BABYLONIAN PLANETARY OMENS

PART ONE

ENŪMA ANU ENLIL
TABLET 63:
THE VENUS TABLET OF AMMIṢADUQA

by

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PHILOLOGICAL INTRODUCTION

The sources for Tablet 63 of the Series *Enūma Anu Enlil*,[1] the so-called Venus Tablets of Ammiṣaduqa, have been increased from the seven known to Langdon and Fotheringham[2] to twenty. With the exception of one text (from Assur?) in the Staatliche Museen (Berlin), published by René Labat, MIO 5 322 and pl. xix (=p. 344), and identified by me as a "Venus Tablet," all new sources are from the collections of the British Museum. Three fragments (E, K, N; see Table Ia) were previously published in LBAT, and identified by A. Sachs in the introductory catalogue to that volume. The others have been identified by me upon inspection of the omen fragments characterized as "astrological" in Bezold's *Catalogue of the Cuneiform Tablets in the Kouyunjik Collection of the British Museum* and from the list of *Enūma Anu Enlil* type material in the British Museum, compiled and generously put at my disposal by A. Sachs. Therefore, it is eminently possible that further fragments may come to light among unpublished texts in other museums, and even in the British Museum itself. This fact is stressed here because, as will become clear from the presentation of the material, all but one of the twenty pieces present the material in such a uniform way that probably no more than two recensions–alike but for the fact that one includes omens 38-59, and the other omits them and adds an extra omen (60)–have to be reconstructed from these late manuscripts, even though the history of the canonical recension may be a complex one, as set forth by David Pingree on pp. 15 ff.

The fifty-nine omens of this tablet, as noted by previous editors and commentators,[2] fall into four sections. Sections I (omens 1-21) and III (omens 34-37) deal with pairs of last and first visibilities of Venus; they are separated by section II (omens 22-33). Most of the omens in I and III are repeated in IV (omens 38-59) wherein they are rearranged in the order of the months. Section II also was excerpted in the series *Iqqur īpuš* where it more properly belongs; see p. 10.

On the assumption that several fragments, though not direct joins, belong to the same tablet (A and M; F and H; L, P, and Q; T and U), the number of exemplars attested may be reduced from twenty to fifteen. Although none of the sources is completely preserved, certain conclusions can be drawn about the content and arrangement of the various exemplars (see Table Ib).

1. All four sections I-IV were contained in exemplar A (+) M and probably in J. If L (+) P (+) Q are parts of one tablet, that exemplar contained sections II-IV, and hence probably I-IV; if G belongs to the same tablet, it certainly contained I-IV.
2. Sections I-III only were contained in C.
3. Sections I-III, plus omen 60, were contained in B, and probably also in R and N. In N, only III and omen 60 are preserved; in R, the subscript preceding omen 60 and omen 60.
4. Exemplar T (+) U contained only section IV, and may represent the second tablet of a recension in which I-IV were written on two tablets, and therefore may be the continuation of an exemplar such as C (or of C itself).

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[1]The number 63 is based on one system of numbering; in another system of serialization, the number 63 is given to the tablet we shall call 64.

[2]See Bibliography.

5. The other sources are so fragmentary that it cannot be established whether they belong to one of the two basic type exemplars, namely manuscript tradition x–above (1) and possibly above (2) plus (4)–and y–above (3). Sections I and II are attested in F (+) H and probably D; only section I in G; only IV in K, O, and V; only II in L which, therefore, may belong to *Iqqur īpuš* (see below).

6. The placement of K is not certain; E cannot be placed, and is given in separate transliteration on p. 64.

Note that V (an Assur text?) is the only manuscript which uses MUL *Dil-bat* for Venus instead of Ninsianna (all other manuscripts).

Each section is delimited not only by its content and, for section IV, also its form, but by a subscript. We have identified eight subscripts, S_1–S_8, though some of these may have to be collapsed.

The first subscript, S_1, occurs after section I; unfortunately, it is illegible in C, and in H–which sets off this section from the next by a double ruling–only the middle portion of the subscript line is preserved, and this portion is blank, so that the nature of S_1 is unknown. (However, in C at least, the subscript was not of the form *n kiṣrū*, because the traces do not allow such an interpretation.)

S_2, the subscript after omen 33, is attested in B, C, D, (A +) M, and N, and reads as follows: *12 kiṣrū tāmurātu*[3] *ša Ninsianna* GABA.RI *Bābili* 'twelve omens, visibilities[3] of Venus, copy of (a text from) Babylon'.

Section III is followed in C by a subscript S_3 which may represent the subscript to Tablet 63; of it only the end, [. . .] *kî pî labīrīšu* '[. . .] according to its original', is preserved. In N, a subscript of two lines, S_4, occurs; the first line is fragmentary and what is preserved is not intelligible; the second line in its preserved part has [. . .] TA *kiṣri* '[. . .] from the omen(s)'. A subscript in both P and K, that we call S_5, preceded the next section, IV; what preceded it is not preserved in P, and cannot be identified as omen 37 in K. Probably it is to be restored as [*4 kiṣrū ša*] *Ninsianna aḫûtu* 'four extraneous omens about Venus'; in P, only the word *Ninsianna* is preserved.

S_6, the subscript that concludes Tablet 63 in A and J, is identical in its preserved portion to S_5, and is probably to be restored as [*21 kiṣrū ša*] *Ninsianna aḫûtu*. In R, only the second half of the subscript is preserved: [. . . *kiṣ*]*ri tajārta ina libbi išû*; this subscript, S_7, may be restored from S_8; see below, and the interpretation proposed on p. 9. In B, this subscript takes up two lines, but the first line is broken with the exception of the first two signs. The second sign may be *ki*, permitting a restoration *ki*[*ṣru*]: the first sign is partly broken, and if it is a numeral it can be only the figure 4. Therefore, we have concluded that this subscript is probably identical with S_4 and S_5, and that manuscripts B and R, and probably N, did not contain section IV.

The additional omen 60 that follows S_7 in B and R, and probably also in N, is a repetition of omen 17 (also appearing as omen 50 in section IV), but correcting the erroneous eastern setting of omen 17 to a western setting.

This omen is again followed by a subscript in B and R, S_8. S_8 is better preserved than S_7, and may be used for the restoration of S_7: *2 kiṣrū ša Ninsianna aḫûtu ultu libbi kiṣri tajārātu ina libbi išû*. Its beginning is preserved only in B, and the figure 2 is beyond doubt, in spite of the fact that the section preceding S_8 (the section between S_7 and S_8) contains only one omen, not two.

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[3]Collation shows a clear *-mu-* as the second sign in this word, thus excluding the reading TA *gaba-ra-tum* retained by Labat, Calendrier p. 199, in spite of the objections of Langdon, The Venus Tablets, p. 13 note 1. It is assumed here that *tāmurātu* is a variant of *tāmarātu*, although such a variant form is not attested elsewhere, because the twelve omens preceding refer to risings (IGI.DU$_8$ = *tāmartu*) of Venus. Professor Borger (orally) suggested that the sign MU may stand for *ia*$_5$ so that this subscript too would contain the term *tajārātu*, for which see note 5.

Subscripts S_7 and S_8 employ a terminology not otherwise attested, and their interpretation is uncertain. They may be translated: 'n extraneous omens about Venus, from an omen (or: the omens); they have returns therein'. The word translated as 'omen' is *kiṣru;* it was translated as 'section (of a text)' in CAD K 441a sub 8a, but the references cited there could also be interpreted as 'omens'; the translation 'omens' is chosen here because the subscript to the twelve omens of section II uses the same term.

The word translated as 'return' is *tajārtu* (plural: *tajārātu*). It is normally used (in the singular) for the 'return (march)' from a campaign in Neo-Assyrian annals and, in transferred meaning, for 'pardon';[4] only a few atypical occurrences[5] suggest the meaning 'repetition' that seems to be required in the subscripts.

Source B also gives the total number of omens on the tablet in the colophon. The number, slightly broken, may be either 34 or 37. The number 34 would account for the total of sections I and II (21 + 12) and the added omen 60; the number 37 would account for all omens of sections I, II, and III (21 + 12 + 4).

The basis for the attribution of the eight-year cycles of Venus of Tablet 63 to the reign of Ammiṣaduqa, and specifically of the first such cycle (omens 1-10) to a Venus-cycle in the first eight years of his reign, is of course the name of year 8 of Ammiṣaduqa[6] that follows the first ten omens. However, the tenth omen, the last of the cycle, is incomplete. In fact, it consists solely of the statement 'Venus disappeared in the east on the 25th of month XII'. Thus, it is not an omen, because it lacks an apodosis; moreover, it also differs from omens 1-9 (and 11-20 of the "second cycle") because it lacks the period of invisibility and the date of the next first visibility. The date of the disappearance of Venus is stated as an event. We know that ominous occurrences that were observed in an extispicy, namely markings and features on the liver and lungs of the lamb, were reported in the Old Babylonian period.[7] All those reports that are dated date to the reigns of the last two kings of the First Dynasty of Babylon, Ammiṣaduqa (fourteen reports) and Samsuditana (two).[8] It is therefore our belief that omen 10 was not shortened from a complete omen in order to find space for the name of the year, but that it was originally a report of an observation of the last visibility of Venus, followed by the date, as in the case of the reports of haruspices.

It should be noted that the fragmentary line [. . .] KÙ.GI. ga.ke$_4$, that is, the end of the year name of Ammiṣaduqa 8, occurs on another fragment of celestial omens, Sm. 1057:8'.

With the exception of omen 10, the omens of sections I, III, and IV, and omen 60 all follow the same pattern: In month MN, day n, Venus disappeared in the east/west; it remains invisible for n days, and became visible in month MN$_2$, day n, in the west/east: apodosis. While the verbs *itbal* 'disappeared' and *innamir* 'became visible' may be in the past tense because of the general style of omens, according to which the introductory *šumma* ('if') governs a grammatical preterite, it is to be noted that the verb 'remains invisible' nonetheless is in the present tense–*uḫḫaram(-ma)*–in all sources which use a syllabic spelling in

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[4]Note that in CT 28 29 r. 6 *ta-a-a-ár-tum* is not a gloss, as assumed in Kraus Texte 33 Index s.v., but is the apodosis, 'pardon', of the omen.

[5]These atypical occurrences are of three types:

a) referring to a feature or deformation of the gall bladder observed in extispicy: *šumma martum ta-a-a-ra-tim išû* YOS 10 31 iv 7-9; *šumma martu imitta u šumēla ta-a-a-ra-ti ītaddât(*ŠUB.MEŠ*-át)* CT 28 48 K.182 + r. 7.

b) rubric at the end of a bilingual incantation: ⌈*t*⌉*a-a-a-ár-ti ša* ÉN AGA.MAḪ ⌈*t*⌉*u-qat-te-e-ma* ŠID-*n*⌈*u*⌉ 'you recite to the end the *tajārtu* of the incantation "AGA.MAḪ"' K.5246:7f. (courtesy R. Borger).

c) in EAE fragments: [. . . *ta-a-a-á*]*r-tu i-šu-ú* DÙ-*ma* (=*kalama*) *šá* E-⌈*ú* . . .⌉ (=*ša iqbû*) ^{d}UDU.IDIM.MEŠ DÙ-*ma* (=*kalama*) *ana* ^{d}UTU.ŠÚ.A *ta-a-a-ár-tú ir-*⌈*šu-ú*⌉ (commentary on ⌈DIŠ MUL.MEŠ *ana*⌉ ^{d}UTU.È *nap-ḫu-ni* 'if the stars rise toward east') Rm. 932:4'-6', cf. (in broken context) [. . . *ta-a-a-ú*]*r-tum i-šu-u ka-la-ma la ka-l*⌈*a-ma* . . .⌉ ibid. 3'.

[6]See Ungnad, RlA 2 190 no. 256.

[7]For a convenient survey, see Goetze, YOS 10 pp. 2 and 4, and JCS 11 89ff., also Nougayrol, JCS 21 219ff.

[8]Nougayrol, JCS 21 220 n. 3.

sections I and III and in omen 60, but in the preterite *-uḫḫiram(-ma)* in section IV. The logographic spelling ZAL may represent either the preterite *uḫḫiram(-ma)* or the present *uḫḫaram(-ma)*.

The omens of section II follow a different pattern: they begin not with the disappearance, but with the appearance of Venus. After the introductory 'In MN, day n, Venus appeared in the east/west', there follows A(podosis)$_1$. Then comes an amplification or explanation: 'It remains present in the east/west until month MN$_2$, day n; it disappears in MN$_2$, day n+1, and remains invisible for three months/seven days; in MN$_3$, day n (= MN$_2$, day n+1 plus three months or seven days), it rises in the west/east: A(podosis)$_2$'. The second section may be called an amplification or explanation because the verb forms in this section are always in the present, and are all followed by the particle *-ma*. This verb form is characteristic of the explanations given in commented texts. Commented texts are of the pattern protasis - apodosis - commentary, and this is the pattern found in the omens of section II, with the difference only that in these omens a second apodosis follows. Not only is it unique that two apodoses occur in two different parts of an omen; the two apodoses are dissimilar, and sometimes contradictory—an occurrence found, to be sure, in other omen series, but with the specification that the second apodosis (which always immediately follows the first) is a variant from another source.

The structure of these omens of section II, and their relation to Tablet 63, remains unique. As mentioned briefly on p. 3, this section was excerpted in at least some recensions of the series *Iqqur īpuš*,[9] a series deriving omens from various activities undertaken by a person (in some recensions by the king) in the twelve months of the year, with the day of the month remaining unspecified.[10] Some tablets of *Iqqur īpuš* which are organized by months (Labat's *Séries Mensuelles*) list as the last of the omens derived from celestial phenomena—moon, sun, Venus, meteorological and atmospheric phenomena—an omen from the rising of Venus which is one of omens 22-33. (For months I, III, IX, and X see Labat, Calendrier p. 199; for month VI, ibid. p. 259.) A further, unpublished, fragment of such a monthly section of *Iqqur īpuš* for month II, K. 7939, also contains the omen from Venus' rising (= EAE 63 omen 23); it is possible that sources for the other months also contained this omen. However, in the first part of *Iqqur īpuš*, in which a paragraph is devoted to each activity, no separate paragraph for the risings of Venus through the twelve months has so far been attested, but such a paragraph was included by Labat as § 104A of *Iqqur īpuš* because of the occurrence of such omens in the monthly series. One of the texts which at first was taken to belong to Tablet 63, K.3170 + 11719 + 14551, turned out to be part of *Iqqur īpuš*, because, while it has omens 22-27 on the reverse, it has other *Iqqur īpuš* paragraphs on the obverse. The pertinent omens from this text are edited in Appendix A. Source L of Tablet 63, K.12344 + 12758, with omens 25-29, may also be part of *Iqqur īpuš* rather than of Tablet 63.

This fact raises anew the question posed by Labat, op. cit. pp. 9f., whether *Iqqur īpuš* borrowed from other omen series, or vice versa. As far as planetary omens are concerned, Labat included five paragraphs on Venus (§§ 82-86), and on pp. 170f. note 6 mentions the possibility that two paragraphs concerning Jupiter and one concerning ^{d}UDU.IDIM of EAE may have been incorporated in some editions of *Iqqur īpuš*. Without attempting to solve the general problem of the relationship of *Iqqur īpuš* to other omen texts, we would point out that section II of EAE 63 (omens 22-33) fits into the monthly schema which forms the structure of *Iqqur īpuš*. Section IV, in which omens 1-21 and 34-37 are rearranged in the order of the months, does not fit into the schema of *Iqqur īpuš* because most months occur more than once in the sequence.

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[9] Edited by René Labat, *Un Calendrier babylonien des travaux, des signes, et des mois (Séries* Iqqur īpuš) (Paris, 1965).

[10] §§ 41' and 66' form an exception; they refer to any month of the year, with the day of the month—from 1 to 30—being the variable.

Table Ia. Sources.

A	K.2321 + 3032	Neobabylonian. AAT 46; ACh Ištar 12, 15; Langdon-Fotheringham pl. 5-6. Omens 1-14; break; 45-59; S_6; end (colophon).
B	W 1924.802	Neobabylonian. Langdon-Fotheringham pl. 3-4. Omens 1-11; break; S_2; 34-37; S_7; 60; S_8; end (colophon). Found at Kish in 1924.
C	K.160	3R 63; ACh Ištar 12-14; Langdon-Fotheringham pl. 1-2. Photo: ACh frontispiece. Omens 8-21; S_1; 22-33; S_2; 34-37; S_3; break.
D	K.7225	Photo. Column i: omens 7-12; break. Column ii: broken, possibly S_2.
E	BM 41498	Neobabylonian. LBAT 1562. See Appendix B.
F	BM 37010	Neobabylonian. Omens 12-15; break.
G	Rm. 2,531	Langdon-Fotheringham pl. 3. Omens 15-20; break.
H	BM 36758 + 37496	Neobabylonian. Photo of BM 36758. Omens 19-21; S_1; 22-27; break.
J	BM 36395	Neobabylonian. Photo. Omens 3-15; break; 54-59; S_6; end (colophon).
K	BM 34227 + 42033	Neobabylonian. LBAT 1561 + 1560. Two unidentified omens (see Appendix C); S_5; omens 38-42; break.
L	K.12344 + 12758	Omens 25-29; break.
M	K.3105	Neobabylonian. Photo. Omens 27-33; S_2; 34-36; break.
N	BM 41688	Neobabylonian. LBAT 1563. S_2; omens 34-37; S_4; 60?; break.
O	BM 37121 + 37432	Neobabylonian. Omens 53-56; break.
P	K.7072	ACh Supp. 42. S_5; omens 38-40; break.
Q	Sm. 174	Babyloniaca 3 285; Langdon-Fotheringham pl. 6. Omens 45-48; break.
R	K.7090	Photo. S_7; 60; S_8; end (colophon).
T	K.5963 + Rm. 134	ACh Supp. 41 (Rm. 134 only). Omens 38-41; break.
U	K.12186	Omens 56-58; break.
V	VAT 11253	MIO 5 pl. 19 (= p. 344). Omens 41-45; break; 57-59; break.

A and M may be parts of the same tablet.

F and H may be parts of the same tablet.

L, P, and Q may be parts of the same tablet.

T and U may be parts of the same tablet.

V has been collated by Dr. Liane Jakob-Rost. All other sources have been collated by E. Reiner; in addition, numbers on all British Museum tablets (i.e., all sources except B and V) have also been checked by Asgar Aaboe.

Table Ib. Arrangement of Sources According to Manuscript Traditions.

Manuscript Families	Sources	Sections										
		I		II		III		IV				
x	A (+) M	1 - (21);		(22) - 33;	S_2;	34 - (37);	[ ]	(38) - 59;	S_6;			
	J	(1) - (21);	[				]	(38) - 59;	S_6;			
	(G +)L (+) P(+)Q	(1) - (21);		(22) - (33);	]	]	S_5;	38 - (59);	]			
	K	[				] ?	S_5;	38 - (59)				
y	B	1 - (21);	[	]	S_2;	34 - 37				S_7;	60;	S_8
	R	[							]	S_7;	60;	S_8
	N	[		]	S_2;	34 - 37;	S_4;				60;	[
z	C	(1) - 21;	S_1;	22 - 33	S_2;	34 - 37;	S_3					
	(+) T + U							38 - (59)	[			

Note. Parentheses around the first or last number in the columns under sections I-IV indicate that the first or last omens of the section are not preserved, but the section is attested in the manuscript through some of the omens.

THE ASTRONOMICAL AND TEXTUAL PROBLEMS

(By David Pingree)

Astronomical Data in the Protases of Omens 1-21, 34-37, and 38-60.

In one synodic period of approximately 584 days the planet Venus makes one rotation about the Sun. (See Figure 1 for a sketch of the orbits of Venus and of the Earth around the Sun). If we consider a rotation to begin with the planet's last visibility in the East (Σ), it will then be approaching superior conjunction with the Sun and its furthest distance from the Earth. Between last visibility in the East (Σ) and first visibility in the West (Ξ) it will be invisible for two months and some days. After its first visibility in the West it remains visible for eight months and some days before its last visibility in the West (Ω) occurs, and it approaches inferior conjunction with the Sun. It remains invisible for as little as three days in the winter, for as much as two weeks and a few days in the summer, before its first visibility in the East (Γ) occurs. Then it is again visible for eight months and some days before its last visibility in the East (Σ). Of course, observations of "last visibilities" can occur before the expected dates and those of "first visibilities" after the expected dates; but *if a watch were kept every night*, such variations because of observational difficulties should not have expanded the periods of invisibility or contracted those of visibility by more than a few days.

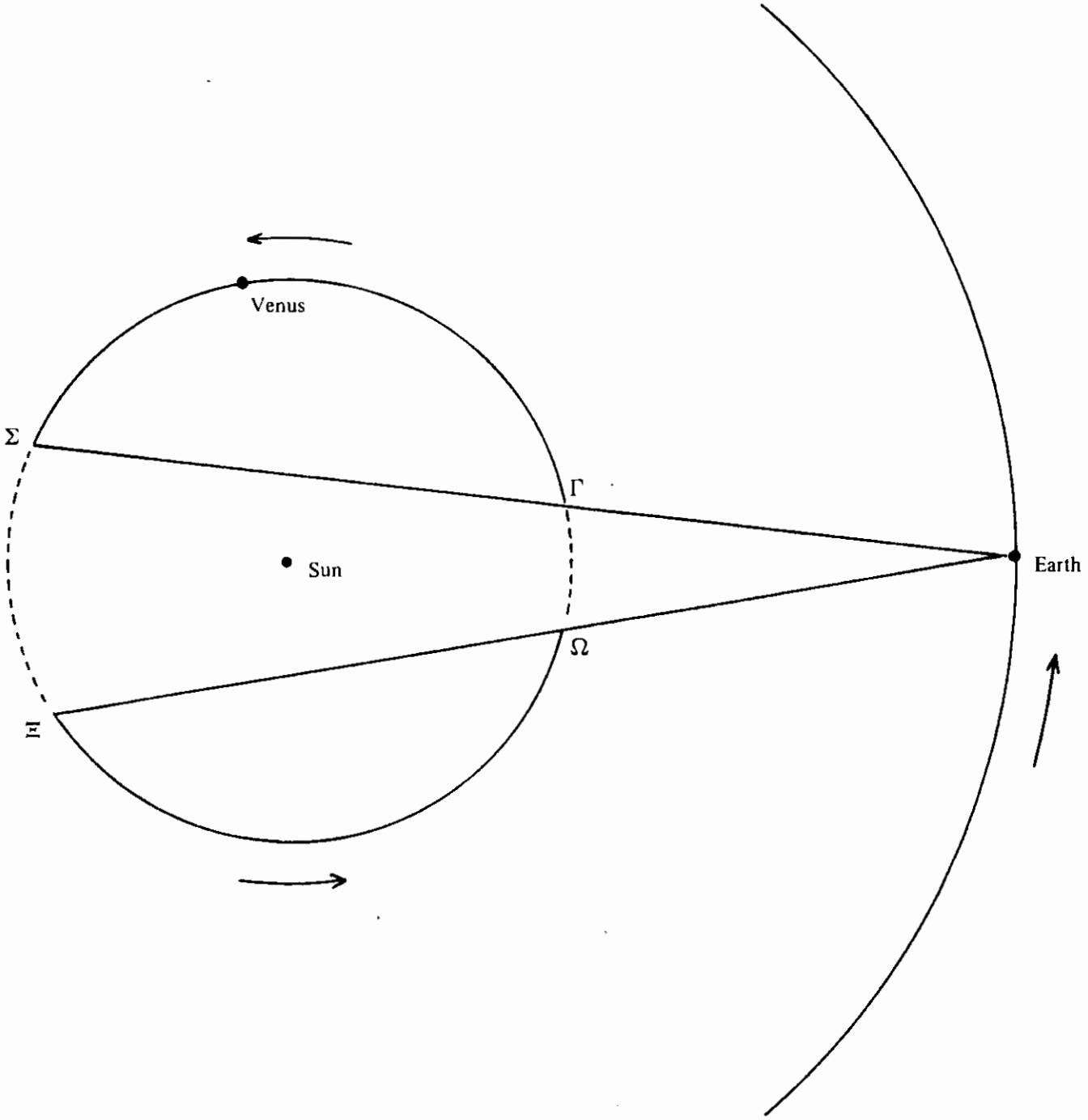
As has been pointed out in the introduction, the text consists of four sections, of which section IV is a monthly rearrangement of sections I and III; omen 60 is a corrected form of omen 17. The identifications of these omens are given in Table III.

Table III. Correlations of Omens 38-60 with 1-21 and 34-37.

Note. The number on the left refers to the omens in section IV, the number on the right to the omens in sections I and III. Where the identification is confirmed by the preserved apodoses (see Table II), an asterisk is added.

*38 = 14	44 = 9	*50 = 17	*56 = 37
*39 = 36	*45 = 19	*51 = 7	*57 = 1
*40 = 5	*46 = 8	*52 = 2	*58 = 20
*41 = 15	*47 = 18	*53 = 12	*59 = 21
*42 = 35	*48 = 3	*54 = 6	*60 = 17
43 = 4	*49 = 13	55 = 16	

Figure 1. The Orbits of Venus and the Earth



Note. This diagram is not drawn to scale. The actual dates and longitudes of the phenomena of Venus depend on variables not represented in this simplified scheme.

In table IV are given the dates and periods of invisibility from each omen in sections I and III and from the corresponding omens in section IV and omen 60. The copies preserving the information are indicated in parentheses. A column is added indicating the intervals of visibility computed on the assumption also made by the scribe who computed the periods of invisibility recorded in the text—that is, that each month contains 30 days. In the margin is given in square brackets the number of the regnal year of Ammiṣaduqa in which the last visibility of each omen would have fallen on the assumption that sections I and III contain observations of the 21 years of his reign.

Table IV. The Astronomical Data in the Order of Omens 1-21.

Year	Omens	Last visibility	Interval of invisibility	First visibility	Interval of visibility
[1]	1	Ω XI 15 (B) Ω (A)	3d (AB)	Γ XI 18 (B) Γ (A)	8m 23d (B)
	57	Ω (AU)	3d (AJ)	Γ XI 18 (J) XI 18 (U) XI 28 (A)	
[2]	2	Σ VIII 11 (B) Σ (A)	2m 7d (B) 2m 8d (A)	Ξ X 19 (B) Ξ (A)	8m 4d (B)
	52	Σ (A)	2m 8d (A)	Ξ X 19 (A)	
[3]	3	Ω VI 23 (B) Ω (A)	20d (AB)	Γ VII 13 (B) Γ (A)	8m 19d (B)
	48	Ω VI 23 (A) Ω (Q)	20d (A)	Γ VII 13 (A)	
[4]	4	Σ VII[1] 2 (B) Σ (A)	2m 1d (AB)	Ξ VI 3 (B) VI 3 (J) Ξ (A)	8^2m 29d (B)
	43				
[5]	5	Ω II 2 (B) Ω (A)	18d (B) 15d (A)	Γ II 18 (B) II (AJ)	8^3m 7d (B)
	40	Ω II 2 (KP) II 2 (T)	*x* d (P)	Γ II 28 or 18 (K) Γ (T)	

[1] A scribal error for IV.

[2] Including the attested XII_2 in Ammiṣaduqa 4.

[3] Including the alleged VI_2 in Ammiṣaduqa 5.

(Table IV continued)

Year	Omens	Last visibility	Interval of invisibility	First visibility	Interval of visibility
[5]	6	Σ IX 25 (B) Σ IX 12 (A)	2m 4d (AB) 4d (J)	Ξ XI 29 (B) Ξ XI 16 (A) XI 28 (J)	8m 29d (B)
	54	Σ *x* + 1 (A) Σ 12 (O)	2m *x*d (AO)	Ξ (AO)	
[6]	7	Ω VIII 18[4] (B) VIII 20 + *x* (A)	3d (AB)	Γ IX 1 (B) IX 1 (A) IX (J)	8m 20d (B + A)
	51	Ω VIII 28 (A)	5d (A)	Γ IX (A)	
[7]	8	Σ V 21 (A) Σ (BC)	2m 11d (B) *x*m *x* + 1d (A)	Ξ VIII 2 (A) VIII 2 (C) VIII (J)	8m 23d (AC)
	46	Σ (Q)		Ξ (Q)	
[8]	9	Ω IV 25 (AC)	7d (BCD)	Γ V 2 (ACJ) Γ (D)	7[1] m 23d (AC)
	44	IV (V)		Ξ[1] (Q) IV (V)	
[8]	10	Σ XII 25 (AC)			
[9]	11	Ω III 11 (AC)	9m 4d (CD) 9m *x*d (A) *x*m 5d (J)	Γ XII 15 (AC) Γ (D) XII 16 (J)	8[5]m 25d (C)
[10]	12	Σ VIII 10 (AC)	2m 6d (C) *x*m 6d (D) 2m 16[?] d (F)	Ξ X 16 (ACJ)	8m 10d (C)
	53	Σ (O)	2m 8d (A) 2m *x*d (O)	Ξ X 16 (A) Ξ (O)	

[4]A scribal error for 28.

[5]Including the attested VI_2 in Ammiṣaduqa 10.

(Table IV continued)

Year	Omens	Last visibility	Interval of invisibility	First visibility	Interval of visibility
[11]	13	Ω VI 26 (C)	11d (CF)	Γ VI_2[6] 7 (CJ)	$7^!$ m 2d (C)
	49	Ω VI 26 (A)	12d (A)	Γ VI_2 8 (A)	
[12]	14	Σ I 9 (C)	5m 16d (CF)	Ξ VI 25 (CJ)	$7^!$ m 10d (C)
	38	Σ I 8 (K)	5m 18d (K)	VI *x* (K)	
		I 8 (T)	5m 17d (T)	VI 25 (T)	
		I (P)		VI 24 (P)	
[13]	15	Ω II 5 (C)	7d (CFG)	Γ *x* + 1 (F)	8m 9d (FG + G)
				Γ (CJ)	
				12 (G)	
	41	Ω II 5 (K)	7d (T)	Γ (KT)	
		5 (T)	$6d^!$ (V)	III (V)	
[13]	16	Σ X 20 (C)	15d (C)	Ξ XI 11 (CG)	8^7m 29d (CG)
		X 21 (G)		Ξ (J)	
	55	$Ω^!$ 24 (O)	1m *x*d (O)	$Γ^!$ XI 28 (A)	
		$Ω^!$ (A)	xm 4d (A)	$Γ^!$ (O)	
[14]	17	$Σ^!$ VII 10 (C)	1m 16d (C)	$Ξ^!$ VIII 26 (CG)	8m 20d (C)
		VII 10 (G)			8m 21d (G)
	50	Ω VII 11 (A)	1m 17d (A)	Γ VIII 28 (A)	
	60	Ω 11 (N)			
		Ω 3 (R)	1m 7d (R)	VIII 28 (R)	
		VII (B)		VIII 27 (B)	
[15]	18	Σ V 20 (C)	2m 15d (C)	Ξ VIII 5 (C)	$9^!$ m 0d (C)
		Σ V 21 (G)		Ξ IX 5 (G)	$11^!$ m 0d (G)
	47	Σ (Q)	1 + *x*d (O)	Ξ (A)	

[6]This is assumed to be the attested VI_2 in Ammiṣaduqa 11.

[7]Including the attested XII_2 in Ammiṣaduqa 13; if the alleged VI_2 in Ammiṣaduqa 14 is correct, the interval is $9^!$ m 29d.

(Table IV continued)

Year	Omens	Last visibility	Interval of invisibility	First visibility	Interval of visibility
[16]	19	Ω V 5 (C) Ω VIII 5 (G)	15d (C)	Γ IV 20 (G) Ξ! V 20 (C)	7! m 25d (G) 6! m 25d (C)
	45	Ω (Q)			
[16]	20	Σ XII 15 (CG) Σ (H)	3m 9d (C) 2m 7d (H)	Ξ III 25 (C) Ξ (G)	8m 15d (C)
	58	Σ (AUV)	2m 7d (AJ)	Ξ (A) III 4 (J)	
[17]	21	XII 10 (C)	4d (CH)	Γ XII 14 (C)	
	59	Ω (A) Σ! (V)	4d (AJ)	Γ XII 14 (J) Γ (A)	
[19]	34	Ω VI_2 1 (C) Ω (N)	15d (C) 16d (M)	Γ VI_2[8] 17 (C) VI_2 (M) VI_2 14 (N)	9! m 8d (C) 9! m 11d (N)
[20]	35	Σ III 25 (C) 25 (N)	2m 6d (C) 2m 16d (M)	Ξ VI 24 (C) VI 14 or *x* (N) Ξ (M)	8[9]m 3d (C)
	42	III (V)	1? m 9d (V)	Ξ (V) *x* + 5 (K)	
[21]	36	Ω I 27 (C) 27 or 28 (N)	7d (C)	II 3 (C)	8m 25d (C + O)
	39	I 26 (PT) Σ! I 27 (K)	6d (T)	Γ II 3 (P) Γ (T) Ξ! II 3 (K)	
[21]	37	Σ (C)		XII 28 (C)	
	56	Σ 28 (O) Σ (A)	2m 0d (A) xm 0d (J)	Ξ (OU)	

[8]This is assumed to be the attested VI_2 in Ammiṣaduqa 17 + d.

[9]Including a VI_2 or a XII_2; this is assumed to be the attested XII_2 in Ammiṣaduqa 17 + a.

Suggestions for a History of the Tradition of the Text.

From the preceding table two things are clear: the source of section IV, which we will henceforth call the γ text, was a rearrangement of the omens that appear in sections I and III, which sections we will call the β text; and γ does not copy all of these omens but omits omens 10 and 11 of section I and omen 34 of section III. If we look more closely, we notice that omen 34 uniquely begins with an intercalary month; that omen 10 is not an omen but as presently preserved is in the form of a simple observation dated in the year of the Golden Throne, which is the eighth year of the reign of Ammiṣaduqa; and that omen 11 contains an egregious error. For in omen 11 the western last visibility (or first invisibility) should be dated XII 11 instead of III 11 and the interval of invisibility should be 4 days instead of 9 months and 4 days. The correct data are found in omen 21, which is quoted in the γ text as omen 59. One may hypothesize therefrom that the common source of β and γ , which source we will call α, had omen 21 in place of omen 11, but that β substituted for it omen 11 with the apodosis of omen 37. Omen 21 was then added at the end of the second 8-year period and has a double apodosis, one unique to it, the other the apodosis of omens 11 and 37. Of course it is also possible to regard omen 21 as containing the first pair of phenomena in the third 8-year cycle of Venus in Ammiṣaduqa's reign.

But it seems to us that the α text naturally falls into three sections. Omens 1-10 constitute an 8-year cycle of Venus (five synodic periods) in which omen 10 was already incomplete, but was dated. Except for the wrong month in omen 4 (month VII written by mistake for month IV, an easy error to make paleographically and one that was peculiar to β since γ, in omen 43, must have had month IV), for variant day-numbers in the different sources of omen 6, and for a serious problem in omen 9, this section in β makes perfect sense astronomically as a sequence of observed events if month XII_2 was intercalated in year 4 and month VI_2 in year 5. In fact, we know that the first of these intercalations and probably the second occurred during the reign of Ammiṣaduqa. The γ text provides us with variant day-numbers for omens 1, 5, and 7 which attest to some insecurity in the text of these ten omens, but not much. This part of the text allows one to eliminate most years in the approximate time of Ammiṣaduqa from consideration as the first year of his reign, but they do not definitely decide which of the remaining years is the correct one.

Omens 11-20/21 appear to represent a second 8-year period of Venus (or such an 8-year period followed by the first pair of phenomena in a third). However, the text of β is extremely corrupt: omens 11, 14, 16, 17, 19, and 20, are impossible; van der Waerden's method of dealing with this is displayed in Table V. In fact, of the twenty-two entries in omens 11-21, which he takes to be a continuation of omens 1-10, van der Waerden, applying the 8-year rule, rejects or alters nine, reads unattested numbers in two, and rejects two entries among the nineteen of omens 1-10 because they do not fit in with the entries for eight years later in omens 11-21. Therefore, more than half of the entries in this section of β are, according to van der Waerden, astronomically impossible if omens 11-21 are to be regarded as a continuation of omens 1-10. Moreover, the versions of omens 12-21 in the γ text offer variants for eight of the day-numbers; and in nine cases no numbers happen to be preserved.

That some of these corruptions already existed in the α text is clear from the fact that the impossible interval between Σ and Ξ in omen 14–5 months and 16 days--also appears in omen 39 of the γ text as 5 months and 17 or 18 days. However, in the case of omen 16 (β), which is not correct according to van der Waerden, there is a given interval of 15 days which does not fit the dates of the phenomena; in the corresponding omen 55 (γ), the phenomena, the dates, and the interval are all different, the interval being 1 month and 4 days. The succeeding omen 17 (β) has the wrong phenomena, while omen 50 (γ) has the correct phenomena. All three texts–α, β, and γ–are corrupt in this section. Omen 20 (β) and omen 58 (γ) allow one to restore the text of this omen in α; the date of the eastern last visibility was XII 25, the interval was 2 months and 9 days, and the date of the western first visibility was III 4. The dates in omen 19 (one must either read the second date as IV 20 as does G or assume an intercalated VI_2, which is not attested for the 16th year of Ammiṣaduqa) were also copied differently from α by different scribes.

These considerations make it difficult to place much reliance on the data in this set of omens, and even raise the possibility that they are not a continuation of omens 1-10 intended to cover the 9th through the 16th (17th if omen 21 is regarded as the beginning of a third 8-year cycle) years of Ammiṣaduqa's reign. It is true that the periods of visibility indicate the presence of an intercalated VI_2 in year 11; in fact, our list of intercalations in Ammiṣaduqa's reign in Table VI shows 10**, 11**, and 13* ; and perhaps 14**. However, the text of the dates of the phenomena in years 13 and 14 (omens 16 and 17) is corrupt, so that some doubt is thrown upon 13*. Therefore, the possibility exists that omens 18-20—and perhaps omens 14-20—have nothing to do with the reign of Ammiṣaduqa, or some of them may while others do not. However one looks at the matter, it is extremely risky to use any of this section as a criterion for dating; essentially one is forced to assume, if one does use it, that disagreements of the text with computations for one's chosen date are scribal errors, so that the chosen date becomes a means of verifying the authenticity of the text rather than the other way around.

Table VI. Attested Intercalations in the Reign of Ammiṣaduqa.

(L.-F: S. Langdon and J. K. Fotheringham, *The Venus Tablets of Ammizaduga*, Oxford-London 1928, p. 61.

YOS 13: J. J. Finkelstein, *Late Old Babylonian Documents and Letters*, Yale Oriental Series 13, New Haven-London 1972.[1]

VAS 18: H. Klengel, *Altbabylonische Rechts- und Wirtschaftsurkunden*, Vorderasiatische Schriftdenkmäler Neue Folge, Heft II (Heft XVIII), Berlin 1973.)

4* (with XII_2)	L-F
5** (with VI_2)	L-F[2]
10**	L-F; YOS 13 532
11**	L-F
13*	YOS 13 404
14**	L-F[3]
17+a*	L-F; YOS 13 53; VAS 18 99
17+d**	YOS 13 146

Further, L-F cite an unpublished text dated 17+a that indicates that the preceding year contained an intercalated VI_2.

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[1]Intercalations attested in YOS 13 have been collected and kindly communicated to us by Dr. Hermann Hunger, University of Vienna.

[2]This VI_2 is based on two unpublished contracts communicated to Fotheringham by Schnabel. It has not been confirmed.

[3]This is reported to be in an unpublished contract communicated to Fotheringham by Schnabel. If it is genuine, the interval of visibility between omens 16 and 17 is too long. Dr. Horst Klengel, Deutsche Akademie der Wissenschaften, Berlin, to whom we are grateful for his help, informs us that a quick check of the unpublished Old Babylonian contracts in the Berlin museum failed to turn up the contracts which supposedly contain the otherwise unattested intercalations.

Bibliography

The following annotated bibliography includes the more significant studies of the Venus Tablets since the edition of Langdon, Fotheringham, and Schoch in 1928; they discuss the literature before 1928 in chapter V (pp. 28-44).

1. S. Langdon, J. K. Fotheringham, and C. Schoch, *The Venus Tablets of Ammizaduga*, Oxford-London 1928.

Analysing the material on the basis of Langdon's copies, transliterations, and translations of A, B, C, G, P, Q, and part of T (Rm. 134) and using Schoch's tables, Fotheringham chose out of the possibilities -1976, -1920, -1856, -1808, and -1800 the second (-1920) to be the first year of Ammiṣaduqa's reign. Langdon misread some numbers, but essentially the table on p. 58 correctly represents the data in the copies accessible to him; the main corrections one would have to make are in omens 16, 19, and 21.

2. D. Sidersky, "Nouvelle étude sur la chronologie de la dynastie Ḫammurapienne," *Revue d'assyriologie* 37 (1940) 45-54.

Using Langdon's data, Sidersky chose -1701 as the first year of Ammiṣaduqa.

3. A. Ungnad, *Die Venustafeln und das neunte Jahr Samsuilunas (1741 v. Chr.)*, Leipzig 1940, reprinted Osnabrück 1972.

Using A, B, C, G, P, and part of T (Rm. 134), correcting Langdon's readings at several points, and assuming that the first year of Ammiṣaduqa's reign falls between -1659 and -1639, Ungnad chose -1645 as the most probable.

4. J. W. S. Sewell in S. Smith, *Alalakh and Chronology*, London 1940, pp. 26-27 and 50-52.

Using Langdon's data and Schoch's tables, Sewell shows that the year -1645 could be the first year of Ammiṣaduqa as well as -1920.

5. F. Cornelius, "Berossos und die altorientalische Chronologie," *Klio* 35 (1942) 1-16.

Using Langdon's data and Schoch's and P. V. Neugebauer's tables, Cornelius claims in fn. 2 on p. 7 to have found that -1581 is a possible first year of Ammiṣaduqa.

6. B. L. van der Waerden, "On Babylonian Astronomy I. The Venus Tablets of Ammiṣaduqa," *Ex oriente lux* 10 (1945-1948) 414-424.

"Correcting" the data of Langdon and Ungnad (see Table V), and preparing new astronomical tables to replace Schoch's (B.L. van der Waerden, "Die Berechnung der Ersten und Letzten Sichtbarkeit von Mond und Planeten und die Venustafeln des Ammisaduqa," *BSAW*, Math.-Phys. Kl. 94 [1943] 23-56), van der Waerden examines Sidersky's, Ungnad's, and Cornelius' dates, and finds the last to be the best. Therefore, he identifies -1581 with the first year of Ammiṣaduqa, but calls attention to a difficulty that this dating raises involving climatic changes in antiquity. This dating is iterated by van der Waerden in his *Die Anfange der Astronomie*, Groningen 1965, pp. 34-47.

7. J. D. Weir, *The Venus Tablets of Ammizaduga*, Istanbul 1972.

Using Langdon's data, Weir concludes that the first year of Ammiṣaduqa was -1645. Further, by making totally unjustifiable assumptions about the nature of the material preserved in the tablets, he tries to squeeze from these very questionable data arguments to support his theses that the original observations were made at Agade and that the orbit of Venus has altered since the seventeenth century B.C.

On the uncertainty of all such attempts at dating these tablets absolutely see O. Neugebauer, "Zur Frage der astronomischen Fixierung der babylonischen Chronologie," *OLZ* 32 (1929) 913-921.

THE TEXT

Introductory Note.

The format of the text edition is an experiment designed to present each text separately[1] so that the preserved parts of each manuscript may be easily identified, and at the same time each omen may be given in its most complete form.

The top line is a composite transliteration from all available manuscripts: the bottom line gives a connected transcription of this composite text. Restorations appear in these two lines only. Under the top line, each source manuscript is given a separate line: each sign that is preserved in the source is indicated by a dash under the transliterated sign in the top line. A ϕ under the transliterated sign indicates that the sign is missing in the manuscript. Broken parts are left blank within the brackets. A small raised number before a sign indicates the line division within that manuscript. Whenever variant spellings appear in the different sources, the particular spelling of that word is given for each source. e.g., the spellings *uḫ-ḫa-ram-ma* or ZAL-ma in omen 34.

Whenever the dates--month or days--of the Venus phenomena differ from text to text, the reconstructed top and bottom lines express no choice among them. When the month name differs, these lines have MN, and the different months are given in each source line; when the day-number differs, these lines have UD.n.KAM, and the attested day-numbers are given in each source line.

Translations accompany the first two omens only, since the protases of omens 1-21 and 34-60 are of the same pattern (see p. 9f). The variables in the protases--the dates of first invisibility, duration of invisibility, and first visibility, and the Eastern or Western occurrence of these phenomena--are given for the sake of clarity and easy comparison in Table IV. Translation and comments on the protases of omens 22-33 are given on p. 10. The translation of the apodoses is found in Table II.

[1]For this format, sometimes referred to as a "score", see D. O. Edzard, Or. NS 43 (1974) 106.

Transliteration and Transcription

1 DIŠ [ina] ITI.ÁŠ UD.15.KAM ^{d}Nin-si$_4$-an-na ina ^{d}UTU.ŠÚ.A it-bal UD.3.KAM

A 1 [ ] - - - - - - - - - - - -

B 1 r. 1 [ ] -

¶ [*Ina*] *Šabāṭi* UD.15.KAM *Ninsianna* *ina* *ereb šamši* *itbal* *3 ūmī*

In month XI, 15th day, Venus in the west disappeared, 3 days

ina AN-e uḫ-ḫa-ram-ma ina ITI.ÁŠ UD.18.KAM ^{d}Nin-si$_4$-an-na

A - - - - - - - 2 [ ] - - -

B - [ ] 2 - - - - - - - - - - - - - -

ina *šamê* *uḫḫaramma* *ina* *Šabāṭi* UD.18.KAM *Ninsianna*

in the sky it stayed away, and in month XI, 18th day, Venus

ina ^{d}UTU.È IGI.DU$_8$ IDIM.MEŠ DU$_8$.MEŠ ^{d}IM ŠEG.MEŠ-šú ^{d}É-a

A - - - - - - - - - - - - 3 [ ]

B - - - - - - - - - - [ ] 3 - - - - - - - - -

ina *ṣīt šamši* *innamir:* *nagbū* *ippaṭṭaru* *Adad* *zunnēšu* *Ea*

in the east became visible: springs will open. Adad his rain, Ea

IDIM.MEŠ-šú ub-ba-la LUGAL ana LUGAL SILIM.MA KIN

A - - - - - - - - - - - - - - - - - -

B - - - - - - - - - - - - - - S[ILIM]

nagbēšu *ubbala* *šarru* *ana* *šarri* *salīma* *išappar.*

his floods will bring, king to king messages of reconciliation will send (= apodosis 13).

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2 DIŠ ina ITI.APIN UD.11.KAM ^{d}Nin-si$_4$-an-na ina ^{d}UTU.È it-bal 2 ITI

A 4 [ ] - - - - - - - - - - - - - -

B 4 -

¶ *Ina* *Araḫsamna* UD.11.KAM *Ninsianna* *ina* *ṣīt šamši* *itbal* *2* *arḫī*

In month VIII, 11th day, Venus in the east disappeared; 2 months

UD.n.KAM ina AN-e uḫ-ḫa-ram-ma *ina* ITI.AB UD.n.KAM

A - 8 - - - - - - - - - 5 [ ]

B - 7 - - - - - [ ] 5 - - - - 19 -

n ūmī *ina* *šamê* *uḫḫaramma* *ina* *Tebēti* UD.n. KAM

n days in the sky it stayed away, and in month X, nth day,

^{d}Nin-si$_4$-an-na ina ^{d}UTU.ŠÚ.A IGI.DU$_8$ EBUR KUR SI.SÁ

A n]a - - - - - - - - - - - -

B - [ ]

Ninsianna *ina* *ereb šamši* *innamir:* *ebūr* *māti* *iššir.*

Venus in the west became visible: the harvest of the land will prosper (= apodosis 1).

Colophons

A (= Hunger Kolophone 469)

Rev. 28' [DIŠ MUL.SAG.ME.GAR ina še-er-ti ik-tu]-un LUGAL.MEŠ KÚR.MEŠ SILIM.MEŠ
DUB 1 UŠ 3 KAM DIŠ UD An ^{d}En-lil
29' [ ] x GIŠ ^{md}U+GUR-DIN-iṭ

End

28' "If Jupiter remains (in the sky) in the morning, enemy kings will become reconciled" [= catchline of Tablet 64].
Tablet 63 of Enūma Anu Enlil.
29' [. . .] written by Nergal-uballiṭ.

B (= Hunger Kolophone 150)

Rev. 15' DIŠ MUL.SAG.ME.GAR ina še-er-ti i[k-tu-un LUGAL.MEŠ KÚR.MEŠ] SILIM.MEŠ
16' DUB 1 UŠ 2.ÀM.KAM.MA [DIŠ] [UD An] ^{d}En-lil 37.ÀM MU.B[IM]
17' [G]ABA.RI Ba-bi-i-li^{ki} [G]IM la-bi-ri-šú ša-ṭir-ma [É]
18' [Š]U ^{d}U+GUR-DU-uš DUMU LÚ.DUMU.DÙ AN [x]
19' [(x)] E^{ki} MU.AN.NA [x].KAM LÚGAL.GI.NA LUGAL [ ]

End

15' "If Jupiter remains (in the sky) in the morning, enemy kings will become reconciled" [= catchline of Tablet 64].
16' Tablet 62 of Enūma Anu Enlil, it has 37 lines.
17' Copy of (a text from) Babylon, written according to its original and collated.
18' Written by Nergal-ēpuš, son of a "Free man" . . .
19' At Babylon, [x]th year of Sargon, king [of Assyria].

J

Rev. 13' [DUB . . . KAM DIŠ UD An ^{d}En-lil] NU AL.TIL
14' [ ] x MU.ME ḪUL.ME TA É.KUR È-am
15' [ ]-x-mu-še-zi-bu x [n]i' ^{m}DIN-su-^{d}EN
16' [ ] x GIŠ x [ ] (blank)

break

13' Tablet n of Enūma Anu Enlil, unfinished.
14' [. . .] evil years' will come out of Ekur (catchline of the "akītu-omens," see provisionally ACh Second Supplément 82 and Gadd, CT 40 p. 8 to pl. 38-40).
15' [. . .]-mušēzibu . . . Uballissu-Bēl
16' (remainder fragmentary).

R

Rev. 7' [DUB x].KAM UD An ^{d}En-líl [ ]
8' [ ] x ^{r}SU^{1} x x x $^{hi\text{-}pí}$
break

7' Tablet n of Enūma Anu Enlil, [unfinished].
8' . . . broken.