whatever ... (EDIT: decryptionist is much more powerful... anyway this is a quite ok free alternative)**

Cicada\_solver

**EDIT : Instructions on how to help us with runes guessing and what we are looking for based on my conversation with Cicada\_Solver and XDDD dude**

For example  : ᚳ ᛁ ᚱ ᚳ ᚢ ᛗ ᚠ ᛖ ᚱ ᛖ ᚾ ᚳ ᛖ - C I R C U M F E R E N C E - this 13 letter word was not encrypted at all ( all it took is to look at the gematria and replace runes with letters) . There are only 4 words that long in the entire book :

ᛇᛈᛋᚢᛚᚪᛈᚢᚳᛖᚠᛞᛉ  - (EO ) P (S/Z) U L A P U (C/K) E F D X

ᛖᛞᚪᚫᛏᚩᛠᛖᛠᛉᚳᛠᛏ   -   E D A (AE) T O (EA)E (EA) X (C/K) (EA) T

ᛈᚳᛇᚢᛏᚳᛡᛇᛝᚾᚢᚻᚦ   -    P (C/K) (EO) U T (C/K) (IA/IO) (EO) (NG/ING) N U H (TH)

ᛒᛠᚠᛉᛁᛗᚢᚳᛈᚻᛝᛚᛇ  -    B (EA) F X I M U (C/K) P H (NG/ING) L (EO)

or

ᚳ ᛁ ᚱ ᚳ ᚢ ᛗ ᚠ ᛖ ᚱ ᛖ ᚾ ᚳ ᛖ ᛋ - C I R C U M F E R E N C E S - this 14 letter word was also not encrypted . There are 3 more words that long in the book :

ᛒᚷᛞᛉᛗᛒᛉᚳᛝᚦᚣᛞᚫᛠ  - B G D X M B X (C/K) (NG/ING) (TH) Y D (AE) (EA)

ᛠᛁᛡᚦᛝᚾᛖᚾᚠᚩᛗᛖᚣᚪ  - (EA) I (IA/IO) (TH) (NG/ING) N E N F O M E Y A

ᛏᚠᛂᚱᚹᚠᛋᚾᚹᛂᛖᛒᚢᚦ   -  T F J R  W F S N W J E B U (TH)

**The explanation from Cicada\_Solver** : Let's take the word "CIRCUMFERENCES". If we assume the word repeats itself in the book and you think that after encryption it gives ᛏᚠᛂᚱᚹᚠᛋᚾᚹᛂᛖᛒᚢᚦ   -  T F J R  W F S N W J E B U (TH) then you have to guess which opetations have been applied on the word ᚳ ᛁ ᚱ ᚳ ᚢ ᛗ ᚠ ᛖ ᚱ ᛖ ᚾ ᚳ ᛖ ᛋ ( CIRCUMFERENCES) with the gematria to have the result ᛏᚠᛂᚱᚹᚠᛋᚾᚹᛂᛖᛒᚢᚦ ( T F J R  W F S N W J E B U (TH) )

When you have an idea try it on other words and correct your guess since you can verify the other possibilities (if you detect a rune, then use cicada\_breaker to guess the others one by one and remember each rune reduce the possibilities from n! to (n-1)!).

If everyone try this, by the end we would have lots of runes guessed (wrong and maybe right) but it is the same operation so we all think about the results and a dozen of minds are much better than one for this task. By comparing the results we can be sure about some runes.

Don't forget that an operation should be bijective and should be able to be reversed otherwise the operation of encryption/decryption could not be executed, so Cicada has necessarily used bijections to encrypt Liber Primus.

And when we have some runes guessed we can launch the bruteforce program.

Anybody that wishes to help - please download the software and try this method . The more people on it the more info for bruteforcing.

I have 29! possibilities which is about 8.841762\*10^30 permutations, if we suppose that there is no other operations added on the other pages, this is just not possible to calculate even with super calculators I've got in labs (in which case it would take years before having the solution). It is a factorial-complexity so it is O(n!) for 2X variables we need 1000 years to find. (For n = 20 it takes about 800 years)

In mechanical engineering, we deal with problems like this one since the inversion of a matrix needs the calculation of determinants and the law looks like this one O(n!), we transform the system to another form having a polynomial-complexity O(n^p) then we have our solution in no time.

The Liber Primus problem is easier cuz we have words and sequences (this is its Achilles' hell), which can be guessed cuz they are comprehensible not like numbers and results of a calculation for determinant (In CFD and FEM the dimensions of the problem give us n = 10^9 easily ... so it is 10^9! operations).

I maybe repeate what I've said, but it is important to guess runes with the cicada\_breaker V1 I gave you, it would reduce the possibilities to 2.092279\*10^13 possibilities and this is rational to bruteforce in labs.

When I said statistical studies and probabilities, you have to take the decrypted pages, take the words reapeated and look for them in the other pages since lenght is known. What you should do is to take long words, write them in runes and copare them with long words from Liber Primus, if you figure out about the permutations applicated on the word, each time you reduce the possibilities from n! to (n-1)! and so on, and this is why I said that is ok if the runes are wrong, the calculation doesn't take time and the worst thing that could happen is having a wrong text. By the end we eliminate the "lenght-of-the-word" possibilities, and since the word is a finite space we can try all the other possibilities by hand.

The only solution to bruteforce is to cut the gematria table to 1X - 1Y permutations, 1X to guess and 1Y to bruteforce.

Guys this is a mathematical problem, we should deal with it with maths if you don't find the key fixed by cicada.

I cannot be more clear than this time.

PS : Do not forget, I assumed that there is only one opperation applied on every rune.

Dr B 67

### 

### *Python Program for Solving Runes:*

### collaborative effort to get as many different cyphers put into the program:

### <https://github.com/Be5haram/CICADA2K16/blob/master/RuneSolver.py>

## Important notice for Primus solvers

## 

**UPDATE: Two members of our community are currently working on decryption tools (one - a dictionary word search, the other - a Vigenere solver)**

## Pages 28 to 32 Discoveries and Decryptions

### Page 28

[](http://uncovering-cicada.wikia.com/wiki/File:28_-_G8mJjnF.jpg)

Characters have been translated from Runic to Latin on page 28:

(Lines here correspond to lines on the page)

[ <http://pastebin.com/NqF7M1Xn> ]

Anyone who has ideas about these words, please leave your thoughts in the comment section. Please understand, that after #, the coding system changes (# = 13 red dots).

Two softwares have been found to help crack the runes:

<http://www.thewordfinder.com/classicscrabble.php>

[**http://www.bestwordlist.com/indexbeginning.htm**](http://www.bestwordlist.com/indexbeginning.htm)

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**EDIT:**Thank you, <jacquerie> for pointing that pages were already transliterated. Please follow this link:

[ <https://titanpad.com/vFCy7T5p0O> ]

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2016-07-14: Did some research and I was wondering about word #19 of page 28. Used several word finders on the web incl. bestwordlist and I couldn't find any match for words with at least 12 characters having a ????????X?XX structure. Can anyone confirm or disprove this?

2016-07-15: I just did the same before reading your statement. With the same result. There is no word in modern English with that structure.

I also isolated the two-letter-words and checked with the 23 modern English two-letter-words that are likely to appear in a written text. I might have made a mistake, but I think I didn't: There is no correlation that makes sense.

Furthermore: Some word structures do resemble Germanic or Romanic languages, but I do have a problem with the short words in this text. There are too many. Appart from English I don't know any language with that many short words (that are actually being used).

And why did the use the Ango-Saxon Futhorc instead of the way more popular Nordic alphabets? By the way, I'm pretty sure that the language used is NOT Old English, and no original text as well (as far as I know, they didn't have consonant gemination in AS Futhorc).

Last but not least I examined the drawings to decide whether they contain cipher/cryptic runes (Wikipedia for more information on that topic). I havn't found a system that I know of (in addition I've never heard of Futhorc cipher runes, only Futark). On the other hand you do talk about twigs and branches when dealing with runes, so maybe the trees do hold a key...

(Written by a linguist who used to professionally work with runes. So the thoughts should be somewhat qualified.)

## Some interesting facts about the number 15:

* The number of chapters in the book (whereas for "chapter" I mean a paragraph with a big red starting rune) is exactly 15.
* From page 41 to page 56 you can see some kind of "plants" at the left and right edges of the page. The right side plant, near the center, has 5 dots. The left side one, however, has only 3 (two of them being removed. It's easy to see if you zoom in). 3 and 5 are the prime factors of 15.

## Pages 8-14 straws/saplings meanings & Discoveries

### *Fibonacci Tree reference*

The saplings from page 8 and on represent the Fibonacci tree. The top of the sapling has exactly 13 branches, which is the number you'd expect from a Fibonacci tree like the one on the right. To find more: <http://oeis.org/A000045/a000045.html>

So the highlighted branches are: 2-3-5-6-8-10-11-13. Anything up with this? Branch 2 and branch 5 make me think of runes somehow.

[](https://uncovering-cicada.fandom.com/wiki/File:Fibotree.png)

[Saproling](https://uncovering-cicada.fandom.com/wiki/File:Saproling.png)

There are 58 pages in total, labled 0-57. 57 is the most accurate integer that can be squared to reach a number closest to 3301. It cannot be a coincidence.

This leads me to believe that the page number is extremely relevant to solving the next stage of this puzzle. Seeing as page 57 is unencrypted, I believe that we are looking for an encryption where the page number (x) can be substituted with 57 (or 58) to equal 0, since the 57th (or possibly 58th if you count the number of pictures) runic page is unencrypted.

Calculating the number 3301 in Base58 gives "ur," which is a Sumerian city. This supports the idea of Cuneiform, and also adds the possibility of x being 58.

I will continue to post my findings.

"Ur" is also the name of the second rune in the alphabet (ᚢ).

If you add up all the numbers of the pages in the runes you get 0+1+2+3+4+5+6+7+8+9+10+11+12+13+14+15+16+17+18+19+20+21+22+23+24+25+26+27+28+29+30+31+32+33+34+35+36+37+38+39+40+41+42+43+44+45+46+47+48+49+50+51+52+53+54+55+56+57 = 1653 which is the 57th triangular number, if you add up its numbers then u get 15.

If you add up the numbers in the runes individually like this 0+1+2+3+4+5+6+7+8+9+1+0+1+1+1+2+1+3+1+4+1+5+1+6+1+7+1+8+1+9+2+0+2+1+2+2+2+3+2+4+2+5+2+6+2+7+2+8+2+9+3+0+3+1+3+2+3+3+3+4+3+5+3+6+3+7+3+8+3+9+4+0+4+1+4+2+4+3+4+4+4+5+4+6+4+7+4+8+4+9+5+0+5+1+5+2+5+3+5+4+5+5+5+6+5+7 = 393 which if u add up its numbers u get 15 too. If you reverse 393 u get 393 which is not prime, but it is only divisible by 11 and 53 which are both prime (without counting 1 and itself).32 is the closest number that if you square it you get almost 1033, and 57 is the closest to 3301, which is the total number of names of pages. Also if you reverse 1653 and 393 and do 3561 - 393 you get 3168 which is 133 away from 3301, which is 1033 without counting its 0, and their two factors are prime, 7 and 19, 7+19 = 26. 133 is also a polygonal number of octagonal(7). 7 appears both when you add up the numbers in 3301/1033/133 and 133 in its polygonal. The 133rd prime is 751 which I really like because its digits appear almost everywhere in their relationships with other numbers, the 751 prime is 5701, the octal of 751 is 1357 (going up 2 by turn and all primes except 1), its duodecimal is 527 (close tho).

32 + 26 = 58 which is the total amount of runes. 32 is a hamming number and its prime factorization is 2\*2\*2\*2\*2. The 32nd prime number is 131, which adds up to 5, same as 32. The factors can be found by multiplying the first factor (1) by 2 until you get to 32 (1, 2, 4, 8, 16, 32). If you reverse 32 you get 23 which is also a prime, the 9th prime. The base8 of 26 is 32 which I think isn't a coincidence. A funny thing about 26 and 101 (the 26th prime) is that in 26 between the base8 and the base12 have a difference of 10 (octal 32, duodecimal 22) and 101 has a difference of 20 between the base12 and the base16 (duodecimal 85, hexadecimal 65). Also since 32 is the closest to 1033 in squaring there could be something, but 32 squared is 1024 which if you add its numbers you get 7, same as 1033 and 3301.

From this I think it is aiming at page 32 and maybe 26 or something like that.   And by the way in this titanpad <https://titanpad.com/vFCy7T5p0O> with the runes and its transcriptions in a few pages there are

(13) at the end or in the middle, the pages with that are 26, 32, 56, 3 (page number 3 has it 3 times), 53, 54. Also in page 32 there is a blurry tree which then only appears in page 55, but in 55 only appears the outline and in 32 it is the interior and blurry. Interesting fact about 32 + 26, it is equal to 58 but if you add 3+2 which is 5 and put it before 2+6 which is 8 you get the same answer which is 58, which is the total amount of pages.

And I forgot to say that in the bible the Genesis 32:26 is "And he said, Let me go, for the day breaks. And he said, I will not let you go, except you bless me." which has 101 characters (the 26th prime) and 23 words (32 reversed), I think that might not just be a coincidence and that it might also be pointing at pages 32 and 26.

Also there are 32 letters in the icelandic runes (see <https://en.wikipedia.org/wiki/Icelandic_orthography>) and there are also 26 letters in the alphabet, I don´t think this is a coincidence either. When Q, V and X are excluded, there are 32 letters in the Polish alphabet too (<https://en.wikipedia.org/wiki/Polish_alphabet>) maybe this is just to decipher the runes in the pages or something.

I want to add to the Pabster's edit that 32th page is linked to the 2016 puzzle image, both contain the tree.

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Nothing new for long time. I guess it is over this time.

1. These are just ideas.
2. This is regarding the amount and number of pages of runes.
3. 58 pages named 0-57.
4. 3301/57 = 57.9122807018 which makes it the closest to its root
5. 1033/32 = which also makes it the closest root
6. Maybe something to do with pg 32?
7. 57.9122807018 : 32.28125 = 1.7939912705301
8. 1+7+9+3+9+9+1+2+7+0+5+3+0+1 = 57
9. 5 + 8 = 13
10. 3 + 2 = 5
11. 5 + 7 = 12
12. All add up to 30
13. Maybe something?
14. The factors of 57 are 3 and 19, both primes.
15. Factors of 32 are 2, 4, 8 and 16. Nothing special I think.
16. 3 + 19 = 22
17. 2 + 4 + 8 + 16 = 30
18. 30 + 30 (from the above section) - 22 = 38
19. 3 + 8 = 11  prime
20. 1 + 1 = 2  also prime
21. Maybe something?
22. Any ideas or do you think this isn't anything, just add up to this or dismiss it.
23. Tnx

So, I was thinking about it and I think there may be a correlation with each individual page adding up to a certain number and then either being, or creating two prime factors. Each page must lead to certain numbers that, when arranged correctly are an encryption key of some sort possibly in order from front to back, but it wouldn't be a long shot to say that its just another encrypted puzzle. It wouldn't be a longshot to say that it spells out another link in the deep to visit. Hopefully we'll get more information but this is just my take after mulling over it for a while. But i think its just another code to crack. I think once we figure out each pages hidden numbers we'll figure out whether it is or isn't another riddle, then we'll be well on our way to the end of this one, if they're even still participating...

3301 has given a hash of a new onion link, saying that we should find it; the hash was broken into 5 lines; putting one after another and passing the full string (128 bytes = 1024 bits) to "[hash-identifier](http://tools.kali.org/password-attacks/hash-identifier)" returns it is likely sha512 or Whirlpool; 3301 uses sha1, so I would guess it is not Whirlpool;

knowing it was a long shot, I created sha1 hashes of each outgessed data; then I took the first character of each line, added "onion" to the end and generated the sha512 hash of it; then the same with the second character of each line and so on (made a script to do it ;-)); none of the sha512 hashes matched the hash given by 3301;

Bruteforcing the sha512 hash with [hashcat](https://hashcat.net/hashcat/) would take several months, if not years, even with the community working together.

----- EDIT\_3: PLEASE. It's been over 2 years so FORGET THE OUTGUESS DATA. You can replicate same kind of results very easily by creating similar pages and trying to embed outguess data on them. The steganography artefacts Outguess creates are very visible and apparent in the image, especially at the amount you suppose it would yield. The data is just plain random.

You can reverse engineer this effect by trying to embed the same amount of binary data on a similar image to the pages. The outguess data is a coincidence and the similar headers it gives is due to the fact that all the pages are alike with a lot of whitespace. I've gone this route. The solution lies elsewhere and even if you don't believe me, you can replicate my test results very easily in 2-3 minutes. Put your efforts to something useful.

## Page 57 QR Scan

<a href="<tel:0421812877725>">0421812877725</a>. (scanned from mayfly, most likely redlaser glitch)

digits are most likely glitch with red laser. Saved just in case.

Addition: is HTML code, a link to telephone number. Does not call, but google search of phone number showed this Pastebin site:

☀<https://pastebin.com/AQRAQ9yS>

with following message:

0421812877725

May you find this

Here's a hint

<http://www.youtube.com/watch?v=4xys0D9LNC8&feature=youtu.be&t=50s>

The following tones are:

1st string 3rd fret

1st string 1st fret

2nd string 3rd fret

2nd string 1st fret

2nd string(0)

2nd string 1st fret

Good luck

-Jens

posted as 3301 by guest

(high likelihood of it not being relevant, but posted anyways.)

## **Regarding pages 49, 50, and 51...**

*Note: I'm new here. I just noticed a few things when reading through this. I hope it can help.*

"Where 4F corresponds to 255": RGB color values range from 0-255. Also mentioned that 4F is maximum value seen in the pages. Could it be reference to colors

--A note on this. If 255 refers to the RGB color system, 4F is equal to 79 in this system. 79 is a prime number.

Also, sexagesimal number systems were developed by the Babylonians - this is closely related to 360 days/year. If I counted correctly, the 255th day in a non-leap year is October 13th. Leap years it is October 14th. Does this have anything to do with it?

*I didn't see this covered anywhere, so I put it here. Should this be a comment? I dunno. -Gopher*

4F corresponds to 255 if you think in base 60. It starts from 0? to 4F, so we have something to 255. ASCII? Colours? Maybe it is a black and white image.

It should also be noted that there are 256 numbers in total (pg. 49 is a block of 10x8 numbers, pg. 50 has 13x8, and pg. 51 has 9x8.) This could either lead to the idea of a 16x16 greyscale image, or 4 8x8 blocks that contain values for an 8x8 RGBA image.

One thing regarding the numbers being sexagesimal is that they can refer to angles (360 degrees in a circle (six 60s), 60 arc minutes in a degree, and 60 arc seconds in an arc minute), and thus potentially it can refer to geographic locations.

Additional idea on this: What if you took the pages and go through all the RGB values, every pixel with a 255 in R, G, and B is disregarded and you consider those that are not 255, aka pure white. I did this with one page and it did come up with a few minor extra markings, but I figured it may be something to consider. -Skellitor301

## Final page possible clue?

I haven't been following this for long but I thought about the possibility that the final page might contain important information so I opened it in notepad. I'm sorry if it's not much but I found a copyright in it and am wondering if it could potentially be a clue. It said "copyright Artifex Software" so maybe they set it up or something.

Artifex Software sites:

<http://www.artifex.com/> <http://www.ghostscript.com/> <http://smartoffice.artifex.com/> <http://www.mupdf.com/>

\***EDIT\***

Artifex is the software they used to create the PDFs, nothing special there.

mntrRGB XYZ

Слова это карта, необходимо преобразовать RGB в XYZ это ведь легче простого.

Words is a map, you need to convert RGB to XYZ, it's easier than ever.

## **Libra Primary**

what if they knew that whoever would decode this would have dyslexia, and so Liber Primus would automatically be decoded in their head as Libra Primary (as in the constellation Libra) libra is the scales so ''liber primus is the way'' would only mean [balances is the way] as for ''beware false paths'' Scorpions are a symbol of treachery, but libra is the symbol of justice idk... but some key words would be (balance,scorpion,claw) and key numbers would be 2.6/ 2.7/ 3.9/ 4.5/ 4.9/ 5.2/ 5.7/ 5.9/ 6.1/ 6.5/ 9.4 only got this much out of 30min OCD but you might be able to do something with it, but beware i got no clue so...yeh

if balance is the key, and this Libra is the way then during the equinox where day and night are equal follow where the Libra constellation is pointing.

~Punqi

kinda related: libra primus can also be read as the main scale or the vernier scale, which has a relation to shifting.

Punqi, they also said "don't take this as true" only accept what you know. So I think it may be opposite to what everyone is thinking. 58|85 - the story with the man and the master is an old tale in latin (either juvenle or virgil forget which). In this story the student became the master (opposites again). - Han-Um

## **Regarding 3301 referring to Babylon and Ur**

After some research I noticed that the characters from the rune pages looked strikingly like Babylonian text. I'll look into that and see if I can decrypt something from the document.

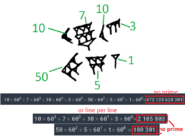
Sumerian, possibly Babylonian/akkadian but I think the runes are more latin/greek in nature. A lot of what it currently states are old tales from there. - Han-Um

## **Cuneiform**

(17 13 55 1)  17\*60+13=1033 55\*60+1=3301

<http://it.stlawu.edu/~dmelvill/mesomath/Bignums.html>

It is also possible, if this were written in base-60, that the numeric values are 607 603 305 1. When converted into base-60 from their initial state, the numbers become HDt1, which is only directly referential to a gene of *Arabidopsis thaliana*, a flower. This may be notable, as the flower itself somewhat resembles some of the images of plants dispersed throughout the book.

[](https://uncovering-cicada.fandom.com/wiki/File:Symbols_page34.png)

## **Another instance of 15**

[[](https://static.wikia.nocookie.net/uncovering-cicada/images/1/19/Liber_Primus_Ideas_and_Suggestions.JPG/revision/latest?cb=20160619011322)](https://static.wikia.nocookie.net/uncovering-cicada/images/1/19/Liber_Primus_Ideas_and_Suggestions.JPG/revision/latest?cb=20160619011322)

Probably a coincidence, but of note.

## Research on apostrophe symbol on page 35

Since apostrophes' usage are limited in English, I found this:

PE'T in the beginning of a sentence on 4th line.

I guess this is IT'S. And then calculated the shifting, I got this numbers (3,2,1).

Could this be a hint on the encryption method?

## Some observations on the OutGuess data

## The length of header and footer increases as the page number increases.

1. All header/footer overlapping part are the same.
2. Each file has the same length, roughly 58KB (and there are 58 pages)

Some thoughts: because the file is unreadable, and header length/ footer length is changing. The only thing I could come up with is XOR. We know that a XOR a = 0 and 0 XOR a = a. Finally all evenly overlapped headers/footers will be canceled to 0. If this still not going to give us any hint, I will quit... (Because the last possibility is that this whole shit was created by some cipherpunks who prefer it will never be decrypted :(

Outguess often outputs false positive outputs.

## Liber Primus in gematria values

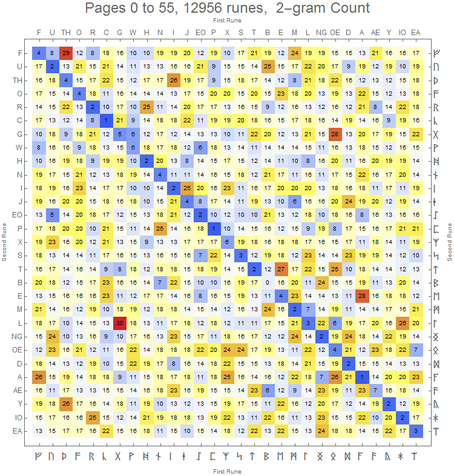
Here is link to unsolved pages of Liber Primus in gematria values. <http://pastebin.com/NrLjVjdq>

Pages: <https://imgur.com/a/8xnWx#0>

## Low occurrence of two-same-rune bigrams

After a lot of analyzing of runes in unsolved pages of LP only conclusion we figured out is that LP is not coded by simple short key vigenere cipher (or monoalphabetic cipher).

Analysis of two grams (pairs of runes) is the only deviation from randomness of other analysis results. It shows strange and unexpected low number of rune pairs with two same runes. Somehow key/cipher produces very few same rune pairs in ciphertext. Same runes 2-grams happen but are very rare.

[](https://static.wikia.nocookie.net/uncovering-cicada/images/1/12/2_grams.png/revision/latest?cb=20160905090214)

Its [almost impossible](http://imgur.com/ZCytrje) that such low occurrence (86 same rune 2-grams in ~13.000 runes) would happen randomly using standard polyalhabetic cipher with most stream shift keys. Algorithm or stream key for some unknown reason cause this. **This is so far only solid clue towards cipher/key found in runes.**

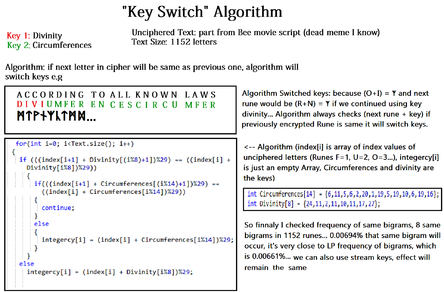
We have found some sequences of numbers that when used as a stream key produce low number of same rune 2-grams. This is example: <https://oeis.org/A061474>, or this <http://pastebin.com/PFb6eQiD>

And we can reproduce similar results with made up enciphering algorithms created to deliberately cause same thing. Such algorithms include previous rune gematria position or value when calculating shift for enciphering. Note that cipher doesnt totally exclude 2 rune repetition, it only makes it happen ~5 times less likely as any other 2 different rune 2-gram.

In the 58 pages there are 89 (prime) repeating pairs, and their Gematria values sum to 4337 (twin prime). They appear evenly spread throughout the pages, with some clusters on certain pages. When placed in order they appear in the text there is a suggestive "W,W,W" 7 repeats from the end... For more info see:

<https://docs.google.com/spreadsheets/d/1-Tqf9SuLXv75YQfpAr7zIm7s1oF4ZWO_jqU-sg9PuN0/edit#gid=0>

## UPDATE: Algorithm that generates low same-two bigrams

[](https://static.wikia.nocookie.net/uncovering-cicada/images/a/ad/Algorithm.png/revision/latest?cb=20170519200925)

Algorithm generates extremely low same-two bigrams in cipher...  
  
  
  
  
  
  
  
  
  
**NOTE:**% in code is (mod) C++  
  
also you can archive same effect if you jump to (n+1)th number in stream key, or if you reset the key, instead of switching it... there are many possibilities

## Frequency analysis of runes in Liber Primus by chapters

Nothing unexpected, distribution of runes is close to random distribution. [Google doc sheet](https://docs.google.com/spreadsheets/d/1DjK-AWjdP6pldAyVbKyCchAEYK0O1LCBLSm72Bbkd1c/edit#gid=0)

Hcaltroms version: <http://imgur.com/D7wpFZG>

UPDATE: we found patterns in Frequency analysis, for more info: [http://uncovering-cicada.wikia.com/wiki/Frequency\_Analysis\_(Liber\_Primus)](https://uncovering-cicada.fandom.com/wiki/Frequency_Analysis_(Liber_Primus))

## 3 ways how to apply key to runes in cipher text

Often when encrypting / decrypting, you want to combine a message-rune with an encryption key to give a cipher-rune. The encryption key can be expressed as another rune. Therefore, it is informative to investigate possible ways that this can be done. Presented below are some common examples. The runes have two numbers that can represent them, their position (pos) in the Gematria Primus or their rune-prime-equivalent (pri). So there are four possible combinations, (where r is any rune)...

Full article: <http://cicada3301.boards.net/thread/31/combining-runes-1-visual-representation>

Another one: <http://cicada3301.boards.net/thread/33/modular-exponentiation-ciphers-runes>

Author: mortlach

## Spreadsheet for decoding Liber Primus

## 

<http://cicada3301.boards.net/thread/43/rune-decrypting-spreadsheet>

[drive.google.com/open?id=0BzOKQofOkvB3YmR1cjJCZGNCdXM](https://drive.google.com/open?id=0BzOKQofOkvB3YmR1cjJCZGNCdXM)

Guide on how to use the spreadsheet:

1. Sheet2 is the Gematria converted to shifts. To create these shifts we use the Prime Counting Function ,Pi(p), on the prime numbers associated with each letter in the Gematria.
2. page\_x is the xth page of the Liber Primus. There are 58 pages total, beginning with a count of 0 we have pages page\_0 to page\_57  
   (\*) There are many "hidden" pages in the spreadsheet for organization, right click on the bottom and select "unhide" [imgur.com/asLy62L](http://imgur.com/asLy62L%C2%A0)

(\*\*) The visible pages are those that begin each distinct section of the Liber Primus. The current theory is that each section uses a different key, so these pages are the best to start.

1. Top row is the original cipher text of the page.   [imgur.com/wZVmpq9](http://imgur.com/wZVmpq9%C2%A0)
2. Rows 3-32 are the shifts from the cipher text in row 1   [imgur.com/UasnRcL](http://imgur.com/UasnRcL)
3. Rows 35-64 are the english letters corresponding to the shifts in **4.**  [imgur.com/RQANPSJ](http://imgur.com/RQANPSJ)
4. Rows 66 - 70 are the ones to use. [imgur.com/RHV0bYJ](http://imgur.com/RHV0bYJ)

The "**Count**" row denotes the index corresponding to the letter position on the page.  The "**Modifier**" row is the Encryption Key - use this to try various key sequences.  The **Modifier**(Key) is applied to the cipher text to obtain the "**Decoded**" row.

See page\_56 and page\_57 to see how these were decrypted.  Page 56 uses the "Count" row to look up the index of the prime corresponding to Pi(count) and subtract it from 59, mod 29.

## Ether8unny CICKADA tool

**As seen on TV!**

<https://ether8unny.shinyapps.io/cickada/>

## Repeat of "DJU BEI" in Liber Primt

We found that string " DJU BEI" or in runes "-ᛞᛄᚢ-ᛒᛖᛁ" repeats two times in Liber Primus. On 27.jpg and 55.jpg. Both times next character after DJU BEI is "AE" "ᚫ". But on page 27 its mid sentence while on page 55 it appears on next page in new paragraph.

This could mean that same key and same plaintext was used on that string or it could be just coincidence.

Links that can be usable investigating this:

* <https://titanpad.com/vFCy7T5p0O>
* <https://github.com/rtkd/iddqd/tree/master/liber-primus__images--unsolved>
* <https://github.com/rtkd/iddqd/blob/master/liber-primus__transcription--full/liber-primus__transcription--full>

## The Pages are The Map

[](https://static.wikia.nocookie.net/uncovering-cicada/images/1/1a/The_map.jpg/revision/latest?cb=20180601003212)

From someone that doesn't know a thing about coding,

but watched enough pirate movies to try playing with the map.

Cicada referenced the pages of the book as a map, so I've tried topping all the pages on one another (because it's a map, not plural maps like before and because of the overlaping mentioned sooner) to see if the letters don't actually form a map of a specific place. The lines seem to be shifted somehow (pic1). By removing pages: 3 4 5 6 7 10 15 21 22 23 27 33 35 36 37 38 39 40 41 42 43 49 50 51 53 54 56 57, I got the regular pattern of lines containing only pages 0 1 2 8 9 11 12 13 14 16 17 18 19 20 24 25 26 28 29 30 31 32 34 44 45 46 47 48 52 55 (pic 2). Which is a group of 28 pages that are irregular and a group of 30 pages with regular line spacing.

[](https://static.wikia.nocookie.net/uncovering-cicada/images/3/39/Regular_map.jpg/revision/latest?cb=20180601004229)

However I'm pretty sure I sorted 2 pages wrong after reading this page, because various clues led other more reasonable people to numbers 32 and 26. I'm useless as a crypto kid because I don't know anything about programming but here you go I hope this helped somehow.

The second group of pages (after applying some effect and lowering opacity, pic3) shows what I guess is Fibonacci sequence. I've been trying to reorder the pages to get those with higher lines and those with lower lines, but spacing is spread randomly, sometimes two or three types of spacing on one page and I couldn't reorder them by any logic known to me.

When I come to think of it, the messages from later years could be a metaphor pointing to problem with "irregular spaces" between the lines. Going to play with the layers some more, I'll update later

[](https://static.wikia.nocookie.net/uncovering-cicada/images/a/a0/Echo.jpg/revision/latest?cb=20180601123442)

Update: could go as far as 31 and 27. Every other page from the group of 27 definitely breaks the pattern. Pretty sure the sequence of broken lines plays a role, but the "wrong" layer would change the whole key so I can't get there so far. Turning 19 on and off doesn't help. (in reference to number 19

previously excluded from something)

Update II: Okay, I somehow (regular and irregular areas, number of pages in every next cluster) came up with these 23 numbers: 3 2 1 2 2 2 1 4 1 5 3 3 1 5 1 1 9 5 3 1 2 1 2 No clue what to do with them, but 23 is the most "eerie" number in weird culture (23 enigma), so it could be something. Even though these are based on groups of 31 and 27 so double check.

[](https://static.wikia.nocookie.net/uncovering-cicada/images/d/d2/Cadaver.jpg/revision/latest?cb=20180601122834)

Also a little note: the cadaver is not black and white. It's a colored picture with very low saturation. One of the squares could be QR, didn't try

## Some sort of Symbolism

I've never been the best with cyphers or decoding any sort of thing, thus when I first saw this I didn't give it much thought, but when I heard this was about privacy, something I wholeheartedly defend, I decided to do some digging into some historical symbolism.

My research led to the question "Who were the first to break someone's privacy, who were the first to make private information public ?", this in turn led me to the Sumerians who along with some of the first established systems of writing also made gravestones a sort of mainstream thing which included the deceased's name, DOB, DOD and profession. Although this may seem common to us, I assume this was somewhat strange to people back then, since this information would have only been available to those close to the deceased. This to me represents some of the first recorded breaches of privacy, which leads to the conclusion that in order to decrypt the whole book, one must use some sort of sumerian iconography or dialect.

This may very well prove to be completly useless but it is my belief that any good mystery has to have some historical reference.

P.S If this does turn out to be completly useless, I apologize to anyone who may have wasted time with it.

## Etherpad with ideas about possible ciphers

<https://etherpad.wikimedia.org/p/cicada>

Untried methods to solve LP

Methods:

• Using the outguess data to relocate the runes before shifting them.

• Counting spaces AS runes instead of not.

• Breaking LP into sections and applying the gematria value of the first rune to shift the next rune. Or the pi\_digit(n)th rune. Or variations.

• Applying gematria value of the first rune to the last rune (of the section).

• Re:rune analysis.

• Translating runes > old english > english.

• Something similar to that [3301-fib prime] spiral from page 15 ( [http://uncovering-cicada.wikia.com/wiki/Onion\_7:\_numbers\_on\_page\_15](https://uncovering-cicada.fandom.com/wiki/Onion_7:_numbers_on_page_15) )

Ideas:

• Maybe it was written backwards or upside down.

• Multiple different languages.

• LP can be divided into sections by artwork used on pages.

• “Find the divinity within and emerge” could be a reference to finding the word “divinity” to help figure out the pattern.

• Fibonacci trees - Beaufort cipher?

• Spirals - Route cipher?

• Undecrypted pages may not use words. Maybe binary.

• Rune - base29 integer?

• <https://en.wikipedia.org/wiki/DADGAD> tuning of mp3’s?

## An observation about page markings

I had a search through the wiki, and noticed that somehow noone had pointed out that the dots that look like stars on pages 23 and 56 look really similar to the constellation Crux, also known as the Southern Cross. I doubt this helps any, but I thought I'd point that out on the off chance it's of any use. This constellation is on the Australian and New Zealand flags as well, and might hold other significance that I'm not aware of. Good luck all!

-erra\_407

## Circumference as a Reference

I was looking at the top of this page with the code breaker and wanting to use "Circumference" as a reference to help decipher the runes, I was going to attempt to get started by hand and I realized that none of the 13 rune sets have the correct repeating pattern that they should have in order to meet "Circumference" there should be the runes for "c" the first rune, the 4th rune, and the 12th rune. None of the other 13 rune words match that, nor match the "e's" but they do, being long words, have repeating runes. I'm only fluent in one language, and dabble in 2 others, barely enough to get around, so I tried looking up circumference in different languages, I might've missed languages, I used a website, not a translator, but regardless I didn't find any letter patterns that would match the 13 rune words. Another thing I've noticed is the "pattern" of the runes between the four words don't match either, and if some encrypting means "F's" need to be skipped then these words might not be 13 runes long.

I'm also inclined to look for 8 rune words that match the pattern of "Divinity"

Common words to look for besides Divinity are: Student, Master, Pilgrim and, Koan

Something I noticed that could be helpful, and I don't know if it has been tried yet, but I haven't seen anything saying it has, is looking for rune patterns to find or create words. Words that begin and end in the same rune, I noticed there was one with 4 runes, this could be a 4 or 5 letter word, but it would have to both begin and end in the same letter, that should narrow it down a lot. It could be in any language of course, narrowing it down is really all this would do, but if we found every word in English that follows those rules we could brute force some runes to make sense grammatically. The rune word I found is on page 0, and it is word 30, this page also has a couple one rune words, which in English would have to be either "I" or "A" but this could all be deciphered into code and not have to match any language. There are also a lot of two rune words and 3 rune words.

I have no coding experience, but it seems most people have been focusing on deciphering via coding and computer languages, I tried running through computer language translators with an output to ASCII using all code looking numbers from the book, from images or messages that are claimed on here to have not been solved, from the lines by the tweets. I couldn't find any input type that gave an ASCII output or that gave one that made sense, I did find similar code from a pastebin titled "Raiden's Contest" and couldn't find anything about this contest, at least not on google, but i don't believe it's related, here's the link if someone is curious: <https://pastebin.com/U4ZXueaS>

Like I said I don't have experience coding, all that comes to mind when I see the hex is the console commands from skyrim

I've only been looking into this for less than 2 days, I'm not looking to be involved with Cicada 3301, but I love puzzles and recognizing patterns and the such, hopefully this'll spark some ideas, I'm going to look through the unsolved pages and look for more patterns or rune words, even if it's just finding one rune words in sections, "A" or/and "I" can be assumed and placed throughout to try and fill in runes.... Hangman style.

*Add-on:* Has anyone tried translating it with normal Anglo-Saxon and running it through "AZ Decrypt", or whatever was used recently to decipher the final part of Z408 regarding the zodiac killer?

-uc2609