APPENDIXES

APPENDIX 1A:

SCHOLARLY ADVISORS OF ESARHADDON AND ASSURBANIPAL

This appendix gives a survey on two successive generations of ancient scholars, employed by King Esarhaddon around 670 B.C. and by his successor Assurbanipal 20 years later. The latter group is well enough defined in an Assyrian administrative document, and it suffices here to give a transliteration and a translation of that text, with necessary complementary notes. The former group must be reconstructed on the ground of the scattered (but ample) evidence of contemporary letters, reports, and official records. Grounds for assigning individual scholars to this group are not explicitly stated in the following list, but each case can relatively easily be verified by means of the material presented elsewhere in this book (the scholars treated in the chapter on the prosopography are recognizable by the fact that only their names, without any additions, are cited; asterisks refer to appendices 1B and 2B; references to sources and necessary details are given in other cases). Persons whose classification is uncertain are enclosed in parentheses (e.g., *unidentified* senders of astrological reports, especially if the reports are not very numerous, are not necessarily 'scribes', since reports originated also from haruspices, exorcists, chanters, priests, and officials). Scholars demonstratably of Babylonian origin are followed by a B in ellipses.

Further comments on this appendix are not necessary, but attention may be drawn to two facts that stand out even on a superficial comparison of the two groups: the absence of interpreters of dreams in the circle of Esarhaddon's scholars (cf. Introduction, p.), and the change of personnel effected by the intervening 20 years (only 6 of Esarhaddon's scholars are still in there office in 630 B.C.). If one were to reconstruct the circle of scholars serving Sennacherib in the year 690 B.C., a parallel situation would probably become apparent (the influential scholarly posts were then occupied by persons called Kalbu, Nabû-zuqup-kēni, Dadâ, etc.). Twenty years may perhaps be assumed as the average length of the career of an Assyrian scholar.

1. *Scholars serving Esarhaddon around 670 B.C.*

SCRIBES

Nabû-zēru-līšer, chief scribe
Ištar-šumu-ēreš, chief scribe

Balasî
Bēl-nāṣer* (B)
Bēl-ušēzib* (B)[1]
(Marduk-šāpik-zēri*) (B) cf Šāpiku
Nabû-aḫḫē-erība
Nabû-mušēši*
Ṭāb-ṣilli-Marduk* (B) cf Ṭābîja

not residing in the court:

Nineveh: Nabû-šumu-iddina
Calah: Bābu-šumu-iddina
Assur: Akkullānu
Nabû'a
Arbela: Ištar-nādin-apli
Babylon: Mār-Ištar
Rāši-ili* (B)
Šuma-iddin* (B)
Ṭābîja* (B)
Zākir* (B)
Barsip: Aplâ* (B)
Nabû-iqīša* (B)
Šāpiku* (B)
Cutha: Nabû-iqbi* (B)
Dilbat: Nabû-aḫḫē-iddin* (B)
Uruk: Aḫḫēšâ

somewhere in Assyria:

Bamāju*
Bulluṭu*
Nergal-šumu-iddina

somewhere in Babylonia:

Ašarēdu* (B)
Nabû-šuma-iškun* (B)
Nergal-ēṭer* (B)
Munnabitu* (B)

sending occasionally astrological reports:

(Aššūr-nāṣer*)
(Aššūr-šarrāni*)
(Adad-šumu-uṣur see exorcists)
(Aššūr-šumu-iddina*)
(Bēl-lēʾi* see exorcists)
(Bēl-upaḫḫir* see haruspices)
(Bēl-šuma-iškun* see appeasers)
(Marduk-šumu-uṣur see haruspices)
(Nādinu* see haruspices)
(Rīmūtu* see exorcists)
(Šumâ* see exorcists)
(Urad-Ea see appeasers)

[1] A.L. Oppenheim, Centaurus 14 (1969), p. 105, suggests that Bēl-ušēzib was stationed somewhere in Babylonia, possibly in Sippar. The correct location is evident from K. 1353 where Bēl-ušēzib explicitly states that four elders from Nippur are "there in Nineveh" to visit the king. M. Dietrich (WO 4 [1968] 234 and recently AOAT 7, p. 68) reads, instead of Nineveh (written $Ni\text{-}na\text{-}a^{KI}$ as usual in Neo-Babylonian texts), Ninâ and connects this with the old Sumerian city of Nina which flourished in the 3rd millennium B.C. This interpretation seems unlikely in the light of ABL 895 = RMA 274, a report of Bēl-ušēzib on a lunar eclipse which he had been observing "in the capital, (i.e.) the city where the king lives" (URU BAL URU *ša* LUGAL *ina lib-bi aš-bu*, obv. 4-5).

EXORCISTS

Marduk-šākin-šumi, chief exorcist
Adad-šumu-uṣur, king's exorcist

Balāssu (B) LAS 238 r4
Bēl-nāṣer (B) LAS 4:7, 174 r10
Nabû-gāmil
Nabû-lē'ûtū LAS 174 r9, 223 r6'.13'
Nabû-murīb-aḫi LAS 174 r6
Nabû-nādin-šumi
Nabû-nāṣer
Ninurta-aḫa-iddin* (B)
Rīmūtu* (B) cf. LAS 174 r4
Šumâ (B) cf. LAS 174 r7, 238 r1
Urad-Gula

not living in Nineveh:

Bēl-lē'i* son of Egibi* (B)
Nabû-šuma-līšer* (B): cf. ABL 276 r6 with ABL 263

HARUSPICES

Marduk-šumu-uṣur, chief haruspex

Aqarâ* (B) AGS 98, 108
Balāssu (B) AGS 48
Bānî AGS 108, 119
Bēlīpuš (B) RMA 18 r3
Bēl-ušallim* (B): cf AGS 8, 9, 54, 57, 98
Kāṣiru AGS 48
Kudurru (B) K.3034+ r15 (WO 4 95): AGS 48
Nabû-aḫḫē-uballiṭ AGS 119, 145
Nabû-(u)šallim AGS 46, 48, 118
Nādinu* (B): cf AGS 55
Nāṣiru (B): AGS 6, 48, 98, 108, 145; PRT 1, 17
Marduk-šumu-ibni AGS 108
Šāsî LAS 115:12, AGS 35 (written ^{I}Ša-<si>-ja)
Šukinu AGS 48
Tabnî

PHYSICIANS

Urad-Nanâ, chief physician
Bānî, Deputy of the chief physician

Aḫa-šubši (B) K.3034+ r17 (WO 4 95)
Ikkāru
Nabû-tabni-uṣur

APPEASERS

Urad-Ea, king's ṣalmāḫu

Bēl-šuma-iškun* (B)
Marduk-nāṣer (B) ABL 1321+ r2 (WO 4 96)

AUGURS no names preserved, but cf. LAS 2

2. *Scholars serving Assurbanipal around 650 B.C.*

K.1276 + ADD 851, with partial duplicate Sm. 471 (unp.): cf. B. Landsberger, BBEA, p. 14 note 8; G. van Driel, *The Cult of Aššur*, p. 55 note 18; and A.L. Oppenheim, Centaurus 14 (1969), p. 100. For the dating of this document see Introduction, p. 32, note 3.

		Transliteration	*Translation*
Col. I	1	^{I}*15*-MU-APIN-*eš*	Ištar-šumu-ēreš
	2	^{I}AŠ-PAP^{MEŠ}	Nādin-aḫḫē
	3	^{I}*Ba-la-su*	Balāssu
	4	^{I}DÙ-*na-aja*	Bunāja
	5	^{I}*Ki-ṣer-*^{d}PA	Kiṣer-Nabû
	6	^{I}*E-tel-pu*	Etelpu
	7	[^{I}DN]-KAR-*er*	[DN]-ēṭer
	8	[PAP 7 A.B]A^{MEŠ}	[total 7 sc]ribes
	9	[^{I} . . .]X-NUMUN	[. . .]-zēri
	10	[^{I}EN-DÙ-*u*]š	[Bēl-ēpu]š
	11	[. . .]-*aja*	[. . .]-āja
	12	[. .]-*BU-u*	[. .]bu
	13	[^{I}*Ku*]-*na-aja*	[Ku]nāja
	14	[^{d}]PA-*sa-kip*	Nabû-sākip
	15	[^{I}]*Rém-u-tú*	Rēmūtu
	16	[^{I}]EN-*ú-še-zib*	Bēl-ušēzib
	17	[^{I}]^{d}PA-NUNUZ-GIŠ	Nabû-per'u-līšer
	18	PAP 9! MAŠ.MAŠ^{MEŠ}	total 9 exorcists
Col. II	1	^{I}*A-qar-a*	Aqarâ
	2	^{I}*Ba-ni-i*	Bānî
	3	^{I}*Zi-zi-i*	Zizî
	4	Id^{Š}Ú-MU-PAP	Marduk-šumu-uṣur
	5	Id$^{}$PA-SUM-A	Nabû-nādin-apli
	6	PAP 5 ḪAL^{MEŠ}	total 5 haruspices
	7	^{I}*Qur-di-Arba-il*	Qurdī-Arba'il
	8	Id$^{}$PA-*u-a*	Nabû'a
	9	Id$^{}$PA-PAP^{MEŠ}-TI	Nabû-aḫḫē-uballiṭ
	10	Id$^{}$MAŠ!-*bal-lit-su*	Ninurta-ballissu
	11	^{I}*As-qu-du*	Asqūdu
	12	^{I}*30*-MAN-PAP	Sîn-šarru-uṣur
	13	Id$^{}$PA-MU-AŠ	Nabû-šumu-iddina
	14	^{I}*Bu-uq-lu*	Buqîu
	15	^{I}*Ṣi-ḫu-ru*	ṣiḫurru
	16	PAP 9 A.Z[U]^{MEŠ}	total 9 physicians

		Transliteration	*Translation*
Col. III	1	^{Id}PA-NUMUN-AŠ	Nabû-zēru-iddina
	2	^{I}*Za-ki-ru*	Zākiru
	3	^{I}*30*-TI-*su*-E	Sîn-balāssu-iqbi
	4	^{Id}PA-MAN-*a-ni*	Nabû-šarrāni
	5	^{Id}PA-EN-MU^{MEŠ}	Nabû-bēl-šumāti
	6	^{I}*Mar-duk*	Marduk
	7	PAP 6 UŠ.KU^{MEŠ}	total 6 appeasers
	8	^{Id}IGI.DU-DÙ-PAP^{MEŠ}	Nergal-bāni-aḫḫē
	9	^{I}*IS-PU-te*	Ispute
	10	^{I}ŠU.ḪUŠ-^{d}*15*	Išdī-Ištar
	11	PAP *3 da-gíl* MUŠEN	total 3 augurs
	12	^{I}[×]-*ši-i*	[ ]šî
	13	^{I}*Ra-a'-si-i*	Ra'sî
Col. IV	1	^{I}*Ṣi-ḫu-u*	Ṣiḫû
	2	PAP *3 ḫar-ṭi-bi*	total 3 dream interpreters
	3	^{I}*Ḫu-u-ru*	Ḫūru
	4	^{I}*Ni-mur-a-u*	Nimmura'u
	5	^{I}*Ṣu-u-a-ṣu*	Ṣū'aṣu
	6	*3* A.BA^{MEŠ}	3 Egyptian
	7	*Mu-ṣur-aje*	scribes
	8	^{ITU}AB UD *16*.KÁM	Kanūnu 16th. [650 B.C.]

N o t e s

I have not been able to collate the tablet, and therefore some uncertain readings remain.

I 8. John's copy in ADD has]+UD AN BE: the reading suggested by Oppenheim, loc. cit., [PAP 7 A.BA] UD AN BE, "[total 7 scribes] of Enūma Anu Enlil" (i.e., astrologers), is possible, but rather unlikely, since *Enlil* is to my knowledge never written with mere BE in NA texts. Note also that in all other instances the totals are followed by a MEŠ (I 18, II 6.16, III 7, IV 6), for which there is no place in the breach.

I 9f. Cf. Sm. 471 which has the following entry for exorcists (obv. 1-3): ^{I}*Na-ṣi-ru* 2 ^{I}EN-ḎU-*uš* 3 PAP 2 LU*MAŠ.MAŠ^{MEŠ}.

I 13. Restored from ABL 447:15; uncertain.

I 15 ff. Cf. ABL 447 r6 ^{I}*Re-mu-tu*, r8 ^{I}EN-*ú-še-zib*, r16 ^{I}*Pe-er-'u*, all engaged with exorcistic rituals.

I 18. Collated by G. van Driel, loc. cit.

II 1-6. In this list of haruspices are missing at least Ninu'āju (who was the chief haruspex according to PRT 116), Danâ (PRT 110 etc) and Nergal-šarru-uṣur (PRT 124 etc.).

II 10. Instead of ^{Id}PA-*bal-lit-su* (copy Johns), Sm. 471:4 (copy Bezold) has ^{Id}MAŠ-DIN-*su* which has to be preferred.

II 15. Cf. ^{I}*Ṣi-i-ḫur-ru* Sm. 471:5.

III 12. The broken sign could be, according to the copy of Johns, either ⌜*gi*⌝ or ⌜*zi*⌝.

APPENDIX 1B:

BIBLIOGRAPHY OF RELATED TEXTS

1. *Letters from Babylonian scholars*

NAME	TEXT	CONTENTS
Aḫḫēšā	K.4670 + BM 99229 (WO 4 227f)	consecration of priests
	Sm.1186 (ABL 1062)	broken
Aplâ	K.523 (ABL 324)	salutation
Aqarâ	Bu.91-5-9.23 (ABL 1259)	petition
Ašarēdu	K.478 (ABL 254)	salutation
	K.552 (ABL 255)	acquisitions for the royal library
	83-1-18.869 (ABL 743)	broken
Ašarēdu qatnu	K.10736 (WO 4 208f)	astrological
	83-1-18.210 (ABL 796 = RMA 274C)	astrological
Bēl-nāṣer	81-2-4.485 (ABL 765)	atrological
Bēl-ušēzib	K.772 (ABL 895 = RMA 274)	atrological
	K.1353 (WO 4 234 ff)	astrol. + political
	K.4684 (WO 4 240f)	astrol. + political
	K.6118 (WO 4 237f)	political
	K.10120 + K.16127 (ABL 1344 + WO 4 242)	astrological
	K.13191 (RMA 277AE)	astrological
	K.15101 + 83-1-18.47 (WO 4 233f + ABL 1109 = RMA 90)	astrol. + political
	Rm.280 (WO 4 239f)	petition
	Rm.561 (ABL 1183)	astrological
	82-5-22.105 (ABL 1216)	astrol. + historical
	83-1-18.1 (ABL 1237)	astrol. + political
	83-1-18.394 (WO 4 240)	astrological
	Ki.1904-10-9.15 (ABL 1373)	astrol. + political
Kudurru	K.154 (ABL 276)	astrol. and magical allusions
Marduk-šāpik-zēri	K.3034 + K.7655 (WO 4 95)	astrological omens, enumeration of scholars
	K.5440a + 82-5-22.123 (ABL 1321 + WO 4 96)	similar to K.3034+
Munnabitu	K.5463 (ABL 928)	petition
Nabû-iqbi	K.7455 (WO 4 219f)	broken
	Rm.198 (ABL 1410)	astrological
	81-2-4.91 (WO 4 221f)	petition
	83-1-18.132 (WO 4 220f)	petition
Nabû-šuma-lišer	K.825 (ABL 263)	allusion to a magical ritual
Nergal-ēṭer	K.1055 (ABL 228)	petition
Ninurta-aḫa-iddin	K.22 (ABL 334)	acquisitions for the royal library
	K.559 (ABL 335)	broken

NAME	TEXT	CONTENTS
Rāši-ili	K.474 (ABL 496)	cultic matters
	K.545 (ABL 497)	cultic matters
	K.646 (ABL 498)	decoration of divine statues
	K.1002 (ABL 499)	petition
	83-1-18.3 (ABL 475)	cf. K.474
	Bu.91-5-9.39 (ABL 501)	denunciation
Rāši-ili son of Nurzānu	K.1303 (ABL 500)	petition, to the crown prince
Šuma-iddin	K.4789 (ABL 968)	building operations
	81-2-4.417 (WO 4 217)	broken
	83-1-18.32 (WO 4 215f)	cultic matters
	TKSM 21/676 (BBEA 7ff)	cultic and political matters
Ṭāb-ṣilli-Marduk	K.1393 (ABL 1448 = RMA 58)	astrological
Zākir	K.467 (ABL 137)	atrological
	81-2-4.77 (ABL 702)	political
anonymous	83-1-18,7 (ABL 477)	astrological
name broken	K.895 (ABL 954)	astrological, petition
	K.5439a (WO 4 211)	astrological
	83-1-18.60 (ABL 1113)	astrological

2. *Astrological reports*

a) From Assyrian writers

Adad-šumu-uṣur	K.730 (RMA 135)	Sm.1179 (RMA 136F)
Akkullānu	K.694 (RMA 166)	Rm.208 (RMA 144B)
	K.702 (RMA 272A)	83-1-18.191 (RMA 138A)
	K.747 (RMA 235)	83-1-18.205 (RMA 34)
	K.1007 (RMA 87A)	83-1-18.228 (RMA 144)
	K.1304 (RMA 89)	Bu.89-4-26.159 (RMA 36)
Aššūr-nāṣer	K.920 (unp.)	
Aššūr-šarrāni	K.775 (RMA 16)	Rm.207 (RMA 175)
Aššūr-šumu-iddina	K.985 (unp.)	
Balasî	K.86 (RMA 91)	K.1301 (RMA 277F)
	K.703 (RMA 119)	K.1323+ (RMA 256B)
	K.706 (RMA 140)	K.1333 (RMA 274O)
	K.712 (RMA 88)	K.1335+ (RMA 55 = ABL 993)
	K.774 (RMA 68)	K.11046 (RMA 136Q)
	K.784 (RMA 8)	Sm.1027 (RMA 171)
	K.786 (RMA 254)	83-1-18.191 (RMA 138A)
	K.795 (RMA 138)	83-1-18.207 (RMA 274H)
	K.855 (RMA 234A)	83-1-18.208A (RMA 208A)
Bamāju	K.92 (RMA 127)	83-1-18.246 (RMA 102)
	K.718 (RMA 161)	Bu.89-4-26.37 (RMA 81B)
	K.864 (RMA 99)	Bu.91-5-9.8 (RMA 156)
	K.871 (RMA 185)	

Bulluṭu	K.742 (RMA 196)	82-5-22.83 (RMA 4)
	K.787 (RMA 256A)	83-1-18.183 (RMA 76)
	K.1334 (RMA 114)	83-1-18.184 (RMA 77)
	K.1375 (RMA 229B)	83-1-18.185 (RMA 3)
	Rm.204 (RMA 131)	83-1-18.198 (RMA 232)
	81-2-4.133 (RMA 1)	
Ištar-šumu-ēreš	K.115 (unp.)	K.3504 (RMA 198)
	K.124 (RMA 267)	K.12555 (RMA 262B)
	K.696 (RMA 7)	Rm.195 (RMA 157D = ABL 1409)
	K.697 (RMA 128)	Rm.200 (RMA 159)
	K.728 (RMA 244)	Rm.212 (RMA 136P)
	K.731 (RMA 206)	80-7-19.57 (RMA 93)
	K.733 (RMA 168)	81-7-27.19 (RMA 257)
	K.765 (RMA 255)	82-5-22.55 (RMA 247)
	K.773 (RMA 1360)	83-1-18.224 (RMA 21A)
	K.788 (RMA 31)	83-1-18.287 (RMA 264)
	K.966 (RMA 277L)	Bu.91-5-9,14 (RMA 21)
	K.1321 (RMA 252E)	Ki.1904-10-9.32 (unp.)
		Ki.1904-10-9,268 (unp.)
rab ṭupšarrī (= Ištar-šumu-ēreš)	K.693 (RMA 58)	80-7-19.56 (RMA 81)
	K.715 (RMA 259)	81-2-4.144 (RMA 109)
	K.779 (RMA 266)	Ki.1904-10-9.38 (unp.)
	Rm.203 (RMA 74)	Ki.1904-10-9.233 (unp.)
	Rm.211 (RMA 275)	
Marduk-šumu-uṣur	K.1460 (RMA 252F)	
Nabû-aḫḫē-erība	K.692 (RMA 75)	Sm.1073 (RMA 42)
	K.705 (RMA 43)	Sm.1974 (RMA 62)
	K.736 (RMA 139)	81-2-4.79 (RMA 70)
	K.740 (RMA 106)	81-2-4.86 (RMA 209)
	K.748 (RMA 248)	81-2-4.109 (RMA 244C)
	K.781 (RMA 180)	81-2-4.287 (RMA 229)
	K.782 (RMA 204)	82-5-22.52 (RMA 96)
	K.839 (RMA 271A)	82-5-22.79 (RMA 236H)
	K.864 (RMA 98)	83-1-18.189 (RMA 54)
	K.865 (RMA 274E)	83-1-18.190 (RMA 51)
	K.868 (RMA 238)	83-1-18.197 (RMA 112)
	K.877 (RMA 84)	83-1-18.204 (RMA 212
	K.984 (RMA 274H)	83-1-18.227 (RMA 179)
	K.1317 (RMA 191)	83-1-18.236 (RMA 236G)
	K.1326 (RMA 252D = ABL 1447)	83-1-18.297 (RMA 246G)
	K.1508 (RMA 141)	83-1-18.314 (RMA 81G)
	K.2327 (RMA 235D)	83-1-18.317 (RMA 246A)
	K.8432 (RMA 57)	83-1-18.320 (RMA 274G)
	Sm.373 (RMA 103)	Bu.91-5-9.34 (RMA 246B)
	Sm.1043 (RMA 258)	Bu.91-5-9,102 (RMA 237)

Nabû-mušēṣi	K.120A (RMA 94)	K.876 (RMA 136L)
	K.704 (RMA 228)	K.1318 (RMA 206A)
	K.710 (RMA 200)	K.14563 (unp.)
	K.719 (RMA 174)	Sm.1664 (RMA 6A)
	K.725 (RMA 205)	80-7-19.54 (RMA 61)
	K.767 (RMA 136E)	81-2-4.380 (RMA 244D)
	K.801 (RMA 118)	82-5-22.78 (RMA 217)
	K.866 (RMA 157)	83-1-18.310 (RMA 266B)
Nabû'a of Assur	K.184 (ABL 817)	K.13116 (ABL 824)
	K.716 (ABL 819)	Rm.205 (ABL 825)
	K.720 (ABL 820)	82-5-22.37 (ABL 826)
	K.792 (ABL 821)	83-1-18.192 (ABL 827)
	K.802 (ABL 822)	Bu.91-5-9.6 (ABL 828)
	K.1368 (ABL 823)	Ki.1904-10-9.215 (unp.)
Šumāju	K.121 (RMA 207)	K.8960 (RMA 274D)
	K.695 (RMA 169)	83-1-18.222 (RMA 111)
	K.713 (RMA 80)	83-1-18.298 (RMA 246D)
Urad-Ea	K.853 (RMA 256C)	K.1405 (RMA 100)
	K.1383 (RMA 72)	
anonymous	K.727 (RMA 165)	82-5-22.60 (RMA 9)
	K.804 (RMA 40)	83-1-18.240 (RMA 136 I)
	K.848 (unp.)	83-1-18.286 (RMA 136 B)
	D.T.148 (RMA 129)	Bu.89-4-26.3 (RMA 192)
name broken away	K.854 (RMA 262)	81-2-4.108 (RMA 136)
	K.878 (RMA 130A)	81-2-4.504 (RMA 118A)
	K.994 (RMA 160A)	82-5-22.54 (RMA 239)
	K.1320 (RMA 70A)	82-5-22.84 (RMA 96A)
	K.1317 (RMA 191A)	82-5-22.87 (RMA 277R)
	K.1388 (RMA 6)	83-1-18.218 (RMA 194A)
	K.1535 (RMA 277G)	83-1-18.236 (RMA 236G)
	K.6078 (RMA 155A)	83-1-18.292 (RMA 157A)
	K.12004+ (RMA 274K)	83-1-18.309 (RMA 277T)
	K.12176 (RMA 211A)	83-1-18.311 (RMA 16C)
	K.12369 (RMA 274L)	83-1-18.317
	K.12469 (RMA 36A)	83-1-18.318 (RMA 277U)
	K.12555 (RMA 262B)	83-1-18.786 (RMA 196A)
	K.13170 (RMA 212A)	83-1-18.870 (RMA 144C)
	Sm.508 (RMA 277AC)	83-1-18.884 (RMA 277W)
	Rm.209 (RMA 183A)	83-1-18.885 (RMA 81I)
	80-7-19.154 (RMA 19A)	Bu.89-4-26.61 (RMA 123A)
	80-7-19.155 (RMA 229A)	Bu.91-5-9.34 (RMA 246B)
	80-7-19.343 (RMA 261)	Bu.91-5-9.38 (RMA 81A)
	80-7-19.364 (RMA 274M)	Bu.91-5-9.58 (RMA 236C)

b) From Babylonian writers

Aḫḫēšâ	K.840 (RMA 13)	82-5-22.58 (RMA 125)
	K.1389 (RMA 252)	83-1-18.233 (RMA 236A)
	K.13087+ (RMA 203)	
Aplâ	K.172 (RMA 46)	K.1385 (RMA 253A)
	K.714 (RMA 132)	K.1407 (RMA 79A)
	K.723 (RMA 197)	81-2-4.82 (RMA 120)
	K.738 (RMA 211)	81-2-4.140 (RMA 277O)
	K.987 (RMA 190A)	82-5-22.61 (RMA 265)
	K.1236 (RMA 277M)	83-1-18.312 (RMA 86A)
Ašarēdu 1) maḫrû	K.861 (RMA 216)	81-2-4.105 (RMA 201)
	K.874 (RMA 27)	82-5-22.63 (RMA 170)
	K.1238+ (RMA 32)	83-1-18.174 (RMA 202)
	K.1394 (RMA 187A)	83-1-18.177 (RMA 87)
	Sm.86 (RMA 29)	Bu.89-4-26.18 (RMA 250)
	79-7-8.100 (RMA 172)	
2) qatnu	K.735 (RMA 231)	83-1-18.178 (RMA 220)
	K.1312 (RMA 136D)	
3) unspecified	K.737 (RMA 133)	80-7-19.58 (RMA 210)
	K.753 (RMA 22B)	80-7-19.62 (RMA 81F)
	K.768 (RMA 249)	81-2-4.132 (RMA 221)
	K.806 (RMA 187)	81-2-4.135 (RMA 242)
	K.873 (RMA 252A)	82-5-22.56 (RMA 219)
	K.955 (RMA 270)	83-1-18.175 (RMA 48)
	K.1338 (RMA 116A)	83-1-18.176 (RMA 252B)
	K.1340 (RMA 46A)	83-1-18.313 (RMA 216B)
	Sm.1232	
Bēl-aḫḫē-irība	K.902 (RMA 241)	81-2-4.84 (RMA 218)
Bēl-lē'i ^{LÚ}āšipu	K.188 (RMA 183)	K.1399 (RMA 24)
	K.734 (RMA 83)	83-1-18.775 (RMA 115F)
Bēl-nāṣer	K.808 (RMA 236)	82-5-22.1778 (RMA 253B)
	K.12017 (RMA 157C)	83-1-18.195 (RMA 18)
	81-2-4.81 (RMA 215)	83-1-18.296 (RMA 155B)
	82-5-22.69 (RMA 274P)	
Bēl-šuma-iškun ^{LÚ}kalû	K.700 (RMA 134)	83-1-18.252 (RMA 235A)
Bēl-upaḫḫer	Ki.1904-10-9.36 (unp.)	
Bēl-ušal[lim]	K.6149 (RMA 277X)	
Munnabitu	K.769 (RMA 82)	K.1305 (RMA 115C)
	K.776 (RMA 63)	K.1398 (RMA 38)
	K.812 (unp.)	K.2085 (RMA 268 = ABL 1006)
	K. 921 (RMA 274A)	
Nabû-aḫḫē-iddin	K.735 (RMA 158A)	K.1373+ (RMA 143)
	K.794 (RMA 121)	83-1-18.244 (RMA 163)

Nabû-iqbi mār Kutê	K.18 (unp.)	81-2-4.233 (RMA 136H)
	K.699 (RMA 233)	82-5-22.51 (RMA 213)
	K.744 (RMA 10)	82-5-22.72 (RMA 80A)
	K.745 (RMA 177)	82-5-22.156 (unp.)
	K.789 (RMA 136M)	83-1-18.188 (RMA 249A)
	K.933 (RMA 201A)	83-1-18.202+ (RMA 22)
	K.1329 (RMA 144E)	83-1-18.219 (RMA 20)
	K.1380 (RMA 263)	83-1-18.290 (RMA 101A)
	Rm.198 (RMA 19 = ABL 1410)	Bu.91-5-9.9 (RMA 110)
	81-2-4.141 (RMA 112B)	Ki.1904-10-9.39 (unp.)
Nabû-iqīša mār Barsip	K.736 (RMA 11)	82-5-22.48 (RMA 195)
	K.793 (RMA 153)	83-1-18.48 (RMA 155)
	K.900 (RMA 5)	83-1-18.186 (RMA 150)
	D.T.304 (RMA 215A)	83-1-18.187 (RMA 49)
	81-2-4.104 (RMA 240)	83-1-18.241 (RMA 112A)
	81-2-4.107 (RMA 189)	83-1-18.299 (RMA 64)
Nabû-šuma-iškun	K.19 (RMA 215)	81-2-4.102 (RMA 151)
	K.785 (RMA 95)	82-5-22.59 (RMA 230)
	K.791 (RMA 41)	83-1-18.200 (RMA 190)
	K.803 (RMA 17)	Bu.89-4-26.19 (RMA 277AD)
	80-7-19.55 (RMA 223A)	
Nādinu	K.1384 (RMA 274F)	81-2-4.89 (RMA 226)
	K.8393 (RMA 144D)	
Nergal-ēṭer	K.701 (RMA 14)	K.4708+ (RMA 199)
	K.702 (RMA 272B)	K.8861 (RMA 252C)
	K.722 (RMA 78)	Sm.1062 (RMA 39)
	K.729 (RMA 37)	Rm.191 (RMA 146) !
	K.739 (RMA 97)	Rm.194 (RMA 86)
	K.741 (RMA 30)	Rm.196 (RMA 162)
	K.749 (RMA 277 = CT 27 45)	Rm.197 (RMA 274Q)
	K.763 (RMA 123)	81-2-4.103 (RMA 35)
	K.783 (RMA 216C)	81-2-4.136 (RMA 199A)
	K.799 (RMA 137)	81-2-4.138 (RMA 32A)
	K.842 (RMA 146A)	81-7-27.23 (RMA 208)
	K.856 (RMA 22A)	82-5-22.49 (RMA 69)
	K.901 (RMA 81K)	82-5-22.57 (RMA 186)
	K.907 (RMA 195A)	83-1-18.171 (RMA 154)
	K.972 (RMA 225)	83-1-18.172 (RMA 243B)
	K.1302 (RMA 277K)	83-1-18.173 (RMA 79)
	K.1306+ (RMA 144A)	83-1-18.208 (RMA 244)
	K.1309 (RMA 181A)	83-1-18.221 (RMA 92)
	K.1322 (RMA 136T)	83-1-18.301 (RMA 277S)
	K.1342 (RMA 207B)	83-1-18.302 (RMA 149)
	K.1369 (RMA 157B)	Bu.91-5-9.7 (RMA 115D)

Rāši-ili	K.119 (RMA 182)	K.1310 (RMA 230A)
	K.732 (RMA 85)	K.1346 (RMA 96B)
	K.805 (RMA 164)	K.1395 (RMA 59)
	K.807 (RMA 148)	K.1594 (RMA 277B)
	K.809 (RMA 66)	Sm.231 (RMA 273)
	K.815 (RMA 269)	81-2-4.106 (RMA 173)
	K.843 (RMA 165A)	82-5-22.50 (RMA 65)
	K.849 (CT 28 30)	82-5-22.53 (RMA 60)
	K.850 (RMA 147)	82-5-22.64 (RMA 142)
	K.851 (RMA 244A)	83-1-18.230 (RMA 227)
	K.875 (RMA 236B)	83-1-18.242 (RMA 26)
	K.963 (RMA 245)	83-1-18.243 (RMA 33)
	K.973 (RMA 151A)	Bu.89-4-26.166 (RMA 107)
Rāši-ili son of Nurzānu	K.698 (RMA 126)	K.1330 (RMA 174A)
	K.721 (RMA 130)	K.1331 (RMA 115E)
	K.811 (RMA 246)	81-2-4.83 (RMA 101)
	K.904 (RMA 46A)	82-5-22.74 (RMA 218A)
Rīmūtu	82-5-22.68 (RMA 265C)	83-1-18.245 (RMA 145)
Šāpiku	K.178 (RMA 117)	80-7-19.371+ (RMA 167)
	K.790 (RMA 265A)	81-2-4.134 (RMA 2)
	K.6184b (RMA 277A)	81-2-4.344 (RMA 262D)
Šumâ	83-1-18.216 (RMA 47)	
Šuma-iddin	83-1-18.194 (RMA 67)	
Ṭābīja	K.1392 (RMA 243A)	83-1-18.181 (RMA 222)
	81-2-4.85 (RMA 12)	83-1-18.182 (RMA 71)
	83-1-18.179 (RMA 193)	Bu.89-4-26.11 (RMA 73)
	83-1-18.180 (RMA 260)	Ki.1904-10-9.28 (unp.)
Ṭāb-ṣilli-Marduk	K.734 (RMA 15)	K.1332 (RMA 194)
	K.1308 (RMA 11A)	
Zākir	K.770 (RMA 25)	80-7-19.155 (RMA 229A)
	K.1345 (unp.)	81-2-4.143 (RMA 251A)
	K.6077 (RMA 114A)	82-5-22.46 (RMA 234)
	K.8391 (RMA 272C)	82-5-22.67 (RMA 236E)
	D.T.53 (RMA 253C)	83-1-18.196 (RMA 183B)
	Rm.201 (RMA 181)	83-1-18.248 (RMA 122)
	80-7-19.19 (RMA 267A = ABL 416)	Bu.89-4-26.8 (RMA 108)
	80-7-19.59 (RMA 28)	Ki.1904-10-9.55 (unp.)
anonymous	80-7-19.60 (CT 28 32)	83-1-18.234 (CT 27 28)
	82-5-22.89 (RMA 124)	Bu.91-5-9.161 (RMA 135A)
name broken	K.759 (RMA 184)	K.1314 (RMA 244B)
	K.964 (RMA 207A)	K.1316 (RMA 181B)
	K.967 (RMA 277I)	K.1324 (RMA 136C)
	K.1300 (RMA 277H)	K.1336 (RMA 277D)
	K.1307 (RMA 81H)	K.1339 (RMA 136C)
	K.1311 (RMA 115B)	K.1341 (RMA 56)

name broken	K.1344 (RMA 47A)	80-7-19.355 (RMA 277AB)
	K.1347 (RMA 216A)	81-2-4.88 (RMA 223)
	K.1557 (RMA 277C)	81-2-4.103 (RMA 240)
	K.1592 (RMA 116)	81-2-4.142 (RMA 243C)
	K.1593 (RMA 262C)	81-2-4.145 (RMA 104)
	K.1599 (unp.)	81-2-4.321 (RMA 46B)
	K.1606 (RMA 85A)	81-2-4.483 (RMA 136A)
	K.1921+ (RMA 113)	82-3-23.112 (RMA 277Q)
	K.1927 (RMA 64B)	82-5-22.56 (RMA 53)
	K.1955 (RMA 211C)	82-5-22.64 (RMA 142)
	K.3723 (RMA 56A)	82-5-22.65 (RMA 105)
	K.6182 (RMA 246E)	83-1-18.203 (RMA 45)
	K.8407 (RMA 211B)	83-1-18.212 (RMA 50)
	K.8704 (RMA 236F)	83-1-18.214 (RMA 115A)
	K.8713 (RMA 272)	83-1-18.220 (RMA 160B)
	K.12250 (RMA 211F)	83-1-18.225 (RMA 158)
	K.12281 (RMA 265B)	83-1-18.296 (RMA 155B)
	K.12283 (RMA 23A)	83-1-18.319 (RMA 211D)
	Sm.694 (RMA 115)	83-1-18.322 (RMA 246C)
	Sm.885 (RMA 136U)	83-1-18.718 (RMA 262A)
	Sm.1327 (RMA 214A)	83-1-18.774 (RMA 277V)
	Rm.2.254 (RMA 237A)	83-1-18.834 (RMA 211E)
	Rm.2.345 (RMA 136S)	83-1-18.881 (RMA 116B)
	80-7-19.62 (RMA 81F)	83-1-18.883 (RMA 277Y)
	80-7-19.63 (RMA 44)	Bu.91-5-9.28 (RMA 136R)
	80-7-19.65 (RMA 23)	Bu.91-5-9.29 (RMA 277Z)
	80-7-19.176 (RMA 69A)	

3. *Oracle queries*

Reports of haruspices dating from the Sargonid period have been published in the following two books:

J. Knudtzon, *Assyrische Gebete an den Sonnengott für Staat und königliches Haus aus der Zeit Asarhaddons und Assurbanipals.* Leipzig 1893.

E. Klauber, *Politisch-religiöse Texte aus der Sargonidenzeit.* Leipzig 1910.

A new edition of these texts is in preparation by J. Aro. Insofar as the queries are signed, they are always written by a whole college of haruspices, and there is consequently no purpose in drawing a list of writers like in the preceding sections.

APPENDIX 2A:

DIACHRONIC SURVEY ON THE LETTERS

This appendix has been compiled in order to make available, in concise form, the results obtained through the dating of the letters, and to provide a check of the ensuing historical consequences. It contains a list of all datable letters arranged in chronological order, with a brief résumé of the contents of each letter. Uncertain cases, which also are included, are indicated by question marks; it has to be pointed out, however, that the commentary should be consulted in all instances before drawing any conclusions on the ground of the present list. The statement of the Assyrian dates in terms of the Julian calendar (cf. Appendix 2C) is largely approximate, since sufficient chronological data to form an absolutely certain frame of reference are lacking, and the Julian dates are here given only for the sake of convenience.

Attention should be paid to the following abbreviations and peculiarities in the list

a. = after
b. = before
M.D. = Mesopotamian date
J.D. = Julian date
Regnal years: Ash 3, etc. = Esarhaddon, 3rd year, etc.
Months are mostly expressed by Roman numerals (for the Assyrian months see Appendix 2D): VIb = intercalary Ulūlu, XIIb = intercalary Addaru.
Writers of letters are enclosed in brackets.

J.D.	M.D.	LETTER	CONTENTS
28.III.673 (?)	15.I.Ash 8(?)	345	verbal equinox on 15th Nisannu [anonymous]
January 672(?)	Šabāṭu Ash 8(?)	325	request for intercalation of the year [Balasî]
February 672(?)	Addaru Ash 8(?)	197-8	mourning the death of Esarhaddon's queen(?) [Marduk-šākin-šumi]
1.IV.672	28.XIIb.Ash 8	338	medical [name broken away]
b. 10.IV.672	b. 8.I. Ash 9	1	arrangements for imposing an oath of loyalty on Assyrian scribes [Ištar-šumu-ēreš]
18.IV.672	16.I. Ash 9	2	ditto
April(?) 672	Nisannu(?) Ash 9	3	arrangements for oath-taking [Ištar-šumu-ēreš]
May 672	Ajaru Ash 9	129	Assurbanipal's nomination as crown prince; reference to the Elamites [Adad-šumu-uṣur]
May 672	Ajaru Ash 9	132	Assurbanipal's nomination as crown prince; reference to the deceased queen [writer's name lost]

J.D.	M.D.	LETTER	CONTENTS
May(?) 672	Ajaru(?) Ash 9	211	magical ritual performed for the king's sister [Nabû-nādin-šumi]
28.V.672	26.II. Ash 9	300	heliacal rising of Mars portending calamity to the king [Akkullānu]
June 672(?)	Simānu Ash 9(?)	334	expiatory rites on account of the late rise of Mars, addressed to the 'farmer' [anonymous]
28.III.671(?)	6.I. Ash 10(?)	344	vernal equinox on the 6th of Nisannu [anonymous]
a. 12.VII.671	a. 22.IV. Ash 10	34	king's return form his campaign <to Egypt>: assurances of loyalty [Balasî]
a. 12.VII.671	a. 22.IV. Ash 10	59	ditto [Nabû-aḫḫē-erība]
22.VII.671	2.V. Ash 10	276	making of the crown of Nabû: riot in Babylon [Mār-Ištar]
July(?) 671	Abu(?) Ash 10	57-58	making of the crown of Nabû [Balasî and Nabû-aḫḫē-erība]
a. July 671	a. Abu Ash 10	181	medical: reference to the king's Egyptian campaign [Marduk-šākin-šumi]
b. 7.X.671	b. 22.VII. Ash 10	249	substitute king ritual [Urad-Nanâ]
end of X.671	Araḫsamna Ash 10	277	king's journey to Šur-marrāte: making of god's of Uruk: building operations in Dēr: reference to the Elamite crown prince [Mār-Ištar]
28.XII.671	15.X. Ash 10	40	report on lunar eclipse [Balasî]
28.XII.671	15.X. Ash 10	61	ditto [Nabû-aḫḫē-erība]
28.XII.671	15.X. Ash 10	278	ditto [Mār-Ištar]
26.XII.671	13.X. Ash 10	185	magical rites performed on account of a lunar eclipse: commencement of a substitute king ritual [Marduk-šākin-šumi]
3.I.670	20.X. Ash 10	279	substitute king ritual [Mār-Ištar]
January(?) 670	Šabāṭu Ash 10	280	substitute king ritual: reaction of the Akkadians [Mār-Ištar]
March 670	Nisannu Ash 11	281	completion of the crown of Nabû: difficulties in Barsip concerning temple revenues [Mār-Ištar]
April 670 (?)	Ajaru Ash 11(?)	38	king frightened on account of a stroke of lightning: intercalation of the year discussed [Balasî]
a. 3.V.670(?)	a. 22.II.Ash 11(?)	51	king's illness and abstinence from food [Balasî and Nabû-aḫḫē-erība]
a. 3.V.670(?)	a. 22.II.Ash 11(?)	143	ditto [Adad-šumu-uṣur]
May 670	Simānu Ash 11	180	king seriously ill [Marduk-šākin-šumi]
15.IV.670	4.II. Ash 11	282	procession of the Lady of Akkad: building operations in Uruk [Mār-Ištar]
May 670	Simānu Ash 11	246-7	king seriously ill: reference to the quelling of a conspiracy in Assyria [Urad-Nanâ]

J.D.	M.D.	LETTER	CONTENTS
June(?) 670	Du'ūzu(?) Ash 11	284	building of Ezida: conjuration of administrative officials of Babylonia: reference to the conspiracy in Assyria: political troubles in South Babylonia [Mār-Ištar]
June(?) 670	Du'ūzu(?) Ash 11	159	reference to the recovery of the king [Adad-šumu-uṣur]
July(?) 670	Abu(?) Ash 11	285	reference to the mid-year festival of Babylon [Mār-Ištar]
10.VIII.670(?) [or 667]	3.VI. Ash 11(?) [or Ash 2?]	286	work on the gods of Ezida [Mār-Ištar]
b. 12.IX.670	b. 6.VIb. Ash 11	190	reference to the intercalation of the year and to the mid-year festival of Babylon [Marduk-šākin-šumi]
12.IX.670	6.VIb. Ash 11	287	ditto [Mār-Ištar]
September 670	Ulūlu Ash 11	288	ditto [Mār-Ištar]
November 670(?)	Araḫsamna Ash 11(?)	196	reference to the Cimmerians [Marduk-šākin-šumi]
1.XII.670	26.VIII.Ash 11	41	king worried about solar eclipse [Balasî]
b. 17.XII.670	b. 14.VIII. Ash 11	62	prediction of a lunar eclipse [Nabû-aḫḫē-erība]
February(?)669	Šabāṭu(?) Ash 11	191	magical
March 669	Addaru Ash 11	106	astrological [name of writer broken away]
March 669	Addaru Ash 11	45	astrological [Balasî]
24.III.669	25.XII. Ash 11	12	astrological [Ištar-šumu-ēreš]
26.III.669	27.XII. Ash 11	65	astrological [Nabû-aḫḫē-erība]
27.III.669	28.XII. Ash 11	66	ditto [Nabû-aḫḫē-erība]
28/9.III.669	29/30.XII. Ash 11	70	ditto [Nabû-aḫḫē-erība]
30. III.669	1.I. Ash 12	46	astrological and hemerological [Balasî]
30.III.669	1.I. Ash 12	71	ditto [Nabû-aḫḫē-erība]
March 669-June 669	Addaru Ash 11-Simānu Ash 12	54	astrological [Balasî and Nabû-aḫḫē-erība]
April 669	Nisannu Ash 12	69	astrological [Nabû-aḫḫē-erība]
May 669	Ajaru Ash 12	29	interrupted transport of the statue of Marduk to Babylon [Ištar-šumu-ēreš, Adad-šumu-uṣur and Marduk-šākin-šumi]
3.VI.669	6.III. Ash 12	289	astrological [Mār-Ištar]
b. 11.VI.669	b. 14.III. Ash 12	25	substitute king ritual: forecast of a lunar eclipse [Ištar-šumu-ēreš]
11.VI.669	14.III. Ash 12	105	astronomical [name of writer lost]
a. 11.VI.669	a. 14.III. Ash 12	136	substitute king ritual [Adad-šumu-uṣur]
27.VI.669	I.IV. Ash 12		astrological [Mār-Ištar]
June 669	Simānu 669		reference to an earthquake and a lunar eclipse [name broken away]
8.VII.669	10.IV. Ash 12	291	building operations in Bar-ip and Cutha: dismissal of several Babylonian officials by royal decree [Mār-Ištar]

J.D.	M.D.	LETTER	CONTENTS
July 669(?)	Du'ūzu Ash 12(?)	120	astrological and meterological observations, petition [Adad-šumu-uṣur]
13.VII.668	30.IV. Ash 1	324	astrological [Balasî]
a. April 666	a. Nisannu Ash 3	299	astrological and magical [Akkullānu]
August 666	8.V. Ash 3	298	substitute king ritual [Akkullānu]
16.VI.657	30.III. Ash 12	110	astrological; reference to the Cimmerians [name of writer lost]
February 650	1.XII. Ash 18	109	astronomical [Ištar-nādin-apli]
28.V.650	29.II. Ash 19	109	astrological and meteorological omens [name of writer lost]
January 649	1.XI. Ash 19	97	astronomical [Ištar-nādin-apli]
July 648	1.VI. Ash 21	98	astronomical [Ištar-nādin-apli]

Letters datable only approximately:

672 or 671 B.C.: 24th Kislimu 173 [Marduk-šākin-šumi]
Kislimu 164 [Adad-šumu-uṣur and Marduk-šākin-šumi]
after 4th Kanūnu 174 [Marduk-šākin-šumi]
5th Kanūnu 163 [Adad-šumu-uṣur and Marduk-šākin-šumi]
5th Kanūnu 176 [Marduk-šākin-šumi]
7th Kanūnu 177 [Marduk-šākin-šumi]

672-669 B.C.: LAS 7, 130-131, 140, 142, 144, 146-148, 150, 154, 171-172, 175, 199, 201, 224, 228, 250, 258, 264, 295, 318.

670 B.C.: LAS 94, 133, 182, 186-189, 191-192, 283.

670-669 B.C.: LAS 159.

669-667 B.C.: LAS 60.

666 B.C.: LAS 117, 301-302.

673 or 671 B.C.: LAS 149.

670 or 669 B.C.: LAS 101.

Reign of Esarhaddon: LAS 17, 21, 30-32, 52, 72, 77, 114, 121-126, 135, 137-139, 145, 152, 155-157, 160, 162, 166, 167, 184, 208, 215-220, 222, 223, 230, 232, 235, 238, 240, 257, 275, 292-294, 297, 317.

Reign of Assurbanipal: LAS 108, 170, 309-310, 321.

Total of letters dated exactly: 84 (= 24.4%)
Total of approximately dated letters: 97 (= 28.1%)
Undatable letters (= written in either Esarhaddon's or Assurbanipal's reign): 164 (= 47.5%)
Letters assigned to Esarhaddon's reign: 165 (= 91%)
Letters assigned to Assurbanipal's reign: 16 (= 9%)

APPENDIX 2B:

LIST OF LETTERS AND REPORTS DATED ON ASTRONOMICAL GROUNDS[1]

YEAR DATE	TEXT	WRITER	DATA
679 Nov 10-13	RMA 272	Bēl-ušēzib	Venus in Sagittarius; Mars betw. Libra and Scorpion; Jupiter in Leo, turning backwards; lunar eclipse predicted for months Kislimu and Simannu
677 Oct 8	RMA 183	Bēl-lē'i	heliacal rising of Jupiter in month Araḫsamna
676 March	ABL 765	Bēl-nāṣer	reference to a lunar eclipse in Araḫsamna
675 Apr 11	RMA 235A	Bēl-šuma-iškun	Mars 7 months in Gemini
675 May 21	RMA 67	[. . .]	conjunction of Venus and Saturn on 1st Simannu
675 Aug 19	RMA 216	Aššarēdu	heliacal rising of Saturn in month Abu (in Leo)
675 Nov 27	RMA 190	Nabû-šuma-iškun	heliacal rising of Jupiter in month Araḫsamna (in Sagittarius)
675 December	RMA 190A	Aplâ	as RMA 190
674 Mar 27	RMA 174A	Rāši-ili	heliacal setting of Venus in Nisannu
673 February	RMA 272B	Nergal-ēṭer	prediction of a lunar eclipse for the 14th of Addaru
673 Mar 29	LAS 343	ananymous	vernal equinox on 15th Nisannu
673 May 20	RMA 98	Nabû-aḫḫē-erība	conjunction of Mars and Jupiter in Leo
673 May 20	RMA 99	Šumāja	as RMA 98
673 May 20	RMA 100	Urad-Ea	as RMA 98
673 May 20	RMA 101A	Nabû-iqbi	as RMA 98
673 May 20	RMA 102	Bamāja	as RMA 98
673 May 20	RMA 107	Rāši-ili maḫrû	as RMA 98
672 May 28	LAS 300	Akkullānu	written on 26th Ajaru; hel. rising of Mars at the feet of Perseus reported
671 Mar 29	LAS 344	anonymous	vernal equinox on 6th Nisannu
671 Apr 10	RMA 162	Nergal-ēṭer	Jupiter and Venus moving together on Ajaru 16
671 July	ABL 276	Kudurru	reference to the eclipse of 2nd July (Du'ūzu)

[1] This list is by no means exhaustive. Many more letters and reports could be dated on astronomical evidence; for instance, numerous texts dealing with observation of the moon in relation to the planets and the zodiacal constellations could not be taken into consideration by me, since accurate tables of lunar longitudes and declinations in the period concerned are lacking. I hope that the present list will nevertheless suffice to demonstrate how poorly the rich chronological and astronomical evidence of the reports has been utilized hitherto. – The correctness of the datings is, of course, open to discussion in a number of cases; additional study of the subject is imperative.

YEAR DATE	TEXT	WRITER	DATA
671 Oct 7	LAS 277	Mār-Ištar	Mars moving towards Sagittarius, having left Scorpio; intercalation of the year and an eclipse referred to
671 Dec 27	LAS 278-9	Mār-Ištar	lunar eclipse in month Kanūnu
671 Dec 27	ABL 137	Zākir	lunar eclipse on 15th Ṭebētu (detailed description)
671 Dec 27	LAS 61	Nabû-aḫḫē-erība	reference to the eclipse of 15th Kanūnu
670 May 3	RMA 186	Nergal-ēṭer	heliacal rising of Jupiter in month Ajaru
670 May 3	RMA 187A	Aššarēdu maḫrû	as RMA 186
670 Jul 4	RMA 231	Aššarēdu qatnu	heliacal rising of Mars in month Du'ūzu (in Gemini)
670 Jul 4	RMA 232	Bulluṭu	as RMA 231
670 Jul 9	RMA 86	Nergal-ēṭer	Venus standing in front of Orion in month Abu
670 Aug 3	RMA 235	Akkullānu	Mars moves to Cancer without stopping there; month Abu
670 Aug 3	RMA 236	Bēl-nāṣer	as RMA 235
670 Aug 3	RMA 236A	Aḫḫēšâ	as RMA 235
670 Aug 3	RMA 256B	Ba[lasî]	as RMA 235
670 Dec 2	RMA 274G	Nabû-aḫḫē-erība	report on the non-occurence a solar eclipse; written in month Kislimu
670 Dec 2	LAS 41	Balasî	as RMA 274G
670 Dec 15	LAS 61	Nabû-aḫḫē-erība	watch for the lunar eclipse of 17th December
670 December	RMA 85	Rāši-ili maḫrû	reference to the lunar eclipse of 17th December (Kislimu)
669 March	LAS 54	Balasî and Nabû-aḫḫē-erība	impending conjunction of Mars and Saturn
669 Mar 15	RMA 88	Balasî	conjunction of Mars and Saturn on 16th Addaru
669 Mar 15	RMA 89	Akkullānu	as RMA 88
669 Mar 15	RMA 103	Nabû-aḫḫē-erība	as RMA 88
669 Mar 15	RMA 167	Šāpiku	as RMA 88 (additional details)
669 Mar 15	RMA 172	Aššarēdu maḫrû	as RMA 88
669 Mar 25	LAS 45	Balasî	Mars having a great luminosity from month Addaru till Ajaru
669 Mar 28	LAS 65-6	Nabû-aḫḫē-erība	Mercury visible, Venus not yet visible; written on 27th Addaru
669 Mar 30	LAS 71	Nabû-aḫḫē-erība	Mercury shining brightly, Venus not yet visible
669 Mar 30	RMA 44	[. . .]	Mercury visible in Aries; written on 30th Addaru; reference to military operations in Egypt
669 Mar 31	LAS 46	Balasî	Mercury shining brightly, written on 1st Nisannu, the month Addaru having 30 days
669 May 27	RMA 269	Rāši-ili maḫrû	annular eclipse of the sun on 29th Ajaru
669 May 27	RMA 272C	Zākir	fragmentary, but probably similar to RMA 269
669 May 29ff	RMA 207	Šumāja	heliacal rising of Venus in month Simannu; will reach Cancer in 6-7 days

YEAR DATE	TEXT	WRITER	DATA
669 May 29	RMA 207B	Nergal-ēṭer	as RMA 207
669 Jun 3	LAS 289	Mār-Ištar	heliacal rising of Jupiter on 6th Simānu
669 Jun 3	RMA 185	Bamāja	as LAS 289
669 Jun 3	RMA 196	Bulluṭu	as LAS 289
669 June	RMA 268	Munnabitu	forecast of the eclipse of 14th Simānu (= 11th June); or is this text to be dated 678 B.C.?
669 June	RMA 270-1	[. . .]	omens relating to the eclipse of 14th Simānu
669 June	LAS 25	Ištar-šumu-ēreš	reference to the lunar eclipse of 14th Simānu
669 Jun 11	LAS 105	[. . .]	report on the lunar eclipse of 14th Simānu
669 Jun 11ff	LAS 234	[. . .]	reference to the lunar eclipse of 14th Simānu
669 Jun 28	LAS 290	Mār-Ištar	observation of the heliacal rising of Jupiter (cf. LAS 289); written on 1st Du'ūzu
669 Jul 10	LAS 120	Adad-šumu-uṣur	Venus about to reach Virgo visibility of Mercury expected reference to a solar eclipse that failed to occur
669 Jul 8	LAS 291	Mār-Ištar	Venus in Leo on 10th Du'ūzu
669 Dec 5	RMA 210	Aššarēdu	heliacal setting of Venus in month Kislimu
668 Jul 13	RMA 187	Aššarēdu	heliacal rising of Jupiter in front of Cancer (1st year of [Assurbanipal])
668 Jul 13	LAS 324	[Balasî]	heliacal rising of Jupiter in month Du'ūzu (in Cancer)
668 Aug 2	ABL 1113	[. . .]	heliacal rising of Mars in month Abu
667 April	RMA 274F	Nādinu	prediction of the lunar eclipse of 14th Ajaru (21st April)
667 May	RMA 236G	Nabû-aḫḫē-erība	Mars in Scorpio, retrograde (month Ajaru)
667 May 19	RMA 68	Balasî	as RMA 236G (1st Nisannu)
667 May 19	RMA 70	Nabû-aḫḫē-erība	as RMA 68
667 Oct 15	RMA 272A	Akkullānu	report on a lunar eclipse in month Tašrītu
666 August	LAS 298	Akkullānu	reference to a lunar eclipse in Nisannu
666 Sep 1	RMA 233	Nabû-iqbi	heliacal rising of Mars in month Ulūlu
666 Sep 11	RMA 189	Nabû-iqīša	heliacal rising of Jupiter in month Ulūlu (in Leo)
666 Sep 11	RMA 191A	[. . .]	as RMA 189
666 Sep 21	RMA 193	Nabû-iqīša	conjunction of Jupiter and Mars (also 9th Nov. 664 possible)
657 March	RMA 264	Ištar-šumu-ēreš	dated in the eponym year of Lābâši
657 May 16	LAS 110	[. . .]	reference to a solar eclipse in month Nisannu and to the heliacal rising of Mars (on 16th Ajaru); written on 1st Simānu
650 May 30	LAS 109	[. . .]	Mars in Capricornus, retrograde; wr. after 29th Ajaru
650 February	LAS 96	Ištar-nādin-apli	dated 1st Addaru, eponym year of Šagab
649 January	LAS 97	Ištar-nādin-apli	dated 1st Šabaṭu, eponym year of Bēl-ḫarrān-šadû'a
648 July	LAS 98	Ištar-nādin-apli	dated 2nd Du'ūzu, eponym year of Bēlšunu

Distribution of dates to individual writers

Adad-šumu-uṣur	669
Aḫḫēšâ	670
Akkullānu	672, 670, 669, 667, 666
Aplâ	673
Ašarēdu	669, 668
Ašarēdu maḫrû	673, 670, 669
Ašarēdu qatnu	670
Balasî	670, 669 (thrice), 668, 667
Bamāju	673 and 669
Bēl-lē'i	677
Bēl-nāṣer	676 and 670
Bēl-šuma-iškun	673
Bēl-ušēzib	679
Bulluṭu	670 and 669
Ištar-nādin-apli	650-648
Ištar-šumu-ēreš	669-657
Kudurru	671
Mār-Ištar	671 (twice), 669 (thrice), 667(?)
Munnabitu	669 (or 678?)
Nabû-aḫḫē-erība	673, 671, 670 (twice), 669 (thrice), 667 (twice)
Nabû-iqbi	673, 666
Nabû-iqīša	666 (twice)
Nabû-šuma-iškun	673
Nādinu	667
Nergal-ēṭer	673, 671, 670 (twice), 669
Rāši-ili maḫrû	673, 670, 669
Rāši-ili mār Nurzānu	674
Šāpiku	669
Šumāja	673 and 669
Urad-Ea	673
Zākir	671 and 669

APPENDIX 2C:

TABLE OF CORRESPONDENCIES BETWEEN JULIAN AND ASSYRIAN DATES IN THE REIGN OF ESARHADDON

The following table of Julian and Assyrian correlations has been appended in order to facilitate the conversion of Assyrian dates (found in the letters) into Julian ones (found in astronomical and chronological works), and vice versa. The correctness of the table depends on two factors: our ability to identify the leap years in the period concerned and to determine the exact days on which the new moon crescent, signifying the beginning of the Assyrian months, was first observed in Assyria.

Both requirements can be fulfilled only partially at present. The list of leap years is still incomplete, and can be reconstructed reliably only for the time span 680-666 B.C., while the dates on which the months began can be determined only theoretically in the great majority of cases. The dates given in this table are based upon calculation of the relevant new-moon hours by means of P.V. Neugebauer, *Abgekürzte Tafeln des Mondes* (1905); since the number of hours passed after the conjunction until the appearence of the crescent cannot be determined with certainty in each case[1], and since weather conditions may have prevented observation in many cases[2], an error of one and possibly even two days is possible all through the line.

The tables are styled after the model of R. Parker - W. Dubberstein, *Babylonian Chronology 626 B.C. - A.D. 75* (Providence, 1956).[3] In view of the many uncertainties discussed above, the dates of the first day of *each* Assyrian month have been calculated only for the years 673-669, the period to which most of the letters and reports are assigned (see Appendices 2A and B) and where there is some chance to check the results. For other years only the dates of the 1st of Nisannu are given.

[1] See the reservations made in Parker-Dubberstein, *Babylonian Chronology*, p. 25. In choosing the dates for the appearances of the crescent, I have followed a rather arbitrary line: if the computed moment of conjunction falls on the *first half* of the day, *one* day is added; otherwise *two* days are added. E.g., the time of the conjunction being March 14, 15 (hours are expressed in decimals of days), the date of the first visibility of the crescent would be March 15 (14 + 1 = 15); conversely, September 28, 93 would yield the date September 30 (28 + 2 = 30). This schematic system is admittedly inaccurate, but sufficiently exact for historical and chronological purposes.

[2] See LAS 96-97, 100-102, 119, 323, 329; ABL 162; RMA 87A, 137, 139, 155, 252D, 274, 274B, and the unpublished report 82-5-22, 81 quoted by Oppenheim, Centaurus 14 (1969), 120 ("As to the king, my lord, writing me, 'The clouds were thick, how could you observe that the gods saw each other (in opposition)?', (the clouds) broke at the dawn; he revealed himself as if he knew the king, my lord.").

[3] "The dates as given are civil days, from midnight to midnight, although in actual practice the Babylonian day began in each case with the preceding sunset. The dates are those of the first day of each month. Leap years are indicated by italicizing the last figure of the year when it is first given, e.g. 625. The accession year of every king is shown as the last year of his predecessor. In the interest of economy of space, months are designated here not by Roman numerals, but by Arabic numerals: thus 4-5 is April 5." (*Op. cit.*, p. 26).

1) *List of identified leap years*

	B.C.	INTERCALARY MONTH	SOURCE
ESARHADDON			
3rd year	678	a) Ulūlu II [Ass.] b) Addaru II [Bab.]	BT 118:4 (Iraq 23, 86 ff) BM 74497 (BBEA, p. 31)
5th year	676		not attested
8th year	673	Addaru II	ADD 53:5 = AR 258:5
11th year	670	Ulūlu II	see notes on LAS 190
ASSURBANIPAL			
2nd year	667	Ulūlu II	G.R. Driver, *Centenary Supplement to the Journal of the Royal Asiatic Society* (1924), Pl. IV/V

2) *Table of Julian and Assyrian correlations*

ESARHADDON

YEAR	B.C.	NIS	AJA	SIM	DUZ	ABU	ULU	U II	TAŠ	ARA	KIS	KAN	ŠAB	ADD	A II
1	680	4/5													
2	679	3/24													
3	678	3/12													
4	677	3/31											I		
5	676	3/19										1/8	2/6	3/8	
6	675	4/6	5/5	6/4	7/3	8/2	8/31		10/1	10/30	11/28	12/28	1/27	2/25	
7	674	3/27	4/25	5/24	6/23	7/20	8/20		9/19	10/19	11/17	12/17	1/16	2/15	
8	673	3/15	4/14	5/13	6/11	7/11	8/9		9/7	10/7	11/5	12/5	1/4	2/3	3/4
9	672	4/3	5/3	6/1	7/1	7/30	8/28		9/26	10/26	11/24	12/24	1/23	2/21	
10	671	3/23	4/22	5/21	6/20	7/20	8/18		9/16	10/16	11/14	12/13	1/12	2/10	
11	670	3/12	4/11	5/10	6/9	7/9	8/7	9/6	10/5	11/4	12/3	1/1	1/31	2/29	
12	669	3/30	4/28	5/28	6/27	7/26	8/25		9/24	10/23	11/22	12/21	1/20	2/18	

ASSURBANIPAL

1	668	3/19	
2	667	3/8	
3	666	3/29	
4	665	3/17	

APPENDIX 2D:

MESOPOTAMIAN CALENDAR AND TIME MEASURING

1. In the period covered by this study the Assyrian calendar was composed of lunar months, which began when the thin crescent of the new moon was first visible in the sky at sunset. Since the lunar year was about eleven days shorter than the solar year, it was necessary at intervals to intercalate a thirteenth month, either a second Ulūlu (the sixth month) or a second Addaru (the twelfth month) in order that New Year's Day, Nisannu 1, should not fall much before the vernal equinox (28th March).[1]

The month names current in the Neo-Assyrian period (and used in this book) were as follows:[2]

I	Nisannu
II	Ajaru
III	Simānu (or Simannu)
IV	Du'ūzu
V	Abu
VI	Ulūlu
VII	Tašrītu
VIII	Araḫsamna
IX	Kislimu
X	Kanūnu (in the Babylonian calendar, = Ṭebētu)
XI	Šabāṭu
XII	Addaru.

2. The days began with the sunset; it has to be noted that the evenings (*nubattu*) and nights (*mūšu*) thus belonged to different days. The twenty-four-hour day was divided into day and night consisting of six 'double-hours' (*bēru*) each. The hours of day were expressed by means of 'double-hours' after the sunrise, those of night by means of watches (called the evening watch, the middle watch, and the morning watch) each of which consisted of two 'double-hours'. Since the length of the day and night varies depending on the time of the year, the length of the 'double-hours' came to vary accordingly. The 'double-hours of day' (*bēr ūmi*) and 'double-hours of night' (*bēr mūši*) were equal only on the equinoxes.

3. For measuring the time, the Assyrians of the Sargonid period had at least three means at their disposal, each of which sufficed for exact results: sundial to be used in the daytime, clepsydra, and sideral clock[3]. There is ample evidence showing that the Assyrians (and Babylonians) measured time in real (i.e., equal) hours, but wide use was never made of this possibility[4]. In practice the length of the daily hours and the night watches

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[1] Cited from Parker-Dubberstein, *Babylonian Chronology* (1956), p. 1, *mutatis mutandis*.

[2] The transcription of individual month names is not absolutely certain, since the names are mostly written with logograms and syllabic spellings are rare. The present list follows the spellings of month names found in Hh I 221-233 (MSL V 25f).

[3] See B.L. van der Waerden, *Anfänge der Astronomie*, p. 63, 75ff.

[4] *Op. cit.*, p. 89: "Andererseits benützen die älteren astrologischen Texte die volkstümliche Einteilung von Tag und Nacht. Das Omen einer Finsternis hängt von der Wache ab, in der sie stattfindet."

was determined by means of handy tables based on schematic and not very exact theory about the variation of daylight on solstices and equinoxes.[1] Hence the theoretical and practical lengths of hours and night watches may have differed considerably from each other. This is a fact that has to be taken into account especially in determining, by means of modern computations, the watches in which a given eclipse occured in antiquity.[2]

[1] See the ivory prism published by S. Langdon, *Babylonian Menologies*, pp. 55-64 (cf. HKL I 279).
[2] Cf. van der Waerden, *op.cit.*, p. 89f.

APPENDIX 3A:

PLANETARY TABLES FOR YEARS 680-663 B.C.

The tables of this appendix are meant to ease the checking of the astronomical arguments used in the dating of the letters, and to help in the dating of other documents from the same period. They are primarily devised to show, at one month intervals, in which *zodiacal constellations* the planets *Venus*, *Mars*, *Jupiter* and *Saturn*[1] were to be found during the years 680-663 B.C., to which span of time most of the letters belong[2]. In addition to this, they also contain important details relating to the movements of the planets. The *retrograde period* of the planets (which, in the case of Mars, coincides with its greatest *luminosity*) is pointed out by a line to the left of each column (short dashes indicating the moments during which the planets halted before reversing their drift). The hatched areas mark the periods when the planets were *behind the sun* or too close to it to be seen well. An *E* in the Venus column means that the planet was seen as an *evening star*, an *M*, as a *morning star*.

Combining all these indications, it is easy to get a fairly accurate picture of what was going on in the sky at the time concerned. Naturally, these tables do not suffice when exact details (e.g., concerning the magnitudes, heliacal risings and settings, and exact longitudes at a given time) are required. In such cases it is necessary to consult the more accurate tables listed in the bibliography.

The present tables are based on the data of W. Stahlman - O. Gingerich, *Solar and Planetary Longitudes for Years -2500 to +2000* (Wisconsin, 1963). The longitudes given for the zodiacal constellations on p. XIII of that work could not be accepted, however, alone for the reason that these had not yet been reduced to schematic *signs* in Neo-Assyrian times: to arrive at the correct figures, one has to take into consideration the respective vernal point (the sun's place in the zodiac on the vernal equinox) and the actual limits of the zodiacal constellations. After the 7th century B.C., the equinoxes have shifted about 37° to the west, and instead of Pisces, the sun then stood right in the middle of Aries (cf. Appendix 3D). The limits assigned to the zodiacal signs in preparation of the present tables are as follows:

CONSTELLATION	LONGITUDE IN DEGREES
Aries	350 to 10
Taurus	15 to 47
Gemini	53 to 78
Cancer	85 to 96
Leo	103 to 140
Virgo	140 to 185
Libra	185 to 197
Scorpio	200 to 230
Sagittarius	233 to 253
Capricornus	267 to 290
Aquarius	290 to 310
Pisces	310 to 350

[1] Mercury was not included because of its rapid movement and short periods of visibility.
[2] Cf. Introduction, p. 50f., and Appendices 2A and B.

The dates in these tables are given in terms of the Julian calender; in order to convert them into their Assyrian equivalents, it is necessary to compare the list of correspondencies given in Appendix 2C. To avoid unnecessary checking, the beginnings of Assyrian years are roughly indicated by a dividing line, and the corresponding Julian dates for the 1st of Nisannu are added in parentheses to the left margin. The circles in the right margin refer to Appendix 3B: blank circles denote eclipses of the moon that were not visible in Mesopotamia, hatched circles, actually observed eclipses.

YEAR	DATE	VENUS	MARS	JUPITER	SATURN	
680	JAN 7	Capricornus	Scorpio	Taurus	Taurus	
	FEB 6	Aquarius	Sagittarius	Taurus	Taurus	
	MAR 8	Aries E	Sag.-Capr.	Gemini	Taurus	
(5/4)						
	APR 7	Taurus E	Capricornus	Gemini	Taurus	
	MAY 7	Gemini E	Aquarius	Gemini	Taurus	
	JUN 6	Leo E	Pisces	Gemini	Taurus	
	JUL 6	Leo-Virgo E	Pisces	Gemini	Taurus	●
	AUG 5	Virgo E	Pisces	Gemini	Taurus	
	SEP 4	Libra E	Pisces	Cancer	Taurus	
	OCT 4	Scorpio E	Pisces	Cancer	Taurus	
	NOV 3	Libra	Pisces	Cancer	Taurus	
	DEC 3	Scorpio M	Pisces	Cancer	Taurus	
679	JAN 2	Scorpio M	Aries	Cancer	Taurus	
	FEB 1	Sag.-Capr. M	Taurus	Canc.-Gem.	Taurus	
	MAR 3	Aquarius M	Taurus	Canc.-Gem.	Taurus	
(24/3)						
	APR 2	Pisces M	Taurus	Cancer	Taurus	
	MAY 2	Aries M	Gemini	Cancer	Gemini	
	JUN 1	Taurus M	Gem.-Canc.	Cancer	Gemini	
	JUL 1	Gem.-Canc.	Leo	Canc.-Leo	Gemini	●
	JUL 31	Leo	Leo	Leo	Gemini	
	AUG 30	Virgo	Leo	Leo	Gemini	
	SEP 29	Libra	Virgo	Leo	Gemini	
	OCT 29	Scorp.-Sag. E	Libra	Leo	Gemini	
	NOV 28	Capricornus E	Scorpio	Leo	Gemini	○
	DEC 28	Aquarius E	Scorp.-Sag.	Leo	Gemini	
678	JAN 27	Pisces E	Sagittarius	Leo	Gemini	
	FEB 26	Taurus E	Capricornus	Leo	Gemini	
(12/3)						
	MAR 28	Taurus E	Aquarius	Leo	Gemini	
	APR 27	Gemini E	Aquarius	Leo	Gemini	
	MAY 27	Gemini	Pisces	Leo	Gemini	●
	JUN 26	Taurus M	Aries	Leo	Gemini	
	JUL 26	Gemini M	Taurus	Leo	Gemini	
	AUG 25	Canc.-Leo M	Taurus	Leo	Gemini	

YEAR	DATE	VENUS	MARS	JUPITER	SATURN	
	SEP 24	Leo M	Taurus	Leo	Gemini	
	OCT 24	Virgo M	Taurus	Virgo	Gemini	
	NOV 23	Scorpio M	Taurus	Virgo	Gemini	○
	DEC 23	Sagittarius M	Taurus	Virgo	Gemini	
677	JAN 22	Capricornus	Taurus	Virgo	Gemini	
	FEB 21	Pisces	Taurus	Virgo	Gemini	
	MAR 22	Aries	Gemini	Virgo	Gemini	
(31/3)						
	APR 21	Taurus	Gemini	Virgo	Gemini	
	MAY 21	Gemini E	Cancer	Virgo	Gemini	○
	JUN 20	Leo E	Leo	Virgo	Gemini	
	JUL 20	Virgo E	Leo	Virgo	Cancer	
	AUG 19	Virgo E	Virgo	Virgo	Cancer	
	SEP 18	Scorpio E	Virgo	Virgo	Cancer	
	OCT 18	Sagittarius E	Libra	Virgo	Cancer	
	NOV 17	Capricornus E	Scorpio	Virgo	Cancer	●
	DEC 17	Capricornus E	Sagittarius	Virgo	Cancer	
676	JAN 16	Capricornus	Sag.-Capr.	Virgo	Cancer	
	FEB 15	Capricornus M	Capricornus	Virgo	Cancer-Gem.	
	MAR 17	Aquarius M	Aquarius	Virgo	Cancer-Gem.	
(19/3)						
	APR 16	Pisces M	Pisces	Virgo	Cancer	
	MAY 16	Aries M	Aries	Virgo	Cancer	
	JUN 15	Taurus M	Taurus	Virgo	Cancer	
	JUL 15	Gem.-Canc. M	Taurus	Virgo	Cancer	
	AUG 14	Leo	Taurus-Gem.	Virgo	Cancer	
	SEP 13	Virgo	Gemini	Libra	Leo	
	OCT 13	Libra	Gemini	Libra	Leo	
	NOV 12	Scorpio	Gemini	Scorpio	Leo	
	DEC 12	Sagittarius	Gemini	Scorpio	Leo	
675	JAN 11	Aquarius E	Gemini	Scorpio	Leo-Cancer	
	FEB 10	Pisces E	Gemini	Scorpio	Cancer	
	MAR 12	Taurus E	Gemini	Scorpio	Cancer	○
(6/4)						
	APR 11	Gemini E	Cancer	Scorpio	Cancer	
	MAY 11	Cancer E	Leo	Scorpio	Canc.-Leo	
	JUN 10	Leo E	Leo	Scorpio	Leo	
	JUL 10	Leo E	Leo	Scorpio	Leo	
	AUG 9	Leo	Virgo	Scorpio	Leo	
	SEP 8	Leo M	Virgo	Scorpio	Leo	○
	OCT 8	Leo M	Scorpio	Scorpio	Leo	
	NOV 7	Virgo M	Scorpio	Scorpio	Leo	
	DEC 7	Libra M	Sagittarius	Sagittarius	Leo	

YEAR	DATE	VENUS	MARS	JUPITER	SATURN	
674	JAN 6	Sagittarius M	Capricornus	Sagittarius	Leo	
	FEB 5	Capricornus M	Aquarius	Sagittarius	Leo	
	MAR 7	Pisces M	Pisces	Sagittarius	Leo	
(27/3)						
	APR 6	Aries	Pisces	Sagittarius	Leo	
	MAY 6	Taurus	Aries	Sagittarius	Leo	
	JUN 5	Gemini	Taurus	Sagittarius	Leo	
	JUL 5	Leo	Taurus	Sagittarius	Leo	
	AUG 4	Virgo E	Gemini	Sagittarius	Leo	
	SEP 3	Virgo E	Gem.-Canc.	Sagittarius	Leo	
	OCT 3	Scorpio E	Cancer	Sagittarius	Leo	
	NOV 2	Sagittarius E	Leo	Sagittarius	Leo	
	DEC 2	Capricornus E	Leo	Sagittarius	Leo	
673	JAN 1	Pisces E	Leo	Capricornus	Leo	
	FEB 1	Pisces E	Cancer	Capricornus	Leo	☌
	MAR 1	Aries	Cancer	Capricornus	Leo	
(15/3)						
	MAR 31	Pisces	Canc.-Leo	Capricornus	Leo	
	APR 30	Pisces M	Leo	Capricornus	Leo	
	MAY 30	Taurus M	Leo	Capricornus	Leo	
	JUN 29	Taur.-Gem. M	Virgo	Capricornus	Leo	
	JUL 29	Gemini M	Virgo	Capricornus	Leo	
	AUG 28	Leo M	Libra	Capricornus	Leo	☍
	SEP 27	Virgo M	Scorpio	Capricornus	Leo	
	OCT 27	Libra	Scorp.-Sag.	Capricornus	Virgo	
	NOV 26	Scorp.-Sag.	Sagittarius	Capricornus	Virgo	
	DEC 26	Capricornus	Capricornus	Capricornus	Virgo	
672	JAN 25	Aquarius	Aquarius	Aquarius	Virgo	
	FEB 24	Pisces	Pisces	Aquarius	Leo	
	MAR 26	Taurus E	Pisces	Aquarius	Leo	
(3/4)						
	APR 25	Gemini E	Aries	Pisces	Leo	
	MAY 24	Cancer E	Taurus	Pisces	Leo	
	JUN 24	Leo E	Taur.-Gem.	Pisces	Virgo	
	JUL 24	Virgo E	Gemini	Pisces	Virgo	
	AUG 23	Libra E	Cancer	Pisces	Virgo	
	SEP 22	Scorpio E	Leo	Aquarius	Virgo	
	OCT 22	Libra	Leo	Aquarius	Virgo	
	NOV 21	Libra M	Leo	Pisces	Virgo	
	DEC 21	Scorpio M	Virgo	Pisces	Virgo	
671	JAN 20	Sagittarius M	Virgo	Pisces	Virgo	☌
	FEB 19	Capricornus M	Leo	Pisces	Virgo	
	MAR 21	Pisces M	Leo	Pisces	Virgo	
(23/3)						

YEAR	DATE	VENUS	MARS	JUPITER	SATURN	
	APR 20	Aries M	Leo	Pisces	Leo	
	MAY 20	Taurus M	Virgo	Pisces	Leo	
	JUN 19	Gemini	Virgo	Aries	Virgo	
	JUL 19	Leo	Virgo	Aries	Virgo	☍
	AUG 18	Virgo	Libra	Aries	Virgo	
	SEP 17	Virgo	Scorpio	Aries	Virgo	
	OCT 17	Scorpio E	Sagittarius	Pisces	Virgo	
	NOV 16	Sagittarius E	Sag.-Capr.	Pisces	Virgo	
	DEC 16	Aquarius E	Capricornus	Pisces	Virgo	☌
670	JAN 15	Pisces E	Aquar.-Pisc.	Aries	Virgo	
	FEB 14	Aries E	Pisces	Aries	Virgo	
(12/3)						
	MAR 16	Taurus E	Aries	Aries	Virgo	
	APR 15	Gemini E	Taurus	Aries	Virgo	
	MAY 15	Gemini	Taurus	Taurus	Virgo	
	JUN 14	Taurus M	Gemini	Taurus	Virgo	☍
	JUL 14	Gemini M	Gemini	Taurus	Virgo	
	AUG 13	Cancer M	Cancer	Taurus	Virgo	
	SEP 12	Leo M	Leo	Taurus	Virgo	
	OCT 12	Virgo M	Leo	Taurus	Virgo	
	NOV 11	Libra M	Virgo	Taurus	Virgo	
	DEC 11	Scorpio M	Virgo	Taurus	Virgo	☌
669	JAN 10	Capricornus M	Virgo	Taurus	Libra	
	FEB 9	Aquarius	Virgo	Taurus	Libra	
	MAR 10	Pisces	Virgo	Taurus	Virgo	
(30/3)						
	APR 9	Taurus	Virgo	Taurus	Virgo	
	MAY 9	Gemini	Virgo	Taurus	Virgo	
	JUN 8	Cancer E	Virgo	Taur.-Gem.	Virgo	☌
	JUL 8	Leo E	Libra	Gemini	Virgo	
	AUG 7	Virgo E	Scorpio	Gemini	Virgo	
	SEP 6	Libra-Scorp. E	Scorpio	Gemini	Virgo	
	OCT 6	Sagittarius E	Sagittarius	Gemini	Virgo	
	NOV 5	Capricornus E	Capricornus	Gemini	Libra	
	DEC 5	Capricornus E	Aquarius	Gemini	Libra	
668	JAN 4	Capricornus	Pisces	Gemini	Libra	
	FEB 3	Capricornus M	Pisces	Gemini	Libra	
	MAR 5	Aquarius M	Aries	Gemini	Libra	
(18/3)						
	APR 4	Pisces M	Taurus	Gemini	Libra	
	MAY 4	Aries M	Taurus	Gemini	Libra	☍
	JUN 3	Taurus M	Gemini	Gemini	Libra	
	JUL 3	Gemini M	Gem.-Canc.	Gem.-Canc.	Libra	
	AUG 2	Leo M	Canc.-Leo	Cancer	Libra	

YEAR	DATE	VENUS	MARS	JUPITER	SATURN	
	SEP 1	Virgo	Leo	Cancer	Libra	
	OCT 1	Virgo	Leo	Cancer	Libra	☌
	OCT 31	Scorpio	Virgo	Cancer	Libra	
	NOV 30	Sagittarius	Virgo	Cancer	Scorpio	
	DEC 30	Aquarius E	Libra	Cancer	Scorpio	
667	JAN 29	Pisces E	Scorpio	Cancer	Scorpio	
	FEB 28	Aries E	Scorpio	Cancer	Scorpio	
(7/3)						
	MAR 30	Taurus E	Sagittarius	Cancer	Scorpio	
	APR 29	Gemini E	Sagittarius	Cancer	Libra	☌
	MAY 29	Leo E	Scorpio	Cancer	Libra	
	JUN 28	Leo E	Scorpio	Leo	Libra	
	JUL 28	Leo	Scorpio	Leo	Libra	
	AUG 27	Leo M	Sagittarius	Leo	Libra	
	SEP 26	Leo M	Sag.-Capr.	Leo	Scorpio	
	OCT 26	Virgo M	Capricornus	Leo	Scorpio	☌
	NOV 25	Libra M	Aquarius	Leo	Scorpio	
	DEC 25	Scorpio M	Pisces	Leo	Scorpio	
666	JAN 24	Capricornus M	Pisces	Leo	Scorpio	
	FEB 23	Aquarius M	Aries	Leo	Scorpio	
	MAR 25	Pisces	Taurus	Leo	Scorpio	
(28/3)						
	APR 24	Taurus	Taur.-Gem.	Leo	Scorpio	☌
	MAY 24	Taurus	Gemini	Leo	Scorpio	
	JUN 23	Cancer	Cancer	Leo	Scorpio	
	JUL 23	Leo	Leo	Leo	Scorpio	
	AUG 22	Virgo E	Leo	Leo	Scorpio	
	SEP 21	Scorpio E	Virgo	Virgo	Scorpio	
	OCT 21	Sagittarius E	Virgo	Virgo	Scorpio	☌
	NOV 20	Capricornus E	Libra	Virgo	Scorpio	
	DEC 20	Aquarius E	Scorpio	Virgo	Scorpio	
665	JAN 19	Pisces E	Scorpio	Virgo	Scorpio	
	FEB 18	Aries E	Sagittarius	Virgo	Scorpio	
(16/3)						
	MAR 19	Pisces	Sag.-Capr.	Virgo	Scorpio	
	APR 18	Pisces M	Capricornus	Virgo	Scorpio	
	MAY 18	Aries M	Aquarius	Virgo	Scorpio	
	JUN 17	Taurus M	Aquarius	Virgo	Scorpio	
	JUL 17	Gemini M	Aquarius	Virgo	Scorpio	
	AUG 16	Leo M	Aquarius	Virgo	Scorpio	
	SEP 15	Leo M	Aquarius	Virgo	Scorpio	
	OCT 15	Virgo M	Aquarius	Virgo	Scorpio	

YEAR	DATE	VENUS	MARS	JUPITER	SATURN	
	NOV 14	Scorpio	Pisces	Virgo	Scorpio	
	DEC 14	Sagittarius	Pisces	Libra	Scorpio	
664	JAN 13	Aquarius	Aries	Libra	Sagittarius	
	FEB 12	Pisces	Taurus	Libra	Sagittarius	☌
	MAR 14	Aries E	Taurus	Libra	Sagittarius	
	APR 13	Taurus E	Gemini	Virgo	Sagittarius	
	MAY 13	Gemini E	Gemini	Virgo	Sagittarius	
	JUN 12	Cancer E	Cancer	Virgo	Scorpio	
	JUL 12	Virgo E	Leo	Virgo	Scorpio	
	AUG 11	Virgo E	Leo	Libra	Scorpio	☌
	SEP 10	Libra E	Virgo	Libra	Scorpio	
	OCT 10	Libra	Virgo	Libra	Sagittarius	
	NOV 9	Libra M	Libra	Scorpio	Sagittarius	
	DEC 9	Scorpio M	Scorpio	Scorpio	Sagittarius	
663	JAN 8	Sagittarius M	Sagittarius	Scorpio	Sagittarius	
	FEB 8	Capricornus M	Sag.-Capr.	Scorpio	Sagittarius	☌
	MAR 9	Aquarius M	Capricornus	Scorpio	Sagittarius	
	APR 8	Pisces M	Aquarius	Scorpio	Sagittarius	
	MAY 8	Taurus M	Pisces	Scorpio	Sagittarius	
	JUN 7	Gemini M	Pisces	Scorpio	Sagittarius	
	JUL 7	Cancer	Aries	Scorpio	Sagittarius	
	AUG 6	Leo	Taurus	Scorpio	Sagittarius	
	SEP 5	Virgo	Taurus	Scorpio	Sagittarius	
	OCT 5	Scorpio	Aries	Scorpio	Sagittarius	
	NOV 4	Sagittarius E	Aries	Scorpio	Sagittarius	
	DEC 4	Capricornus E	Aries	Sagittarius	Sagittarius	

APPENDIX 3B:

GRAPHIC PRESENTATION OF THE LUNAR ECLIPSES VISIBLE IN MESOPOTAMIA IN YEARS 679-663 B.C.

This appendix has been devised to alleviate the identification of the lunar eclipses reported in the present letters and related contemporary texts. For this purpose, I have tried to show, on the ground of the data supplied by modern canons of eclipses, how these eclipses were actually *seen* by their ancient observers. The drawings represent the *disc of the moon*, divided into four quadrants (cf. Appendix 3D), in the middle of each eclipse in question: the dark areas represent the *shadow* thrown by the earth. The *direction* in which the shadow shifted is indicated by a vector: the ends of the vectors signify the *initial and terminal points* of the eclipses, respectively.

It has to be pointed out that, in the drawing of the figures, the following extents were regarded as constant:

Width of the moon's disc 30′ = 0.5°
Width of the shadow of the earth 105′ = 1°45′.

The drawings are based on the data of P.V. Neugebauer - O. Hiller, *Spezieller Kanon der Mondfinsternisse* (Kiel, 1934), which gives the following list of lunar eclipses for years 680-663 B.C. (E = *Eintrittswinkel*, A = *Austrittswinkel*, L = longitude):

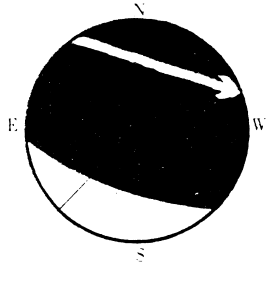
ECLIPSE	LOCAL TIME OF BABYLON I	II	III	IV	INCHES	E	A	L
680 JUL 11-12	22h4	–	–	0h3	3.0	31°	331°	280°9
679 JUN 2	1.6	–	–	2.8	1.5	179	215	242.7
679 NOV 26	13.3*	–	–	16.3*	7.6	32	290	57.8
678 MAY 22	17.7*	18h6?	20h2	21.1	18.0	122	278	232.7
677 NOV 3	17.4?	–	–	20.0	6.5	109	201	35.1
675 MAR 21	7.4*	–	–	10.2*	6.7	162	256	173.0
674 SEP 3-4	23.2	0.2	1.9	2.9	21.0	67	239	333.2
673 FEB 27	17.9	–	–	20.2	5.0	66	346	151.5
673 AUG 23	6.0*	–	–	8.1*	3.4	121	191	322.4
671 JAN 7	14.0*	–	–	17.1?	11.1	129	251	101.0
671 JUN 2	19.4?	–	–	22.7	10.9	53	293	272.1
671 DEC 27-28	23.9	1.0	2.5	3.6	18.0	84	286	90.0
670 DEC 17	3.7	–	–	5.3	2.1	28	332	78.7
669 JUN 11	1.8	–	–	2.8	1.0	169	197	251.7
668 OCT 25	14.9*	–	–	17.5?	6.7	118	210	25.5
667 APR 21	16.8*	17.8*	19.6	20.6	21.3	104	288	203.4
667 OCT 15	3.8	4.8	6.4?	7.4*	22.4	72	272	14.7
666 APR 10	19.0	–	–	21.7	3.9	154	242	192.7
666 OCT 4	20.2	–	–	22.8	7.4	29	295	4.0
664 FEB 17	16.4*	–	–	19.3	9.6	69	317	142.4
664 AUG 14	1.4	–	–	4.3	7.4	119	219	313.2
663 FEB 7	7.6*	8.5*	10.1*	11.0*	19.3	110	272	132.0
663 AUG 3	1.0	2.1	3.8	4.9?	20.2	77	267	302.2

Not all of the 23 eclipses listed above were visible in Mesopotamia (the asterisks denote phases whose visibility is virtually excluded), and still fewer are reported in contemporary documents. I have been able to identify only the following eleven:

679 NOV 26 (= Babylonian month Kislimu): predicted in RMA 272
678 MAY 22 (= Simānu): predicted in RMA 272 (and, perhaps, RMA 268 and 270)
677 NOV 3 (= Araḫsamna): mentioned in ABL 765 and RMA 235A
673 FEB 27 (= Addaru): predicted in RMA 272B
671 JUL 2 (= Du'ūzu): referred to in ABL 276
671 DEC 27 (= Ṭebētu): reported in ABL 137, LAS 61 and 278-279
670 DEC 17 (= Kislimu): predicted in RMA 85, attested indirectly in LAS 41 and 61
669 JUN 11 (= Simānu): predicted in RMA 268, 271 and LAS 25; reported in LAS 105 and 234
667 APR 21 (= Ajaru): predicted in RMA 274F
667 OCT 15 (= Tašritu): predicted in LAS 286(?), reported in RMA 272A
666 APR 10 (= Nisannu): referred to in LAS 298.

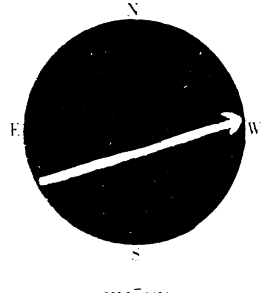
These eclipses and the intervening one of 3rd September, 674, which certainly was visible but has not been attested so far, were taken into consideration in preparing the following drawings. In addition to the data presented graphically, the Assyrian months and night watches in which the eclipses occured have been registered in each case to ease the identifications. Details found in the above list are not repeated.

679 NOV 26



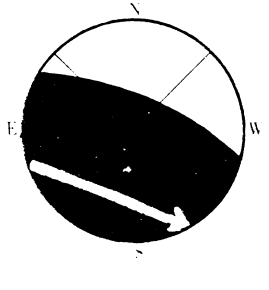
KISLIMU
(NOT VISIBLE IN
MESOPOTAMIA)

678 MAY 22



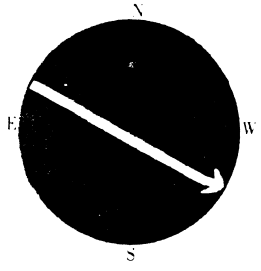
SIMĀNU
EVENING WATCH

677 NOV 3



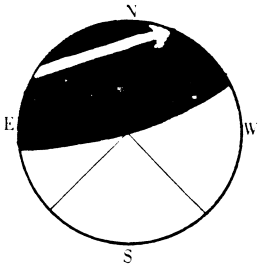
ARAḪSAMNA
EVENING WATCH

674 SEP 3-4



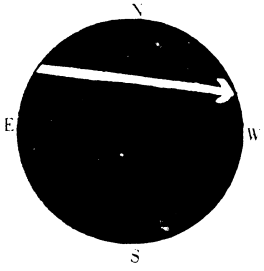
ULŪLU
MIDDLE WATCH

673 FEB 27



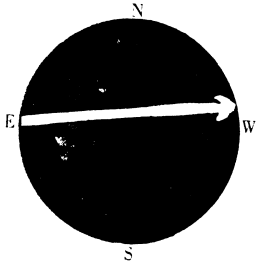
ADDARU
EVENING WATCH

671 JUL 2



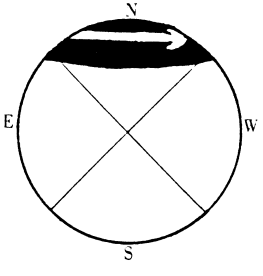
DU'ŪZU
EVENING WATCH

671 DEC 27-8



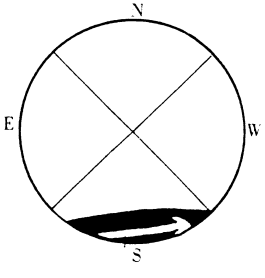
KANŪNU
MIDDLE WATCH

670 DEC 17



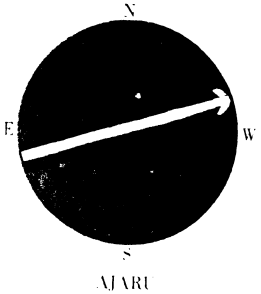
KISLIMU
MORNING WATCH

669 JUN 11



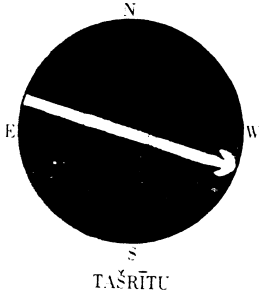
ŠIMĀNU
MORNING WATCH

667 APR 21



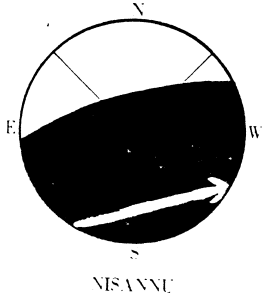
AJARU
EVENING WATCH

667 OCT 15



TAŠRĪTU
MORNING WATCH

666 APR 10

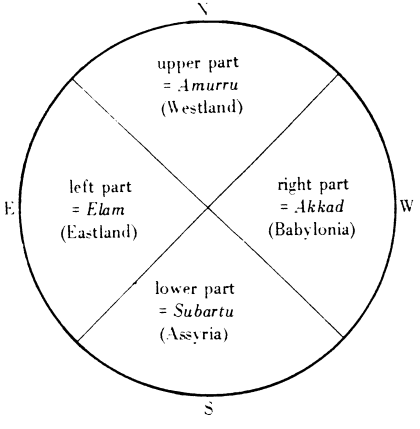


NISANNU
EVENING WATCH

APPENDIX 3C:

INTERPRETATION OF LUNAR ECLIPSES

1) *Significance of the eclipsed moon quadrants*

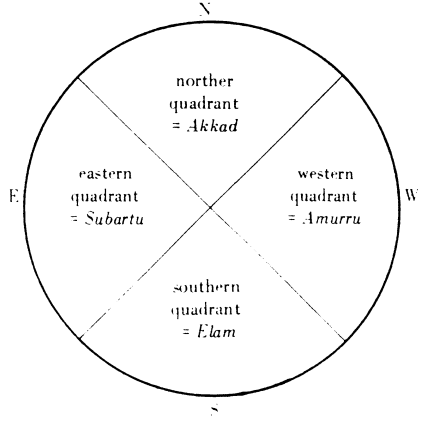


Cf. RMA 268 = ABL 1006, obv. 11f:
15 ^{d}*30* KUR URI^{KI} *150* ^{d}*30* KUR NIM.MA^{KI}
e-la-a-ti ^{d}[*30* KUR MA]R^{KI} *šap-la-a-ti* ^{d}*30* KUR SU.
BIR$_4$^{KI}

"The right part of the moon (signifies) Akkad, the left part of the moon, Elam; the upper part of the [moon, Amur]ru, and the lower part of the moon, Subartu."

For additional evidence, see A. Schott, ZA 47, p. 107 f.

2) *Significance of the direction in which the shadow of the earth drifts*



Cf. RMA 268 = ABL 1006, obv. 8ff:
mi-ni-tú AN.MI-*šú a-na* UGU ^{IM}GÀL.LU *u* ^{IM}MAR.
TU *il-ta-ḫa-at* ḪUL *ša* KUR NIM.MA^{KI} *u* KUR MAR.
TU^{KI} *ul-tu* ^{IM}KUR.RA *u* ^{IM}SI.SÁ KI(?)-*šá*(?) *im-mer*
SIG$_5$ *ša Su-bar-tu*$_4$^{KI} *u* URI^{KI}-*i*
See also ZA 47, p. 107 f.

"its calculated eclipse drifted towards the South and the West, (that means) bad fortune to Elam and Amurru; its(?) disc(?) cleared from the East and the North, good fortune to Subartu and Akkad."

3) *Significance of the months*

I Nisannu	V Abu	IX Kislimu	=	Akkad
II Ajaru	VI Ulūlu	X Kanūnu	=	Elam
III Simānu	VII Tašrītu	XI Šabāṭu	=	Amurru
IV Du'ūzu	VIII Araḫsamna	XII Addaru	=	Subartu

See ACh 2 Spl. 19:13-15 and *passim.*

4) *Significance of the days*

13th day	=	Akkad
14th day	=	Elam
15th day	=	Amurru
16th day	=	Subartu

See, e.g., ACh 2 Spl. 19:16; RMA 156 r2, 271:10.

5) *Significance of the night watches*

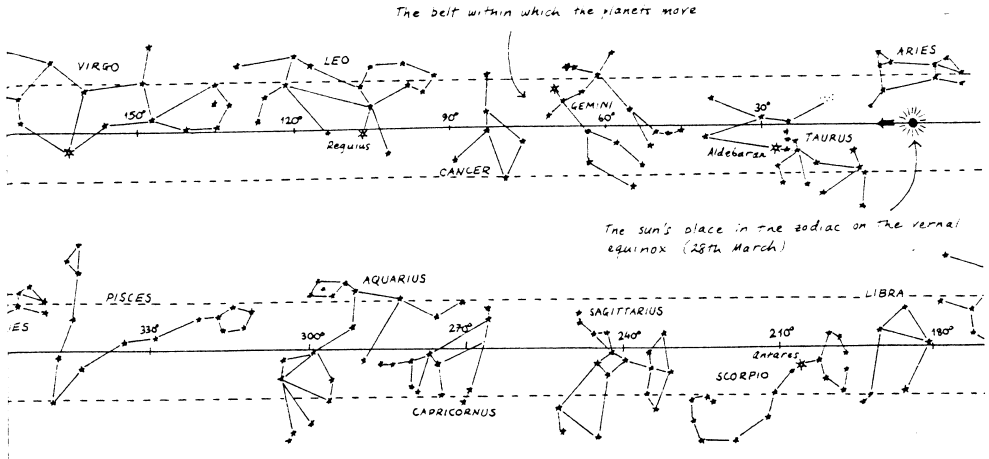
Evening watch	=	Akkad
Middle watch	=	Subartu
Morning watch	=	Elam

See ACh 2 Spl. 19:12-13; RMA 270 r10, 271:10, etc.

APPENDIX 3D:

1) SUN'S WAY THROUGH THE ZODIAC

(after H.A. Rey, *A New Way to See the Stars* (London 1960), p. 131)



2) SUN'S DAILY COURSE IN DIFFERENT SEASONS
(= THE WAYS OF THE ANU, ENLIL, AND EA STARS)

(after E. Weidner, *Handbuch der Babylonischen Astronomie* I (Leipzig 1915), p. 47)