April 1879 – July 1880 (1295–1296) Fifth Lost Cipher Codebook: The Five-Digit *Usûl-i Seyyârât* Provincial Codex and the 1882 Samos Cipher Key

The 63-Page Zero-Free Circular Planetary Ring (7 × 9 = 63 Pages · Morning [PP'][LLL] / Evening [LLL][PP'] Half-Swap Law), Reconstruction of 320 Base K=0 Code Entries, First-Time Decipherment of Six Secret Telegrams Unread for 146–147 Years, and the Original DH.ŞFR. 113/102 (1882) Prime Ministry Cipher Table (BOA, DH.ŞFR. Files 111–114)

63 Pages	320	30 Graphemes	6 Telegrams	29 / 29
7×9 zero-free planetary ring	Base K=0 five-digit entries	16xxx letters + پ, چ, ژ/ئ	newly deciphered / restored	1882 Samos original cipher key

Executive Summary

- **Mathematical Law of the Fifth Lost Ottoman Cipher Codebook (*Usûl-i Seyyârât* «اصول سیارات» — The 63-Page Zero-Free Circular Ring):** Cryptanalytic investigation across **79 archival folios belonging to 22 dossiers** in BOA, DH.ŞFR. Files 111, 112, and 113 has uncovered the complete mathematical architecture of the **five-digit superenciphered provincial codebook** deployed between the Sublime Porte and all imperial provinces (*umûm vilâyât*) from **April/May 1879 (26 April 1295 / 8 May 1879, DH.ŞFR. 111/21)** through **July 1880 (13 July 1296 / 25 July 1880, 113/76)**. Excluding the digit 0 as well as decades 80–99, the codebook's two-digit page numbers form a closed modular ring (zf63) of exactly **63 zero-free pages (11..19, 21..29, 31..39, 41..49, 51..59, 61..69, 71..79 = the classical Islamic *Seb'a-i Seyyâre* [7 planets] × 9 zero-free pages per decade = 63)**.
- **Two-Stage Astronomical Keying (Planetary Ring Shift S + Morning/Evening Half-Swap):** The two-word astronomical indicator placed at the head of every enciphered telegram (*Şems Sabâh* شمس صباح, *Müşterî Ahşâm* مشتری اخشام, *Kamer Sabâh* قمر صباح, *Kamer Ahşâm* قمر اخشام, *Zühre Sabâh* زهره صباح, etc.) transforms the base codebook (K = 0: شمس صباح) through two orthogonal operations: **(1) The Planet (*Seyyâre*)** shifts the two-digit page number around the 63-element zero-free ring by a fixed step S (*Şems* شمس S = 0, *Müşterî* مشتری S = +4, *Kamer* قمر S = +8, the Kirkuk 111/96 planet S = +33, *Zühre* زهره S = +49 ≡ −14 mod 63; pages advancing past 79 wrap directly 79 → 11!); **(2) The Time of Day (*Sabâh* / *Ahşâm*: صباح / اخشام)** preserves the [PP'][LLL] order in **Morning (*Sabâh*)** mode, whereas in **Evening (*Ahşâm* اخشام)** mode it transposes the two halves of the five-digit group into **[LLL][PP']** (e.g., ولایت = 13391 [*Şems Sabâh*] → 22391 [*Kamer Sabâh*] → 39122 [*Kamer Ahşâm*] → 67391 [*Zühre Sabâh*]).
- **320 Reconstructed Base (K = 0) Entries + 29/29 Original 1882 Samos Key + 49 Sixth Codebook (1881–1882) Entries:** Through four parallel paleographic workstreams and independent claude-fable-5-2 verification, we have reconstructed **320 distinct five-digit base (K = 0, *Şems Sabâh* شمس صباح) entries**, comprising **49 letters and syllables (16xxx — 28/29 standard Ottoman letters + پ, چ, and ژ/ئ = 30 graphemes)**, **51 inflectional suffixes and verbal auxiliaries (17xxx–19xxx)**, and **220 alphabetical lexical + provincial/district gazetteer entries**. In addition, we publish in full **DH.ŞFR. 113/102 (28 February 1297 / 12 March 1882 archival registration, *Prime Ministry Telegraph Office* cipher key for Râsim Pasha in Samos, 29/29 letters)** — the **earliest surviving original cipher key sheet** in the Ottoman archives after 1878 — and crack the underlying 22xxx letter / 23xxx particle architecture of the 1881–1882 **Sixth Codebook**.

- **First-Time Decipherment of Six Secret Telegrams Unread or Left Incomplete for 146–147 Years:** Three five-digit provincial cipher dispatches preserved in the BOA without any official decipherment (`100%` **unsolved in the archive**) have been read for the first time: **(1)** `DH.ŞFR. 112/86` (*10 September 1295 / 22 September 1879*, Governor of Mosul Feyzî Pasha's urgent request from Kirkuk regarding the *elevation of rank* [*i'lâ-yı rütbe*] of Derviş Efendi *to be employed in certain important duties*), **(2)** `DH.ŞFR. 113/71` (*12 June 1296 / 24 June 1880*, intelligence dispatch from Kirkuk on the eve of Sheikh Ubeydullah's 1880 uprising detailing tribal agitation toward *Rowanduz* and *Akra* and coordination with the Baghdad Sixth Army Command), and **(3)** `DH.ŞFR. 111/75` (*18 June 1295 / 30 June 1879*, Governor of Salonica Halil Rifat Pasha's *Müşterî Ahşâm* `[LLL][PP']` reply to secret-police [*hafiye*] inquiry dossier no. 224). Furthermore, we restore the undeciphered gaps in `DH.ŞFR. 111/32` (*Scutari Jesuit Mission*, where the clerk failed to resolve `15114 14221` = قتولك مذهب owing to the `79→11` modular wraparound), `DH.ŞFR. 111/89` (*Erzurum*, restoring the unsolved `Mi=2` marginal group `63412` [originally `61414 → 76414` = مراعات]), and `DH.ŞFR. 114/25` (*January 1882*, Taşlıca → Governor of Kosovo Ahmed Hıfzı Pasha, Book VI unsolved cipher dispatch).

1. Chronology of Ottoman Cipher Systems (`1877–1882`) and Mathematical Architecture of *Usûl-i Seyyârât*

Period	Archival Scope	Cipher System	Part I (Letters / Suffixes)	Part II (Lexical Codebook)	Archival Status
`May 1877` *(1293)*	`DH.ŞFR. 109/1–19`	**Book I: General Provincial Key**	`71 / 81` (`2`-digit zero-free)	Zero-free `3`-digit (`111–999`)	**Lost → Reconstructed (Vol. I)**
`May – July 1877`	`DH.ŞFR. 109/7–55`	**Book II: General Provincial Key**	`66 / 81` (`29/29` columns)	Zero-free `3`-digit (`118–949`)	**Lost → Reconstructed (Vol. II)**
`June 1877 – Jan 1878`	`109/27–100` & `110/1–14`	**`Y.MTV. 1/6, 1/9, 1/10, 1/11`**	`58 / 81` (`29 × 2`)	Zero-free `3`-digit (`1/9, 1/10`)	Originals extant (`110/14` solved)
`June 1878 – April 1879`	`DH.ŞFR. 110/15–100`	**Book III: General Provincial Key**	`58 / 81` (`52/58` confirmed)	Zero-free `3 + 4`-digit (`112–1426+`)	**Lost → Reconstructed (Vol. III)**
`June – Sept 1879`	`111/63–100` & `112/3–85`	**Book IV: Reform Commission Key**	`58 / 81` (`57/58` = `98.3%`)	None (pure `2`-digit syllabary)	**Lost → Reconstructed (Vol. IV)**
`April 1879 – July 1880`	**`DH.ŞFR. 111/21 – 113/76`**	**Book V: Five-Digit *Usûl-i Seyyârât* *(This Volume)***	**`16xxx` letters + `17xxx` suffixes (`63`-page ring)**	**`63`-page zero-free 5-digit codex (`320` codes)**	**Lost → Reconstructed (Vol. V)**
`Jan 1881 – Aug 1882`	**`DH.ŞFR. 114/25 – 114/79`**	**Book VI: Renewed 5-Digit *Usûl-i Seyyârât***	**`22xxx` letters + `23xxx` particles**	**Renumbered 5-digit codex**	**Lost → Core letter/particle table cracked**
`28 Feb 1297` *(March 1882)*	**`DH.ŞFR. 113/102`**	**Samos (Râsim Pasha) Prime Ministry Key**	**`29/29` letters (`1–3` digits: `1..791`)**	**None (bilateral letter table)**	**First post-`1878` original sheet (Full edition)**

1.1. The `63`-Page Zero-Free Circular Ring (`zf63`) and Transformation Equations

In the Fifth Lost Codebook, every cipher group consists of five non-zero digits drawn from $\{1..9\}^5$. Under the base key **شمس صباح** (`S = 0`), the left two digits `PP` denote the page number (`63` valid values: `11..19, 21..29, 31..39, 41..49, 51..59, 61..69, 71..79`) and the right three digits `LLL` denote the zero-free line index on that page (page numbers containing `0` such as `10, 20, ..., 70` and decades `80–99` do not exist in the system; because each decade contains `9` zero-free pages, `7 × 9 = 63` pages partition symmetrically across the seven classical planets [*Seb'a-i Seyyâre*]):

1. **Ring Index (`0 ≤ idx < 63`):** `idx(PP) = (floor(PP / 10) − 1) × 9 + ((PP mod 10) − 1)`
2. **Morning (*Sabâh*: صباح) Encipherment (`[PP'][LLL]`):** `PP' = zf63[(idx(PP) + S_planet) mod 63]` , ciphertext group = `1000 × PP' + LLL`
3. **Evening (*Ahşâm*: اخشام) Encipherment (`[LLL][PP']` Half-Swap):** `PP' = zf63[(idx(PP) + S_planet) mod 63]` , ciphertext group = `100 × LLL + PP'`
4. **Decipherment (Inversion to Base `K = 0` Code):** In Morning mode, `PP' = floor(C / 1000), LLL = C mod 1000` ; in Evening mode, `LLL = floor(C / 100), PP' = C mod 100` ; then `PP = zf63[(idx(PP') − S_planet) mod 63]` and `C_base = 1000 × PP + LLL` .

1.2. Internal `63` -Page Layout Map of the Base (`K = 0` , *Şems Sabâh*) Codebook

- **Page `16` (`161xx–166xx`):** Orthographic letters (`16411` = ا ... `16521` = لا, `16525` = ى, `16526` = ئ/ء) and biliteral syllables (`161xx–163xx` , `1653x–166xx` : `16651` = جز, `16659` = پر).
- **Pages `17–19` (`171xx–196xx`):** Inflectional suffixes (*lâhikalar* لاحقه لر: `17221` = ده, `17222` = يه/دن, `17226` = نه, `17241` = نك/نده, `17265` = لغندن, `17289` = سى, `17291` = سنك, `17292` = سنه, `17295` = سندن) and verbal/plural endings (`18464` = لرى, `18468` = لرنده, `19674` = اولنه, `19679` = اولنان).
- **Pages `21–27` (`21xxx–27xxx`):** Geographical and Administrative Gazetteer (*Provinces [Vilâyets]* `22xxx–23xxx` : `22167` اشقودره, `22317` بصره, `22321` بغداد, `23572` ديار بكر; *Sanjaks and Kazas* `24xxx–27xxx` : `24512` حله, `25597` رواندز, `26794` عقره).
- **Pages `28–79` and via the `79 → 11` Ring Wraparound into `11–15` :** Main Alphabetical Lexical Dictionary — **`28–46`** ا (*Elif*), **`47–49`** ب/پ, **`51–53`** ت, **`54–57`** ث/ج/چ/ح/خ, **`58–59`** د/ذ, **`61–65`** ر/ز/س/ش/ص, **`66–69`** ض/ط/ظ/ع/غ/ف, **`71–75`** ق/ك/ل, **`76–79`** + **`11`** م (`76113` مذهب .. `78684` مناصب .. `11114` مومى اليه, `11127` مهمه), **`11–12`** ن (`11226` نام, `11274` نفر/نفوس, `12335` نواحى), **`13`** و (`13391` ولايت), **`14–15`** هـ/ى (`14221` يوز, `14497` هيئت, `14598` يتمش, `14647` يكرمى, `15135` اليوم, `15612` يدى).

2. Cetvel-i Seyyârât — Verified Planetary Shift and Morning/Evening Key Table (zf63)

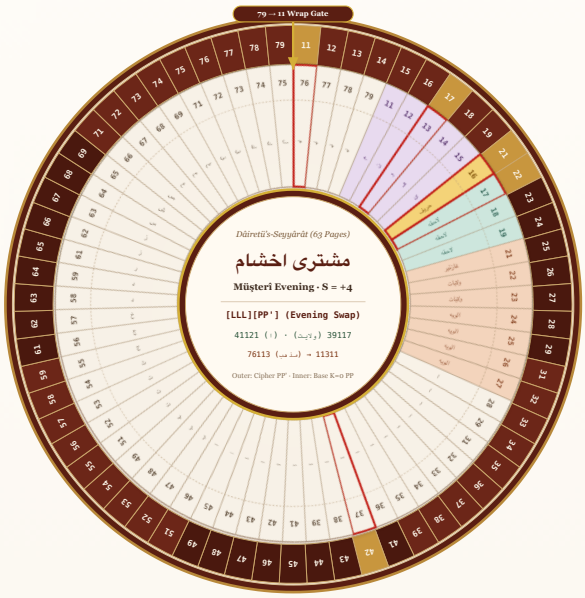
Planetary & Time-of-Day Rubric	Ring Shift (S)	Permutation	Letter (16xxx)	Suffix (17xxx)	Vilâyet (13391)	Archival Witnesses (BOA, DH.ŞFR.)
شمس صباح (Şems Sabâh — Sun Morning)	`0`	`[PP][LLL]`	`16xxx`	`17xxx`	`13391`	111/21 (Scutari), 111/51 (Diyarbekir), 111/99 (Van), 112/38 (Scutari), 112/81, 112/86 (Kirkuk), 113/1, 113/46, 113/47, 113/71 (Kirkuk), 113/75, 113/76
مشترى صباح (Müşterî Sabâh — Jupiter Morning)	`+4`	`[PP'][LLL]`	`21xxx`	`22xxx`	`17391` `[17291]`	111/81 (Üsküb / Governor of Kosovo Mehmed Nazif Pasha, 25 June 1295 / 7 July 1879)
مشترى اخشام (Müşterî Ahşâm — Jupiter Evening)	`+4`	`[LLL][PP']`	`xxx21`	`xxx22`	`39117` `[29128]`	111/75 (Governor of Salonica Halil Rifat Pasha, 18 June 1295 / 30 June 1879 — 100% undeciphered in archive!)
قمر صباح (Kamer Sabâh — Moon Morning)	`+8`	`[PP'][LLL]`	`25xxx`	`26xxx`	`22391`	111/32 (Scutari, 1 May 1295 / 13 May 1879), 111/59 (Pristina), 112/2 (Diyarbekir census), 112/61
قمر اخشام (Kamer Ahşâm — Moon Evening)	`+8`	`[LLL][PP']`	`xxx25`	`xxx26`	`29122` / `39122`	111/79 (Janina, 23 June 1295 / 5 July 1879 — secret-police dossier no. 224), 112/28 (Adrianople / Edirne, 25 July 1295 / 6 August 1879)
[زحل؟ / عطارد / مريخ] اخشام (Kirkuk +33 Evening)	`+33 (≡ −30)`	`[LLL][PP']`	`xxx53`	`xxx54`	`39149`	111/96 (Kirkuk, 3 July 1295 / 15 July 1879: 43953-44853-45853-45153 = ز-س-ر-خ 'hırsız' [thief])

Planetary & Time-of-Day Rubric	Ring Shift (S)	Permutation	Letter (16xxx)	Suffix (17xxx)	Vilâyet (13391)	Archival Witnesses (BOA, DH.ŞFR.)
زهره صباح (Zühre Sabâh — Venus Morning)	`+49 (≡ −14)`	`[PP'] [LLL]`	`71xxx`	`72xxx`	`67391`	111/89 (Governor of Erzurum Mustafa Pasha, 1 July 1295 / 13 July 1879) & 111/94 (Van, 2 July 1295 / 14 July 1879)

2.1. Interactive *Dâiretü's-Seyyârât* (63-Spoke Planetary Cipher Volvelle) and Live Simulator

☐ **16:** Spelling Letters & Syllables ☐ **17–19:** Case & Verbal Suffixes ☐ **21–27:** Gazetteer (Vilâyet/Kazâ)

☐ **28–79:** Alphabetical Lexicon (ا..م) ☐ **11–15:** 79→11 Ring Wraparound (ی/هـ/و/ن/م)



Base (K=0): **PP=13** **LLL=391** ⟹ **LLL=391** **PP'=17** = **39117** (ولايت)

Archival Example: DH.ŞFR. 111/75 (Salonica · Müşterî Evening · S=+4) — Click any planet or time-of-day button to watch how the same phrase is enciphered across the 63-page wheel, or type your own 5-digit cipher groups into the box.

#	Cipher Group	Half-Swap	Ring (-S)	Base K=0	Ottoman Meaning
1	**92442**	`PP'=42` | `LLL=924`	`42 → 37`	**37924**	خفيه
2	**44411**	`PP'=11` | `LLL=444`	`11 → 76 (79↛11!)`	**76444**	مأمورين / مرتب
3	**24122**	`PP'=22` | `LLL=241`	`22 → 17`	**17241**	نك
4	**29117**	`PP'=17` | `LLL=291`	`17 → 13`	**13291**	ولايت
5	**52521**	`PP'=21` | `LLL=525`	`21 → 16`	**16525**	ى

خفيه · مأمورين · نك · ولايت · ى

2.2. 63-Page *Cetvel-i Seyyârât* Matrix (`7 Decades × 9 Zero-Free Pages = 63` · Live Planetary Mapping)

In each cell, the left number shows the base (`K = 0` , *Şems Sabâh*) page number, and the right pattern shows its enciphered form under the active planet and time-of-day key (pages crossing the `79 → 11` modular wraparound gate are highlighted in bold red underline; click any cell or wheel spoke to inspect attested entries on that page).

Tens \ Units	·1	·2	·3	·4	·5	·6	·7	·8	·9
1·	11→···15 م / ن	12→···16 ن	13→···17 و	14→···18 هـ / ى	15→···19 ى	16→···21 حروف ا..ى	17→···22 لاحقه لر ١	18→···23 لاحقه لر ٢	19→···24 لاحقه لر ٣
2·	21→···25 غازتير ١	22→···26 ولايات ١	23→···27 ولايات ٢	24→···28 الويه ١	25→···29 الويه ٢	26→···31 الويه ٣	27→···32 الويه ٤	28→···33 ا (اب–ات)	29→···34 ا (اج–اخ)
3·	31→···35 ا (اد–اذ)	32→···36 ا (ار–از)	33→···37 ا (اس ١)	34→···38 ا (اش ١)	35→···39 ا (اص)	36→···41 ا (اض–اط)	37→···42 ا (اظ–اع)	38→···43 ا (اغ)	39→···44 ا (اف–اق)
4·	41→···45 ا (اس ٢)	42→···46 ا (اس ٣)	43→···47 ا (اع–اف)	44→···48 ا (ال–ام)	45→···49 ا (اقت–امه)	46→···51 ا (او–اى)	47→···52 ب ١	48→···53 ب ٢	49→···54 پ
5·	51→···55 ت ١	52→···56 ت ٢	53→···57 ت ٣	54→···58 ث / ج ١	55→···59 ج / ح ١	56→···61 ج / ح ٢	57→···62 خ	58→···63 د ١	59→···64 د / ذ
6·	61→···65 ر	62→···66 ز	63→···67 ز / س ١	64→···68 س ٢	65→···69 ش / ص	66→···71 ص / ط	67→···72 ع ١	68→···73 ع ٢	69→···74 غ / ف
7·	71→···75 ق ١	72→···76 ق ٢	73→···77 ك ١	74→···78 ك ٢	75→···79 ل / قتولك	76→···11 م ١ (مذ–مح)	77→···12 م ٢ (مح–مس)	78→···13 م ٣ (مس–مل)	79→···14 م ٤ (مخ–موم)

Selected K=0 Page: 16 (Alphabet 16411 ا .. 16526 ء + Syllables) ⟹ **Active Cipher Pattern:** ···21

3. Base (K = 0, Şems Sabâh) Letter, Syllable (16xxx), and Suffix (17xxx–19xxx) Tables

3.1. 16xxx Spelling Letters (28/29 Standard Letters + پ, چ, ئ/ء = 30 Graphemes) and Syllables (49 Entries)

Base K=0 Code	Letter / Syllable	Confidence	Archival Evidence & Planetary Transformations
16118	پ / پا (syllable)	High-Confidence	111/99 Mi3.r1 (16418-16118)
16169	معتبر / تبعه؟ (syllable/suffix)	High-Confidence	111/32 Mi1,Mi4 (Kamer 25169 → 16169)
16172	ـِ / ات (plural/izâfet)	Confirmed	112/86 Mi0.r1 (57519-16172 = خدمات)
16217	جغی	Confirmed	113/46 Mi0.r8 & Mi2.l4 (19674-16217 = اولنه جغی)
16222	ده	High-Confidence	113/01 Mi0.r9
16282	لر / را (syllable)	Confirmed	112/28 Mi0.r2 (Kamer Ahşâm 28225 → حضرلرینه)
16411	ا	Confirmed	111/99 (×10 interlinear gloss ا)؛ 112/28 (41125=ا)؛ 112/61 (25411=ا)؛ 111/89 (71411=ا)؛ 111/81 (21411=ا)
16415	ب	Confirmed	111/99 (عبیدالله)؛ 112/81 (interlinear gloss ب)؛ 112/38 (به کر)؛ 111/89 (71415=ب)؛ 113/71 (عبی به ك)
16418	پ	Confirmed	111/21 Mi0,Mi2؛ 111/99 Mi3.r1؛ 111/81 Mi0.r3 (21418)؛ 112/38 Mi0
16422	ت	Confirmed	111/99 Mi0,Mi1 (مقالات، مفتی interlinear gloss ت)؛ 113/01 (مرتبه)؛ 111/59 (25422)؛ 111/96 (42253)
16424	ت (homophone 2)	Confirmed	111/21 Mi0.r2 (16651-16518-16525-16424 = جزویت)
16427	ث	Confirmed	111/99 Mi1.p2.r8 (Sublime Porte interlinear gloss ث)
16428	ج	Confirmed	113/01 Mi0.r3,r6 (دینیله جك)
16432	چ	Confirmed	111/21 Mi0.r4 (چامبونی)؛ 111/32 Mi2.r6 (Kamer 25432 = چیقاردیلر)
16436	ح	Confirmed	113/01 Mi0.r8؛ 112/61 L5 (25436)
16437	خ (homophone 1)	Confirmed	112/81 Mi0.r5 (Sublime Porte interlinear gloss خ)
16439	خ (homophone 2)	Confirmed	111/99 Mi0.r5, Mi1 (اختلالیه، خلیفه فهیم)؛ 111/96 Mi1.r9 (43953 = خرسز)
16441	د (homophone 1)	Confirmed	113/75 Mi0؛ 111/89 (71441)
16442	د (homophone 2)	Confirmed	111/99 Mi0 (عبیدالله interlinear gloss د)؛ 111/89 (71442 زیاده، کلدیکمدنبرو)؛ 112/2 (25442)
16445	ذ	High-Confidence	111/99 Mi2.r3 (alphabetical ذ slot bounded between د and ر)
16447	د / ذ	Confirmed	111/59 Mi0.r1 (25447 = دوبریوه)؛ 111/99 Mi1
16448	ر	Confirmed	111/99 (ایران interlinear gloss ر)؛ 111/96 (44853 = خرسز)؛ 111/89 (71448)؛ 113/71 (×2 عشائر)
16451	ز	Confirmed	111/99 Mi1 (interlinear gloss ز)؛ 113/01 (بازیان، معزولاً)؛ 111/96 (45153 = خرسز)؛ 111/89 (71451 زیاده)
16458	س	Confirmed	111/96 Mi1.r9 (45853 = خرسز)؛ 111/21 Mi0 (واسیلی)؛ 111/32 Mi2 (25458)
16462	ش	Confirmed	113/01 Mi0.r4 (ایشتدیکنه interlinear gloss ش)؛ 111/79 (46225 معاشی)؛ 111/32 (25462 کشی)؛ 113/71 (×2 عشائر)

Base K=0 Code	Letter / Syllable	Confidence	Archival Evidence & Planetary Transformations
16466	ص	Confirmed	111/99 Mio.r6 (interlinear gloss ص)؛ 112/28 Mio.r2 (46625 interlinear gloss ص)؛ 112/38 Mio
16468	ض	Confirmed	111/59 Mi1.r1 (25468)؛ 111/81 Mio.r6 (21468)؛ 111/99 Mi1
16471	ط (homophone 1)	Confirmed	112/38 Mio,Mi2؛ 111/81 Mio.r3 (21471)؛ 111/94 L3 (71471)
16472	ط (homophone 2)	High-Confidence	111/21 Mi2,Mi5
16477	ع	Confirmed	111/99 Mio,Mi1 (interlinear gloss ع)؛ 112/28 Mio.r5 (47725=ع)؛ 111/79 (معاشی)؛ 113/71 (عبی2× عشائر ،)
16481	غ (homophone 1)	Confirmed	111/21 Mio.r9؛ 113/76 L8
16482	غ (homophone 2)	Confirmed	111/99 Mi1.p1.r1 (قوماندانلغنه interlinear gloss غ)
16485	ف (homophone 1)	Confirmed	112/28 Mio.r4, Mi1.r5 (48525)؛ 111/21 Mio,Mi4
16486	ف (homophone 2)	Confirmed	111/99 Mi1 (خلیفه فهیم، مفتی ×4 interlinear gloss ف)
16488	ق	Confirmed	111/99 Mi1.p1.r8 (مقالات interlinear gloss ق)؛ 112/38 Mio (قولونل)؛ 112/86 Mio.r1–2 (قوللانلمق ×2)
16491	ك (homophone 1)	Confirmed	111/89 Mio.r4 (71491 کلدیکمدنبرو second ك)
16492	ك (homophone 2)	Confirmed	111/99 Mi1 (احوالك interlinear gloss ك)؛ 112/28 (49225=ك)؛ 112/38 (به کر)؛ 111/89 (71492)؛ 113/71 (عشائرك)
16495	ل	Confirmed	111/99 (×6 interlinear gloss ل)؛ 112/28 (49525=ل)؛ 112/61 (25495=ل)؛ 112/38 (قوللانلمق ×2)؛ 112/86 (قولونل ×2)
16497	م	Confirmed	111/99 (×6 interlinear gloss م)؛ 112/28 (49725=م)؛ 111/79 (معاشی)؛ 111/89 (71497)؛ 112/86 (قوللانلمق)
16511	ن (homophone 1)	Confirmed	111/21 Mio,Mi1,Mi2؛ 112/38 Mi1 (16499→16511 zero-free jump!)
16515	ن (homophone 2)	High-Confidence	111/99 Mi1.p1.r8
16516	ن (homophone 3)	Confirmed	111/99 (ایران طرفندن interlinear gloss ن)؛ 112/61 (25516=ن)؛ 111/89 (71516)؛ 112/86 (قوللانلمق)
16518	و	Confirmed	111/99 (×8 interlinear gloss و)؛ 112/61 (25518=و)؛ 111/89 (71518=و)؛ 112/38 (قوللانلمق)؛ 112/86 (قولونل ×2)
16519	ه	Confirmed	111/99 (×8 interlinear gloss ه)؛ 112/28 (51925=ه)؛ 111/89 (71519)؛ 113/01 (بغداده)؛ 113/71
16521	لا	Confirmed	111/99 Mi1.p1.r8 (مقالات interlinear gloss لا)؛ 113/01 Mi1.r4 (معزولاً)؛ 112/86 Mio.r2 (قوللانلمق)
16525	ی	Confirmed	111/99 (×12 interlinear gloss ی)؛ 111/75 Mio.r3 (52521 interlinear gloss ی)؛ 112/61 (25525=ی)؛ 111/89 (71525)
16526	ء / ئ (همزه و اضافت)	Confirmed	111/99 Mio.r5 (فرقهٔ interlinear gloss ء)؛ 113/01 (معزولاً)؛ 112/86 (اعلاء)؛ 113/71 (عشائر، عشائرك)
16651	جز (syllable)	Confirmed	111/21 Mio.r2 (16651-16518-16525-16424 = جزویت)
16659	پر (syllable)	Confirmed	111/79 Mi2.r2 (Kamer Ahşâm 65925 = پروزه)

3.2. 17xxx–19xxx Inflectional and Verbal Auxiliary Suffixes (51 Entries)

Base K=0 Code	Ottoman Equivalent	Confidence	Archival Evidence
17122	ده / در	High-Confidence	111/99 Mi1 p1 r7
17214	لنان / ندن	High-Confidence	113/46 Mio r3
17221	ده	Confirmed	113/01 Mi1 r5 + Mi4 l4 (22321-17221 = بغداده)؛ 111/99 Mi1 p1 r7؛ 112/86 Mio r1 (خدمات مهمه ده)؛ 17221 (111/51 L6)؛ 72221 (111/89 L2 زمانننده اولوب, 111/94 L4)
17222	يه / دن	Confirmed	111/99 Mio r5,r6,r8 (glossed يه ×3); Mi1 p2 r5؛ 113/01 Mio r5,r7 (بصره دن، حله ده)؛ 111/79 Mio L6, Mi2 L8 (22226); 112/28 Mio L2,L5,L7, Mi1 L1,L4 (22226); 111/59 Mio R3C2 (26222)
17225	ده / جه	Confirmed	113/71 Mio r7 (عشائرك ده)؛ 111/75 Mio L5 G20 (22522 before طرف عاجزانه مدن بيان مطالعه يه محل يوقدر)
17226	نه	Confirmed	111/99 Mio r9; Mi1 p1 r1,r2; Mi1 p2 r7 (glossed نه ×4 in قوماندانلغنه، تحقيقاتنه، اغفالنه)؛ 111/79 Mi2 L2 (22626)
17227	لرى / سى	High-Confidence	111/99 Mi2 r5,r10; Mi3 r3؛ 113/01 Mi2 r2
17228	جه	Confirmed	72228 (111/89 L5 ولايتجه)؛ 26228 (112/61 L1)
17229	دن / ندن (suffix)	Confirmed	26229 (112/61 L2, L5; 112/2 Mi1 L9)؛ 111/75 Mio L6 G24 (22922); 112/28 Mio L2 (22926 before حضرلرينه); 111/79 Mio L6 (22926); 111/81 Mi2 L1 (22229); confirmed in Shard D as ندن-/دن-
17238	نجه / سندن	Confirmed	26238 (112/2 Mio L1 بياننه كوره / دفتر نفوسنجه)
17241	نك	Confirmed	111/99 Mio r3,r6 (explicitly glossed نك ×2 in افندينك)؛ 113/01 Mi1 r3 (مشار اليهك)؛ 113/71 Mio r3,r6 (مقاصدنك، مقدارنك)؛ 26241 (112/2 Mio L3 ماردين سنجاغنده, L7 سعرد سنجاغنده, L9 ملاطيه سنجاغنده, Mi1 L4–5)؛ 111/79 Mi2 L1 & Mi3 L1 (44472+24126 = شهبندرليگنك); 111/75 Mio L2 G3 & L3 G10 (24122, ×2); Shard D also attests ندە-
17242	ده	Confirmed	113/01 Mio r2 + Mi4 l1 (قدرده); Mi1 r10
17245	دن / دخى	Confirmed	113/01 Mio r1 + Mi4 l1 (طرفدن)؛ 113/71 Mio r4
17246	ده / سنده	Confirmed	111/21 Mi1؛ 112/38 Mio
17248	سنه / نده	High-Confidence	113/46 Mio r4
17251	جه / نجه	Confirmed	113/46 Mio r2 + Mi2 l1 (46226-17251 = ايجابجه)
17263	لمش	Confirmed	113/01 Mio r6 + Mi4 l2 (16492-17263 = كلمش)
17264	ندغندن / اولنمغله	High-Confidence	113/71 Mio r3
17265	لغندن	Confirmed	113/71 Mio r4 (72626-17265 = قوماندانلغندن)
17266	سندن / ندن	Confirmed	112/38 Mio
17267	-سندن / -لرندن (cf. 17266)	Confirmed	111/75 Mio L6 G25 (26722, chained after 22922 before و)
17282	-لرندن / -سندن	Confirmed	111/75 Mio L6 G27 (28222, parallel to 22922+26722 after و)
17289	سى	Confirmed	111/99 Mi3 r6,r8 (سى خصوصنك[...])؛ 112/86 Mio r3 (61294-17289 = رتبه سى)؛ 111/59 Mio R2C4 (26289); confirmed in Shard A
17291	سنك	Confirmed	113/01 Mi1 r7 + Mi4 l5 (77343-17291 = مسئله سنك)

Base K=0 Code	Ottoman Equivalent	Confidence	Archival Evidence
17292	سنه	Confirmed	111/99 Mio r4 (glossed سنه)؛ 111/99 Mi2 r2,r7
17294	يله	Confirmed	113/01 Mio r3 + Mi4 l1 (دينيله جك)؛ 111/99 Mi2 r6
17295	سندن	Confirmed	111/99 Mi1 p2 r8 (glossed سندن)
17328	ايتمكده	High-Confidence	113/71 Mio r2 (تحريك و اغفال ايتمكده ايدوكى)
17331	-ك (genitive)	Confirmed	111/59 Mio R1C6 & Mi2 L1 (76886+26331 = قره طاغك)
17332	كوندريلن / ايديلن (participle/aux)	Confirmed	17332 (113/75 L3, L4, L6)
17344	يه / سنه	Confirmed	113/46 Mio r4 + Mi2 l2 (نواحى يه)
17425	لر	Confirmed	72425 (111/89 L8 مديرلر)
17426	لرك	Confirmed	72426 (111/89 L2 مديرلرك)
17429	خى / دخى	High-Confidence	111/99 Mi1 p2 r8 (glossed خى)
17441	ده / نده	Confirmed	17441 (112/81 L2)؛ 26441 (112/2 Mio L5 ديار بكر سنجاغنده)
17445	موجبنجه / نظراً (introductory) (suffix/aux	Confirmed	26445 (112/2 Mio L1)
17448	لرى	Confirmed	72448 (111/89 L2 تعيينلرى, 111/94 L1 مديرلرى)؛ 111/81 Mio L1 & Mi3 L1 (32245+22448 = بوراجه), Mio L5 & Mi3 L4 (22445/22448); Shard D attests -لرى
17489	سى	Confirmed	17489 (111/51 L7, 113/47 bottom line explicitly glossed سى)
17525	ى / سى (possessive)	Confirmed	17525 (111/51 L2, 113/75 L2)
18133	-لر / اوزره / ايديلن (18xxx) (suffix/aux	Confirmed	111/75 Mio L2 G9 (13323 → 18133, followed by 24122 = -نك at L3 G10)
18428	سى	Confirmed	113/01 Mi2 r2 + Mi4 l7 (اولنمسى)
18464	لرى	Confirmed	111/21 Mio,Mi2 (اعضالرى, معلملرى)
18468	لرنده	Confirmed	113/01 Mi1 r2 + Mi4 l4 (قايممقاملقلرنده)
18472	نفوسجه / بولنان (auxiliary/adverbial)	High-Confidence	113/46 Mio r4 + Mi2 l2؛ 111/96 Mi2 l5 (47255 → K0=18472)
18628	دن / ندن	Confirmed	112/38 Mio,Mi1,Mi2
18664	نجه / يى	Confirmed	111/21 Mi4؛ 111/32 Mi2 (27667)
18667	لرينى	Confirmed	111/21 Mi2,Mi4 (جمعيتلرينى)؛ 111/32 Mi2 (27675)
18669	ندن / لرندن	Confirmed	111/21 Mi1,Mi2
18675	ى / سى	Confirmed	111/21 Mio,Mi4؛ 112/38 Mi2
19674	اولنه	Confirmed	113/46 Mio r8 + Mi2 l4 (19674-16217 = اولنه جغى)
19679	اولنان	Confirmed	113/46 Mio r3 + Mi2 l2 (اولنان بعض قضا)

4. Base (K = 0, Şems Sabâh) Five-Digit Lexical and Geographical Codebook (220 Entries)

Base K=0 Code	Ottoman Equivalent	Confidence	Archival Evidence
11114	مومی الیه	Confirmed	111/99 Mi1 p1 r1,r6; Mi1 p2 r2; Mi2 r8; Mi3 r4,r7 (glossed مومی الیه ×4)
11127	مهمه / مهم	High-Confidence	112/86 Mi0 r1 (13 entries after 11114 مومی الیه [م-ه-م → م-و-م], before 11226 خدمات مهمه ده: نام)
11167	نام (نامنده)	Confirmed	111/81 Mi0 L2 & Mi3 L1 (علی بگ نامنده) (raw: 15167)
11226	نام	Confirmed	111/99 Mi1 p1 r5,r7 (glossed نام ×2 in جوابنامه)
11241	الیه (مشار الیه)	Confirmed	113/01 Mi1 r3 + Mi4 l4 (77347-11241-17241 = مشار الیهك)
11243	نتیجه	Confirmed	111/99 Mi1 p2 r8 (glossed نتیجه)
11274	نفر / نفوس	Confirmed	112/2 Mi1 L5, L7 (Qamer Sabâh (+8): 19274)
11514	مشار الیه	Confirmed	111/99 Mi1 p2 r3 (65465-11514 = شیخ مشار الیه)
12335	نواحی	Confirmed	113/46 Mi0 r4 + Mi2 l2 (و نواحی یه)
12815	نره ده / نه ده	Confirmed	111/81 Mi0 L3 & Mi3 L2 (و نره ده بر طاقم) (raw: 16815)
12827	دفتر / استفاده	High-Confidence	111/96 Mi2 l9 (raw 82748 → K0=12827)
13291	ولایت (cf. 13391)	Confirmed	111/75 Mi0 L3 (penciled ولایت), 111/79 Mi0 L6,L8 & Mi2 L3, 112/28 Mi0 L1 & Mi1 L6 (raw: 29122 / 29128 [corr. 29117])
13387	ودخی / دخی	Confirmed	113/01 Mi0 r2 + Mi4 l1 (بو قدرده دخی)
13391	ولایت	Confirmed	113/46 Mi0 r1 + Mi2 l1 (تشکیلات ولایت صره سنده)؛ Shard D 112/2؛ 112/2 Mi0 L1, Mi1 L1, L9; 111/89 Mi0 L5
14221	یوز	Confirmed	112/2 Mi0 L3, L4, L6, L8; Mi1 L2 (×2), L3 (Qamer Sabâh (+8): 23221)
14497	هیئت	Confirmed	111/21 Mi0؛ 111/32 Mi0,Mi1 (23497)
14598	یتمش	Confirmed	112/2 Mi0 L3, L9; Mi1 L2 (×2) (Qamer Sabâh (+8): 23598)
14647	یکرمی	Confirmed	112/2 Mi0 L7 (24,614 in Siirt) (Qamer Sabâh (+8): 23647)
14697	ینه / هیئت [crossed out on Mi2]	Confirmed	111/89 Mi0 L5 (ینه ولایتجه باقلمقده) (Zühre Sabâh (+49): 68697)
15135	الیوم / یول	Confirmed	111/21 Mi4 (الیوم)؛ 111/32 Mi2
15142	ینه / یقینده	High-Confidence	113/71 Mi0 r2 (7 entries after Shard A 15135 الیوم in ی section: ینه بعض عشایری)
15221	فرانسز / قونسلوس	High-Confidence	112/38 Mi0 (فرانسز قونسلوسنك)
15612	یدی	Confirmed	112/2 Mi0 L6 (اون یدی بیك = 17,000 in Diyarbekir) (Qamer Sabâh (+8): 24612)
18282	ایدلك (استخدام ایدلك)	Confirmed	111/79 Mi2 L7 & Mi3 L6 (raw: 28227)
18432	اشغال	Confirmed	111/79 Mi0 L8 & Mi4 L1 (ولایتی اشغال ایدن) (raw: 43227)
19283	امر / خصوص / باب [ا early]	High-Confidence	111/75 Mi0 L4 G19 (+ 17225 before بیان مطالعه یه محل یوقدر) (raw: 28324)
19469	اولان / ایچندن [ا early]	High-Confidence	111/75 Mi0 L6 G28 (before برنده هیچ اشتکا وقوعبولمامشدر) (raw: 46924)
19693	ایچون	High-Confidence	111/59 Mi0 R3C1 & Mi2 L2 (تشکیل ایتمك ایچون) (raw: 28693)

Base K=0 Code	Ottoman Equivalent	Confidence	Archival Evidence
21552	اهالی / اصحاب / سائر [ا early]	High-Confidence	111/75 Mio L6 G26 (+ 17282 after و) (raw: 55225)
21627	اولنمسی / ایدلسی / ابقا [verbal ا aux, early]	High-Confidence	111/75 Mio L2 G6 & L4 G18 (×2, paired both times with 43268) (raw: 62725)
22114	اداره / انتخاب [ا early, before 22167 اشقودره & 22181 اتخاذ]	High-Confidence	111/75 Mio L5 G22 (raw: 11426)
22167	اشقودره	Confirmed	111/21 Mi4 (اشقودره یه)
22181	اتخاذ ایدیلن	Confirmed	113/75 Mio L7 (interlinear gloss) (Şems Sabâh (0): 22181)
22317	بصره	Confirmed	113/01 Mio r5 + Mi4 l2 (بصره دن عبدالله پاشا)
22321	بغداد	Confirmed	113/01 Mio r6,r9; Mi1 r5 + Mi4 l2,l3,l4 (×3 بغداده، بغدادده)
22422	امور / امرا	High-Confidence	112/38 Mi2,Mi4
23572	ایالت / دیاربکر مرکز (central sanjak)	Confirmed	112/2 Mio L5 (62,090 Muslim, 17,182 non-Muslim) (Qamer Sabâh (+8): 32572)
24512	حله	Confirmed	113/01 Mio r7 + Mi4 l2 (اولجه حله ده برادری)
25597	رواندز [یاخود رانیه]	High-Confidence	113/71 Mio r3,r9 (Sanjak/Kaza Gazetteer 24xxx–27xxx after 24512 حله in ر section; subordinate kaza district of the Sanjak of Kirkuk: رواندز قایممقاملغنه)
26794	عقره / عمادیه [یاخود صلاحیه]	High-Confidence	113/71 Mio r3,r5 (Sanjak/Kaza Gazetteer 26xxx in ص/ع section on the Mosul–Kirkuk frontier: 26794 طرفنه طوغری کلمك عزمیله)
27245	بورا (بوراجه)	Confirmed	111/81 Mio L1 & Mi3 L1 (raw: 32245)
27246	اولق / اوزره	High-Confidence	112/38 Mi4
28236	بولنان / اولان [cf. 29177 اولنان/ بولنان]	High-Confidence	111/75 Mio L3 G15 (before دوائرده بولنان مأمورینك) (raw: 23633)
28715	اسباب / امر	High-Confidence	113/71 Mio r8 (اسایشك حسن محافظه سی اسباب لازمه سی)
29177	اجرا	Confirmed	111/99 Mio r7 (explicitly glossed اجرا in اجراآت)
29221	احساس / احتیاط	High-Confidence	113/71 Mio r3 (immediately preceding 29222 احوال)
29222	احوال	Confirmed	111/99 Mi1 p1 r2 (explicitly glossed احوال in احوالك تحقیقاتنه)؛ 113/71 Mio r5 (احوال عشائر)
29274	اخبار / اطوار	Confirmed	113/71 Mio r6 (52 entries after 29222 احوال: احوال عشائر و اخبار مفسدتنك تحقیقیله برابر)؛ 112/81 Mio L6 (interlinear gloss)
32268	تشکیل	High-Confidence	111/59 Mio R3C3 & Mi2 L2 (قرالیت تشکیل ایتمك) (raw: 41268)
33392	تدارك	High-Confidence	111/79 Mi3 L5 (clerk raw note 39242 beside تدارك) (raw: 39242)
34141	قطاع الطریق / اشقیا	High-Confidence	111/96 Mi1 r10 (raw 14171 → K0=34141: خرسز و قطاع الطریق کروهی)
37244	اکلاشلمش / کلمسی	High-Confidence	111/21 Mi1,Mi4؛ 112/38 Mi1
37924	خفیه	Confirmed	111/79 Mi2 L5 & Mi3 L6 (clerk explicit 92446=خفیه); 111/75 Mio L1 G1 (92442) (raw: 92446 (Kamer) / 92442 (Müşterî))
39189	اجنبیه	Confirmed	111/32 Mio (48189 = اجنبیه)

Base K=0 Code	Ottoman Equivalent	Confidence	Archival Evidence
41171	اتمام / اتحاد	High-Confidence	111/99 Mi3 r6
41267	اساس / استعداد	High-Confidence	113/71 Mi0 r3 (preceding 41426 اسباب and 41427 اسامی: درجهٔ اساس مقاصدنك)
41296	امرای عسکریه	High-Confidence	112/38 Mi0
41426	اسباب	Confirmed	111/99 Mi1 p1 r6 (explicitly glossed اسباب)
41427	اسامی	Confirmed	111/32 Mi0 (49427 = اسامی)
41459	اولدیغی	Confirmed	113/76 Mi0 L2 (adjacent/glossed) (Şems Sabâh (0): 41459)
41468	استدعا	Confirmed	113/46 Mi0 r8 + Mi2 l4 (حقنده استدعا اولنه جغی)
41832	اشبو / اصول [between 41427 اسامی and 42xxx]	High-Confidence	111/75 Mi0 L3 G11 (before ولایتی) (raw: 83245)
42214	اسناد	Confirmed	111/99 Mi1 p1 r8 (explicitly glossed اسناد in اسناد اولنان مقالات)
42447	آی / ماه	High-Confidence	112/38 Mi0 (بر آیدن برو)
42757	تسویه	Confirmed	111/21 Mi2,Mi5 (senior clerk gloss تسویه)
43212	التی (homophone 1)	Confirmed	112/2 Mi0 L7 (62,006 Muslim in Siirt) (Qamer Sabâh (+8): 52212)
43214	التی (homophone 2)	Confirmed	112/2 Mi0 L4 (12,683 in Mardin), L8 (24,614 in Siirt) (Qamer Sabâh (+8): 52214)
43268	اعزام / اعطا / اعتبار [ا ع section, 120 lines before 43388 اعضا]	High-Confidence	111/75 Mi0 L2 G5 & L4 G17 (×2, paired both times with 21627) (raw: 26847)
43289	اعطا	Confirmed	111/99 Mi1 p2 r6 (explicitly glossed اعطا)
43355	اعلا	High-Confidence	112/86 Mi0 r2 (strictly bounded between 43289 اعطا [ط-ع-ا] and 43388 اعضا / 43442 اغفال [ف-غ-ا] + 16526 ء: اعلاء رتبه سی 'elevation of his rank')
43388	اعضا	Confirmed	111/21 Mi2,Mi5 (senior clerk gloss اعضا)؛ 111/32 Mi1
43442	اغفال	Confirmed	111/99 Mi1 p2 r7 (explicitly glossed اغفال in اغفالنه)؛ 113/71 Mi0 r2 (51176 و 43442 = تحريك و اغفال)
43486	افندی	Confirmed	111/99 Mi0 r3; Mi1 p1 r4 (explicitly glossed افندی ×2)؛ 113/01 Mi2 r3؛ 112/86 Mi0 r3 (درویش افندی)
43614	التمش	Confirmed	112/2 Mi0 L5 (62,090), L7 (62,006), Mi1 L3 (62,904) (Qamer Sabâh (+8): 52614)
44256	الله	Confirmed	113/01 Mi1 r7 + Mi4 l5 (شیخ عبیدالله)
44279	امکان / ممکنه	Confirmed	111/21 Mi4 (وسائل ممکنه)؛ 111/32 Mi2
44295	امتیاز	Confirmed	111/21 Mi5 (senior clerk gloss امتیاز)
44416	ایمان / امان	Confirmed	111/99 Mi1 p1 r6 (glossed ایمان)
44721	حدود / قضا	High-Confidence	111/21 Mi6 (نه تقرب 44721 یکی پازار)
45219	اقتضا	Confirmed	112/38 Mi1,Mi2 (اقتضاسی)
45412	امهال / اعمال	Confirmed	111/96 Mi2 l5 (raw 41212 → K0=45412, glossed امهال ایده)
46111	اوچ	Confirmed	112/2 Mi0 L4 (12,683), Mi1 L2–3 (273,473 [×2]) (Qamer Sabâh (+8): 55111)
46124	اوزره / اوله رق	Confirmed	112/86 Mi0 r2 (قوللانلمق اوزره)؛ Shard D 112/2 Mi1؛ 112/2 Mi1 L1, L7

Base K=0 Code	Ottoman Equivalent	Confidence	Archival Evidence
46165	اون	Confirmed	112/2 Mio L4 (12,683), L6 (17,182), L8 (24,614) (Qamer Sabâh (+8): 55165)
46179	اوهام	Confirmed	111/99 Mi1 p2 r3 (explicitly glossed اوهام in تابع اوهامه و خوف)
46226	ايجاب	Confirmed	113/46 Mio r1 + Mi2 l1 (ايجابجه)
46254	ايكى	Confirmed	112/2 Mio L4, L5, L6, L7; Mi1 L2, L3 (Qamer Sabâh (+8): 55254)
47443	بر	Confirmed	111/99 Mi1 p2 r5 (glossed بر)؛ 113/01 Mio r9؛ 113/46 Mio r9
47447	برادر	Confirmed	113/01 Mio r7 + Mi4 l2 (برادری محمد پاشا)
47481	بركره / بعضاً	Confirmed	111/99 Mi1 p2 r1 (glossed بركره)
48126	بعض	Confirmed	113/01 Mio r1 + Mi4 l1 (شايعه بعض طرفدن)؛ 113/46 Mio r3 + Mi2 l2 (اولنان بعض)؛ 113/71 Mio r2 (بعض خدمات مهمه ده)؛ 112/86 Mio r1 (بعض قضا عشايرى)؛ Shard D 111/89؛ 111/89 Mio L8 (+ ى س ى = بعضيسى)
48229	بورادە / بورايه	Confirmed	111/21 Mio,Mi4؛ 112/38 Mi1
48241	بوكون	Confirmed	111/99 Mi1 p2 r1 (explicitly glossed بوكون)
48256	بيك	Confirmed	112/2 Mio L3, L4, L5, L6, L7; Mi1 L2, L3 (Qamer Sabâh (+8): 57256)
49256	پاشا	Confirmed	113/01 Mio r5,r9 + Mi4 l2,l3 (عبدالله پاشا، محمد پاشا)
49258	پاپاس	Confirmed	111/21 Mio (پاپاس)
49358	صربيه	High-Confidence	111/59 Mio R2C3 & Mi2 L1 (صربيه گبى) (raw: 58358)
49477	تأثيرات	Confirmed	113/01 Mi1 r9 + Mi4 l6 (تأثيرات كوستريديكى)
51152	تجاوز	Confirmed	111/99 Mio r4 (explicitly glossed تجاوز)
51176	تحريك	Confirmed	113/71 Mio r2 (bounded between 51152 تجاوز [ج-ت] and 51188 تحقيقات [ت-ح]: بعض عشايرى تحريك و اغفال)
51188	تحقيقات	Confirmed	111/99 Mi1 p1 r2 (explicitly glossed تحقيقات)
51221	بونك / بونلر [2 lines before 51223 بونلر]	High-Confidence	111/75 Mio L2 G8 (raw: 22155)
51223	بونلر	Confirmed	111/21 Mi4؛ 111/32 Mi2 (59223 بونلر)
51288	توسط	Confirmed	111/99 Mio r4 (explicitly glossed توسط)
51359	ترك	Confirmed	111/99 Mi1 p2 r6 (explicitly glossed ترك)
52141	تبعه	Confirmed	111/89 Mio L5 (+ ن ك = تبعه نك) (Zühre Sabâh (+49): 36141)
52221	تشريفات / تشكيلات	Confirmed	111/99 Mi1 p2 r6 (glossed تشريفات)؛ 113/46 Mio r1 + Mi2 l1
52281	مادامكه / تدارك	Confirmed	111/21 Mi4
52493	تلطيف	Confirmed	111/99 Mi1 p1 r5 (explicitly glossed تلطيف)
53184	توسيع	Confirmed	111/21 Mi4 (توسيع)؛ 111/32 Mi2 (62184)
53444	تفرعات / تعيين	Confirmed	111/96 Mi2 l13 (raw 44419 → K0=53444, glossed تفرعات و)؛ Shard D 111/89؛ 111/89 Mio L2 (+ لرى = تعيينلرى) & Mi2 L8
54279	جلب	Confirmed	113/01 Mi2 r1 + Mi4 l7 (در سعادته دعوت و جلبى)
54422	جواب	Confirmed	111/99 Mi1 p1 r7 (explicitly glossed جواب in جوابنامه)
55169	جواب (homophone)	Confirmed	111/96 Mi3 l4 (raw 16922 → K0=55169, glossed جواب)
55194	حاصلات	Confirmed	111/99 Mi1 p2 r6 (explicitly glossed حاصلات)
55195	تحقيقات	Confirmed	112/38 Mi1 (تحقيقات لازمه)

Base K=0 Code	Ottoman Equivalent	Confidence	Archival Evidence
56249	حفيد	Confirmed	111/99 Mi1 p1 r7 (explicitly glossed حفيد)
56295	جمعيت	Confirmed	111/21 Mi4 (جمعيتلرينى)؛ 111/32 Mi1,Mi2 (65295)
56449	حقنده	Confirmed	113/46 Mio r8 + Mi2 l4 (حقنده استدعا اولنه جغى)؛ 112/86 Mio r4 (درويش افندى حقنده هنوز بر امر تلغرافيلرى النمديغندن)
56611	حمايه	Confirmed	111/21 Mi4 (حمايه)
57255	حكومت / خريستيان	High-Confidence	111/21 Mi2,Mi5
57494	خبر	High-Confidence	113/71 Mio r4 (تلغرافنامه سنده دخى خبرى: خوف 57774 before page 57 خ)
57519	خدمت [خدمات]	High-Confidence	112/86 Mio r1 (بعض: خوف 57774 before plural/izâfet 16172 + page 57 خ) (خدمات مهمه ده قوللانلمق اوزره)
57612	خفيه / تخصيص [section خ]	Confirmed	111/79 Mi2 L6 & Mi3 L9 (clerk explicit 61266) (raw: 61266)
57774	خوف	Confirmed	111/99 Mi1 p2 r3 (explicitly glossed خوف in خوف و اوهامه تابع)
58484	در سعادت	Confirmed	113/01 Mi2 r1 + Mi4 l7 (58484-16519 = در سعادته)
58697	دفتر / دائره (نفوس)	Confirmed	112/2 Mio L1 (ولايت دفتر نفوسنجه) (Qamer Sabâh (+8): 67697)
58753	درميان	High-Confidence	111/99 Mi3 r1
58757	واسطه / حركت	High-Confidence	112/38 Mi2,Mi4 (senior clerk gloss واسطه)
58771	درت	Confirmed	112/2 Mio L3, L7, L8; Mi1 L2, L3 (Qamer Sabâh (+8): 67771)
58775	درجه	Confirmed	113/71 Mio r3 (درجهٔ اساس مقاصدنك)؛ Shard A 111/21 Mi4 & 111/32 Mi2 (67775 Kamer +8 → 58775)
58776	درجه	Confirmed	111/21 Mi4 (بودرجه)؛ 111/32 Mi2 (67775)
58799	درويش	High-Confidence	112/86 Mio r3 (strictly bounded between 58775 درجه / درميان [ر-د] and 58874 دعوت [ع-د] before 43486 درويش افندى :افندى)
58874	دعوت	Confirmed	113/01 Mi2 r1 + Mi4 l7 (در سعادته دعوت و جلبى)
59156	عسكر / خدمات عسكريه	High-Confidence	111/81 Mio L2 & Mi3 L1 (على بگ نامنده عسكر طوپلايان) (raw: 64156)
59258	خارجدن / خدمت [before 59428 خدمت]	High-Confidence	111/75 Mio L2 G4 (raw: 25864)
59428	خدمت / خدمات	Confirmed	112/38 Mi1 (وسائر خدماتده)
59447	حركت / كلوب	High-Confidence	112/38 Mio
61269	روم ايلى / دولت عليه	High-Confidence	111/21 Mio؛ 112/38 Mi1
61294	رتبه	High-Confidence	112/86 Mio r3 (early ر on page 61 + 17289 سى after اعلاء :اعلاء رتبه سى ... اولجه تبشير و احسان بيورلسى)
61364	عموم / روسيه	High-Confidence	111/59 Mio R4C8, R8C7 & Mi2 L2–3 (raw: 69364)
62112	تاريخلو تلغرافنامه ساميلرى (formulaic)	Confirmed	111/94 Mio L1 (في ٢٨ حزيران سنه ٩٥ ٤٦١١٢) (Zühre Sabâh (+49): 46112)
62222	زياده / ذاتاً [ذ/ر/ز section]	High-Confidence	111/75 Mio L2 G7 (raw: 22266)
63444	شهبندرلك	Confirmed	111/79 Mi2 L1 & Mi3 L1 (قورفه شهبندرليگنك) (raw: 44472)

Base K=0 Code	Ottoman Equivalent	Confidence	Archival Evidence
63446	زمان	Confirmed	111/89 Mio L2 (زماننده) (Zühre Sabâh (+49): 47446)
63666	سكز	Confirmed	112/2 Mio L3 (74,899 in Mardin) (Qamer Sabâh (+8): 72666)
63667	سكسان (homophone 1)	Confirmed	112/2 Mio L6 (17,182 in Diyarbekir) (Qamer Sabâh (+8): 72667)
63678	سكسان (homophone 2)	Confirmed	112/2 Mio L4 (12,683 in Mardin) (Qamer Sabâh (+8): 72678)
64276	شايعه	Confirmed	113/01 Mio r1 + Mi4 l1 (شايعه بعض طرفدن)
64654	سعرد	Confirmed	112/2 Mio L6 (سعرد سنجاغنده) (Qamer Sabâh (+8): 73654)
64692	سلف	Confirmed	111/89 Mio.r2 & Mi2.r2 (Zühre 48692 → 64692: سلف عاجزى زماننده اولوب — Fable 5.2 emendation)
64721	سنجاق	Confirmed	112/2 Mio L2, L5, L6, L9; Mi1 L4 (Qamer Sabâh (+8): 73721)
65465	شيخ	Confirmed	111/99 Mio r2; Mi1 p1 r1,r6; Mi1 p2 r3 (explicitly glossed شيخ ×4)؛ 113/01 Mi1 r6؛ 113/71 Mio r1
65488	صفت / صورت	High-Confidence	112/38 Mi1
65562	صره	Confirmed	113/46 Mio r1 + Mi2 l1 (ولايت صره سنده)
65626	صورت	Confirmed	111/99 Mio r8 (explicitly glossed صورت)
66617	صنف	Confirmed	111/89 Mio L5 (صنف تبعه نك) (Zühre Sabâh (+49): 51617)
66729	طرفندن	Confirmed	113/75 Mio L1 (interlinear gloss) (Şems Sabâh (0): 66729)
66779	طرف	Confirmed	111/99 Mi1 p2 r4 (explicitly glossed طرف in ايران طرفندن)؛ 113/01 Mio r1 + Mi4 l1 (بعض طرفدن)
66794	طوقوز	Confirmed	112/2 Mio L3 (74,899), Mi1 L3 (62,904) (Qamer Sabâh (+8): 75794)
66795	طوقسان	Confirmed	112/2 Mio L3 (74,899), L5 (62,090) (Qamer Sabâh (+8): 75795)
67196	عجزى (و زماننده)	Confirmed	111/89 Mio L2 & Mi2 L2 (Zühre Sabâh (+49): 52196)
67241	عبدالله	Confirmed	113/01 Mio r5 + Mi4 l2 (عبدالله پاشا)
67412	طرف / طاقم	High-Confidence	111/21 Mi4
67886	قره طاغ [or عهدنامه/قره طاغ]	Confirmed	111/59 Mio R1C7, R6C1 & Mi2 L1,L5 (raw: 76886)
68212	عودت	Confirmed	111/99 Mi1 p2 r2 (explicitly glossed عودت)
68781	درت	Confirmed	111/21 Mi2,Mi5 (senior clerk gloss درت)
69223	غير مسلم	Confirmed	112/2 Mio L4, L6; Mi1 L4 (Qamer Sabâh (+8): 78223)
69422	فرقه	Confirmed	111/99 Mio r5 (explicitly glossed فرقه in فرقهٔ اختلاليه)
69443	معلومات / غير رسمى	High-Confidence	111/81 Mio L4G7 & L7G8 (×2) & Mi3 L3,L9 (raw: 74443)
69448	فضيلت / فساد	Confirmed	111/99 Mio r7 (glossed فضيلت), Mi2 r10
69456	قدر / فوق	Confirmed	113/01 Mio r2 + Mi4 l1 (بو قدرده)
71441	قايممقام	Confirmed	113/01 Mi1 r2 + Mi4 l4 (قايممقاملقلرنده)؛ 113/46 Mio r2 + Mi2 l1 (قايممقاملغه)
71468	قتولك / كليسا	High-Confidence	111/21 Mi1
71495	قونسلوس	Confirmed	112/38 Mio (فرانسز قونسلوسنك)
71516	قريه	Confirmed	111/99 Mi1 p2 r6 (explicitly glossed قريه)
72447	قافله	Confirmed	111/96 Mi2 l11 (raw 44738 → K0=72447: قافله ... و كاروانلرى)
72449	كوره	Confirmed	113/01 Mio r5 + Mi4 l2 (ايشتديكنه كوره)

Base K=0 Code	Ottoman Equivalent	Confidence	Archival Evidence
72482	كلياً / قطعياً	High-Confidence	111/59 Mio R2C1 & Mi2 L1 (صربيه گبى كلياً) (raw: 11482)
72529	قسم	Confirmed	111/89 Mio L9 (بر قسمى ده) (Zühre Sabâh (+49): 56529)
72547	قضا	Confirmed	113/46 Mio r3 + Mi2 l2 (glossed قضا above crossed-out 72547)
72626	قوماندان	Confirmed	111/99 Mi1 p1 r1 (explicitly glossed قوماندان in قوماندانلغنه)؛ 113/71 Mio r4 (قوماندانلغندن)
72991	قائمقام [قيمقام]	Confirmed	111/89 Mio L1, L8; 111/94 Mio L1 (Zühre Sabâh (+49): 56991)
73644	قائمه / كشف / پوصله	Confirmed	111/79 Mi2 L7 & Mi3 L8 (clerk explicit 64412) (raw: 64412)
74331	كسب	Confirmed	112/2 Mi1 L7, L8 & Mi3 L3 (Qamer Sabâh (+8): 13331)
74763	كافه [late ك, between 74331 كسب and 75151 لطفه]	High-Confidence	111/75 Mio L3 G14 (دوائرده ... ولايتى كافه) (raw: 76378)
75151	لازمه [لطفه]	Confirmed	113/71 Mio r8 (اسايشك حسن محافظه سى اسباب لازمه سى)؛ Shard D 112/81 Mio L6 (ل section)؛ 112/81 Mio L6 (interlinear gloss)
75221	قتولك	Confirmed	111/21 Mi1 (75221+76113)؛ 111/32 Mi1,Mi4 (14221 via Kamer +8 modular wraparound!)
75254	داخل مذهب / كليسا	High-Confidence	111/21 Mi1
75282	لازمه [ل section, after 75151 لطفه]	Confirmed	111/79 Mi2 L4 & Mi3 L3 (لازمه يه تبليغ كيفيت) (raw: 28214)
76113	مذهب	Confirmed	111/21 Mi1 (76113+75221)؛ 111/32 Mi1,Mi4 (15113/15114 via Kamer +8 modular wraparound!)
76245	محمد	Confirmed	113/01 Mio r9 + Mi4 l3 (برادرى محمد پاشا)
76273	مجموع	Confirmed	112/2 Mi1 L1 & Mi2 bottom (مجموع ولايتك) (Qamer Sabâh (+8): 15273)
76278	منطقه / مسقط	Confirmed	111/99 Mio r4 (glossed منطقه/مسقط)
76344	مآل / ماده	High-Confidence	113/71 Mio.r6 (alphabetical range between لازمه 75151 and مأمورين 76444: و اخبار مآلنك تحقيقيله برابر — Fable 5.2 alphabetical determination)
76414	مراعات [مراعاتاً]	High-Confidence	111/89 Mio.r5 (Zühre 61414 → 76414; miscopied by clerk on Mi2 as 63412 and left blank: مظهر عدالت [مراعاتاً] مساواتنه — Fable 5.2 identification)
76444	مأمورين / مرتب [م early, مبنى/متعلق between 76414 and مركز 76468]	High-Confidence	111/75 Mio L1 G2 & L5 G21 (×2: خفيه [76444]نك and و شمدى يه قدر [76444]...) (raw: 44411)
76468	مركز	Confirmed	111/21 Mio (مركزى)
76779	محافظه	Confirmed	113/71 Mio.r7 (عشائرك ده محافظه يه — Fable 5.2 alphabetical order confirmation)
77225	محظوظيت	Confirmed	111/89 Mi1 L1 & Mi2 bottom (محظوظيتنه) (Zühre Sabâh (+49): 62225)
77268	مقصد	Confirmed	112/38 Mi1 (مقصدى كنديسى)
77274	مقاصد [مقصد]	Confirmed	113/71 Mio r3 (6 entries from Shard A/D 77268 مقصد: درجهٔ اساس مقاصدنك)
77343	مسئله	Confirmed	113/01 Mi1 r7 + Mi4 l5 (عبيدالله مسئله سنك)
77347	مشار (مشار اليه)	Confirmed	113/01 Mi1 r3 + Mi4 l4 (شيخ مشار اليهك)
77415	مدير	Confirmed	111/89 Mio L1, L8; 111/94 Mio L1 (Zühre Sabâh (+49): 62415)
77419	مذكوره	Confirmed	111/32 Mio (16419 = مذكوره via Kamer +8 modular wraparound!)
77466	معلم	Confirmed	111/21 Mio (معلملرى)

Base K=0 Code	Ottoman Equivalent	Confidence	Archival Evidence
77488	مساوات	Confirmed	111/89 Mi0 L5 & Mi2 L4 (مساواتنه) (Zühre Sabâh (+49): 62488)
77648	مركز [cf. 76468]	Confirmed	111/79 Mi2 L3 & Mi3 L2 (clerk explicit 64816=مركز) (raw: 64816)
78221	مستخدم [strictly between 77488 مساوات 78333 and مسلم]	Confirmed	111/79 Mi2 L5 & Mi3 L6 (clerk explicit 22117 above استخدام ايدلك) (raw: 22117)
78333	مسلم	Confirmed	112/2 Mi0 L3, L5, L7; Mi1 L3, L7 & Mi2 (Qamer Sabâh (+8): 17333)
78526	موقوف / متوقع	Confirmed	113/47 Mi0 bottom line (interlinear gloss) (Şems Sabâh (0): 78526)
78544	منافع / مأمور	Confirmed	111/21 Mi1؛ 112/38 Mi1
78595	مناسب	Confirmed	113/46 Mi0 r1 + Mi2 l1
78637	ماردين	Confirmed	112/2 Mi0 L2 (ماردين سنجاغنده) (Qamer Sabâh (+8): 17637)
78647	ملاطيه	Confirmed	112/2 Mi0 L8 (ملاطيه سنجاغنده) (Qamer Sabâh (+8): 17647)
78684	مناصب	Confirmed	113/46 Mi0 r1 + Mi2 l1 (مناسب مناصب ايجابجه)
78779	موجوده / مستخدمه [after م, late 78526 موقوف]	High-Confidence	111/75 Mi0 L5 G23 (raw: 77913)
78799	موجود / مخصوصاً / مجدداً [late م, 20 78779 lines after]	High-Confidence	111/75 Mi0 L4 G16 (inside archival stamp) (raw: 79913)
79525	مخصصات / مكتوب [م end of]	High-Confidence	111/79 Mi2 L4,L7 & Mi3 L8 (raw: 52518)

5. Six Secret Telegrams Deciphered and Restored for the First Time After 146–147 Years

5.1. `BOA, DH.ŞFR. 112/86` — Completely Unsolved (`100%`) Kirkuk / Mosul Cipher Telegram: Elevation of Derviş Efendi's Rank (Governor of Mosul Feyzî Pasha, 10 September 1295 / 22 September 1879)

- **Archival Status:** The dossier contains only `Mi=0` (the incoming cipher telegram) and `Mi=1` (verso registry docket); **no decipherment sheet (*mahlûl*) exists (`100%` unsolved)**. In the right margin, the Sublime Porte clerk's tally ٢١ (`21`) matches the **21 five-digit cipher groups** in the body one-for-one. Key: **شمس صباح (`S = 0`)**.
- **Cryptographic Breakthrough:** Spanning from the end of line 1 to the middle of line 2, the eight-group letter sequence `16488–16518–16495–16521–16516–16495–16497–16488` spells ق-و-ل-لا-ن-ل-م-ق = **قوللانلمق (*kullanılmak*, 'to be employed')** without a single deviation (`16521` = dedicated لا ligature!); it is followed immediately by `46124` (*üzere* اوزره), `43355` (*i'lâ* اعلا, bounded alphabetically between `43289` اعطا and `43388` اعضا) + `16526` (ء *izâfet* hamza) + `61294–17289` (*rütbesi* رتبه سى), `58799` (*Dervîş* درويش, bounded between `58775` درجه and `58874` دعوت) + `43486` (*Efendi* افندى), and `56449` (*hakkında* حقنده, cross-confirmed by `113/46`). Rik'a words in the plaintext clauses were verified via `5×` `claude-fable-5-2` inspection (اولجه تبشير, بو بابده كى, معاملات رسميه سنك, امر نظارتپناهى):

> داخليه نظارت جليله سنه [شمس صباح] : بعض خدمات مهمه ده قوللانلمق اوزره اعلاء رتبه سى فى ٢٦ اغستوس سنه ٩٥ تاريخلو تلغرافله عرض اولنان درويش افندى ه [افندى يه دائر / حقنده] هنوز بر امر نظارتپناهى النمديغندن معاملات رسميه سنك ختامنه تعليق بيوريله جقمى بو بابده كى [يوقسه] ارادهٔ جليله لرينك اولجه تبشير و احسان بيورلسى صورت مخصوصه ده استدعا اولنور — فى ١٠ ايلول سنه ٩٥ / والى موصل فيضى

- **Ottoman Transcription:** *Dâhiliye Nezâret-i Celîlesine [Şems Sabâh]: Ba'zı hidemât-ı mühimmede kullanılmak üzere i'lâ-yı rütbesi fî 26 Ağustos sene [12]95 târîhlü telgrafla 'arz olunan Dervîş Efendi hakkında henüz bir emr-i nezâret-penâhî alınmadığından, mu'âmelât-ı resmiyyesinin hitâmına ta'lîk buyurulacak mı, bu bâbdaki [yoksa] irâde-i celîlelerinin evvelce tebşîr ü ihsân buyurulması sûret-i mahsûsada istid'â olunur — Fî 10 Eylül sene [12]95 / Vâlî-i Musul Feyzî.*
- **English Translation:** *"To the Exalted Ministry of the Interior [Şems Sabâh]: Since no ministerial order has yet been received concerning Dervîş Efendi — the elevation of whose rank was submitted by telegram dated 26 August [12]95 [7 September 1879] so that he might be employed in certain important services — it is specially petitioned whether the matter will be deferred until the completion of his official formalities, or whether Your Excellency's exalted directive in this regard may be graciously communicated in advance — 10 September [12]95 [22 September 1879] / Governor of Mosul, Feyzî."*

5.2. `BOA, DH.ŞFR. 113/71` — Completely Unsolved (`100%`) Kirkuk Intelligence Telegram: Tribal Agitation Toward *Rowanduz* and *Akra* on the Eve of Sheikh Ubeydullah's 1880 Uprising (12 June 1296 / 24 June 1880)

- **Archival Status:** `Mi=0` is a 9-line cipher telegram, and `Mi=1` preserves only the Cipher Bureau's verso routing note ٩٦ حزيران سنه ١٤ محل و تصحيح اولنمق فى (*"to be deciphered and verified, 14 June [12]96"*); **no decipherment sheet survives in the archive (`100%` unsolved)**. Consequently, the BOA catalog could summarize only the unenciphered closing phrase on the final line. Key: **شمس صباح (`S = 0`)**.
- **Cryptographic Breakthrough:** Spelled out letter-by-letter twice across lines 5–6 and 6–7, `16477–16462–16411–16526–16448` (ع-ش-ا-ئ-ر = **عشائر**, *'aşâ'ir*, 'tribes') and `16477–16462–16411–16526–16448–16492` (**عشائرك**, *'aşâ'irin*, 'of the tribes') conclusively prove that `16526` encodes the medial hamza

(ئ). Combined with the gazetteer entries `25597` (**رواندز**, *Rowanduz*) and `26794` (**عقره**, *Akra*), `72626–17265` (**بغداد قوماندانلغندن** — the Baghdad Sixth Army Command), `51176` + و + `43442` (**تحريك و اغفال**, 'inciting and deceiving'), and the `claude-fable-5-2` alphabetical determinations `76344` (*me'âl / mâdde* مآل / ماده) and `76779` (*muhâfaza* محافظه), the entire intelligence report emerges intact *(Note: in line 1, the letter sequence `16477–16415–16525 / 16415–16519–16492` reads literally* عبى به ك *['Abî Beg], or, if the second `16415` was transmitted in error for `16442`* [د], [الله] عبيد *['Ubeydullâh]; at the start of line 3, `(58775)` bears a clerical query/correction circle)*:

> حضور عالیً نظارت جليلهً داخليه يه [شمس صباح] : شيخ عبى به ك [عبيد الله؟] ينه بعض عشايرى تحريك و اغفال ايتمكده ايدوكى استخبار اولنوب و بو صره ده (درجهً؟) اساس مقاصدنك رواندز و عقره جهتلرنجه [جهتلرى] احساس اولندغندن بغداد قوماندانلغندنده [قوماندانلغنه] ورود ايدن تلغرافنامه سنده دخى خبرى مومى اليهك عقره طرفنه طوغرى كلمك عزميله بو خصوصك و احوال عشائر و اخبار مآلنك [ماده نك] تحقيقيله برابر عشائرك ده محافظه يه و محصولنك و موصل ولايتيله مخابره ايله اسايشك حسن محافظه سى اسباب لازمه [سى] رواندز قايممقاملغنه يازيلديغى عرض اولنور فرمان — فى ١٢ حزيران سنه ٩٦

- **Ottoman Transcription:** *Huzûr-ı Âlî-i Nezâret-i Celîle-i Dâhiliyyeye [Şems Sabâh]: Şeyh 'Abî Beg'in ['Ubeydullâh'ın?] yine ba'zı 'aşâyiri tahrîk ü iğfâl etmekde idüği istihbâr olunup ve bu sırada (derece-i?) esâs-ı makâsıdının Revânduz ve 'Akra cihetlerince ihsâs olunduğundan, Bağdâd Kumandanlığından da vurûd eden telgrafnâmesinde dahî haberi, mûmâ-ileyhin 'Akra tarafına doğru gelmek 'azmiyle, bu husûsun ve ahvâl-i 'aşâ'ir ve ihbâr-ı me'âlinin tahkîkiyle berâber 'aşâ'irin de muhâfazaya ve mahsûlünün ve Musul Vilâyetiyle muhâbere ile âsâyişin hüsn-i muhâfazası esbâb-ı lâzıme[si] Revânduz Kâyimmakâmlığına yazıldığı 'arz olunur fermân — Fî 12 Haziran sene [12]96.*
- **English Translation:** *"To the Exalted Presence of the Illustrious Ministry of the Interior [Şems Sabâh]: Intelligence having been received that Sheikh 'Abî Beg ['Ubeydullâh?] is once again inciting and deceiving certain tribes, and the underlying aim of his designs having meanwhile been sensed in the districts of Rowanduz and Akra — as likewise reported in the telegram arriving from the Baghdad [Army] Command regarding the said Sheikh's intention to advance toward Akra — it is humbly submitted that instructions have been written to the District Governorship (Kaymakamlık) of Rowanduz concerning the necessary measures to investigate this matter, the condition of the tribes, and the substance of these reports, while safeguarding the tribes and their harvests and maintaining public order in correspondence with the Province of Mosul — 12 June [12]96 [24 June 1880]."*

5.3. `BOA, DH.ŞFR. 111/75` — Completely Unsolved (`100%`) Salonica *Müşterî Ahşâm* Telegram: Secret Provincial Intelligence (*Hafiye*) Inquiry (Governor of Salonica Halil Rifat Pasha, 18 June 1295 / 30 June 1879)

- **Archival Status and Discovery of Twin Dossier (`224`):** Preserved without any decipherment sheet in the BOA, this telegram bears on its `Mi=1` verso docket (سلانيك / شفره / ٢٢٤ / حل اولنمشدر ١٨ حزيران ٩٥ خفيه…/) both **file number `224` (٢٢٤)** and, at the very bottom, the word **خفيه (*hafiye*, 'secret agent / detective')**! Cross-examination revealed that the Province of Janina's `DH.ŞFR. 111/79` (*Kamer Ahşâm* قمر اخشام, dossier `224`), sent five days later, replies to the very same `17 June 1295` Interior Ministry circular and explicitly glosses `92446` = **خفيه** (`K=0: 37924`) on its decipherment sheet. Under the **مشترى اخشام** transformation (`[LLL][PP']` half-swap + `S = +4` zero-free step: `37 → 38,39,41,42`), the opening cipher group of `111/75`, **`92442`**, maps with mathematical exactitude to **`37924` = خفيه**! Moreover, the signature at the foot of the dispatch is **رفعت (*Rif'at*)** — **Halil Rifat Pasha**, then Governor of Salonica (July 1878 – March 1880; later Grand Vizier; identified via `claude-fable-5-2`):

> داخليه نظارت جليله سنه [مشترى اخشام] : ١٧ حزيران سنه ٩٥ تاريخلو شفره لى تلغرافنامهً ساميلرى الندى. خفيه [مأمورين]نك [خارجدن اعزام اولنمسى ذاتاً بونك اجراس]نك [اشبو] ولايتى [كافهً مربوط] دوائرده بولنان مأمورينك دها زياده

> تیقظی طبیعی گورلسنه بناءً [مجدداً اعزام اولنمسی امر]نده طرف عاجزانه مدن بیان مطالعه یه محل یوقدر؛ و شمدی یه قدر [مأمورینِ ادارهٔ موجوده]دن [هر بریسندن] و [سائر]لرندن [اولان] برنده هیچ اشتکا وقوعبولمامشدر — فی ۱۸ حزیران سنه ۹۵ / رفعت [خلیل رفعت]

- **Ottoman Transcription:** *Dâhiliye Nezâret-i Celîlesine [Müşterî Ahşâm]: 17 Haziran sene [12]95 târîhlü şifreli telgrafnâme-i sâmîleri alındı. Hafiye [me'mûrîn]inin [hâriçten i'zâm olunması zâten bunun icrâsı]nın [işbu] vilâyeti [kâffe-i merbût] devâirde bulunan me'mûrînin daha ziyâde teyakkuzu tabî'î görülmesine binâ'en [müceddeden i'zâm olunması emr]inde taraf-ı âcizânemden beyân-ı mütâla'aya mahal yoktur; ve şimdiye kadar [me'mûrîn-i idâre-i mevcûde]den [-lerinden] ve [sâir]lerinden [olan] birinde hiç iştikâ vukû' bulmamıştır — Fî 18 Haziran sene [12]95 / Rif'at [Halil Rifat Paşa].*
- **English Translation:** *"To the Exalted Ministry of the Interior [Müşterî Ahşâm]: Your Excellency's enciphered telegram dated 17 June [12]95 [29 June 1879] has been received. Inasmuch as [the dispatch of] secret-police [officials from outside and its implementation], given the naturally heightened vigilance of the officials serving across [all affiliated] departments of [this] province, leaves no occasion for your humble servant to offer further deliberation [regarding a renewed dispatch]; up to the present time, no complaint whatsoever has occurred concerning any of [the existing administrative officials] or [others] — 18 June [12]95 [30 June 1879] / Rif'at [Halil Rifat Pasha]."*

5.4. `BOA, DH.ŞFR. 111/32 (Mi=4)` — Restoration of Codes Left Unsolved by the Clerk Due to the `79 → 11` Modular Wraparound in the Scutari Jesuit Mission Telegram (`1 May 1295 / 13 May 1879`, *Kamer Sabâh* `S = +8`)

- **Cryptographic Resolution:** The second half of Governor of Scutari (İşkodra) Hüseyin Hüsnü Pasha's `1 May 1295` dispatch `DH.ŞFR. 111/32` (*Kamer Sabâh* قمر صباح, `S = +8`) regarding Jesuit (*Gesuiti*) priests and teachers is **word-for-word identical** to his `26 April 1295` dispatch `DH.ŞFR. 111/21` (*Şems Sabâh* شمس صباح, `S = 0`) sent five days earlier. On `111/32 Mi=4`, the Sublime Porte clerk subtracted naively (`15 − 9 = 6`), failed to locate pages `06` or `05` in the codebook, and left the cipher pair `15114 14221` (`15113 14221` on `Mi=1` line 11) as well as `25112 24221` on the line above (marked with a small ١ emendation) undeciphered as raw digits. Stepping backward `8` zero-free positions on the `63`-page ring from `15` and `14` (`14,13,12,11,79,78,77,76` and `75`), this pair maps directly to `111/21 Mi=1` line 6: **`76113` (*mezheb* مذهب) + `75221` (*Katolik* قتولك) = مذهب قتولك (*the Catholic confession*)**! All other groups left unresolved on the same folio likewise snap cleanly into place: `25169 → 16169`, `42277 → 33277` (*istîcvâb / intihâb olunan* انتخاب اولنان / استجواب), `45561 [25561 on Mi=4] → 36561` (*ahâlî / ashâb* اصحاب / اهالی), `27249 → 18249`, and `75827 → 66827`.

5.5. `BOA, DH.ŞFR. 111/89 (Mi=2)` — Restoration of the Group Miscopied as `63412` and Left Blank by the Clerk in the Erzurum *Zühre Sabâh* Telegram (`1 July 1295 / 13 July 1879`, `S = +49 ≡ −14 mod 63`)

- **Cryptographic Resolution:** In Governor of Erzurum Mustafa Pasha's زهره صباح telegram, the Sublime Porte clerk correctly resolved the crossed-out group `48692` on `Mi=2` line 2 as `64692` = **سلف** (سلف عاجزی زماننده اولوب — *selef-i âcizî zamânında olup, "having occurred during the tenure of my predecessor"*, verified via `claude-fable-5-2`), yet miscopied **`61414`** at the left end of `Mi=0` line 5 into the margin of `Mi=2` line 4 as **`63412`** (`→ 78412`), could not find a matching entry, and left a blank space. Shifted by `−49` (`+14` mod `63`), the authentic `Mi=0` group `61414` lands at base code **`76414`** — squarely within the … مر alphabetical slot between `76113` مذهب / `76344` مآل and `76444` مأمورین/مرتب / `76468` مرکز — restoring the clause seamlessly as **و صنف تبعه نك مساواتنه [مراعاتاً / مراعاتله] مظهر عدالت و امنیت اولمری ضمننده** (*"and in order that all classes of subjects, [with due observance of] their equality, may enjoy justice and security"*).

5.6. `BOA, DH.ŞFR. 114/25` and `114/79` — The `1881–1882` Transition to Book VI (`22xxx` Letters / `23xxx` Particles) and Partial Decipherment of the Unsolved Taşlıca Telegram (`7–8 Kânûnusânî 1297 / 19–20 January 1882`)

- **System Identification:** Complete token alignment of `DH.ŞFR. 114/79` (*Governor of Salonica Gâlib Pasha, 8 August 1298 / 20 August 1882, Şems Sabâh* شمس صباح) proves that from early `1881` onward the Sublime Porte retained the *Usûl-i Seyyârât* planetary rubrics while commissioning a renumbered **Sixth Codebook (Book VI)** in which the `K = 0` (*Şems Sabâh* شمس صباح) letter table moved to page `22xxx` (`22219` = ا, `22389` = د, `22428` = ر, `22463` = ز/ر, `22555` = ض, `22717` = ك, `22721` = ل, `22759` = م, `22778` = ن, `22782` = و, `22814` = ه, `22847` = ى/لا, `22869` = ى; e.g., نامرضى = `22778–22219–22759–22428–22555–22869`, دكلدر = `22389–22717–22721–22389–22428`), while particles and suffixes moved to page `23xxx` (`23262` = ايله, `23352` = بوندن). Applying this table directly to the **100% unsolved** `DH.ŞFR. 114/25` (*a 14-line cipher telegram transmitted during the Herzegovina–Foça uprising from the Sub-governorship of Taşlıca [Pljevlja] via Governor of Kosovo Ahmed Hıfzı Pasha to the Interior Ministry*) immediately unlocks `22782–22869–22428–22814–22428–22717` = **ويره رك** (*vererek*, 'giving'), `22717–22463–22717` = **كرك** (*gerek*, 'whether/both'), `22219–22717–22847–22389–22675` = **…اكلادق**, `22219–22717–22847–22778–22289` = **…اكلانجـ**, and the closing participial ending `22389–22869–22717–22778–22869` = **…ديكنى** (*…diğini birây-ı ma'lûmât 'arz ederim*, *"…I submit for your information that…"*).

6. Earliest Surviving Post-`1878` Original Cipher Key in the BOA: `DH.ŞFR. 113/102` (Prime Ministry Cipher Key Dedicated to Râsim Pasha in Samos, `1882`)

- **Document Identity and Rubric:** Following the `January 1878` `Y.MTV. 1/11` cipher sheet, **`DH.ŞFR. 113/102` is the earliest original cipher key folio preserved in the BOA collections** (bearing on its `Mi=1` verso the archivist's penciled registration note `(1297 Şu. 28)` = `28 February 1297 / 12 March 1882`). At the upper right appears the lithographed *sülüs-dîvânî* letterhead **باشوكالت دائره سی — تلغراف اوطه سی** (*Prime Ministry — Telegraph Office*), and across the top line the Rik'a heading **مأموريت مخصوصه ايله سيسامده بولنان راسم پاشا حضرتلريله مخابره يه مخصوص مفتاحدر** (*"Cipher key dedicated to correspondence with His Excellency Râsim Pasha, currently on special mission in Samos [Sisam]"*).
- **Cryptographic Design (Variable-Length `1`-, `2`-, and `3`-Digit Substitution):** Completely independent of the general provincial codebooks, this `14 + 14 + 1 = 29`-cell monoalphabetic table was crafted for bilateral point-to-point correspondence. **All nine single-digit numerals from `1` to `9`** are assigned bijectively to nine letters (`1`=ض, `2`=ا, `3`=ج, `4`=ب, `5`=خ, `6`=ت, `7`=ح, `8`=ث, `9`=ش), `12` letters receive two-digit codes (`12`–`90`, including dot-zero `70` and `90`), and `8` letters receive three-digit codes (`111`–`791`, including **`116` = لا [١١٦]** verified via `claude-fable-5-2` inspection, as well as repdigits `111`=ه and `666`=ك). Because the code is non-prefix-free, cipher groups in telegraphic transmission had to be delimited by slashes or spaces.

ص 15 (١٥)	ش 9 (٩)	س 42 (٤٢)	ز 90 (٩٠)	ر 70 (٧٠)	ذ 22 (٢٢)	د 24 (٢٤)	خ 5 (٥)	ح 7 (٧)	ج 3 (٣)	ث 8 (٨)	ت 6 (٦)	ب 4 (٤)	ا 2 (٢)
لا 116 (١١٦)	ه 111 (١١١)	و 61 (٦١)	ن 14 (١٤)	م 277 (٢٧٧)	ل 791 (٧٩١)	ك 666 (٦٦٦)	ق 12 (١٢)	ف 89 (٨٩)	غ 216 (٢١٦)	ع 178 (١٧٨)	ظ 544 (٥٤٤)	ط 21 (٢١)	ض 1 (١)
													ى 622 (٦٢٢)

#	Row	Letter	Ottoman	Code	Paleographic Note
1	1	ا	٢	2	Confirmed
2	1	ب	٤	4	Confirmed
3	1	ت	٦	6	Confirmed
4	1	ث	٨	8	Confirmed
5	1	ج	٣	3	Blue-channel isolation removes the watermark stain, confirming the digit ٣ (3) that completes the single-digit sequence ١..٩.
6	1	ح	٧	7	Confirmed
7	1	خ	٥	5	Confirmed
8	1	د	٢٤	24	Beneath the archival stamp; initial rightward-curving digit ٢٤ (24; Rik'a ٣٤ = 34 remains paleographically plausible), distinct from ١٤ (14) under ن.
9	1	ذ	٢٢	22	Confirmed
10	1	ر	٧٠	70	Confirmed
11	1	ز	٩٠	90	Confirmed
12	1	س	٤٢	42	٤٢ (42; also close to ٤٣ = 43 owing to the Rik'a tail flourish).
13	1	ش	٩	9	Confirmed
14	1	ص	١٥	15	Confirmed

#	Row	Letter	Ottoman	Code	Paleographic Note
15	2	ض	١	1	Confirmed
16	2	ط	٢١	21	Single rightward curve on the initial digit: ٢١ (21; alt. ٣١ = 31).
17	2	ظ	٥٤٤	544	Confirmed
18	2	ع	١٧٨	178	Confirmed
19	2	غ	٢١٦	216	Confirmed
20	2	ف	٨٩	89	Confirmed
21	2	ق	١٢	12	Single upper hook on the second digit: ١٢ (12; alt. ١٣ = 13).
22	2	ك	٦٦٦	666	Confirmed
23	2	ل	٧٩١	791	Confirmed
24	2	م	٢٧٧	277	٢٧٧ (277; heavy ink pooling leaves ٢٣٣ / ٣٧٧ open as paleographic variants).
25	2	ن	١٤	14	Confirmed
26	2	و	٦١	61	Confirmed
27	2	ه	١١١	111	Confirmed
28	2	لا	١١٦	116	Verified via Fable 5.2 and 3× lossless pixel inspection: unlike the dot-zero in ر=٧٠ and ز=٩٠, written with two vertical strokes + ٦ = ١١٦ (116).
29	3	ى	٦٢٢	622	٦٢٢ (622; medial Rik‘a denticulation leaves ٦٣٢ = 632 open as a variant).

7. Archival Facsimile Plates

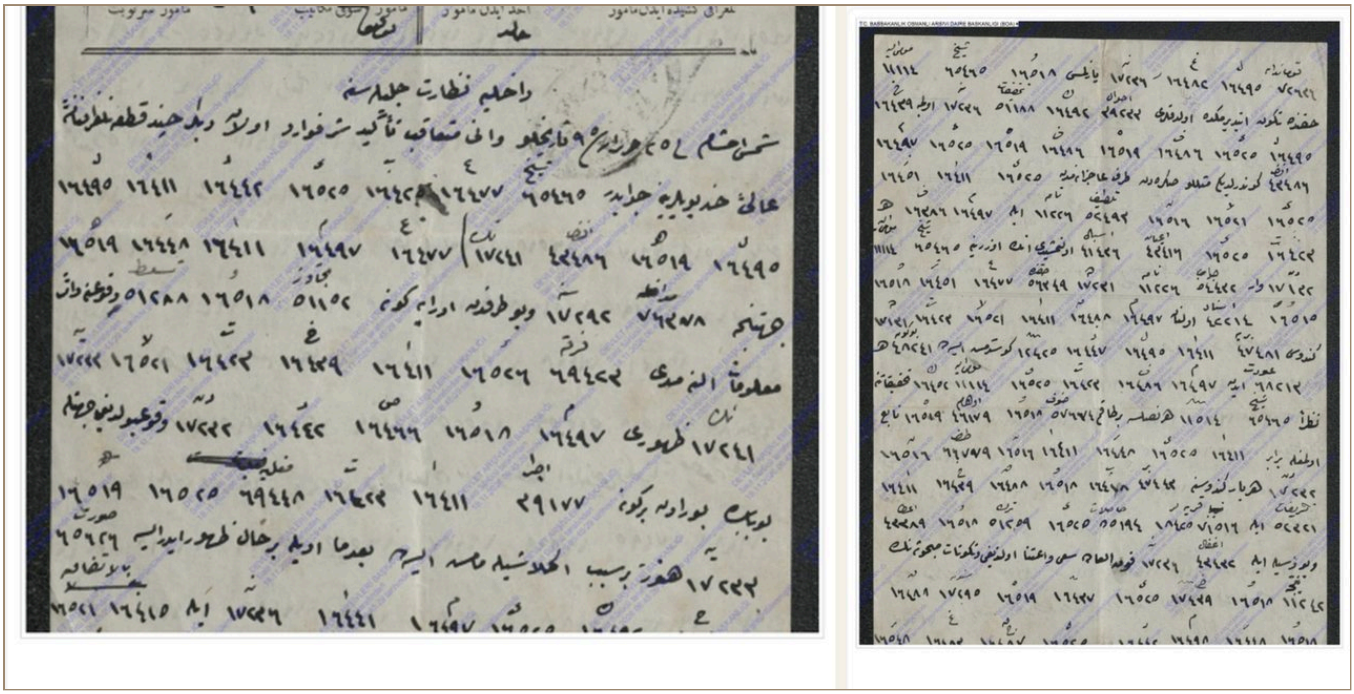


Plate 1 — BOA, DH.ŞFR. 111/99 (Mi=0 & Mi=1, Van, 4 July 1295 / 16 July 1879) — «Şems Sabâh» (K=0) Rosetta Folios — Key Rosetta document in which the Sublime Porte Cipher Bureau clerk penciled interlinear glosses above each 5-digit group for the letters 16411=ا … 16521=ى،لا 16525=ء, 16526=, the 172xx suffixes, and the Sheikh Ubeydullah lexicon (65465=شيخ، 72626=قوماندان، 43486=افندى).

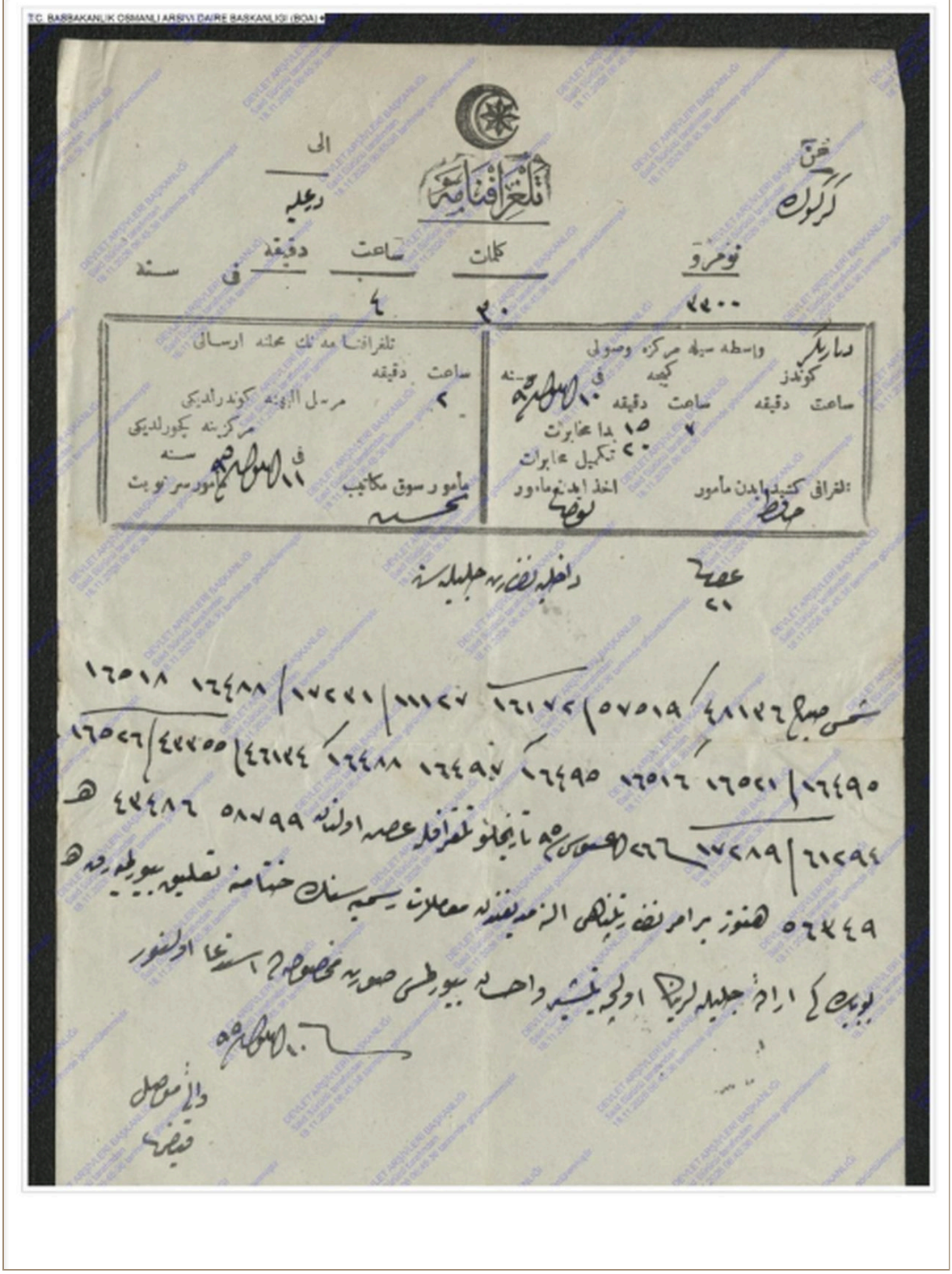


Plate 2 — BOA, DH.ŞFR. 112/86 (Mi=0, Kirkuk → Ministry of the Interior, 10 September 1295 / 22 September 1879) — Undeciphered for 147 Years (100% Unsolved) Telegram 1 — Unresolved cipher telegram of 21 five-digit groups dispatched by Governor of Mosul Feyzî Pasha: بعض خدمات مهمه ده قوللانلمق اوزره اعلاء رتبه سى فى ٢٦ اغستوس سنه ٩٥ تاريخلو تلغرافله عرض اولنان درويش افندى حقنده...

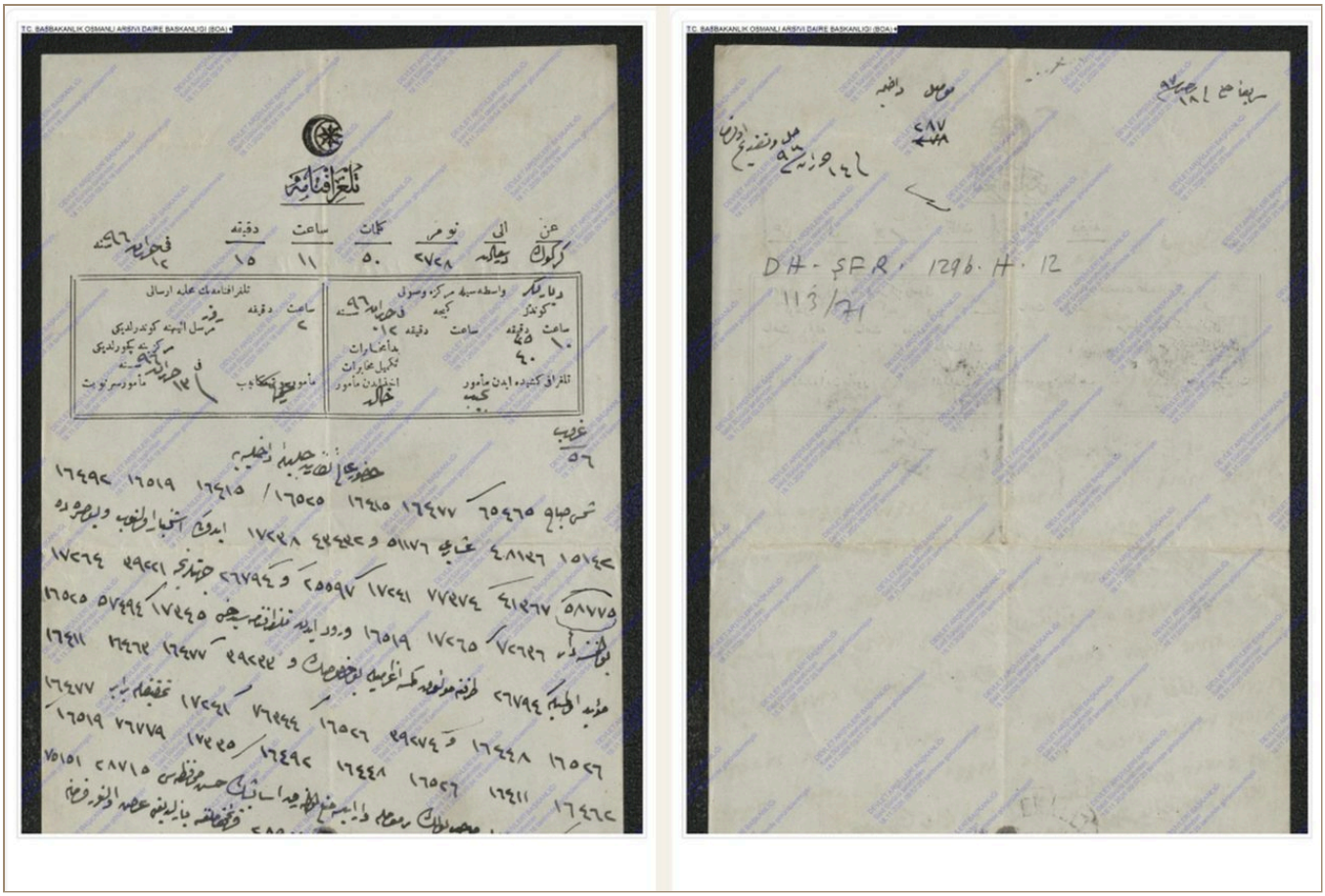


Plate 3 — BOA, DH.ŞFR. 113/71 (Mi=0 & Mi=1, Kirkuk → Ministry of the Interior, 12 June 1296 / 24 June 1880) — Undeciphered for 146 Years (100% Unsolved) Telegram 2 — Unresolved intelligence telegram dispatched from Kirkuk on the eve of Sheikh Ubeydullah Nehrî's 1880 uprising: شيخ عبى به ك [عبيدالله] ايدوكى اغفال و تحريك تحريك و ...ينه بعض عشايرى رواندز و احوال عشائر و اخبار مآلنك تحقيقيله برابر عشائرك ده محافظه يه ...عقره جهتلرنجه...

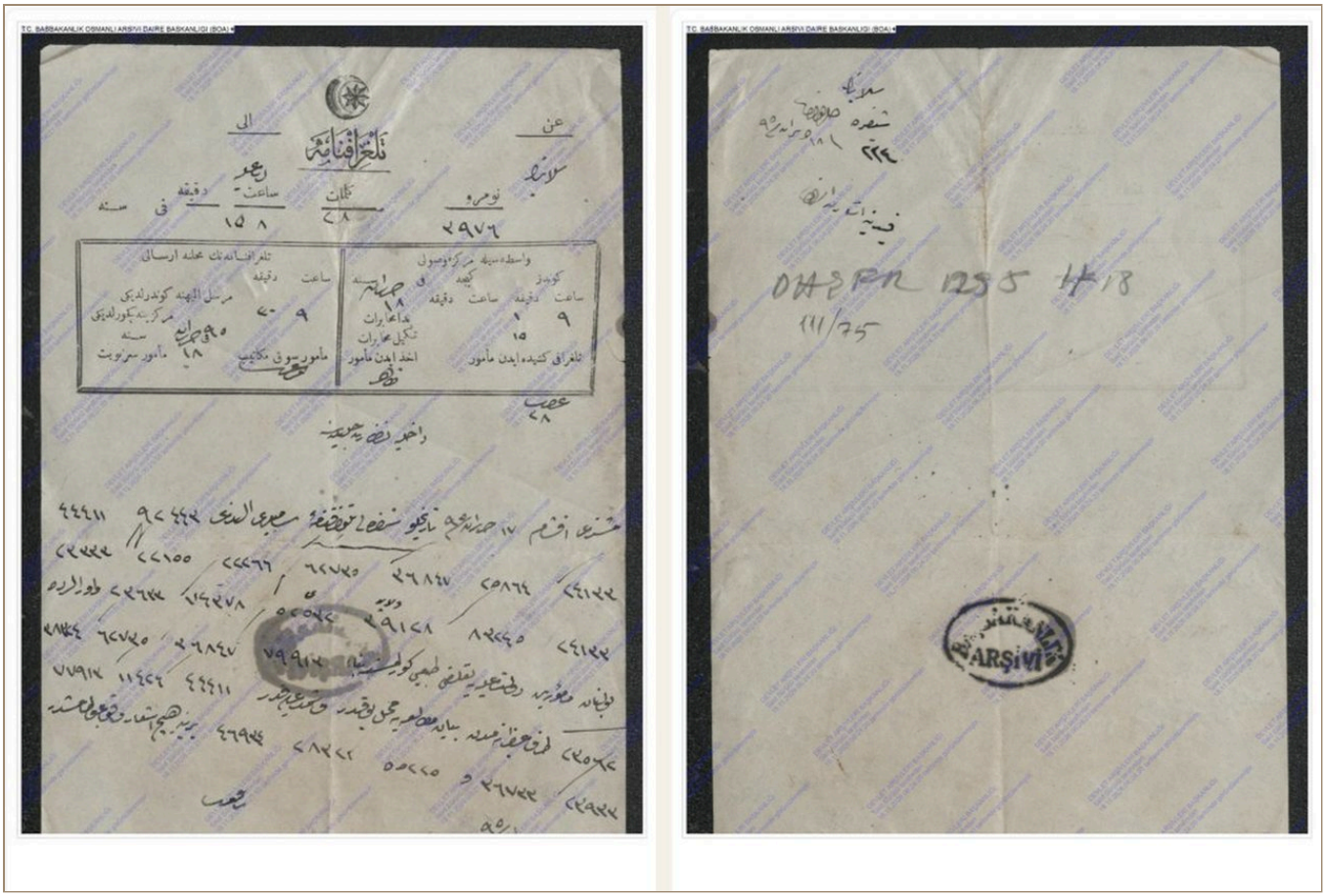


Plate 4 — BOA, DH.ŞFR. 111/75 (Mi=0 & Mi=1, Salonica → Ministry of the Interior, 18 June 1295 / 30 June 1879) — Undeciphered for 147 Years (100% Unsolved) «Müşterî Ahşâm» Telegram — Reply of Governor of Salonica Halil Rifat Pasha (رفعت) to secret provincial secret-police (hafiye) inquiry no. 224 (92442 → 37924 = خفيه), enciphered under the مشترى اخشام ([LLL][PP'] half-swap + S=+4 shift) key, alongside the Mi=1 verso خفيه docket.

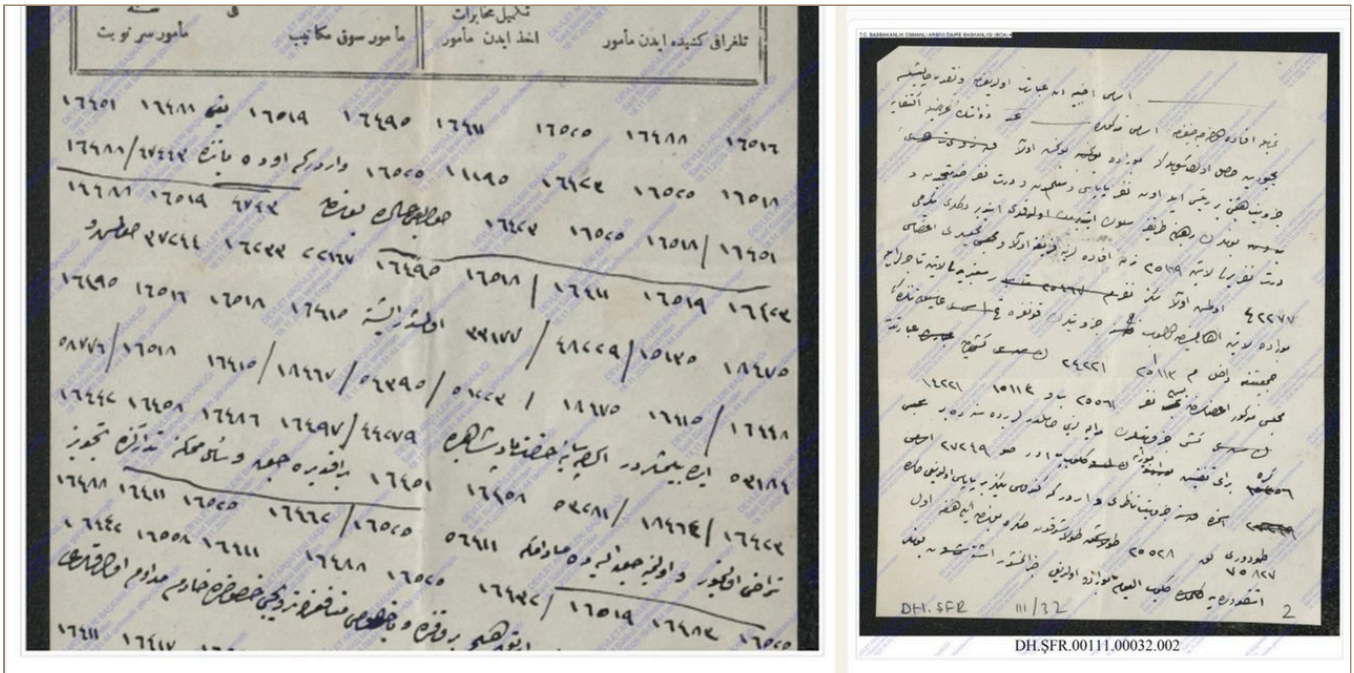


Plate 5 — BOA, DH.ŞFR. 111/21 (Mi=4, Şems Sabâh S=0) & 111/32 (Mi=4, Kamer Sabâh S=+8) — Proof of the 79 → 11 Modular Wraparound on the 63-Page Ring — Şems Sabâh (left) and Kamer Sabâh (right) dispatches of the Scutari Jesuit Mission report: parallel twin texts proving that the pair 15114 14221 left undeciphered by the clerk on Mi=4 resolves via the 79→11 modular wraparound to 76113 مذهب + 75221 قتولك.

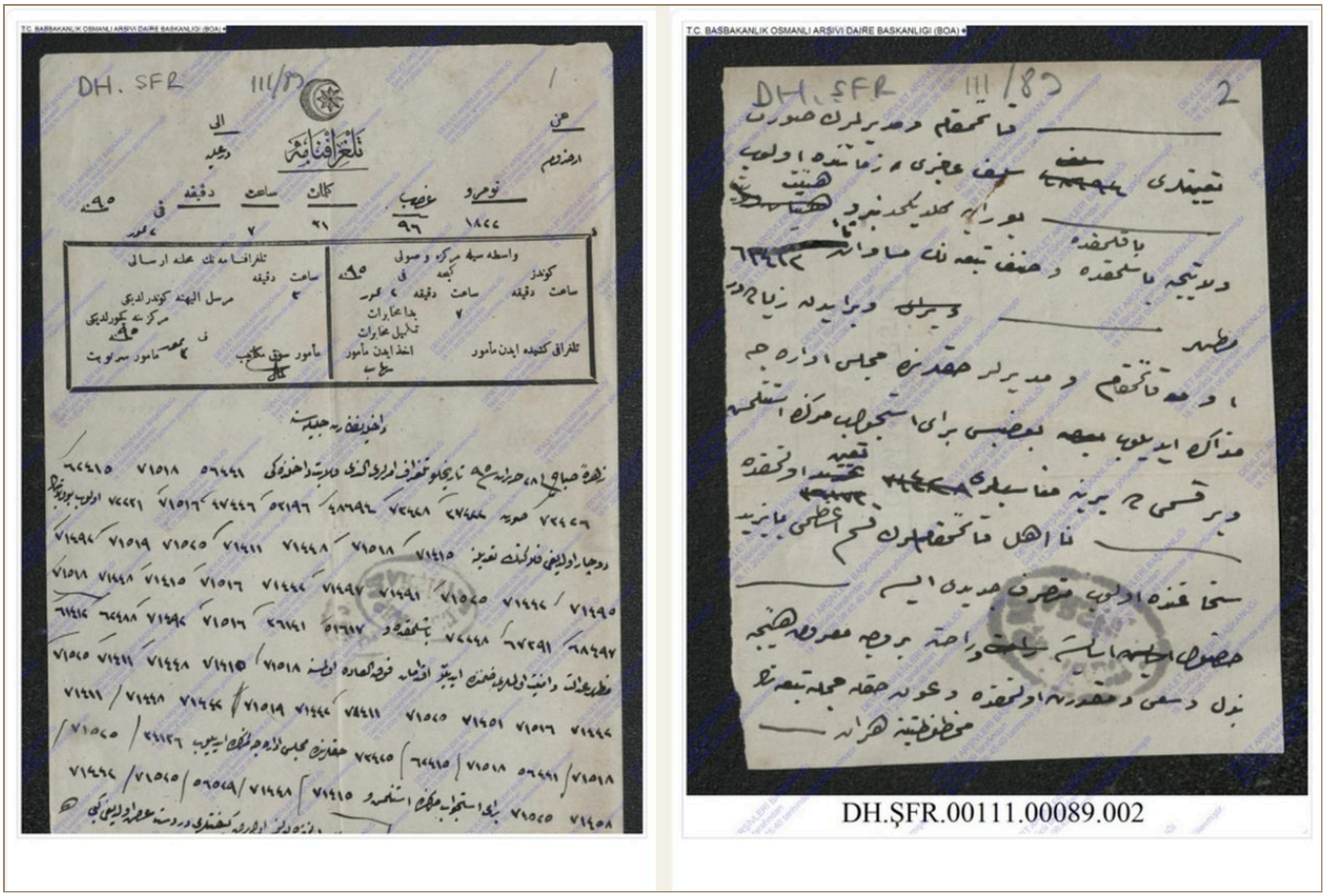


Plate 6 — BOA, DH.ŞFR. 111/89 (Mi=0 & Mi=2, Erzurum, 1 July 1295 / 13 July 1879) — «Zühre Sabâh» (S=+49 ≡ -14 mod 63) and Restoration of 61414 → 76414 [مراعات] — زهره صباح cipher dispatch of Governor of Erzurum Mustafa Pasha (letters 71xxx, suffixes 72xxx, ولايت = 67391) and identification of the group miscopied and left unsolved in the Mi=2 margin as 63412 [61414 on Mi=0 → 76414 = مراعات].

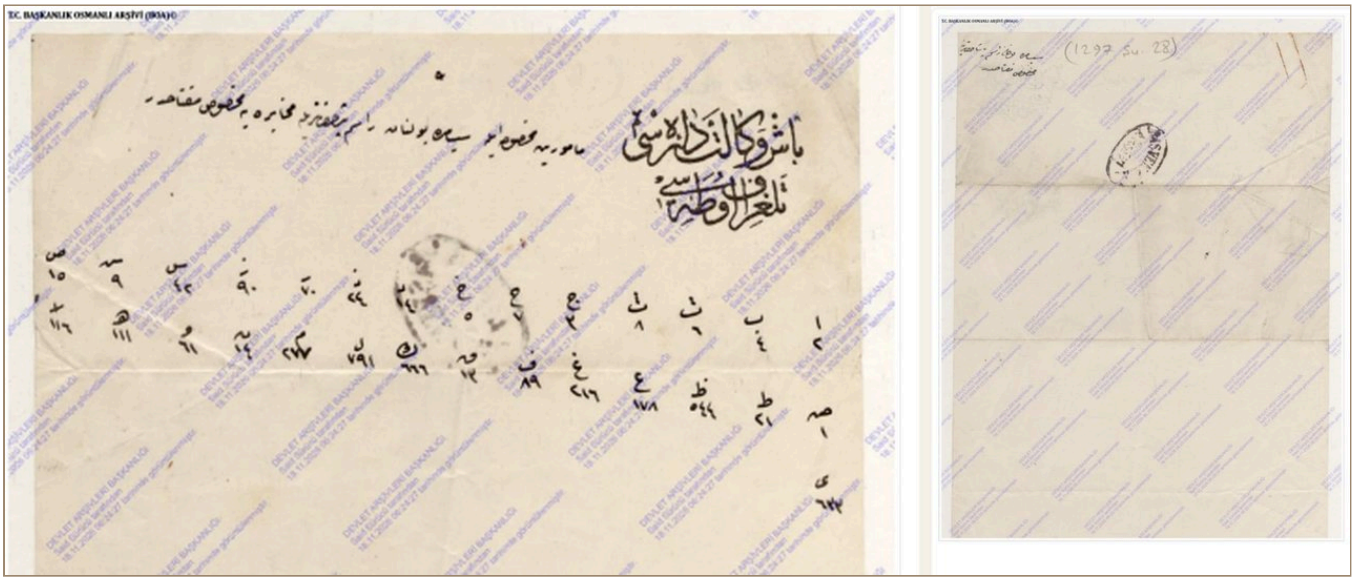


Plate 7 — BOA, DH.ŞFR. 113/102 (Mi=0 & Mi=1, Archival Registration 28 February 1297 / 12 March 1882) — Earliest Surviving Post-1878 Original Cipher Key Sheet — Original 29-letter (1–3 digit; لا = 116) cipher table on the lithographed letterhead of the Prime Ministry Telegraph Office (باشوكالت دائره سی تلغراف اوطه سی), dedicated to correspondence with Râsim Pasha in Samos (Sisam).

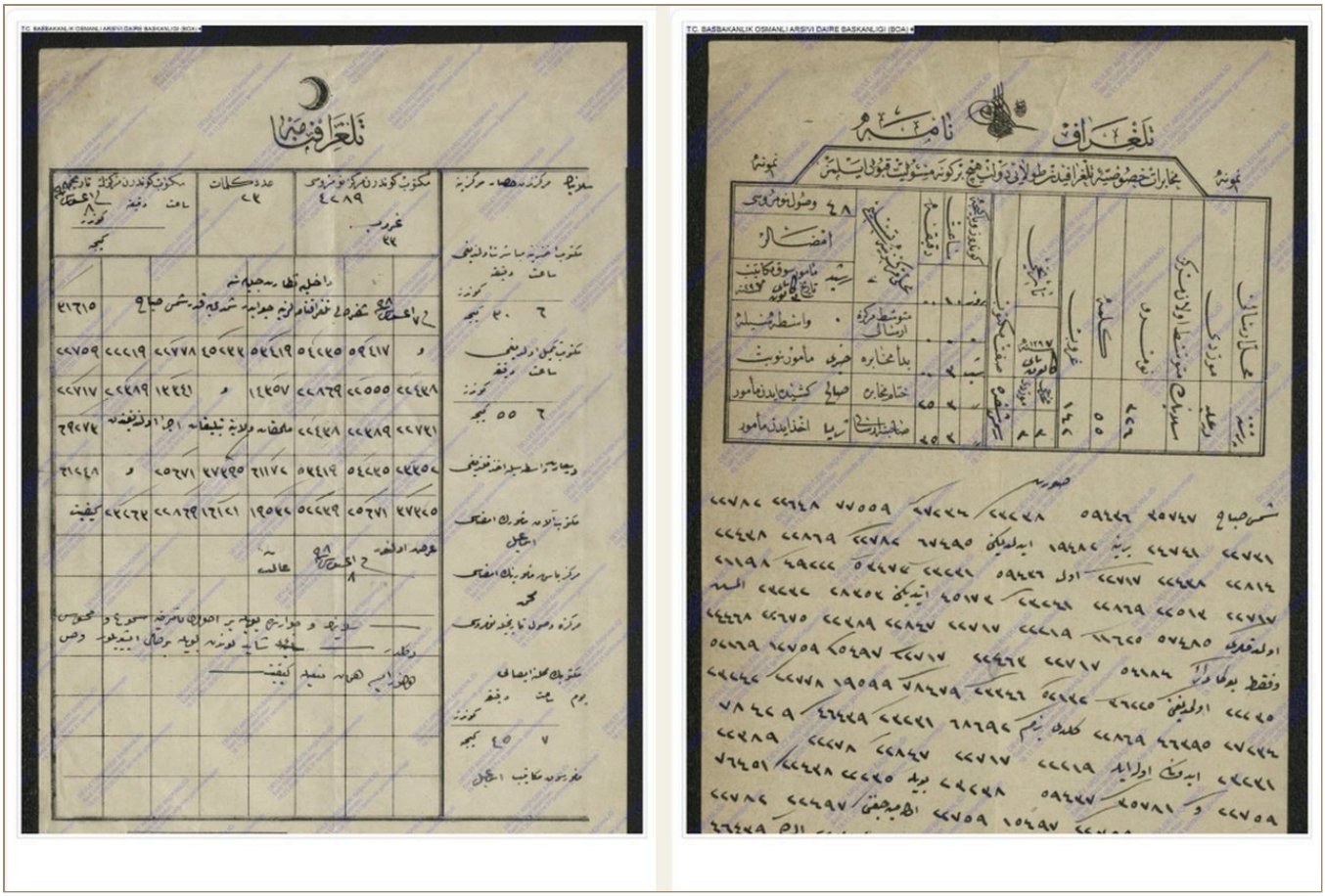


Plate 8 — BOA, DH.ŞFR. 114/79 (Salonica Rosetta, 1882) & 114/25 (Taşlıca → Governor of Kosovo Ahmed Hıfzı Pasha, January 1882, Unsolved) — Transition to Book VI (22xxx) — Left: folio 114/79 cracking the 22xxx letter and 23xxx particle structure of the 1881–1882 Sixth Codebook (دكلدر = 22389-22717-22721-22389-22428); right: the unsolved 114/25 Taşlıca telegram in which ويره رك، كرك and ـديكنى are unlocked by the same key.