Proposal to Encode Additional Glagolitic Characters in Unicode

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Section 1. Introduction

Glagolitic, also known as "Glagolitsa", is an alphabetic writing system used to record Church Slavonic and other Slavic languages. Originating in the 9th Century, it is the earliest known Slavonic alphabet. The creation of the alphabet is attributed to the younger of the teachers of the Slavs, St. Cyril.

Glagolitic writing may be found in mediæval manuscripts and in printed liturgical books, mostly of a Croatian origin. In Bulgaria, Glagolitic was gradually replaced by the Cyrillic alphabet, and this Cyrillic alphabet was subsequently used also by other Slavs. For its part, the Glagolitic script has been preserved by some communities in Croatia even up to the present. Extant Glagolitic texts are of enormous value to linguists, paleographers, and scholars of liturgy.

Support for Glagolitic in the Unicode standard is necessary for two purposes. First, for the digital storage of manuscripts and printed matter in an electronic format (including associated functions such as searching and string comparison). Second, for the development of computer fonts that contain the repertoire of Glagolitic characters necessary for use in academic publications. In this proposal, we will provide examples of Glagolitic characters both from the manuscript tradition and from recent academic works.

The base repertoire of Glagolitic characters has been included in the Unicode standard since version 4.0. Nonetheless, this repertoire is incomplete because it lacks combining (superscript) Glagolitic letters. Such combining letters exist in the Glagolitic script and play a function that is analogous to their role in Cyrillic – that is, they are used in abbreviations that are either space saving devices (for example, commonly written words are often abbreviated) or in *nomina sacra.* For full support of the Glagolitic writing system in Unicode, we therefore propose the creation of an additional block of characters entitled *Glagolitic Extended.* We propose also the encoding of two additional characters to the Glagolitic block of Unicode. These characters occur in recently discovered manuscripts and have been also used in academic literature that discusses these manuscripts. We also propose to change the properties on two Cyrillic characters so that they may be used with Glagolitic writing.

Section 2. Combining Glagolitic Letters

The following table contains examples of combining Glagolitic letters that occur in various Glagolitic manuscripts and in printed literature. We propose to encode the characters as one block, in the same codepoint order as the non-combining (base) Glagolitic letters encoded at U+2C00 and following. This allows for simple computer manipulation of Glagolitic characters, as well as leaving some encoding positions empty to be used in the unlikely instance that additional combining characters are discovered by researchers and need to be encoded. Note that all of the indicated codepoints in this proposal are provisional codepoints in the Private Use Area (PUA).

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Name	Codepoint	Appearance	Location in Sources
Combining Glagolitic Letter Azu	U+E000	✝	*Srez.*, p. 42; *MissSin*, 13v18, 44r16-17, 45v20; *PsDem*, 27v6, 42r7, 118r5
Combining Glagolitic Letter Buki	U+E001	ᛒ	*Srez.*, p. 254; *MissSin*, 38r13, 49v20
Combining Glagolitic Letter Vede	U+E002	℧	*Srez.*, p. 59; *MissSin*, 7r2, 22r10, 40v10, 52r17; *PsDem*, 104r8
Combining Glagolitic Letter Glagoli	U+E003	℅	*Srez.*, p. 254; *PsDem*, 117r1
Combining Glagolitic Letter Dobro	U+E004	ᚎ	*Srez.*, p. 228; *MissSin*, 54v14; *PsDem*, 21v1, 42r8, 78r19, 131r9
Combining Glagolitic Letter Yestu	U+E005	э	*Srez.*, p. 59; *MissSin*, 29r20, 46r12
Combining Glagolitic Letter Zhivete	U+E006	ж	*Srez.*, p. 84
Combining Glagolitic Letter Zemlja	U+E008	⊕	*EuchSinV*, 103r16m
Combining Glagolitic Letter Izhe	U+E009	ⴔ	Srez., p. 82
Combining Glagolitic Letter Initial Izhe	U+E00A	ⵅ	*PsSinV*, 177r18
Combining Glagolitic Letter I	U+E00B	ᚦ	Srezn., p. 82
Combining Glagolitic Letter Djervi	U+E00C	ᚔ	Srezn., p. 84; *MissSin*, 18v6
Combining Glagolitic Letter Kako	U+E00D	ᚒ	Srezn., p. 224; *PsDem*, 126r2
Combining Glagolitic Letter Ljudie	U+E00E	ᚘ	Srezn., p. 40, p. 42; *PsDem*, 5v1; *MissSin.*, 30v22, 51r15
Combinign Glagolitic Letter Myslite	U+E00F	ᚕ	Srezn., p. 224; *PsDem*, 50v15, 105r19, 113v3; *MissSin*, 13r18
Combining Glagolitic Letter Nashi	U+E010	ᚳ	Srezn., p. 59; *PsDem*, 21v3; *MissSin*, 20v23
Combining Glagolitic Letter Onu	U+E011	э	*PsDem*, 126r2.; *MissSin*, 43v14, 43v21-2
Combinign Glagolitic Letter Pokoji	U+E012	ᚒ	Srezn., p. 42, p. 248; *MissSin*, 13r18, 13v10
Combining Glagolitic Letter Ritsi	U+E013	ь	Srezn., p. 42; *MissSin*, 35v15
Combining Glagolitic Letter Slovo	U+E014	ᚨ	Srezn., p. 228; *PsDem*, 126r24, 128v7, 126r24, 126v18
Combinign Glagolitic Letter Tvrido	U+E015	ᚒ	Srezn., p. 36, p. 42, 59; *PsDem*, 118r4; *MissSin*, 18v3, 17v12, 45v20, 46r19

Name	Codepoint	Appearance	Location in Sources
Combining Glagolitic Letter Uku	U+E016	ꙟ	*MissSin*, 43v14
Combining Glagolitic Letter Fritu	U+E017	Ⴔ	*MissSin*, 25r13, 29r14, 33r23, 40r15, 22r10
Combining Glagolitic Letter Heru	U+E018	Ⴆ	*MissSin*, 19r12, 13v15, 17v14
Combining Glagolitic Letter Shta	U+E01B	Ⱅ	*MissSin*, 58r6, 72r/v8
Combining Glagolitic Letter Tsi	U+E01C	Ⴍ	Srezn., p. 59; *MissSin*, 19r12
Combining Glagolitic Letter Chrivi	U+E01D	Ⴟ	*MissSin*, 53r5, 45r9-10, 39v13
Combining Glagolitic Letter Sha	U+E01E	Ш	Srezn., p. 224; *MissSin*, 21r12, 13r1, 17r18, 22v18, 24r23, 24(15)v8
Combining Glagolitic Letter Yeru	U+E01F	Ⳙ	*MissSin*, 18v6
Combinign Glagolitic Letter Yeri	U+E020	Ⳙ	Srezn., p. 42
Combining Glagolitic Letter Yati	U+E021	Ⱑ	Srezn., p. 248; *PsDem*, 83r16; *MissSin*, 40r15
Combining Glagolitic Letter Yu	U+E023	Ⱓ	Srezn., p. 254
Combining Glagolitic Letter Small Yus	U+E024	Ⱔ	*EuchSinV*, 32v17, 51r11
Combining Glagolitic Letter Yo	U+E026	Ⱖ	Does not exist as a single character, but is a component of U+E029.
Combining Glagolitic Letter Iotated Small Yus	U+E027	Ⳙⱔ	Srezn., p. 248; *MissSin*, 19r12
Combining Glagolitic Letter Big Yus	U+E028	Ⳙⱔ	Mansvetov, p. 362 (given by Mansvetov in Cyrillic transcription only)
Combining Glagolitic Letter Iotated Big Yus	U+E029	Ⱖⱔ	*EuchSinV*, 5r10, 17r1, 17v18, 28v3, 29r18 etc.
Combining Glagolitic Letter Fita	U+E02A	Ⱚ	*Assem*, 125v5, 149v25; (*EuchSinV*, 83v14, 84v15, 85v4 for /f/)

The following entries are proposed for addition to UnicodeData.txt (note that all codepoints are provisional):

```
E000;COMBINING GLAGOLITIC LETTER AZU;Mn;230;NSM;;;;;N;;;;;
E001;COMBINING GLAGOLITIC LETTER BUKI;Mn;230;NSM;;;;;N;;;;;
E002;COMBINING GLAGOLITIC LETTER VEDE;Mn;230;NSM;;;;;N;;;;;
E003;COMBINING GLAGOLITIC LETTER GLAGOLI;Mn;230;NSM;;;;;N;;;;;
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E004;COMBINING GLAGOLITIC LETTER DOBRO;Mn;230;NSM;;;;;N;;;;;
E005;COMBINING GLAGOLITIC LETTER YESTU;Mn;230;NSM;;;;;N;;;;;
E006;COMBINING GLAGOLITIC LETTER ZHIVETE;Mn;230;NSM;;;;;N;;;;;
E008;COMBINING GLAGOLITIC LETTER ZEMLJA;Mn;230;NSM;;;;;N;;;;;
E009;COMBINING GLAGOLITIC LETTER IZHE;Mn;230;NSM;;;;;N;;;;;
E00A;COMBINING GLAGOLITIC LETTER INITIAL IZHE;Mn;230;NSM;;;;;N;;;;;
E00B;COMBINIGN GLAGOLITIC LETTER I;Mn;230;NSM;;;;;N;;;;;
E00C;COMBINING GLAGOLITIC LETTER DJERVI;Mn;230;NSM;;;;;N;;;;;
E00D;COMBINING GLAGOLITIC LETTER KAKO;Mn;230;NSM;;;;;N;;;;;
E00E;COMBINING GLAGOLITIC LETTER LJUDIE;Mn;230;NSM;;;;;N;;;;;
E00F;COMBINING GLAGOLITIC LETTER MYSLITE;Mn;230;NSM;;;;;N;;;;;
E010;COMBINING GLAGOLITIC LETTER NASHI;Mn;230;NSM;;;;;N;;;;;
E011;COMBINING GLAGOLITIC LETTER ONU;Mn;230;NSM;;;;;N;;;;;
E012;COMBINING GLAGOLITIC LETTER POKOJI;Mn;230;NSM;;;;;N;;;;;
E013;COMBINING GLAGOLITIC LETTER RITSI;Mn;230;NSM;;;;;N;;;;;
E014;COMBINING GLAGOLITIC LETTER SLOVO;Mn;230;NSM;;;;;N;;;;;
E015;COMBINING GLAGOLITIC LETTER TVRIDO;Mn;230;NSM;;;;;N;;;;;
E016;COMBINING GLAGOLITIC LETTER UKU;Mn;230;NSM;;;;;N;;;;;
E017;COMBINING GLAGOLITIC LETTER FRITU;Mn;230;NSM;;;;;N;;;;;
E018;COMBINING GLAGOLITIC LETTER HERU;Mn;230;NSM;;;;;N;;;;;
E01B;COMBINING GLAGOLITIC LETTER SHTA;Mn;230;NSM;;;;;N;;;;;
E01C;COMBINING GLAGOLITIC LETTER TSI;Mn;230;NSM;;;;;N;;;;;
E01D;COMBINING GLAGOLITIC LETTER CHRIVI;Mn;230;NSM;;;;;N;;;;;
E01E;COMBINING GLAGOLITIC LETTER SHA;Mn;230;NSM;;;;;N;;;;;
E01F;COMBINING GLAGOLITIC LETTER YERU;Mn;230;NSM;;;;;N;;;;;
E020;COMBINING GLAGOLITIC LETTER YERI;Mn;230;NSM;;;;;N;;;;;
E021;COMBINING GLAGOLITIC LETTER YATI;Mn;230;NSM;;;;;N;;;;;
E023;COMBINING GLAGOLITIC LETTER YU;Mn;230;NSM;;;;;N;;;;;
E024;COMBINING GLAGOLITIC LETTER SMALL YUS;Mn;230;NSM;;;;;N;;;;;
E026;COMBINING GLAGOLITIC LETTER YO;Mn;230;NSM;;;;;N;;;;;
E027;COMBINING GLAGOLITIC LETTER IOTATED SMALL YUS;Mn;230;NSM;;;;;N;;;;;
E028;COMBINING GLAGOLITIC LETTER BIG YUS;Mn;230;NSM;;;;;N;;;;;
E029;COMBINING GLAGOLITIC LETTER IOTATED BIG YUS;Mn;230;NSM;;;;;N;;;;;
E02A;COMBINING GLAGOLITIC LETTER FITA;Mn;230;NSM;;;;;N;;;;;
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The following entries are proposed for addition to Scripts.txt:

```
E000..E02A   ; Glagolitic # Mn  [43] COMBINING GLAGOLITIC LETTER AZU..COMBINING
GLAGOLITIC LETTER FITA
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Collation

It is proposed that the default collation order given by the DUCET for Glagolitic characters mimic the default collation order for Cyrillic characters as follows:

Glagolitic Extended (Proposed)

0	1	2
⊹ ◌ U+E000	ⱝ ◌ U+E010	� ◌ U+E020
ⱞ ◌ U+E001	ⱻ ◌ U+E011	ⱶ ◌ U+E021
ⱡ ◌ U+E002	ⱬ ◌ U+E012	U+E022
ⱷ ◌ U+E003	ⱨ ◌ U+E013	Ᵽ ◌ U+E023
ⱱ ◌ U+E004	ⱳ ◌ U+E014	Ɛ ◌ U+E024
Ɜ ◌ U+E005	ⱚ ◌ U+E015	U+E025
ⱶ ◌ U+E006	ⱨⱨ ◌ U+E016	ⱴ ◌ U+E026
U+E007	Φ ◌ U+E017	ⱮƐ ◌ U+E027
ⱛ ◌ U+E008	ⱨ ◌ U+E018	ⱝƐ ◌ U+E028
ⱷ ◌ U+E009	U+E019	ⱴƐ ◌ U+E029
ⱔ ◌ U+E00A	U+E01A	ⱺ ◌ U+E02A
ⱬ ◌ U+E00B	Ⱳ ◌ U+E01B	U+E02B
ⱪ ◌ U+E00C	ⱴ ◌ U+E01C	U+E02C
ⱶ ◌ U+E00D	ⱳ ◌ U+E01D	U+E02D
ⱘ ◌ U+E00E	ⱎ ◌ U+E01E	U+E02E
ⱸ ◌ U+E00F	ⱝ ◌ U+E01F	U+E02F

Warning: all codepoints are provisional!

U+E000: Combining Glagolitic Letter Azu
U+E001: Combining Glagolitic Letter Buki
U+E002: Combining Glagolitic Letter Vede
U+E003: Combining Glagolitic Letter Glagoli
U+E004: Combining Glagolitic Letter Dobro
U+E005: Combining Glagolitic Letter Yestu
U+E006: Combining Glagolitic Letter Zhivete
U+E007: <not assigned>
U+E008: Combining Glagolitic Letter Zemlja
U+E009: Combining Glagolitic Letter Izhe
U+E00A: Combining Glagolitic Letter Initial Izhe
U+E00B: Combining Glagolitic Letter I
U+E00C: Combining Glagolitic Letter Djervi
U+E00D: Combining Glagolitic Letter Kako
U+E00E: Combining Glagolitic Letter Ljudie
U+E00F: Combining Glagolitic Letter Myslite

U+E010: Combining Glagolitic Letter Nashi
U+E011: Combining Glagolitic Letter Onu
U+E012: Combining Glagolitic Letter Pokoji
U+E013: Combining Glagolitic Letter Ritsi
U+E014: Combining Glagolitic Letter Slovo
U+E015: Combining Glagolitic Letter Tvrido
U+E016: Combining Glagolitic Letter Uku
U+E017: Combining Glagolitic Letter Fritu
U+E018: Combining Glagolitic Letter Heru
U+E019: <not assigned>
U+E01A: <not assigned>
U+E01B: Combining Glagolitic Letter Shta
U+E01C: Combining Glagolitic Letter Tsi
U+E01D: Combining Glagolitic Letter Chrivi
U+E01E: Combining Glagolitic Letter Sha
U+E01F: Combining Glagolitic Letter Yeru

U+E020: Combining Glagolitic Letter Yeri
U+E021: Combining Glagolitic Letter Yati
U+E022: <not assigned>
U+E023: Combining Glagolitic Letter Yu
U+E024: Combining Glagolitic Letter Small Yus
U+E025: <not assigned>
U+E026: Combining Glagolitic Letter Yo
U+E027: Combining Glagolitic Letter Iotated Small Yus
U+E028: Combining Glagolitic Letter Big Yus
U+E029: Combining Glagolitic Letter Iotated Big Yus
U+E02A: Combining Glagolitic Letter Fita
U+E02B: <not assigned>
U+E02C: <not assigned>
U+E02D: <not assigned>
U+E02E: <not assigned>
U+E02F: <not assigned>

Figure 1: Combining Glagolitic Letter Azu (boxed in red). Source: Srezn.

об. (верхнюю половину страницы занимаетъ большая заставка.)

Figure 2: Combining Glagolitic Letters Buky (boxed in red); Glagoli (boxed in black); Ljudije (boxed in blue); Tvrido (boxed in yellow); and Yu (boxed in green). Note the use of the Pokrytie. Source: Srezn.

15.

Figure 3: Combining Glagolitic Letters Dobro (boxed in blue); Slovo (boxed in red) and Tvrido (boxed in green). Source: Srezn.

Figure 4: Combining Glagolitic Letter Kako (boxed in red). Note the use of the Pokrytie. Source: Srezn.

б.

Figure 5: Combining Glagolitic Letter Heru (boxed in orange). Source: Srezn.

15.

Figure 6: Combining Glagolitic Letters Vede (boxed in blue); Dobro (boxed in green); Djervi (boxed in black); Nashi (boxed in red); and Tvrido (boxed in indigo). Source: Srezn.

15.

※

Figure 7: Combining Glagolitic Letters Vede (boxed in blue); Zhivete (boxed in green); Myslite (boxed in black); and Sha (boxed in red). Source: Srezn.

10.

Figure 8: Combining Glagolitic Letters Nashi (boxed in black); Pokoji (boxed in blue); Yati (boxed in orange); and Iotated Small Yus (boxed in red). Source: Srezn.

10.

15.

Figure 9: Combining Glagolitic Letters Yestu (boxed in red); Tsi (boxed in black); and Izhe (boxed in blue). Source: Srezn.

Figure 10: Combining Glagolitic Letter I (boxed in red). Source: Srezn.

Figure 11: Combining Glagolitic Letters Buky (boxed in green); Vedi (boxed in indigo); Djervi (boxed in orange); Kako (boxed in red); Tvrido (boxed in black); and Fita (boxed in blue). Source: Assemaniev Gospel.
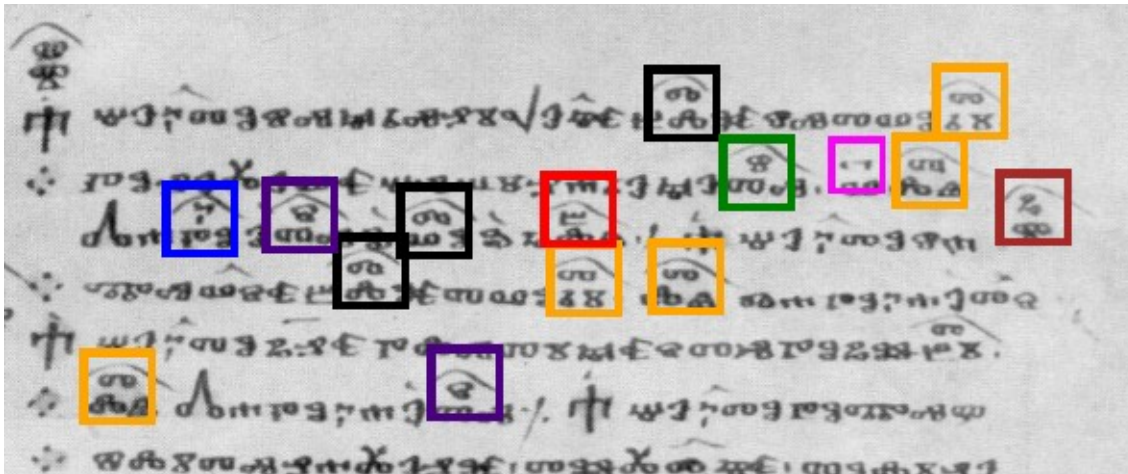
Figure 12: Combining Glagolitic Letters Buky (boxed in red); Glagoli (boxed in brown); Dobro (boxed in black); Initial Izhe (boxed in green); Kako (boxed in blue); Slovo (boxed in indigo); and Tvrido (boxed in orange). Note the use of the Pokrytie with these characters as well as the use of the Combining Vzmet (boxed in magenta). Source: EuchSin.
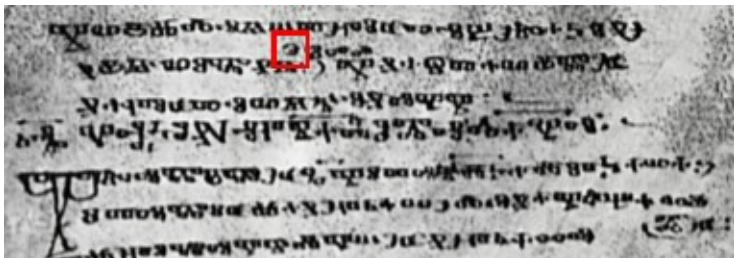
Figure 13: Combining Glagolitic Letter Yestu (boxed in red). Source: PsSin.

Section 3. Proposed Changes to Cyrillic Characters also Used in Glagolitic

Combining Glagolitic Letters are sometimes "covered" by an arc-like or line character (called "Pokrytie" and "Vzmet", respectivelly). We propose that the existing Cyrillic characters be used for this purpose: U+0487 Combining Cyrillic Pokrytie and U+A66F Combining Cyrillic Vzmet. For this purpose, the script property on these two characters should be changed from Cyrillic to Common by making the appropriate changes in Scripts.txt; likewise the appropriate annotations should be added to the characters.

Changes proposed in Scripts.txt

Current	Proposed
0487 ; Cyrillic # Mn COMBINING CYRILLIC POKRYTIE	0487 ; Common # Mn COMBINING CYRILLIC POKRYTIE
A66F ; Cyrillic # Mn COMBINING CYRILLIC VZMET	A66F ; Common # Mn COMBINING CYRILLIC VZMET

Changes proposed in NamesList.txt

Current	Proposed

0487   COMBINING CYRILLIC POKRYTIE
 	
     * used only with letter titlos
 	
     x (combining inverted breve - 0311)
 	
     x (combining cyrillic vzmet - A66F)
	0487 COMBINING CYRILLIC POKRYTIE
	
	     * used only with letter titlos
	
	     * used also for Glagolitic
	
	     x (combining inverted breve - 0311)
	
	     x (combining cyrillic vzmet - A66F)

A66F   COMBINING CYRILLIC VZMET
 	
     * used with Cyrillic letters to indicate abbreviation
     x (combining cyrillic titlo - 0483)
     x (combining cyrillic pokrytie - 0487)
	A66F COMBINING CYRILLIC VZMET
	
	     * used with Cyrillic and Glagolitic letters to indicate abbreviation
	     x (combining cyrillic titlo - 0483)
	     x (combining cyrillic pokrytie - 0487)

Section 4. Glagolitic Letter Broad Onu

The Glagoligic Letter Broad Onu has been identified in Glagolitic manuscripts recently discovered at St. Catherine's Monastery in Sinai, Egypt, including *PsDem* and *MissSin*. It may also be found in the St. Petersburg Sluzhebnik (the "Folios of Krylov and Uspensky") and in the *EuchSin*. The character, which at first glance visually resembles U+2C11/U+2C31 Glagolitic Letter Onu (ꜟ), is wider in appearance and has a strongly convex arc as opposed to the nearly vertical line of the narrow form (see Figure 14). The character is in fact its own character and not simply a graphical variant of Onu. It functions in the same manner as the Cyrillic Broad On (encoded in Unicode as U+047B Cyrillic Letter Round Omega), as a wide letter On used in specific instances, mostly in initial position. In Figures 14 and 15, we demonstrate the usage of this character in *PsDem,* where it occurs as the initial letter of the prefix Ꙅⱅ ("от", meaning "from"). Note in these Figures that both the regular Onu (ꜟ) and the Broad Onu (Ꙅ) are used in the manuscript. In fact, Stankovska (2000) has demonstrated that all three forms of the Glagolitic letter "O" – U+2C41 Glagolitic Letter Onu (ꜟ), U+2C49 Glagolitic Letter Otu (ꝡ) and the proposed U+2C5F Glagolitic Letter Broad Onu (ꙅ) – are used in *EuchSin*. Because all of the Glagolitic characters are encoded in Unicode with two forms – a lowercase form and an uppercase form – we likewise propose for encoding two characters at the two remaining empty codepoints in the Glagolitic block.

Characters Proposed for Encoding

Codepoint	Name	Appearance
U+2C2F	Glagolitic Capital Letter Broad Onu	Ꙅ
U+2C5F	Glagolitic Small Letter Broad Onu	ꙅ
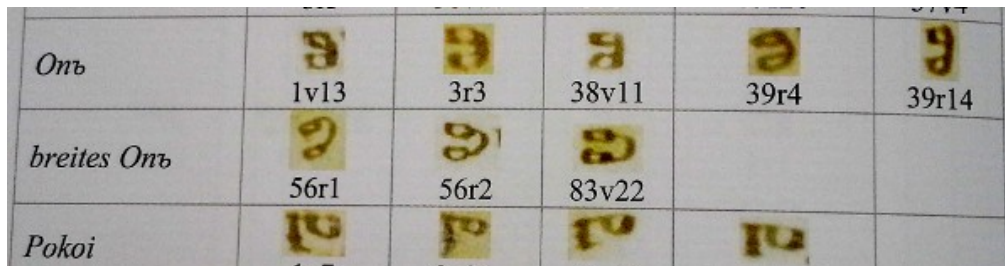
Figure 14: Different appearances of Glagolitic Letters Onu and Broad (German: "breites") Onu in PsDem (p. 88).

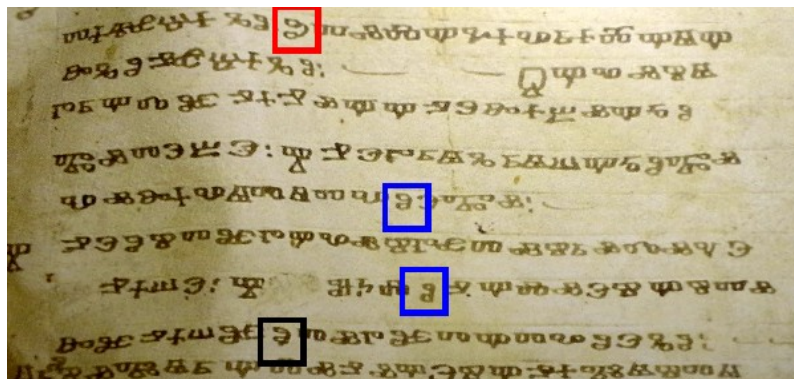*Figure 15: Broad Onu (boxed in red) and regular Onu (boxed in blue) in PsDem, f. 56r. Note that regular Onu may also occur in initial position preceding the letter Tvrido (�) (boxed in black) so contextual substitution cannot be used to render this character at the font level.*
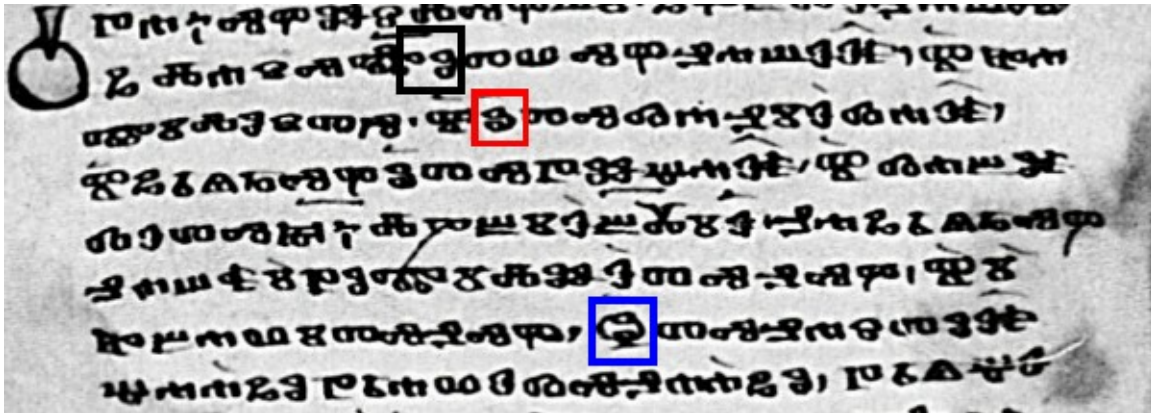
Figure 16: Note the use of three forms of the letter O: Glagolitic Letter Broad Onu (proposed for encoding; boxed in red); Glagolitic Letter Onu (boxed in black); and Glagolitic Letter Otu (boxed in blue). All three characters occur immediately before Glagolitic Letter Tvrido. Source: EuchSin.

The following entries are proposed for inclusion in UnicodeData.txt:

```
2C2F;GLAGOLITIC CAPITAL LETTER BROAD ONU;Lu;0;L;;;;;N;;;;2C5F;
2C5F;GLAGOLITIC SMALL LETTER BROAD ONU;Ll;0;L;;;;;N;;;2C2F;;2C2F
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The following changes are proposed in Scripts.txt:

Current	Proposed
2C00..2C2E ; Glagolitic # L& [47] GLAGOLITIC CAPITAL LETTER AZU..GLAGOLITIC CAPITAL LETTER LATINATE MYSLITE	2C00..2C2F ; Glagolitic # L& [48] GLAGOLITIC CAPITAL LETTER AZU..GLAGOLITIC CAPITAL LETTER BROAD ONU
2C30..2C5E ; Glagolitic # L& [47] GLAGOLITIC SMALL LETTER AZU..GLAGOLITIC SMALL LETTER LATINATE MYSLITE	2C30..2C5F ; Glagolitic # L& [48] GLAGOLITIC SMALL LETTER AZU..GLAGOLITIC SMALL LETTER BROAD ONU
# Total code points: 94	# Total code points: 96

Collation

As has been discussed above, the proposed collation order for the Broad Onu is as follows:

ꙁ <<< ⷕ <<< Ⰾ < ꙁ <<< Ⰾ < ꙏ <<< ⷕ <<< ꙏ

Glagolitic (U+2C00)

	0	1	2	3	4	5
0	✝ U+2C00	Ⱂ U+2C10	ⰠU+2C20	✝ U+2C30	Ⱂ U+2C40	ⱠU+2C50
1	Ⱁ U+2C01	Ⱑ U+2C11	Ⱡ U+2C21	Ⱁ U+2C31	Ⱑ U+2C41	Ⱡ U+2C51
2	Ⱂ U+2C02	Ⱒ U+2C12	Ɫ U+2C22	Ⱂ U+2C32	Ⱒ U+2C42	Ɫ U+2C52
3	Ⱃ U+2C03	Ⱓ U+2C13	Ᵽ U+2C23	Ⱃ U+2C33	Ⱓ U+2C43	Ᵽ U+2C53
4	Ⱄ U+2C04	Ⱔ U+2C14	Ɽ U+2C24	Ⱄ U+2C34	Ⱔ U+2C44	Ɽ U+2C54
5	Ⱅ U+2C05	Ⱕ U+2C15	Ⱥ U+2C25	Ⱅ U+2C35	Ⱕ U+2C45	Ⱥ U+2C55
6	Ⱆ U+2C06	Ⱖ U+2C16	Ⱦ U+2C26	Ⱆ U+2C36	Ⱖ U+2C46	Ⱦ U+2C56
7	Ⱇ U+2C07	Ⱗ U+2C17	Ⱨ U+2C27	Ⱇ U+2C37	Ⱗ U+2C47	Ⱨ U+2C57
8	Ⱈ U+2C08	Ⱘ U+2C18	Ⱨ U+2C28	Ⱈ U+2C38	Ⱘ U+2C48	Ⱨ U+2C58
9	Ⱉ U+2C09	Ⱙ U+2C19	Ⱪ U+2C29	Ⱉ U+2C39	Ⱙ U+2C49	Ⱪ U+2C59
A	Ⱚ U+2C0A	Ⱚ U+2C1A	Ⱚ U+2C2A	Ⱚ U+2C3A	Ⱚ U+2C4A	Ⱚ U+2C5A
B	ⱋ U+2C0B	Ⱛ U+2C1B	Ⱛ U+2C2B	ⱋ U+2C3B	Ⱛ U+2C4B	Ⱛ U+2C5B
C	Ⱌ U+2C0C	Ⱜ U+2C1C	Ⱌ U+2C2C	Ⱌ U+2C3C	Ⱜ U+2C4C	Ⱌ U+2C5C
D	ⱍ U+2C0D	Ⱝ U+2C1D	ⱝ U+2C2D	ⱍ U+2C3D	Ⱝ U+2C4D	ⱝ U+2C5D
E	Ⱎ U+2C0E	Ⱞ U+2C1E	Ⱞ U+2C2E	Ⱎ U+2C3E	Ⱞ U+2C4E	Ⱞ U+2C5E
F	Ⱏ U+2C0F	ⱟ U+2C1F	**ⱟ U+2C2F**	Ⱏ U+2C3F	ⱟ U+2C4F	**ⱟ U+2C5F**

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U+2C00: Glagolitic Capital Letter Azu
U+2C01: Glagolitic Capital Letter Buki
U+2C02: Glagolitic Capital Letter Vede
U+2C03: Glagolitic Capital Letter Glagoli
U+2C04: Glagolitic Capital Letter Dobro
U+2C05: Glagolitic Capital Letter Yestu
U+2C06: Glagolitic Capital Letter Zhivete
U+2C07: Glagolitic Capital Letter Dzelo
U+2C08: Glagolitic Capital Letter Zemlja
U+2C09: Glagolitic Capital Letter Izhe
U+2C0A: Glagolitic Capital Letter Initial Izhe
U+2C0B: Glagolitic Capital Letter I
U+2C0C: Glagolitic Capital Letter Djervi
U+2C0D: Glagolitic Capital Letter Kako
U+2C0E: Glagolitic Capital Letter Ljudie
U+2C0F: Glagolitic Capital Letter Myslite

U+2C10: Glagolitic Capital Letter Nashi
U+2C11: Glagolitic Capital Letter Onu
U+2C12: Glagolitic Capital Letter Pokoji
U+2C13: Glagolitic Capital Letter Ritsi
U+2C14: Glagolitic Capital Letter Slovo
U+2C15: Glagolitic Capital Letter Tvrido
U+2C16: Glagolitic Capital Letter Uku
U+2C17: Glagolitic Capital Letter Fritu
U+2C18: Glagolitic Capital Letter Heru
U+2C19: Glagolitic Capital Letter Otu
U+2C1A: Glagolitic Capital Letter Pe
U+2C1B: Glagolitic Capital Letter Shta
U+2C1C: Glagolitic Capital Letter Tsi
U+2C1D: Glagolitic Capital Letter Chrivi
U+2C1E: Glagolitic Capital Letter Sha
U+2C1F: Glagolitic Capital Letter Yeru

U+2C20: Glagolitic Capital Letter Yeri
U+2C21: Glagolitic Capital Letter Yati
U+2C22: Glagolitic Cpaital Letter Spidery Ha
U+2C23: Glagolitic Capital Letter Yu
U+2C24: Glagolitic Capital Letter Small Yus
U+2C25: Glagolitic Capital Letter Small Yus with Tail
U+2C26: Glagolitic Capital Letter Yo
U+2C27: Glagolitic Capital Letter Iotated Small Yus
U+2C28: Glagolitic Capital Letter Big Yus
U+2C29: Glagolitic Capital Letter Iotated Big Yus
U+2C2A: Glagolitic Capital Letter Fita
U+2C2B: Glagolitic Capital Letter Izhitsa
U+2C2C: Glagolitic Capital Letter Shtapic
U+2C2D: Glagolitic Capital Letter Trokutasti A
U+2C2E: Glagolitic Capital Letter Latinate Myslite
U+2C2F: Glagolitic Capital Letter Broad Onu
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U+2C30: Glagolitic Small Letter Azu
U+2C31: Glagolitic Small Letter Buki
U+2C32: Glagolitic Small Letter Vede
U+2C33: Glagolitic Small Letter Glagoli
U+2C34: Glagolitic Small Letter Dobro
U+2C35: Glagolitic Small Letter Yestu
U+2C36: Glagolitic Small Letter Zhivete
U+2C37: Glagolitic Small Letter Dzelo
U+2C38: Glagolitic Small Letter Zemlja
U+2C39: Glagolitic Small Letter Izhe
U+2C3A: Glagolitic Small Letter Initial Izhe
U+2C3B: Glagolitic Small Letter I
U+2C3C: Glagolitic Small Letter Djervi
U+2C3D: Glagolitic Small Letter Kako
U+2C3E: Glagolitic Small Letter Ljudie
U+2C3F: Glagolitic Small Letter Myslite

U+2C40: Glagolitic Small Letter Nashi
U+2C41: Glagolitic Small Letter Onu
U+2C42: Glagolitic Small Letter Pokoji
U+2C43: Glagolitic Small Letter Ritsi
U+2C44: Glagolitic Small Letter Slovo
U+2C45: Glagolitic Small Letter Tvrido
U+2C46: Glagolitic Small Letter Uku
U+2C47: Glagolitic Small Letter Fritu
U+2C48: Glagolitic Small Letter Heru
U+2C49: Glagolitic Small Letter Otu
U+2C4A: Glagolitic Small Letter Pe
U+2C4B: Glagolitic Small Letter Shta
U+2C4C: Glagolitic Small Letter Tsi
U+2C4D: Glagolitic Small Letter Chrivi
U+2C4E: Glagolitic Small Letter Sha
U+2C4F: Glagolitic Small Letter Yeru

U+2C50: Glagolitic Small Letter Yeri
U+2C51: Glagolitic Small Letter Yati
U+2C52: Glagolitic Cpaital Letter Spidery Ha
U+2C53: Glagolitic Small Letter Yu
U+2C54: Glagolitic Small Letter Small Yus
U+2C55: Glagolitic Small Letter Small Yus with Tail
U+2C56: Glagolitic Small Letter Yo
U+2C57: Glagolitic Small Letter Iotated Small Yus
U+2C58: Glagolitic Small Letter Big Yus
U+2C59: Glagolitic Small Letter Iotated Big Yus
U+2C5A: Glagolitic Small Letter Fita
U+2C5B: Glagolitic Small Letter Izhitsa
U+2C5C: Glagolitic Small Letter Shtapic
U+2C5D: Glagolitic Small Letter Trokutasti A
U+2C5E: Glagolitic Small Letter Latinate Myslite
U+2C5F: Glagolitic Small Letter Broad Onu
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References

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PsDem: Psalter of Demetrius (Sin. slav. 3/N), Sinai, 11[th] c. Facsimile edition: *Psalterium Demetrii Sinaitici (monasterii sanctae Catharinae codex slav. 3/N), adiectis foliis medicinalibus.* Ad editionem phototypicam praeparaverunt M. Gau, D. Hürner, F. Kleber, M. Lettner, H. Miklas sub redactione Henrici Miklas. Cum praefationibus sacri monasterii atque Ioannis Tarnanidae (Glagolitica Sinaitica 1). Vienna: Holzhausen, 2012.

PsSinV: Psalterium Sinaiticum, old part (Sin. slav. 38), Sinai, 11[th] c., Facsimile edition: ALTBAUER, M.: *Psalterium Sinaiticum. An 11th Century Glagolitic Manuscript from St. Catherine's Monastery, Mt. Sinai.* Skopje: The Macedonian Academy of Sciences and Arts, Goce Delčev Publishing House, 1971.

Srez.: SREZNEVSKIJ, I. I., *Древніе глаголическіе памятники, сравнительно съ памятниками кириллицы*, St. Petersburg: Tipografija Imperatorskoj akademii nauk, 1866.

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<table>
<tr><td colspan="2" align="center">ISO/IEC JTC 1/SC 2/WG 2
PROPOSAL SUMMARY FORM TO ACCOMPANY SUBMISSIONS
FOR ADDITIONS TO THE REPERTOIRE OF ISO/IEC 10646[1]
Please fill all the sections A, B and C below.
Please read Principles and Procedures Document (P & P) from http://std.dkuug.dk/JTC1/SC2/WG2/docs/principles.html for guidelines and details before filling this form.
Please ensure you are using the latest Form from http://std.dkuug.dk/JTC1/SC2/WG2/docs/summaryform.html.
See also http://std.dkuug.dk/JTC1/SC2/WG2/docs/roadmaps.html for latest <i>Roadmaps</i>.</td></tr>
</table>

A. Administrative

1. **Title:**   *Proposal to Encode Additional Glagolitic Characters in Unicode*
2. Requester's name: *Aleksandr Andreev, Heinz Miklas and Yuri Shardt*
3. Requester type (Member body/Liaison/Individual contribution):   *Individual contribution*
4. Submission date: *April 14, 2014*
5. Requester's reference (if applicable):   *N/A*
6. Choose one of the following:
     This is a complete proposal: *X*
     (or) More information will be provided later:

B. Technical – General

1. Choose one of the following:
     a. This proposal is for a new script (set of characters):   *YES*
       Proposed name of script: *Glagolitic Extended*
     b. The proposal is for addition of character(s) to an existing block: *YES*
       Name of the existing block: *Glagolitic*
2. Number of characters in proposal: *40*
3. Proposed category (select one from below - see section 2.2 of P&P document):
     A-Contemporary   B.1-Specialized (small collection)   *X*   B.2-Specialized (large collection)
     C-Major extinct   D-Attested extinct   E-Minor extinct
     F-Archaic Hieroglyphic or Ideographic   G-Obscure or questionable usage symbols
4. Is a repertoire including character names provided?   *YES*
     a. If YES, are the names in accordance with the "character naming guidelines"
       in Annex L of P&P document?   *YES*
     b. Are the character shapes attached in a legible form suitable for review?   *YES*
5. Fonts related:
     a. Who will provide the appropriate computerized font to the Project Editor of 10646 for publishing the standard?
       Aleksandr Andreev (aleksandr.andreev@gmail.com; http://www.ponomar.net/cu_support.html)
     b. Identify the party granting a license for use of the font by the editors (include address, e-mail, ftp-site, etc.):
       Menaion Unicode font licensed under GNU GPL by Aleksandr Andreev and Yuri Shardt
6. References:
     a. Are references (to other character sets, dictionaries, descriptive texts etc.) provided?   *YES*
     b. Are published examples of use (such as samples from newspapers, magazines, or other sources)
     of proposed characters attached?   *YES*
7. Special encoding issues:
     Does the proposal address other aspects of character data processing (if applicable) such as input,
     presentation, sorting, searching, indexing, transliteration etc. (if yes please enclose information)?   *NO*

8. Additional Information:

Submitters are invited to provide any additional information about Properties of the proposed Character(s) or Script that will assist in correct understanding of and correct linguistic processing of the proposed character(s) or script. Examples of such properties are: Casing information, Numeric information, Currency information, Display behaviour information such as line breaks, widths etc., Combining behaviour, Spacing behaviour, Directional behaviour, Default Collation behaviour, relevance in Mark Up contexts, Compatibility equivalence and other Unicode normalization related information. See the Unicode standard at http://www.unicode.org for such information on other scripts. Also see Unicode Character Database (http://www.unicode.org/reports/tr44/) and associated Unicode Technical Reports for information needed for consideration by the Unicode Technical Committee for inclusion in the Unicode Standard.

C. Technical - Justification

1. Has this proposal for addition of character(s) been submitted before? **NO**
    If YES explain

2. Has contact been made to members of the user community (for example: National Body,
    user groups of the script or characters, other experts, etc.)? **YES**
        If YES, with whom? *Institut für Slawistik at the University of Vienna, Udmurt State University*
        If YES, available relevant documents: *E-mail correspondence*

3. Information on the user community for the proposed characters (for example:
    size, demographics, information technology use, or publishing use) is included? **YES**
    Reference: *Used by academics studying Glagolitic manuscripts. See Section 1, Introduction*

4. The context of use for the proposed characters (type of use; common or rare) **YES**
    Reference: *Rare. See Section 1, Introduction*

5. Are the proposed characters in current use by the user community? **YES**
    If YES, where? Reference: *Academic publications and digital storage of manuscripts. See Section 1*

6. After giving due considerations to the principles in the P&P document must the proposed characters be entirely
    in the BMP? **NO**
        If YES, is a rationale provided?
            If YES, reference: *N/A*

7. Should the proposed characters be kept together in a contiguous range (rather than being scattered)? **YES**

8. Can any of the proposed characters be considered a presentation form of an existing
    character or character sequence? **NO**
        If YES, is a rationale for its inclusion provided?
            If YES, reference: *N/A*

9. Can any of the proposed characters be encoded using a composed character sequence of either
    existing characters or other proposed characters? **NO**
        If YES, is a rationale for its inclusion provided?
            If YES, reference: *N/A*

10. Can any of the proposed character(s) be considered to be similar (in appearance or function)
    to, or could be confused with, an existing character? **NO**
        If YES, is a rationale for its inclusion provided?
            If YES, reference: *N/A*

11. Does the proposal include use of combining characters and/or use of composite sequences? **NO**
    If YES, is a rationale for such use provided?
        If YES, reference: *N/A*
    Is a list of composite sequences and their corresponding glyph images (graphic symbols) provided?
        If YES, reference: *N/A*

12. Does the proposal contain characters with any special properties such as
    control function or similar semantics? **YES**
        If YES, describe in detail (include attachment if necessary)
        It is proposed to change the script property and annotations on two Cyrillic characters.
        See Section 3, Proposed Changes to Cyrillic Characters also Used in Glagolitic

13. Does the proposal contain any Ideographic compatibility characters? **NO**
    If YES, are the equivalent corresponding unified ideographic characters identified?
        If YES, reference: *N/A*