Volume X: II. Usûl-i Seyyârât (Miftâh-ı Cedîd) — The 7-Planet × 2-Time `zf81` Law

2 July 1890 – Sept 1895+ Hamidian Provincial 5-Digit Codebook · **7 Planets × 2 Times (14 Keys)** on an 81-Page Zero-Free Modular Ring (`zf81`) · **125 Verified `Şems Morning (k=0)` Codes** · Parallel 1888–1892 Sanjaq 2-Digit Cipher & 1896 *III. Usûl-i Seyyârât* (`14xxx`) Upper-Boundary Discovery (**18 Archival Plates**)

> **Key Findings:** We first proved that the Vol. VI codebook `A.}d. 1060` (`22xxx` letter block) remained in continuous provincial service **6.5 years longer than previously known** — through March 1890 (`DH.ŞFR. 142/44, 71, 72, 100`). On **2 July 1890** (`20 Haziran 1306, BOA, DH.ŞFR. 143/134` , Governor Bahri Pasha of Shkodra), the Sublime Porte introduced the new **II. Usûl-i Seyyârât (*Miftâh-ı Cedîd*)** with letter page `11xxx` . Because none of the printed 1887–1900 `A.}d.` codebooks are digitized in BETSİS (`A.}d. 1059, 1102–1160` = 0 images; `HH.d. 2275` is a mislabeled Privy Purse ledger), we reconstructed the entire **14-key modular law** and **125 verified codes** directly from `DH.ŞFR. 143–180` telegrams.

1. Complete Chronology of the Hamidian *Usûl-i Seyyârât* Dynasty (1879–1897+)

Period	Volume / Generation	Letter Page	Modular Ring	Verified Archival Boundaries
1879–1880	Vol. V · *I. Usûl-i Seyyârât*	`16xxx`	`zf63` (63 zero-free)	`DH.ŞFR. 111–113` (May 1879 – July 1880)
1881–Mar 1890	Vol. VI · `A.}d. 1060`	`22xxx`	7-column printed header	`DH.ŞFR. 114–142/100` (+6.5 yrs extended lifespan!)
2 Jul 1890 – Sep 1895+	**Vol. X · *II. Usûl-i Seyyârât* (Miftâh-ı Cedîd)**	**`11xxx`**	**`zf81` (81 zero-free)**	**`DH.ŞFR. 143/134` → `180/64` (5+ yrs active)**
1896–1897+	*III. Usûl-i Seyyârât* (Next Gen.)	`14xxx`	5-digit planetary	`DH.ŞFR. 200/2` (1312, Mamuretülaziz)
1888–1892 (Parallel)	Sanjaq 2-Digit Letter Cipher	2-digit	Direct substitution	`DH.MKT. 1560/29` ; `DH.ŞFR. 135/15, 152/11, 156/1`

2. Complete 7-Planet × 2-Time (14-Key) `zf81` Mathematical Law

Every 5-digit group combines a 2-digit page number from the 81-page zero-free ring `zf81` (`PP' ∈ {11..19, 21..29, ..., 91..99}` , skipping `20, 30, ..., 90`) with a 3-digit line number (`LLL`). **Morning (Sabâh / صباح)** writes `[PP'][LLL]` ; **Evening (Ahşâm / اقشام)** half-swaps to `[LLL][PP']` .

Two-Section Offset Discovery: Five planets (`Şems, Kamer, Müşterî, Zühal, Utârid`) use the exact same `zf81` shift across both the front grammar pages (`pp. 11–12`) and the main dictionary (`pp. 13–99`). By contrast, **Merîh** (`+14 → +23`) and **Zühre** (`+16 → +25`) step forward by exactly **`+9` (one zero-free decade)** in the main dictionary; in `Zühre` , `mektûb (73194 → 11194)` and `78114 → 16114` conclusively prove exact `mod 81` wrap-around.

Planet	Ottoman	p.11 / p.12	Front (11–12)	Main (13–99)	Cross-Planet Archival Proofs
Şems (Sun)	شمس	11 / 12	+0	+0	Base key (Morning: 143/134, 144/63–123, 167/102, 180/64; Evening: 144/88 Ankara)
Kamer (Moon)	قمر	15 / 16	+4	+4	Ermeni 25188→29188/18829 (144/50, 3×); Morning: 144/8, 144/16; Evening: 144/13, 50, 145/5
Müşterî (Jupiter)	مشتري	19 / 21	+8	+8	Erzurum 16688→25688, 78114→87114 (144/98 Morning); 144/102 Adana (Evening: 41119, 91819, 21821)
Zühal (Saturn)	زحل	25 / 26	+13	+13	hudûd 49457 (144/73)→64457 (144/45 Mosul Morning: 25411, 25918, 26218, 26219)
Utârid (Mercury)	عطارد	29 / 31	+17	+17	tahkîkât 45267→64267/26764, telgraf 46696→65696/69665 (145/40 Van Evening: 41129, 91829, 21131)
Merîh (Mars)	مريخ	26 / 27	+14	+23 **(+9)**	kazâ 66151 (147/4)→92151/15192 (+23 = +14+9; 144/10 Mosul Evening: 91526, 91826, 42227)
Zühre (Venus)	زهره	28 / 29	+16	+25 **(+9)**	6/6 exact proof (+25 = +16+9): Erzurum 16→44, Viyana 24→52, telgraf 46→74, kazâ 66→94, mektûb 73→11 & 78→16 (zf81 wrap-around!); Morning: 144/24, 47, 108, 145/31; Evening: 144/11

3. Interactive 14-Key `zf81` Decoder & Encoder Workbench

4. Verified `Şems Morning (k=0)` Concordance (125 Codes)

4.1. Page 11 — Letters & Suffixes (`11xxx` · 25 Codes)

Code	Ottoman	Transliteration	Archival Sources
11411	ا	a / elif	144/63, 144/88 (41111), 145/40 (41129)
11416	ب	b	144/63, 144/117, 147/4
11455	ت	t	144/63, 144/73, 145/5 (45515)
11466	پ / ب	p / b	144/63, 144/117, 144/98 (19466)
11512	چ / ج	c / ç	144/108 (28512), 145/26
11517	د	d	144/10 (51726), 144/117, 147/4
11611	ر	r	144/11 (61128), 144/63, 144/117
11612	ز / ر	r / z	144/45 (25612), 144/117, 147/4
11614	س	s	144/47 (28614), 144/88 (61411), 145/40 (61429)
11615	ش	ş	144/50 (61515), 145/26
11714	ط / ص	s / t	144/98 (19714), 145/26
11715	ع	‘ayn	144/63, 144/102 (71519)
11716	ف	f	144/63, 145/26
11815	ق	kaf	144/63, 144/13 (81515)

Code	Ottoman	Transliteration	Archival Sources
11817	ق / ك	k	144/8 (15817), 144/110
11818	ل	l	144/63, 144/8 (15818), 144/102 (81819)
11819	م	m	144/102, 145/89
11911	ك / ن	k / n	144/63, 144/88 (91111), 144/117
11912	د / و	d / v	144/47 (28912), 144/117, 147/4
11914	ل / ه	l / h	144/10 (91426), 144/63, 144/117
11915	م / ـن	m / -n	144/10 (91526), 144/63, 144/110, 167/102
11916	ن / ـه	n / -e	144/45 (25916), 144/47 (28916), 144/73, 144/117
11917	و	v / u	144/82, 144/98 (19917), 145/40 (91729)
11918	ى / ـى	y / -i	144/10 (91826), 144/45 (25918), 144/47 (28918), 145/40 (91829), 180/64
11919	ت / ـت	t / -t	144/47 (28919), 144/63, 144/123

4.2. Page 12 — Frequent Verbs & Particles (`12xxx` · 16 Codes)

Code	Ottoman	Transliteration	Archival Sources
12218	ايديلـ / ايده	edil- / ide-	143/134, 144/16 (16218), 144/102 (21821), 144/108 (29218), 180/64
12219	اولديغى	olduğu	144/8 (16219), 144/45 (26219), 144/108 (29219), 145/89, 180/64
12221	باب عالى	Bâb-ı Âlî	143/134 (İşkodra, 2 Temmuz 1890)
12225	تلغراف / يكنى	telgraf / yeğeni (bağlamlı)	144/63, 145/26, 145/53, 148/21
12228	طرفندن / اولديغندن	tarafından / olduğundan	144/50 (22816), 144/98 (21228), 145/53, 148/21
12248	اولوب	olub	144/82, 180/64
12251	اولمـ / اولمديغى	olma- / olmadığı	144/24 (29251), 144/45 (26251), 145/89, 180/64
12252	اولديغندن	olduğundan	144/98 (21252), 144/117
12278	ايديلوب	edilüb	144/102 (27821), 144/108 (29278), 147/9, 147/61
12512	شمدى	şimdi	145/89
12514	ـلره / دائر	-lere / dâir	144/63
12515	ده / دا	de / da	144/63
12516	صورت	sûret	144/110, 145/80, 147/61, 152/29
12517	بولونـ	bulun-	152/29
12554	دائر	dâir	167/102 (Sivas, Temmuz 1894)
12559	يونانستان	Yunanistan	144/73 (Yanya, 2×)

4.3. Pages 16–78 — Main Dictionary (`16xxx–78xxx` · 84 Codes)

Code	Ottoman	Transliteration	Archival Sources & `zf81` Proofs
16688	ارضروم	Erzurum	144/98 (25688, Müşterî +8), 144/108 (44688, Zühre +25)
16718	ولايت	vilâyet	145/26, 147/4, 156/7, 180/64
16722	اسكدار	Üsküdar	144/63 (Adana)
16724	اسكندرون	İskenderun	145/53, 148/21
16728	اطنه	Adana	144/63 (2×)
16751	درسعادت	Dersa‘âdet (İstanbul)	144/123 (Mamuretülaziz)
17158	بصره	Basra	147/18, 148/17, 148/61
17165	بغداد	Bağdad	148/17
18614	چتينه	Çetine (Cetinje)	143/134 (İşkodra)
24496	ويانه	Viyana	145/26 (2×), 144/108 (52496, Zühre +25, 2×)
25188	ارمنى	Ermeni	144/50 (18829, Kamer +4, 3×), 145/49, 148/17, 167/102
26167	اشقيا	eşkıyâ	144/73 (Yanya, 2×)
29452	امضا	imzâ	144/110 (Mamuretülaziz)
34224	آسايش	âsâyiş	144/47 (62224, Zühre +25, 2×), 144/11 (22462, Zühre Ahşâm)
42255	اداره	idâre	144/117 (Halep)
44598	بونلرك	bunların	144/123
45057	اصولى	usûlü	144/82 (İşkodra)
45267	تحقيق / تحقيقات	tahkîk / tahkîkât	144/110, 145/40 (26764, Utârid +17, 2×)
45774	سند	sened	144/123
45899	معروضات	ma‘rûzât	180/64 (Beyrut, Eylül 1895)
46159	استقراض	istikrâz	144/123
46696	تلغراف	telgraf	143/134, 145/40 (69665, Utârid +17), 144/108 (74696, Zühre +25, 2×)
48127	جديد	cedîd	143/134 (2× — Miftâh-ı Cedîd)
48844	التى	altı	144/63
49457	حدود	hudûd	144/73 (2×), 144/45 (64457, Zühal +13)
49484	حركت	hareket	144/123
51042	حصر	hasr	144/82
51567	حقنده	hakkında	144/73, 145/89, 147/61, 148/2
51714	خانه	hâne	144/82 (3×), 148/21, 152/87
52678	حصه	hisse	144/123
52717	دائره	dâire	144/82
54495	شخص	şahıs	144/110
55586	روم	Rum	147/4, 147/61, 152/85
56447	رأى	re'y	156/7 (2×)

Code	Ottoman	Transliteration	Archival Sources & `zf81` Proofs
56515	سائر	sâir	144/63
57228	سفارت	sefâret	143/134 (2×)
57629	سوارى	süvârî	143/134
58762	شاكردانندن	şâkirdânından	144/63
58871	شفره / اشبو	şifre / işbu (bağlamlı)	143/134, 144/110
58919	تحويلات	tahvîlât	144/123
59162	صاحبلرى	sâhipleri	144/110
61669	طبانجه	tabanca	144/63
61692	طرف / طرفندن	taraf / tarafından	144/73, 147/61, 152/29, 152/85
62155	طولايى	dolayı	144/117
62225	بويوك	büyük	147/4
62242	النمسى	alınması	144/63
64414	عادى	âdî	180/64
64546	عبارت	ibâret	144/82
65529	فقط	fakat	147/4
65689	قرال	kral	167/102 (Temmuz 1894)
65691	قرالیچه	kraliçe	167/102 (Temmuz 1894)
65697	قائمقاملغى	kaymakamlığı	144/117
66150	قريه	karye	144/24 (94150, Zühre +25)
66151	قضا	kazâ	147/4, 147/9, 144/47 (94151, Zühre +25), 144/10 (15192, Merîh +23)
66546	قومسيونجى	komisyoncu	144/123
67246	مبايعه	mübâya‘a	144/110
67475	كوره	göre	144/63
68198	لنگرانداز	lenger-endâz	147/18
68246	مذكور	mezkûr	144/110
69287	يازيله	yazıla	144/110 (2×)
69289	چوجق	çocuk	144/63 (2×)
69426	هر	her	144/73
71164	مخابره	muhâbere	143/134
71168	محرمانه	mahremâne	143/134
71177	مخرج	mahrec	144/123
71191	مخصوص	mahsûs	143/134 (2×), 144/82
72142	مفتاحك	miftâhın	143/134 (2×)
72154	مفتاح	miftâh	143/134 (3×)
72172	مقتضى	muktezî	144/82

Code	Ottoman	Transliteration	Archival Sources & `zf81` Proofs
72192	مكتب	mekteb	144/63 (2×), 145/26 (2×), 144/98 (82192, Müşterî)
73194	مكتوب	mektûb	144/108 (11194, Zühre +25 mod 81 wrap-around, 2×!)
74264	قلم	kalem	144/110
74759	تجار	tüccâr	144/110
74855	بالمقايسه	bi'l-mukâyese	144/123
75222	نفس	nefs	144/63
76115	واپور	vapur	147/18 (2×)
76122	واسطه سيله	vâsıtasıyla	144/117
76142	دائره	dâire	147/4
76452	داخلنده	dâhilinde	144/73
77722	افندى	Efendi	144/63
77799	حالده	hâlde	144/73
78114	چكيلان / مذكور	çekilen / mezkûr	144/63, 145/26, 144/98 (87114, Müşterî +8), 144/108 (16114, Zühre +25 mod 81!)
78127	في الواقع	fi'l-vâki‘	144/123
78642	كليسا	kilise	147/61

5. Archival Plates (18 Primary Witnesses — Click to Zoom)

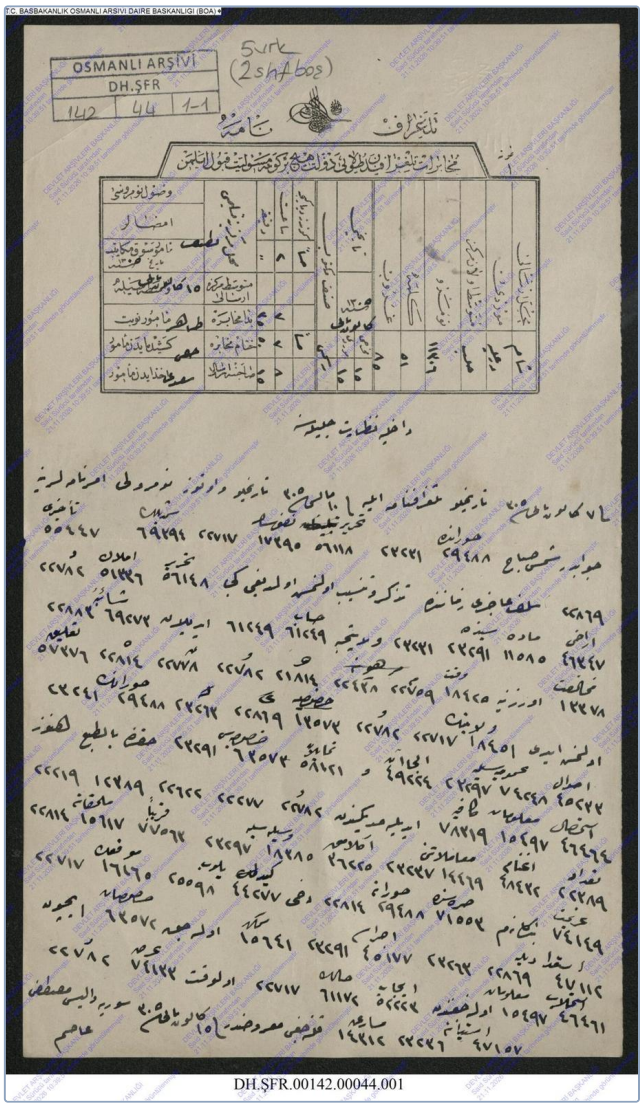


Plate 1 · BOA, DH.ŞFR. 142/44 (March 1890, Syria): Latest attested use of the old A.}d. 1060 (Vol. VI, 22xxx) codebook (+6.5 years extended lifespan).

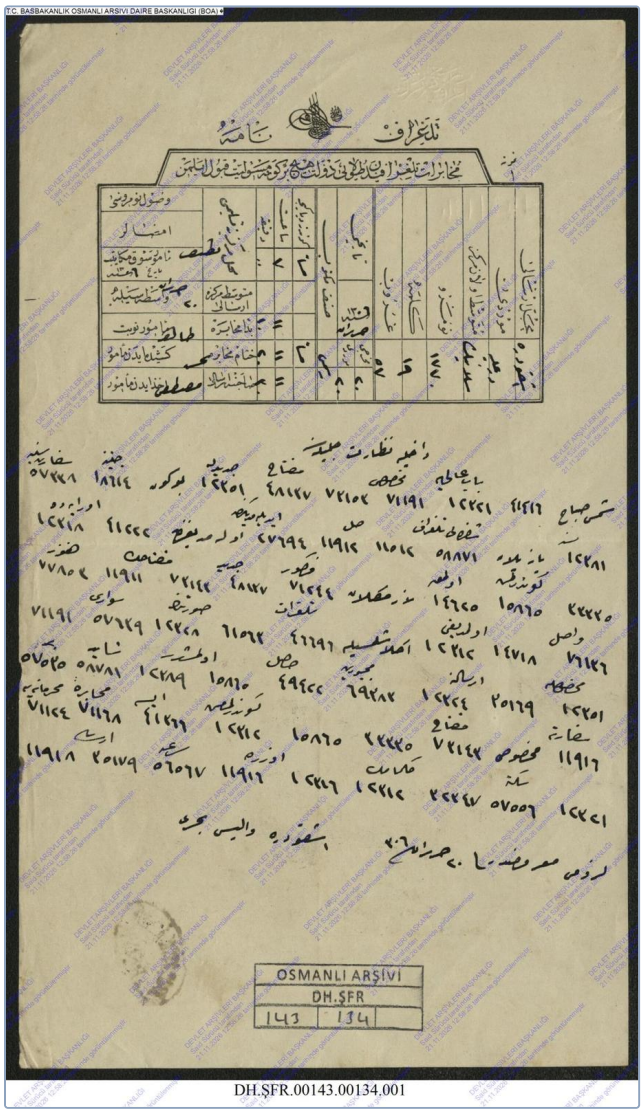
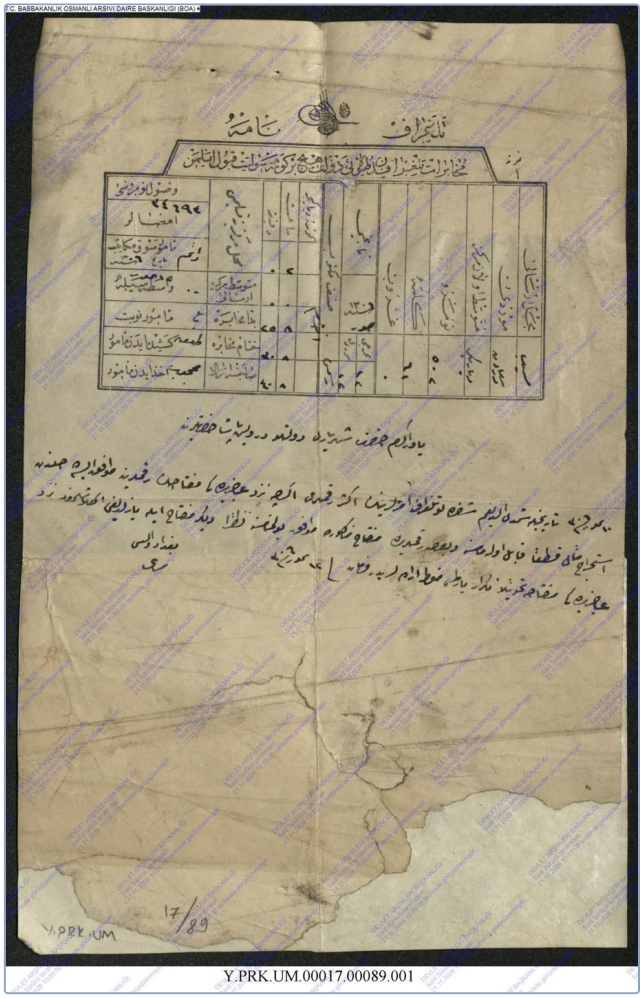
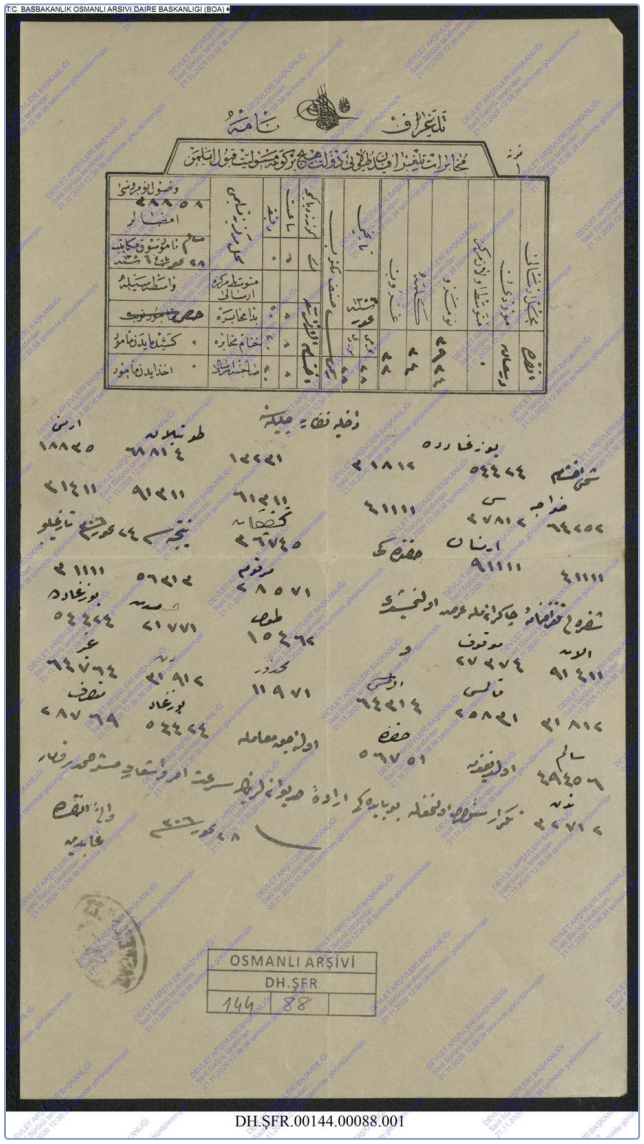


Plate 2 · BOA, DH.ŞFR. 143/134 (2 July 1890, Shkodra): Earliest witness of the new Miftâh-ı Cedîd (II. Usûl-i Seyyârât), itself encrypted in Şems Morning (11xxx/46696/72154).



Y.PRK.UM.00017.00089.001

Plate 3 · BOA, Y.PRK.UM. 17/89 (22 July 1890, Baghdad): Transition witness reporting that the 7 Temmuz cipher no longer matched the old codebook.



DH.ŞFR.00144.00088.001

Plate 4 · BOA, DH.ŞFR. 144/88 (Ankara): Şems Evening (شمس اقشام) — S=0, evening half-swap [LLL][11] (41111, 61411, 91111).

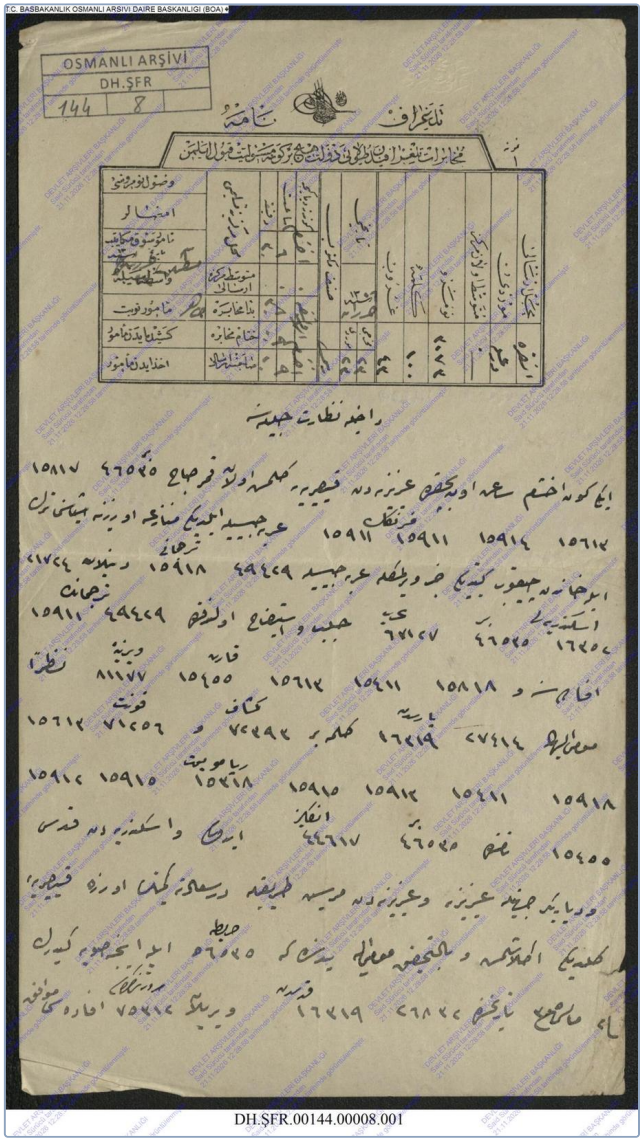


Plate 5 · BOA, DH.ŞFR. 144/8 (5 July 1890, Ankara): Kamer Morning (قمر صباح) — S=+4, letter page 15xxx, verb page 16xxx (15411, 15918, 16219).

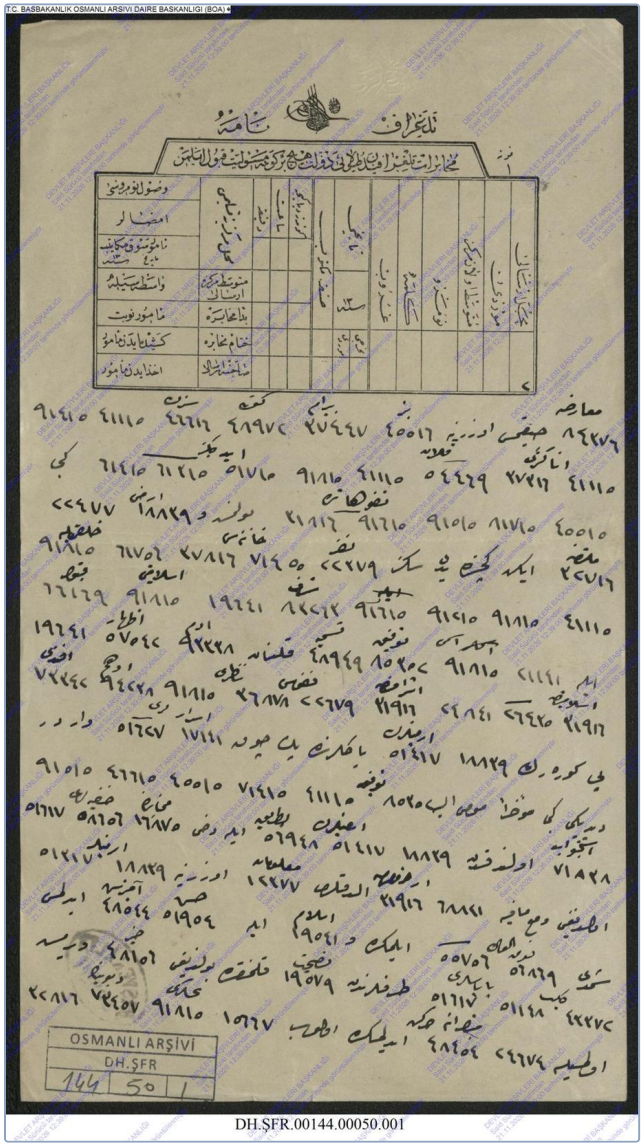
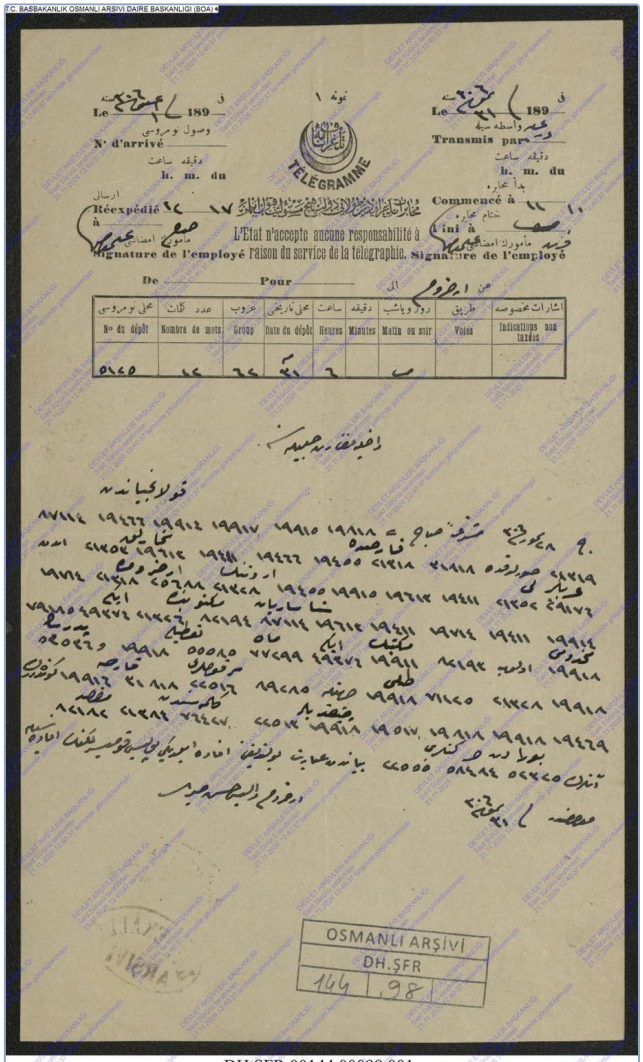
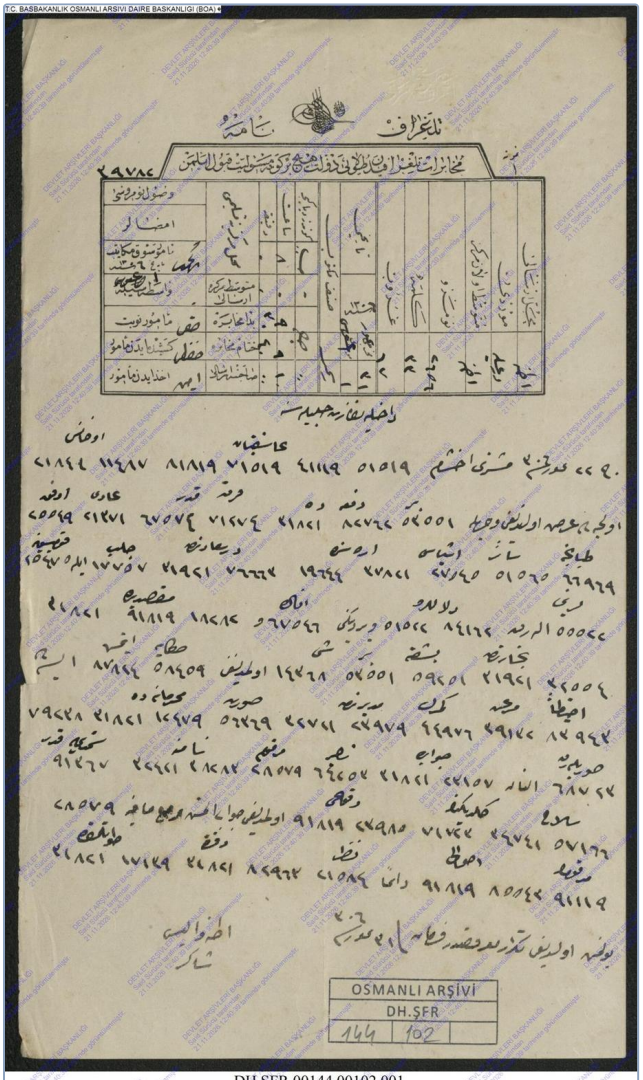


Plate 6 · BOA, DH.ŞFR. 144/50 (Sivas): Kamer Evening (قمر اقشام) — S=+4, Ermeni 25188 → 18829 (3×) main-dictionary proof.



DH.ŞFR.00144.00098.001

Plate 7 · BOA, DH.ŞFR. 144/98 (Erzurum): Müşterî Morning (مشتري صباح) — S=+8 (zf81), p.11→19, p.12→21 (skipping 20!), Erzurum 16688→25688, 78114→87114.



DH.ŞFR.00144.00102.001

Plate 8 · BOA, DH.ŞFR. 144/102 (Adana): Müşterî Evening (مشتري اقشام) — S=+8 (zf81), evening half-swap [LLL][19/21] (41119, 91819, 21821).

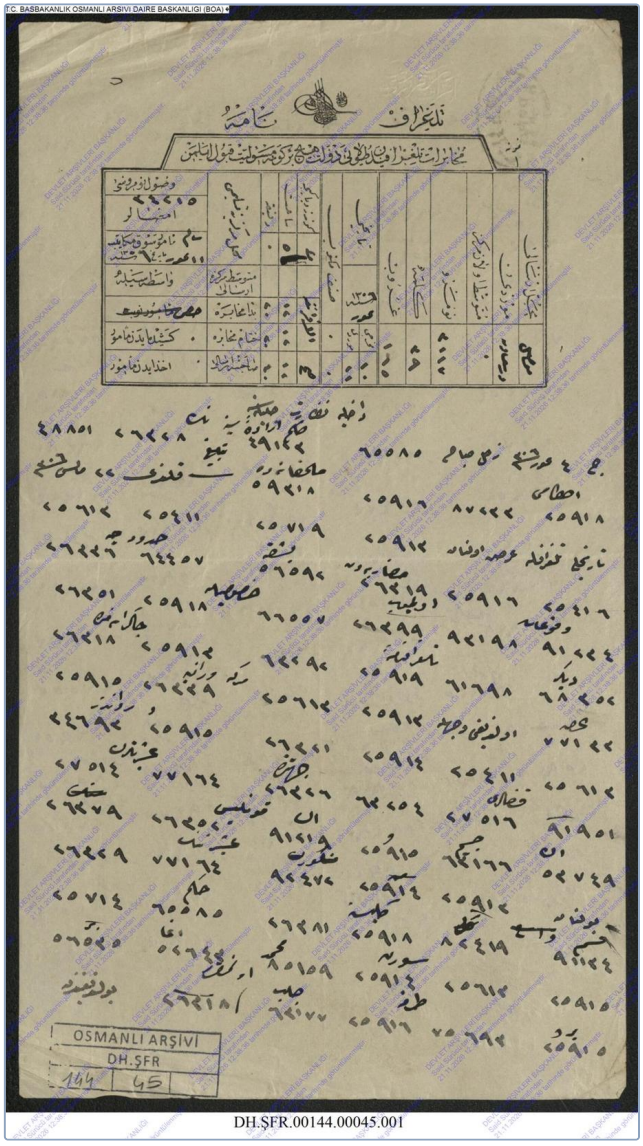


Plate 9 · BOA, DH.ŞFR. 144/45 (Mosul): Zühal Morning (زحل صباح) — S=+13 (zf81), p.11→25, p.12→26, hudûd 49457→64457.

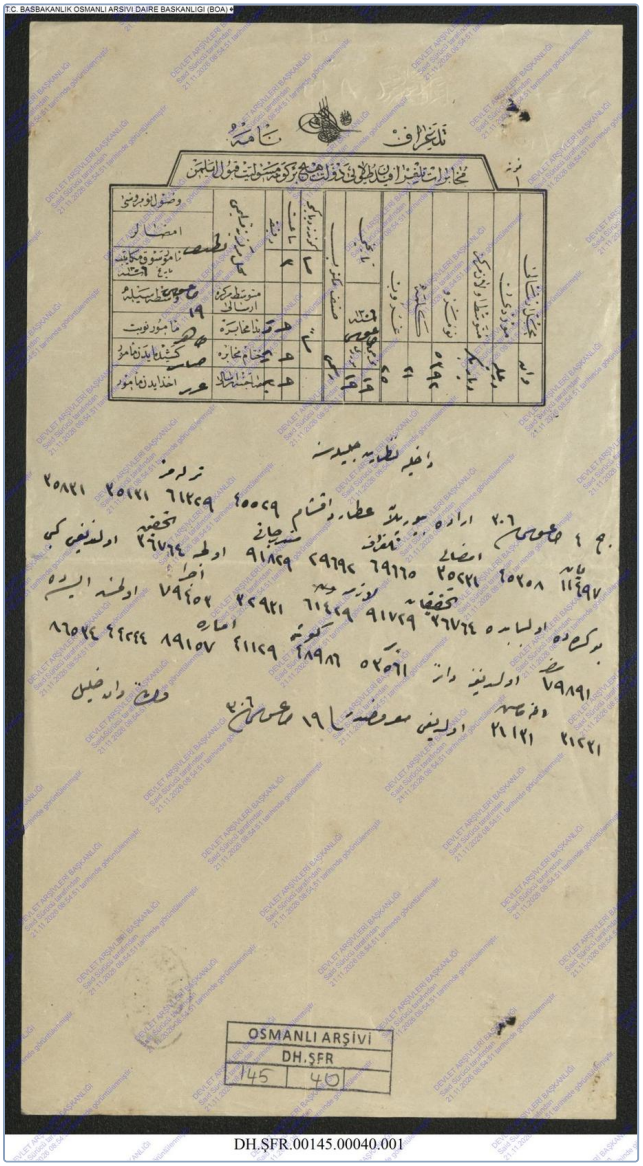


Plate 10 · BOA, DH.ŞFR. 145/40 (Van): Utârid Evening (عطارد اقشام) — S=+17 (zf81), p.11→29, p.12→31, tahkîkât 26764, telgraf 69665.

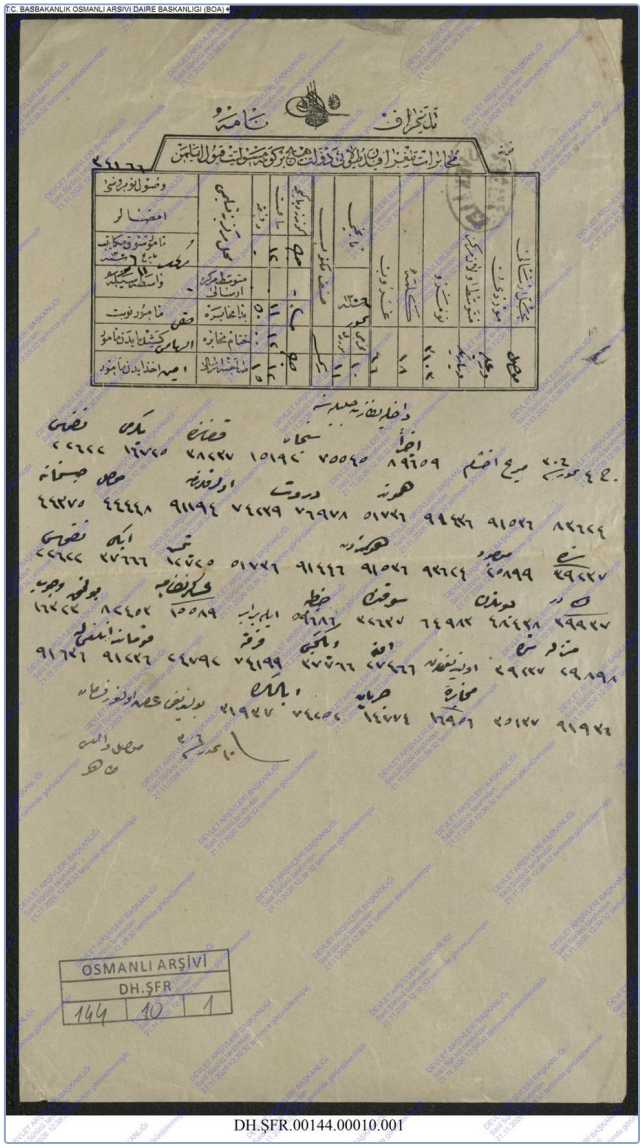


Plate 11 · BOA, DH.ŞFR. 144/10 (Mosul): Merîh Evening (مريخ اقشام) — Front +14 (26/27), main dict +23 (+14+9): kazâ 66151 → 15192 (92151).

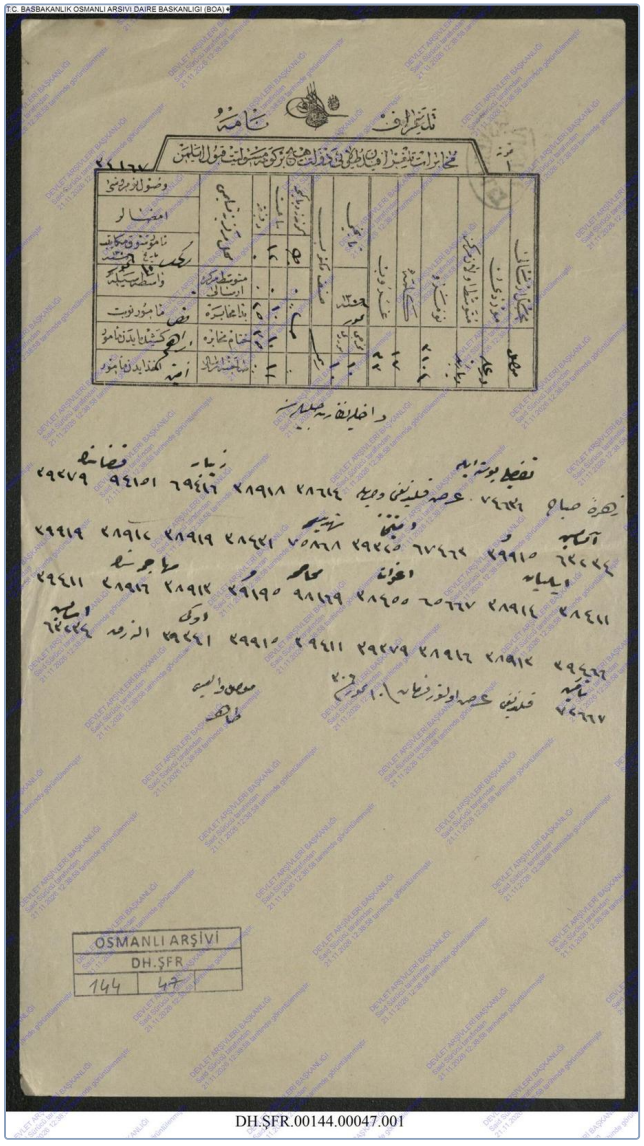


Plate 12 · BOA, DH.ŞFR. 144/47 (Mosul): Zühre Morning (زهره صباح) — Front +16 (28/29), main dict +25 (+16+9): kazâ 66151 → 94151, âsâyiş 34224 → 62224.

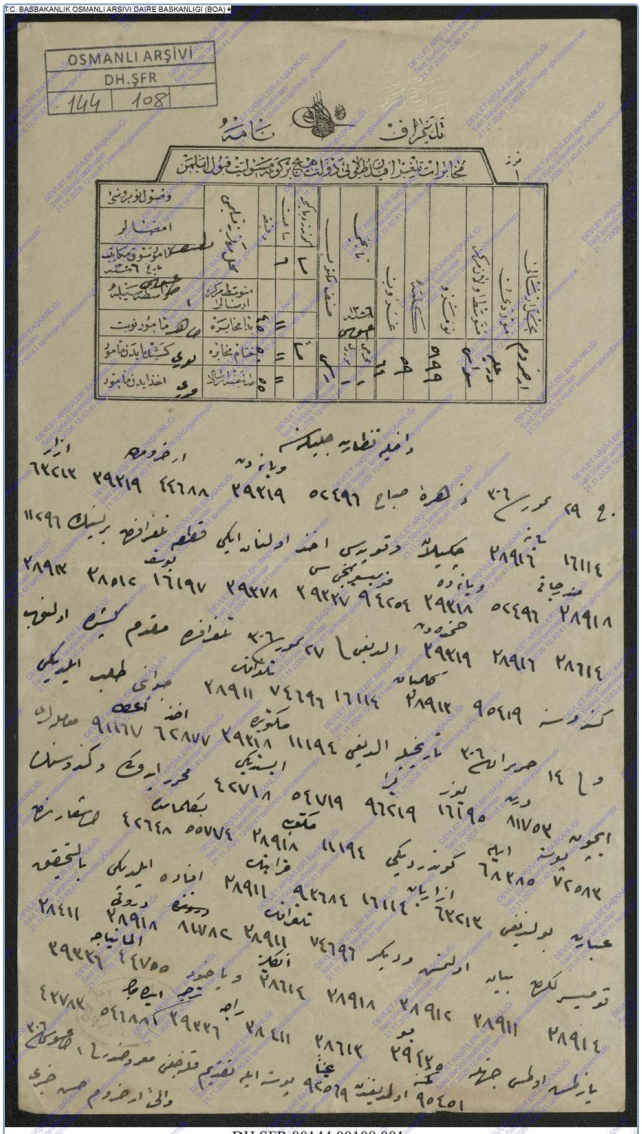


Plate 13 · BOA, DH.ŞFR. 144/108 (Erzurum): Zühre Morning — zf81 wrap-around proof: mektûb 73194→11194, 78114→16114, telgraf 46696→74696, Viyana 24496→52496.

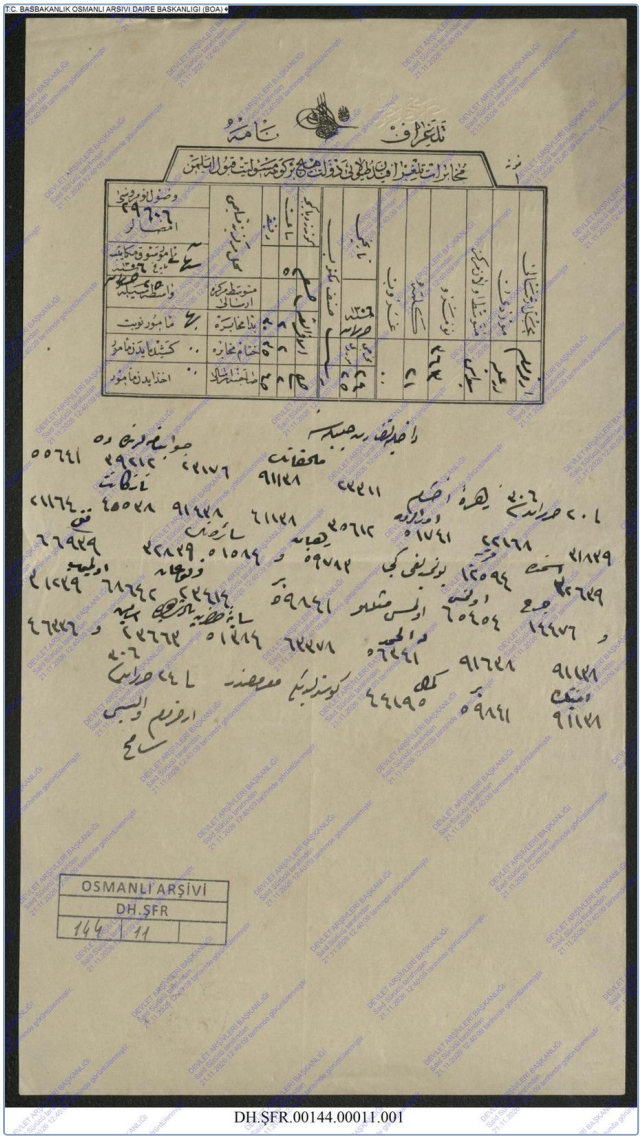


Plate 14 · BOA, DH.ŞFR. 144/11 (Erzurum): Zühre Evening (زهره اقشام) — evening half-swap [LLL][28] (41128, 91628, 22462 âsâyiş).

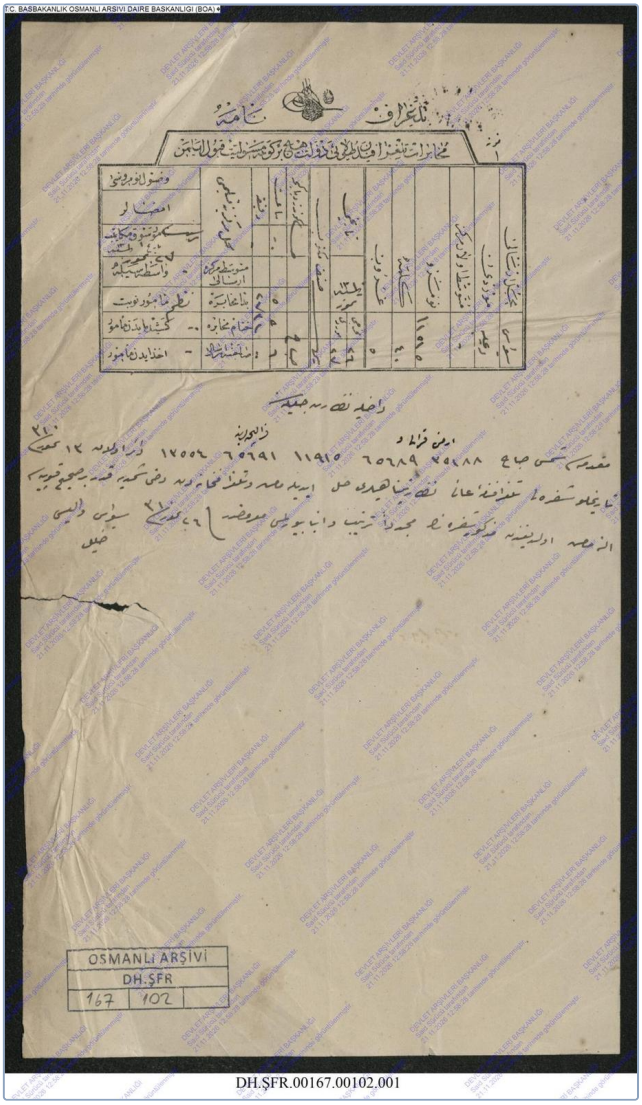


Plate 15 · BOA, DH.ŞFR. 167/102 (July 1894, Sivas): Year-4 continuity witness (Şems Morning: 25188 Ermeni, 65689 kral, 65691 kraliçe).

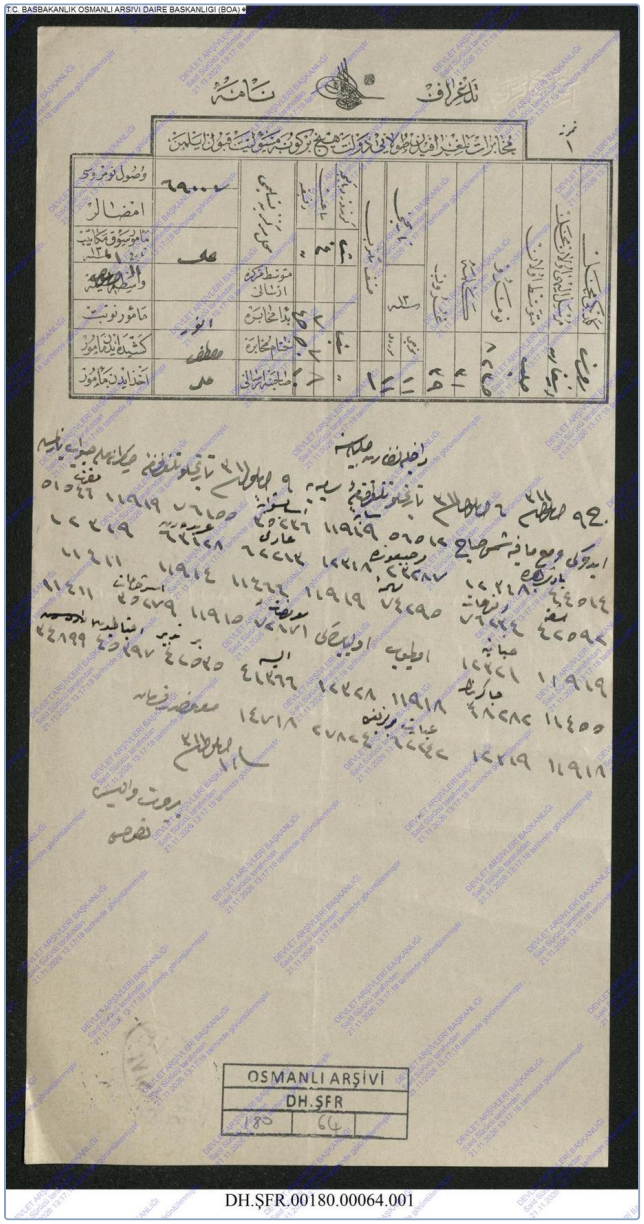


Plate 16 · BOA, DH.ŞFR. 180/64 (Sept 1895, Beirut): Year-5+ upper-boundary witness (Şems Morning: 11918, 12219, 16718).